SONY

Multi Format Switcher System

XVS-9000 System
XVS-8000 System
XVS-7000 System
XVS-6000 System

(With ICP-X7000 Integrated Control Panel)

XVS-9000	XVS-8000	XVS-7000	XVS-6000	
XKS-S9112	XKS-S8110	XKS-S8111	XKS-S8112	XKS-T8110
XKS-Q8111	XKS-C9111	XKS-C9111N	XKS-C8111	XKS-C9121
XKS-C9121N	XKS-S9167	XKS-S8165	XKS-S8167	XKS-T8165
XKS-Q8166	XKS-C8166	XKS-8160	XKS-8210	XKS-7210
XKS-8440	XKS-8460	XKS-8470	XKS-8475	
XZS-9200	XZS-9510	XZS-9520	XZS-9530	XZS-9540
XZS-9550	XZS-8200	XZS-8510	XZS-8520	XZS-8530
XZS-8540	XZS-8550	XZS-7200	XZS-7510	XZS-7520
XZS-7530	XZS-6200	XZS-6510	XZS-6520	
ICP-X7000	MKS-X7075	MKS-X7011	MKS-X7017	MKS-X7018
MKS-X7019	MKS-X7020	MKS-X7021	MKS-X7023	MKS-X7024
MKS-X7026	MKS-X7031TB	MKS-X7032	MKS-X7033	MKS-X7035
MKS-X7040	MKS-X7041	MKS-X7042		
MKS-X2700	MKS-X7700	MKS-X7701	MKS-X7702	

User's Guide English

Software Version 3.4 and Later

1st Edition (Revised 10)

NOTICE TO USERS

Functions Supported in Version 3.4

The functions newly supported in XVS-9000/8000/7000/6000 System Ver. 3.4 are as follows.

Functions common to the M/E-1 to M/E-5 menus and PGM/PST menu are indicated using M/E-1 menu numbers. Functions common to key 1 to key 8 are indicated using key 1 menu numbers.
For details about the menu numbers of each switcher bank, see *"Menu Tree" (page 501)*.

Functions relating to the system

Classification	Functions supported	Menu No.	See page
System configuration	Region Simul mode setting	7312 7312.3	*page 393*
Network	NMOS settings	7311.7	*page 391*
GPI	GPI input/output via a network	7351 7352 7353 7354	*page 473* *page 474* *page 476* *page 477*
External devices	Control of P-Bus compatible devices via a network	7355.1	*page 282* *page 478*
	TCP/IP connected device control	7325.4 7355.9	*page 281* *page 427* *page 482*

Functions relating to the switcher

Classification	Functions supported	Menu No.	See page
Signal format	OETF and color gamut settings	7313	*page 395*
Input/output	Supports XKS-C8111/ XKS-C9111/ XKS-C9121/ XKS-C8166 720P format	–	*page 443* *page 454*
Format converter	XVS-9000 internal format converter settings (with resource sharing enabled only)	7332.11	*page 210*
Re-entry signal	Release of re-entry signal selection restriction (extended re-entry)	7331	*page 76* *page 204* *page 442*

Functions relating to setup

Classification	Functions supported	Menu No.	See page
NS-Bus	Signal source name link function improvement	7326	*page 429*

Functions relating to operability

Classification	Functions supported	Menu No.	See page
Macro	Simultaneous multiple macro execution	7326.6	*page 347* *page 432*
	Pause event auto insertion (auto pause insert mode)	–	*page 347* *page 349* *page 354*
	Added events • Send command to TCP/IP connected device • Select cross-point assign table • Resume all paused macros • Stop all simultaneously executing macros • Move to previous keyframe • Move to next keyframe • Set transition rate	7142.3	*page 360* *page 537* *page 539*
Utility commands	Added commands • Resume all paused macros • Stop all simultaneously executing macros • Set Region Simul mode	7324 7324.1 7324.2	*page 419* *page 423* *page 426*
Cross-point control block	Selecting cross-point assign tables on each button row	7326.14	*page 25* *page 433*

Functions and Operations Not Supported in Version 3.4

The following functions are not supported in Ver. 3.4. The related button operation and menu settings are disabled. For details about the timing and version for support, contact your Sony service or sales representative.

DME channels 5 to 8
- DME channel 5 to 8 operation and settings
- DME channel 5 to 8 related bus operation and settings
- DME channel 5 to 8 region operation and settings
- 2nd DME related settings

Table of Contents

Chapter 4 Keys

Chapter 5 Wipes

Chapter 6 DME Wipes

Chapter 7 Frame Memory

Chapter 8 Color Backgrounds, Copy and Swap, and Other Settings

Chapter 9 Special Functions

Chapter 10 DMEs

Chapter 11 External Devices

Chapter 12 Keyframes

Chapter 13 Snapshots

Chapter 14 Utility/Shotbox

Chapter 15 Macros

Chapter 16 Files

Chapter 17 System Setup

Chapter 18 Control Panel Setup

Chapter 19 Switcher Setup

Chapter 20 DME Setup

Chapter 21 DCU Setup

Chapter 22 Router Interface and Tally Setup

Chapter 23 Diagnostics

Appendix

Chapter 1 Overview

Introduction

This manual describes the functions and operation of the XVS-9000/8000/7000/6000 Multi Format Switcher system.
It describes picture creation and configuration settings using the ICP-X7000 Integrated Control Panel.

System configuration devices

The principal components of the XVS-9000/8000/7000/6000 system and the terms used in this manual are as follows.

Configuration device	Terms used in this manual
XVS-9000 Multi Format Switcher	• XVS-9000 • Switcher • Multi format switcher
XVS-8000 Multi Format Switcher	• XVS-8000 • Switcher • Multi format switcher
XVS-7000 Multi Format Switcher	• XVS-7000 • Switcher • Multi format switcher
XVS-6000 Multi Format Switcher	• XVS-6000 • Switcher • Multi format switcher
ICP-X7000 Integrated Control Panel	• ICP-X7000 • Control panel • Integrated control panel
PWS-110SC1 Switcher Control Station	• PWS-110SC1 • SCS • Switcher control station
PWS-100SC1 Switcher Control Station	• PWS-100SC1 • SCS • Switcher control station
XKS-8475 DME Board	• XKS-8475 • DME • DME board
XKS-8470 HD DME Board	• XKS-8470 • DME • DME board
MKS-X7700 System Interface Unit	• MKS-X7700 • SIU • System interface unit
MKS-X2700 System Interface Unit	• MKS-X2700 • SIU • System interface unit

Signal format notation

The signal formats in the menu and this manual are denoted as given below.

Format terms		Format name
4K format	3840×2160P	• 3840×2160P/59.94 a) • 3840×2160P/50 a)
	3840×2160PsF	• 3840×2160PsF/29.97 b) • 3840×2160PsF/25 b) • 3840×2160PsF/24 b) • 3840×2160PsF/23.98 b)
HD format	1080P	• 1080P/59.94 c) • 1080P/50 c)
	1080PsF	• 1080PsF/29.97 • 1080PsF/25 • 1080PsF/24 • 1080PsF/23.98
	1080i	• 1080i/59.94 • 1080i/50
	720P	• 720P/59.94 • 720P/50

a) SMPTE ST 425-5/SMPTE ST 2082-1, Level A, 2-sample interleave division (2SI) and square division (SQD) compliant.
b) Square division (SQD) compliant.
c) SMPTE ST 425-1, Level A compliant.

3840×2160PsF format

In this format, 3840×2160 images are subdivided into four and are transferred as four 1080PsF format signals.
Unless stated otherwise in this document, the term “4K format” includes the 3840×2160PsF format.

About screenshots and illustrations

The display of operation buttons and menu screens vary, depending on the system configuration.

Features

The XVS-9000/8000/7000/6000 Multi Format Switcher system is an extensible, high performance, multi-functionality switcher system that supports 4K video creation and networked media interface (NMI) input/output.
The following are some of the principal features of this system.

4K format support

4K signal format is supported, enabling 4K video processing.
The number of M/E (mix/effect) banks, keys, input/outputs, etc. that support 4K format vary depending on the switcher.
On the XVS-9000 when the signal format is 3840×2160P 2SI, up to five M/E banks are available, with up to four keys (two keys + two sub keys) per M/E bank, up to 80 inputs, and up to 40 outputs (up to 48 outputs, counting the multi viewer output connectors).

NMI and ST2110 support

Transfer of input/output signals is supported when connected to an IP network.
One switcher can support a combination of SDI and IP networks (NMI or ST2110) using the existing support for SDI input/output.

Flexible device configuration

The number of M/E banks and number of inputs/outputs can be changed using combinations of option boards. Devices can be configured to suit the system scale and expansion.
Also, installing an optional DME board[1)] enables DME functionality on up to four channels.

1) 3840×2160P SQD and 3840×2160PsF SQD signal formats are not supported.

Powerful frame memory functions

Installing an optional frame memory board enables use of 20-channel frame memory outputs.
With memory that can store about 5,000 frames of HD images and large-capacity non-volatile storage (SSD) installed, this enables images saved in storage to be recalled into memory at high speed.

Flexible control panel layout

Modular design enables flexible layout of the various sections of the control panel. M/E rows can also be split and installed on curved surfaces or in different locations. The control panel can be configured in accordance with the operational environment and organization of systems.

Panel design for enhanced operability

The control panel features high visibility components, such as organic EL (OLED) displays, cross-point buttons with color indicators, and LCD buttons (cross-point pad, Flexi Pad control block, utility/shotbox control block). In addition, changeable button layouts improve the operability, making it ideal for live production environments in which instantaneous decisions are required.

Main Functions

Image Creation

Transitions

Switching from the current video feed to a new video feed is referred to as a transition. Switching a background video or key insertion/removal can be performed, depending on the transition.
The method for switching video feeds (transition type) can be set, and the transition executed using the buttons and fader levers on the control panel.

Independent key transitions

In addition to common transitions, it is possible to configure independent transitions on each keyer.
Executing an independent key transition in combination with a common transition enables different transition types to be used for the background and keys.

For details, see "Signal Selection and Transitions" (page 74).

Keys

Images (keys), such as titles, can be superimposed on the background video. Key processing is performed on a keyer.
The key source (signal used to cut out a portion of the background image), key fill (signal to embed in the cutout portion) and key type (key source processing method) can be selected for a key.

Resizer

This function adds effects, such as movement, rotation, and scaling, to the created key.

For details, see "Keys" (page 107).

Wipes

This function switches from the current video feed to a new video feed using a wipe pattern. There are two types of wipe: those that can be selected in a common transition, and those that can be selected in an independent key transition.
You can apply various modifiers to a wipe pattern, such as setting the wipe direction and pattern position.

For details, see "Wipes" (page 140).

DME wipes

This function switches from the current video feed to a new video feed using a DME effect. There are two types of DME wipe: those that can be selected in a common transition, and those that can be selected in an independent key transition.
You can apply various modifiers to a wipe pattern, such as setting the wipe direction and pattern position.

Resizer DME wipes

Using the resizer, you can execute DME wipes of keys.

For details, see "DME Wipes" (page 154).

Digital Multi Effects (DME)

When used with the switcher, DME allows you to add three-dimensional effects such as image movement, rotation, and scaling, as well as a wide variety of special effects.

Global effects

Global effects are special effects created by combining the pictures of successive DME channels.

For details, see "DMEs" (page 212).

Frame memory

This function freezes and captures a single frame of the input video feed as a still image for later use. You can also specify a range in the input video to create still images to form a frame memory clip.

For details, see "Frame Memory" (page 169).

Color backgrounds

This function is used to create color background video, using a color signal created by a dedicated generator.

For details, see "Color Backgrounds" (page 183).

Video process

This function adjusts the luminance and hue of the input signal.

For details, see "Video Process" (page 194).

Side flags

This function is used to attach separate video to both sides of a video with a 4:3 aspect ratio to make a 16:9 aspect ratio.

For details, see "Side Flags" (page 196).

Image Data Management and Operation

Keyframes

This function loads the conditions of the video at a point in time as data which can then be recalled to reproduce the same conditions.
By arranging multiple keyframes on the time axis (timeline) and interpolating between successive keyframes, you can create an effect in which there is a continuous change from each keyframe to the next (keyframe effect). You can save the effect in memory (effect register) and then reproduce the same effect by recalling it from memory as required.

For details, see "Keyframes" (page 295).

Snapshots

This function saves the conditions configured for applying an effect to an image as data in memory (snapshot register) which can be recalled to reproduce the same conditions as required.

For details, see "Snapshots" (page 327).

Utility

This function is used to assign a specific action or a shortcut for a frequently used menu to a button, which can then be recalled by pressing the button.

For details, see "Utility Overview" (page 337).

Shotbox

This function is used to save any combination of snapshots or keyframe effects specified for a region in memory (shotbox register) and then recall them simultaneously as required.

For details, see "Shotbox Overview" (page 339).

Macros

This function is used to store a sequence of control panel operations (events) as data in memory (macro register), which you can recall to reproduce the same sequence of operations as required.

Menu macros

You can register menu operations as events.

Macro timeline

You can execute macros in sequence by registering macro recall/execute actions as keyframes on the timeline.

Macro attachments

You can execute a sequence of macros when a control panel button or fader lever is operated by assigning the control panel button or a fader lever to a macro register.

For details, see "Macros" (page 345).

Copy and swap

You can copy or swap the settings between switcher banks or between keyers.

For details, see "Copy and Swap" (page 185).

File operations

You can save register data, including setup information and snapshot information, as a file on the local drive or removable drive, and recall it as required.

For details, see "Files" (page 374).

External device control

You can control the operation of external devices, such as GPI-compatible devices, P-Bus compatible devices, VTRs, and disk recorders.
You can also control external devices by creating a timeline and configuring operation actions at keyframes.

For details, see "External Devices" (page 281).

Multi Program 2

This function divides a single M/E switcher bank into two ("main" and "sub"), allowing you to create images separately on each.
You can set separate backgrounds, keys, and transitions for the main and sub outputs.

For details, see "Multi Program 2" (page 199).

Setup

You perform the setup operations in the Engineering Setup menu (hereinafter called the Setup menu).

The Setup menu is separated into the following categories.

System setup (System)

For details, see "System Setup" (page 387).

Panel setup (Panel)

For details, see "Control Panel Setup" (page 406).

Switcher setup (Switcher)

For details, see “Switcher Setup” (page 439).

DME setup (DME)

For details, see “DME Setup” (page 472).

DCU setup (DCU)

For details, see “DCU Setup” (page 473).

Router/tally setup (Router/Tally)

For details, see “Router Interface and Tally Setup” (page 484).

Menus and Control Panel

Chapter 2

Names and Functions of Parts of the Control Panel

The number of M/Es and number of DME channels supported by the XVS-9000, XVS-8000, XVS-7000, and XVS-6000 are different.
Some button operations and menu settings for functions relating to M/Es and DMEs may be unavailable, depending on the switcher.

For details, see "XVS-9000/8000/7000/6000 System Configuration Comparison" (page 523).

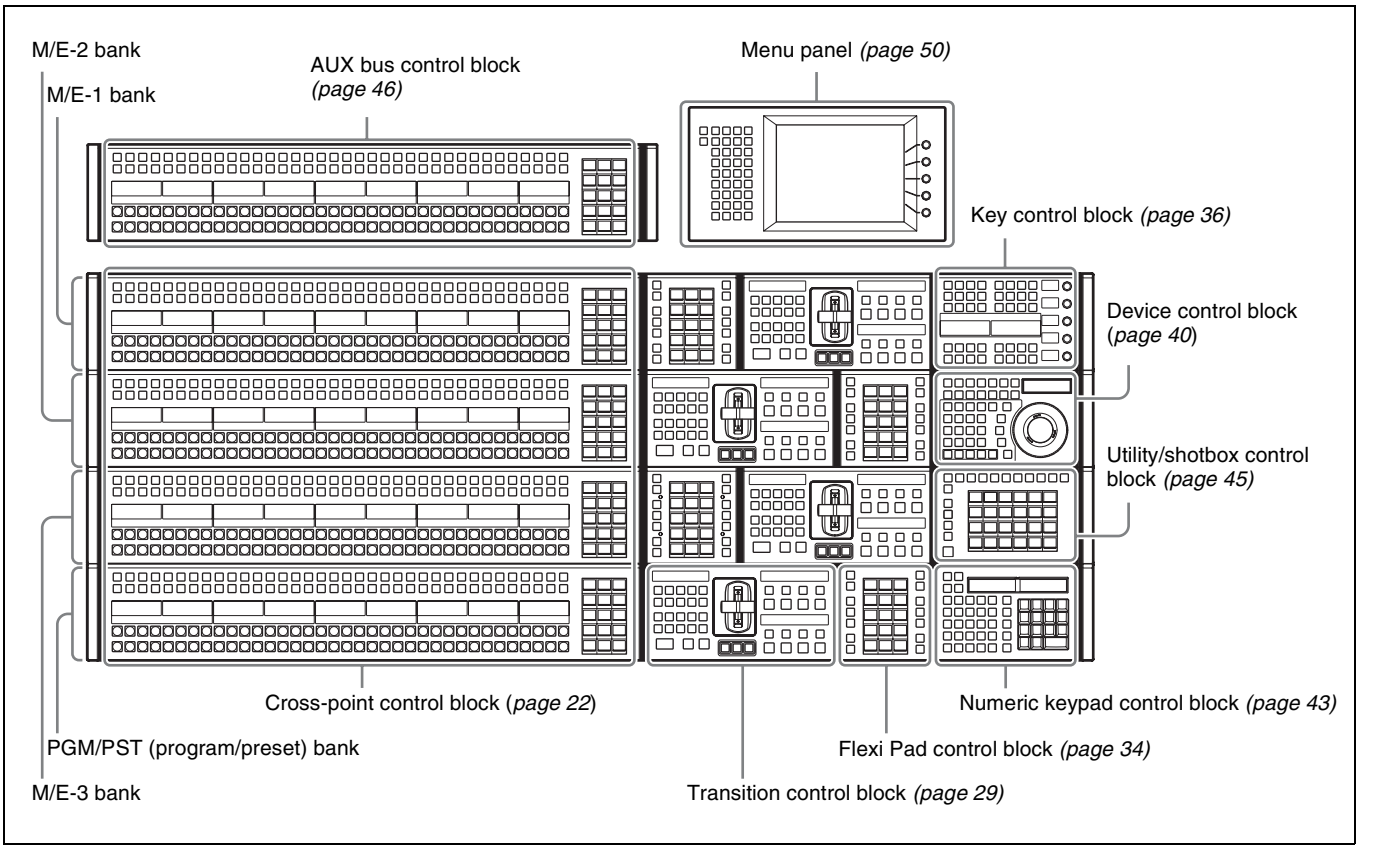
Control Panel Configuration

The ICP-X7000 integrated control panel provides flexible support for a combination of several modules.
The name of each control block and the supported modules are given below.

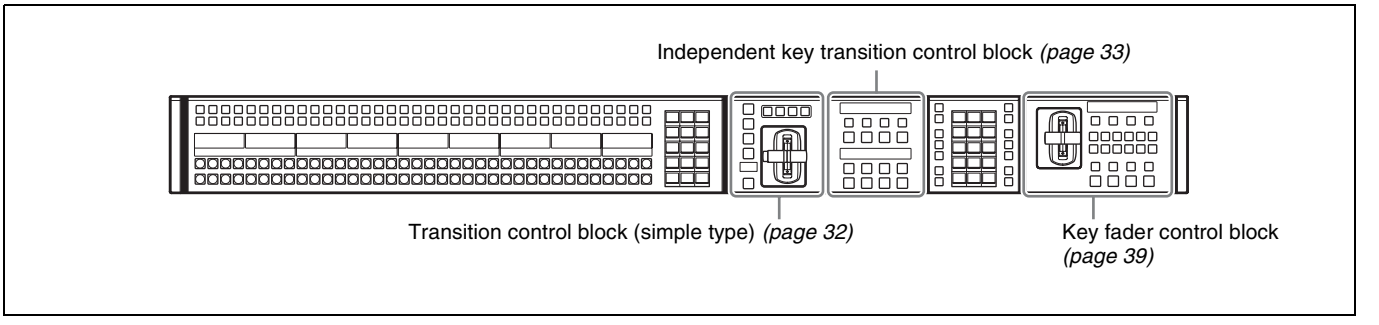
Control block	Module
Cross-point control block	MKS-X7017, MKS-X7018, MKS-X7019 a) b)
AUX bus control block	
Transition control block	MKS-X7020
Transition control block (simple type)	MKS-X7021
Independent key transition control block	MKS-X7023
Flexi Pad control block	MKS-X7024
Key control block	MKS-X7035
Key fader control block	MKS-X7032
Device control block (trackball)	MKS-X7031TB
Numeric keypad control block	MKS-X7026
Utility/shotbox control block	MKS-X7033
Menu panel	MKS-X7011

a) The cross-point control block and AUX bus control block use the same module. You can set which control block the module is used as in the Setup menu.
b) There are three types of modules with varying numbers of cross-point buttons: 36 buttons (MKS-X7017), 28 buttons (MKS-X7018), and 20 buttons (MKS-X7019).

4M/E configuration example using 36-button modules for cross-point control block and AUX bus control block



M/E configuration example using transition control block (simple type)



Cross-Point Control Block

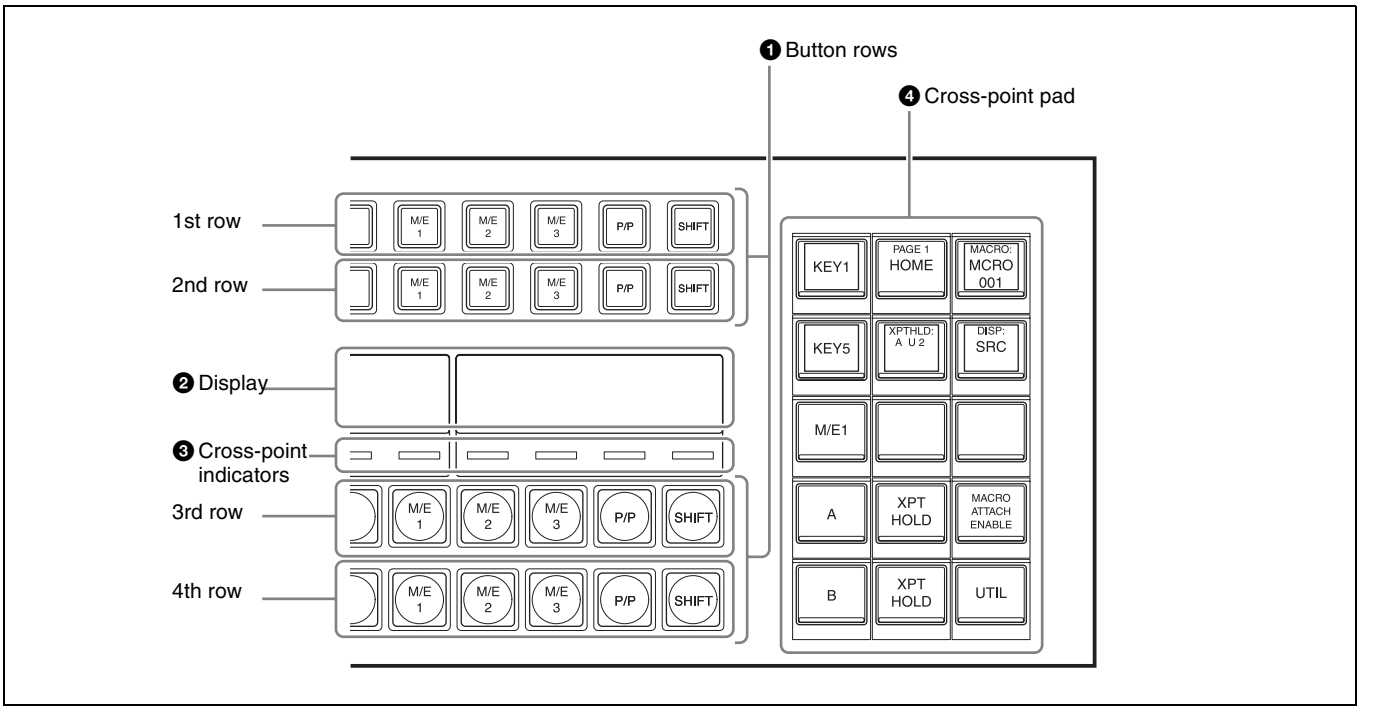
The cross-point control block is used to select the signals to be used in the M/E banks and PGM/PST bank.
The button rows on the cross-point control block are set to key bus mode by default. They can be set to free assign mode or key/AUX bus delegation mode in the Setup menu.

For details, see "Free assign mode" (page 27) and "Key/AUX bus delegation mode" (page 28).

Note

To use as a cross-point control block, the control panel target row must be set to an M/E row or P/P row in the Engineering Setup >Panel >Config menu (7321).

For details, see "Setting the Configuration for Each Bank" (page 406).



❶ Button rows

Used as cross-point buttons for selecting signals and functions.

The 1st row buttons can also be used as 2nd row delegation buttons (key/AUX bus delegation mode).

Name	Description
1st row	• Selects the following bus signals selected using the cross-point pad delegation buttons. Key bus[a], utility bus, DME external video bus, DME utility bus • Selects the following functions when utility/shotbox bank is selected using the cross-point pad delegation buttons (utility/shotbox mode). [b] Utility command, menu shortcut, macro recall, shotbox recall • Selects the shifted signal on the background A bus when the [DUAL BKGD BUS] button of the cross-point pad is lit (dual background bus mode). • Selects the DME external video bus signal while the [UTIL] button of the cross-point pad is pressed (utility bus mode). [c] • Selects the bus signal or utility/shotbox function [b] selected by a delegation button on the cross-point pad when free assign mode is set. • Selects the bus or utility/shotbox bank when key/AUX bus delegation mode is set.
2nd row	• Selects the following bus signals selected using the cross-point pad delegation buttons. Key bus[a], utility bus, DME external video bus, DME utility bus • Selects the following functions when utility/shotbox bank is selected using the cross-point pad delegation buttons (utility/shotbox mode). [b] Utility command, menu shortcut, macro recall, shotbox recall • Selects the shifted signal on the background B bus when the [DUAL BKGD BUS] button of the cross-point pad is lit (dual background bus mode). • Selects the DME utility 1 bus or 2 bus signal while the [UTIL] button of the cross-point pad is pressed (utility bus mode). [c] • Selects the bus signal or utility/shotbox function [b] selected by a delegation button on the cross-point pad when free assign mode is set. • Selects the bus signal or utility/shotbox function [b] selected by the 1st row delegation button when key/AUX bus delegation mode is set.

Name	Description
3rd row	• Selects background A bus signal. • Selects the utility 1 bus signal while the [UTIL] button of the cross-point pad is pressed (utility bus mode). [c)] • Selects the bus signal or utility/ shotbox function [b)] selected by a delegation button on the cross-point pad when free assign mode is set.
4th row	• Selects background B bus signal. • Selects the utility 2 bus signal while the [UTIL] button of the cross-point pad is pressed (utility bus mode). [c)] • Selects the bus signal or utility/ shotbox function [b)] selected by a delegation button on the cross-point pad when free assign mode is set.

a) When a cross-point button is pressed, a key fill signal is selected. While a key bus delegation button is pressed, you can select a key fill signal on the 1st row and a key source signal on the 2nd row. The 2nd row uses the same cross-point assign table as the 1st row.
b) Utility/shotbox mode functions are assigned in the Setup menu. The settings are common to the M/E and PGM/PST banks.
For details, see "Assigning Functions to Cross-Point Buttons of the Cross-Point Control Block" (page 426).
c) You can change the bus assignment and operation mode of the [UTIL] button in the Setup menu.
For details, see "Setting Utility Bus Mode" (page 436) and "Setting the [UTIL] button operation mode" (page 431).

Cross-point button numbers
The button numbers are labeled on the cross-point buttons.

For details, see "Cross-point control block button numbers" (page 80).

Assigning signals to button numbers
You can assign a signal to each button number in the Setup menu.

For details, see "Creating Cross-Point Assign Tables" (page 413).

Colors of lit cross-point buttons
The status of cross-point buttons can be checked according to the color of the button when lit.

For details, see "Colors of lit cross-point buttons" (page 82).

Re-entry buttons
Re-entry buttons are assigned to the cross-point button rows (M/E-4 and M/E-5 re-entry buttons must be assigned in the Setup menu). Re-entry buttons can also be assigned to the cross-point pad.

For details about re-entry buttons, see "Re-entry buttons" (page 76).

SHIFT button
The [SHIFT] button function is assigned to the button on the right-hand end, and is used to toggle between the shifted and unshifted states of the button row.
The operation of the [SHIFT] button can be set to one of the following modes in the Setup menu.
- The shifted state is selected while the button is pressed (hold mode).
- Every time the button is pressed, it toggles between shifted and unshifted states (lock mode).

You can also disable the [SHIFT] button function.

For details, see "Setting the [SHIFT] button operation mode" (page 414).

SHIFT ALL button
You can switch the cross-point button rows on all buses to the shifted state using the [SHIFT ALL] button assigned to the cross-point pad. The [SHIFT ALL] button operation can be set to hold mode or lock mode in the Setup menu.

For details, see "Setting the [SHIFT ALL] button operation mode" (page 414).

Note

The [SHIFT ALL] button is not available when a M/E or PGM/PST bank is in the following states.
- When dual background bus mode is set
- When set to [Dual M/E Assign]
- When the operation of the [SHIFT] button of a cross-point button row is set to hold mode

Cross-point hold function
Setting cross-point hold enables you to recall a keyframe or snapshot while keeping the current cross-point selection unchanged.

When cross-point hold is set, use the cross-point hold buttons of the cross-point pad.
To set for each bus, press the cross-point hold button for the target bus, turning the button indicator on.
To set for each cross-point button row, press the 1st row to 4th row cross-point hold buttons, turning the button indicators on.

You can check whether cross-point hold is set for a key bus (K1 to K8), utility bus (U1, U2), or background bus (A, B) on the cross-point hold status display assigned to the cross-point pad button.

Inhibiting operation of a cross-point button row (protect function)

To inhibit operation of buttons on the 1st to 4th rows, press the [ROW-1 PROT] to [ROW-4 PROT] buttons on the cross-point pad, turning them on.

Inhibiting operation of a cross-point button row (inhibit function)

To inhibit operation of a cross-point button, press and hold the [XPT INHBT SET] button on the cross-point pad, and press the target cross-point button you want to inhibit. To release the inhibit setting, press and hold the [XPT INHBT SET] button on the cross-point pad, and press the target cross-point button you want to release.
To release the inhibit setting for all buttons, press and hold the [XPT INHBT SET] button on the cross-point pad, and press the [XPT INHBT ALLCLR] button.

For details about the inhibit function, see "Inhibiting Operation of Cross-point Buttons" (page 81).

KEY button

In free assign mode or key/AUX bus delegation mode, you can select the key signal of a V/K pair using the [KEY] button on the cross-point pad.
When a cross-point button is pressed while pressing the [KEY] button, the key signal is selected. When a cross-point button is pressed without pressing the [KEY] button, the video signal is selected.
When a key source signal is selected and an operation mode that allows you to select both a key signal and video signal is set in the Setup menu, the [KEY] button is enabled. In key source signal operations, when the [KEY] button is pressed, turning it on, and a cross-point button is pressed, the key signal is selected. When the [KEY] button is not lit and a cross-point button is pressed, the video signal is selected.
Information for the key signal or video signal, whichever is selected, appears on the display.

For details, see "Setting the Button and Fader Lever Operation Mode" (page 430).

Note

The [KEY] button cannot be used on the following buses. Only the video signal is selectable.
- Key fill bus
- DME video bus
- Background A bus, B bus

❷ Display

Six types of display mode can be selected, according to the information to display. The display mode is switched using the display mode buttons on the cross-point pad.
The following information can be shown on the display.

- Settings of buttons on the 1st row to 4th row (signal name, bus name, register name, or function name assigned to the button)
- Macro register name of macro attachment assigned to the 1st to 4th row buttons

Notes

- When the [SHIFT] button function is set, "SHFT" appears on the display. When the shifted state is selected, "SHFT" is highlighted in reverse video, and the button information also toggles to show the shifted display.
- When the [SIDE FLAG] button function is set, "SIDE FLAG" appears on the display.

The information shown in each display mode is configured in the Setup menu. The display can also be subdivided (top and bottom) to display two pieces of information.

For details, see "Setting the Display Mode of the Cross-Point Control Block/AUX Bus Control Block" (page 436).

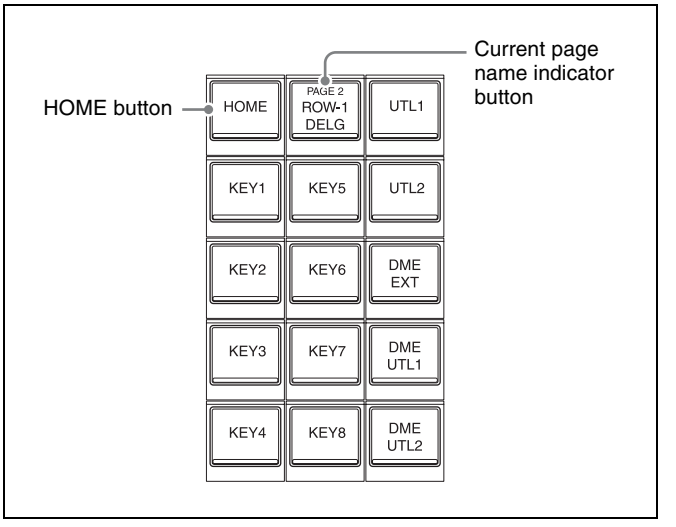
❸ Cross-point indicators

When lit, this indicates the source color of the video signal assigned to buttons on the 3rd row.
If a signal cannot be selected, because a signal is not assigned or the inhibit setting is set, the indicator is not lit.
You can set whether to enable the cross-point indicator in the Setup menu.

For details, see "Setting cross-point indicators" (page 433).

❹ Cross-point pad

Contains button assignments for functions used for cross-point operations, status display, and so on.



You can assign functions to each button in the Setup menu. You can set up 14 pages of settings and assign an arbitrary name to each M/E and PGM/PST bank.

For details, see "Configuring the Cross-Point Pad" (page 433).

Use the following buttons to navigate the cross-point pad pages.

- [HOME] button: Displays the HOME page configured in the Setup menu.
- [<<] button: Displays the previous page (page name below <<).
- [>>] button: Displays the next page (page name below >>).
- Button assigned with page recall function: Displays the page configured in the Setup menu.

If the current page name indicator button is pressed, or the [<<] button and [>>] button are pressed simultaneously, the cross-point pad changes to page selection display mode, and you can press a button, turning it on, to select the page to display. To exit page selection display, press the [EXIT] button.

The following functions can be assigned to the cross-point pad of the cross-point control block.

Button name [a]	Description
HOME	Displays the HOME page of the cross-point pad.
PREV (<< XXX)	Displays the previous page of the cross-point pad. XXX = page name (up to 12 characters)
NEXT (>> XXX)	Displays the next page of the cross-point pad. XXX = page name (up to 12 characters)
Row-n Assign Status (TBL: 1 to 14, MAIN, XXX)	Displays the bus/function names assigned to the 1st row to 4th row. If a table different from the cross-point assign table configured on a switcher bank is assigned, it also displays the currently selected table (TBL: 1 to 14, or MAIN). n = 1 to 4 XXX = bus/function name
Current Page Status (PAGE 1 XXX to PAGE14 XXX)	Displays the name of the currently displayed page. XXX = page name (up to 12 characters)
M/E Status (P/P, M/E1 to M/E5)	Displays the name of the currently set bank.
Disp Mode Status (DISP: XXX)	Displays the name of the currently set display mode. XXX = display mode name (up to 12 characters)
Macro Reg Status (MACRO: XXX, ATTCH: XXX)	Displays the name of the currently recalled macro register. Displays the macro attachment register name while the [PRE MACRO] button or [POST MACRO] button is pressed. XXX = macro register name (up to 8 characters)
PRE MACRO	Sets macro attachment in pre macro mode.
POST MACRO	Sets macro attachment in post macro mode.
MACRO ATTACH ENABLE	Enables macro attachments assigned to buttons of the M/E banks and PGM/PST bank.
DISP MODE1 to DISP MODE6 (XXX)	Selects display mode 1 to 6 (display mode button). XXX = display mode name (up to 12 characters)
ROW-n A [b) c)] ROW-n B [b) c)] (A, B)	Assigns background A and B buses to the 1st row to 4th row. n = 1 to 4
ROW-n KEY1 to ROW-n KEY8 [c) d)] (KEY1 to KEY8)	Assigns key 1 to 8 buses to the 1st row to 4th row. n = 1 to 4
ROW-n UTIL1 [c) d)] ROW-n UTIL2 [c) d)] (UTL1, UTL2)	Assigns utility 1 and 2 buses to the 1st row to 4th row. n = 1 to 4
ROW-n DME EXT [c) d)] (DME EXT)	Assigns DME external video bus to the 1st row to 4th row. n = 1 to 4
ROW-n DME UTIL1 [c) d)] ROW-n DME UTIL2 [c) d)] (DME UTL1, DME UTL2)	Assigns DME utility 1 and 2 buses to the 1st row to 4th row. n = 1 to 4
ROW-n EDIT PVW [b) c)] (EDIT PVW)	Assigns edit preview bus to the 1st row to 4th row. n = 1 to 4
ROW-n AUX1 to ROW-n AUX48 [b) c)] (AUX1 to AUX48)	Assigns AUX1 to AUX48 buses to the 1st row to 4th row. n = 1 to 4
ROW-n FMS1 [b) c)] ROW-n FMS2 [b) c)] (FMS1, FMS2)	Assigns frame memory source 1 and 2 buses to the 1st row to 4th row. n = 1 to 4
ROW-n DME1V to ROW-n DME4V [b) c)] (DME1V to DME4V)	Assigns DME1 to DME4 video buses to the 1st row to 4th row. n = 1 to 4
ROW-n DME1K to ROW-n DME4K [b) c)] (DME1K to DME4K)	Assigns DME1 to DME4 key buses to the 1st row to 4th row. n = 1 to 4
ROW-n UTIL/SBOX1 to ROW-n UTIL/SBOX10 [c) d)] (UTL/SB 1 to UTL/SB10)	Assigns utility/shotbox banks 1 to 10 to the 1st row to 4th row (utility/shotbox mode). n = 1 to 4
Xpt Hold Status (XPTHLD: AB U12 K1234 K5678)	Displays buses for which cross-point hold is set.

Button name [a]	Description
XPTHLD A XPTHLD B	Sets cross-point hold for the background A or B bus.
XPTHLD KEY1 to XPTHLD KEY8	Sets cross-point hold key 1 to 8 buses.
XPTHLD UTIL1 XPTHLD UTIL2 (XPTHLD UTL1, XPTHLD UTL2)	Sets cross-point hold for the utility 1 and 2 buses.
XPTHLD DME EXT	Sets cross-point hold for the DME external video bus.
XPTHLD DME UTIL1 XPTHLD DME UTIL2 (XPTHLD DME UTL1, XPTHLD DME UTL2)	Sets cross-point hold for the DME utility 1 and 2 buses.
ROW-n XPTHLD [e] (XPT HOLD)	Sets cross-point hold for the buses assigned to the 1st row to 4th row. n = 1 to 4
ROW-n P/P OUT1 [e] ROW-n M/E-1 OUT1 to ROW-n M/E-5 OUT1 [e] (XXX)	Loads images (OUT1) from the PGM/PST and M/E-1 to M/E-5 banks into the 1st row to 4th row (re-entry buttons). n = 1 to 4 XXX = Name set to P/P OUT1, M/E-1 OUT1 to M/E-5 OUT1
ROW-n P/P OUT6 [e] ROW-n M/E-1 OUT6 to ROW-n M/E-5 OUT6 [e] (XXX)	Loads images (OUT6) from the PGM/PST and M/E-1 to M/E-5 banks into the 1st row to 4th row (re-entry buttons). n = 1 to 4 XXX = Name set to P/P OUT6, M/E-1 OUT6 to M/E-5 OUT6
ROWn TABLE MAIN [f]	Assigns the main cross-point assign table to the 1st row to 4th row. n = 1 to 4
ROWn TBL: 1 to 14 [f]	Assigns cross-point assign tables 1 to 14 to the 1st row to 4th row. n = 1 to 4
ROWn BANK TABLE [f]	Assigns cross-point assign tables configured on a switcher bank to the 1st row to 4th row. n = 1 to 4
ROW3&4 TABLE MAIN	Assigns the main cross-point assign table to the 3rd row and 4th row.
ROW3&4 TBL: 1 to 14	Assigns cross-point assign tables 1 to 14 to the 3rd row and 4th row.
ROW3&4 BANK TABLE	Assigns cross-point assign tables configured on a switcher bank to the 3rd row and 4th row.
ROWALL TABLE MAIN [f]	Assigns the main cross-point assign table to all rows.
ROWALL TBL: 1 to 14 [f]	Assigns cross-point assign tables 1 to 14 to all rows.
ROWALL BANK TABLE [f]	Assigns cross-point assign tables configured on a switcher bank to all rows.

Button name [a]	Description
ROW-n IMAGE [g] (IMAGE)	Sets the image effect on background A bus or B bus on the 1st row to 4th row. n = 1 to 4
UTIL [c] [h]	Assigns the specified bus to the 1st row to 4th row in utility bus mode.
SHIFT ALL [e]	Switches the cross-point button rows on all buses to the shifted state.
XPTPAD COPY	Copies the cross-point pad settings.
ROW-n AUX MIX [b] [c] (AUX MIX)	Executes an AUX mix transition when an AUX bus is selected on the 1st row to 4th row. n = 1 to 4
AUX MIX [b] [h]	Executes an AUX mix transition when the AUX bus is selected.
ROW-n KEY [b] [c] (KEY)	Selects the signal on the key side in the 1st row to 4th row. n = 1 to 4
KEY [b] [h]	Selects the signal on the key side in the 2nd row.
XPT INHBT SET	Sets/releases inhibit mode for cross-point buttons.
XPT INHBT ALLCLR	Releases inhibit mode for all cross-point buttons.
DUAL BKGD BUS [h]	Toggles dual background bus mode.
ROW-n PROT [e]	Inhibits button operation on the 1st row to 4th row. n = 1 to 4
MACRO TAKE (TAKE)	Executes a macro take operation.
Macro Status (EVENT XX/XX)	Displays the macro status. XX/XX = executed event number / total number of events
Macro: XXX (XXX)	Recalls a macro register (1 to 250). XXX = macro register name (up to 8 characters)

a) Button name when setting in the Setup menu. When the display differs from that on the cross-point pad, the button name shown in parentheses ( ) is displayed.
b) Disabled in key bus mode.
c) Disabled in key/AUX bus delegation mode.
d) 3rd row and 4th row disabled in key bus mode.
e) 1st row disabled in key/AUX bus delegation mode.
f) 1st row and 2nd row disabled in key/AUX bus delegation mode.
g) 1st row and 2nd row disabled in key bus mode and key/AUX bus delegation mode.
h) Disabled in free assign mode.

Free assign mode

Setting free assign mode in the Setup menu allows you to use the 1st row to 4th row as cross-point button rows.

For details, see "Setting the Operation Mode of the Cross-Point Control Block Button Rows" (page 432).

To assign a bus/function to the 1st row to 4th row, use the delegation buttons on the cross-point pad.

Notes

- When a key bus is assigned and a cross-point button is pressed, a key fill signal is selected.
  While a key bus delegation button is pressed, you can select a key fill signal on the 1st row and a key source signal on the 2nd row, regardless of the button row to which the key bus is assigned.
- When a DME video bus or DME key bus is assigned and a cross-point button is pressed, a front image signal is selected. When a cross-point button is pressed while pressing a DME video bus/DME key bus delegation button, a rear image signal is selected.
- The operation of the [SHIFT] button is the operation mode set by the cross-point assign table of the switcher bank (M/E or P/P), regardless of the buses assigned to the cross-point button rows.

Key/AUX bus delegation mode

Setting key/AUX bus delegation mode in the Setup menu allows you to use the 1st row buttons as 2nd row delegation buttons.

For details, see "Setting the Operation Mode of the Cross-Point Control Block Button Rows" (page 432).

You can assign the following bus/function delegation buttons to the 1st row.
KEY1 to KEY8[1)], UTIL1, UTIL2, DME EXT, DME UTIL1, DME UTIL2, EDIT PVW, AUX1 to AUX48, FMS1, FMS2, DME1 V to DME4 V[2)], DME1 K to DME4 K[2)], UTIL/SBOX1 to UTIL/SBOX10

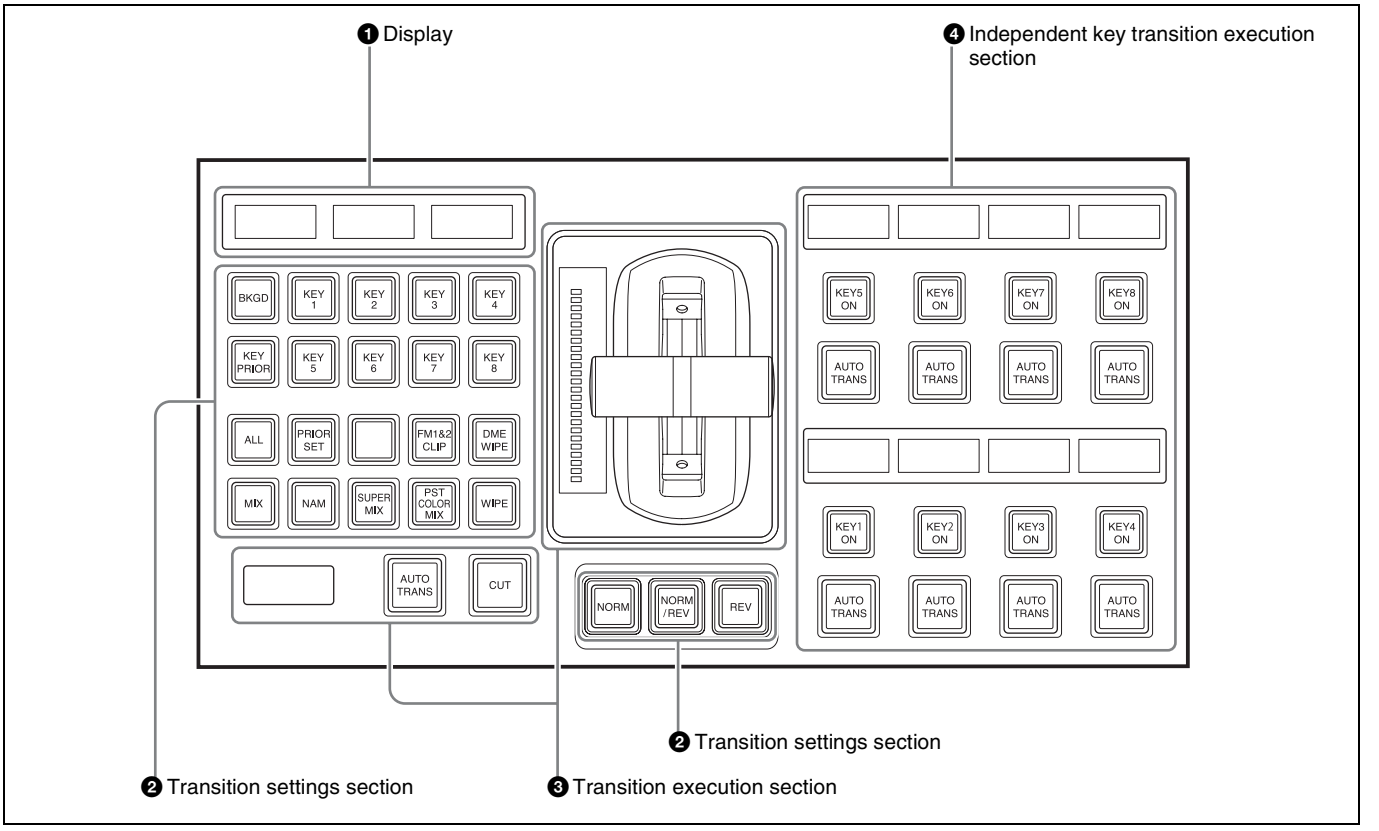
1) When a 2nd row button is pressed, a key fill signal is selected. When a 2nd row button is pressed while pressing a 1st row delegation button, a key source signal is selected.
2) When a 2nd row button is pressed, a front image signal is selected. When a 2nd row button is pressed while pressing a 1st row delegation button, a rear image signal is selected.

Notes

- In key/AUX bus delegation mode, the cross-point pad delegation buttons are not available.
- The operation of the [SHIFT] button in the 2nd row is the operation mode set by the cross-point assign table of the switcher bank (M/E or P/P), regardless of the bus selected in the 1st row.

Transition Control Block

The transition control block is used to execute transitions. It supports common transitions and independent key transition.



❶ Display

The following information is displayed.

- Left-side display: Target bank name (M/E1 to M/E5, P/P)
- Center display: State (highlighted in reverse video when on) and priority of key 1 to key 4
- Right-side display: State (highlighted in reverse video when on) and priority of key 5 to key 8

For details about priority of keys, see "Displaying the Key Output Status and Priority" (page 88).

❷ Transition settings section

Used in the assignment of functions, such as selecting transitions and making settings, to buttons.
You can change the assignment of buttons in the Setup menu.

For details, see "Setting Transition Control Block Button Assignments" (page 410).

Next transition selection buttons

These buttons specify how the image will be changed as a result of the next transition.

Button name	Description
BKGD (background)	Press the button, turning it on, to change the background using the next transition.
KEY1 to KEY8	• Press the [KEY1] button, turning it on, to insert or remove key 1 using the next transition. If key 1 is not currently inserted, it will be inserted by the transition. If key 1 is currently inserted, it will be removed by the transition. • The same applies to the [KEY2] to [KEY8] buttons.

Button name	Description
KEY1/5, KEY2/6, KEY3/7, KEY4/8, ADD, SHIFT	(Assignment in the Setup menu is required.) • Press the [KEY1/5] button, turning it on, to insert or remove key 1 using the next transition. Press the [SHIFT] button, turning it on, and press the [KEY1/5] button to insert or remove key 5. Press and hold the [ADD] button and press the [KEY1/5] button, turning it on, to simultaneously insert or remove key 1 and key 5. • The same applies to the [KEY2/6], [KEY3/7], and [KEY4/8] buttons.
KEY PRIOR (key priority)	• Press the button, turning it on, to enable the key priority setting after the transition. • When the [PRIOR SET] button is lit, the setting for key priority after the transition is used. *For details, see "Setting the Key Priority (Transition Control Block)" (page 87).*
ALL	Selects multiple next transitions simultaneously. You set the next transition to select in the Setup menu. *For details, see "Setting the Operation Mode of the [ALL] Button in the Transition Control Block" (page 431).*
PRIOR SET (priority set)	Sets the key priority. *For details, see "Setting the Key Priority (Transition Control Block)" (page 87).*

Transition type selection buttons

These select the transition type.

- MIX button
- NAM (non-additive mix) button
- SUPER MIX button
- PST (preset) COLOR MIX button
- WIPE button
- DME WIPE button
- FM1&2 CLIP, FM3&4 CLIP, FM5&6 CLIP, FM7&8 CLIP (frame memory clip) buttons
  (The [FM3&4 CLIP], [FM5&6 CLIP], and [FM7&8 CLIP] buttons must be assigned in the Setup menu.)

For details about transition types, see "Transition Type" (page 84).

When multi-program mode is selected, there may be cases in which two or more transition type selection buttons are lit.

For details about multi-program mode, see "Setting the Operation Mode" (page 439).

Wipe direction selection buttons

These buttons select the wipe direction when the transition type is a wipe or DME wipe.

Button name	Description
NORM (normal)	The wipe proceeds in the direction from black to white of the pattern images, shown in *"Wipe Pattern List" (page 494)*, or in the direction of the arrows.
REV (reverse)	The wipe proceeds in the opposite direction of [NORM].
NORM/REV (normal/ reverse)	The wipe direction alternates between normal and reverse every time a transition is executed.

TRANS PVW (transition preview) button

(Assignment in the Setup menu is required.)
With the preview output of the M/E banks and PGM/PST bank, you can check the effect of the image during a transition in advance.
During preview, you can use the fader lever, [AUTO TRANS] button, and [CUT] button.
The operation of the [TRANS PVW] button can be set to one of the following modes in the Setup menu.

- Press the button to start transition preview mode; the mode returns to normal mode when the transition finishes.
- The transition preview mode is maintained only while this button is pressed.
- Each time the button is pressed, the mode toggles between transition preview mode and normal mode.

For details, see "Setting the Button and Fader Lever Operation Mode" (page 430) and "Setting the transition preview mode" (page 467).

KF (keyframe) button

(Assignment in the Setup menu is required.)
You can use the fader lever as a keyframe fader.

For details about the keyframe fader, see "Effect Execution" (page 319).

Pattern limit setting buttons

(Assignment in the Setup menu is required.)
These buttons are used to set pattern limits.

- PTN (pattern) LIMIT button
- LIMIT SET button

For details about pattern limits, see "Pattern Limit" (page 93).

External device operation buttons

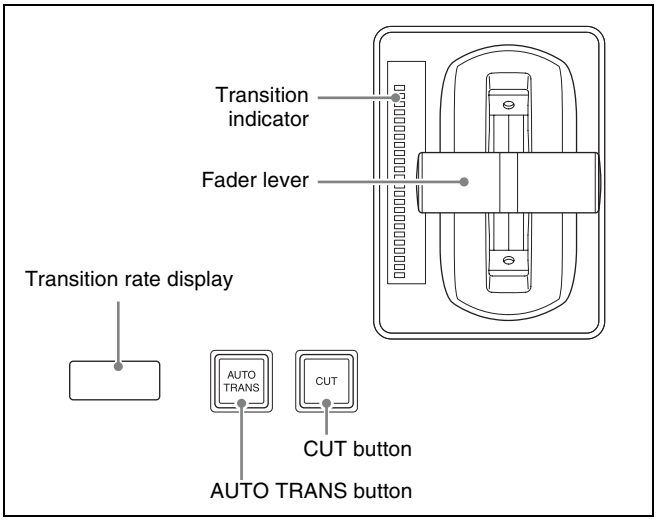
(Assignment in the Setup menu is required.)
These buttons are used to control playback, stop, and cue-up operations on connected devices.

- PLAY button
- STOP button
- CUE button

For details about operation of external devices, see "Control of VTRs and Disk Recorders" (page 286).

❸ Transition execution section

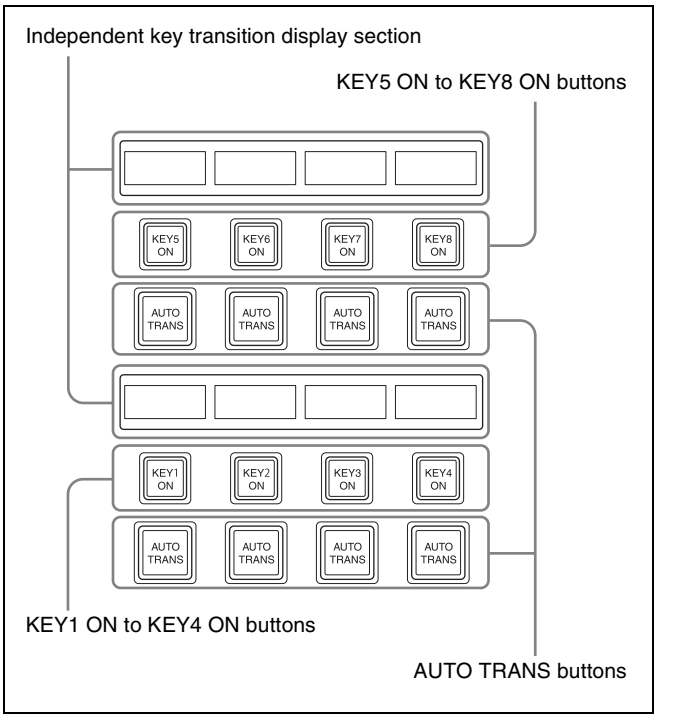
This section is used to execute transitions and check the progress of the transition.



Name	Description
Fader lever	• Move this up or down to carry out the transition. • Press the [KF] button, turning it on, to enable the fader lever to be used as a keyframe fader.
Transition indicator	Displays the transition progress using LEDs.
Transition rate display	Displays the configured transition rate (the time from the beginning of a transition to its completion).
AUTO TRANS (auto transition) button	• Executes an auto transition with the set transition rate and transition type. • During the transition, the button is lit amber.
CUT button	Executes an immediate transition.

❹ Independent key transition execution section

This section executes independent key transitions.



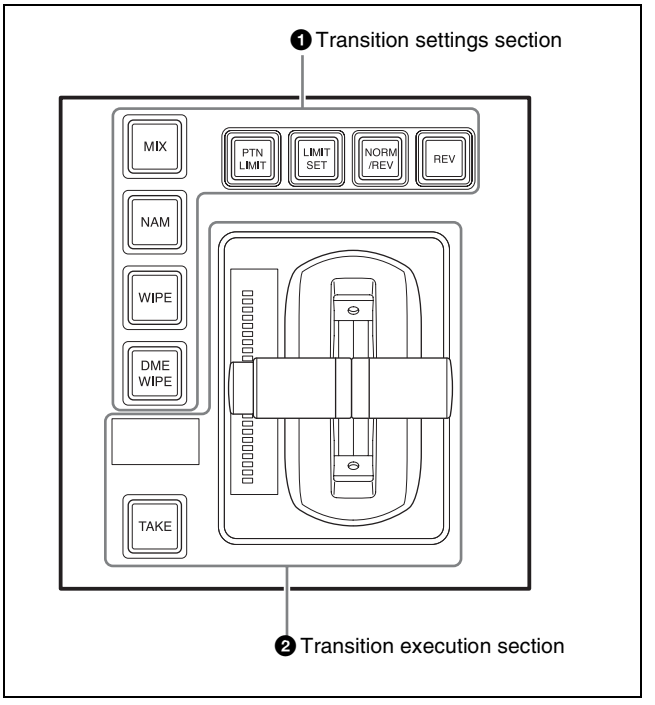
Name	Description
Independent key transition display section	Displays the following information for key 1 to key 8. Key material name (key source name when a key source is selected on the key bus of the cross-point control block), DME channel or resizer being used, transition rate, and transition type
KEY1 ON to KEY8 ON buttons	• Inserts or removes the key instantaneously. • If a key is currently inserted, the corresponding key button is lit amber.
AUTO TRANS (auto transition) buttons	• Inserts or removes the key automatically, for key 1 to key8, with the set transition rate and transition type. • During the transition, the button is lit amber.

You can change the position of the key 1 to key 8 operation buttons in the Setup menu. However, the [AUTO TRANS] button is assigned with the [KEYx ON] (x = 1 to 8) button of the same key as a set.

For details, see "Setting Transition Control Block Button Assignments" (page 410).

Transition Control Block (Simple Type)

The simple-type transition control block is used to execute background transitions.



❶ Transition settings section

Used in the assignment of functions, such as selecting transitions and making settings, to buttons.
You can change the assignment of buttons in the Setup menu.

For details, see "Setting Transition Control Block Button Assignments" (page 410).

Note

The functions that can be assigned to the four buttons at the top and four buttons on the left are different.

Transition type selection buttons

These select the transition type.
Functions can be assigned to both the four buttons at the top and four buttons on the left.

- MIX button
- NAM (non-additive mix) button
- SUPER MIX button
  (Assignment in the Setup menu is required.)
- PST (preset) COLOR MIX button
  (Assignment in the Setup menu is required.)
- WIPE button
- DME WIPE button
- FM1&2 CLIP, FM3&4 CLIP, FM5&6 CLIP, FM7&8 CLIP (frame memory clip) buttons
  (Assignment in the Setup menu is required.)

For details about transition types, see "Transition Type" (page 84).

When multi-program mode is selected, there may be cases in which two or more transition type selection buttons are lit.

For details about multi-program mode, see "Setting the Operation Mode" (page 439).

Wipe direction selection buttons

These buttons select the wipe direction when the transition type is a wipe or DME wipe.
These can only be assigned to the four buttons at the top.

Button name	Description
REV (reverse)	• When not lit, the wipe proceeds in the direction from black to white of the pattern images, shown in *"Wipe Pattern List" (page 494)*, or in the direction of the arrows (normal). • When lit, the wipe proceeds in the opposite direction.
NORM/REV (normal/ reverse)	The wipe direction alternates between normal and reverse every time a transition is executed.

KF (keyframe) button

(Assignment in the Setup menu is required.)
You can use the fader lever as a keyframe fader.
Functions can be assigned to both the four buttons at the top and four buttons on the left.

For details about the keyframe fader, see "Effect Execution" (page 319).

Pattern limit setting buttons

These buttons are used to set pattern limits.
These can only be assigned to the four buttons at the top.

- PTN (pattern) LIMIT button
- LIMIT SET button

For details about pattern limits, see "Pattern Limit" (page 93).

TAKE button

(Assignment in the Setup menu is required.)
Executes an auto transition with the set transition rate and transition type.
This can only be assigned to the four buttons on the left.

CUT button

(Assignment in the Setup menu is required.)
Executes an immediate transition.
This can only be assigned to the four buttons on the left.

MCRO TAKE (macro take) button

(Assignment in the Setup menu is required.)
Executes a macro take operation.
This can only be assigned to the four buttons on the left.

External device operation buttons

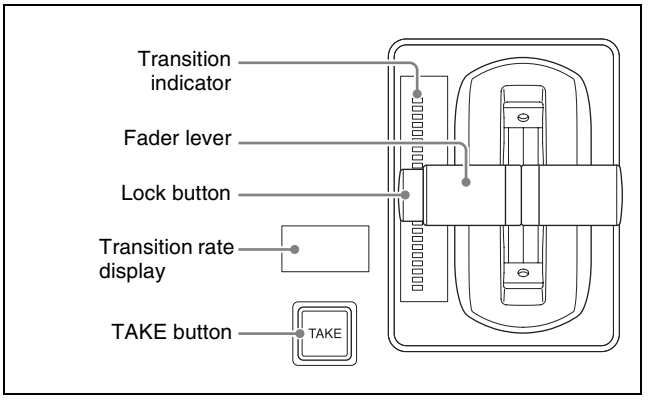
(Assignment in the Setup menu is required.)
These buttons are used to control playback, stop, and cue-up operations on connected devices.
These can only be assigned to the four buttons at the top.

- PLAY button
- STOP button
- CUE button

For details about operation of external devices, see "Control of VTRs and Disk Recorders" (page 286).

❷ Transition execution section

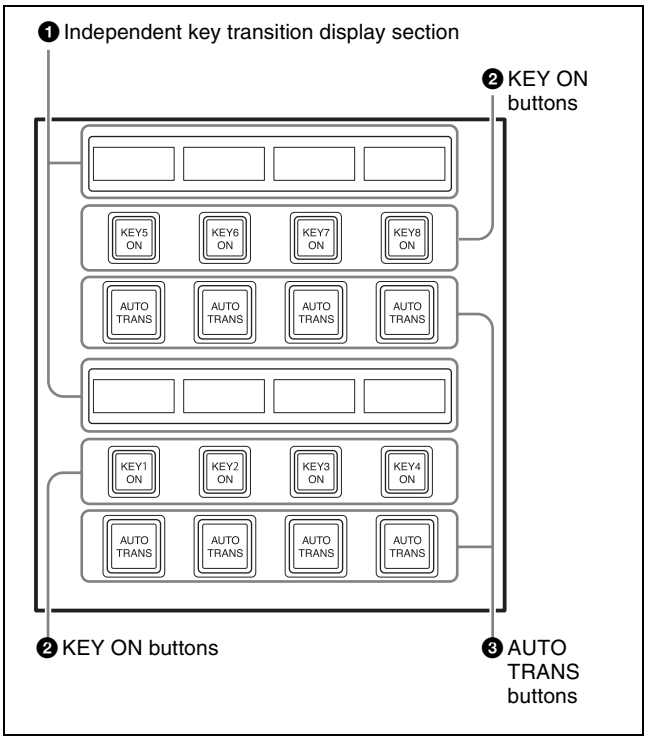
This section is used to execute transitions and check the progress of the transition.



Name	Description
Fader lever	• Move this up or down to carry out the transition. • Press the [KF] button, turning it on, to enable the fader lever to be used as a keyframe fader. • Pressing the lock button splits the fader lever into two for use as split faders. *For details, see "Split Fader" (page 97).*
Transition indicator	Displays the transition progress using LEDs.
Transition rate display	Displays the configured transition rate (the time from the beginning of a transition to its completion).
TAKE button	• Executes an auto transition with the set transition rate and transition type. • During the transition, the button is lit amber. • You can also assign a function to the transition type selection buttons, [KF] button, [CUT] button, and [MCRO TAKE] button in the Setup menu. *For details, see "Setting Transition Control Block Button Assignments" (page 410).*

Independent Key Transition Control Block

The independent key transition control block is used to execute independent key transitions.



❶ Independent key transition display section
The following information is displayed for the assigned key on the [KEY ON] buttons.

- Key material name (key source name when a key source is selected on the key bus of the cross-point control block)
- DME channel or resizer being used
- Transition rate
- Transition type

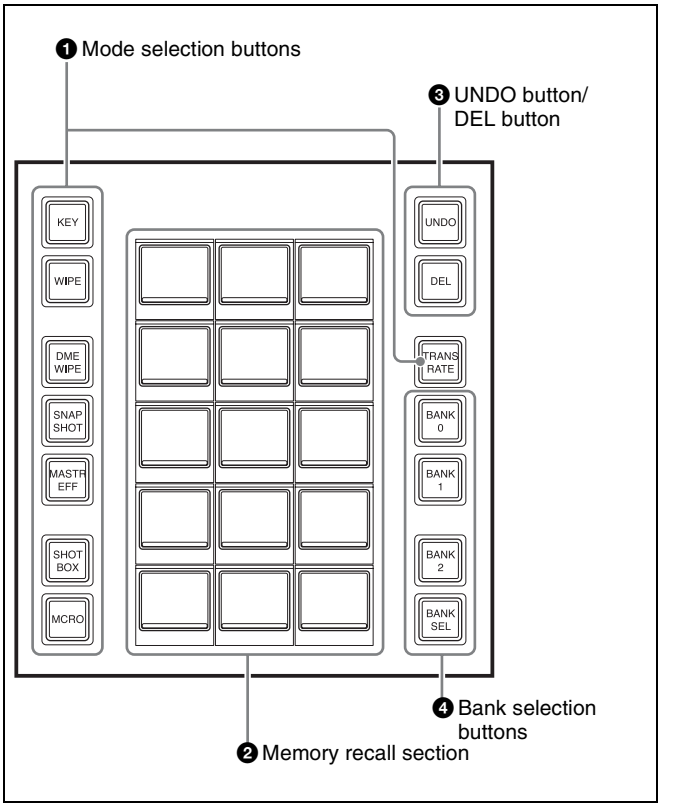
❷ KEY ON buttons
Inserts or removes the key assigned to the button instantaneously.
If a key is currently inserted, the corresponding key button is lit.
You can assign a key (KEY1 to KEY8) of any switcher bank (M/E-1 to M/E-5, PGM/PST) to the [KEY ON] buttons in the Setup menu.

For details, see "Setting Independent Key Transition Control Block Button Assignments" (page 410).

❸ AUTO TRANS (auto transition) buttons
Inserts or removes the key assigned to the [KEY ON] button with the set transition rate and transition type automatically.
During the execution of the transition, the button is lit.

Flexi Pad Control Block

You use the Flexi Pad control block for recalling and saving snapshots, wipe snapshots, DME wipe snapshots, and key snapshots, for recalling and creating macros, for recalling and executing shotboxes and master timelines, for entering the transition rate, and for other tasks.



❶ Mode selection buttons

These buttons select the operation mode of the Flexi Pad control block. Press a mode selection button to change the memory recall section to the display for the selected operation mode.
You can change the assignment of mode selection buttons in the Setup menu.

For details, see "Setting Flexi Pad Control Block Button Assignments" (page 410).

Button name	Description
KEY	Switches to key operation mode. In key operation mode, you can carry out the following operations. • Saving and recalling key snapshots • Selecting independent key transition type • Displays/selects the key source signal in the cross-point control block
WIPE (wipe snapshot)	Switches to wipe snapshot operation mode. In wipe snapshot operation mode, you can save and recall wipe snapshots, and select the wipe pattern.
DME WIPE (DME wipe snapshot)	Switches to DME wipe snapshot operation mode. In DME wipe snapshot operation mode, you can save and recall DME wipe snapshots, and select the DME wipe pattern.
SNAPSHOT	Switches to snapshot operation mode. In snapshot operation mode, you can save and recall snapshots, and add attributes.
MASTR EFF (master effect)	Switches to effect operation mode. In effect operation mode, you can recall and execute the master timeline.
SHOTBOX	Switches to shotbox operation mode. In shotbox operation mode, you can recall and execute shotboxes.
MCRO (macro)	Switches to macro operation mode. In macro operation mode, press and hold the [MCRO] button and press a button (for the target register) in the memory recall section to enter edit mode. In macro operation mode, you can save, recall, and edit macros.
TRANS RATE (transition rate)	Switches to transition rate operation mode. In transition rate operation mode, you can enter the transition rate.

❷ Memory recall section

This section displays the functions assigned to the buttons for the selected operation mode.
The top right button is used to display the selected pattern number, register number, macro event number, transition rate input value, and other status display (excluding in key operation mode).
When a macro is recalled in macro operation mode, the bottom center button displays the executed event number and the total number of events.

Numeric keypad mode

Pressing the [BANK SEL] button, [PTN NO.] button, or [PAUSE] switches the memory recall section to numeric keypad mode, where you can enter bank numbers, wipe pattern numbers, and pause event times.
The currently set numeric value or the value entered using in numeric keypad mode is displayed on the top right button.

❸ UNDO button/DEL (delete) button

After recalling a register, press the [UNDO] button to return to the state before the register was recalled.
Or press and hold the [DEL] button and press a register button in the memory recall section to delete the data registered in the button.
You can change the assignment of buttons in the Setup menu.

For details, see "Setting Flexi Pad Control Block Button Assignments" (page 410).

Note

The [UNDO] button and [DEL] button cannot be used in effect operation mode or shotbox operation mode. The [UNDO] button cannot be used in macro operation mode.

❹ Bank selection buttons

These select the target bank to control, and switches the memory recall section to the register display for the selected bank.
You can change the assignment of bank selection buttons in the Setup menu.

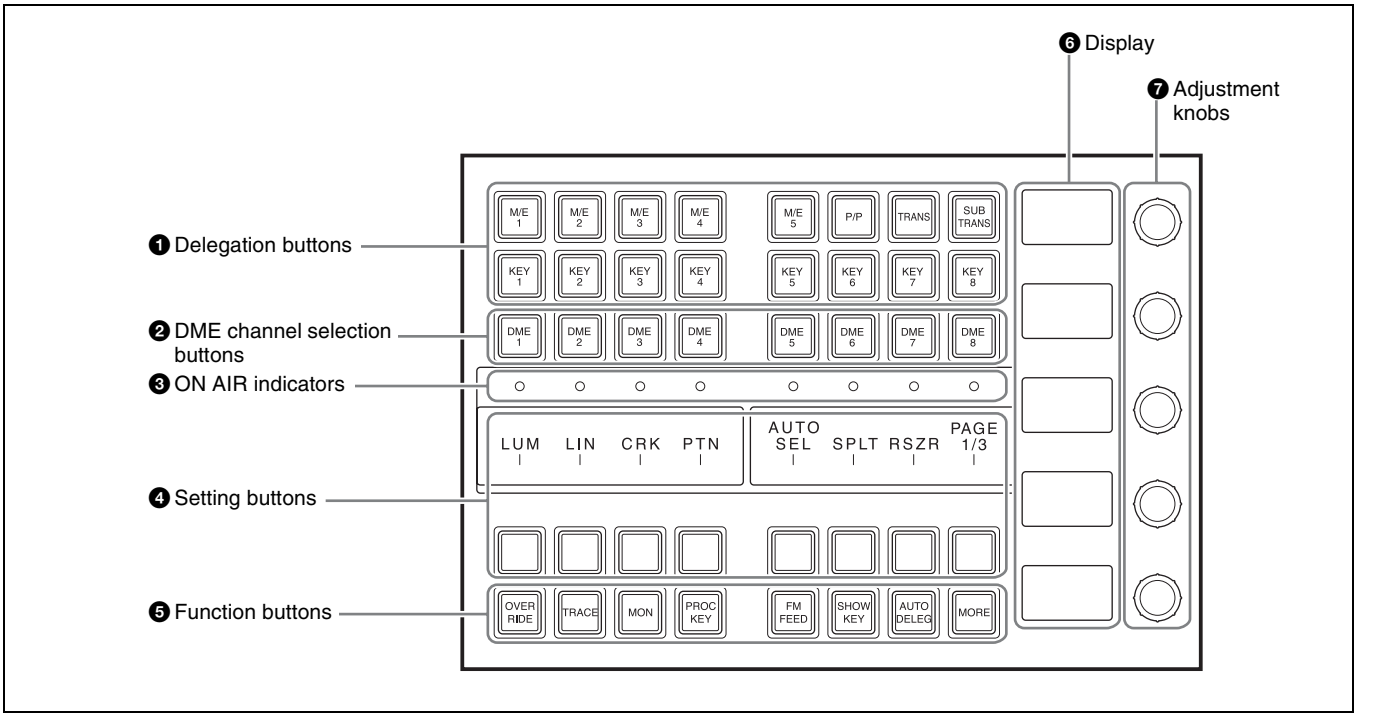
For details, see "Key Snapshot Operations (Flexi Pad Control Block)" (page 138).

Button name	Description
BANK0 to BANK25	(Assignment of [BANK3] to [BANK25] is required.) Switches the memory recall section to the register display for the selected bank.

Button name	Description
BANK SEL (bank select)	Switches the memory recall section to numeric keypad mode for entering bank numbers. Enter a bank number and press the [ENTER] button to switch the memory recall section to the register display for the selected bank.

Key Control Block

The key control block is used to adjust and modify keys.



❶ Delegation buttons

These select the bank (M/E and PGM/PST) and keyer to assign to the key control block.

Button name	Description
M/E1 to M/E5, P/P	Assigns M/E-1 to M/E-5 banks and PGM/PST bank.
KEY1 to KEY8	• Assigns key 1 to key 8. • Press and hold a [KEY1] to [KEY8] button and press an [M/E1] to [M/E5] or [P/P] button to return the settings of the selected key to the defaults.
TRANS (transition)	• Used to check the DME channel used for DME wipes on the M/E or PGM/PST bank. • You can select the DME channel to be used beforehand when a DME wipe is selected as the transition type. • Press and hold the [TRANS] button and press a [KEY1] to [KEY8] button to enable independent key transition operation.
SUB TRANS (sub transition)	In Multi Program 2 mode, used as the [TRANS] button on the sub side. *For details about Multi Program 2 mode, see "Multi Program 2" (page 199).*

❷ DME channel selection buttons

These select the DME channel to assign to a key.
When the [TRANS] or [SUB TRANS] delegation button is selected, the DME channel used by the DME wipe is displayed. You can select the DME channel to be used beforehand when a DME wipe is selected as the transition type.

Note

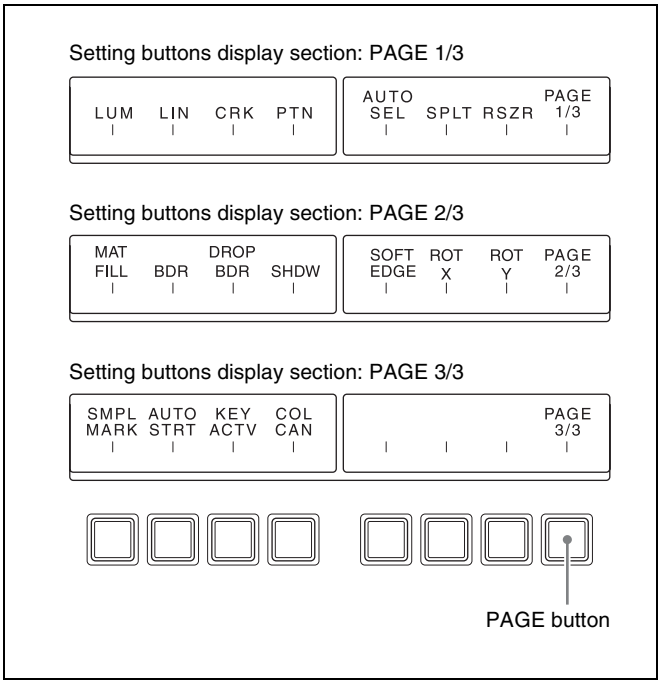
The [DME5] to [DME8] buttons cannot be used. Reserved for future use.

❸ ON AIR indicators

These indicators are lit red when the corresponding DME channels are included in the final program output.

❹ Setting buttons

These buttons are used to adjust keys.
The settings button assignments for different functions are spread over three pages (1/3, 2/3, 3/3), and you can switch between them using the [PAGE] button.
The functions set in each button can be viewed in the setting buttons display section.



Key type selection buttons

These buttons select the key type.
Press a button to view the parameters on the display, and use the adjustment knobs to change settings.
- LUM (luminance key)
- LIN (linear key)
- CRK (chroma key)
- PTN (key wipe pattern key)

For details, see "Key Operations (Key Control Block)" (page 124).

Key fill/key source selection buttons

These buttons select the key fill and key source.
- AUTO SEL (auto select)
- SPLT (split)
- MAT FILL (matte fill)

For details, see "Key Operations (Key Control Block)" (page 124).

Key modifier buttons

These buttons modify the edges of keys.
Press a button to view the parameters on the display, and use the adjustment knobs to change settings.
- BDR (border)
- DROP BDR (drop border)
- SHDW (shadow)
- SOFT EDGE

For details, see "Key Adjustments (Key Control Block)" (page 126).

Resizer operation buttons

These buttons zoom, move, and rotate keys using a resizer.
Press a button to view the parameters on the display, and use the adjustment knobs to change settings.
- RSZR (resizer)
- ROT X (rotation X)
- ROT Y (rotation Y)

For details, see "Two-Dimensional Transforms and Rotation of Keys" (page 129).

Chroma key setting buttons

These buttons are used to adjust chroma keys.
- SMPL MARK (sample mark)
- AUTO STRT (auto start)
- KEY ACTV (key active)
- COL CAN (color cancel)

For details, see "Key Adjustments (Key Control Block)" (page 126).

PAGE button

This button switches the settings button page.
The page switches in the order 1/3 → 2/3 → 3/3 each time the button is pressed. The currently selected page number is displayed in the setting buttons display section.

❺ Function buttons

These buttons select the functions used for key operations.

Button name	Description
OVERRIDE	Assigns a DME channel assigned to another key/bus to the currently selected key (override function). Press and hold the [OVERRIDE] button and press the target DME channel button to change the assignment.
TRACE	When a DME channel is assigned to another key, this switches the delegation to the key assigned with the DME channel (trace function). Press and hold the [TRACE] button and press the target DME channel button to switch the delegation.
MON (monitor)	• Assigns a DME channel output to the monitor signal. Press and hold the [MON] button and press the target DME channel selection button to set it. • You can check the monitor signal assignment status by pressing the [MON] button by itself. Lit amber: Assignable DME channel. Lit green: Currently assigned DME channel.
PROC KEY (processed key)	Press the [PROC KEY], turning it on amber, to enable selection of a processed key signal as a re-entry signal (PROC V, PROC K) on a bank (M/E-1 to M/E-5, PGM/PST).
FM FEED (frame memory feed)	Pressing the [FM FEED] button, turning it on amber momentarily, selects the processed key signal on the frame memory source 1 and 2 buses. The [PROC KEY] button is lit amber simultaneously.
SHOW KEY	Displays the processed key source signal on the specified output (edit preview or image creation bank preview) while the [SHOW KEY] button is pressed (or for a preset time) (show key function). The show key function output and preset time are configured in the Setup menu. *For details, see "Setting Show Key" (page 468).*

Button name	Description
AUTO DELEG (auto delegation)	Switches the key control block delegation selection in conjunction with buttons on the following control blocks. • Transition control block: [KEY1] to [KEY8] buttons • Cross-point pad on the cross-point control block: Key 1 to 8 bus delegation buttons [KEY1] to [KEY8] • 1st row on cross-point control block (key/AUX bus delegation mode): [KEY1] to [KEY8] buttons • Memory recall section on the Flexi Pad control block (key operation mode): [KEY1] to [KEY8] buttons • Key fader control block: Key delegation buttons
MORE	• When there are more than six parameters, this button is lit amber. • Press the [MORE] button, turning it on green, to display the 6th and subsequent parameters.

❻ Display

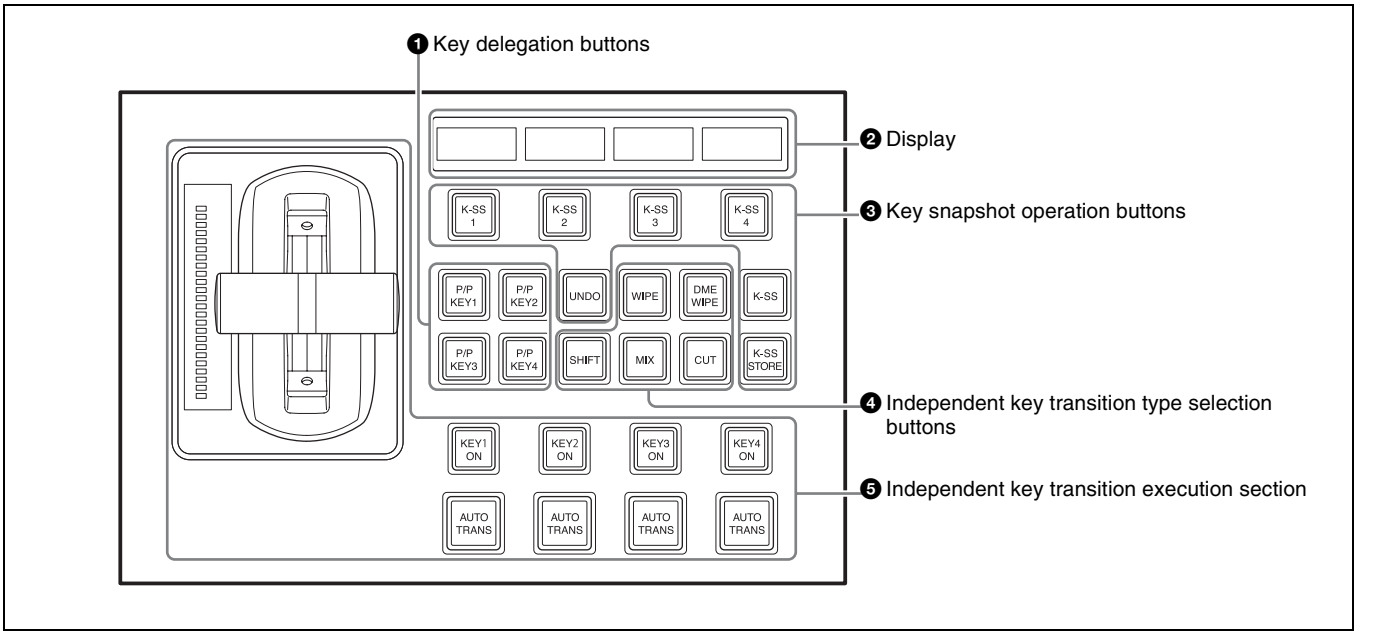
Displays the name of parameter items and the setting value.

❼ Adjustment knobs

These buttons adjust the parameters of items selected using the setting buttons.

Key Fader Control Block

The key fader control block is used to execute independent key transitions and for key snapshot operations.



❶ Key delegation buttons

These buttons select the target key to operate.
The four buttons are key delegation buttons 1 to 4 in the order top left, top right, bottom left, and bottom right.
You can assign a key (KEY1 to KEY8) of any switcher bank (M/E-1 to M/E-5, PGM/PST) in the Setup menu.

For details, see "Setting the Buttons and Fader Levers on the Key Fader Control Block" (page 408).

❷ Display

The following information is displayed for the four keys assigned to the key delegation buttons.

- Key material name (key source name when a key source is selected on the key bus of the cross-point control block)
- DME channel or resizer being used
- Transition rate
- Transition type
- In key snapshot operation mode, the register name of the key selected using the key delegation button

❸ Key snapshot operation buttons

Recalls and saves key snapshots.

Button name	Description
K-SS 1 to K-SS 4 (key snapshot 1 to key snapshot 4)	Selects key snapshot register 1 to 4.
K-SS (key snapshot)	• Switches to key snapshot operation mode. • Recalls and saves a key snapshot.
K-SS STORE (key snapshot store)	Pressing and holding the [K-SS STORE] button and pressing the [K-SS 1] to [K-SS 4] buttons saves the key snapshot in the selected register.
UNDO	After recalling a key snapshot, returns to the state before the key snapshot was recalled.

❹ Independent key transition type selection buttons

These select the independent key transition type.

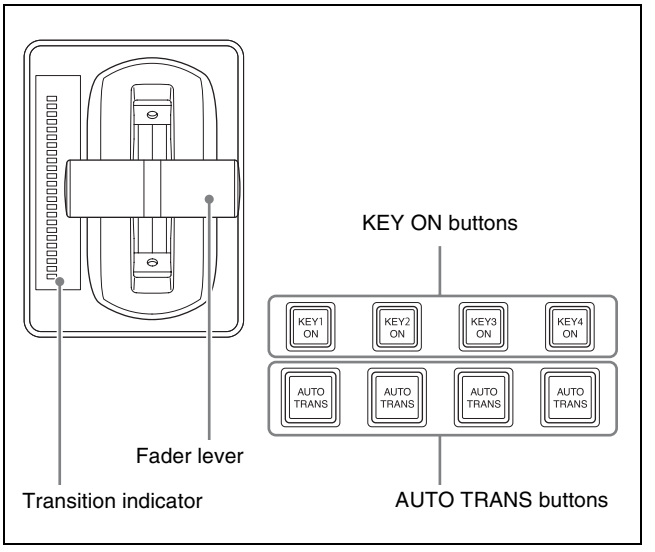
- MIX button
- WIPE button
- DME WIPE button
- CUT button

When [Independ] is selected in the <Key Transition> group of the Engineering Setup >Switcher >Transition menu (7334), you can set the transition type used when inserting and removing a key.
If the transition type used when inserting a key is displayed, you can select the transition type used when removing a key by pressing and holding the [SHIFT] button and pressing an independent key transition type selection button. If the transition type used when removing a key is displayed, you can select the transition type used when inserting a key using the same operation.

For details about transition types, see "Transition Type" (page 84).

❺ Independent key transition execution section

This section executes independent key transitions.



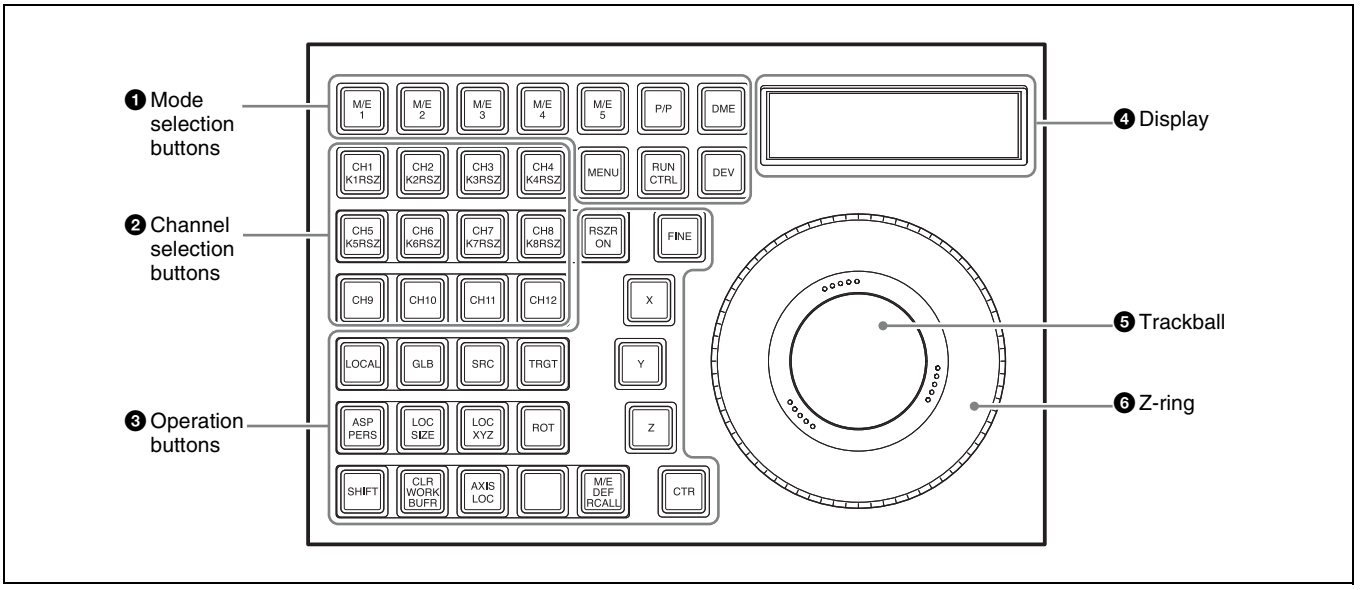
Name	Description
Fader lever	Move this up or down to carry out the transition.
Transition indicator	Displays the transition progress using LEDs.
KEY ON buttons	• Inserts or removes a key, for key delegation buttons 1 to 4, instantaneously. • If a key is currently inserted, the corresponding key button is lit amber.
AUTO TRANS (auto transition) buttons	• Inserts or removes a key automatically, for key delegation buttons 1 to 4, with the set transition rate and transition type. • During the transition, the button is lit amber.

You can also set the key delegation button for operation by the fader lever.

For details, see "Setting the Buttons and Fader Levers on the Key Fader Control Block" (page 408).

Device Control Block (Trackball)

The device control block (trackball) is used for three-dimensional transforms using a DME, two-dimensional transforms using a resizer, executing keyframe effects, controlling VTRs/disk recorders/frame memory clips, setting menu parameters, and so on.



❶ Mode selection buttons

These buttons select the operation mode of the device control block (trackball). The function of the device control block (trackball) buttons, trackball, and Z-ring vary depending on the operation mode.

You can change the assignment of mode selection buttons in the Setup menu.

For details, see "Setting Device Control Block (Trackball) Button Assignments" (page 411).

Button name	Description
M/E1 to M/E5, P/P	• Switches to resizer operation mode. • You can select more than one button. The first selected button becomes the reference, and is lit green. Subsequent selected buttons are lit amber.
DME	Switches to three-dimensional transform operation mode.
MENU	• Switches to menu parameter operation mode. • You can adjust parameters (numbers 1 to 3) of the currently displayed menu using the trackball and Z-ring. • Press the [MENU] button twice, turning it on green, to fix the target of the trackball and Z-ring to the parameter currently being adjusted.
RUN CTRL (run control)	• Switches to keyframe operation mode. • Enables operation on the timeline of the currently recalled keyframe effect using the Z-ring.
DEV (device)	Switches to VTR/disk recorder/ frame memory operation mode.

❷ Channel selection buttons

These select the target to control when in resizer operation mode, three-dimensional transform operation mode, VTR/ disk recorder/frame memory operation mode, and so on. You can select more than one channel. The first selected button becomes the reference channel, and is lit green. Subsequent selected buttons are lit amber.
For buttons that not set by default, assignment is required in the Setup menu.

For details, see "Setting Device Control Block (Trackball) Button Assignments" (page 411).

Button name	Description
K1RSZ to K8RSZ	Selects the target resizer in resizer operation mode.
CH1 to CH4	• Selects the target DME channel in three-dimensional transform operation mode. • Select the target DME channel for operation in the DME menu. • Displays the state of the reference channel in the DME menu.
CH1 to CH12	Selects the target device in VTR/ disk recorder/frame memory operation mode.
FM1 CLIP to FM20 CLIP	(Assignment in the Setup menu is required.) Selects the target frame memory clip in VTR/disk recorder/frame memory operation mode.

❸ Operation buttons

The function of the buttons vary depending on the operation mode.

Resizer operation mode

This mode performs two-dimensional transform operations on images using a resizer.

Button name	Description
RSZR ON (resizer on)	Enables/disables the selected resizer.
ASP PERS (ASP: aspect)	Adjusts the aspect ratio of a key to which the resizer is applied using the trackball or Z-ring.
LOC SIZE (location and size)	Moves/zooms a key to which the resizer is applied using the trackball or Z-ring.
ROT (ROT PERS: rotation and perspective)	Adjusts the rotation and perspective of a key to which the resizer is applied using the trackball or Z-ring.
BDR/CROP (border/ crop)	(Assignment in the Setup menu is required.) • When the [BDR/CROP] button is pressed (lit amber): Adjusts the border width of a key to which the resizer is applied using the trackball or Z-ring. • When the [BDR/CROP] button is pressed while pressing the [SHIFT] button (lit green): Adjusts the crop width of a key to which the resizer is applied using the Z-ring.
SHIFT	Used in combination with the [CTR], [CTR WORK BUFR], and [BDR/CROP] buttons.
CLR WORK BUFR (clear work buffer)	• When the [CLR WORK BUFR] button is pressed once: Returns the resizer two-dimensional transform and rotation parameters to the defaults. • When the [CLR WORK BUFR] button is pressed twice, or is pressed once while pressing the [SHIFT] button: Returns all resizer parameters to the initial state.
FINE	Switches to fine mode, enabling fine adjustment control of setting values using the trackball and Z-ring.

Button name	Description
CTR (center)	• When the [CTR] is pressed once: Adjusts the two-dimensional transform setting values to the closest detent positions. • When the [CTR] button is pressed twice, or is pressed once while pressing the [SHIFT] button: Returns the two-dimensional transform setting values to the defaults. • When the [BDR/CROP] button is lit green, the [CTR] button selects the edge (bottom edge) to crop.
X, Y, Z	• Restricts the parameters targeted by the operation. When the [X] button is lit: Operations on parameters on the X-axis using the trackball are enabled. When the [Y] button is lit: Operations on parameters on the X-axis using the trackball are enabled. When the [Z] button is lit: Operations on parameters on the Z-axis (Z-ring adjustment items) using the Z-ring are enabled. • When the [ROT] button is lit, the [X] button and [Y] button select the direction of rotation. • When the [BDR/CROP] button is lit green, the [X] button, [Y] button, and [Z] button select the edge (top edge, left edge, right edge) to crop. • Setting values for parameters of buttons that are lit green can be entered using the numeric keypad control block.
M/E DEF RCALL (M/E default recall)	Press the [M/E DEF RCALL] button twice to return the currently selected bank (M/E or PGM/PST) to the defaults.

Three-dimensional transform operation mode

This mode performs three-dimensional transform operations on images using a DME.

For details, see "Three-Dimensional Transform Operations" (page 224).

Menu parameter operation mode

This mode is used to set menu parameters.

Button name	Description
FINE	Switches to fine mode, enabling fine adjustment control of setting values using the trackball and Z-ring.
X, Y, Z	• Restricts the parameters targeted by the operation. When the [X] button is lit: Operation on parameter 1 using the trackball is enabled. When the [Y] button is lit: Operation on parameter 2 using the trackball is enabled. When the [Z] button is lit: Operation on parameter 3 using the Z-ring is enabled. • Setting values for parameters of buttons that are lit green can be entered using the numeric keypad control block.

VTR/disk recorder/frame memory operation mode

This mode controls playback of VTRs/disk recorders and frame memory clips.

For details, see "Control of VTRs and Disk Recorders" (page 286).

❹ Display

The information displayed will vary depending on the operation mode.

Resizer operation mode

- Reference bank name: M/E1 to M/E5, P/P
- Reference channel name: KEY1 RSZR to KEY8 RSZR
- Selected parameter item name: ASP, LOC SIZE, ROT PERS, BDR, CROP
- X-, Y-, and Z-axes setting values

Three-dimensional transform operation mode

- Reference channel name: DME1 to DME4
- Currently selected three-dimensional space: LOCAL/GLB and SRC/TRGT
- Currently selected parameter item: LOC XYZ, ASP PERS, LOC SIZE, ROT, AXIS LOC, SPIN, SKEW
- X-, Y-, and Z-axes setting values

Menu parameter operation mode

"MENU" is displayed.

Keyframe operation mode

- Reference region name, register number, and register name
- Effect duration
- Current keyframe number, total number of keyframes, and current timecode

VTR/disk recorder/frame memory operation mode

- Recalled file name (if reference channel is a disk recorder)
- Current timecode, start point timecode, and stop point timecode

❺ Trackball
This adjusts the parameters of items selected using the operation buttons.

Resizer operation mode
Moves the key, to which the resizer is applied, in the X-axis and Y-axis directions, changes the X/Y aspect ratio, rotates the keys around the X-axis and Y-axis, and changes the border width in the X-axis and Y-axis directions.

Three-dimensional transform operation mode
Adjusts the X-axis and Y-axis of the three-dimensional transform.

Menu parameter operation mode
Adjusts menu parameters 1 and 2.

For details, see "Setting Parameters" (page 59).

❻ Z-ring
This adjusts the parameters of items selected using the operation buttons. It is also used for keyframe effect timeline operations, playback of devices and frame memory clips, and so on.

Resizer operation mode
Changes the size, aspect ratio, perspective, border width, and crop width of the key to which the resizer is applied.

Three-dimensional transform operation mode
Adjusts the Z-axis of the three-dimensional transform.

Menu parameter operation mode
Adjusts menu parameter 3.

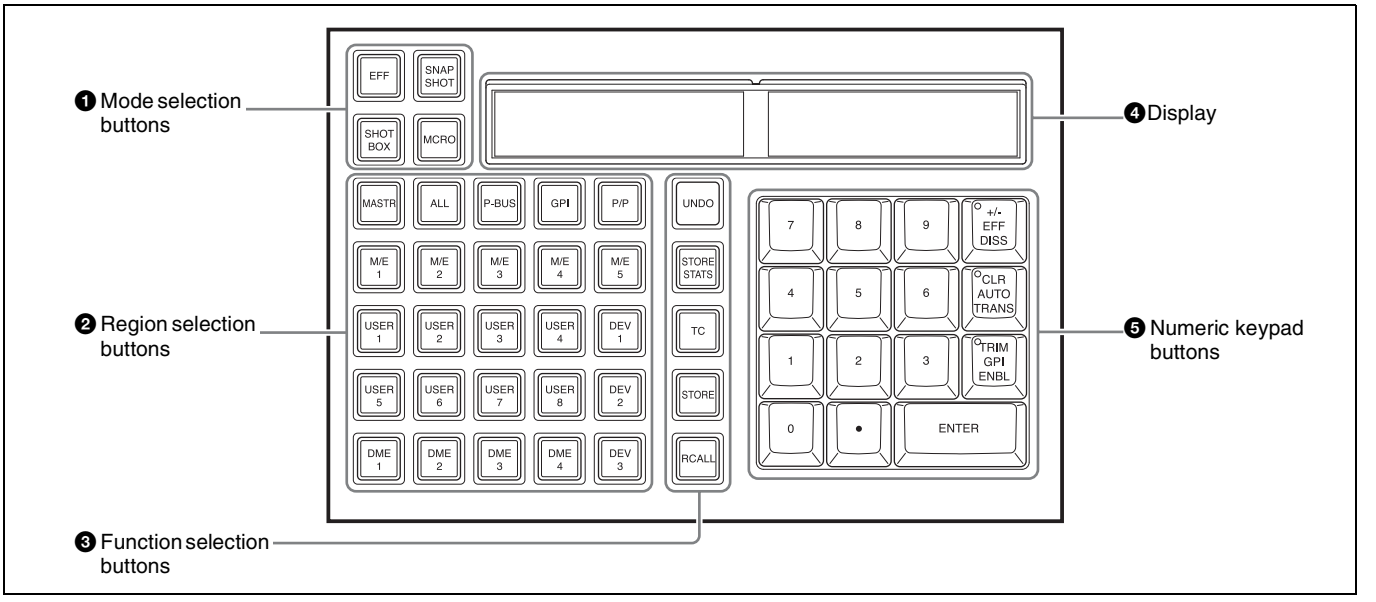
For details, see "Setting Parameters" (page 59).

Keyframe operation mode
Turn clockwise to run the keyframe effect in the normal direction, and counterclockwise for the reverse direction. You can operate the effect timeline, without affecting the settings of buttons, such as the [EFF LOOP] and [STOP NEXT KF] buttons, on the utility/shotbox control block.

VTR/disk recorder/frame memory operation mode
This mode controls playback of VTRs/disk recorders and frame memory clips.

Numeric Keypad Control Block

You use the numeric keypad control block for selecting regions, for recalling and saving shotboxes, snapshots, and keyframe effects, for recalling and creating macros, for entering the transition rate, and for other tasks.



❶ Mode selection buttons
These buttons select the operation mode of the numeric keypad control block.

Button name	Description
EFF (effect)	• Switches to effect operation mode. • Recalls and saves keyframe effects.

Button name	Description
SNAPSHOT	• Switches to snapshot operation mode. • Recalls and saves snapshots.
SHOTBOX	• Switches to shotbox operation mode. • Recalls and saves shotboxes.
MCRO (macro)	• Switches to macro operation mode. • Recalls, saves, and edits macros.

❷ Region selection buttons

These buttons select the target region to control.
You can select more than one region. The first selected button becomes the reference region, and is lit green. Subsequent selected buttons are lit amber.

With the exception of the [MASTR] and [ALL] buttons, you can assign arbitrary regions to the region selection buttons in the Setup menu. Up to four regions can be assigned to a button.
When a button with more than one region assigned is selected, the reference region is set according to the priority. You can temporarily change the region selection and reference region in the Key Frame >Region Select menu (6117).

For details, see "Assigning a Region to the Region Selection Buttons in the Numeric Keypad Control Block" (page 409) and "Recalling regions to edit (menu)" (page 307).

Button name	Description
M/E1 to M/E5, P/P	Selects the M/E-1 to M/E-5 and PGM/PST regions.
USER 1 to USER 8	Selects the USER1 to USER8 regions.
DME1 to DME4	Selects the DME1 to DME4 regions.
DEV1 to DEV12	(Assignment of the [DEV4] to [DEV12] buttons in the Setup menu is required.) Selects the device 1 to device 12 regions.
P-BUS	Selects the P-Bus region.
GPI	Selects the GPI region.
RTR	(Assignment in the Setup menu is required.) Selects the router region.
MCRO	(Assignment in the Setup menu is required.) Selects the macro region.
MASTR	Selects the master region.
ALL	• Selects all specified regions if there is no region selected. • Deselects all region selections if there is a region selected.

❸ Function selection buttons

These buttons are used for recalling and saving shotboxes, snapshots, keyframe effects, macros, and for other tasks.

Button name	Description
UNDO	After recalling a register, returns to the state before the register was recalled.
STORE STATS (store status)	• Saves data in the register, and the button is lit amber. • When the [STORE STATS] button is lit amber, you can press and hold the [STORE STATS] button and press the [UNDO] button to return to the state before data was saved.
TC (timecode)	Switches the numeric keypad to timecode input mode.
STORE [a]	• Switches the mode for saving a shotbox, snapshot, keyframe effect, master snapshot, master timeline, or macro in a register (store mode). • During store mode, the [STORE] button is lit amber.
RCALL (recall) [a]	• Switches the mode for recalling a shotbox, snapshot, keyframe effect, master snapshot, master timeline, or macro stored in a register (recall mode). • During recall mode, the [RCALL] button is lit amber.

a) If more than one region is assigned to a region selection button and there is a region not selected in the Key Frame >Region Select menu (6117), the [RCALL] button or [STORE] button flashes amber (excluding in macro operation mode).

❹ Display

The following information is displayed.
- Left-side display (rows 1 to 3), right-side display (rows 1 to 2): Name of currently selected region (reference region is highlighted in reverse video)
- Right-side display (rows 3 to 4): Register number, input numeric values, and so on

❺ Numeric keypad buttons

These buttons are used for entering numeric values and adding snapshot attributes.

Button name	Description
0 to 9	Enters numeric values.

Button name	Description
. (period)	• Enters the decimal point. • Enters “00” in timecode input mode. • Used for searching for empty registers in effect operation mode, snapshot operation mode, and shotbox operation mode.
+/– EFF DISS (effect dissolve)	• Inverts the sign (plus and minus) • Used to add effect dissolve attributes in snapshot operation mode and effect operation mode.
CLR (clear) AUTO TRANS (auto transition)	• Clear an entered numeric value. • Used when adding an auto transition attribute in snapshot operation mode.
TRIM GPI ENBL (GPI enable)	When entering the difference from the current value, enter a numeric value and then press the [TRIM] button.

Button name	Description
ENTER	Confirms an entered value or selected attribute.

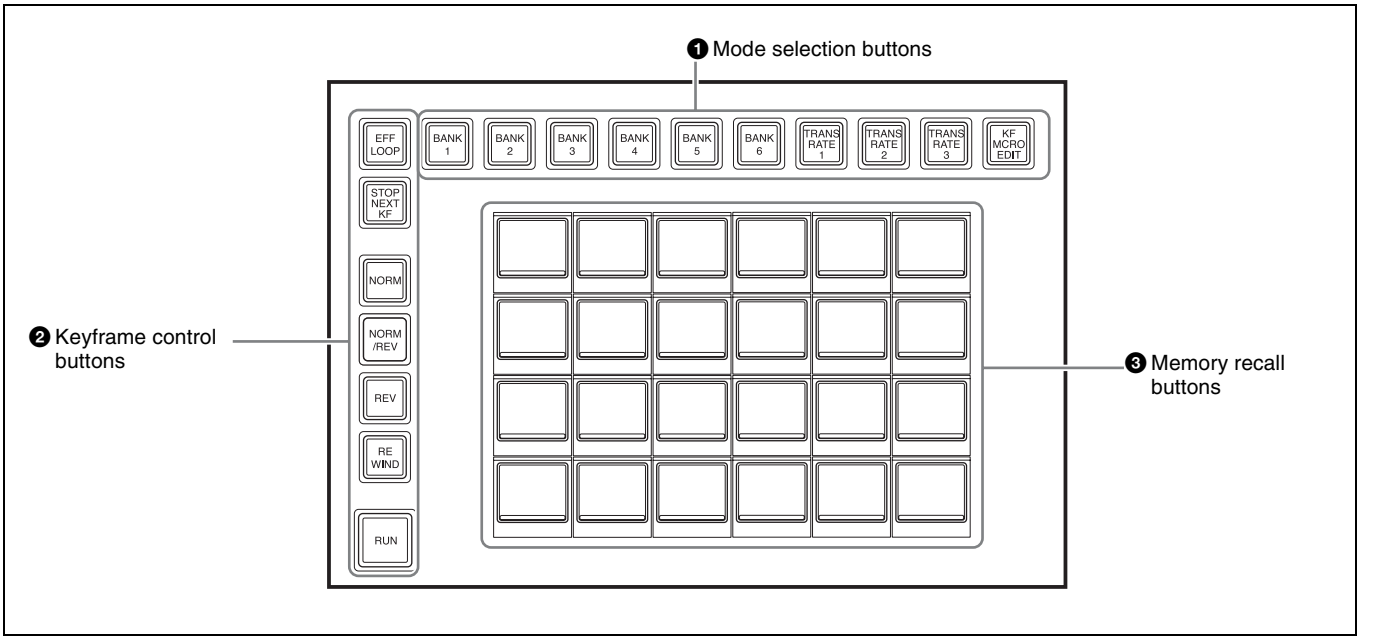
Note

The [GPI ENBL] button function is not supported.

The numeric keypad buttons on the numeric keypad control block are also used when entering numeric values in conjunction with other operations, such as setting parameters using the device control block (trackball), or keyframe editing and setting the transition rate on the utility/shotbox control block. While setting an item, the item and the numeric value appear on the display.

Utility/Shotbox Control Block

You use the utility/shotbox control block for executing functions assigned to memory recall buttons, editing and executing keyframe effects, editing macros, and display the transition rate.



❶ Mode selection buttons

These buttons select the operation mode of the utility/shotbox control block. Press a mode selection button to change the memory recall buttons to the display for the selected operation mode.

You can change the assignment of mode selection buttons in the Setup menu.

For details, see “Setting Utility/Shotbox Control Block Button Assignments” (page 411).

Button name	Description
BANK1 to BANK20	(Assignment of the [BANK7] to [BANK20] buttons in the Setup menu is required.) Switches the memory recall buttons to the function recall mode set in the selected bank.
TRANS RATE1 to TRANS RATE3 (transition rate 1 to transition rate 3)	Switches the memory recall buttons to transition rate display mode.
KF MCRO EDIT (keyframe macro edit)	Switches the memory recall buttons to keyframe/macro editing mode.

❷ Keyframe control buttons

Executes keyframe effects.
You can change the assignment of keyframe control buttons in the Setup menu.

For details, see "Setting Utility/Shotbox Control Block Button Assignments" (page 411).

Button name	Description
EFF LOOP (effect loop)	Sets the mode for repeatedly executing an effect.
STOP NEXT KF (stop next keyframe)	Sets the mode to repeatedly execute/stop effects for each keyframe.
NORM (normal)	Sets the effect execution direction to normal (from beginning to end).
NORM/REV (normal/ reverse)	Sets the effect execution direction to normal/reverse (automatically toggles each time execution finishes).
REV (reverse)	Sets the effect execution direction to reverse (from end to beginning).
REWIND	Returns to the first keyframe of the effect.
RUN	• Executes an effect from the first keyframe. • When paused, execution stops at that point, and then resumes when you press the [RUN] button.

❸ Memory recall buttons

This section displays the functions assigned to the buttons for the selected operation mode.

Note

When two utility/shotbox control blocks are used, the memory recall button settings for the same mode selection buttons are common to both blocks.

Function recall mode

This displays the function specified in the selected bank.
You can change the assignment of the following functions to the memory recall buttons in the Setup menu.

- Menu shortcut
- Utility command
- Macro register
- Shotbox register

For details, see "Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block" (page 423).

Transition rate display mode

This mode displays the transition rate set in the image creation banks (M/E-1 to M/E-5, PGM/PST) and keys (KEY1 to KEY8).
Pressing a button displaying a transition rate enables you to enter a transition rate using the numeric keypad control block.
You can change the assignment of transition rate display buttons in the Setup menu.

For details, see "Setting the transition rate target to display on memory recall buttons" (page 426).

Keyframe/macro editing mode

This mode displays buttons used for editing keyframe effects and macros.
You can edit effects and macro registers recalled using the numeric keypad control block.

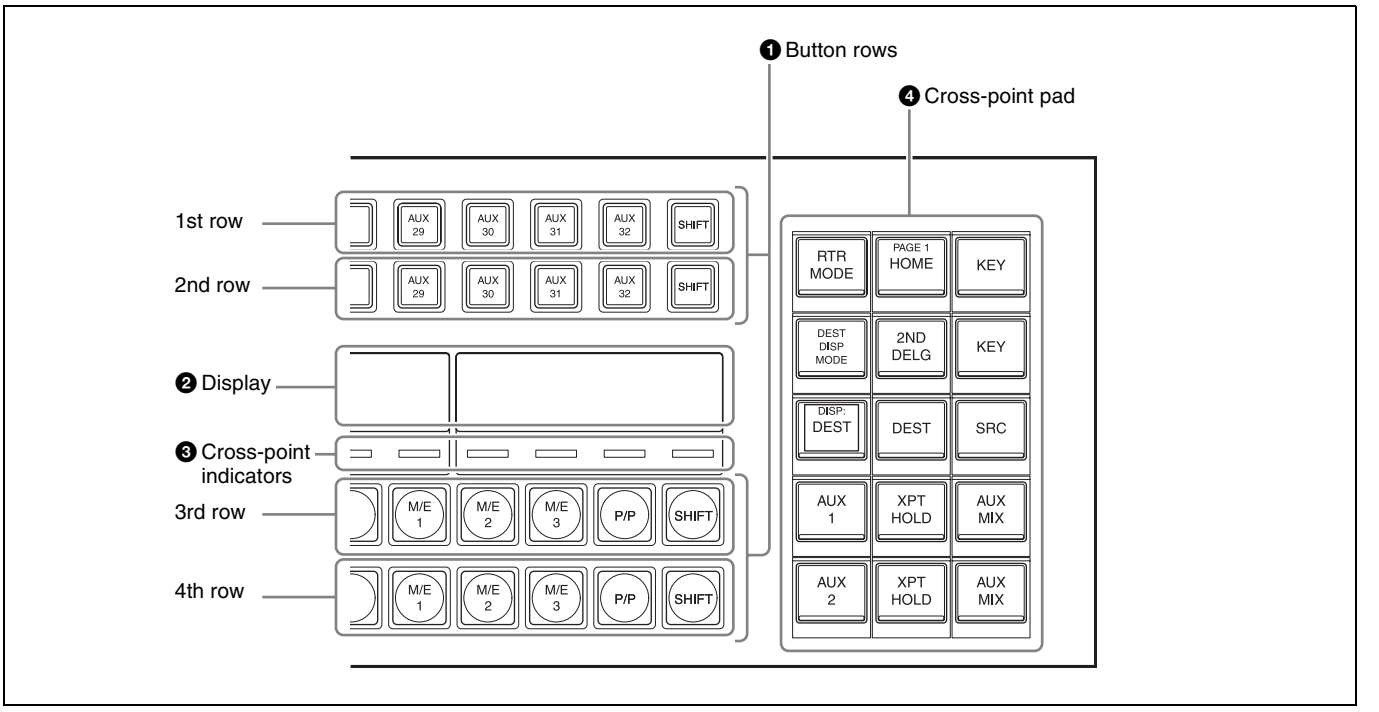
AUX Bus Control Block

You use the AUX bus control block for bus signal selection and router operations.
You switch between AUX bus operation mode and router operation mode using the [RTR MODE] button on the cross-point pad.

Note

To use as an AUX bus control block, the control panel target row must be set to an AUX row in the Engineering Setup >Panel >Config menu (7321).

For details, see "Setting the Configuration for Each Bank" (page 406).



AUX bus operation mode

Used for bus signal selection.

For details about assignable buses, see "Bus Selection" (page 77).

❶ Button rows

The 1st row/2nd row are used as bus selection delegation button rows, and the 3rd row/4th row are used as signal selection cross-point button rows.
The 1st row and 2nd row can select different buses (second delegation mode) by pressing the [2ND DELG] button on the cross-point pad, turning it on.

Name	Description
1st row	When the [2ND DELG] button is lit: Selects a bus to assign in the 3rd row. When the [2ND DELG] button is not lit: • Selects a bus to assign in the 3rd row and 4th row. • Selects a bus on the unshifted state of a delegation button in the 1st row.
2nd row	When the [2ND DELG] button is lit: Selects a bus to assign in the 4th row. When the [2ND DELG] button is not lit: • Selects a bus to assign in the 3rd row and 4th row. • Selects a bus on the shifted state of a delegation button in the 2nd row.
3rd row	When the [2ND DELG] button is lit: Selects a signal on the bus selected in the 1st row. a) When the [2ND DELG] button is not lit: • Selects a signal on the bus selected in the 1st row or 2nd row. a) • You can select a signal on the shifted state of a button while pressing the [SHIFT] button.
4th row	When the [2ND DELG] button is lit: Selects a signal on the bus selected in the 2nd row. a) When the [2ND DELG] button is not lit: Selects a signal on the shifted state of the bus selected in the 1st row or 2nd row.

a) For DME1 V/K to DME4 V/K buses, the front of the image is selected. While a delegation button is pressed, the rear of the image is selected.

Delegation button/cross-point button numbers

The button numbers are labeled on the delegation/cross-point buttons.

For details, see "Button numbers in the AUX bus control block (AUX bus operation mode)" (page 80).

Colors of lit cross-point buttons

The status of cross-point buttons can be checked according to the color of the button when lit.

For details, see "Colors of lit cross-point buttons" (page 82).

SHIFT button

The [SHIFT] button function is assigned to the button on the right-hand end, and is used to toggle between the shifted and unshifted states of the button row.
The operation of the [SHIFT] button in second delegation mode can be set to one of the following modes in the Setup menu.

- The shifted state is selected while the button is pressed (hold mode).
- Every time the button is pressed, it toggles between shifted and unshifted states (lock mode).

You can also disable the [SHIFT] button function for the 3rd row/4th row cross-point buttons.

For details, see "Setting the AUX Bus Operation Mode" (page 417) and "Setting the [SHIFT] button operation mode" (page 414).

Cross-point hold function

Setting cross-point hold enables you to recall a keyframe or snapshot while keeping the current cross-point selection unchanged.
To set cross-point hold for the bus selected in the 1st row/2nd row, press the [XPT HOLD] button on the cross-point pad, turning it on.
When second delegation mode is set, use the [XPT HOLD] button to set cross-point hold on the 3rd row, and the [XPT HOLD] button for second delegation (2ND XPT HOLD) to set cross-point hold on the 4th row.

KEY button

The key signal or video signal can be selected in the cross-point button rows using the [KEY] button on the cross-point pad.
When a cross-point button on the 3rd/4th row is pressed while pressing the [KEY] button, the key signal is selected.
When a cross-point button on the 3rd/4th row is pressed without pressing the [KEY] button, the video signal is selected.
When a key source bus is selected in the 1st row/2nd row and an operation mode that allows you to select both a key signal and video signal is set in the Setup menu, the [KEY] button is enabled.
When second delegation mode is set, use the [KEY] button to select the signal on the 3rd row, and the [KEY] button for second delegation (2ND KEY) to select the signal on the 4th row.
Information for the key signal or video signal, whichever is selected, appears on the display.

For details, see "Setting the Button and Fader Lever Operation Mode" (page 430).

❷ Display

Six types of display mode can be selected, according to the information to display. The display mode is switched using the display mode buttons on the cross-point pad.
The following information can be shown on the display.

- Settings of buttons on the 1st row to 4th row (bus name, signal name)
- Macro register name of macro attachment assigned to the 3rd to 4th row buttons
- Names of signals selected on each bus for the delegation buttons in the 1st row and 2nd row

Notes

- When the [SHIFT] button function is set, "SHFT" appears on the display. When the shifted state is selected, "SHFT" is highlighted in reverse video, and the button information also toggles to show the shifted display.
- When the [DEST DISP MODE] button is pressed on the cross-point pad, turning it off, the 1st row and 2nd row information shown on the display toggles to the signal names selected on the bus.

The information shown in each display mode is configured in the Setup menu. The display can also be subdivided (top and bottom) to display two pieces of information.

For details, see "Setting the Display Mode of the Cross-Point Control Block/AUX Bus Control Block" (page 436).

❸ Cross-point indicators

When lit, this indicates the source color of the video signal assigned to buttons on the 3rd row.
If a signal cannot be selected, because a signal is not assigned or the inhibit setting is set, the indicator is not lit.
You can set whether to enable the cross-point indicator in the Setup menu.

For details, see "Setting cross-point indicators" (page 433).

❹ Cross-point pad

Contains button assignments for functions used for bus and router operations, status display, and so on.

For details about operation, see "Cross-point pad" (page 25) of the cross-point control block.

The following functions can be assigned to the cross-point pad of the AUX bus control block.

Button name [a)]	Description
HOME	Displays the HOME page of the cross-point pad.
PREV (<< XXX)	Displays the previous page of the cross-point pad. XXX = page name (up to 12 characters)

Button name [a]	Description
NEXT (>> XXX)	Displays the next page of the cross-point pad. XXX = page name (up to 12 characters)
Row-n Assign Status (XXX)	Displays the bus/function names assigned to the 1st row to 4th row. n = 1 to 4 XXX = bus/function name [b]
Current Page Status (PAGE 1 XXX to PAGE14 XXX)	Displays the name of the currently displayed page. XXX = page name (up to 12 characters)
Disp Mode Status (DISP: XXX)	Displays the name of the currently set display mode. XXX = display mode name (up to 12 characters)
Macro Reg Status (MACRO: XXX, ATTCH: XXX)	Displays the name of the currently recalled macro register. Displays the macro attachment register name while the [PRE MACRO] button or [POST MACRO] button is pressed. XXX = macro register name (up to 8 characters)
DISP MODE1 to DISP MODE6 (XXX)	Selects display mode 1 to 6 (display mode button). XXX = display mode name (up to 12 characters)
RTR MODE	Switches to router operation mode.
2ND DELG	Sets second delegation mode.
DEST DISP MODE	Switches the 1st row and 2nd row information shown on the display to the selected signal/source names.
AUX MIX [c]	• Executes an AUX mix transition on the 3rd row when the [2ND DELG] button is lit. • Executes an AUX mix transition on the 3rd row or 4th row when the [2ND DELG] button is not lit.
2ND AUX MIX [c] (AUX MIX)	Executes an AUX mix transition on the 4th row when the [2ND DELG] button is lit.
XPT HOLD [c]	• Sets cross-point hold on the 3rd row when the [2ND DELG] button is lit. • Sets cross-point hold on the 3rd row and 4th row when the [2ND DELG] button is not lit.
2ND XPT HOLD [c] (XPT HOLD)	Sets cross-point hold on the 4th row when the [2ND DELG] button is lit.
KEY [c]	• You can select a signal on the key side of the 3rd row while pressing the [KEY] button when the [2ND DELG] button is lit. • You can select signals on the key side of the 3rd row and 4th row while pressing the [KEY] button when the [2ND DELG] button is not lit.
2ND KEY [c] (KEY)	You can select a signal on the key side of the 4th row while pressing the [KEY] button when the [2ND DELG] button is lit.
LEVEL BTN1 to LEVEL BTN4 [d]	Selects the S-Bus/NS-Bus level configured in the Setup menu (level selection buttons).
XPTPAD COPY	Copies the cross-point pad settings.
ROW-n P/P OUT1 [c] ROW-n M/E-1 OUT1 to ROW-n M/E-5 OUT1 [c] (XXX)	Loads images (OUT1) from the PGM/PST and M/E-1 to M/E-5 banks into the 3rd row or 4th row (re-entry buttons). n = 3 or 4 XXX = Name set to P/P OUT1, M/E-1 OUT1 to M/E-5 OUT1
ROW-n P/P OUT6 [c] ROW-n M/E-1 OUT6 to ROW-n M/E-5 OUT6 [c] (XXX)	Loads images (OUT6) from the PGM/PST and M/E-1 to M/E-5 banks into the 3rd row or 4th row (re-entry buttons). n = 3 or 4 XXX = Name set to P/P OUT6, M/E-1 OUT6 to M/E-5 OUT6
MACRO TAKE (TAKE)	Executes a macro take operation.
Macro Status (EVENT XX/XX)	Displays the macro status. XX/XX = executed event number / total number of events
Macro: XXX (XXX)	Recalls a macro register (1 to 250). XXX = macro register name (up to 8 characters)

a) Button name when setting in the Setup menu. When the display differs from that on the cross-point pad, the button name shown in parentheses ( ) is displayed.
b) If a destination is selected for which operation is inhibited using the S-Bus/NS-Bus protect function, "PROT" is displayed in the 3rd row and 4th row.
c) Enabled in AUX bus operation mode only.
d) Enabled in router operation mode only.

Router operation mode

Used for destination source selection.
The AUX bus control block switches to router operation mode when the [RTR MODE] button on the cross-point pad is pressed, turning it on.

❶ Button rows

The 1st row/2nd row are used as destination selection delegation button rows, and the 3rd row/4th row are used as source selection cross-point button rows.

The 1st row and 2nd row can select different destinations (second delegation mode) by pressing the [2ND DELG] button on the cross-point pad, turning it on.

Name	Description
1st row	When the [2ND DELG] button is lit: Selects a destination to assign in the 3rd row. When the [2ND DELG] button is not lit: • Selects a destination to assign in the 3rd row and 4th row. • Selects a destination on the unshifted state of a delegation button in the 1st row.
2nd row	When the [2ND DELG] button is lit: Selects a destination to assign in the 4th row. When the [2ND DELG] button is not lit: • Selects a destination to assign in the 3rd row and 4th row. • Selects a destination on the shifted state of a delegation button in the 2nd row.
3rd row	When the [2ND DELG] button is lit: Selects a source for the destination selected in the 1st row. When the [2ND DELG] button is not lit: • Selects a source for the destination selected in the 1st row or 2nd row. • You can select a source on the shifted state of a button while pressing the [SHIFT] button.
4th row	When the [2ND DELG] button is lit: Selects a source for the destination selected in the 2nd row. When the [2ND DELG] button is not lit: Selects a source on the shifted state for the destination selected in the 1st row or 2nd row.

SHIFT button

The [SHIFT] button function is assigned to the button on the right-hand end, and is used to toggle between the shifted and unshifted states of the button row.
The operation of the [SHIFT] button in second delegation mode can be set to one of the following modes in the Setup menu.

- The shifted state is selected while the button is pressed (hold mode).
- Every time the button is pressed, it toggles between shifted and unshifted states (lock mode).

You can also disable the [SHIFT] button function for the 3rd row/4th row cross-point buttons.

For details, see "Setting the Router Operation Mode" (page 417).

Delegation button/cross-point button numbers

The button numbers are labeled on the delegation/cross-point buttons. The button numbers are the same as for AUX bus control block (AUX bus operation mode). However, button numbers 65 to 70 are unavailable for 1st row/2nd row delegation buttons.

For details, see "Button numbers in the AUX bus control block (AUX bus operation mode)" (page 80).

❷ Display

Six types of display mode can be selected, according to the information to display. The display mode is switched using the display mode buttons on the cross-point pad.
The following information can be shown on the display.

- Settings of buttons on the 1st row to 4th row (destination name, source name)
- Names of sources selected on each destination for the delegation buttons in the 1st row and 2nd row

Notes

- When the [SHIFT] button function is set, "SHFT" appears on the display. When the shifted state is selected, "SHFT" is highlighted in reverse video, and the button information also toggles to show the shifted display.
- When the [DEST DISP MODE] button is pressed, turning it off, the 1st row and 2nd row information shown on the display toggles to the source names selected for the destination.

The information shown in each display mode is configured in the Setup menu. The display can also be subdivided (top and bottom) to display two pieces of information.

For details, see "Setting the Display Mode of the Cross-Point Control Block/AUX Bus Control Block" (page 436).

❸ Cross-point indicators

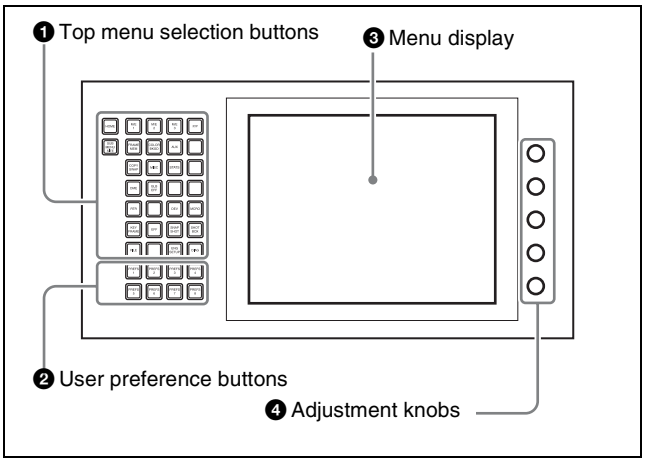
Not used in router operation mode.

❹ Cross-point pad

For details about the cross-point pad, see "Cross-point pad" (page 48) in AUX bus operation mode.

Menu Panel

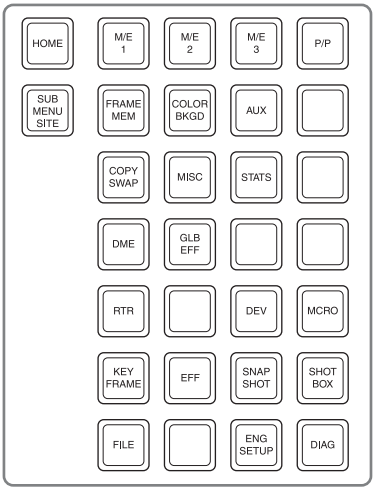
The menu panel is used for menu operations.



❶ Top menu selection buttons

These buttons select the menu appearing in the menu display.
You can change the assignment of mode top menu selection buttons in the Setup menu.

For details, see "Setting Menu Panel Button Assignments" (page 411).



❷ User preference buttons

These buttons recall functions and menus assigned to the buttons.
You can assign the following functions to the [PREFS 1] to [PREFS 16] user preference buttons in the Setup menu.

- Menu shortcut
- Utility command
- Macro register
- Shotbox register

For details, see "Assigning Functions to User Preference Buttons" (page 419).

You can change the assignment of user preference buttons in the Setup menu.

For details, see "Setting Menu Panel Button Assignments" (page 411).

❸ Menu display

Displays the menu.

❹ Adjustment knobs

These adjust the parameter values appearing in the menu.

Names and Functions of Parts of the Menu Screen

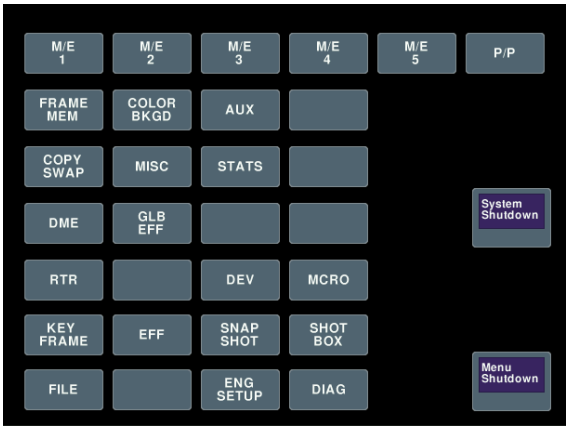
Overview

All detailed settings for basic operations such as transitions, keys, wipes, and DME are made in menus. In addition, system management, data management, and setup are all performed using menu operations.

The menu is operated using the menu panel.

Top Menu List

When the menu panel is powered on, the following top menu list appears.



In the same way as for the top menu selection buttons on the menu panel, press each button to display the corresponding top menu in the menu display.
Use [System Shutdown] and [Menu Shutdown] to shut down the system and menu, respectively.

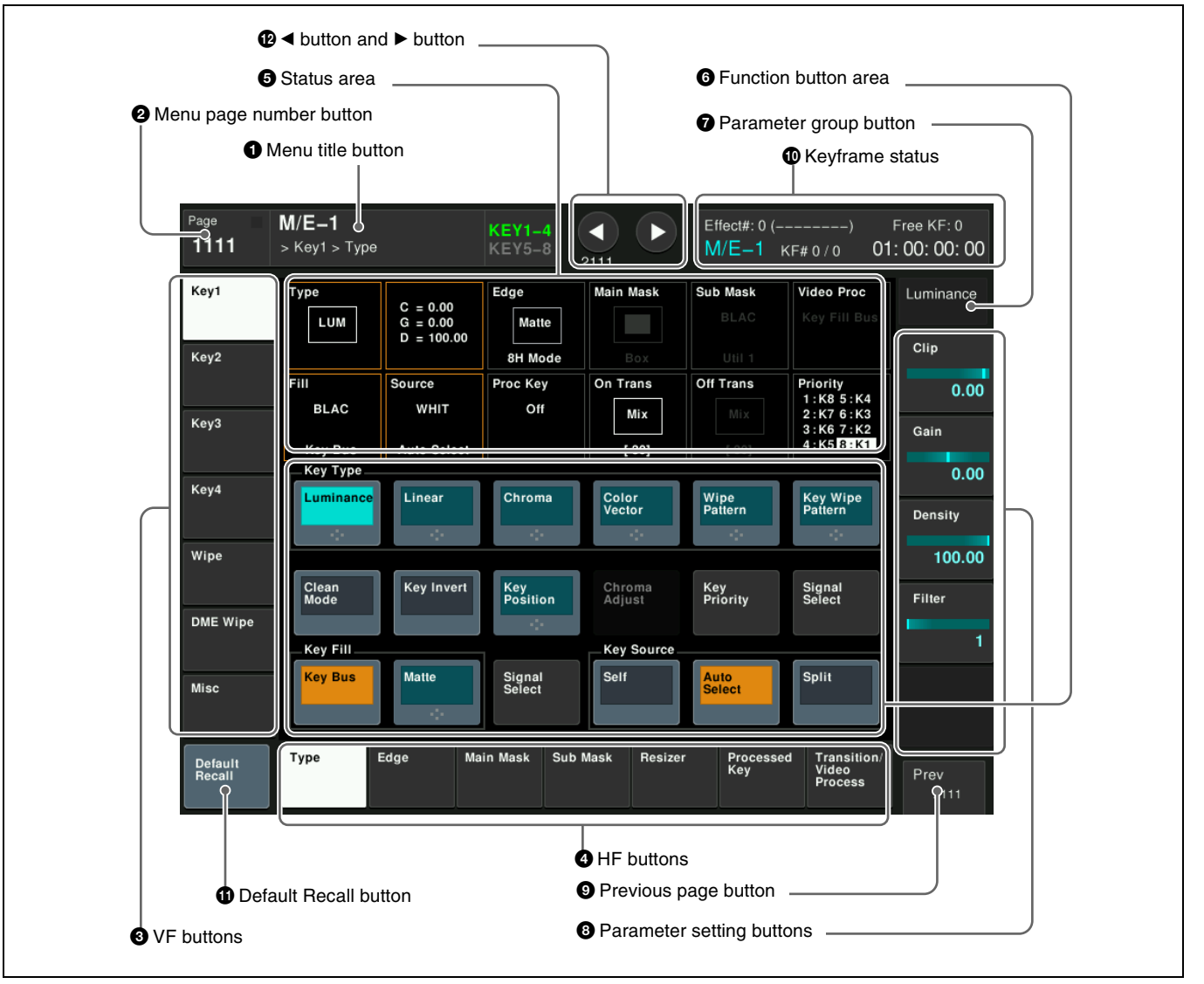
For details about shutting down, see "Shutting Down the Switcher System" (page 62) and "Shutting Down the Menu" (page 61).

Notes

- The arrangement of buttons in the top menu list and the default arrangement of the top menu selection buttons may be different.
- Changing the top menu selection button assignment in the Setup menu has no effect on the top menu list.

Menu Screen

The following are the main parts of the menu screen.
This section describes the M/E-1 >Key1 >Type menu (1111) as an example.



❶ Menu title button

This button displays the title of the menu screen.
The menu title of the sub menu site *(see page 61)* is displayed using a different color than the main menu site.

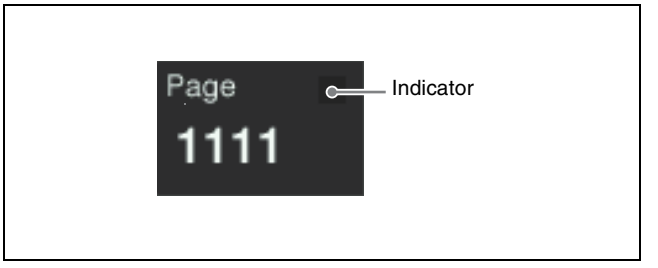
Switching the VF buttons between the Key1 to Key4 and Key5 to Key8 button displays

You can switch the displays using the [KEY1-4] and [KEY5-8] menu title buttons.

When [KEY1-4] is lit, Key1 to Key4 appear in the VF1 to VF4 buttons. When [KEY5-8] is lit, Key5 to Key8 appear in the VF1 to VF4 buttons.

❷ Menu page number button

This shows the menu screen page number.
When you press this button, the top menu window *(see page 55)* opens. You can enter the page number for the desired menu, or press one of the top menu selection buttons in the window, to display that menu.
When the system is accessing a local drive, the indicator is lit red.



Note

When an indicator is lit, do not power off the switcher.

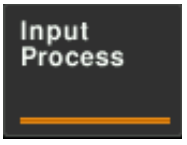
❸ VF buttons

These indicate the larger subdivisions (2nd level) of the menu.

Depending on the selected item, the content displayed on the menu screen and the HF button indicators change.

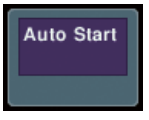
❹ HF buttons
These indicate the smaller subdivisions (3rd level) of the menu.
Depending on the selected item, the menu indications change.

Depending on the function, whenever any button is selected, an orange bar appears on the VF buttons and HF buttons.



❺ Status area
This area shows the status of the settings items controlled by the selected menu.
An orange frame appears around the parameter area relating to the displayed menu. For each of the twelve areas, pressing the display jumps to the related menu.

❻ Function button area
This area shows the functions that can be operated in the currently selected menu using the buttons.
Each function button corresponds to a function which can be set in the currently selected menu. Press a button to enable the function, to display a parameter group and adjust the parameters, or to execute the function.
These buttons are grouped by function. In the screen example, the [Key Bus] and [Matte] function buttons constitute the <Key Fill> group.
Pressing to select a button turns it on and shows its state.

Color	State
Pale blue 	The function is enabled, and the parameters can be adjusted.
Orange 	The function is enabled.
Purple 	Execution button. Pressing the button immediately executes the function. (Example: [Auto Start] in the Chroma Adjust menu)

When you press a function button that is in this state, another menu appears. (Example: [Chroma Adjust] in the Type menu)

❼ Parameter group button
This displays the name of parameter groups that are adjustable, the current parameter setting page number, and the total number of the parameter setting pages (for example, Color Vector 1/2).
When there are more than five parameters within the same parameter group, press this button to display the sixth and subsequent parameters, which can then be adjusted.

❽ Parameter setting buttons
These buttons show the adjustable parameters and their set values. Pressing a button opens the numeric keypad window *(see page 56)*, where you can then enter a new value with the numeric keypad.

❾ Previous page button
This button shows the page number of the previously displayed menu screen. Press it to go back to that page.

❿ Keyframe status
This shows the keyframe status of the reference region. Pressing this button switches the menu screen as follows.
When a menu other than the Key Frame menu is currently shown: The menu screen switches to the Key Frame menu.
When the Key Frame menu is currently shown: The menu screen switches to the menu that was on the screen immediately before the Key Frame menu.
In some menus, such as the File menu, this functions as a "region selection area" for selecting the region to which operations apply.

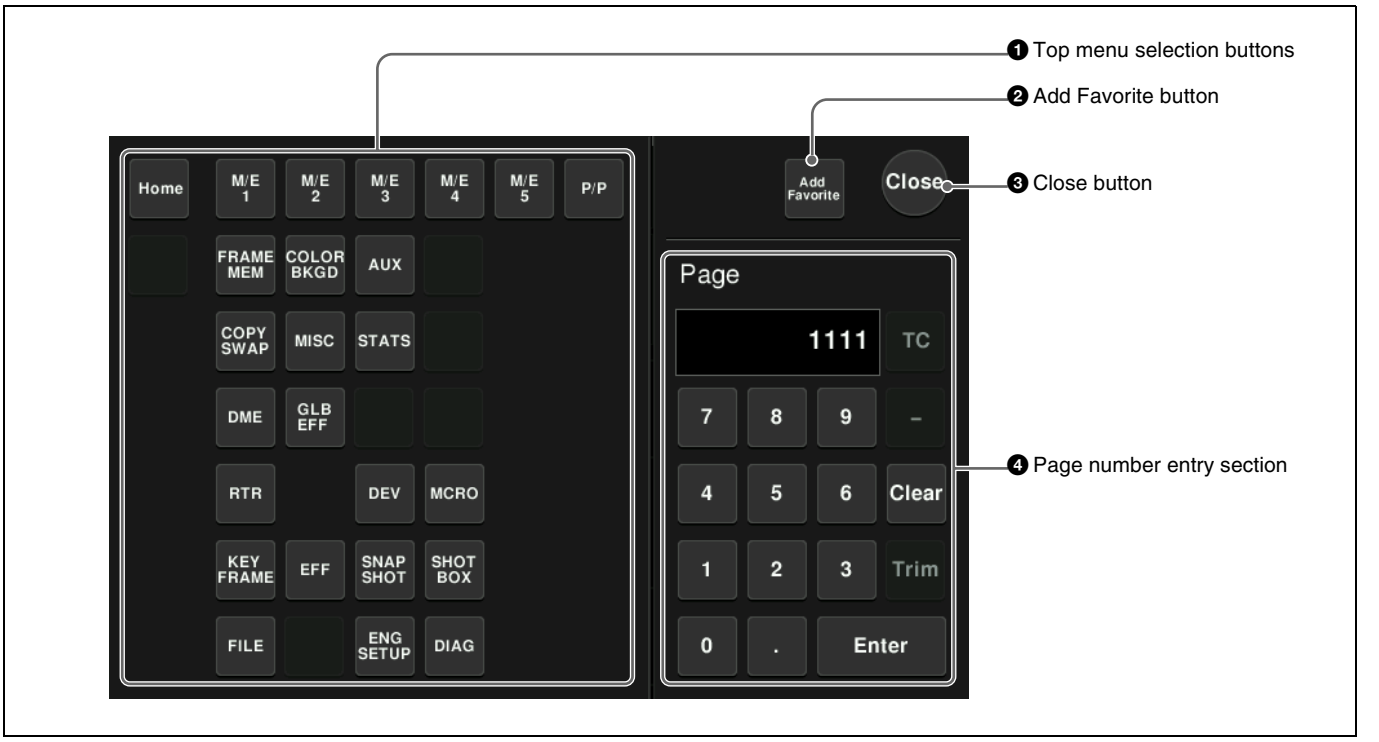
⓫ Default Recall button
Press this button, and then press a VF button or parameter setting button to return the settings to their default values, in the following groupings.
- Function grouping (functions of the HF buttons under the VF button)
- Parameter grouping (settings of parameter setting buttons)

This only appears in those menus for which the default recall function is enabled.

For details on menus that can be returned to their default states, see "Menu Tree" (page 501).

⓬ ◀ (previous) button and ▶ (next) button
The ◀ button returns to the previous menu. Press the ▶ button to advance to the next menu.

Top Menu Window



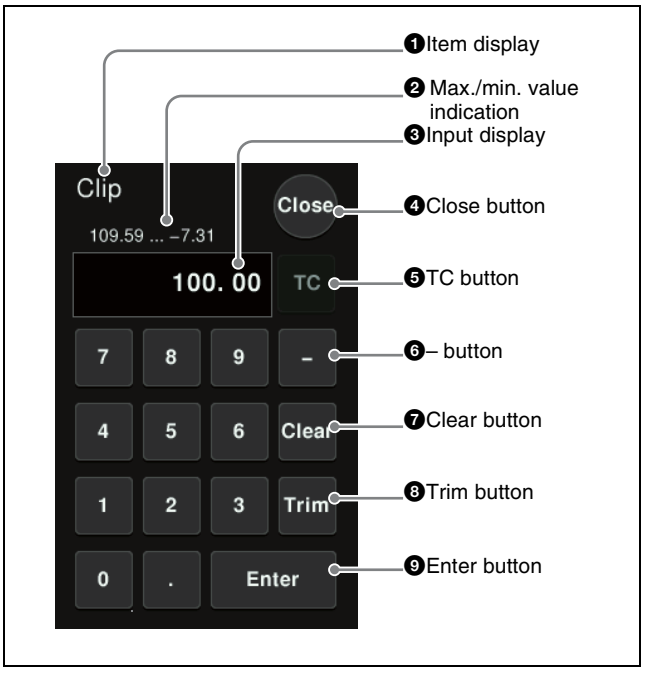
❶ Top menu selection buttons
Displays the selected menu.

❷ Add Favorite button
This button registers the currently displayed menu in the shortcut menu *(see page 60)*.

❸ Close button
This button closes the top menu window.

❹ Page number entry section
Enter a page number and press [Enter] to open that page. If the page number does not exist, the color of the entered page will change. Pressing [Clear] clears the entry.

Numeric Keypad Window



❶ Item display
This displays the name of the parameter being set using the numeric keypad window.

❷ Max./min. value indication
This displays the maximum and minimum values of the parameter.

❸ Input display
This displays the value being entered in the numeric keypad window.

❹ Close button
This button closes the numeric keypad window.

❺ TC (timecode) button
When the numeric keypad window is opened to enter a timecode value, this button appears in the pressed state. The range of timecode values you can enter varies as follows depending on the signal format.
00:00:00:00 to 23:59:59:xx
where xx = (number of frames per second) – 1

❻ – (minus) button
This button toggles the sign of the entered value.

❼ Clear button
This button clears the input display. It does not change the parameter setting.

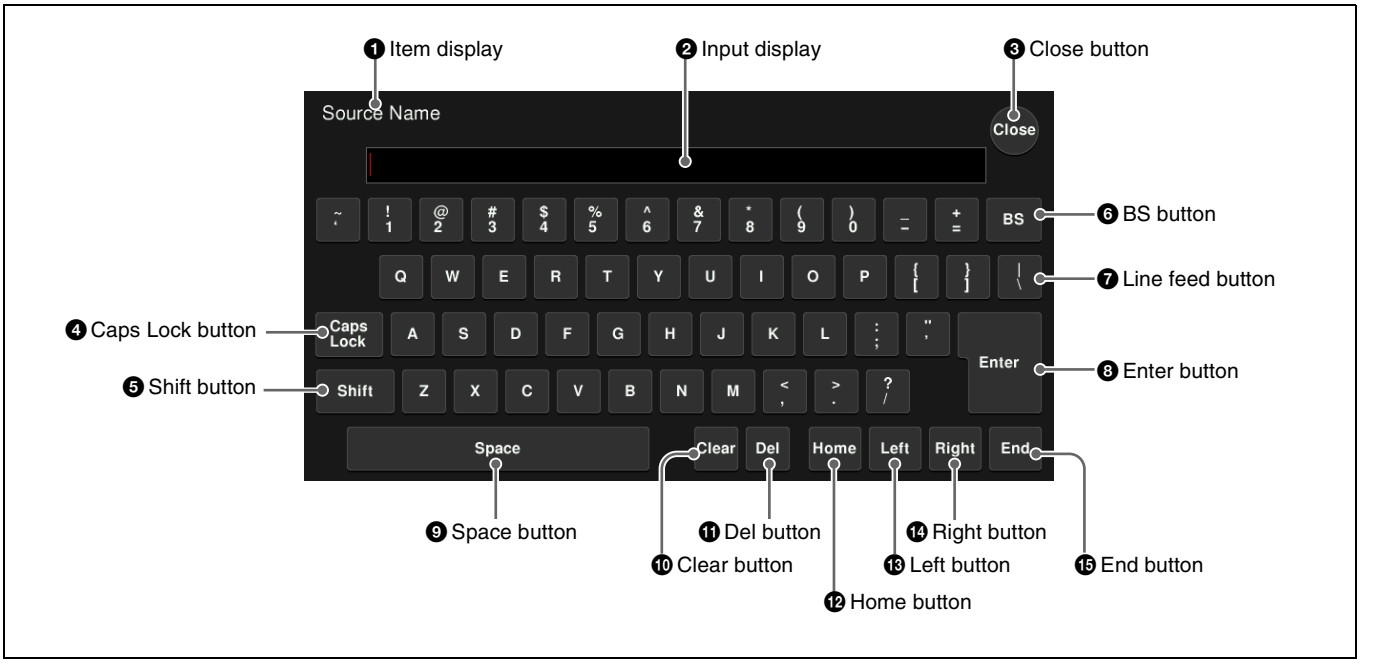
❽ Trim button
After entering the difference from the current value, press this button to confirm the numeric input.

❾ Enter button
This button confirms the entered value.
If the value is set correctly, the numeric keypad window closes.
If it is not set correctly, the input display changes color.

Keyboard Window

Note

Except when changing source names, the following characters cannot be used.
space, \, /, :, ;, , (comma), . (period), <, >, *, ?, ", |



❶ Item display
This is the name of the parameter being set.

❷ Input display
This displays the character string being entered.

❸ Close button
This button closes the keyboard window.

❹ Caps Lock button
This button enables input of upper case alphabetic characters.

Note

You can enter items to be displayed on the control panel display using lowercase letters, but these will be converted to uppercase for display.

❺ Shift button
This button selects the characters on the shifted side of buttons. [Shift] is released when you enter a character.

❻ BS (backspace) button
This button clears the character immediately before the cursor.

❼ Line feed button
After pressing [Shift], press this button to advance by one line on the control panel display. The input display represents a line feed as "|".

❽ Enter button
This button sets the input string as a parameter value.
If the value is set correctly, the keyboard window closes. If the value is not set correctly, the display color changes.

❾ Space button
This button enters a space character.

❿ Clear button
This button clears all of the characters in the input string.

⓫ Del (delete) button
This button clears the character immediately after the cursor.

⓬ Home button
This button moves the cursor to the start of the character string.

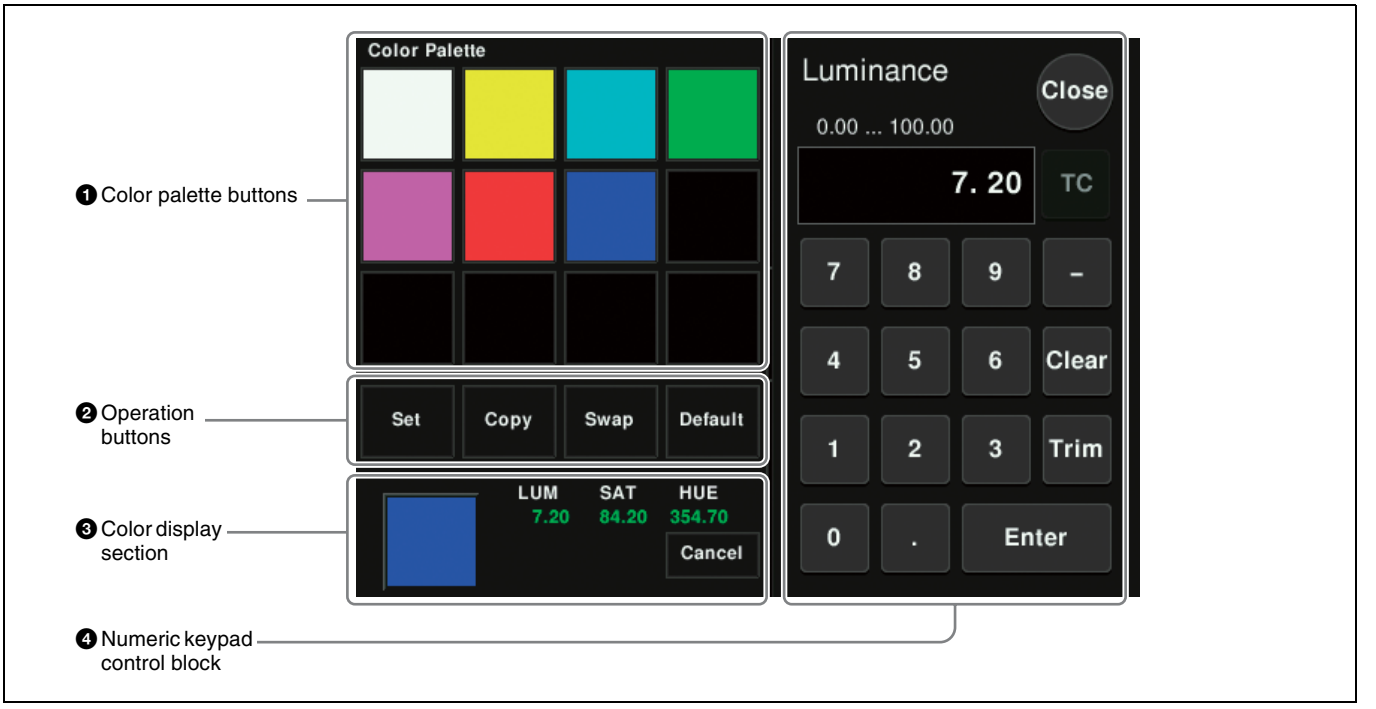
⓭ Left button
This button moves the cursor one character to the left.

⓮ Right button
This button moves the cursor one character to the right.

⓯ End button
This button moves the cursor to the end of the character string.

Color Palette Window

When parameters are assigned a combination of luminance, saturation, and hue, pressing a parameter setting button displays the color palette window.



❶ Color palette buttons

These buttons display the corresponding color in the color display section.

❷ Operation buttons

Set: If you press any color palette button with this button held down, the color shown in the color display section is assigned to the color palette button.

Copy: If you press a color palette button with this button held down, the color is used as the source for copying. Next, press a different color palette button to copy to that button.

Swap: If you press two color palette buttons in sequence with this button held down, the two colors are swapped.

Default: If you press any color palette button with this button held down, the color palette button is set to the default color.

❸ Color display section

This displays the set color and its parameters (LUM, SAT, and HUE).

By adjusting the parameters, you can create any color.

If a parameter value is outside the permitted range for RGB (0 to 255), “Illegal Color” appears, and the setting is adjusted to a value within range.

Cancel: Pressing this button returns to the state before the color palette window was opened.

❹ Numeric keypad control block

Use the numeric keypad to enter numeric values for parameters *(see page 56)*.

Basic Menu Operations

Note

Some menus and unsupported functions may not appear, depending on the system configuration.

Recalling a Menu

The following three methods are available for recalling menus.

Top menu selection buttons on the menu panel

Open the top menu (1st menu level) corresponding menu for each button.

Note

To select the M/E-4 or M/E-5 menu, a previous assignment in the Setup menu is required *(see page 411)*.

Top menu window

Specify the menu page number to open the menu. In the same way as the menu panel, you can also open top menus using the top menu selection buttons.

For details, see "Top Menu Window" (page 55).

Pressing specific buttons twice

Open the menu that corresponds to the button.

For details, see "Menus Recalled by Pressing a Button Twice" (page 520).

Selecting a Menu

1 Display the top menu.

2 Use the VF buttons (left side of screen) to select a 2nd level menu, and then use the HF buttons (bottom of screen) to select the 3rd level menu.

3 Press the appropriate function button within the function button area (center of screen).

In this manual, menu selection operations are indicated as "1st level >2nd level >3rd level (menu page number)."
Example: To select the Shortcut menu
Home >Favorites >Shortcut menu (0021)

Returning to the previous menu

To return to the last displayed menu, press the previous page button.

Selecting a List Item

When a list is displayed on the menu screen, use one of the following methods to select an item.

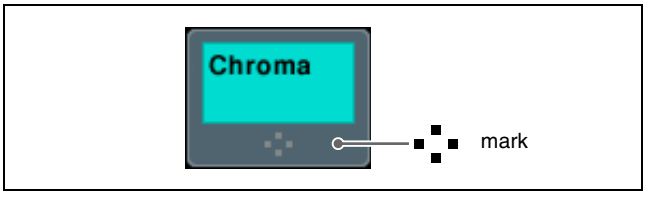
- Press the item directly in the list.
- Use the arrow keys to scroll the reverse video cursor to the item.
- Turn the knob corresponding to the parameter of the item selection.
- Press the parameter setting button for the item selection and enter a value for the item using the numeric keypad window.

Depending on the menu, you can press [Plural] to select more than one item or [ALL] to select all items.
You can also select more than one item using the [Num] parameter.
Example: Selecting a snapshot register

No.	Parameter	Adjustment
1	Register	Register number selection
2	Num	Number to select

Setting the [Register] parameter to "2" and the [Num] parameter to "5" will select five registers starting from register 2.

Setting Parameters



The mark on a function button (above) indicates that there are parameters which can be adjusted.
When you press these function buttons, you can set the parameters using one of the following methods.

- Turn the knob corresponding to each parameter to adjust the value.
- Press the parameter setting button corresponding to each parameter, then enter a value in the displayed numeric keypad window.
- Using a mouse *(see page 60)*.

In this manual, parameter setting operations use the following convention.
The "No." column indicates the position (numbered 1 to 5 from the top) of the adjustment knobs on the menu panel and the parameter setting buttons.
Example: Setting the key wipe pattern key parameters

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Degree of edge softness

No.	Parameter	Adjustment
3	Density	Key density

The first adjustment knob or the first parameter setting button sets the [Size] parameter (pattern size).

In addition, when the [MENU] button is pressed in the device control block (trackball), turning it on, you can use the trackball and Z-ring to adjust the parameters.
- Move the trackball on the X-axis to adjust the 1st parameter, and on the Y-axis to adjust the 2nd parameter. Moving up or to the right increases the parameter value, and moving down or to the left decreases the parameter value.
- Turn the Z-ring to adjust the 3rd parameter. Turning clockwise increases the parameter value, and turning counterclockwise decreases the parameter value.

Returning Settings to Default Values

Press [Default Recall], turning it on, and then press a VF button or parameter setting button to return the parameter values or function enable/disable settings to their default values, in the following groupings.
- When a VF button is pressed: Function grouping (functions of the HF buttons at the bottom of the screen)
- When a parameter setting button is pressed: Parameter grouping

For details on menus that can be returned to their default states, see "Menu Tree" (page 501).

Notes

- The default state varies depending on the initial status mode specified in the Setup menu.
  User: State configured by the user
  Factory: Factory default state
  For details, see "Power-On (Startup) State Selection" (page 397).
- The horizontal (H) and vertical (V) of position setting parameters cannot be returned to their default states individually. For example, returning the horizontal (H) position to its default value also returns the vertical (V) position to its default value automatically, and vice versa.

Using a Mouse

You can position the mouse cursor over a button and click the mouse instead of pressing (touching) a button on the menu panel. Also, you can use a mouse to set parameters and to scroll lists.

Setting a parameter with the mouse

To adjust the value of a parameter setting button with the mouse, you can use one of the following three methods.
- Position the cursor over the parameter setting button for which you want to adjust the value, and turn the mouse wheel.
- Position the cursor over the parameter setting button for which you want to adjust the value, then right-click and drag the bar showing the setting value.
- Position the cursor over the parameter setting button for which you want to adjust the value, then left-click and enter a value in the numeric keypad window.

Scrolling a list with the mouse

Position the cursor over the list you want to scroll, and turn the mouse wheel.

In the Setup menu, you can specify the scroll direction and whether parameters increase or decrease in relation to the mouse wheel rotation. And you can also switch the functions of the right and left mouse buttons used when adjusting the value of parameter setting buttons.

For details, see "Setting the Mouse Wheel Function when Setting Parameters" (page 438) and "Setting the Mouse Button Function when Setting Parameters" (page 438).

Using the Shortcut Menu

You can create a shortcut menu by grouping frequently used menus into a kind of "favorites" menu.
In addition to menus, menu macros can also be saved in the shortcut menu.

For details about menu macros, see "Menu Macros" (page 367).

The shortcut menu settings are handled as part of the control panel setup. You can recall and save these settings in the same way as setup data.

Recalling a menu from the shortcut menu

1 Open the Home >Favorites >Shortcut menu (0021).

2 Select a group in the <Group Select> group.

3 Press the button to which the desired menu is registered.

Registering a menu in the shortcut menu

You can register 15 buttons in a single shortcut menu group. The following two registration methods are available.

To register by page number

1 In the Home >Favorites >Shortcut menu (0021), select the group to which you want to register the menu.

2 Press [Button Edit].

The Home >Favorites >Button Edit menu (0023) appears.

3 Select the position in which to display the button.

To change the content of an already displayed button, press the button to select it.

4 Press [Page Set].

5 Enter the page number for the menu you want to register.

To register the currently displayed menu

1 In the Home >Favorites >Shortcut menu (0021), select the group in which you want to register the menu.

2 Display the menu you want to register in the shortcut menu.

3 Press the menu page number button, and press the [Add Favorite] button.

The menu selected in step **2** is automatically registered to an open button in the group selected in step **1**.

Customizing the shortcut menu

To customize buttons

1 In the Home >Favorites >Shortcut menu (0021), press [Button Edit].

The Home >Favorites >Button Edit menu (0023) appears.

2 Perform the following operations.

To rename a button
Select a button and press [Rename], then enter a new button name (up to 24 characters) and press [Enter].

To change the color of a button
Select a button and press [Color Set], then select the desired color.

To copy button settings
Select the button you want to copy and press [Copy], and then select the target button and press [Paste].

To delete button settings
Select the button you want to delete, and then press [Clear].

To customize a group

1 In the Home >Favorites >Shortcut menu (0021), press [Group Edit].

The Home >Favorites >Group Edit menu (0022) appears.

2 Perform the following operations.

To rename a group
Select a group and press [Rename], then enter a new group name (up to 24 characters) and press [Enter].

To copy group settings
Select the group you want to copy and press [Copy], and then select the target group and press [Paste].

To delete group settings
Select the group you want to delete and press [Clear], check the message and press [Yes].

Switching between the Main Menu Site and Sub Menu Site

You can store two separate menu transition flows in the main and sub menu sites.
By switching sites and pressing the ◀ button and the ▶ button, you can trace the history in each menu.
To choose the sub menu site, press the [SUB MENU SITE] button, assigned to a top menu selection button or user preference button on the menu panel, turning it on.

For details about button assignment, see "Setting Menu Panel Button Assignments" (page 411).

Shutting Down the Menu

1 Press [Menu Shutdown] in the top menu list.

2 Check the message, then press [Yes].

When menu shutdown is completed, the menu screen display turns off. And the button at the top left of the menu panel ([HOME] button by default) is lit.

To display the menu screen

Press and hold the button at the top left of the menu panel for about two seconds.

Shutting Down the Switcher System

Before turning the switcher system off, shut down the switcher, switcher control station, and menu using the following procedure.

Note

If the switcher system is configured with several switchers and control panels, shutting down the switcher control station will cause all switchers and control panels to not operate correctly.

1. Press [System Shutdown] in the top menu list.
2. Check the message, then press [Yes].

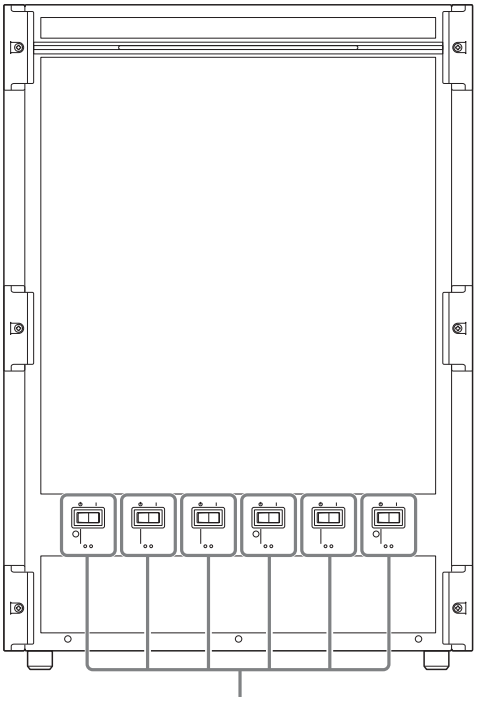
   The switcher, switcher control station, and menu are shut down in that order.
   When menu shutdown is completed, the menu screen display turns off.

Power Supply and Connector Section

XVS-9000/8000/7000/6000 Multi Format Switcher

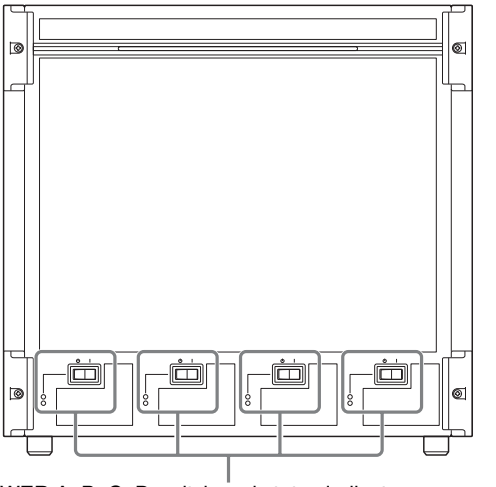
Front view

XVS-9000



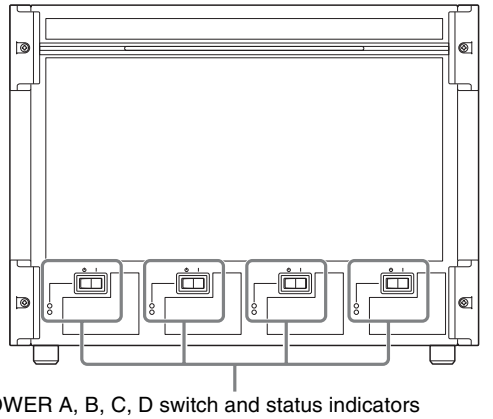
POWER A, B, C, D, E, F switch and status indicators

XVS-8000



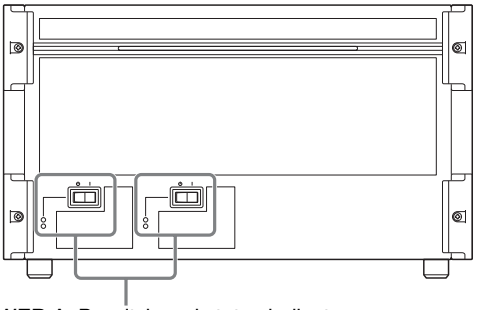
POWER A, B, C, D switch and status indicators

XVS-7000



POWER A, B, C, D switch and status indicators

XVS-6000



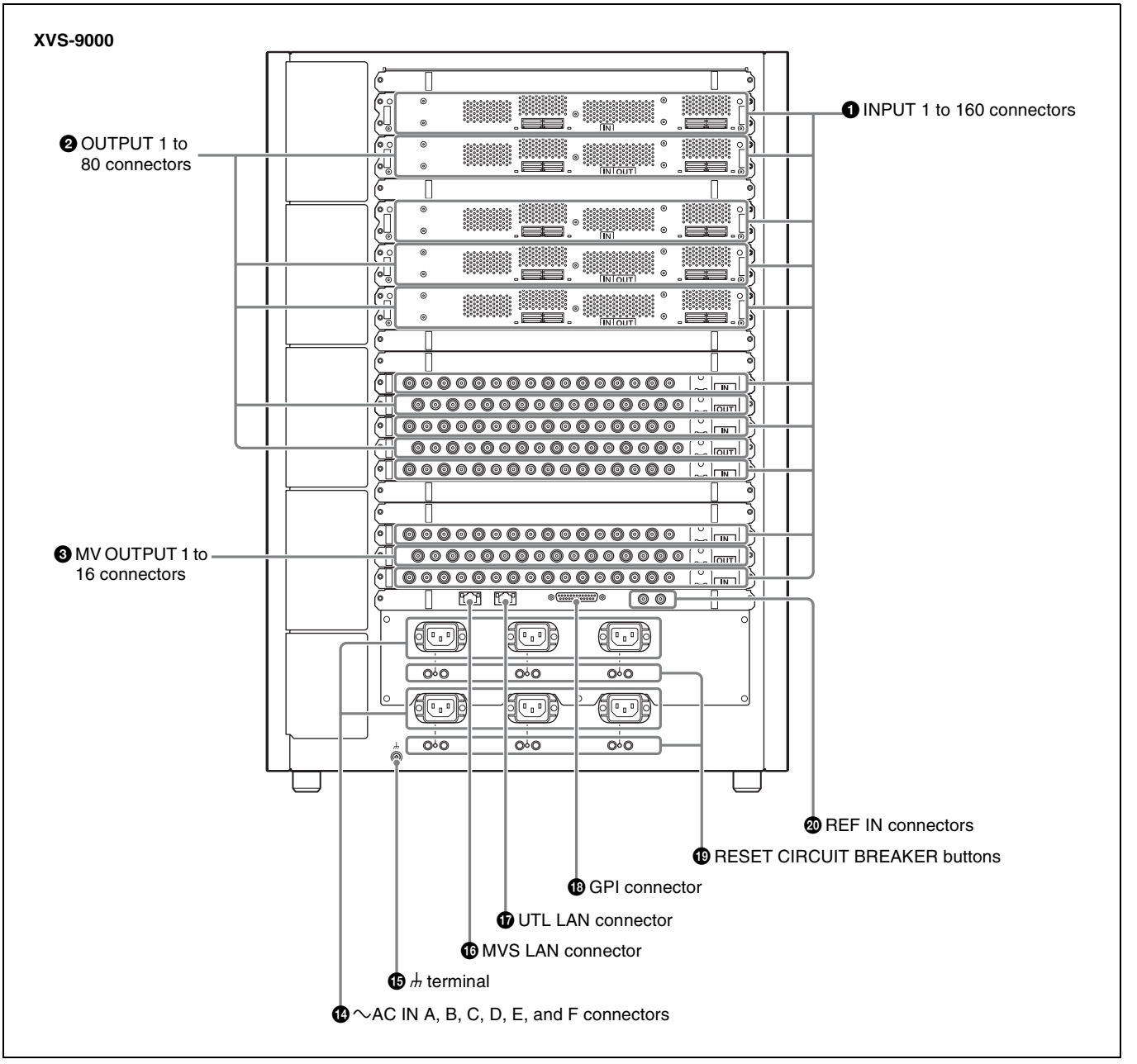
POWER A, B switch and status indicators

POWER A, B, C, D, E, F switch and status indicators (XVS-9000)
POWER A, B, C, D switch and status indicators (XVS-8000/7000)
POWER A, B switch and status indicators (XVS-6000)
Turn the POWER switch on/off to power the unit on/off. The unit is turned on when the POWER switch is in the "**I**" position, and turned off when in the "⏻" position.

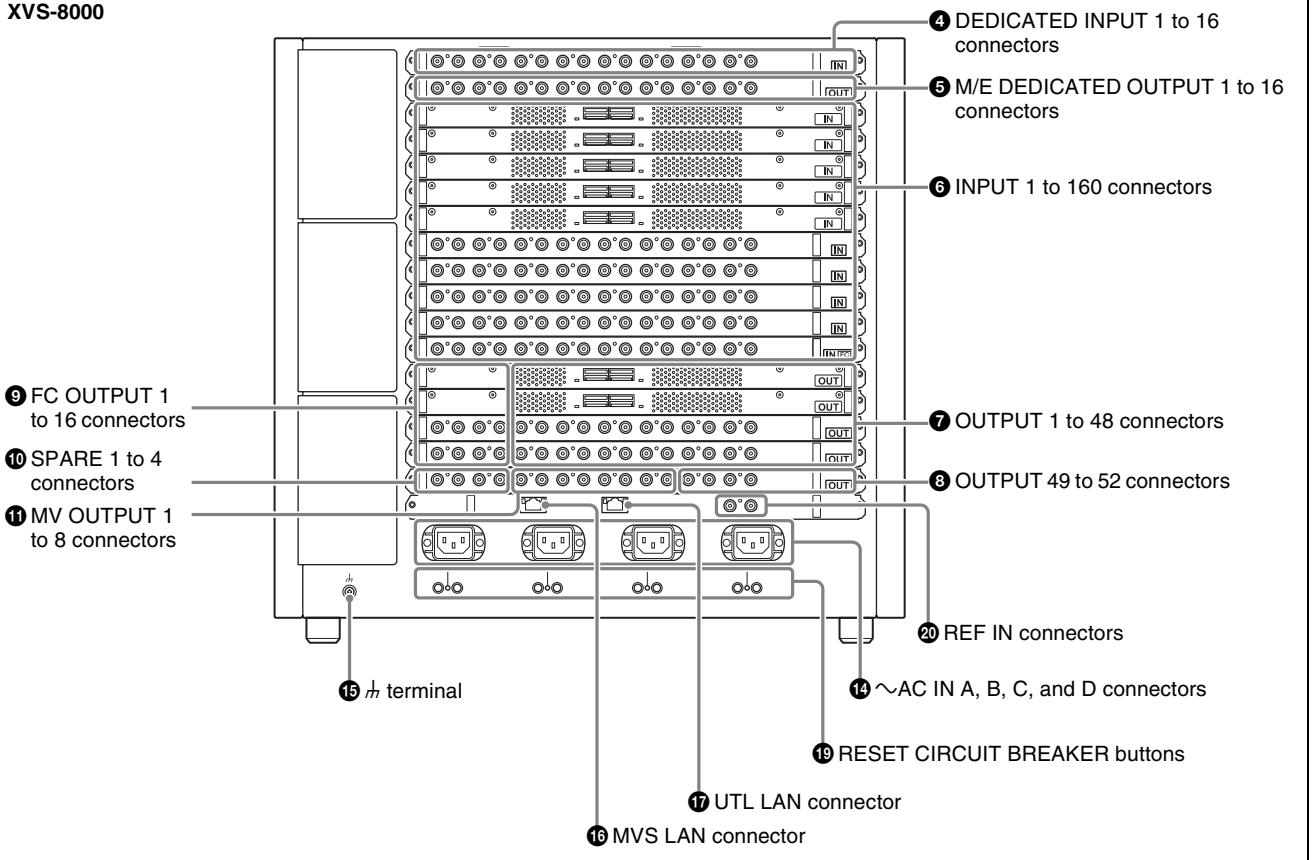
The status indicators and power supply status are given below.

Indicator status	AC status indicator	DC status indicator
Lit green	AC input within specified range	POWER switch on, and AC input and DC output within specified range
Off	AC input outside specified range	Indicates one of the following. • POWER switch off • AC input outside specified range • DC output outside specified range

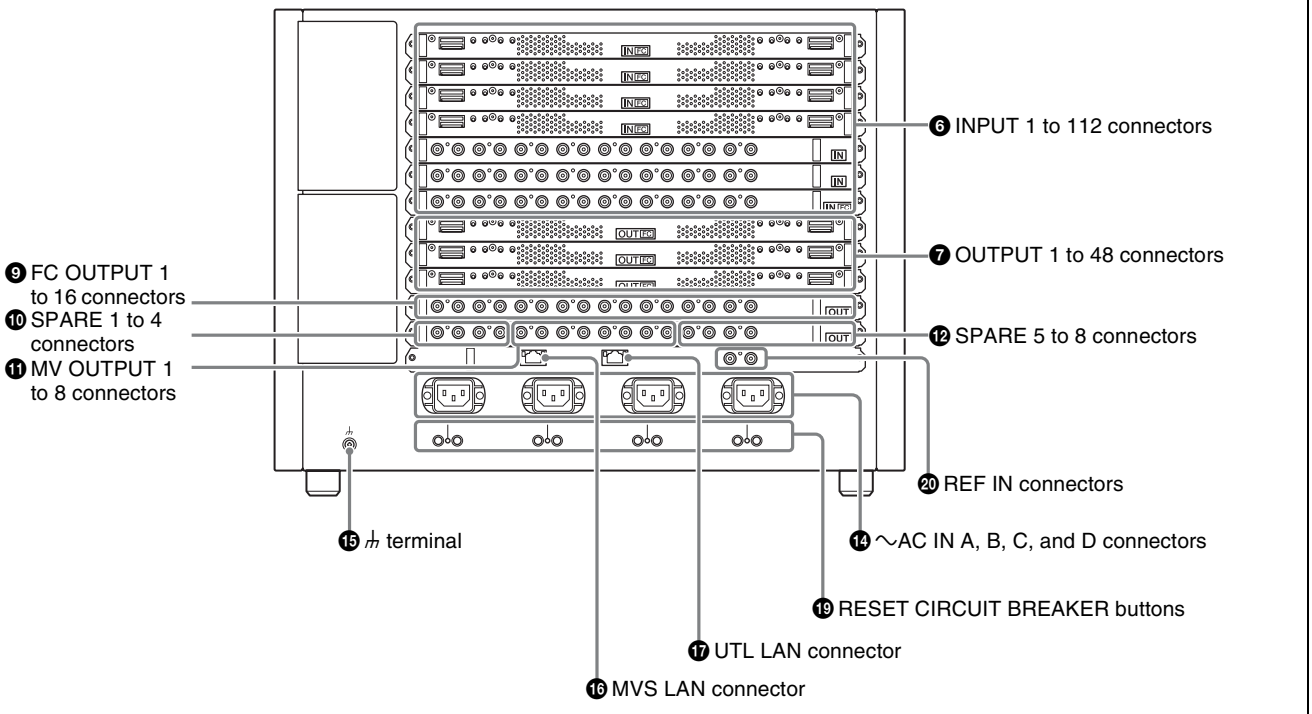
Rear view

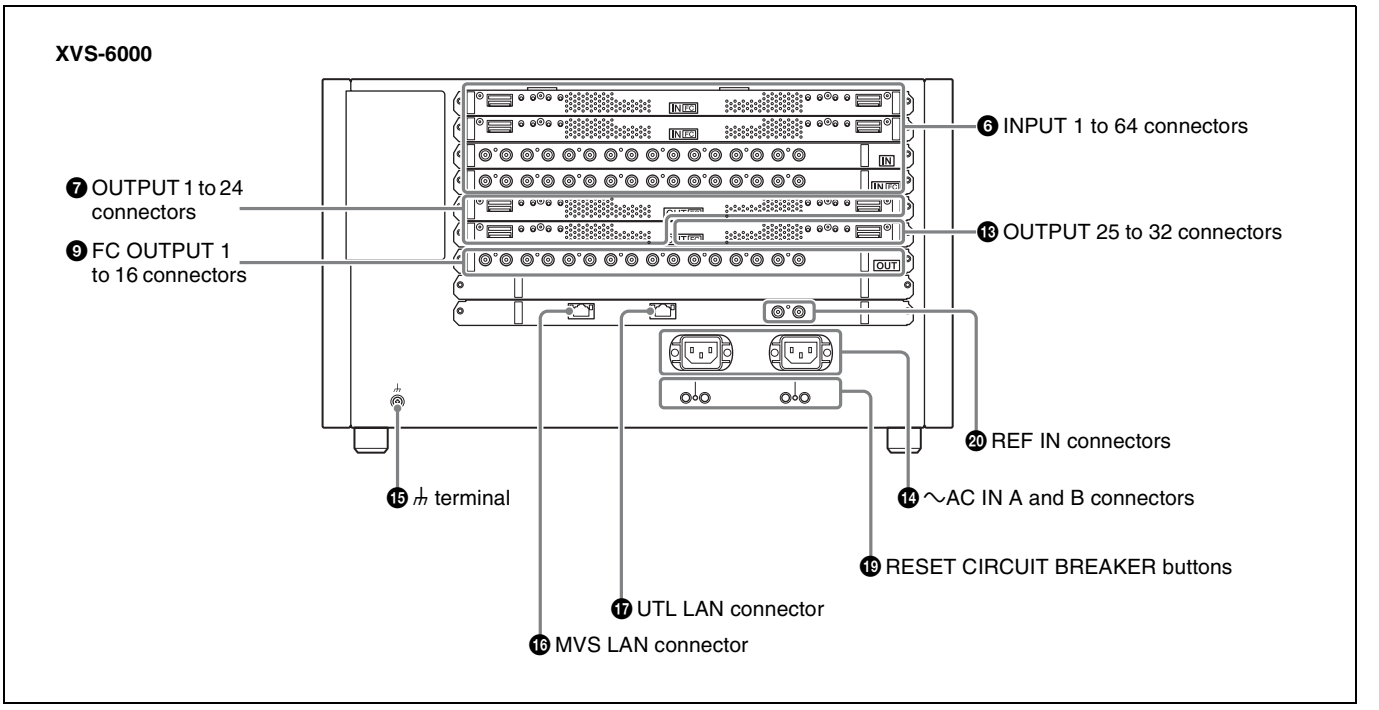


XVS-8000



XVS-7000





❶ INPUT 1 to 160 connectors (BNC type: XKS-S9112, QSFP+ type: XKS-C9111N/ XKS-C9121N, QSFP28 type: XKS-C9111/ XKS-C9121)

Up to 160 serial digital video signals can be input on the XVS-9000.
The number of connectors (slots) available depends on the number of option connector boards installed.

❷ OUTPUT 1 to 80 connectors (BNC type: XKS-S9167, QSFP+ type: XKS-C9121N, QSFP28 type: XKS-C9121)

Any outputs, such as program outputs, preview outputs, and AUX outputs, can be assigned and output as serial digital video signals.
The output setting is controlled from the control panel of the XVS system. The number of connectors (slots) available depends on the number of option connector boards installed.

❸ MV (multi viewer) OUTPUT 1 to 16 connectors (BNC type: XKS-S9167, QSFP+ type: XKS-C9121N, QSFP28 type: XKS-C9121)

Up to four multi viewer outputs can be assigned. Multiple output signals are combined and output as serial digital video signals arranged in a grid.
When not used as multi viewer output connectors, outputs such as program outputs, preview outputs, and AUX outputs can be assigned as output connectors 81 to 96.
The output setting is controlled from the control panel of the XVS system.

❹ DEDICATED INPUT 1 to 16 connectors (BNC type: XKS-S8110)

Inputs signals from connected output connectors.
The output connector and signal settings are controlled from the control panel of the XVS system.

❺ M/E DEDICATED OUTPUT 1 to 16 connectors (BNC type: XKS-S8165)

Outputs the signals selected from among the program output, preview output, clean output, and key preview output of each switcher bank. This setting is available only when the signal format is 3840×2160P.
The output setting is controlled from the control panel of the XVS system.

❻ INPUT connectors (BNC type: XKS-S8110/ XKS-S8111/XKS-S8112, RJ-45 type: XKS-T8110, QSFP+ type: XKS-Q8111, QSFP28 type: XKS-C8111)
XVS-8000: 1 to 160 connectors
XVS-7000: 1 to 112 connectors
XVS-6000: 1 to 64 connectors

Up to 160 (XVS-8000), 112 (XVS-7000), and 64 (XVS-6000) serial digital video signals can be input.
The number of connectors (slots) available depends on the number of option connector boards installed.

❼ OUTPUT connectors (BNC type: XKS-S8165/XKS-S8167, RJ-45 type: XKS-T8165, QSFP+ type: XKS-Q8166, QSFP28 type: XKS-C8166)
XVS-8000/7000: 1 to 48 connectors
XVS-6000: 1 to 24 connectors

Any outputs, such as program outputs, preview outputs, and AUX outputs, can be assigned and output as serial digital video signals.
The output setting is controlled from the control panel of the XVS system. The number of connectors (slots) available depends on the number of option connector boards installed.

❽ OUTPUT 49 to 52 connectors (BNC type: XKS-S8165/XKS-S8167, RJ-45 type: XKS-T8165, QSFP+ type: XKS-Q8166, QSFP28 type: XKS-C8166)

If an XKS-S8165 is installed in the XVS-8000, these can be used as output connectors to connect to dedicated inputs.

❾ FC (format converter) OUTPUT 1 to 16 connectors (BNC type: XKS-S8165/XKS-S8167, RJ-45 type: XKS-T8165, QSFP+ type: XKS-Q8166, QSFP28 type: XKS-C8166)

Outputs signals generated using the internal format converter function. Up to 16 output systems are supported.
The output setting is controlled from the control panel of the XVS system.

❿ SPARE 1 to 4 connectors (BNC type: XKS-S8165/XKS-S8167, RJ-45 type: XKS-T8165, QSFP+ type: XKS-Q8166, QSFP28 type: XKS-C8166)

On the XVS-8000, the same signals on the FC OUTPUT 1, 5, 9, and 13 connectors are output, from left to right, on the SPARE 1, 2, 3, and 4 connectors.
On the XVS-7000, the same signals on the FC OUTPUT 1 and 5 connectors are output on the SPARE 1 and 2 connectors. Signals are not assigned to the SPARE 3 and 4 connectors.

⓫ MV (multi viewer) OUTPUT 1 to 8 connectors (BNC type: XKS-S8165/XKS-S8167, RJ-45 type: XKS-T8165, QSFP+ type: XKS-Q8166, QSFP28 type: XKS-C8166)

Multiple output signals can be combined and output as serial digital video signals arranged in a grid. Up to two output systems are supported.
The output setting is controlled from the control panel of the XVS system.

⓬ SPARE 5 to 8 connectors (BNC type: XKS-S8165/XKS-S8167, RJ-45 type: XKS-T8165, QSFP+ type: XKS-Q8166, QSFP28 type: XKS-C8166)

Reserved for future use.

⓭ OUTPUT 25 to 32 connectors (BNC type: XKS-S8165/XKS-S8167, RJ-45 type: XKS-T8165, QSFP+ type: XKS-Q8166, QSFP28 type: XKS-C8166)

Used as multi viewer output 1 to 8 connectors on the XVS-6000.
Multiple output signals can be combined and output as serial digital video signals arranged in a grid. Up to two output systems are supported.
The output setting is controlled from the control panel of the XVS system.

⓮ ∿AC IN (AC power input) connectors (3-pin)
XVS-9000: A, B, C, D, E, and F connectors
XVS-8000/7000: A, B, C, and D connectors
XVS-6000: A and B connectors

Connect to 100 V to 240 V AC power supply with AC power cords (sold separately).

⓯ ⏚ (signal ground) terminal

Connect to the system ground.

⓰ MVS LAN (multi format video switcher LAN) connector (RJ-45 compliant)

Connect to an Ethernet switch. [1)]
Used to communicate between switcher control stations connected to an Ethernet switch.

1) For details about supported Ethernet switches, contact your Sony service or sales representative.
For details about Ethernet switch connection, refer to the XVS-9000/8000/7000/6000 Installation Manual.

⓱ UTL LAN (utility LAN) connector (RJ-45 compliant)

Reserved for future use.
Do not connect any signal to this connector.

⓲ GPI connector (D-sub 25-pin)

Outputs an alarm when a switcher error occurs.

⓳ RESET CIRCUIT BREAKER buttons

If an overcurrent condition is detected, due to a short circuit or other cause, the button will pop out, disconnecting the circuit. The button pops out approximate 3.5 mm ($^5/_{32}$ inches).

⓴ REF IN (reference video signal input) connectors (BNC type)

Connect to an HD tri-level sync signal, black burst signal, or analog sync signal when using the unit synchronized to an external sync signal.
The two connectors are loop-through, so that the signal input on either connector is also output on the other connector. Connect the supplied 75 Ω terminator to the remaining connector if not using the loop-through output.

About 4K signal input/output connector assignment (SDI connector boards)

In 4K format, a subdivided-by-4 image (sub images) are transferred as four separate signals, where the 4K signal is assigned to four input/output connectors.
On connector boards that support 12G-SDI,[1)] a 4K signal can be transferred using a single cable.

1) 12G-SDI is an interface for digital transfer of 4K signals using a co-axial cable that supports 12 Gbps transfer speeds.

When assigning to four connectors

On the following connector boards, a 4K signal is assigned to a group of four connectors.

- Input connector boards: XKS-S8110/XKS-S8111
- Output connector boards: XKS-S8165

The assignment is as follows.

4K format input signal/ output signal	Connector number [a)]
1st system	1, 2, 3, 4
2nd system	5, 6, 7, 8
3rd system	9, 10, 11, 12
(and so on)	(and so on)

a) The connector numbers correspond to sub images 1, 2, 3, and 4 in that order.

Note

On connector boards that support 12G-SDI (XKS-S8112/XKS-S9112/XKS-S8167/XKS-S9167), four signals are transferred in the following cases.

- For input/output of 3840×2160P 2SI 3G, 3840×2160P SQD, and 3840×2160PsF SQD signals
- When the XKS-S8167 output connectors are set to 3G mode

When assigning to one connector (12G-SDI)

On the following connector boards, a 4K signal (3840×2160P 2SI 12G) is assigned to a single connector.

- Input connector boards: XKS-S8112/XKS-S9112
- Output connector boards: XKS-S8167/XKS-S9167

The assignment is as follows.

4K format input signal/ output signal	Connector number	
	XKS-S8112/ XKS-S8167	XKS-S9112/ XKS-S9167
1st system	1	1
2nd system	5	3
3rd system	9	5
(and so on)	(and so on)	(and so on)

Notes

- The XKS-S8112/XKS-S8167 use the input connectors/ output connectors with the first number (1, 5, 9, and so on) of each group of four connectors.
- The XKS-S9112/XKS-S9167 use the input connectors/ output connectors with odd numbers (1, 3, 5, and so on).

About output connectors of 12G-SDI connector boards

The output connectors of the XKS-S8167/XKS-S9167 12G-SDI Output Boards can be enabled/disabled.
When disabled, no signal is output from the output connector.
If a cable is not connected to an enabled output connector, radio wave interference may occur. Disable unused output connectors.

For details, see "Enabling/Disabling SDI Output Connectors" (page 404).

Note

On the XVS-9000, when the switcher signal format is 3840×2160P 2SI, if the signal format of the odd-numbered output connectors on the XKS-S9167 is set to 3840×2160P 2SI 12G, a signal converted to 1080i format is output on the subsequent even-numbered output connectors.

About network connector boards

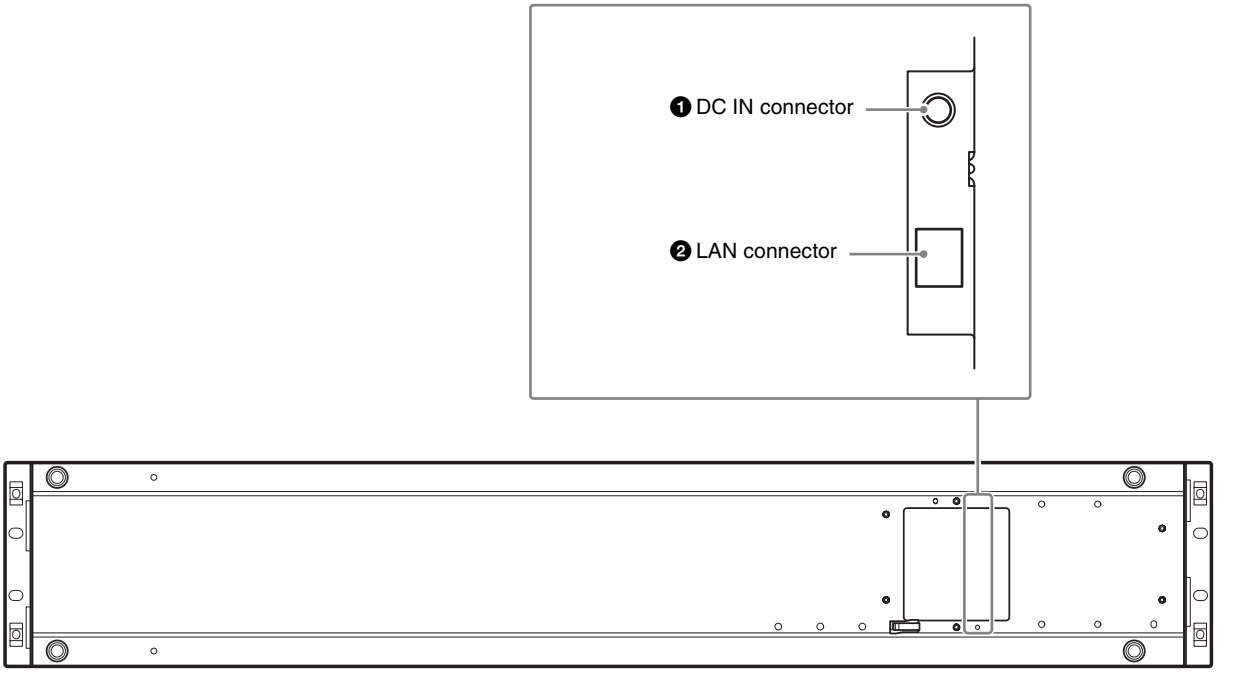
The XKS-C8111/XKS-C9111/XKS-C9111N/ XKS-C9121/XKS-C9121N/XKS-C8166 have the following restrictions.

- Two slots per board are required for the installation of XKS-C9111/XKS-C9111N/XKS-C9121/ XKS-C9121N.
- The XKS-C9111/XKS-C9121 and XKS-C9111N/ XKS-C9121N cannot be installed at the same time.
- The XKS-C9121/XKS-C9121N supports both inputs and outputs (bidirectional).
- On the XKS-C9111N/XKS-C9121N, input/outputs 7 and 15 on each board cannot be used.
  The XKS-C9111N/XKS-C9121N support 3840×2160P 2SI signal format. Accordingly, odd-numbered input/ outputs can be configured, but input/outputs that are multiples of 8 minus 1 (7, 15, 23, and so on) are invalid.
- The XKS-C8111/XKS-C8166 cannot be installed at the same time as the XKS-T8110/XKS-T8165.

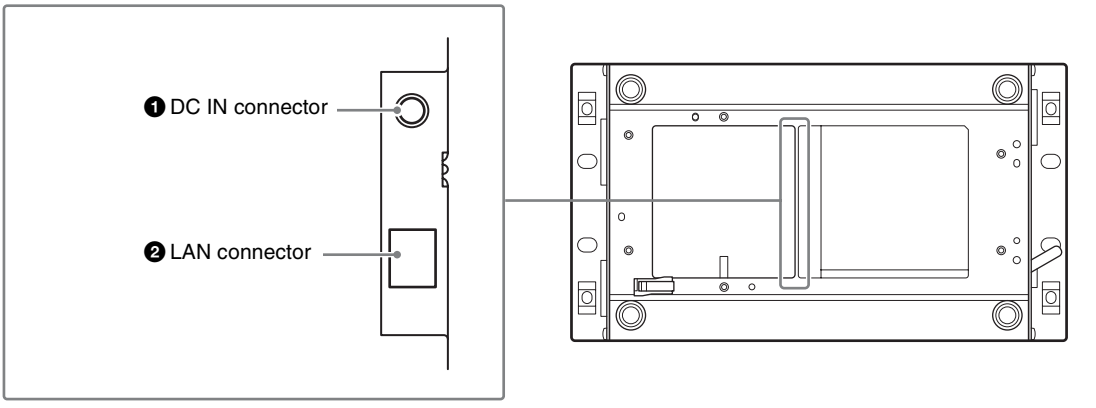
Control Panel

Bottom view

ICP-X7000 Integrated Control Panel



MKS-X7075 Extension Adaptor



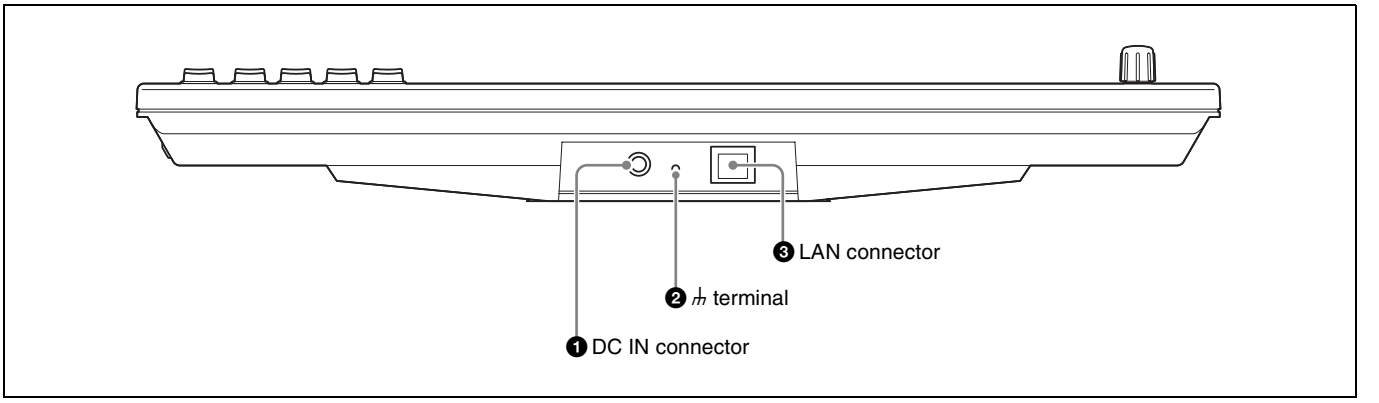
❶ DC IN connector
Connect to the 12 V DC output of the supplied AC adaptor.

❷ LAN connector (RJ-45, PoE+, 1000BASE-T compliant)
Connect to a switcher control station via an Ethernet switch. The unit can operate without using an AC adaptor if connected to a PoE+ (Power over Ethernet Plus) compatible Ethernet switch. [1)]

1) For details about supported PoE+ compatible Ethernet switches, contact your Sony service or sales representative.

MKS-X7011 Menu Panel

Bottom view



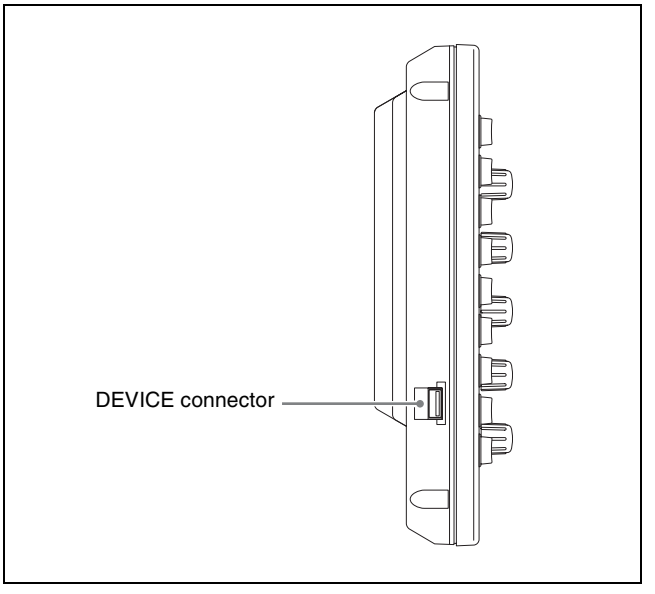
❶ DC IN connector
Connect to the 12 V DC output of the supplied AC adaptor.

❷ ⏚ (signal ground) terminal
Connect to the system ground.

❸ LAN connector (RJ-45, PoE+, 1000BASE-T compliant)
Connect to a switcher control station via an Ethernet switch. The unit can operate without using an AC adaptor if connected to a PoE+ (Power over Ethernet Plus) compatible Ethernet switch. [1)]

1) For details about supported PoE+ compatible Ethernet switches, contact your Sony service or sales representative.

Side view

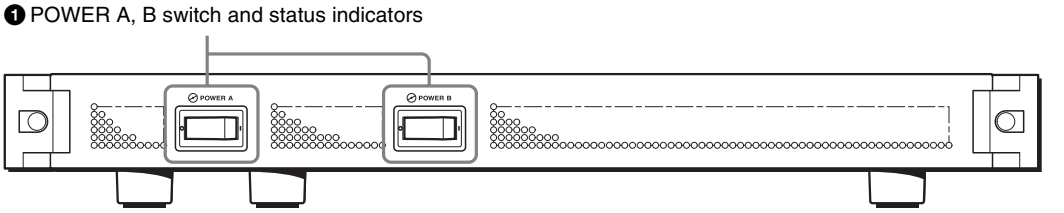


DEVICE connector (USB 2.0 compliant, USB Type A)
Connect to a USB flash drive. Used for installing software, importing/exporting files, etc.

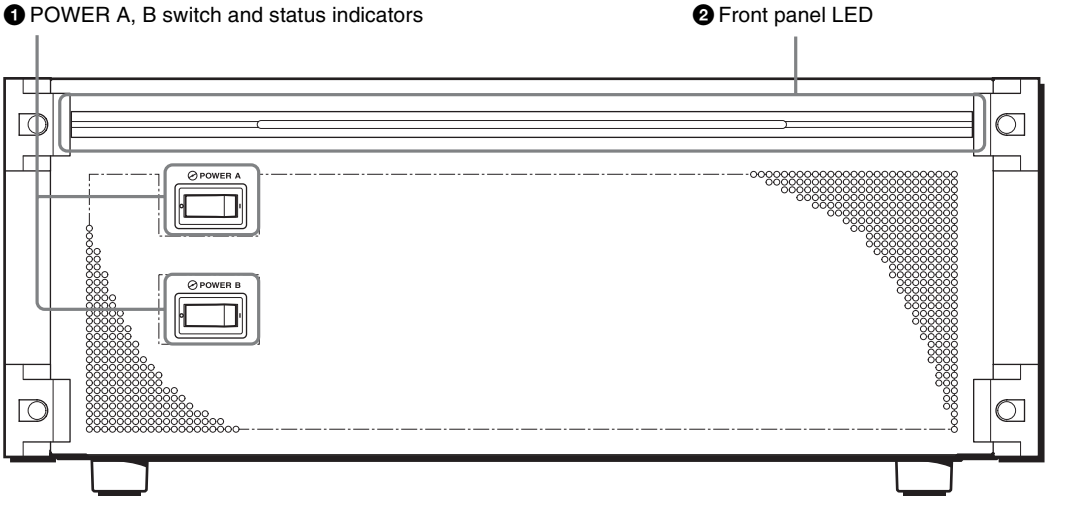
MKS-X2700/X7700 System Interface Unit

Front view

MKS-X2700



MKS-X7700



❶ POWER A, B switch and status indicators

Turn the POWER switch on/off to power the unit on/off. The unit is turned on when the POWER switch is in the "**I**" position, and turned off when in the "○" position.
The status indicators light green when the unit is powered on.
The unit can continue to operate normally when only one power supply is operating.

Errors and corrective measures displayed depending on the status indicator

The status indicators indicate when the power is turned on and when an error is detected during operation.

Indicator color	State	Error description	Solution
Green	Lit	Operating normally	–
Red	Lit	Power supply internal fan failure or +12 V output failure	Replace the fan unit or the power supply unit.
–	Off	Power supply failure	Replace the power supply unit.

Notes

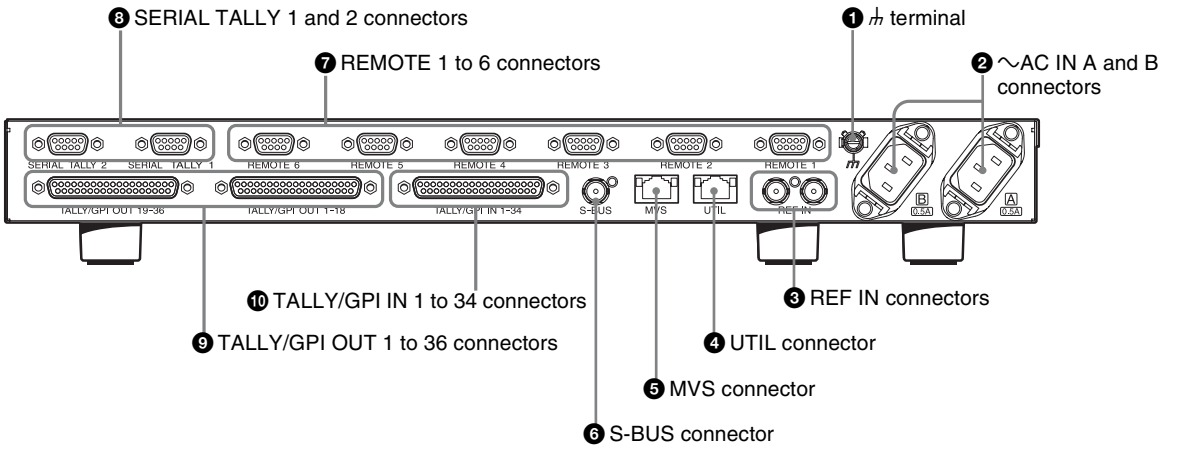
- If a status indicator is not lit when the POWER switch is turned on, there may be a problem with the power supply wiring. Turn the POWER switch off and contact your Sony service representative.
- If a status indicator momentarily is lit red when the power supply is turned on, a tone may be emitted, but this does not indicate a fault.
- You should always turn on both the POWER A and B switches.

❷ Front panel LED (MKS-X7700 only)

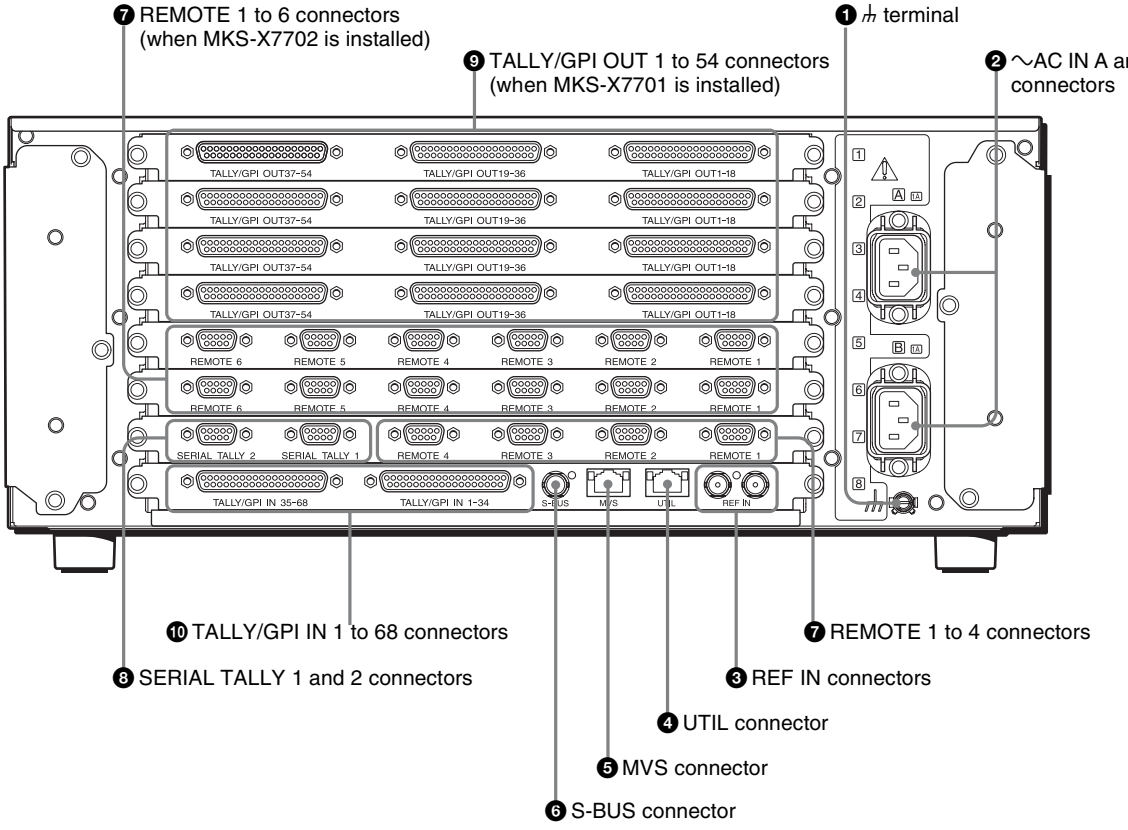
Lit blue when the POWER switch is turned on and the unit is booting.

Rear view

MKS-X2700



MKS-X7700



❶ ⏚ (signal ground) terminal

Connect to the system ground.

❷ ∿AC IN (AC power input) A and B connectors (3-pin)

Connect to 100 V to 240 V AC power supply with the optional AC power cords.

The unit is equipped with two power supplies. When A or B power supply is normal, unit operation can proceed.

❸ REF IN (reference video signal input) connectors (BNC type)

Connect to an HD tri-level sync signal, black burst signal, or analog sync signal when using the unit synchronized to an external sync signal.

The two connectors are link through, so that the signal input on either connector is also output on the other connector. Connect the supplied 75 Ω terminator to the remaining connector if not using the link through output.

❹ UTIL (utility) connector (RJ-45, 1000BASE-T compliant)

Use when controlling serial tally, GPI input/output, or external device via a network.

❺ MVS (multi format video switcher) connector (RJ-45, 1000BASE-T compliant)

Connect to a switcher control station via an Ethernet switch.

❻ S-BUS connector (BNC-type)

Connect a cable with BNC connector to an S-Bus data link via a T bridge.

Connecting devices such as routing switchers and AUX bus remote panels via an S-Bus data link enables the following kinds of control.

- Generation and return of tally information on the S-Bus, based on data received from other devices.
- Switching of cross-points on a routing switcher from the control panel.
- Switching of cross-points on a switcher from the remote panel.
- Display of source names configured by a routing switcher on the control panel.

❼ REMOTE connectors (D-sub 9-pin, RS-422A compliant)

MKS-X2700: 1 to 6 connectors

MKS-X7700: 1 to 6 connectors, 1 to 4 connectors

Connect to a device controlled using Sony 9-pin VTR, VDCP (Video Disk Communications Protocol), Odetics protocol, or P-Bus (Peripheral II Protocol) protocols.

❽ SERIAL TALLY 1 and 2 connectors (D-sub 9-pin, RS-422A compliant)

Outputs tally information generated by the switcher control station of the XVS system.

❾ TALLY/GPI OUT connectors (D-sub 37-pin)

MKS-X2700: 1 to 36 connectors

MKS-X7700: 1 to 54 connectors

Outputs tally information generated by the switcher control station of the XVS system using a relay. It can also be used as a GPI output port.

The output setting is controlled from the control panel of the XVS system.

❿ TALLY/GPI IN connectors (D-sub 37-pin)

MKS-X2700: 1 to 34 connectors

MKS-X7700: 1 to 68 connectors

Input a trigger signal as a GPI input.

The input setting is controlled from the control panel of the XVS system.

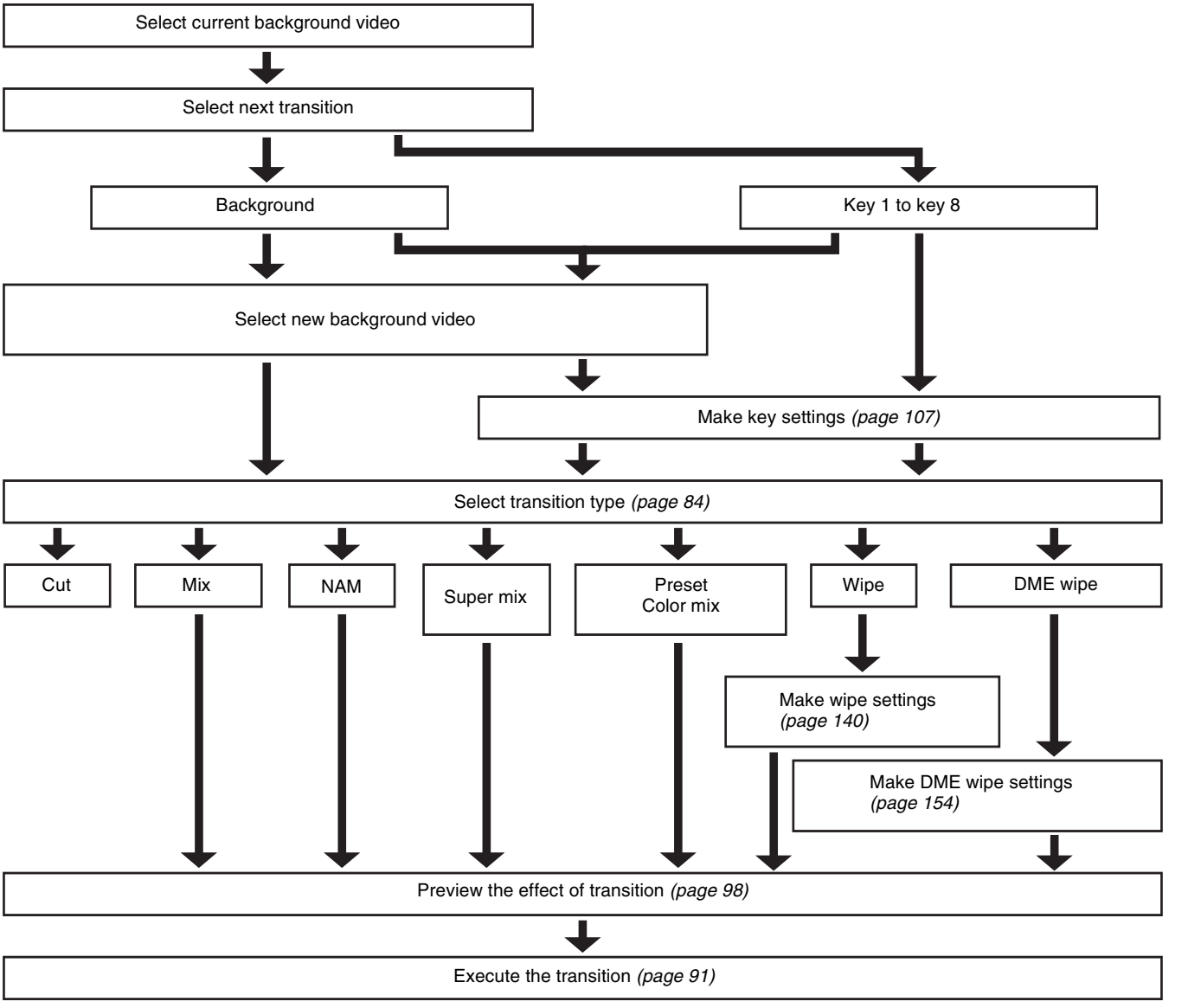
Signal Selection and Transitions

Chapter 3

Image Creation Operation Flow

The switch from the current video feed (appearing on the switcher bank program monitor) to a new video feed is referred to as a transition.

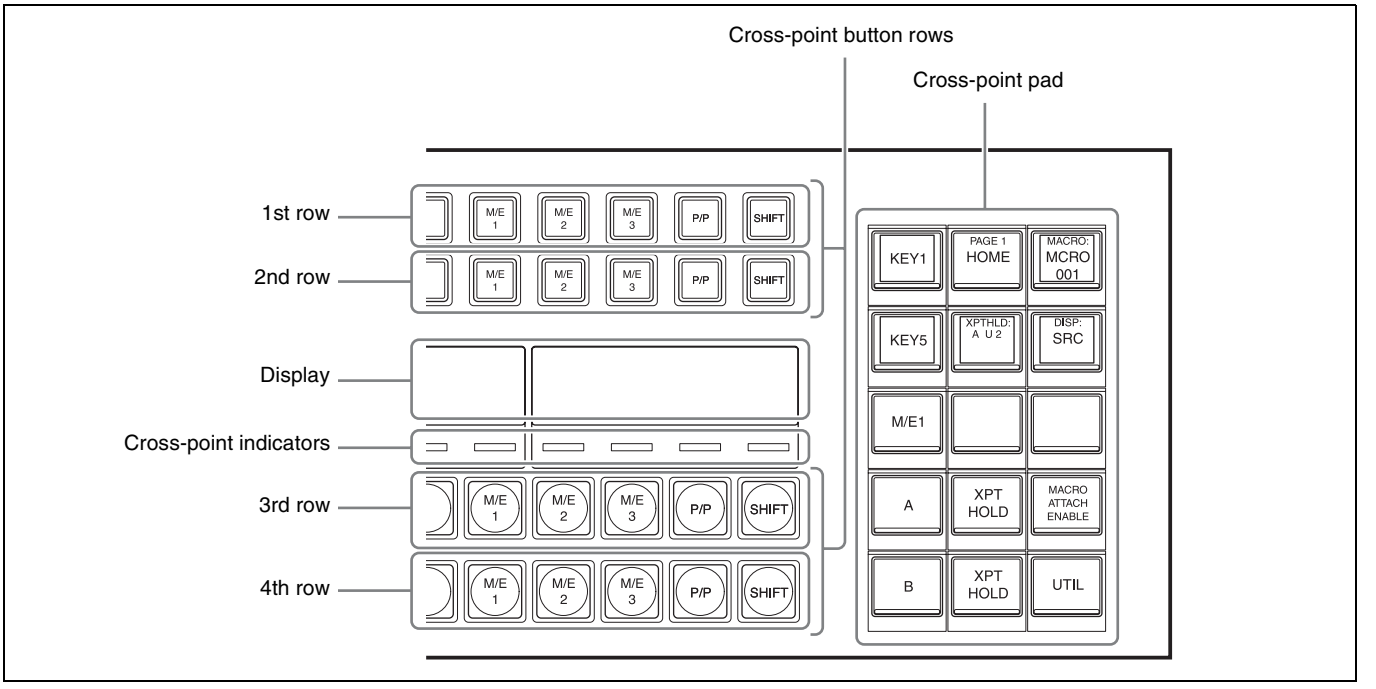
The following illustration shows the flow of operations for carrying out a transition on an M/E bank or the PGM/PST bank.



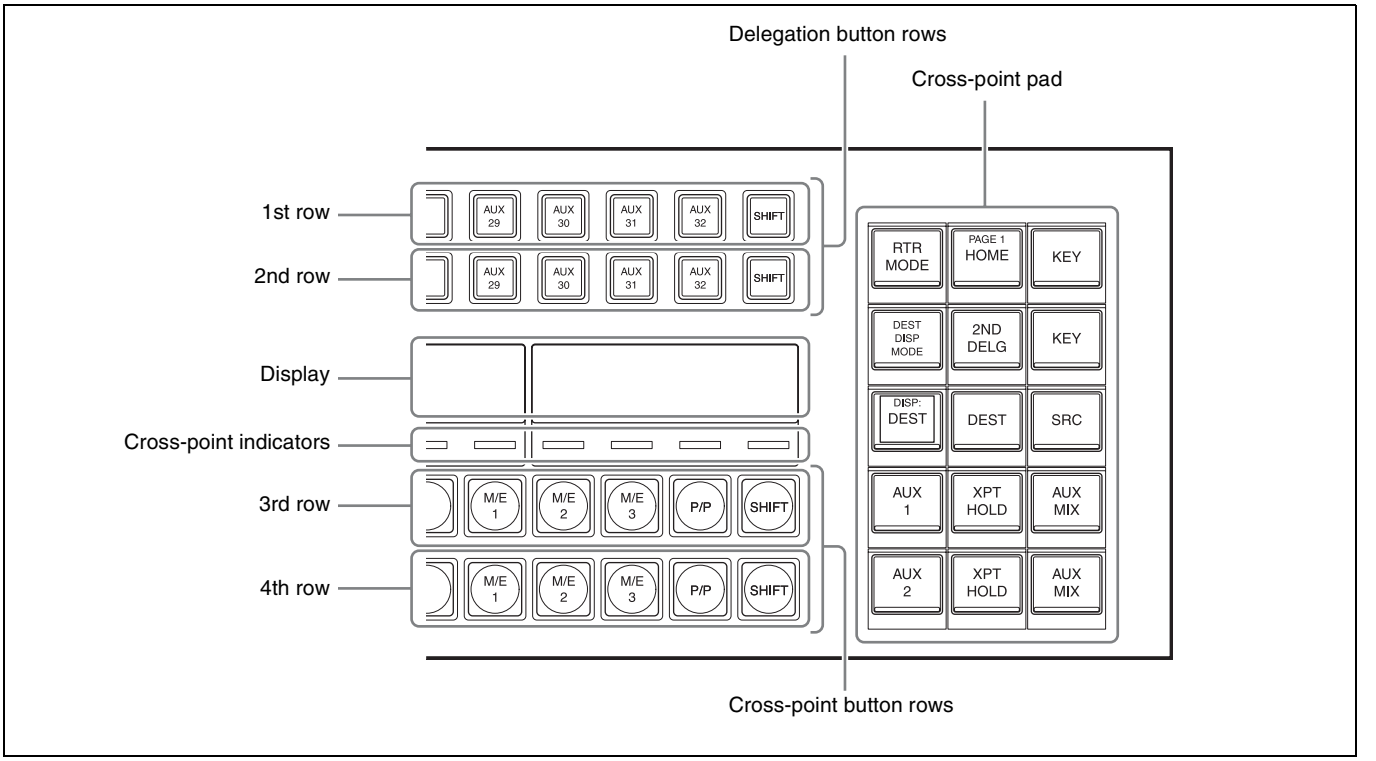
Signal Selection

You carry out signal selection with the cross-point buttons in the cross-point control block of the M/E bank or PGM/PST bank, and the buttons in the AUX bus control block (AUX bus operation mode).

Depending on the module used, each row has 36 buttons, 28 buttons, or 20 buttons. This section describes modules with 36-button rows.



Cross-point control block



AUX bus control block (AUX bus operation mode)

Overview

The cross-point control block and AUX bus control block each have 36 cross-point buttons.
These buttons are identified by numbers common to all of the banks and the control block, and a signal is assigned to each number.
The basic signal selection process is to select, in a cross-point button row, the cross-point button to which is assigned the desired signal.

Re-entry buttons

Re-entry buttons are assigned to the cross-point button rows in the cross-point control block and AUX bus control block (AUX bus operation mode).
Re-entry buttons are used to load an image created on a switcher bank (M/E and PGM/PST) as an input signal on another switcher bank.
For example, to load the output image from the M/E-1 bank as the background B on the M/E-2 bank, press the M/E-1 re-entry button in the cross-point button row for background B bus in the cross-point control block of the M/E-2 bank.

Notes

- In 36-button rows, the M/E-1 to M/E-3 and PGM/PST re-entry buttons are assigned to buttons numbered 32 to 35.
  The M/E-4 and M/E-5 re-entry buttons must be assigned in the Setup menu *(see page 413)*.
- Re-entry buttons can also be assigned to the cross-point pad *(see page 433)*.
- When extended re-entry is enabled for switcher banks, re-entry signals within the same switcher bank can be selected.

Re-entry signal restrictions

Up to four re-entry stages are supported.
The following restrictions apply, depending on the signal format and M/E configuration, for re-entry signal selection.

Signal format	M/E configuration	Restrictions
• 1080P • 3840×2160P	3M/E to 6M/E	Re-entry signals not selectable on a key bus or the utility 1 bus. a)
• 720P	4M/E to 6M/E	Re-entry signals spanning more than two stages not selectable on a key bus or the utility 1 bus. b)

a) When extended re-entry for keyers is enabled, re-entry signals can be selected on the key bus and utility 1 bus.

b) For example, if M/E-1 is selected on the M/E-2 background A bus (or background B bus, key bus, utility 1 bus, or utility 2 bus), then M/E-2 cannot be selected on the M/E-3 key bus or utility 1 bus.

Extended re-entry

The following re-entry signal selections are available when extended re-entry is enabled in the Setup menu.

- Re-entry signal selection within the same switcher bank (extended re-entry for switcher banks).
- Re-entry signal selection using key bus/utility 1 bus on 3M/E or higher configurations when the switcher signal format is 3840×2160P or 1080P (extended re-entry for keyers).

For details, see "Setting Extended Re-Entry" (page 442).

Bus Selection

Each cross-point button row is shared by multiple buses. To assign a bus to the 1st row to 4th row cross-point buttons in the cross-point control block, press one of the bus delegation buttons in the cross-point pad, turning it on. To assign a bus to the 3rd row/4th row cross-point buttons in the AUX bus control block (AUX bus operation mode), press one of the bus delegation buttons in the 1st row or 2nd row, turning it on.

You can also select a signal in the 2nd row by assigning bus delegation buttons to the 1st row of the cross-point control block (key/AUX bus delegation mode).

For details, see "Setting the Operation Mode of the Cross-Point Control Block Button Rows" (page 432).

The following table illustrates the correspondence between buses and cross-point button rows, and the delegation operations.

Control block	Bus name	Cross-point button rows	Delegation operation [a]
Cross-point control block: M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	Background A bus [b] [c]	1st row to 4th row	• In key bus mode and key/AUX bus delegation mode, assigned to the 3rd row. • In free assign mode, press the delegation button [A] on the cross-point pad, turning it on.
	Background B bus [b] [c]	1st row to 4th row	• In key bus mode and key/AUX bus delegation mode, assigned to the 4th row. • In free assign mode, press the delegation button [B] on the cross-point pad, turning it on.
	Key 1 bus to key 8 bus [c]	1st row to 4th row	• Press the delegation buttons [KEY1] to [KEY8] on the cross-point pad, turning them on. [d] • To assign to the 2nd row in key/AUX bus delegation mode, press the [KEY1] to [KEY8] buttons in the 1st row, turning them on.
	Utility 1 bus [c] Utility 2 bus [c]	1st row to 4th row	• Press the delegation buttons [UTL1] and [UTL2] on the cross-point pad, turning them on. [d] • To assign to the 2nd row in key/AUX bus delegation mode, press the [UTIL1] and [UTIL2] buttons in the 1st row, turning them on.
	DME external video bus [c]	1st row to 4th row	• Press the delegation button [DME EXT] on the cross-point pad, turning it on. [d] • To assign to the 2nd row in key/AUX bus delegation mode, press the [DME EXT] button in the 1st row, turning it on.
	DME utility 1 bus [c] DME utility 2 bus [c]	1st row to 4th row	• Press the delegation buttons [DME UTL1] and [DME UTL2] on the cross-point pad, turning them on. [d] • To assign to the 2nd row in key/AUX bus delegation mode, press the [DME UTIL1] and [DME UTIL2] buttons in the 1st row, turning them on.
	Edit preview bus	1st row to 4th row	• In free assign mode, press the delegation button [EDIT PVW] on the cross-point pad, turning it on. • To assign to the 2nd row in key/AUX bus delegation mode, press the [EDIT PVW] button in the 1st row, turning it on.

Control block	Bus name	Cross-point button rows	Delegation operation [a)]
Cross-point control block: M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	AUX1 bus to AUX48 bus	1st row to 4th row	• In free assign mode, press the delegation buttons [AUX1] to [AUX48] on the cross-point pad, turning them on. • To assign to the 2nd row in key/AUX bus delegation mode, press the [AUX 1] to [AUX 48] buttons in the 1st row, turning them on.
	Frame memory source 1 bus Frame memory source 2 bus	1st row to 4th row	• In free assign mode, press the delegation buttons [FMS1] and [FMS2] on the cross-point pad, turning them on. • To assign to the 2nd row in key/AUX bus delegation mode, press the [FMS 1] and [FMS 2] buttons in the 1st row, turning them on.
	DME1 video bus to DME4 video bus	1st row to 4th row	• In free assign mode, press the delegation buttons [DME1V] to [DME4V] on the cross-point pad, turning them on. • To assign to the 2nd row in key/AUX bus delegation mode, press the [DME1 V] to [DME4 V] buttons in the 1st row, turning them on.
	DME1 key bus to DME4 key bus	1st row to 4th row	• In free assign mode, press the delegation buttons [DME1K] to [DME4K] on the cross-point pad, turning them on. • To assign to the 2nd row in key/AUX bus delegation mode, press the [DME1 K] to [DME4 K] buttons in the 1st row, turning them on.
AUX bus control block (AUX bus operation mode)	AUX1 bus to AUX48 bus	3rd row, 4th row	Press the [AUX 1] to [AUX 48] buttons in the 1st row/2nd row, turning them on.
	Frame memory source 1 bus Frame memory source 2 bus	3rd row, 4th row	Press the [FMS 1] button and [FMS 2] button in the 1st row/2nd row, turning them on.
	Edit preview bus	3rd row, 4th row	Press the [EDIT PVW] buttons in the 1st row/2nd row, turning them on.
	DME1 video bus to DME4 video bus	3rd row, 4th row	Press the [DME1 V] and [DME4 V] buttons in the 1st row/2nd row, turning them on.
	DME1 key bus to DME4 key bus	3rd row, 4th row	Press the [DME1 K] and [DME4 K] buttons in the 1st row/2nd row, turning them on.
	M/E-1 UTILITY 1 and 2 buses M/E-2 UTILITY 1 and 2 buses M/E-3 UTILITY 1 and 2 buses M/E-4 UTILITY 1 and 2 buses M/E-5 UTILITY 1 and 2 buses P/P UTILITY 1 and 2 buses	3rd row, 4th row	Press the following buttons in the 1st row/2nd row, turning them on. [M/E1 UTIL1] button, [M/E1 UTIL2] button [M/E2 UTIL1] button, [M/E2 UTIL2] button [M/E3 UTIL1] button, [M/E3 UTIL2] button [M/E4 UTIL1] button, [M/E4 UTIL2] button [M/E5 UTIL1] button, [M/E5 UTIL2] button [P/P UTIL1] button, [P/P UTIL2] button
	M/E-1 key 1 to key 8 fill buses M/E-2 key 1 to key 8 fill buses M/E-3 key 1 to key 8 fill buses M/E-4 key 1 to key 8 fill buses M/E-5 key 1 to key 8 fill buses P/P key 1 to key 8 fill buses	3rd row, 4th row	Press the following buttons in the 1st row/2nd row, turning them on. [M/E1 KEY1 V] to [M/E1 KEY8 V] buttons [M/E2 KEY1 V] to [M/E2 KEY8 V] buttons [M/E3 KEY1 V] to [M/E3 KEY8 V] buttons [M/E4 KEY1 V] to [M/E4 KEY8 V] buttons [M/E5 KEY1 V] to [M/E5 KEY8 V] buttons [P/P KEY1 V] to [P/P KEY8 V] buttons

Control block	Bus name	Cross-point button rows	Delegation operation [a)]
AUX bus control block (AUX bus operation mode)	M/E-1 key 1 to key 8 source buses M/E-2 key 1 to key 8 source buses M/E-3 key 1 to key 8 source buses M/E-4 key 1 to key 8 source buses M/E-5 key 1 to key 8 source buses P/P key 1 to key 8 source buses	3rd row, 4th row	Press the following buttons in the 1st row/2nd row, turning them on. [M/E1 KEY1 K] to [M/E1 KEY8 K] buttons [M/E2 KEY1 K] to [M/E2 KEY8 K] buttons [M/E3 KEY1 K] to [M/E3 KEY8 K] buttons [M/E4 KEY1 K] to [M/E4 KEY8 K] buttons [M/E5 KEY1 K] to [M/E5 KEY8 K] buttons [P/P KEY1 K] to [P/P KEY8 K] buttons
	M/E-1 DME external video bus M/E-2 DME external video bus M/E-3 DME external video bus M/E-4 DME external video bus M/E-5 DME external video bus P/P DME external video bus	3rd row, 4th row	Press the following buttons in the 1st row/2nd row, turning them on. [M/E1 DME EXT] button [M/E2 DME EXT] button [M/E3 DME EXT] button [M/E4 DME EXT] button [M/E5 DME EXT] button [P/P DME EXT] button
	DME utility 1 bus DME utility 2 bus	3rd row, 4th row	Press the [DME UTIL1] and [DME UTIL2] buttons in the 1st row/2nd row, turning them on.

a) For buttons that not set by default, assignment is required in the Setup menu.
b) Dual background bus mode can be selected.
c) Can also be assigned using utility bus mode.
d) Can be assigned to the 1st row and 2nd row in key bus mode, or to the 1st row to 4th row in free assign mode.

Dual background bus mode

You can select the background A bus (3rd row) shifted signal in the 1st row, and the background B bus (4th row) shifted signal in the 2nd row.
To set dual background bus mode, press the [DUAL BKGD BUS] button on the cross-point pad, turning it on.

Notes

- The [DUAL BKGD BUS] button requires an assignment to have been made in the Setup menu *(see page 433)*.
- For the following state of the switcher banks, dual background bus mode is not available.
  - When set to [Dual M/E Assign]
  - When the operation mode (M/E Config) is set to DSK mode
- Not available in free assign mode.

Utility bus mode

The following buses can be assigned to the 1st row to 4th row while the [UTIL] button is pressed on the cross-point pad of the cross-point control block.
While the [UTIL] button is pressed, the cross-point pad displays buttons for utility bus mode, and you can switch the assignment in the 2nd row by pressing the [DME UTL1] button or [DME UTL2] button.

- 1st row: DME external video bus
- 2nd row: DME utility 1 bus (when [DME UTL1] button indicator is lit) or DME utility 2 bus (when [DME UTL2] button indicator is lit)
- 3rd row: Utility 1 bus
- 4th row: Utility 2 bus

You can change the bus assignments of the 1st row to 4th row in the Setup menu. The following bus assignments are supported.

- Background A bus, B bus
- Key 1 bus to key 8 bus

The [UTIL] button operation can be set to hold mode or lock mode.

For details, see "Setting Utility Bus Mode" (page 436) and "Setting the [UTIL] button operation mode" (page 431).

Notes

- Not available in key/AUX bus delegation mode and free assign mode.
- Not available when dual background bus mode is set.
- If a key bus is assigned using the [UTIL] button, the key source signal cannot be selected.

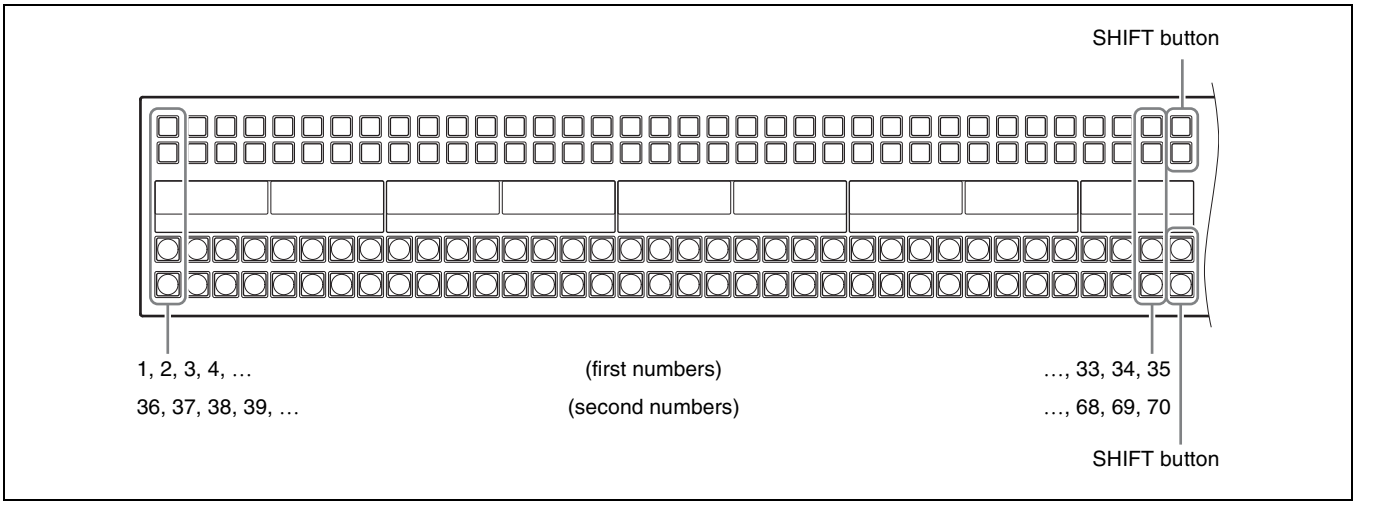
Signal Assignment and Selection

Assigning signals to buttons

Each cross-point button has a button number, which you use to assign a signal.
Signals input to the input connectors (primary inputs) and signals generated within the switcher can be selected.
Each button has assigned to it a video signal and a key signal, forming a pair. You can set the video and key combinations in the Setup menu.

For details, see "Creating Cross-Point Assign Tables" (page 413).

Cross-point control block button numbers



On the M/E and PGM/PST banks, each cross-point button has two button numbers, and you use the [SHIFT] button to switch between these numbers.
In the case of a 36-button layout, the button numbers are as follows.

Button	Number when the shift button is not pressed (unshifted state)	Number when the shift button is pressed (shifted state)
From left side to 35th	1 to 35	36 to 70

The rightmost (36th) button is used as the [SHIFT] button. When selecting the signals of button numbers 1 to 35, press the corresponding cross-point button number. When selecting the signals of button numbers 36 to 70, press the [SHIFT] button and the corresponding cross-point button number.

Notes

- The [SHIFT] button functions in the mode (hold/lock) set in the Setup menu.
  You can also disable the [SHIFT] button function.
  For details, see "Setting the [SHIFT] button operation mode" (page 414).
- The [SHIFT ALL] button assigned to the cross-point pad is enabled, even if the [SHIFT] button use is not set. In this case, the button numbers are 1 to 36 in the unshifted state, and 37 to 72 in the shifted state.
- You can use the rightmost button (36th) as a [SIDE FLAG] button. In this case, the [SHIFT] button moves one position to the left to number 35, and the button numbers are offset by one.
  For details about the [SIDE FLAG] button, see "Assigning the [SIDE FLAG] Button" (page 416).

Button numbers in the AUX bus control block (AUX bus operation mode)

The 1st row and 2nd row are used as bus selection delegation button rows, and the 3rd row and 4th row are used as signal selection cross-point button rows.
The button numbers vary depending on the state of the [2ND DELG] button (lit/unlit) in the cross-point pad.

When the [2ND DELG] button is lit (second delegation mode)

The bus selected by the delegation buttons in the 1st row is assigned to the 3rd row, and the bus selected by the delegation buttons in the 2nd row is assigned to the 4th row.
In the case of a 36-button layout, the button numbers are as follows.

Button	Number when the shift button is not pressed (unshifted state)	Number when the shift button is pressed (shifted state)
From left side to 35th	1 to 35	36 to 70

The rightmost (36th) button is used as the [SHIFT] button. When selecting the bus/signals of button numbers 1 to 35, press the corresponding cross-point button number. When selecting the bus/signals of button numbers 36 to 70, press the [SHIFT] button and the corresponding cross-point button number.

Note

The [SHIFT] button functions in the mode (hold/lock) set in the Setup menu.
You can also disable the [SHIFT] button function for the 3rd row/4th row cross-point buttons.

For details, see "Setting the AUX Bus Operation Mode" (page 417) and "Setting the [SHIFT] button operation mode" (page 414).

When the [2ND DELG] button is not lit

The bus selected by the delegation buttons in the 1st row or 2nd row is assigned to the 3rd row and 4th row.
In the case of a 36-button layout, the button numbers are as follows.

Button row	Button	Button number/ [SHIFT] button
1st row, 3rd row	From left side to 35th	1 to 35 While the [SHIFT] button is held down: 36 to 70
	36th	[SHIFT] button (hold mode)
2nd row, 4th row	From left side to 35th	36 to 70
	36th	[SHIFT] button (always lit)

The [SHIFT] buttons in the 1st row and 3rd row operate in hold mode, and you can select a signal on the shifted state of a button while pressing the [SHIFT] button.
The [SHIFT] buttons on the 2nd row and 4th row are always lit, and have no effect when pressed.

Inhibiting Operation of Cross-point Buttons

Inhibiting operation of each cross-point button

For each cross-point button, you can temporarily inhibit operations.

Note

This setting is cleared when you reset the control panel.

To enable inhibit setting operation, assignment to the [XPT INHBT SET] button and [XPT INHBT ALLCLR] button in the cross-point pad is required in the Setup menu.

For details, see "Assigning a function to a cross-point pad button" (page 433).

Buses for which operations can be inhibited

You can specify the cross-point button rows in the cross-point control block.
For example, if you inhibit one cross-point button in the cross-point control block, this inhibits operation of all cross-point buttons with the same number in the following buses.

- Background A and background B buses
- Key 1 bus to key 8 bus
- Utility 1 bus and utility 2 bus
- DME utility 1 bus and DME utility 2 bus
- DME external video bus

Setting inhibit for a cross-point button

Press and hold the [XPT INHBT SET] button, and press the target cross-point button to inhibit.
While the [XPT INHBT SET] button is pressed, the inhibited buttons flash amber.

Notes

- Nothing is displayed on inhibited cross-point buttons.
- Even when you inhibit operation of a cross-point button, macro attachment settings are still possible.

Releasing inhibit mode for a cross-point button

Press and hold the [XPT INHBT SET] button, and press the target cross-point button to release.

Releasing inhibit mode for all buttons

Press and hold the [XPT INHBT SET] button, and press the [XPT INHBT ALLCLR] button.

Inhibiting (protect) operation of each cross-point button row

For each cross-point button row on the cross-point control block, you can temporarily inhibit button operations.

The [ROW-1 PROT] to [ROW-4 PROT] buttons used for protecting rows are assigned to the cross-point pad in the Setup menu *(see page 433)*.
Press the [ROW-1 PROT] to [ROW-4 PROT] buttons, turning them on, to inhibit button operation in the target cross-point button rows (1st row to 4th row).

Signal Name Display

You can attach a name (source name) to the signal assigned to a cross-point button, with a maximum of 16 characters.
The specified source name appears on the display of the cross-point control block or AUX bus control block (AUX bus operation mode).
There are six display modes, depending on the information to display and format, switched using the display mode buttons on the cross-point pad.

For details about the display, see "Cross-Point Control Block" (page 22) and "AUX Bus Control Block" (page 46).

Note

When a signal on the shifted state of a cross-point button is selected, the shifted signal name is displayed.

Colors of lit cross-point buttons

In a particular row of cross-point buttons, only the last pressed button is active, and is lit amber or red. Amber indicates the “low tally” state and red indicates the “high tally” state, indicating whether or not the selected signal appears in the final output video.

Color of button when lit	State	Meaning
Amber [a)]	Low tally	Does not appear in final output video
Red	High tally	Appears in final output video

a) If secondary delegation mode is set on the AUX bus control block (AUX bus operation mode), the 4th row buttons are lit green.

Cross-point indicators

Indicators are lit the color of the video signal source color assigned to the buttons in the 3rd row of the cross-point control block/AUX bus control block (AUX bus operation mode).
The color of the cross-point indicators does not change even if a 3rd row button is lit red or amber.

Transitions

Overview

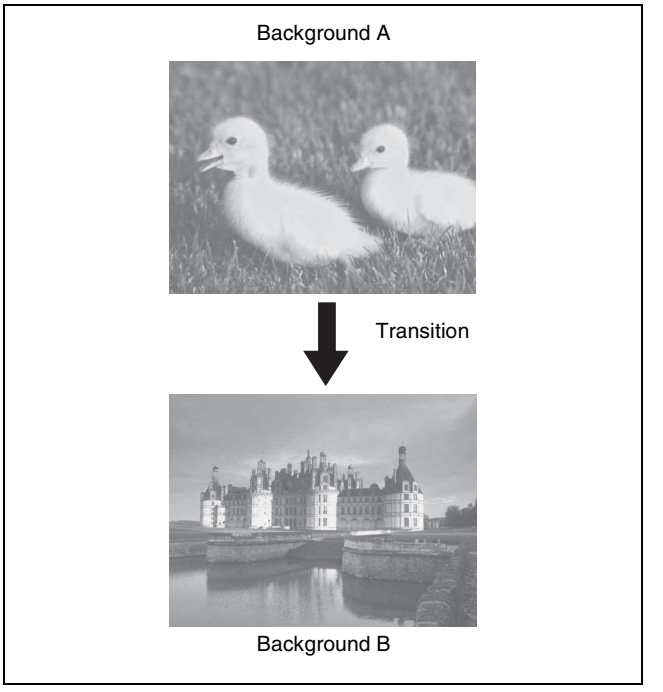
On each switcher bank (M/E and PGM/PST) the background can be combined with one or more keys (1 to 8) to execute a transition.

Note

For details about the keys that can be used on each switcher bank in 4K format, see *“Keys supported in 4K format” (page 107).*

Changing the background

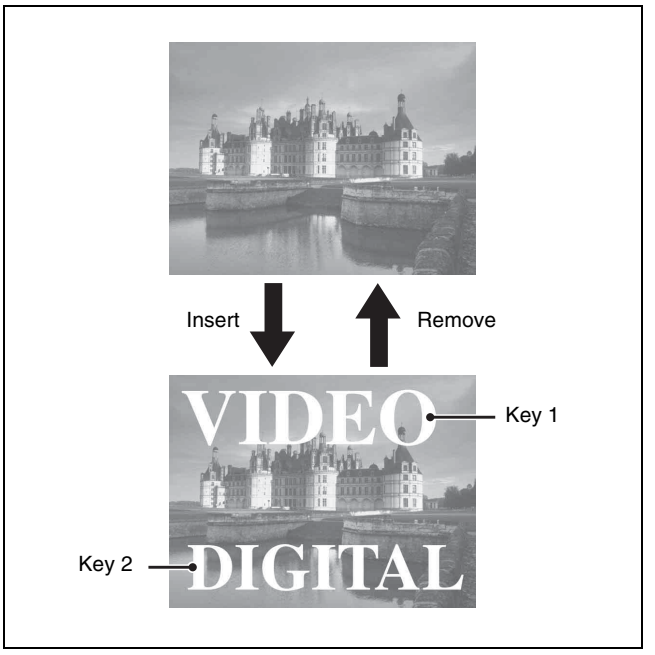
A background transition switches from the video selected on the background A bus (the current video) to the video selected on the background B bus (the new video).

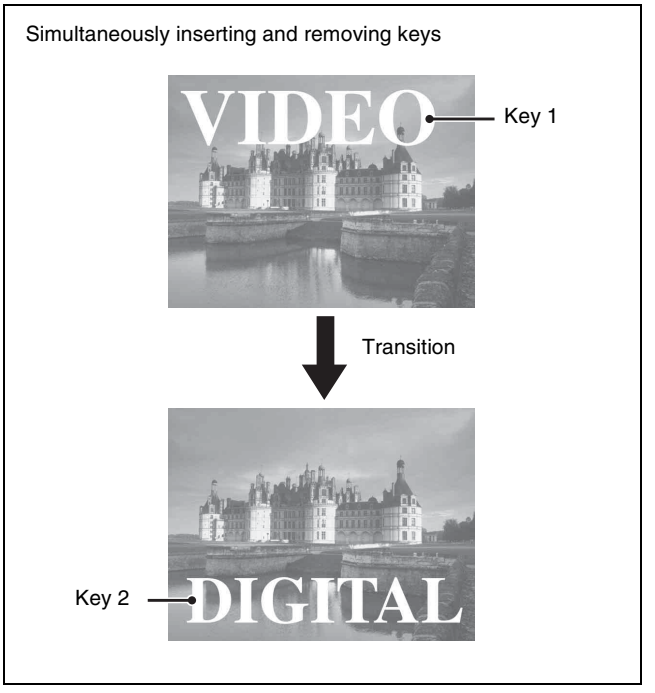


In the default selection of flip-flop mode *(see page 96)*, the background always switches in the direction A bus → B bus. When the transition completes, the cross-point selections on the A and B buses are interchanged.

Inserting and removing a key

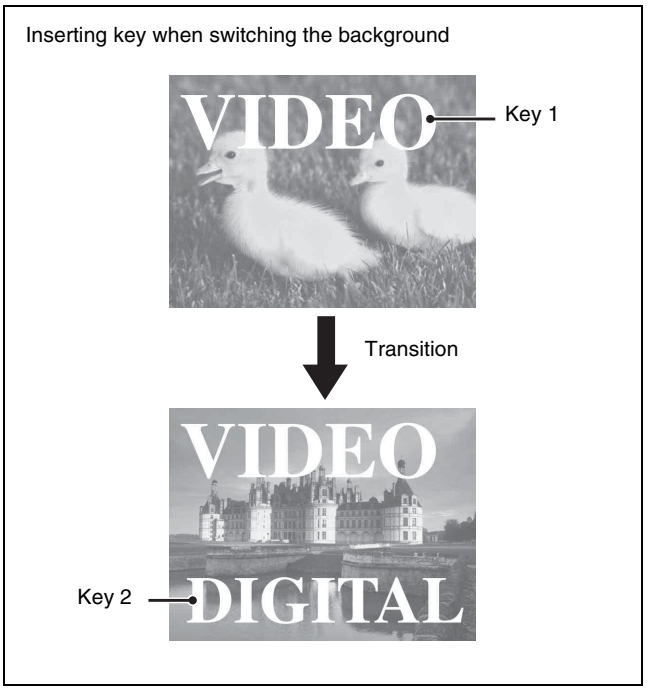
This inserts a key in the current video. If you select a key which is already inserted, the transition will remove the key.
A simultaneous combination of inserting and removing keys is also possible.

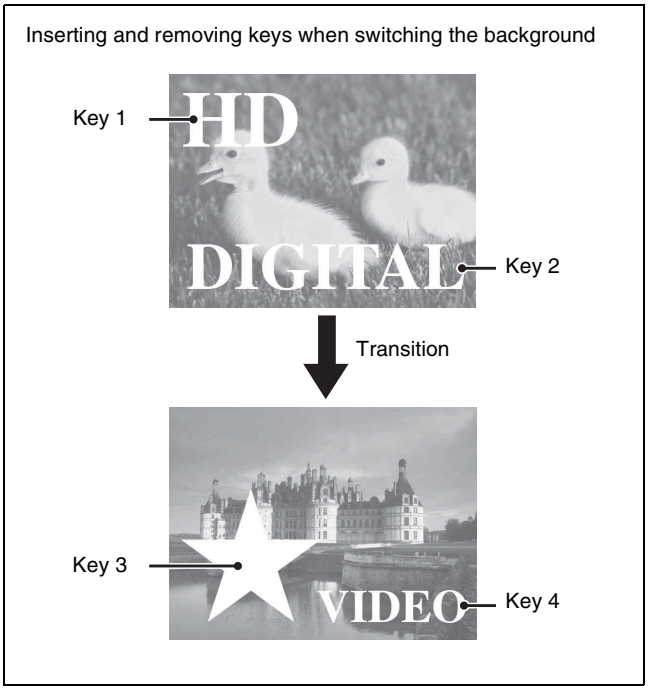




Combining a background and key

You can simultaneously insert and remove keys when switching the background.





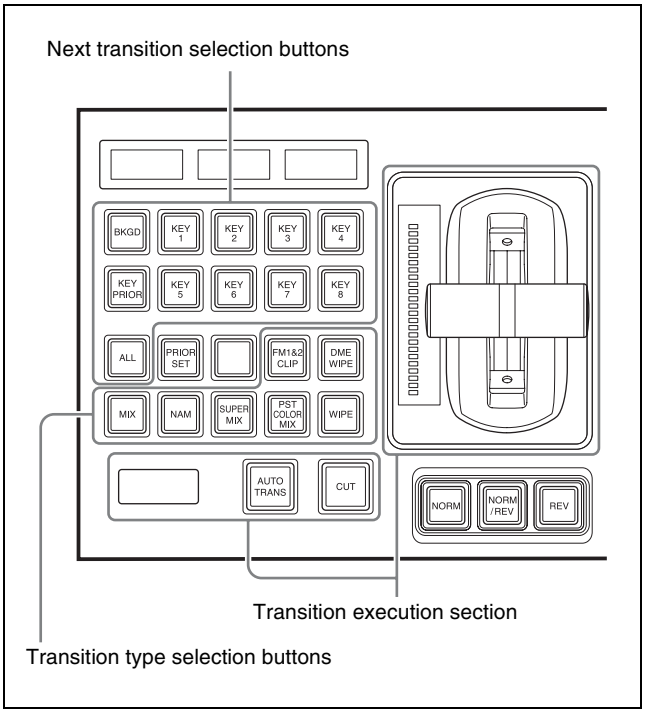
Transition Type

Type	Description	Independent key transitions
Mix	The new video progressively fades in over the current video. The sum of the two video outputs is maintained at a constant, with the output of each at 50% at the mid-point of the transition (i.e., when the fader lever is in the center position).	Selectable
NAM (non-additive mix)	The current video and new video signals are compared, and the signal with the higher luminance level is given priority in the output. The signals are compared at the mid-point of the transition when both signals are at 100%, at which point the signal with the higher luminance level is output.	Not selectable
Super mix	The current video is maintained at 100% output for the first half of the transition as the new video is mixed while increasing progressively to 100% at the mid point of the transition.	Not selectable
Preset color mix	A color matte (unpatterned display) is inserted during the transition where the current video is switched to the new video in a two-stage transition.	Not selectable
Wipe	A wipe switches from the current video to the new video using a predetermined pattern.	Selectable
DME wipe	The current video switches to the new video, similar to a wipe, using a DME effect.	Selectable
Clip transition	Plays back a frame memory clip (movie) linked to a mix or wipe transition.	Not selectable
Cut	The new video instantaneously replaces the current video.	Selectable

Basic Operation for Transitions

Transition operations are performed using the transition control block. Only background transitions can be executed on the simple-type transition control block.

Operations on the transition control block



Transition control block

1 Select the background video using the background A bus cross-point buttons in the cross-point control block.

2 Select the part of the image to change in a transition using the next transition selection buttons in the transition control block.

To change the background: Press the [BKGD] button, turning it on.

To insert or remove a key: Press the [KEY1] to [KEY8] buttons, turning them on.

To enable the key overlay order (priority) setting after the transition: Press the [KEY PRIOR] button, turning it on.

To remove all the currently inserted keys: Press the [BKGD] button twice in rapid succession (available only when double-press operations are enabled in the Setup menu).

To change preset keys and backgrounds simultaneously: Press the [ALL] button.

For details about double-press operation settings of the [BKGD] button, see "Setting the Button and Fader Lever Operation Mode" (page 430).

For details about settings of the [ALL] button, see "Setting the Operation Mode of the [ALL] Button in the Transition Control Block" (page 431).

Note

More than one next transition selection buttons can be pressed and lit at the same time.

3 To change the key overlay sequence for a transition, set the key priority for after the transition.

For details about the method of operation, see "Key Priority Settings" (page 86).

4 Select the video for after the transition executes.

Select the background video using the background B bus cross-point buttons.
To insert a key, select the key signal, and make key settings as required.

For details about key settings, see "Keys" (page 107).

To carry out an instantaneous cut transition, skip to step **7**.

5 Select the transition type using the transition type selection buttons.

To switch gradually to the new video overlaid on the current video: Press the [MIX], [NAM], [SUPER MIX], or [PST COLOR MIX] button, turning it on.
To switch from the current video to the new video using a wipe: Press the [WIPE] or [DME] button, turning it on.
To play a frame memory clip while switching from the old video to the new video: Press the [FM1&2 CLIP], [FM3&4 CLIP], [FM5&6 CLIP], or [FM7&8 CLIP] button corresponding to the frame memory clip to use, turning it on.

You can also use the Misc >Transition menu to select a transition type for a switcher bank *(see page 89)*.

Note

You can change the assignment of the transition selection buttons in the transition control block in the Setup menu *(see page 410)*.

6 Make the required settings, according to the selected transition type.

- Super mix settings *(see page 89)*
- Preset color mix settings *(see page 89)*
- Wipe settings *(see page 140)*
- DME wipe settings *(see page 159)*
- Clip transition settings *(see page 179)*
- Transition rate (the time from the beginning of a transition to its completion) settings *(see page 91)*

Using transition preview mode *(see page 98)*, you can check the transition on the preview monitor.

Note

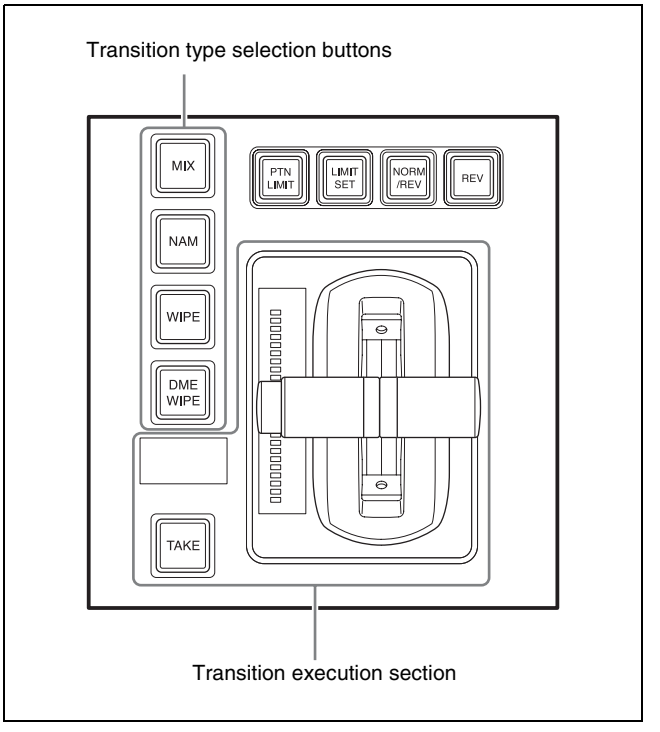
When you have selected a wipe or DME wipe as the transition type, set the transition execution range *(see page 93)*.

7 Carry out the transition in the transition execution section.

To switch video gradually due to a mix or wipe, for example: Press the [AUTO TRANS] button, or operate the fader lever.
When you press the [AUTO TRANS] button, the transition is executed at the set transition rate.
To switch video instantaneously: Press the [CUT] button.

For details, see "Executing a Transition" (page 91).

Operations on the transition control block (simple type)



Transition control block (simple type)

1 Select the background video on the cross-point control block.

Select the video to display before execution of the transition using the background A bus cross-point buttons, and the video to display after the transition using the background B bus cross-point buttons.

2 Select the transition type using the transition type selection buttons.

*For details, refer to step **5** in "Operations on the transition control block" (page 84).*

3 Make the required settings, according to the selected transition type.

*For details, refer to step **6** in "Operations on the transition control block" (page 84).*

4 Carry out the transition in the transition execution section.

Press the [TAKE] button or operate the fader lever. Pressing the [TAKE] button executes the transition at the preset transition rate.

For details, see "Executing a Transition" (page 91).

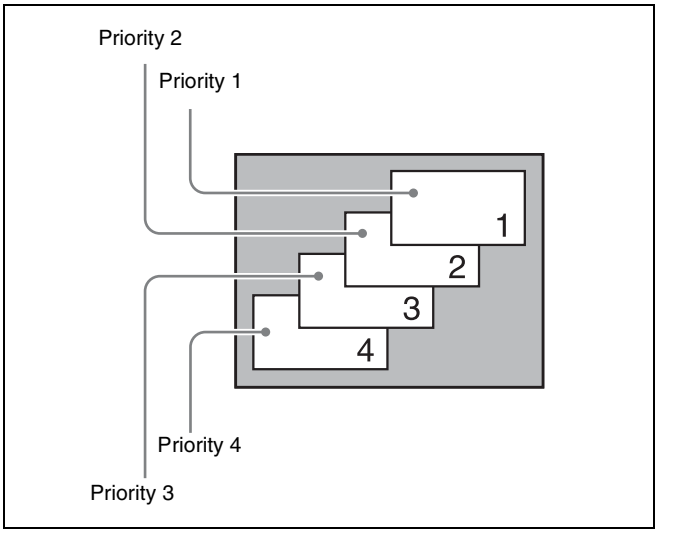
Note

You can also use the fader lever as split faders *(see page 97)*.

Key Priority Settings

If a number of keys are already inserted in the current video, you can check or change the overlay sequence (key priority).
When a key priority ([KEY PRIOR] button) is selected as the next transition, you can also change the key priority when switching to the new video.

The key priority values are from 1 to 4, with a higher priority key being "in front" as seen on the screen.

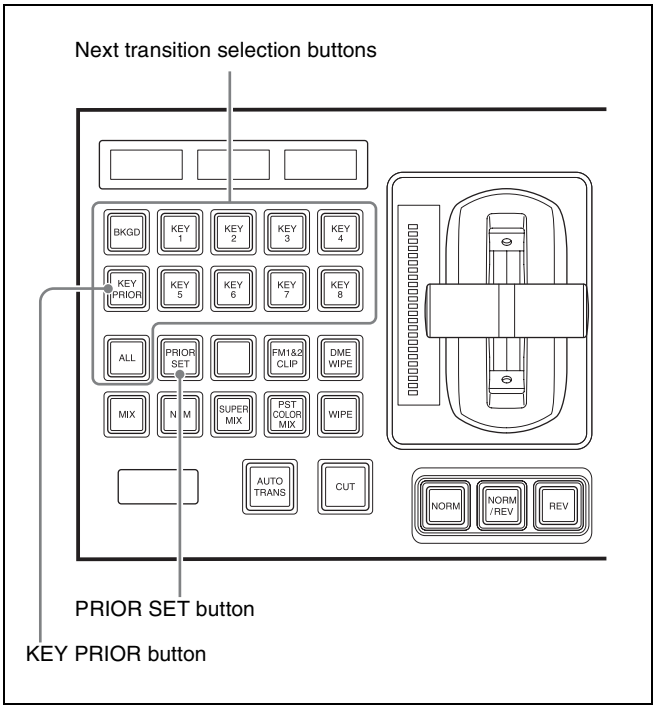


You can set the key priority for keys inserted in the current video and for keys after the transition.
The key priority setting can be set using either the [PRIOR SET] button in the transition control block, or using the Misc >Key Priority menu for the M/E or PGM/PST bank.

Note

When the operating mode is set to multi program, the key priority setting cannot be made.

Setting the Key Priority (Transition Control Block)

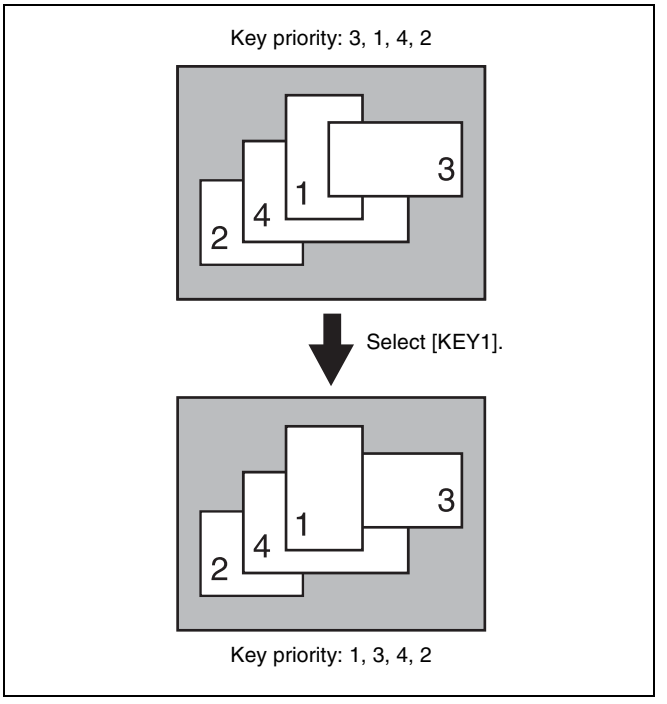


Transition control block

Note

Setting the key priority is not supported using the transition control block (simple type).

Changing the key priority



1 Press and hold the [PRIOR SET] and press the [KEY PRIOR] button to select key priority setting mode.

When the [KEY PRIOR] button is lit green, key setting mode for after the transition is selected. When the [KEY PRIOR] button is not lit, key setting mode for the currently inserted keys is selected.

2 Set the key to display at the front.

Set each group, consisting of key 1 to key 4 and key 5 to key 8.
Press and hold the [PRIOR SET] button and press the [KEY1] to [KEY4] buttons or [KEY5] to [KEY8] buttons.
The selected key is set for display at the front within the group.
To set the key priority for after the transition to the same setting as the current setting, press and hold the [PRIOR SET] button and press the [BKGD] button.

Notes

- You can set the key priority within the key 1 to key 4 group and key 5 to key 8 group, but not for combinations of keys from different groups. For example, it is not possible to set a sequence of keys 1, 5, and 2.
- The [BKGD] button is active only when in the mode for changing the key priority for after the transition.

The current key priority can be checked on the program monitor for the switcher bank.
When the [KEY PRIOR] button is selected in a next transition, the key priority for after the transition can be checked on the preview monitor for the switcher bank.

3 Repeat steps **1** and **2** to set the key priority.

Key Priority Setting Operations (Menu)

The priority of the key 1 to key 4 group and key 5 to key 8 group (higher/lower) sets the key sequence within each group.
The keys in the higher group have priority 1 to 4, and the keys in the lower group have priority 5 to 8.
This section describes setting the key priority on the M/E-1 bank as an example.

Changing the key priority

1 Display the key priority setting menu.

To set the key priority of the currently inserted keys, open the M/E-1 >Misc >Key Priority menu (1173).

To set the key priority of the keys for after the transition, open the M/E-1 >Misc >Next Key Priority menu (1174).

2 In the <Higher Group> group, select the group to display at the front.

The selected group button is lit green, indicating that the priority of the keys within the group can be set.

3 In the <Priority1>, <Priority2>, <Priority3>, and <Priority4> groups, select the key for each priority level.

The selected keys are set priority 1 to 4.

Note

It is not possible to select the same key for different priority levels.

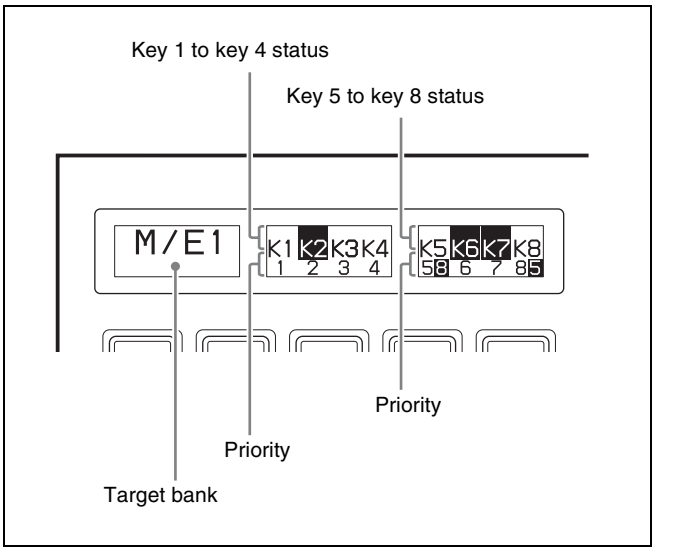
4 In the <Lower Group> group, select the other group, then select the key for each priority level in the <Priority5>, <Priority6>, <Priority7>, and <Priority8> groups.

The selected keys are set priority 5 to 8.

The current key priority can be checked on the program monitor for the switcher bank.
When the [KEY PRIOR] button is selected in a next transition, the key priority for after the transition can be checked on the preview monitor for the switcher bank.

Displaying the Key Output Status and Priority

You can check the key status and priority on the display of the transition control block.



Transition control block display

Key output status display

When a key is currently inserted, “K1” to “K8” are displayed highlighted.

Key priority display

The key priority is displayed using the numbers 1 to 8 under the status indicators for each key corresponding to the priority levels 1 to 8.
If the [KEY PRIOR] button is selected in a next transition, the priority of keys for after the transition are displayed highlighted on the right of the current priority. The key priority for after the transition is not displayed if the values are the same as the current priority setting.

Note

Only the priority for after the transition is displayed while setting the priority of keys for after the transition.

Transition Type Selection

For details about selecting the transition type on the transition control block, see "Basic Operation for Transitions" (page 84).

Setting the Transition Type (Menu)

You can select the transition type in the Misc >Transition menu for each switcher bank.
This section describes setting the transition type on the M/E-1 bank as an example.

1 Open the M/E-1 >Misc >Transition menu (1171).

2 Select the transition type in the <Transition Type> group.

Make the required settings, according to the selected transition type.
- Super mix settings *(see page 89)*
- Preset color mix settings *(see page 89)*

Note

When multi-program mode is selected, there may be cases in which two or more transition types have been selected.

Super Mix Settings

You can set the output levels of the current and new video signals at the mid-point of the transition, in the range 0 to 100%.

1 Open the M/E-1 >Misc >Transition menu (1171).

2 Select [Super Mix] in the <Transition Type> group.

3 Set the following parameters.

No.	Parameter	Adjustment
2	A Gain	Background A output level
3	B Gain	Background B output level

Preset Color Mix Settings

You can specify the color for the color matte inserted in a preset color mix by adjusting the luminance, saturation, and hue values.

Also, in place of a color matte you can use an image selected on the utility 2 bus.

Note

In multi-program mode, you can use a preset color mix only when selecting the background for the next transition.

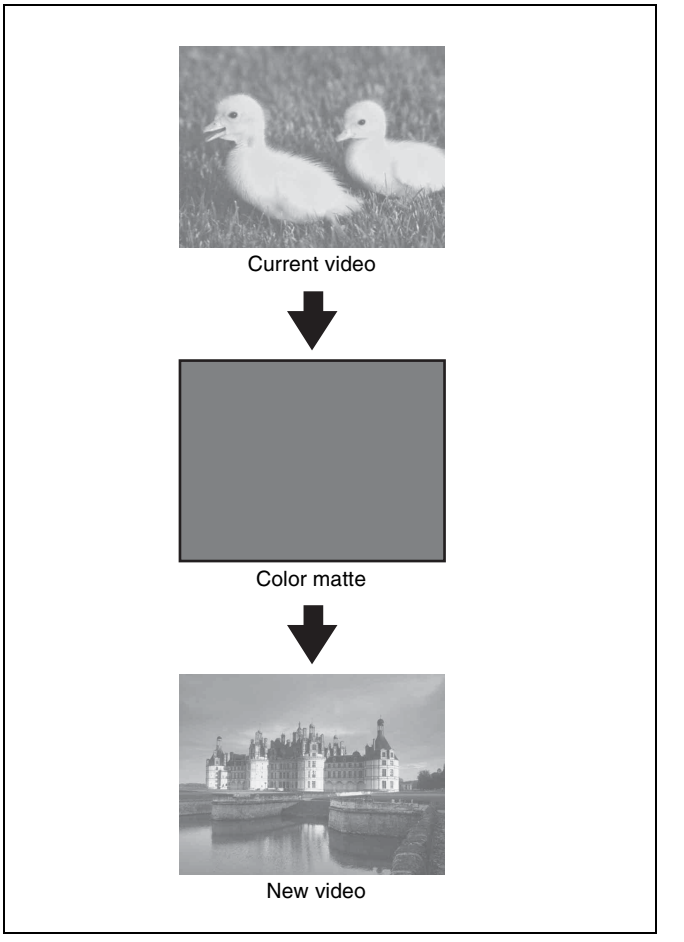
One-stroke mode

This mode performs a preset color mix in a single transition.
When bus fixed mode is selected in the Setup menu, a preset color mix is always carried out in one-stroke mode.

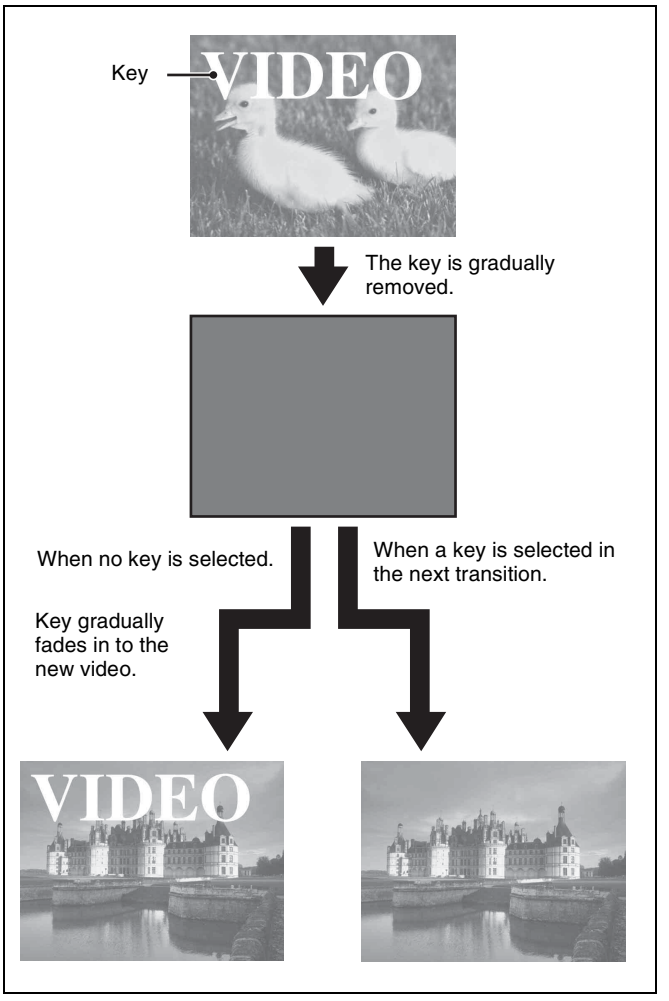
One-time mode

This mode switches to the previous transition type automatically when a preset color mix is completed.

When only the background is changed

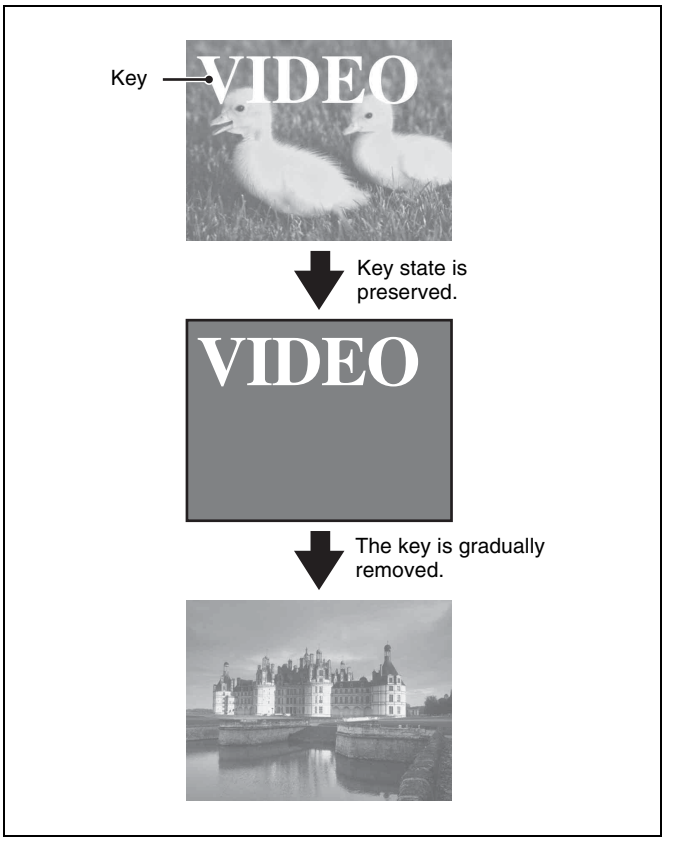


When a key is inserted



It is possible to preserve the key state while carrying out the color matte mix using settings in the Setup menu.

When, with a key inserted, a key is selected in the next transition



Setting the color matte

1 Open the M/E-1 >Misc >Transition menu (1171).

2 Select [Preset Color Mix] in the <Transition Type> group.

3 Select [Flat Color] in the <Preset Color Mix Fill> group.

To use the utility 2 bus signal, select [Utility 2 Bus].

4 Set the following parameters.

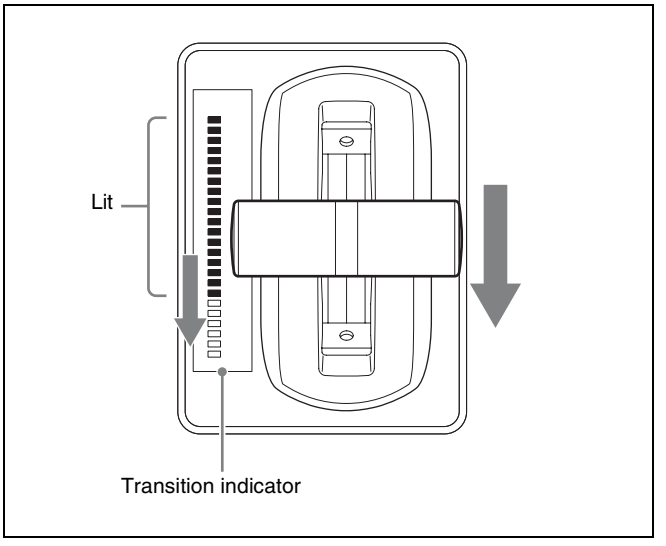
No.	Parameter	Adjustment
2	Luminance	Luminance
3	Saturation	Saturation
4	Hue	Hue

Executing a Transition

There are two modes for carrying out a transition: auto transitions are carried out by a button operation, and manual transitions are carried out using the fader lever. It is also possible to combine both methods, taking control with the fader lever of an auto transition which has partly completed, or complete a transition started with the fader lever as an auto transition.
By combining common transitions with independent key transitions, different transition types can be applied to the background and keys, for example allowing a key wipe combined with a background dissolve.

Transition Indicator

In each of the M/E banks and PGM/PST bank, to the left of the fader lever is a transition indicator composed of multiple LEDs. This indicator shows the state of the transition, whether auto or manual, by which LEDs are lit.



For example, in the previous illustration, it can be seen that the transition is more than half completed.
When the transition is completed, all of the LEDs turn off.

Setting the Transition Rate

There are two ways of setting the transition rate: using the Flexi Pad control block or numeric keypad control block to enter a numeric value, or using the Misc >Transition menu for the M/E or PGM/PST bank.
You can also display the transition rate, independent key transition rate, and fade-to-black transition rate for each bank, and change the settings *(see page 189)*.

Note

When a clip transition is selected as the transition type, it is not possible to set the transition rate.

Frame input mode and timecode input mode

For numeric input of the transition rate value, there are two modes: frame input mode and timecode input mode. You select one of these modes using either the Flexi Pad control block or the numeric keypad control block.

Frame input mode

The entered value sets the number of frames.
Example: Entering 123 constitutes an entry of 123 frames

Timecode input mode

The entered value sets the number of seconds and frames.
Example: Entering 123 constitutes an entry of 1 second 23 frames.

Note

You can enter a value of up to 999 in frame input mode, but a value greater than 10 seconds cannot be entered in timecode input mode.

Frame display mode and timecode display mode

For display of the transition rate, there are two modes: frame display mode and timecode display mode. You can select the mode in the Setup menu.

For details, see "Setting the Transition Rate Display Mode" (page 428).

Note

The display mode setting is common to the M/E and PGM/PST banks.

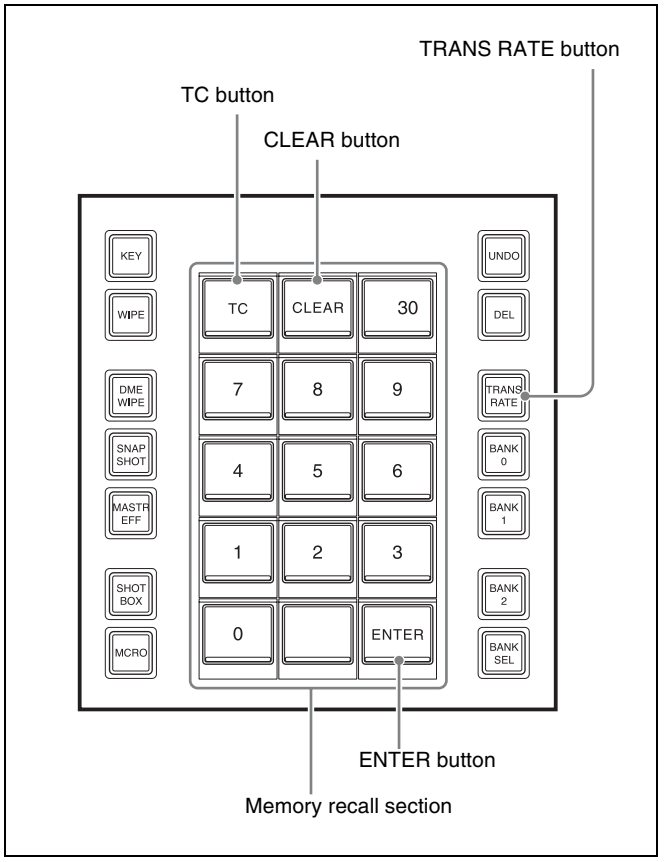
Frame display mode

Displays the number of frames (0 to 999). A value also entered in timecode input mode is converted for display as a number of frames.

Timecode display mode

Displays a timecode value (seconds and frames). A value also entered in frame input mode is converted for display as a timecode value.

Setting the transition rate (Flexi Pad control block)



Flexi Pad control block

1 In the Flexi Pad control block of the target switcher bank, press the [TRANS RATE] button.

This switches the memory recall section to transition rate operation mode.

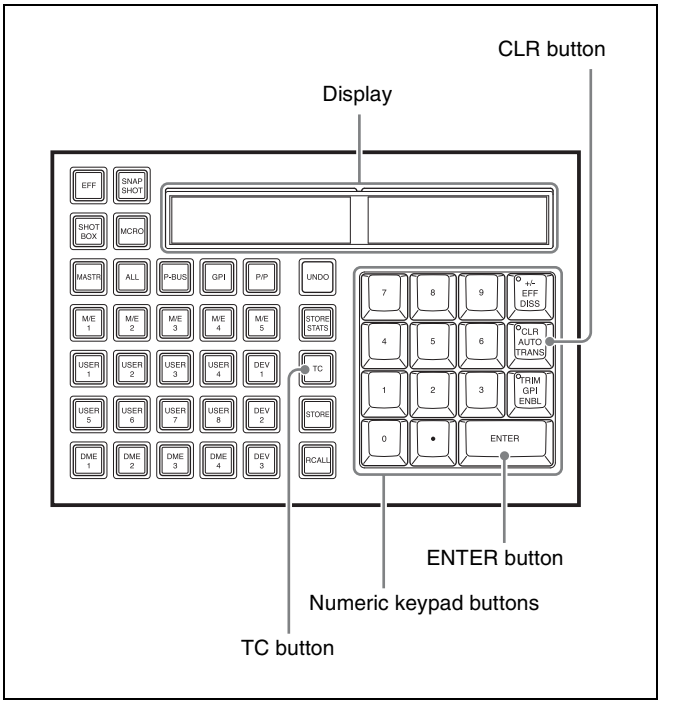
2 Enter the transition rate in the numeric keypad.

You can switch the input mode using the [TC] button. In frame input mode, enter three digits. In timecode input mode, enter four digits.
The entered value appears in the top right of the memory recall section.
To clear the entered value, press the [CLEAR] button.

3 Press the [ENTER] button.

Setting the transition rate (utility/shotbox control block and numeric keypad control block)

Pressing the [TRANS RATE1] to [TRANS RATE3] buttons on the utility/shotbox control block displays the transition rates set in the switcher bank or key on the memory recall buttons. Pressing a memory recall button displaying a transition rate enables you to enter a transition rate using the numeric keypad control block.
You can change the target that is displayed on the [TRANS RATE1] to [TRANS RATE3] buttons in the Setup menu *(see page 426)*.



Numeric keypad control block

1 Press the [TRANS RATE1] to [TRANS RATE3] buttons in the utility/shotbox control block.

This switches the memory recall buttons to transition rate display mode.

2 Press a memory recall button displaying the transition rate to set, turning it on.

The region name and transition rate appears in the numeric keypad control block display.

3 Enter the transition rate using the numeric keypad in the numeric keypad control block.

You can switch the input mode using the [TC] button. In frame input mode, enter three digits. In timecode input mode, enter four digits.
To clear the entered value, press the [CLR] button.

4 Press the [ENTER] button.

The input is applied, and the specified value is reflected in the memory recall button in the utility/shotbox control block.
The specified value is also displayed in the transition rate display section of the transition control block.

To enter a difference value

To set the transition rate by specifying a difference value from the current value, press the [+/−] button, enter the difference value, and press the [TRIM] button. Each time you press the [+/−] button, it toggles between plus (+) and minus (–).

Setting the transition rate (menu)

This section describes setting the transition rate on the M/E-1 bank as an example.

1 Open the M/E-1 >Misc >Transition menu (1171).

2 Select the transition type in the <Transition Type> group.

3 Set the transition rate.

No.	Parameter	Adjustment
1	Transition Rate	Transition rate

To display the transition rates in list view and change the settings

You can display the transition rate, independent key transition rate, and fade-to-black transition rate for each bank, and change the settings *(see page 189)*.

Pattern Limit

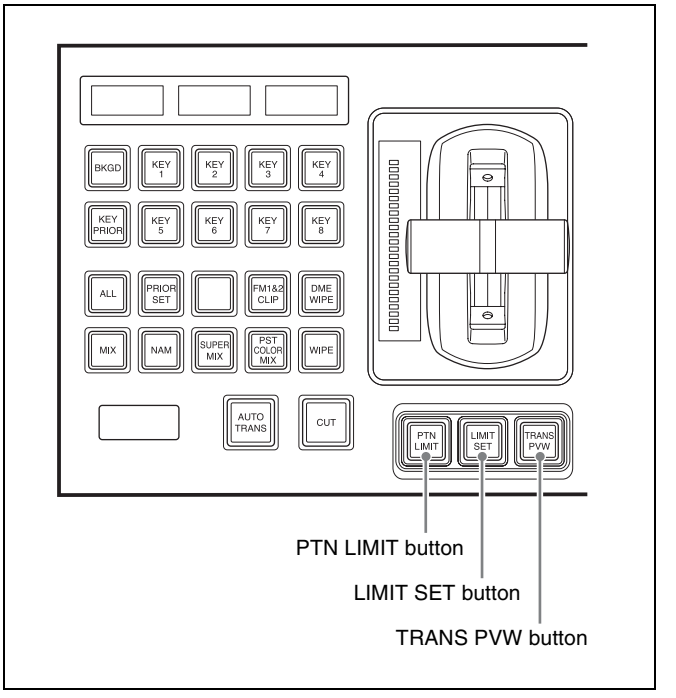
When a wipe or DME wipe is selected as the transition pattern, you can specify the transition execution limits for each bank independently.
When the pattern limit function is enabled, the following effects occur, depending on the execution limit settings.

- When the limit value is set to 50%, the effect at the end of the transition is the same as when the fader lever is at the center position with the pattern limit function disabled; namely, the video is not completely switched.
- When the limit value is set to the minimum of 0%, the video is not switched even when the transition is executed.
- When the limit value is set to the maximum of 100%, the image changes in the same way as when the pattern limit function is off, but when the transition is completed, the cross-point selections on the background A and B buses do not interchange.

There are two ways of setting a pattern limit: either by operating the fader lever to save the fader position, or by using the Wipe >Edge/Direction menu or DME Wipe >Edge/Direction menu for the M/E or PGM/PST bank.

Notes

- A pattern limit only applies when a wipe or DME wipe is selected as the transition type.
- In multi-program mode, pattern limits can be used only when the background transition type is a wipe or DME wipe. If a key is selected for the next transition, the pattern limit settings are reflected in the wipe or DME wipe selected for the background transition type.



Transition control block

To perform pattern limit operations, the [PTN LIMIT] and [LIMIT SET] buttons must be assigned to buttons in the transition control block beforehand in the Setup menu *(see page 410)*.

Note

The [PTN LIMIT] and [LIMIT SET] buttons are set on the transition control block (simple type) by default. Also, transition preview and cut operations are not supported.

Setting the pattern limit with the fader lever

1 Move the fader lever to the position corresponding to a particular pattern size.

Notes

- First make sure that the [PTN LIMIT] button is off.
- To adjust while monitoring the video on the preview monitor, first press the [TRANS PVW] button to select transition preview mode *(see page 98)*.

2 Press the [LIMIT SET] button.

This sets the current fader lever position as the pattern limit.

Setting the pattern limit (menu)

This section describes setting the pattern limit on the M/E-1 bank as an example.

1 Display the pattern limit setting menu.

When the transition type is a wipe, open the M/E-1 >Wipe >Edge/Direction menu (1154).
When the transition type is a DME wipe, open the M/E-1 >DME Wipe >Edge/Direction menu (1164).

2 Press [Pattern Limit], turning it on.

3 Set the following parameter.

No.	Parameter	Adjustment
1	Pattern Limit	Pattern limit range [a]

a) 0.00%: Executing the transition does not change the video output.
100.00%: The transition is the same as when the pattern limit is disabled, but the cross-point button selections of the background A and B buses do not interchange when the transition completes.

Executing a pattern limit transition

1 Press the [PTN LIMIT] button.

The [PTN LIMIT] button is lit amber.

2 Execute the transition.

The transition progresses as far as the set pattern limit. Even if the transition completes, the cross-point button assignments of the background A and B buses do not interchange.

3 Execute the transition once again.

The status before the previous transition is restored.

To cancel the pattern limit

If the pattern limit is restored to the previous value by executing step **3**, press the [PTN LIMIT] button, turning it off.
If the pattern limit is applied by executing step **2**, carry out the following procedure.

1 Press the [PTN LIMIT] button.

The [PTN LIMIT] button is lit green.

2 Execute the transition.

When the transition is completed, the [PTN LIMIT] button turns off, and the pattern limit is released. Depending on the transition execution method, the action will be as follows.

- When you press the [CUT] button, the pattern limit is immediately released, and the video switches instantaneously.
- When you press the [AUTO TRANS] button (or [TAKE] button), until the next transition state, the transition is executed over the duration given by the transition rate.
- When you move the fader lever, the transition is executed from the pattern limit state to the state before the pattern limit was executed.
  Moving the fader lever even a little synchronizes the fader lever position with the transition state, and you can move the fader lever either in the forward direction or in the reverse direction.

Depending on the Setup menu settings, the transition is executed at the instant you press the [PTN LIMIT] button, turning the button off. In this case, execution continues for the time specified by the independent transition rate in the menu, up to the next transition state.

To set the transition rate when the pattern limit is released

This section describes setting the transition rate on the M/E-1 bank as an example.

1 In the <Pattern Limit Release> group in the M/E-1 >Wipe >Edge/Direction menu (1154) or M/E-1 >DME Wipe >Edge/Direction menu (1164), select one of the following.

Auto Trans Rate: Transition rate set in the transition control block
Independ Trans Rate: Independent transition rate

2 If [Independ Trans Rate] is selected, adjust the following parameter.

No.	Parameter	Adjustment
1	Transition Rate	Independent transition rate

Executing an Auto Transition

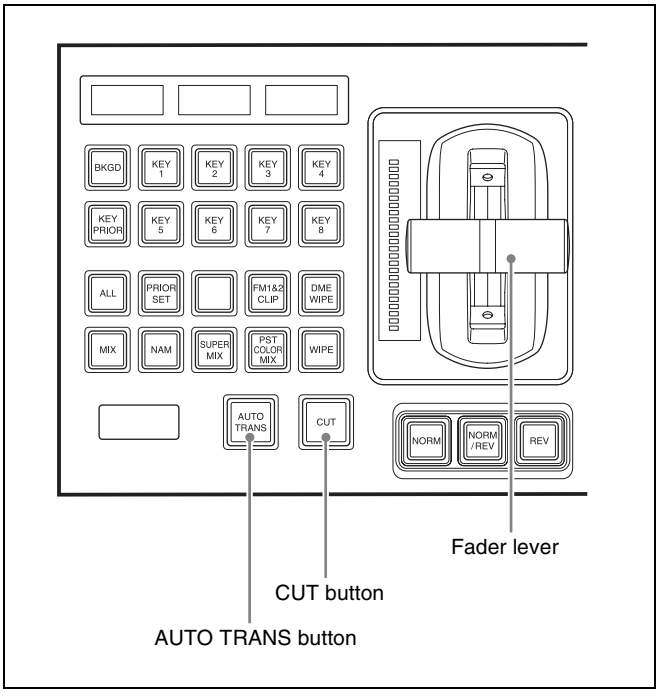
The following two modes can be used for auto transition.

Cut

A cut switches instantaneously from the current video to the new video. When the next transition is a key, the key is inserted (cut in) or removed (cut out) instantaneously.

Auto transition

The transition from the current video to the new video is executed automatically at a constant rate, using the transition effect selected as the transition type.
You can set the transition rate in advance *(see page 91)*.



Transition control block

To execute a transition, use the following procedure in the transition control block.

To switch video instantaneously

Press the [CUT] button.

To switch video gradually

Press the [AUTO TRNS] button.
This executes the transition at the preset transition rate. During the execution of the transition, the [AUTO TRANS] button is lit amber.

To complete a partially executed transition instantaneously

Press the [CUT] button.
The [AUTO TRANS] button turns off.

Note

The [TAKE] button is used, instead of the [AUTO TRANS] button on the transition control block (simple type). Also, cut operations are not supported.

Executing a Transition with the Fader Lever (Manual Transition)

Using the fader lever, you can manually control the progress of the transition effect specified by the transition type from the current video to the new video. Moving the fader lever from one end of its travel to the other completes the transition.

To execute a manual transition with the transition control block fader lever, use the following procedure.

To execute the transition completely

Move the lever over the full range of its travel.

To pause a partly executed transition

Stop moving the fader lever.

To resume a paused transition

Resume moving the fader lever.

Auto/Manual Transition Combination

Using the [AUTO TRANS] button, the [CUT] button, and the fader lever, use the following procedures.

Moving the fader lever during an auto transition

During an auto transition started by pressing the [AUTO TRANS] button, operating the fader lever immediately enables the fader lever, and the [AUTO TRANS] button turns off. Thereafter, the fader lever controls the execution of the transition.

Executing an auto transition after stopping the fader lever mid execution

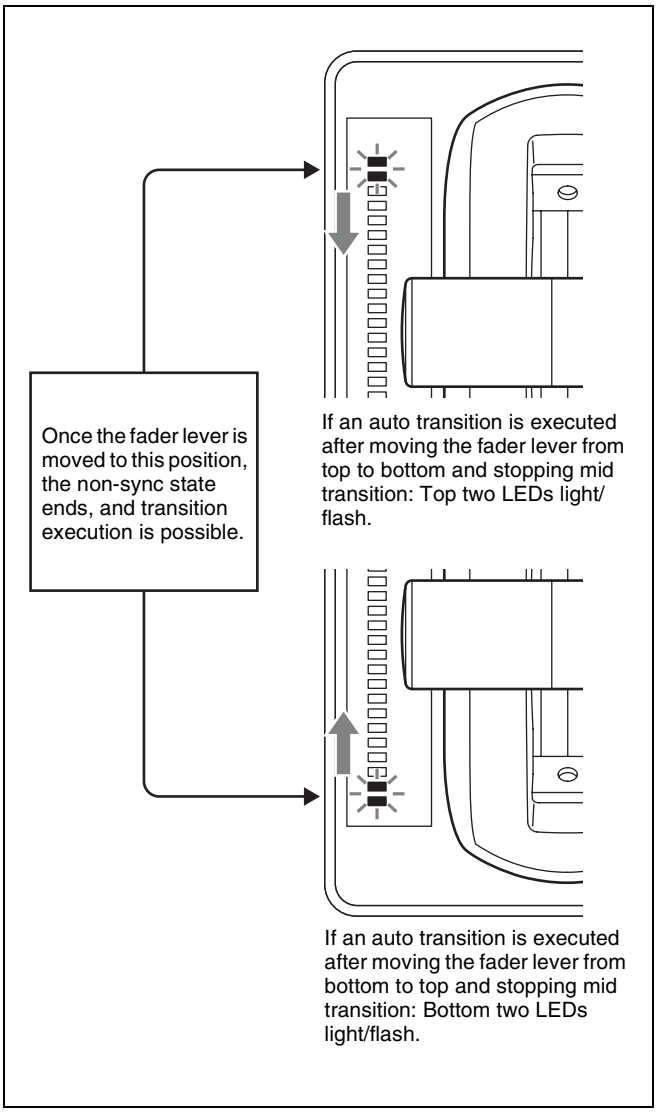
Press the [CUT] button to instantaneously complete the transition.
Press the [AUTO TRANS] button to complete the execution of the rest of the transition at the preset transition rate. For example, if the transition rate is set to 100 frames, and the fader lever has moved through 1/4 of the transition, then the remaining 3/4 of the transition is executed in 100 frames.

Non-Sync State

If the fader lever is in an intermediate position when a transition is completed as an auto transition, then the lever position no longer agrees with the transition state. This is termed non-sync state.
In non-sync state, the position from which a normal sync-state fader lever transition can be resumed is indicated by which of the two transition indicator LEDs (top, bottom, or both ends) are lit or flashing.

- Moving the fader lever toward the position of the lit/flashing LEDs does not execute a transition, but when the fader lever reaches the end position the non-sync

state is released, and it is then possible to execute a transition.



- If the fader lever is moved in the direction away from the lit/flashing LEDs, the transition is executed over the remaining part of the fader lever travel.
- Even in a non-sync state, you can execute an auto transition. During auto transition execution by pressing the [AUTO TRANS] button (or [TAKE] button), the transition indicator shows the transition progress in the usual way, but when the transition completes, they once again indicate the non-sync state.

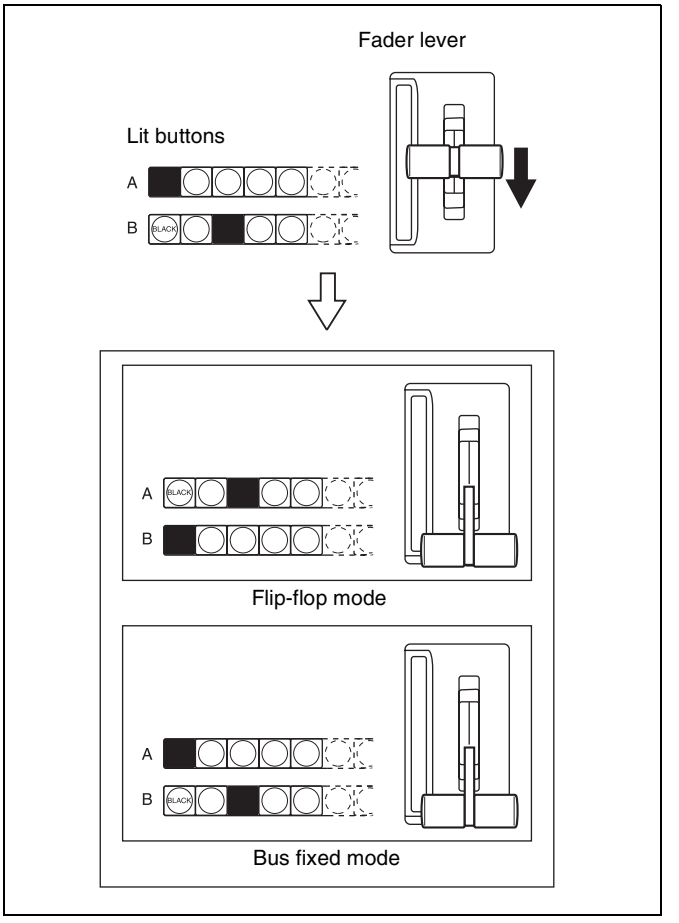
Note

The transition indicator display state (lit or flashing) is set in the Setup menu *(see page 430)*.

Fader Lever Operation in Bus Fixed Mode

Flip-flop mode and bus fixed mode

This section describes flip-flop mode and bus fixed mode on an M/E bank, as an example. The functionality is the same on the PGM/PST bank.
Normally, when a background transition is executed on an M/E bank, the signals selected on the background A bus and background B bus are interchanged at the end of the transition. That is to say, except during a transition, the background output is always from the background A bus. This is called “flip-flop mode.”
The alternative is known as “bus fixed mode,” in which there is no bus interchange between the A bus and B bus signals. In this mode, when the fader lever is at the top of its travel the output from the A bus is always 100%, and when the fader lever is at the bottom of its travel the output from the B bus is 100%.



In bus fixed mode, there is a fixed relationship between the position of the fader lever and the signal output on the background A bus and background B bus. When executing a manual transition, the fader lever must therefore always be moved in the directions shown in the following table according to the transition direction. This does not affect

an auto transition, which can always be executed regardless of the fader lever direction.

Next transition	Transition direction	Fader lever movement
Background	A → B	Top → Bottom
	B → A	Bottom → Top
Key 1 to key 8	On → Off (remove)	Top → Bottom
	Off → On (insert)	Bottom → Top

- When a transition uses a combination of more than one of the background and key 1 to key 8, then the transition for all of these must be in the same direction complying with the above table.
- If as a result of an auto transition, for example, the fader lever position does not agree with the signal output of each bus, a non-sync state *(see page 95)* results and LEDs light/flash at both end positions of the fader lever travel.

Split Fader

Split fader is a function that splits a single fader lever into left and right, allowing you to control background A bus and background B bus transitions independently.

The fader lever on the transition control block (simple type) is split into two by pressing the lock button to unlock the two fader levers for use as split faders.
The split fader levers support the following buses. You can change the settings in the Setup menu.
- Right fader lever: Background A bus (main)
- Left fader lever: Background B bus

The following conditions must be satisfied in order to use the fader lever as split faders.
- Bus fixed mode is set.
- Split faders are enabled.
- Mix or NAM (non-additive mix) is selected for transition type.
- If the transition type is a clip transition, Mix or NAM (non-additive mix) is selected for the background transition type.

If these conditions are not satisfied, only the main (background A bus) fader lever can be operated.

For details about split fader settings, see "Setting the Main Fader Lever" (page 428) and "Enabling/disabling split faders" (page 467).

Split fader operation

The relationship between the position of the fader lever and the output for a mix transition type is given below.

Fader lever position		Output	
Right lever (A bus)	Left lever (B bus)	A bus	B bus
Top	Top	100%	0%
Top	Bottom	100%	100%
Bottom	Top	0%	0%
Bottom	Bottom	0%	100%
Center	Center	50%	50%

The A bus and B bus output for a NAM transition type is an image created using non-additive mixing.

Note

The transition indicator displays the progress of the background A bus.

Transition Preview

With the preview output of the M/E bank and PGM/PST bank, you can check the effect of a transition in advance. To perform a transition preview, the [TRANS PVW] button must be assigned to a button in the transition control block beforehand in the Setup menu *(see page 410)*.

Notes

- It is not possible to carry out a transition preview in the following cases.
  - Transitions in progress
  - Multi-program mode
  - DSK mode
  - Bus fixed mode
- Transition preview operations are not supported using the transition control block (simple type).

There are three modes for a transition preview.

Hold mode: Transition preview mode is enabled only while the [TRANS PVW] button is pressed.

Lock mode: Pressing the [TRANS PVW] button switches between transition preview mode and normal mode each time the button is pressed.

One-time mode: Pressing the [TRANS PVW] button switches to transition preview mode, and the mode returns to normal mode when the transition finishes.

Set the transition preview mode in the following combinations in the Setup menu.

Transition preview mode	<Transition Preview> group in the Engineering Setup >Switcher >Transition menu (7334)	<Trans Pvw> group in the Engineering Setup >Panel >Operation >Custom Button/Fader menu (7326.4)
Lock	Normal	Lock
Hold	Normal	Hold
One-time	One Time	–

For details, see "Setting the Button and Fader Lever Operation Mode" (page 430) and "Setting the transition preview mode" (page 467).

Carrying out a transition preview

1 Press the [TRANS PVW] button in the transition control block.

The [TRANS PVW] button is lit green, and the switcher enters transition preview mode. At this point, the preview output is the same as the program output before the [TRANS PVW] button was pressed.

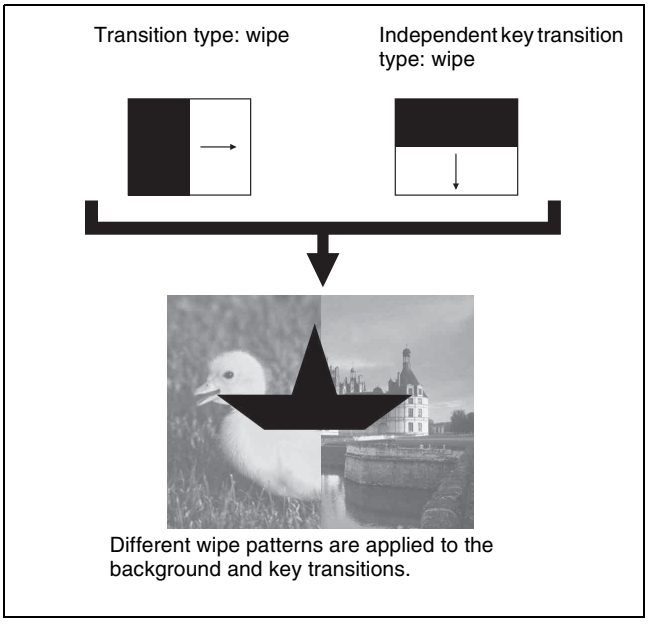
2 Execute the transition.

Operate the fader lever, or press the [AUTO TRANS] button or [CUT] button.
On the preview monitor, you can check the effect of the transition.

Independent Key Transitions

Overview

In addition to common transitions, it is possible to configure independent transitions on the keyers of the M/E banks and PGM/PST bank. These are called "independent key transitions."
By carrying out an independent key transition in combination with a common transition, different transition types can be used for the background and keys.



Different wipe patterns are applied to the background and key transitions.

If the independent key transition mode is set to [Independ] in the Setup menu, you can switch to a different transition type and transition rate when the key is inserted or removed.

For details about independent key transition mode settings, see "Selecting independent key transition mode" (page 467).

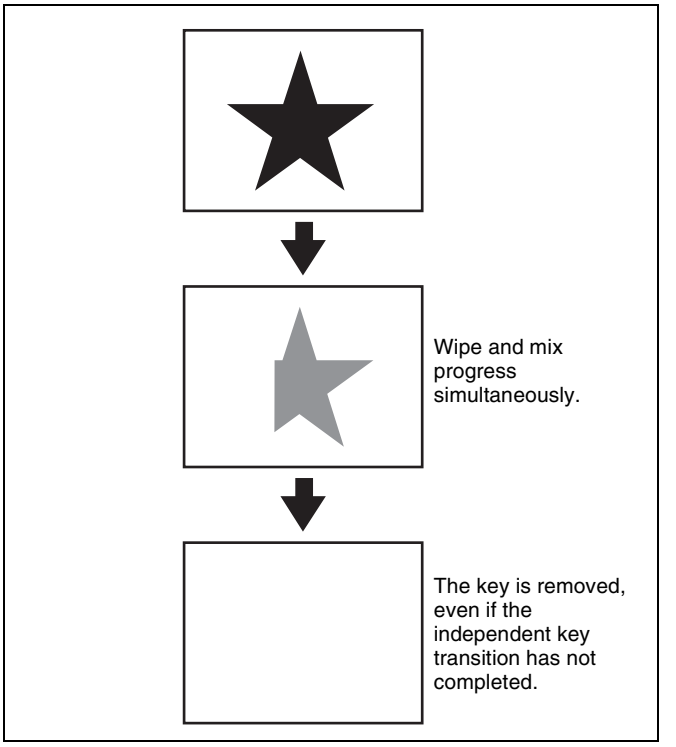
Combining transitions with independent key transitions

When you set a common transition and a key independent transition for the same key, you can apply two different effects, such as a wipe and mix, simultaneously.
When executing such a combination of transitions on the same key as an auto transition, the transition effect varies depending on the timing at which the two transition and independent key transition [AUTO TRANS] buttons are pressed.

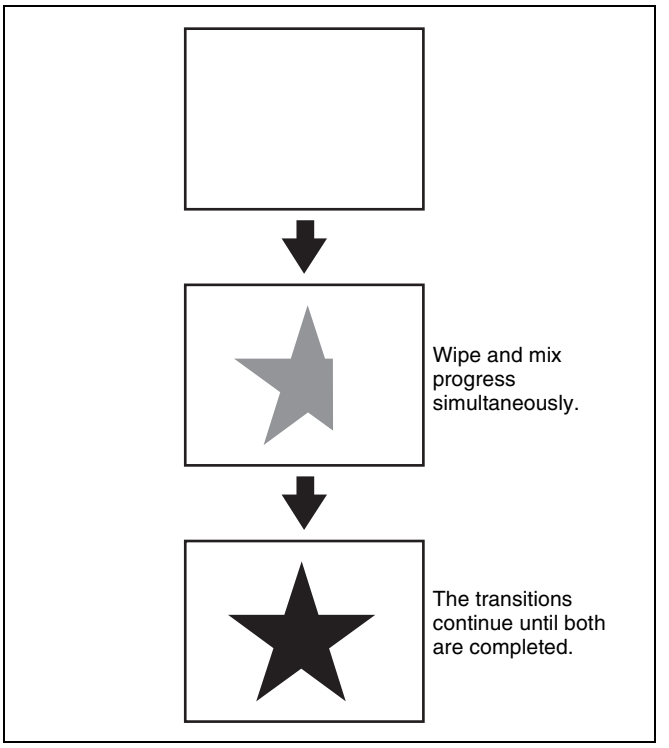
Simultaneous execution

If the [AUTO TRANS] buttons for the transition and independent key transition are pressed simultaneously, the following result occurs.
The common transition type is a wipe and the independent key transition type is a mix.

Removing a key by executing simultaneously: With the key inserted (on), the key is gradually removed (off) using each transition type simultaneously.
When the common transition completes, even if the independent key transition is still not completed, the two end simultaneously.



Inserting a key by executing simultaneously: With the key not inserted (off), the key is gradually inserted (on) using each transition type simultaneously.
All transitions are completed at the point when both the common transition and independent key transition are finished.



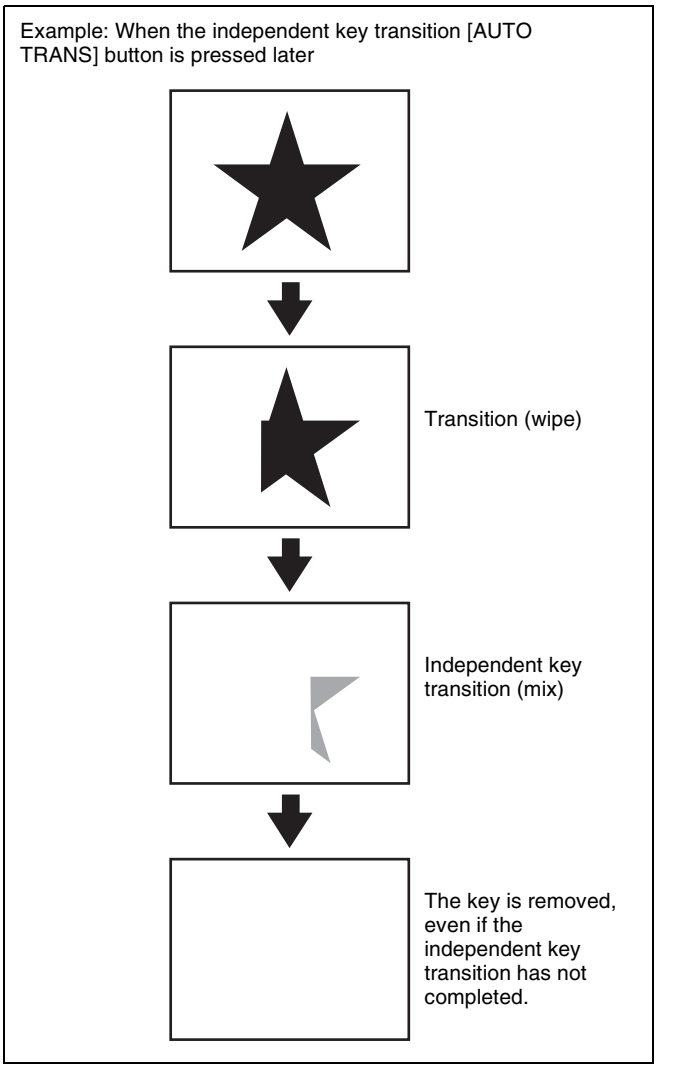
Time offset execution

If the [AUTO TRANS] buttons for the transition and independent key transition are pressed with a time offset, the following result occurs.

The common transition type is a wipe and the independent key transition type is a mix.

Time offset execution with the key inserted: With the key inserted (on), the key is removed (off) using each transition type with a time offset.

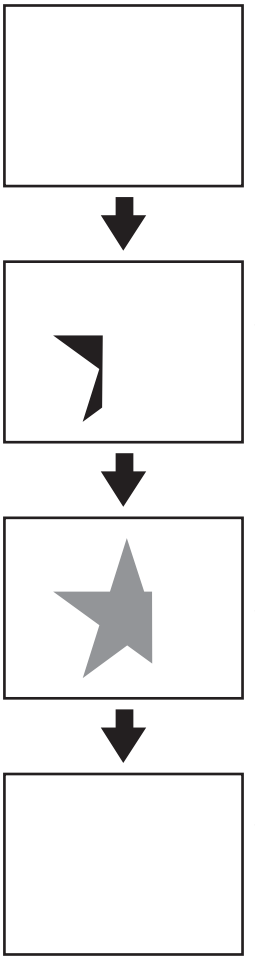
Whichever button is pressed first, when the common transition completes, even if the independent key transition is still not completed, the transitions end simultaneously.



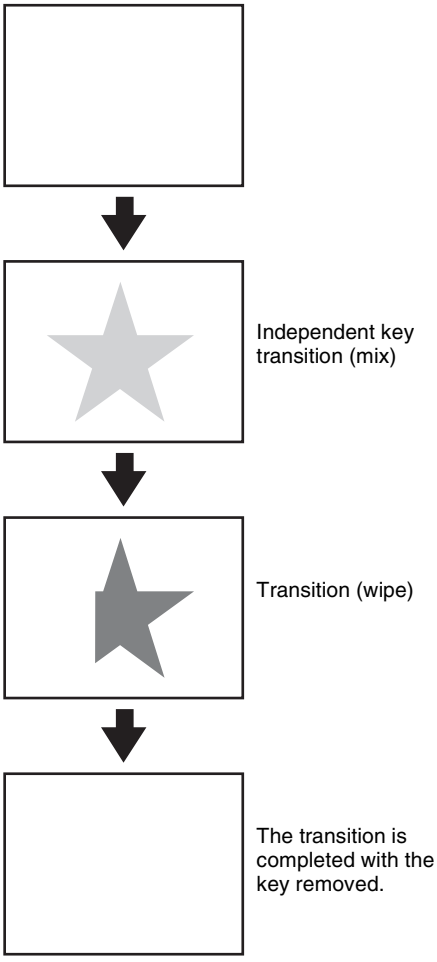
Time offset execution with the key not inserted: With the key not inserted (off), the key is inserted (on) using the transition type whose [AUTO TRANS] button is pressed first.

Since the key is then in the inserted state, the transition whose [AUTO TRANS] button is pressed later will remove (off) the key. When all keys are completely removed, all transitions are completed.

Example 1: When the independent key transition [AUTO TRANS] button is pressed later



Example 2: When the common transition [AUTO TRANS] button is pressed later



Basic Independent Key Transition Operations

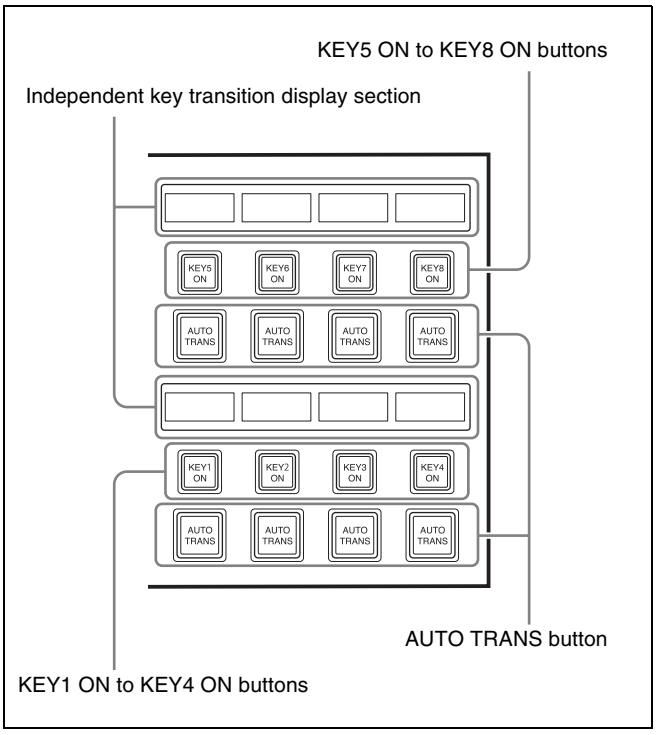
Independent key transition operations are performed using the transition control block, independent key transition control block, or key fader control block.

Executing an independent key transition (transition control block)

Independent key transition operations are performed using the independent key transition execution section of the transition control block. The same operations can also be performed using the independent key transition control block.

Note

Independent key transition operations are not supported using the transition control block (simple type).



Transition control block

1 Set the independent key transition type.

The independent key transition type is set using the menu *(see page 103)* or Flexi Pad control block *(see page 103)*.

2 Set the independent key transition rate.

The independent key transition rate is set using the menu *(see page 104)*, or utility/shotbox control block and numeric keypad control block *(see page 104)*.

3 Execute the independent key transition on the transition control block or independent key transition control block.

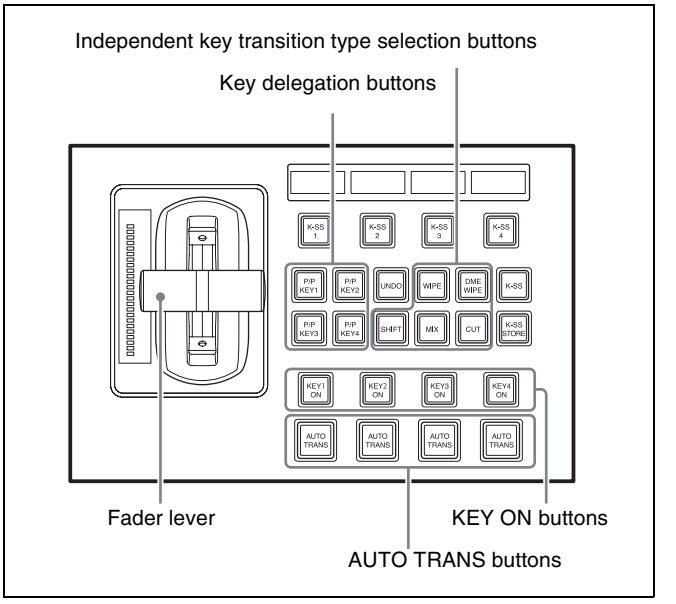
To insert or remove the key gradually with a mix or wipe, press the [AUTO TRANS] button. This executes the transition at the preset transition type and transition rate.
To insert/remove the key instantaneously, press the [KEY1 ON] to [KEY8 ON] buttons (or the [KEY ON] button for the corresponding key).

Notes

- In an independent key transition, the pattern limit function is not available.
- When the following DME effects are set, the DME effects may be applied during wipe transitions. If the effects are not necessary, cancel the DME settings.
  - Trail
  - Motion Decay
  - Wind

When the Keyframe Strobe effect is set, the effects are equivalent to operation using keyframes. In this case as well, cancel the unnecessary DME settings.

Executing an independent key transition (key fader control block)



Key fader control block

1 Select the target key to operate using the key delegation buttons.

2 Set the transition type using the independent key transition type selection buttons.

Press the [MIX], [WIPE], [DME WIPE], or [CUT] button, turning it on.
When [Independ] is selected in the <Key Transition> group of the Engineering Setup >Switcher >Transition menu (7334), you can set the transition type used when inserting and removing a key.
If the transition type used when inserting a key is displayed, you can select the transition type used when removing a key by pressing and holding the [SHIFT] button and pressing an independent key transition type selection button. If the transition type used when removing a key is displayed, you can select the transition type used when inserting a key using the same operation.
You can check the specified independent key transition type on the display *(see page 103)*.

3 Set the independent key transition rate.

The independent key transition rate is set using the menu *(see page 104)*, or utility/shotbox control block and numeric keypad control block *(see page 104)*.

4 Execute the independent key transition.

To insert or remove the key gradually with a mix or wipe, press the [AUTO TRANS] button for the corresponding key or operate the fader lever. Pressing the [AUTO TRANS] button executes the transition at the preset transition rate.
To insert/remove the key instantaneously, press the [KEY ON] button for the corresponding key.

Note

You can also set the key delegation button for operation by the fader lever.

For details, see "Setting the Buttons and Fader Levers on the Key Fader Control Block" (page 408).

Selecting Independent Key Transition Type

There are two ways of setting the transition type: using the Flexi Pad control block or using the Transition/Video Process menu for the target key on the M/E or PGM/PST bank.
You can also set the transition type using independent key transition operations on the key fader control block *(see page 102)*.

When the independent key transition mode is set to [Independ] in the <Key Transition> group of the Engineering Setup >Switcher >Transition menu (7334), you can select the transition type used when inserting and removing a key.

Setting the independent key transition type (Flexi Pad control block)

If the independent key transition mode is set to [Independ], setting the transition type while a key is not inserted will set the transition type for key insertion, and setting the transition type while a key is inserted will set the transition type for key removal.

1 In the Flexi Pad control block of the target switcher bank, press the [KEY] button.

This switches the memory recall section to independent key mode.

2 Select the target key.

Press one of the [KEY1] to [KEY8] buttons, turning it on.

3 Set the transition type.

Press the [MIX], [WIPE], or [DME WIPE] button, turning it on.

To check the independent key transition type

The specified independent key transition type is displayed in the independent key transition display section in the transition control block or independent key transition control block.
The transition type for keys assigned to the key delegation buttons are shown on the display in the key fader control block.

Notes

- The transition types are indicated by the letter "M" (mix), "W" (wipe), "D" (DME wipe), and "C" (cut).
- The transition type is not displayed when the transition rate display is set to timecode display mode.

Setting the independent key transition type (menu)

This section describes setting the transition type for key 1 on the M/E-1 bank as an example.

1 Open the M/E-1 >Key1 >Transition/Video Process menu (1117).

2 Select the transition type in the <Transition Type> group.

If the independent key transition mode is set to [Independ], select the transition type for key insertion in the <ON Transition Type> group and the transition type for key removal in the <OFF Transition Type> group.

Setting the Independent Key Transition Rate

There are two ways of setting the transition rate: entering a value using the numeric keypad control block or using the Transition/Video Process menu for target key on the M/E or PGM/PST bank.
You can also display the transition rate, independent key transition rate, and fade-to-black transition rate for each bank, and change the settings *(see page 189)*.

When the independent key transition mode is set to [Independ] in the <Key Transition> group of the Engineering Setup >Switcher >Transition menu (7334), you can select the transition type rate when inserting and removing a key.

Setting the independent key transition rate (utility/shotbox control block and numeric keypad control block)

If the independent key transition mode is set to [Independ], setting the transition rate while a key is not inserted will set the transition rate for key insertion, and setting the transition rate while a key is inserted will set the transition rate for key removal.

1 Press the [TRANS RATE1] to [TRANS RATE3] buttons in the utility/shotbox control block.

This switches the memory recall buttons to transition rate display mode.

For details about the [TRANS RATE1] to [TRANS RATE3] buttons, see "Setting the transition rate (utility/shotbox control block and numeric keypad control block)" (page 92).

2 Press a memory recall button displaying the transition rate to set for the target key, turning it on.

The region name and transition rate appears in the numeric keypad control block display.

3 Enter the transition rate using the numeric keypad in the numeric keypad control block.

You can switch the input mode using the [TC] button. In frame input mode, enter three digits. In timecode input mode, enter four digits.
To clear the entered value, press the [CLR] button.

4 Press the [ENTER] button.

The input is applied, and the specified value is reflected in the memory recall button in the utility/shotbox control block.

To enter a difference value

To set the transition rate by specifying a difference value from the current value, press the [+/−] button, enter the difference value, and press the [TRIM] button. Each time you press the [+/−] button, it toggles between plus (+) and minus (–).

To check the independent key transition rate

The specified independent key transition rate is displayed in the independent key transition display section in the transition control block or independent key transition control block.
The transition rate for keys assigned to the key delegation buttons are shown on the display in the key fader control block.
You can also switch the utility/shotbox control block to transition display mode to check the transition rate set for each key.

For details about the transition rate display mode, see "Frame display mode and timecode display mode" (page 91).

Setting the independent key transition rate (menu)

This section describes setting the transition rate of key 1 on the M/E-1 bank as an example.

1 Open the M/E-1 >Key1 >Transition/Video Process menu (1117).

2 Select the transition type in the <Transition Type> group.

If the independent key transition mode is set to [Independ], select the transition type for key insertion in the <ON Transition Type> group and the transition type for key removal in the <OFF Transition Type> group.

3 Set the transition rate.

No.	Parameter	Adjustment
1	Transition Rate	Transition rate

To display the independent key transition rates in list view and change the settings

You can display the transition rate, independent key transition rate, and fade-to-black transition rate for each bank, and change the settings *(see page 189)*.

Fade-to-Black

This function gradually darkens the program output video of the PGM/PST bank, eventually cutting it to black.

Note

In multi-program mode or DSK mode, fade-to-black is executed for a number of programs simultaneously. You can also set fade-to-black so that is not applied to particular programs in the Setup menu.

For details, see "Enabling/Disabling the Fade-to-Black Function" (page 466).

To execute fade-to-black, the "Fade To Black" utility command must be assigned to the following buttons beforehand in the Setup menu.

- Cross-point buttons on the cross-point control block in utility/shotbox mode
- Memory recall buttons in the utility/shotbox control block
- User preference buttons in the menu panel

This section describes operation using a memory recall button ([FTB] button) in the utility/shotbox control block assigned with the "Fade To Black" utility command.

Executing fade-to-black

Press the [FTB] button in the utility/shotbox control block to execute fade-to-block at the preset transition rate. During the transition execution, the [FTB] button is lit light purple. When the transition is completed (screen is black), the [FTB] button color changes to red.

Setting the fade-to-black transition rate

1 Open the PGM/PST >Misc >Transition menu (1471).

2 Press [FTB], turning it on.

3 Set the fade-to-black transition rate.

No.	Parameter	Adjustment
1	Transition Rate	Transition rate

To display the transition rates in list view and change the settings

You can display the transition rate, independent key transition rate, and fade-to-black transition rate for each bank, and change the settings *(see page 189)*.

AUX Mix Transitions

In addition to M/E and PGM/PST, you can make transitions between two AUX buses.

Preparing an AUX mix transition

The following preparations are required.

Preparations	See page
Assign the two AUX buses used for the AUX mix to consecutive odd-numbered and even-numbered output connectors (for example, 1 and 2). a)	*page 465*
Set the AUX mix transition rate.	*page 190*

a) In 4K format, the following combination of output connectors can be used in an AUX mix.
XVS-9000:
- For 3840×2160P 2SI and 3840×2160P SQD, pairs of odd-numbered output connectors starting from 1 (1 and 3, 5 and 7, 9 and 11, and so on)
- For 3840×2160PsF SQD, pairs of groups of four output connectors per group starting from 1 (1 to 4 and 5 to 8, 9 to 12 and 13 to 16, 17 to 20 and 21 to 24, and so on)

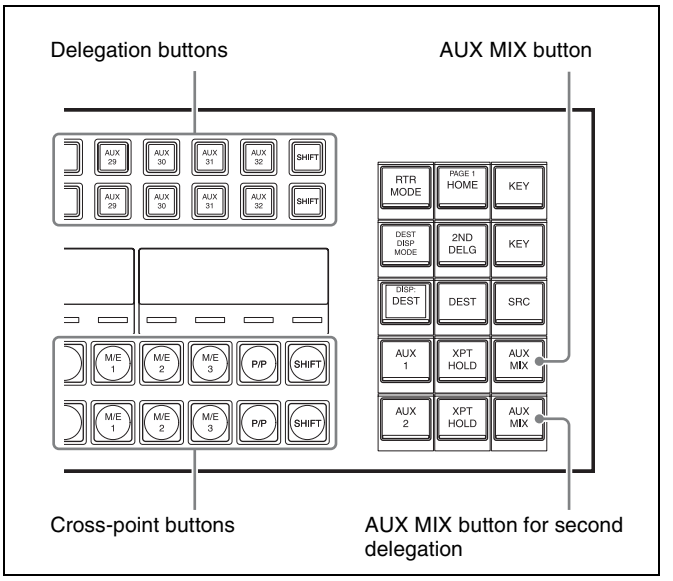
XVS-8000/7000/6000:
- 1 to 4 and 5 to 8
- 13 to 16 and 17 to 20
- 25 to 28 and 29 to 32 (XVS-8000/7000 only)
- 37 to 40 and 41 to 44 (XVS-8000/7000 only)

Executing an AUX mix transition

Use the [AUX MIX] button in the cross-point pad on the following control blocks to execute a transition.

- AUX bus control block (AUX bus operation mode)
- Cross-point control block in key/AUX bus delegation mode
- Cross-point control block in free assign mode

This section describes the use of the AUX1 and AUX2 buses in the AUX bus control block as an example.



AUX bus control block (AUX bus operation mode)

Note

When an AUX bus used in an AUX mix is assigned to an output connector with through mode enabled and the input image is switched from an input with through mode enabled to another input or color background, the AUX mix transition is disabled and a cut transition occurs.

1 In the 1st row or 2nd row in the AUX bus control block, press the delegation button assigned to the AUX1 bus, turning it on.

Note

When executing an AUX mix translation, select an odd-numbered bus. Selecting an even-numbered bus will not execute an AUX mix transition, even if AUX mix transitions are enabled.

2 Using the 3rd row or 4th row cross-point buttons, select the video for before the transition.

3 Press the [AUX MIX] button, turning it on.

Note

To execute an AUX mix transition in the 4th row if second delegation mode is set, use the [AUX MIX] button for second delegation (2ND AUX MIX).

4 Using the 3rd row or 4th row cross-point buttons, select the video for after the transition.

This executes the transition at the preset transition rate. The video during the transition is output from the AUX1 bus. The video selected in step **4** is output from the AUX2 bus.

Note

On the XKS-C9121N, outputs that are multiples of 8 minus 1 (7, 15, 23, and so on) are invalid because outputs 7 and 15 on each board cannot be used.
For example, for a combination of output 5 (AUX1 bus) and output 7 (AUX2 bus), an AUX mix transition image will be output on the AUX1 bus, but the AUX2 bus signal is not output.

Keys

Chapter 4

Overview

A key is an effect in which a part of the background image is replaced by an image or superimposed text. The signal determining how the background is cut out is termed the "key source," and the signal that replaces the cut-out part is termed the "key fill." The system component responsible for processing a key is referred to as a "keyer." Each M/E bank and the PGM/PST bank has eight keyers.

Keys supported in 4K format

The following keys can be used on each switcher bank.

- 3840×2160P: Key 1 to key 4
- 3840×2160PsF: Key 1 to key 2

Key 3 and key 4 in 3840×2160P format are called "sub keys" due to restrictions in their functionality. You can also disable use of key 4.

For details about function restrictions of sub keys, see "Sub key restrictions" (page 526).

For details about sub key settings, see "Setting the Sub Key Mode" (page 442).

Key Types

The key type indicates the manner in which the key source signal is used to cut out the background.

Type	Description	Clean mode
Luminance key	The background is cut out according to the luminance (Y) of the key source signal, and at the same time the key fill signal is cut out and then added to the background signal.	Supported
Linear key	This is a type of luminance key, but there is a reduced variability in gain, allowing more precise adjustment.	Supported
Color vector key	The key signal is created from a combination of the luminance and chrominance components of the key source signal. When perfect keying is not possible with a luminance key, this allows a key signal to be created even if the luminance level is low, provided that the colors have high saturation.	Supported
Chroma key	A key signal based on a particular color is used to cut out the background, and the key fill is then inserted.	Not supported
Wipe pattern key	This uses the wipe pattern selected for a transition to cut out the background, and the key fill is then inserted.	Not supported
Key wipe pattern key	This uses the wipe pattern selected for an independent key transition to cut out the background, and the key fill is then inserted.	Not supported

Clean mode

In a luminance key, linear key or color vector key, you can enable clean mode. When clean mode is enabled, key fill is added to the background without cutting out with key source. This improves the keyed image quality, but means that the part of the key fill signal which is not to be inserted must be completely black, or it will color the background. You set clean mode in the Type menu for each keyer.

For details, see "Setting the Key Type" (page 110).

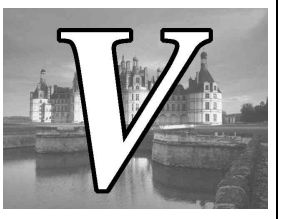
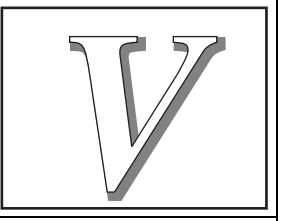
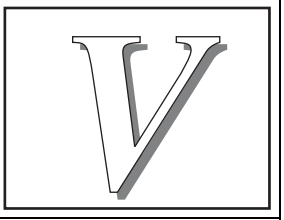
In the following situations, clean mode cannot be enabled.

- When key invert is enabled
- When the key fill is a matte
- When the key edge is an outline
- When the key edge is normal and soft edge is enabled
- When fine key is enabled
- When key positioning is enabled

Key Modifiers

Edge modifiers

You can apply borders and other modifiers to the edge of the key image.

Type	Description	Video
Normal	This is the state with no key edge modifiers applied.	
Border	Applies a border around the key. You can adjust the border width and density. You can also enable the separate edge function, and adjust the top, bottom, left, and right border widths separately.	
Drop border	Applies a border below and to the right of the key, for example. You can adjust the border width, position, and density.	
Shadow	Applies a shadow below and to the right of the key, for example. You can adjust the shadow width, position, and density.	
Outline	Uses the outline as the key. You can adjust the outline width and density. You can also enable the separate edge function, and adjust the top, bottom, left, and right outline widths separately.	
Emboss	Applies an embossing effect around the periphery of the key. You can adjust the emboss width, position, and density. You can adjust the density separately for key fill and key edge. When embossing is enabled, the Fine Key and zabton functions are disabled.	–
Soft edge	Softens the edge of the key.	–
Zabton	Inserts a translucent pattern to the key background. You can adjust the pattern size, softness, density, and color.	–

Edge type and key fill/key source position

The key edge modification function has two modes: a mode (key drop on mode) in which the key fill/key source position moves downward, and a mode (key drop off mode) in which it does not move.

Key drop on mode: The key fill/key source position moves downward by eight scan lines or four scan lines. When a drop border or shadow is selected, it is possible to apply a border to the top edge of the key.

Key drop off mode: The key fill/key source position does not move. When a drop border or shadow is selected, it is not possible to apply a border to the top edge of the key.

In key drop on mode, a menu setting selects between the mode (4H mode) in which the key fill/key source position is lowered by four scan lines, and the mode (8H mode) in which the key fill/key source position is lowered by eight scan lines.

When Fine Key is enabled, the edge width is forced into the range 0.00 to 4.00.

In the following situations, the key drop on mode is forcibly enabled.

- When the edge type is border, outline, or emboss
- When fine key is enabled

To fix key fill/key source to key drop off mode

Enable frame delay mode.

Regardless of the fine key and edge type settings, key fill and key source are fixed to key drop off mode.

Notes

- The resizer function is used in frame delay mode. The frame delay mode setting is enabled only when the conditions for use of the resizer are satisfied.
- When using dual resizer effects, the frame delay mode setting is disabled on the two target keys.
- When the frame delay mode setting is enabled, the video has a one-frame delay.

Edge fill

When a border, drop border, or shadow is selected, you can select a signal to fill the edges, called an edge fill.

The edge fill may be either the signal from the dedicated color matte generator, or the signal currently selected on the utility 1 bus.
In the case of an outline, there is no edge fill signal selection, because the key fill signal fills the outline, and the rest of the image remains as the background.
For the emboss effect, in place of the edge fill signal, the emboss fill matte 1 and emboss fill matte 2 signals are used.

Mask

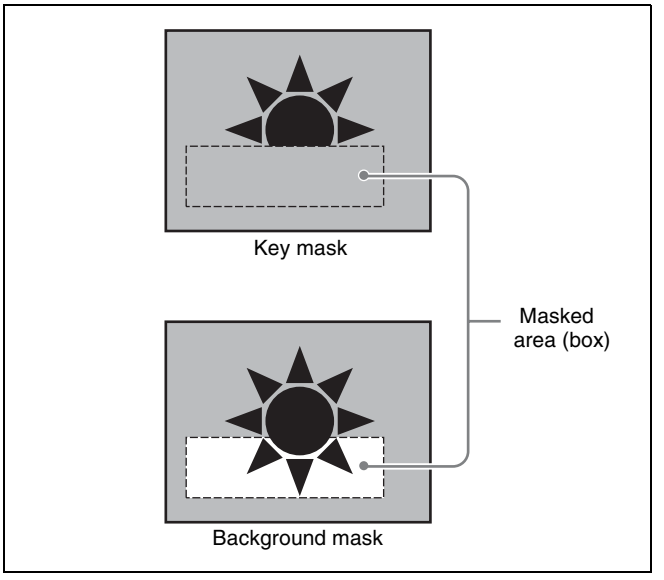
A mask uses the background or a key to hide a part of the image. You can correct the image, such as unwanted holes that appear in the background or when a key is not the desired shape, using masks.

Key mask and background mask

There are two types of mask: a key mask and a background mask.

Key mask: This masks out a part of the key so that the background becomes visible.

Background mask: This masks out a part of the background so that the key fill becomes visible.



Main mask and sub mask

Each keyer allows two masks to be used simultaneously, and these are referred to as the main mask and the sub mask. The signal that determines the mask shape and size is termed the mask source, and different sources are used for the main mask and sub mask.

Main mask: This uses the signal from the box generator provided on each keyer or the signal from a dedicated pattern generator as the mask source.
When the box generator is selected, a mask using a rectangular signal is formed.
When a pattern generator is selected, you can select the pattern and apply modifiers.

Sub mask: This uses the wipe generator signal or the signal selected on the utility 1 bus as the mask source. When the wipe generator is selected, the patterns and the pattern modifiers are the same as for a wipe transition.

Key Memory

The key memory function allows the keyer settings on each cross-point button to be automatically stored, so that the next time the same cross-point button is selected these settings are recalled automatically.
There are two modes for key memory: simple mode and full mode.
The parameters stored in each mode are as follows.

Simple mode: key type, clean mode (including the plane setting for chroma keying), key position, key invert, and adjustment values for the particular key type (Clip, Gain, Density, Filter, etc. This includes color vector key, wipe pattern key, key wipe pattern key, and chroma key. However, in the case of a chroma key, it excludes color cancel, Y balance, foreground CCR, window, and shadow.)

Full mode: All settings except transitions (the same parameters as simple mode: Fine Key, key modifiers, main and sub mask settings, chroma key detailed settings, and so on)

For details about setting the mode, see "Selecting the key memory mode" (page 468).

Key Defaults

With a simple operation, you can return the key adjustment values to their defaults.
The adjustment values which can be returned to their default values are as follows.

- Adjustment values for the particular key type (Clip, Gain, Density, Filter, etc.)
  In the case of chroma keys, all adjustment values return to their default values.
- Key position
- Key invert
- Clean mode

For details, see "Returning the key adjustment values to their defaults" (page 129).

Key Setting Operations (Menu)

There are two ways of making key settings: either using key setup menus for the switcher bank, or using the key control block or the Flexi Pad control block.

Key Setting Menus

The key setting menus for each bank (M/E and PGM/PST) are as follows.

Bank	Target keys	Menu
M/E-1	Keys 1 to 8	M/E-1 >Key1 to 8
M/E-2	Keys 1 to 8	M/E-2 >Key1 to 8
M/E-3	Keys 1 to 8	M/E-3 >Key1 to 8
M/E-4	Keys 1 to 8	M/E-4 >Key1 to 8
M/E-5	Keys 1 to 8	M/E-5 >Key1 to 8
PGM/PST	Keys 1 to 8	PGM/PST >Key1 to 8

This section describes key setting operations using key 1 on the M/E-1 bank (M/E-1 >Key1 menu) as an example.

Setting the Key Type

1 Open the M/E-1 >Key1 >Type menu (1111).

2 In the <Key Type> group, select the key type.

Luminance: Luminance key
Linear: Linear key
Chroma: Chroma key
Color Vector: Color vector key
Wipe Pattern: Wipe pattern key
Key Wipe Pattern: Key wipe pattern key

3 Perform the following operations, according to the selection in step **2**.

To enable clean mode for a luminance key, linear key, or color vector key: Press [Clean Mode], turning it on.

When chroma key is selected: Press [Chroma Adjust] to open the Chroma Adjust menu (1111.1), and make the required settings *(see page 114)*.

When a wipe pattern key is selected: Press [Pattern Select] to open the M/E-1 >Wipe >Main Pattern menu (1151), and select a pattern and set modifiers *(see page 140)*.

When a key wipe pattern key is selected: Press [Pattern Select] to open the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust >Pattern Select menu (1117.2), and select a pattern and set modifiers *(see page 150)*.

Note

In patterns selected for a wipe pattern or a key wipe pattern, modifiers for wipe direction and edges are disabled.

4 Set the following parameters.

When a luminance key or linear key is selected

No.	Parameter	Adjustment
1	Clip	Reference level for key signal generation
2	Gain	Key sensitivity
3	Density	Key density
4	Filter	Filter coefficient a)

a) Setting this value to "1" produces "through" state in which no filtering is applied. The larger the value, the stronger the filtering applied.

When a chroma key is selected

No.	Parameter	Adjustment
3	Density	Key density

When a color vector key is selected

Parameter group [1/2]

No.	Parameter	Adjustment
1	Y Clip	Reference level for generating the luminance signal
2	Y Gain	Luminance signal sensitivity
3	C Clip	Reference level for generating the chrominance signal
4	C Gain	Chrominance signal sensitivity
5	Density	Key density

Parameter group [2/2]

No.	Parameter	Adjustment
1	Y Filter	Luminance signal filter coefficient
2	C Filter	Chrominance signal filter coefficient

When a wipe pattern key or key wipe pattern key is selected

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Degree of edge softness
3	Density	Key density

5 Make the following settings as required.

To invert the black and white of the key source: Press [Key Invert], turning it on.

To adjust the horizontal position or key source width for a luminance key, linear key, color vector key, or chroma key: Press [Key Position], turning it on, and set the following parameters.

No.	Parameter	Adjustment
1	H Phase	Key horizontal position
2	Left	Key left edge position
3	Right	Key right edge position

To set the key priority: Press [Key Priority] to open the M/E-1 >Misc >Key Priority menu (1173), and set the priority *(see page 87)*.

Selecting Key Fill and Key Source

Selecting the key fill and key source

1 Open the M/E-1 >Key1 >Type menu (1111).

2 In the <Key Fill> group, select the key fill.

Key Bus: Signal selected on the key 1 fill bus
Matte: Signal from a dedicated color matte generator

3 If [Key Bus] is selected in step **2**, select a key fill signal using one of the following methods.

- On the cross-point control block, press delegation button [KEY1] on the cross-point pad and select a signal using the cross-point buttons.
- On the cross-point control block in key/AUX bus delegation mode, press the [KEY1] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

Note

You can assign a key fill bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

4 If [Matte] is selected in step **2**, press [Matte Adjust] to open the Matte Adjust menu (1111.2), and select [Flat Color] (single color) or [Mix Color] (2-color mix) in the <Fill Matte> group.

If [Mix Color] is selected, set the color mixing *(see page 112)*.
If [Flat Color] is selected, adjust color 1 using the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

5 In the <Key Source> group, specify the key source selection mode.

Self: Selects the key fill bus signal.
Auto Select: Automatically selects the key fill signal on the cross-point buttons and the signal assigned with it as a pair.
Split: Allows you to select a separate signal that the signal that would be selected automatically.

Notes

- When chroma key is selected as the key type, select [Self].
- When [Split] is selected, the key memory function is disabled.

6 If [Split] is selected in step **5**, select a key source signal using one of the following methods.

- On the cross-point control block, press and hold delegation button [KEY1] on the cross-point pad and select a signal using the cross-point buttons in the 2nd row.
- Press and hold the [SPLT] button in the key control block, then select a signal using the cross-point buttons in the 2nd row in the cross-point control block.
- On the Flexi Pad control block in key operation mode, press and hold the [KEY1] button in the memory recall section and select a signal using the cross-point buttons in the 2nd row in the cross-point control block.
- On the cross-point control block in key/AUX bus delegation mode, press and hold the [KEY1] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

When a cross-point button is pressed, a key signal is selected.
To select a video signal, first set the [KEY] button operation mode in the Setup menu *(see page 112)*.

Notes

- On the cross-point control block in key bus mode or free assign mode, you can select a key fill signal in the 1st row and a key source signal in the 2nd row by pressing and holding the following buttons.
  - Key bus delegation buttons on the cross-point pad
  - [SPLT] button on the key control block

- Key delegation buttons in the memory recall section on the Flexi Pad control block (key operation mode)

• You can assign a key source bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

To select a video signal assigned to a cross-point button

Set the operation mode that allows you to select both a key signal and a video signal using the [KEY] button in the Setup menu *(see page 430)*.
This allows you to select a key signal and video signal using the following methods.

• To select a key signal on the cross-point control block in free assign mode or key/AUX bus delegation mode, press the [KEY] button on the cross-point pad, turning it on, and select a key source signal.
• To select a video signal on the cross-point control block in free assign mode or key/AUX bus delegation mode, press the [KEY] button on the cross-point pad, turning it off, and select a key source signal.

Note

When a key source bus delegation button is assigned on the AUX bus control block (AUX bus operation mode), you can perform the operation using the [KEY] button on the cross-point pad.
When a cross-point button on the 3rd/4th row is pressed while pressing the [KEY] button, the key signal is selected.
When a cross-point button on the 3rd/4th row is pressed without pressing the [KEY] button, the video signal is selected.

To select a key source in the menu

1 In the M/E-1 >Key1 >Type menu (1111), press [Key Bus] in the <Key Fill> group.

2 Press [Signal Select].

The Signal Select menu (1111.3) appears.

3 In the <Target> group, press [Source].

4 In the <Key Source> group, specify the key source selection mode (Self, Auto Select, or Split).

*For details, refer to step **5** in "Selecting the key fill and key source" (page 111).*

5 If [Split] is selected in step **4**, select a key source signal from the list on the right.

6 In the <Assign> group, select the video signal or key signal from the V/K pair to assign to the key source.

Video: V/K pair video signal
Key: V/K pair key signal

7 Press [Set Xpt].

To select a key fill in the menu

1 In the M/E-1 >Key1 >Type menu (1111), press [Key Bus] in the <Key Fill> group.

2 Press [Signal Select].

The Signal Select menu (1111.3) appears.

3 In the <Target> group, press [Fill].

4 Select the fill signal from the list on the right.

5 Press [Set Xpt].

Carrying out a color mix for key fill

When [Matte] is selected for key fill, you can use an independent key transition wipe pattern or dedicated pattern to combine color 1 and color 2.

1 In the M/E-1 >Key1 >Type menu (1111), press [Matte] in the <Key Fill> group.

2 Press [Matte Adjust].

The Matte Adjust menu (1111.2) appears.

3 In the <Fill Matte> group, press [Mix Color].

4 Set the following parameters.

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Degree of softness of pattern edge

5 In the <Mix Pattern> group, select the mixing pattern.

Key Wipe: Mix using the wipe pattern selected for an independent key transition.
Pressing [Pattern Select] opens the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust >Pattern Select menu (1117.2), allowing you to select a pattern. Pressing [Pattern Adjust] opens the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu (1117.1), allowing you to adjust the pattern.
Key Edge Pattern: Combine using a dedicated color mix wipe pattern for key edge fill.
Pressing [Pattern Select] opens the M/E-1 >Key1 >Edge >Matte Adjust >Mix Ptn Select menu (1112.2), allowing you to select a pattern. Pressing [Pattern Adjust] opens the M/E-1 >Key1 >Edge

>Matte Adjust menu (1112.1), allowing you to adjust the pattern.

For details, see "Matte color mixing for key edge fill" (page 118).

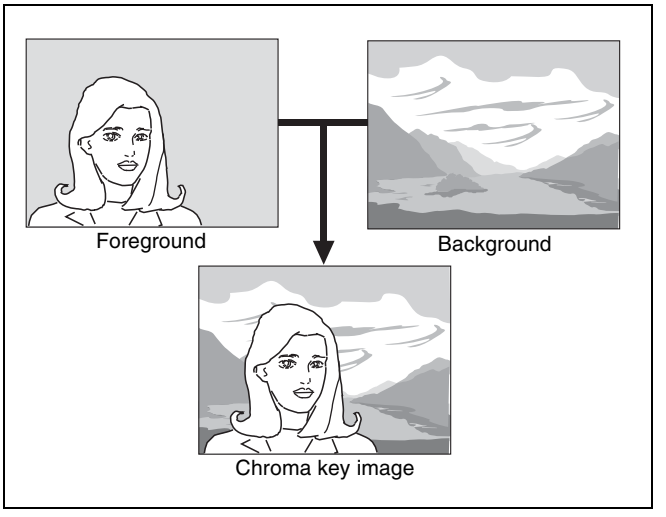
6 When adjusting color 1 and 2, select [Color 1] and [Color 2], respectively, then adjust the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

7 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Chroma Key Composition and Settings

A key signal based on a particular color is used to cut out the background, and the key fill is then inserted. The inserted signal is also referred to as the foreground, and the composite image is called a chroma key image.



In creating a chroma key image, either a normal mix or an additive mix can be used.

Normal mix

The foreground is cut out with the key signal, and then combined with the background, which has also been cut out with the key signal.

Additive mix

The background, which has been cut out with the key signal, is combined with the unshaped foreground. This is effective for a natural-looking composite when the scene includes glass or other translucent objects.

The following functions are also used in additive mixing.

Plane function

In an additive mix, the foreground is not shaped by the key signal, and variations in the (blue) background appear in the composite image. To avoid this, a particular luminance level can be set for the (blue) background, and regions of lower luminance forcibly cut.

Color cancel function

In an additive mix, the (blue) background parts of the foreground video must be converted to black using the color cancel function *(see page 115)*.

Composing an image by chroma keying

1 Open the M/E-1 >Key1 >Type menu (1111).

2 In the <Key Type> group, select [Chroma].

You can now adjust the key density *(see page 110)*.

3 Press [Chroma Adjust].

The Chroma Adjust menu (1111.1) appears.

4 Execute auto chroma key.

Make manual adjustments as necessary to obtain an optimum chroma key image *(see page 114)*.

5 In the <Mix Mode> group, select the chroma key composition method.

Normal Mix: Compose using a normal mix.
Additive Mix: Compose using an additive mix.

Using the plane function

1 In the M/E-1 >Key1 >Type >Chroma Adjust menu (1111.1), press [Plane], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Luminance	Luminance level

Key Adjustments (Menu)

You can make the following adjustments using a menu operation.
- Chroma key adjustments *(see page 114)*
- Key edge modifications *(see page 116)*
- Masks *(see page 119)*
- DME effects for keys *(see page 121)*
- Specifying the key output destination *(see page 123)*
- Blink *(see page 123)*
- Video process *(see page 123)*
- Key modify clear *(see page 123)*

This section describes adjustment of key 1 on the M/E-1 bank as an example.

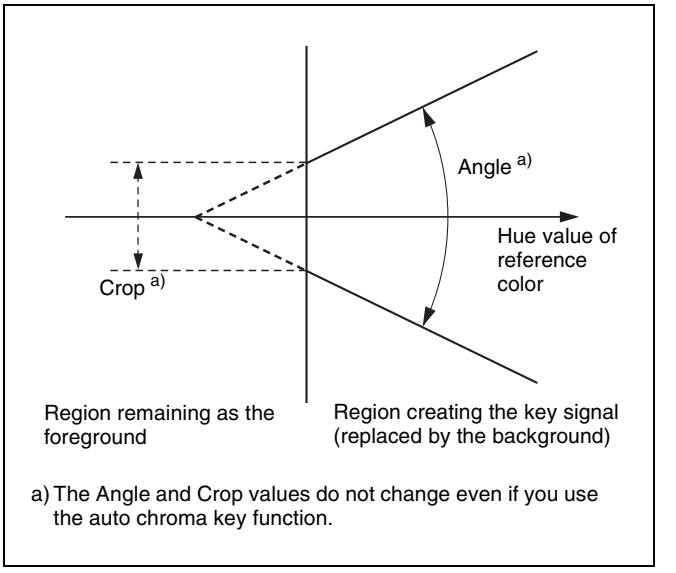
Chroma Key Adjustments

Methods of adjusting the composite obtained from chroma keying include automatic adjustment with the auto chroma key function, and manual adjustment carrying out the necessary processing separately. The optimum results will be obtained by first carrying out adjustments with the auto chroma key function, then making any fine adjustments as required.
The following manual adjustments are possible.

Key active
When disabled, only the foreground is output and you can make color cancel adjustments.

Color cancel
If the foreground image includes shades of the background color, this function removes the color from the foreground image.

Window
You can adjust the range over which the key signal is determined as matching the specified hue. When disabled, the default range is used for image adjustment.
Chroma keying generates a key signal based on a particular color (reference color) in the foreground (typically a blue background), and the "window" refers to the range of colors which are regarded as matching this specified reference color to create the key signal.
The region that makes up the key signal in the foreground (to be replaced by the background) appears as a fan shape with a cropped tip when viewed on a vectorscope. This region is specified by two parameters: an "Angle" parameter and a "Crop" parameter, which determines the degree of cropping.



a) The Angle and Crop values do not change even if you use the auto chroma key function.

Y balance
In normal chroma keying, the key signal is based on the chrominance component only, and all elements of the foreground with the same hue are replaced by the background. Using the Y balance function, you can specify a luminance level range within which the key is active, and replace the specified part by the background.
You can use the Y balance function independently on the key signal for the composition and the key signal for the color cancel function. When applied to the key signal for the composition, this produces the foreground with the color cancel effect applied. For example, this can therefore be used to provide an impression of smoke.
When the Y balance function is applied to the color cancel key, the relevant part is output in its original color without canceling, and therefore it is possible to combine colors which are the same color as the background (i.e. typically blue) in the foreground.

Chroma key shadow
This function allows a shadow falling on the (typically blue) background color to be rendered more realistically. Since parts of the blue background darker than a specified intensity are treated as shadows, there is no effect on cutting out of the foreground.

Video signal adjustment
You can vary the foreground signal gain, or change the hue. There are separate adjustments for the gain of the overall video signal, and Y and C components.

Adjusting auto chroma keys

Auto chroma key is an automatic adjustment function which allows you to specify a part of the foreground video (for example, the blue background color) and use it as a reference for creating the chroma key image.

1 In the M/E-1 >Key1 >Type menu (1111), press [Chroma] in the <Key Type> group.

2 Press [Chroma Adjust].

The Chroma Adjust menu (1111.1) appears.

3 In the <Auto> group, press [Sample Mark], turning it on.

The foreground video only appears on the monitor, with a white box-shaped sample marker.

4 Adjust the position and size of the sample marker, to specify the reference color for chroma keying (typically a blue background).

No.	Parameter	Adjustment
1	Position H	Horizontal position
2	Position V	Vertical position
3	Size	Size

5 In the <Auto> group, press [Auto Start].

This executes an auto chroma key based on the color specified by the sample marker, and displays the composite image on the monitor.

Adjusting key active

When the key active function is enabled, the composite image is output to the monitor, and you can watch the monitor while manually adjusting the keying.
When the key active function is disabled, only the foreground image appears. Disable key active when manually adjusting color cancel.

1 In the M/E-1 >Key1 >Type >Chroma Adjust menu (1111.1), press [Key Active], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Clip	Chroma key reference level
2	Gain	Key gain
3	Hue	Hue
4	Density	Density
5	Filter	Filter coefficient

Adjusting color cancel

If the background color is leaking into the foreground video, enabling the color cancel function allows you to eliminate this leakage.

1 In the M/E-1 >Key1 >Type >Chroma Adjust menu (1111.1), press [Key Active], turning it off.

Only the foreground image appears on the monitor.

2 In the <Color Cancel> group, press [Color Cancel], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Video signal gain
2	Saturation	Luminance signal gain
3	Hue	Chrominance signal gain
5	Filter	Hue offset amount

4 Press [Key Active], turning it on.

The chroma key composite image reappears in the monitor.

Adjusting the key signal for color cancel

1 In the M/E-1 >Key1 >Type >Chroma Adjust menu (1111.1), press [Color Cancel] in the <Color Cancel> group, turning it on.

2 In the <Color Cancel> group, press [Cancel Key].

3 Set the following parameters.

No.	Parameter	Adjustment
1	Clip	Color cancel key reference level
2	Gain	Color cancel key gain

4 In the <Color Cancel> group, make adjustments as necessary.

Key Position: Adjusts the color cancel key edge position. Set the following parameters.

No.	Parameter	Adjustment
1	H Phase	Simultaneous movement of left and right edges of the color cancel key
2	Left	Movement of left edge of the color cancel key
3	Right	Movement of right edge of the color cancel key

Window: Adjusts the detection range of the color cancel key. Set the following parameters.

No.	Parameter	Adjustment
1	Crop	Crop value [a)]
2	Angle	Angle value [a)]

a) See *page 114*.

Y Balance: Adjusts the ratio in which Y balance is added to the color cancel key Set the following parameter.

No.	Parameter	Adjustment
1	Mixture	Ratio of Y balance key

Adjusting the window

Enabling the window *(see page 114)* function allows you to adjust the detection range used to determine the key signal. When disabled, the default range is used for image adjustment.
To adjust the window, adjustment of Clip, Gain, and Hue values is required to appropriate values beforehand.

1 In the M/E-1 >Key1 >Type >Chroma Adjust menu (1111.1), press [Window], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Crop	Crop value
2	Angle	Angle value

Adjusting the Y balance

Enabling the Y balance *(see page 114)* allows you to specify that, even if the hue is the same, only portions of a particular luminance will be replaced by the background.

1 In the M/E-1 >Key1 >Type >Chroma Adjust menu (1111.1), press [Y Balance], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Clip	Luminance width
2	Gain	Key gain
3	Luminance	Luminance

Adjusting the chroma key shadow

This function allows a shadow falling on the (typically blue) background color to be rendered more realistically. Since parts of the blue background darker than a specified intensity are treated as shadows, there is no effect on cutting out of the foreground.

1 In the M/E-1 >Key1 >Type >Chroma Adjust menu (1111.1), press [Shadow], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Reference luminance for shadows
2	Gain	Shadow key gain
3	Density	Shadow opacity
4	Soft	Softness of shadow

Note

When chroma key shadow is enabled, key edge is changed to normal and soft edge is disabled.

Adjusting the video signal

You can vary the foreground signal gain, or change the hue. There are separate adjustments for the gain of the overall video signal, and Y and C components.

1 In the M/E-1 >Key1 >Type >Chroma Adjust menu (1111.1), press [FRGD CCR], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Video Gain	Video signal gain
2	Y Gain	Luminance signal gain
3	C Gain	Chrominance signal gain
4	Hue	Hue offset amount

Key Edge Modification

1 Open the M/E-1 >Key1 >Edge menu (1112).

2 In the <Edge> group, select the edge type *(see page 108)*.

Normal: Unadorned edge
Border: Edge with border applied
Drop Border: Edge with drop border applied
Shadow: Edge with shadow applied
Outline: Edge used as outline
Emboss: Embossing effect applied to edge

If [Normal] is selected, skip to step **7**.

3 Set the following parameters, depending on the selected edge type.

When a border or pattern is selected
The parameters to configure vary depending on whether the separate edge function is enabled/ disabled.
To enable the separate edge function, press [Separate Edge], setting it on.

- When separate edge is disabled

No.	Parameter	Adjustment
1	Width	Width

No.	Parameter	Adjustment
3	Density	Density

• When separate edge is enabled
The left, right, top, and bottom border or outline widths can be adjusted independently. The separate edge function is only available when luminance key, linear key, color vector key, or chroma key is selected as the key type.

No.	Parameter	Adjustment
1	Top	Top edge width
2	Left	Left edge width
3	Right	Right edge width
4	Bottom	Bottom edge width
5	Density	Density

When drop border or shadow is selected

No.	Parameter	Adjustment
1	Width	Width
2	Position	Position
3	Density	Density

When emboss is selected

No.	Parameter	Adjustment
1	Width	Width
2	Position	Position
3	Density [a)]	Density

a) The Density adjustment only affects the key edge. This can be adjusted separately from key Density, and if key Density is set to 0.00, only the embossed edge effect can be applied.

If emboss is selected, adjust the edge fill in step **6**.

4 In the <Edge Fill> group, select the edge fill signal.

Utility 1 Bus: Signal selected on the utility 1 bus
Matte: Signal from dedicated color matte generator.
When [Matte] is selected, adjust color 1 using the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

When the edge type is outline, in place of the edge fill signal, the selected key fill signal fills the outline, and the background fills all areas other than the outline.

5 Depending on the selection in step **4**, carry out the following operation.

When [Utility 1 Bus] is selected: On the cross-point control block, press delegation button [UTL1] on the cross-point pad and select a signal using the cross-point buttons.

Notes

- On the cross-point control block in key/AUX bus delegation mode, press the [UTIL1] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.
- You can assign the utility 1 bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.
- You can assign a utility 1 bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

When [Matte] is selected: Press [Matte Adjust] to open the Matte Adjust menu (1112.1), and select [Flat Color] (single color) or [Mix Color] (2-color mix) in the <Edge Matte> group.
If [Mix Color] is selected, set the color mixing *(see page 118)*.
If [Flat Color] is selected, adjust color 1 using the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

6 If the edge type is emboss, adjust the color in the <Emboss Fill> group.

When adjusting color 1 and 2, select [Matte 1] and [Matte 2], respectively, then adjust the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

7 To soften the edge, select [Soft Edge] and set the following parameter.

No.	Parameter	Adjustment
1	Soft	Edge softness

Note

When normal is selected for edge type, [Key Drop] must be enabled beforehand to use [Soft Edge].

8 To make separate fine adjustments to the positions of the left, right, top, and bottom of the key source, select [Fine Key] and set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	Top	Key top edge position
2	Left	Key left edge position
3	Right	Key right edge position
4	Bottom	Key bottom edge position

Parameter group [2/2]

No.	Parameter	Adjustment
1	H Phase	Key horizontal position
2	V Phase	Key vertical position

Notes

- When emboss is selected for the edge type, [Fine Key] cannot be selected.
- When normal, drop border, or shadow is selected for the edge type, enabling [Fine Key] enables [Key Drop].
- When applying a border to the key edge, enabling the [Fine Key] function halves the border width setting range.

Setting key drop mode

1 In the M/E-1 >Key1 >Edge menu (1112), press [Key Delay Mode].

The Key Delay Mode menu (1112.4) appears.

2 In the <Key Delay Mode> group, press [Key Drop] to set key drop mode.

When key drop on mode is set, [Key Drop] is lit.
When key drop off mode is set, [Key Drop] is not lit.

To set the key fill/key source position

Press [8H Mode] to switch between 8H mode and 4H mode.
When 8H mode is set, [8H Mode] is lit.
When 4H mode is set, [8H Mode] is not lit.

To fix key fill/key source to key drop off mode

Enable frame delay mode.
In the <Key Delay Mode> group, press [Frame Delay], turning it on.

Notes

- The resizer function is used in frame delay mode. The frame delay mode setting is enabled only when the conditions for use of the resizer are satisfied.
- When using dual resizer effects, the frame delay mode setting is disabled on the two target keys.
- When the frame delay mode setting is enabled, the video has a one-frame delay.

Matte color mixing for key edge fill

If [Matte] is selected for the edge fill of a border, drop border, or shadow, you can create a combination of color 1 and color 2 using a wipe pattern generated by the dedicated pattern generator.

1 In the <Edge Fill> group of the M/E-1 >Key1 >Edge menu (1112), select [Matte] and press [Matte Adjust].

The Matte Adjust menu (1112.1) appears.

2 In the <Edge Matte> group, press [Mix Color].

3 Set the following parameters.

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Degree of softness of pattern edge
3	Pattern	Pattern number a)

a) The patterns are the same as standard wipe patterns 1 to 24.

You can also make a pattern selection by pressing [Mix Pattern Select] in the Matte Adjust menu to display the Mix Ptn Select menu (1112.2).
Press the desired pattern (1 to 24) to select it, and set the [Size] and [Soft] parameters.

4 When adjusting color 1 and 2, select [Color 1] and [Color 2], respectively, then adjust the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

5 Set pattern modifiers, as required.

When selecting [Position] and setting the pattern position

No.	Parameter	Adjustment
1	Position H	Horizontal position a)
2	Position V	Vertical position a)

a) See *page 145*.

When selecting [Multi] and replicating the pattern

No.	Parameter	Adjustment
1	H Multi	Number of repetitions of pattern horizontally
2	V Multi	Number of repetitions of pattern vertically
3	Invert Type	Replication layout a)

a) See *page 147*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 146*.

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) See *page 146*.

When selecting [Speed] in the <Rotation> group and rotating the pattern at a constant speed

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern a)

a) See *page 146*.

6 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Applying the zabton effect

1 In the M/E-1 >Key1 >Edge menu (1112), press [Zabton], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Degree of softness of pattern edge
3	Density	Density

Note

If [Mask Pattern] is selected in step **4** and [Box] is selected for the main mask, you cannot change the [Size] parameter. Set it in the M/E-1 >Key1 >Main Mask menu (1113).

3 Press [Zabton Adjust].

The Zabton Adjust menu (1112.3) appears.

4 In the <Zabton Pattern> group, select the pattern.

Key Wipe: Uses a key wipe.
Pressing [Pattern Select] opens the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust >Pattern Select menu (1117.2), allowing you to select a pattern. Pressing [Pattern Adjust] opens the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu (1117.1), allowing you to adjust the pattern.

Key Edge Pattern: Uses a color mixing pattern for key edge.
Pressing [Pattern Select] opens the M/E-1 >Key1 >Edge >Matte Adjust >Mix Ptn Select menu (1112.2), allowing you to select a pattern. Pressing [Pattern Adjust] opens the M/E-1 >Key1 >Edge >Matte Adjust menu (1112.1), allowing you to adjust the pattern.

Mask Pattern: Use the main mask source.
Pressing [Pattern Select] opens the M/E-1 >Key1 >Main Mask menu (1113), allowing you to select [Box] or [Pattern] in the <Mask Source> group.

5 Press [Zabton Color] and adjust the color.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue
4	Density	Density

Mask

There are two masks, which can be used to mask off unneeded parts of a key or background, or to remove defects, and these are known as the main mask and sub mask.
You can either use the main mask and sub mask independently, or at the same time.

Using the main mask

1 Open the M/E-1 >Key1 >Main Mask menu (1113).

2 In the <Mask Type> group, select the mask type.

Key Mask: Masks a part of a key.
Bkgd Mask: Masks a part of a background.

3 In the <Mask Source> group, select the mask source.

Box: Signal from dedicated box generator
Pattern: Signal from dedicated pattern generator

4 Depending on the selection in step **3**, set the following parameters.

When [Box] is selected

No.	Parameter	Adjustment
1	Top	Position of top side
2	Left	Position of left side
3	Right	Position of right side
4	Bottom	Position of bottom side
5	Soft	Degree of softness of box

When [Pattern] is selected

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Degree of softness of pattern edge
5	Pattern	Pattern number a)

a) The patterns are the same as standard wipe patterns 1 to 24.

You can also make a pattern selection by pressing [Mask Ptn Select] in the Main Mask menu to display the Mask Ptn Select menu (1113.1).
Press the desired pattern (1 to 24) to select it, and set the [Size] and [Soft] parameters.

5 To invert the mask source, press [Mask Invert], turning it on.

6 When a pattern is selected as a mask source, set the pattern modifiers as required.

When selecting [Position] and setting the pattern position

No.	Parameter	Adjustment
1	Position H	Horizontal position a)
2	Position V	Vertical position a)

a) See *page 145*.

When selecting [Multi] and replicating the pattern

No.	Parameter	Adjustment
1	H Multi	Number of repetitions of pattern horizontally
2	V Multi	Number of repetitions of pattern vertically
3	Invert Type	Pattern layout a)

a) See *page 147*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 146*.

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) See *page 146*.

When selecting [Speed] in the <Rotation> group and rotating the pattern at a constant speed

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern a)

a) See *page 146*.

Using the sub mask

1 Open the M/E-1 >Key1 >Sub Mask menu (1114).

2 In the <Mask Type> group, select the mask type.

Key Mask: Masks a part of a key.
Bkgd Mask: Masks a part of a background.

3 In the <Mask Source> group, select the mask source.

Wipe: Wipe pattern selected for a transition.
Press [Pattern Select] to open the M/E-1 >Wipe >Main Pattern menu (1151), and select a pattern and set modifiers *(see page 140)*.

Note

In patterns selected for a mask, modifiers for wipe direction and edges are disabled.

Utility 1 Bus: Signal selected on the utility 1 bus.
On the cross-point control block, press delegation button [UTL1] on the cross-point pad and select a signal using the cross-point buttons.

Notes

- On the cross-point control block in key/AUX bus delegation mode, press the [UTIL1] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.
- You can assign the utility 1 bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.
- You can assign a utility 1 bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

4 Depending on the selection in step **3**, set the following parameters.

When [Wipe] is selected

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Edge softness

When [Utility 1 Bus] is selected

No.	Parameter	Adjustment
1	Clip	Reference level for creating mask signal
2	Gain	Gain

5 To invert the mask source, press [Mask Invert], turning it on.

DME Effects for Keys

DME restrictions

- When the switcher signal format is 3840×2160P SQD or 3840×2160PsF SQD, the DME function cannot be used.
- There are restrictions on the number of DME channels that can be used and on the functions, depending on the switcher and signal format.
  For differences in functions by switcher, see "XVS-9000/8000/7000/6000 System Configuration Comparison" (page 523).
  For details about restrictions for 4K format, see "4K Format Restrictions" (page 525).
- The number of keys to which DME effects (including DME wipes) can be applied simultaneously for one M/E bank varies as follows depending on the execution mode of the DME wipe pattern selected for the background.

Key to which DME effects are applied	DME wipe pattern for background	Number of keys to which DME effects can be applied simultaneously
Keys 1 to 4	DME wipes not used	2
	1-channel mode	1
	2-channel or 3-channel mode	0
Keys 5 to 8	–	2

  When the signal format is 3840×2160P 2SI, DME effects (including DME wipes) can be used simultaneously in only one place on an M/E bank. When not using background DME wipes, DME effects can be used on either key 1 or key 2.
- If an image effect is set, the number of keys that can simultaneously use a DME on an M/E bank is restricted *(see page 195)*.
- You cannot use DME effects on a key for which the resizer function is enabled. Disable the resizer using the M/E-1 >Key1 >Resizer menu (1115).

Assigning a DME to a key

1 Open the M/E-1 >Key1 >Processed Key menu (1116).

2 In the <DME Select> group, select the DME channel (DME1 to DME4) to be used.

The lit colors of [DME1] to [DME4] indicate the DME assignment.
Lit green: DME assigned to the currently selected key
Lit amber: DME assigned to another key or bus
Not lit: Unassigned DME

To select a DME being used by another key/bus
Press [Override], turning it on, then select the DME channel that is lit amber.
The selected DME channel becomes available, and the button is lit green.

Using two or three DME channels on one keyer

1 In the <DME Select> group of the M/E-1 >Key1 >Processed Key menu (1116), select consecutive DME channels.

Select the DME for the first channel, then select the successive DME channel for the second channel. For the third channel, select the next channel.

2 Select the second channel video signal.

Select using any of the following methods.
- On the cross-point control block, press delegation button [DME EXT] on the cross-point pad and select a signal using the cross-point buttons.
- On the cross-point control block in key/AUX bus delegation mode, press the [DME EXT] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

Notes

- You can assign the DME external video bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.
- You can assign a DME external video bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

3 Select the third channel video signal.

Select using any of the following methods.
- On the cross-point control block, press delegation button [DME UTL1] on the cross-point pad and select a signal using the cross-point buttons.

- On the cross-point control block in key/AUX bus delegation mode, press the [DME UTIL1] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

Notes

- You can assign the DME utility 1 bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.
- You can assign a DME utility 1 bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

Using four DME channels on one keyer

1 In the <DME Select> group of the M/E-1 >Key1 >Processed Key menu (1116), select consecutive DME channels.

Select [DME1] for the first channel, [DME2] for the second channel, [DME3] for the third channel, and [DME4] for the fourth channel.

2 Select the second channel video signal.

Select using any of the following methods.
- On the cross-point control block, press delegation button [DME EXT] on the cross-point pad and select a signal using the cross-point buttons.
- On the cross-point control block in key/AUX bus delegation mode, press the [DME EXT] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

Notes

- You can assign the DME external video bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.
- You can assign a DME external video bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

3 Select the third channel video signal.

Select using any of the following methods.
- On the cross-point control block, press delegation button [DME UTL1] on the cross-point pad and select a signal using the cross-point buttons.
- On the cross-point control block in key/AUX bus delegation mode, press the [DME UTIL1] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

Notes

- You can assign the DME utility 1 bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.
- You can assign a DME utility 1 bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

4 Select the fourth channel video signal.

Select using any of the following methods.
- On the cross-point control block, press delegation button [DME UTL2] on the cross-point pad and select a signal using the cross-point buttons.
- On the cross-point control block in key/AUX bus delegation mode, press the [DME UTIL2] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

Notes

- You can assign the DME utility 2 bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.
- You can assign a DME utility 2 bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

To check DME usage status

You can check the DME operating status in the Status >DME Status menu (3311) *(see page 192)*.

Assigning a DME output signal as a monitor signal

1 In the M/E-1 >Key1 >Processed Key menu (1116), press [Monitor].

The Monitor menu (1116.1) appears.

2 Press [Monitor Set], turning it on.

3 In the <DME Select> group, select the DME channel (DME1 to DME4) to be used.

This assigns the selected DME output to DME MON V and DME MON K.
The lit colors of [DME1] to [DME4] indicate the DME assignment.
Lit green: DME currently being monitored
Lit amber: DME which can be monitored
Not lit: Unassigned DME

Specifying the Key Output Destination

Using a processed key keyer signal (external processed key)

To select key fill and key source signals for a processed key keyer on the AUX bus or edit preview bus, press [Ext Proc Key] in the M/E-1 >Key1 >Processed Key menu (1116), turning it on.
This assigns the key fill and key source signals, processed using key 1 on the M/E-1 bank, to re-entry signals PROC V and PROC K.
When DME is selected on the keyer, the key fill and key source signals with DME effect applied are assigned.

Note

The PROC V and PROC K signals on each switcher bank cannot be selected using the cross-point buttons on the same switcher bank.

Using processed key keyer signals in frame memory (frame memory feed)

To select key fill and key source signals for a processed key keyer on the frame memory source buses, press [FM Feed] in the M/E-1 >Key1 >Processed Key menu (1116). [Ext Proc Key] turns on, and the key fill and key source signals processed on key 1 of the M/E-1 bank are assigned to frame memory source 1 and 2 buses.
When DME is selected on the keyer, the key fill and key source signals with DME effect applied are assigned.

Blink

The following effects can be configured.
Key blink: The key is turned on and off at preset constant intervals. You can set the blinking cycle time, and the proportion of each cycle for which the key is on and off.
Edge blink: The key fill and key edge fill signals are interchanged at regular intervals. You can set the blinking cycle time, and the proportion of each cycle that the original state is replaced by the key fill and key edge fill state.

1 Open the M/E-1 >Key1 >Transition/Video Process menu (1117).

2 In the <Blink> group, select a blink effect.

Key Blink: Sets key blinking.
Edge Blink: Sets edge blinking.

3 Depending on the selection in step **2**, set the following parameters.

When [Key Blink] is selected

No.	Parameter	Adjustment
1	Blink Rate	Length of blink cycle
2	Duty	Proportion of cycle for which key is on

When [Edge Blink] is selected

No.	Parameter	Adjustment
1	Blink Rate	Length of blink cycle
2	Duty	Proportion of cycle for which original state continues

Video Process

You can adjust the luminance and hue of the selected key fill signal.

1 Open the M/E-1 >Key1 >Transition/Video Process menu (1117).

2 Press [Video Process], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Video Gain	Video signal gain
2	Y Gain	Luminance signal gain
3	C Gain	Chrominance signal gain
4	Hue Delay	Hue delay
5	Black Level	Black level

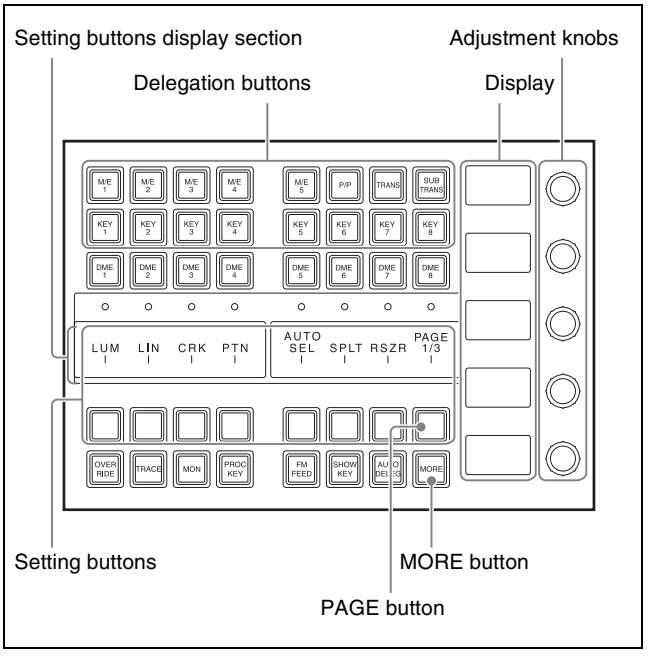
To return the parameters to their default settings
Press [Unity].

Key Modify Clear

Press [Default Recall] at the lower left of the menu display, turning it on, then press a VF button (VF1 to VF4) to return the corresponding key settings to their initial status.

For details about initial status, see "Power-On (Startup) State Selection" (page 397).

Key Operations (Key Control Block)



Key control block

To make settings for keys on the key control block, select a bank and keyer using the delegation buttons.
The key type selection buttons, key fill/key source selection buttons, key modifier buttons, and chroma key setting buttons are assigned to the setting buttons. The functions set in each button can be viewed in the setting buttons display section.
The settings button assignments for different functions are spread over three pages (1/3, 2/3, 3/3), and you can switch between them using the [PAGE] button.

Setting parameters

If there are parameters available for the selected function, the set value for each item appears on the display.
The parameters are adjusted using five adjustment knobs similar to the menu panel (numbered 1 to 5 from the top).
When there are six or more parameters, the [MORE] button is lit amber. Press the [MORE] button, turning it on green, to display the 6th and subsequent parameters (parameter group [2/2]).
You can set a parameter when the button is lit green. If the button for the parameter you want to set is lit amber, press the button, turning it on green, and then set the value.

To cancel the adjustment knob parameter assignment

Press the [PAGE] button to switch to another page.

The parameter assignment to the adjustment knob is canceled, and the selected setting button changes color from green to amber.

Selecting the Bank and Keyer

1 Press the delegation button for the target bank (M/E-1 to M/E-5, P/P), turning it on.

2 Press the delegation button for the target keyer (KEY1 to KEY8), turning it on.

The key control block is assigned to the selected keyer on the selected bank.

Setting the Key Type

1 Press a key type selection button to select a key type *(see page 107)*.

[LUM] button: Luminance key
[LIN] button: Linear key
[CRK] button: Chroma key
[PTN] button: Key wipe pattern key
Pressing a button, turning it on green, displays the parameter name and value of each parameter item on the display.

Note

To use a color vector key or wipe pattern key, use the menu *(see page 110)*.

2 Set the following parameters, depending on the selected key type.

When a luminance key or linear key is selected

No.	Parameter	Adjustment
1	CLIP	Reference level for key signal generation
2	GAIN	Key sensitivity
3	DENSITY	Key density
4	FILTER	Filter coefficient

When a chroma key is selected

No.	Parameter	Adjustment
1	CLIP [a)]	Chroma key reference level
2	GAIN [a)]	Key sensitivity
3	HUE [a)]	Hue
4	DENSITY	Key density
5	FILTER [a)]	Filter coefficient

a) Not displayed if [Key Active] is disabled in the Type >Chroma Adjust menu for a key.

When key wipe pattern key is selected

No.	Parameter	Adjustment
1	SIZE	Pattern size
2	SOFT	Degree of edge softness
3	DENSITY	Key density

Selecting a Key Fill

Set a key fill using the key fill/key source selection buttons.

When using a color matte

Press the [PAGE] button to display the page 2/3 setting buttons, then press the [MAT FILL] button.
The [MAT FILL] button turns on green, and displays the parameter name and value of each parameter item on the display.

When [Flat Color] is selected in the Type >Matte Adjust menu, set the following parameters.

No.	Parameter	Adjustment
1	LUM	Color 1 luminance
2	SAT	Color 1 saturation
3	HUE	Color 1 hue

When [Mix Color] is selected in the Type >Matte Adjust menu, set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	LUM	Color 1 luminance
2	SAT	Color 1 saturation
3	HUE	Color 1 hue
4	SIZE	Pattern size
5	SOFT	Degree of softness of pattern edge

Parameter group [2/2]

No.	Parameter	Adjustment
1	LUM	Color 2 luminance
2	SAT	Color 2 saturation
3	HUE	Color 2 hue
4	SIZE	Pattern size
5	SOFT	Degree of softness of pattern edge

When using a key fill bus signal

Press the [PAGE] button to display the page 2/3 setting buttons, then press the [MAT FILL] button, turning it off.
Using any of the following methods, select the key fill signal.

- On the cross-point control block, press a key bus delegation button on the cross-point pad and select a signal using the cross-point buttons.
- On the cross-point control block in key/AUX bus delegation mode, press a key bus delegation button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

Note

You can assign a key fill bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

Selecting a Key Source

Set a key source using the key fill/key source selection buttons.

When using a selected key fill and paired key source signal

Press the [AUTO SEL] button, turning it on.

When using a signal other than the selected key fill paired signal

Press the [SPLT] button, turning it on.
Using any of the following methods, select the key source.

- On the cross-point control block, press and hold a key bus delegation button on the cross-point pad and select a signal using the cross-point buttons in the 2nd row.
- Press and hold the [SPLT] button in the key control block, then select a signal using the cross-point buttons in the 2nd row in the cross-point control block.
- On the Flexi Pad control block in key operation mode, press and hold a key delegation button in the memory recall section and select a signal using the cross-point buttons in the 2nd row in the cross-point control block.
- On the cross-point control block in key/AUX bus delegation mode, press and hold a key bus delegation button in the 1st row and select a signal using the cross-point buttons in the 2nd row.

Notes

- On the cross-point control block in key bus mode or free assign mode, you can select a key fill signal in the 1st row and a key source signal in the 2nd row by pressing and holding the following buttons.
  - Key bus delegation buttons on the cross-point pad
  - [SPLT] button on the key control block
  - Key delegation buttons in the memory recall section on the Flexi Pad control block (key operation mode)
- You can assign a key source bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.
- To select a video signal, first set the [KEY] button operation mode in the Setup menu *(see page 112)*.

When using the selected key fill signal as the key source

Press the [AUTO SEL] button and [SPLT] button simultaneously.
When both buttons are off, Self mode is selected.

Note

When chroma key is selected as the key type, select Self mode.

Key Adjustments (Key Control Block)

You can make the following adjustments in the key control block.
- Chroma key adjustments *(see page 126)*
- Key edge modifications *(see page 127)*
- DME effects for keys *(see page 127)*
- Other key adjustments *(see page 128)*

For details about buttons and parameters on the key control block, see "Key Operations (Key Control Block)" (page 124).

Chroma Key Adjustments

Press the [PAGE] button to display the page 3/3 setting buttons. Press the chroma key setting button and adjust the chroma key *(see page 114)*.

[SMPL MARK] button: Auto chroma key (sample mark)
[KEY ACTV] button: Key active
[COL CAN] button: Color cancel

Pressing a button, turning it on green, displays the parameter names and set values on the display.

Setting the auto chroma key (sample mark) parameters

No.	Parameter	Adjustment
1	POS H	Horizontal position
2	POS V	Vertical position
3	SIZE	Size

To execute auto chroma key

Press the [AUTO STRT] button. This executes adjustment of the auto chroma key based on the color specified by the sample mark. During the execution of the auto chroma key, the [AUTO STRT] button is lit amber.

Setting the key active parameters

No.	Parameter	Adjustment
1	CLIP	Chroma key reference level
2	GAIN	Key gain
3	HUE	Hue
4	DENSITY	Density
5	FILTER	Filter coefficient

Setting the color cancel parameters

No.	Parameter	Adjustment
1	LUM	Luminance
2	SAT	Saturation
3	HUE	Hue
5	FILTER	Filter coefficient

Key Edge Modification

Press the [PAGE] button to display the page 2/3 setting buttons. Press a key modifier button to select an edge type *(see page 108)*.

[BDR] button: Border
[DROP BDR] button: Drop border
[SHDW] button: Shadow
[SOFT EDGE] button: Soft edge

Pressing a button, turning it on green, displays the parameter name and value of each parameter item on the display.

Note

To use a normal, outline, emboss, or zabton key edge, use the menu *(see page 116)*.

Setting the border parameters

The parameters to configure vary depending on whether the separate edge function is enabled/disabled.
The separate edge function is set using [Separate Edge] in the Edge menu for the key.
When [Matte] is selected in the <Edge Fill> group of the Edge menu for the key, you can adjust the color of the edge fill.

When separate edge is disabled

No.	Parameter	Adjustment
1	WIDTH	Border width
4	DENSITY	Border density

When separate edge is enabled

The border width settings can be made independently for left, right, top, and bottom sides. The separate edge function is only available when luminance key, linear key, color vector key, or chroma key is selected as the key type.

No.	Parameter	Adjustment
1	TOP	Top edge width
2	LEFT	Left edge width
3	RIGHT	Right edge width
4	BOTTOM	Bottom edge width

To adjust the edge fill color

Press the [MORE] button to display the 6th and subsequent parameters, then adjust color 1.

Parameter group [2/2]

No.	Parameter	Adjustment
1	LUM	Luminance
2	SAT	Saturation
3	HUE	Hue
4	DENSITY	Density

Setting the drop border and shadow parameters

When [Matte] is selected in the <Edge Fill> group of the Edge menu for the key, you can adjust the color of the edge fill.

No.	Parameter	Adjustment
1	WIDTH	Width
2	POSITION	Position
4	DENSITY	Density

To adjust the edge fill color

Press the [MORE] button to display the 6th and subsequent parameters, then adjust color 1.

Parameter group [2/2]

No.	Parameter	Adjustment
1	LUM	Luminance
2	SAT	Saturation
3	HUE	Hue
4	DENSITY	Density

Setting the soft edge parameters

No.	Parameter	Adjustment
1	SOFT	Edge softness

Notes

- When normal is selected for edge type, auto drop on mode must be enabled beforehand to use soft edge.
- Enabling soft edge on a luminance key or linear key disables clean mode.

DME Effects for Keys

For details about restrictions when using DME, see "DME restrictions" (page 121).

Assigning a DME to a key

1 Press the delegation button for the target bank (M/E1 to M/E5, P/P), turning it on.

2 Press the delegation button for the target keyer (KEY1 to KEY8), turning it on.

3 Using the DME channel selection buttons (DME1 to DME4), select the DME channel to use.

The lit colors of the [DME1] to [DME4] buttons indicate the DME assignment.
Lit green: DME assigned to the currently selected key
Lit amber: DME assigned to another key or bus
Not lit: Unassigned DME

To select a DME being used by another key/bus
Press and hold the [OVERRIDE] button and press a DME channel button that is lit amber.
The selected DME channel becomes available, and the button is lit green.

Using two or three DME channels on one keyer

Using the DME channel selection buttons (DME1 to DME4), select the DME channels to use and operate using the menu.

For details about the method of operation, see "Using two or three DME channels on one keyer" (page 121).

Using four DME channels on one keyer

Using the DME channel selection buttons (DME1 to DME4), select the DME channels to use and operate using the menu.

For details about the method of operation, see "Using four DME channels on one keyer" (page 122).

To check DME usage status

You can check the DME operating status in the Status >DME Status menu (3311) *(see page 192)*.

Assigning a DME output signal as a monitor signal

Press and hold the [MON] button and press the DME channel selection button (DME1 to DME4) for the DME channel to use.
This assigns the selected DME output to DME MON V and DME MON K.

To check DME assignment status

While the [MON] button is pressed, the lit color of the [DME1] to [DME4] buttons shows the DME assignment status.
Lit green: DME currently being monitored
Lit amber: DME which can be monitored
Not lit: Unassigned DME

Other Key Adjustments

Using an external processed key

To select key fill and key source signals for a processed key keyer on the AUX bus or edit preview bus, press [PROC KEY].
The [PROC KEY] button is lit amber, and the key fill and key source signals processed on the currently selected keyer are assigned to re-entry signals PROC V and PROC K.
When DME is selected on the keyer, the key fill and key source signals with DME effect applied are assigned.

Note

The PROC V and PROC K signals on each switcher bank cannot be selected using the cross-point buttons on the same switcher bank.

Using frame memory feed

To select key fill and key source signals for a processed key keyer on the frame memory source buses, press the [FM FEED] button.
The [FM FEED] button momentarily is lit amber, and the key fill and key source signals processed on the currently selected keyer are assigned to the frame memory source 1 and 2 buses. The [PROC KEY] button is lit amber simultaneously.
When DME is selected on the keyer, the key fill and key source signals with DME effect applied are assigned.

Using the show key function

While the [SHOW KEY] button is pressed, the key source signal for the processed key appears on the specified output.
You can also set the show key function so that it is maintained for a preset time after the [SHOW KEY] button is pressed.
The show key function output and preset time are configured in the Setup menu.

For details, see "Setting Show Key" (page 468).

Using auto delegation

To couple the selection of the buttons in the following control blocks so that the delegation selection switches automatically in the key control block, press the [AUTO DELEG] button, turning it on.

- Transition control block: [KEY1] to [KEY8] buttons
- Cross-point pad on the cross-point control block: Key 1 to 8 bus delegation buttons [KEY1] to [KEY8]
- 1st row on cross-point control block (key/AUX bus delegation mode): [KEY1] to [KEY8] buttons
- Memory recall section on the Flexi Pad control block (key operation mode): [KEY1] to [KEY8] buttons
- Key fader control block: Key delegation buttons

Returning the key adjustment values to their defaults

Press and hold the key type selection buttons (LUM, LIN, CRK, PTN) to restore the key adjustment values to their defaults *(see page 109)*.

Key modify clear

Simultaneously pressing and holding a bank delegation button (M/E1 to M/E5, P/P) and keyer delegation button (KEY1 to KEY8) sets the selected key settings to the initial status settings.

For details about initial status, see "Power-On (Startup) State Selection" (page 397).

Resizer

The resizer is a function that applies effects, such as image reduction/enlargement, movement, rotation, and changes in aspect ratio, to the generated key.
The following operations are available.

- Two-dimensional transforms of keys *(see page 129)*
- Key rotation on the X- or Y-axis *(see page 132)*
- Resizer interpolation settings *(see page 132)*
- Resizer crop/border settings *(see page 132)*
- Resizer CG border settings *(see page 134)*
- Resizer effect settings *(see page 135)*
  (wide key border, drop shadow, edge enhance, mosaic, defocus, mask)
- Key freeze setting *(see page 137)*

This section describes setting the resizer of key 1 on the M/E-1 bank as an example.

Notes

- The image of the key manipulated by resizer has a one-frame delay.
- Some effects of resizer are different from what you would expect of DME effects.
- There are restrictions on the combined use of resizer effects themselves and use with DME wipes *(see page 135)*.
- You cannot use DME effects on a key for which the resizer function is enabled. When one of the three functions – resizer, DME wipe and DME effects – is enabled, the other two are disabled.

Two-Dimensional Transforms and Rotation of Keys

Note

When the screen aspect ratio is 4:3 in HD format, reducing an image using the resizer reduces the 16:9 image as-is with the added image portions on the left and right sides. Use the crop function as required to extract the 4:3 image.

Reducing, enlarging, rotating, and moving keys (menu)

1 In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.

2 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	Location X	Horizontal key movement
2	Location Y	Vertical key movement
3	Size	Key reduction/enlargement
4 a)	Rotation X	Horizontal key rotation
4 b)	Rotation Y	Vertical key rotation
5	Perspective	Perspective

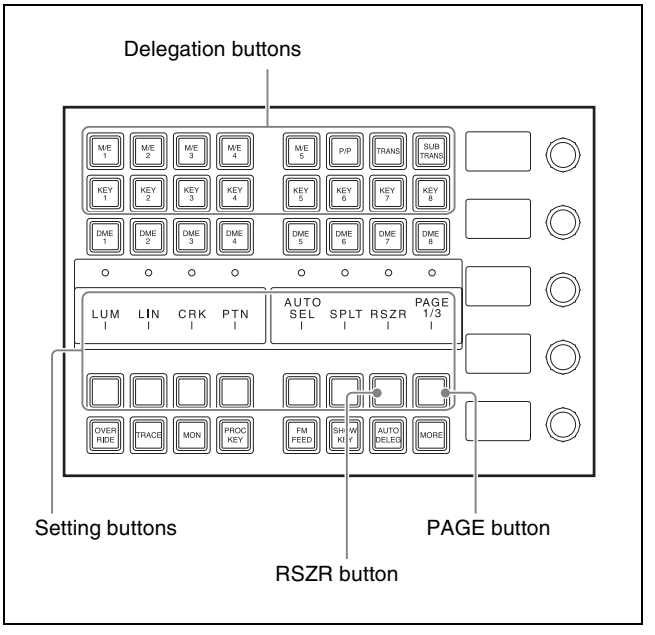
a) When [X] is selected in the <Rotation> group in the Resizer >Rotation menu (1115.5).
b) When [Y] is selected in the <Rotation> group in the Resizer >Rotation menu (1115.5).

Parameter group [2/2]

No.	Parameter	Adjustment
1	Aspect X	Change aspect ratio horizontally
2	Aspect Y	Change aspect ratio vertically
3	Aspect Ratio	Change aspect ratio horizontally and vertically simultaneously

Reducing, enlarging, rotating, and moving keys (key control block)

For details about buttons and parameters on the key control block, see "Key Operations (Key Control Block)" (page 124).



Key control block

1 Press a delegation button to select the target keyer.

Press the [M/E1] button, turning it on, and press the [KEY1] button, turning it on.

2 Press the [RSZR] button, turning it on.

3 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	LOC X	Horizontal key movement
2	LOC Y	Vertical key movement
3	SIZE	Key reduction/enlargement
4 a)	ROT X	Horizontal key rotation
4 b)	ROT Y	Vertical key rotation
5	PERS	Perspective

a) When rotation direction is selected using the [ROT X] button.
b) When rotation direction is selected using the [ROT Y] button.

Parameter group [2/2]

No.	Parameter	Adjustment
1	ASPECT X	Change aspect ratio horizontally
2	ASPECT Y	Change aspect ratio vertically
3	ASPECT R	Change aspect ratio horizontally and vertically simultaneously

4 Select the direction of rotation.

Press the [PAGE] button to display the page 2/3 setting buttons, then press the [ROT X] button or [ROT Y] button, turning it on.

5 Set the following parameters.

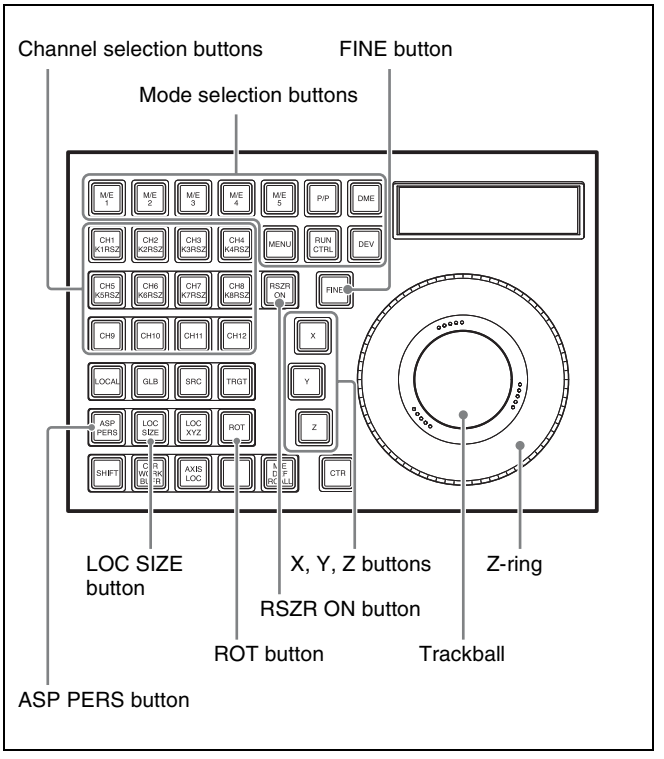
When the [ROT X] button is selected

No.	Parameter	Adjustment
1	ROT X	Horizontal key rotation
4	PERS	Perspective

When the [ROT Y] button is selected

No.	Parameter	Adjustment
2	ROT Y	Vertical key rotation
4	PERS	Perspective

Reducing, enlarging, rotating, and moving keys (device control block)



Device control block (trackball)

1 Press the [M/E1] button.

The [M/E1] button turns on green, and the M/E-1 bank switches to resizer operation mode.

Notes

- Pressing the [M/E1] to [M/E5] and [P/P] mode selection buttons switches the selected bank to resizer operation mode.
- You can select more than one button. The first selected button becomes the reference, and is lit green. Subsequent selected buttons are lit amber.

2 Press the [K1RSZ] button.

The [K1RSZ] button turns on green, and key 1 becomes the target of resizer operation.

Notes

- The [K1RSZ] to [K8RSZ] channel selection buttons correspond to key 1 to key 8.
- You can select more than one button. The first selected button becomes the reference, and is lit green. Subsequent selected buttons are lit amber.

3 Press the [RSZR ON] button, turning it on.

The target resizer is enabled.

4 Select the function to be set.

To change the aspect ratio of the key: Press the [ASP PERS] button, turning it on.
To reduce/enlarge or move the key: Press the [LOC SIZE] button, turning it on.
To rotate or change the perspective of the key: Press the [ROT] button, turning it on. To specify the direction of rotation, press the [X] button or [Y] button. To adjust perspective, press the [Z] button.

5 Use the trackball or Z-ring for the operation.

Pressing the [FINE] button, turning it on, enables fine adjustment of setting values (fine mode).
Pressing the [X], [Y], or [Z] button, turning it on, restricts operation to the selected axis or item.

The target bank and resizer, and the current parameter and its value, are displayed in the display of the device control block.

The functions assignable to trackball and Z-ring operations are shown in the following table.

Operation buttons (Parameter)	Trackball (horizontal rotation)	Trackball (vertical rotation)	Z-ring
	[X] button	[Y] button	[Z] button
ASP PERS (ASP)	Change aspect ratio on X-axis	Change aspect ratio on Y-axis	Change aspect ratio on X- and Y-axes simultaneously
LOC SIZE (LOC SIZE)	Move image on X-axis	Move image on Y-axis	Magnify and shrink image
ROT (ROT PERS)	Rotate image on Y-axis	Rotate image on X-axis	Change distance of viewpoint position

To enter parameters

Operates identically to DME three-dimensional parameter input.

For details, see "Three-Dimensional Parameter Entry" (page 227).

To reset parameters

Operates identically to DME three-dimensional parameter reset.

For details, see "Resetting three-dimensional parameters" (page 227).

To return the resizer to default state (clear work buffer)

To clear and reset to default state only the two-dimensional transform and rotation parameters contained in the work buffer, depending on the resizer operation, press the [CLR WORK BUFR] button in the device control block.

To clear all of the parameters in the work buffer and reset the resizer, press the [CLR WORK BUFR] button twice in rapid succession.
For the default state, you can select either the factory default settings or user settings.

For details, see "Power-On (Startup) State Selection" (page 397).

To reset the bank to the default state
Press the [M/E DEF RCALL] button twice in rapid succession to return the currently selected bank (M/E or PGM/PST) to the default state.

Rotation Settings

Note

Select either X or Y direction for rotation. You cannot make rotation by combining both directions.

1. In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.
2. In the <Resizer Effect/Rotation> group, press [Rotation].

   The Rotation menu (1115.5) appears.
3. In the <Rotation> group, select the direction of rotation.

   X: Horizontal rotation
   Y: Vertical rotation
4. Set the following parameters.

   When [X] is selected

No.	Parameter	Adjustment
1	Rotation X	Horizontal key rotation
4	Perspective	Perspective

   When [Y] is selected

No.	Parameter	Adjustment
2	Rotation Y	Vertical key rotation
4	Perspective	Perspective

Virtual Image Cancelation

If an extreme degree of perspective is set for an image, the part of the image exceeding the virtual view point is displayed wrapped around on the monitor screen. This is referred to as a virtual image.
You can make a setting so as not to show the virtual images.

1. In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.
2. In the <Resizer Effect/Rotation> group, press [Rotation].

   The Rotation menu (1115.5) appears.
3. Press [Wrap Around], turning it on.

Interpolation Settings

1. In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.
2. In the <Resizer Effect/Rotation> group, press [Resizer Process].

   The Resizer Process menu (1115.3) appears.
3. Select an interpolation method.

   Set the interpolation settings in the same way as for the DME interpolation settings.

   For details, see "Interpolation Settings" (page 273).

Crop/Border Settings

Setting cropping (menu)

1. In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.
2. In the <Resizer Effect/Rotation> group, press [Border/Crop].

   The Border/Crop menu (1115.1) appears.
3. Press [Crop], turning it on.
4. Set the parameters.

   Set the crop settings in the same way as for the DME crop settings.

   For details, see "Crop Settings" (page 231).

Note

Enabling mosaic or defocus in the M/E-1 >Key1 >Resizer >Enhanced Effect menu (1115.2) and selecting [Video/Key] in the <Mosaic/Defocus Mode> group disables cropping.

Setting cropping (device control block)

You can adjust the crop width of the top/bottom/left/right edges in the device control block (trackball).

Note

The [BDR/CROP] button must be assigned to the operation buttons beforehand in the Setup menu *(see page 411)*.

1 Enable the resizer as described in steps **1** to **3** in *"Reducing, enlarging, rotating, and moving keys (device control block)" (page 131)*.

2 In the M/E-1 >Key1 >Resizer >Border/Crop menu (1115.1), press [Crop], turning it on.

3 In the device control block, press and hold the [SHIFT] button, and press the [BDR/CROP] button, turning it on green.

4 Select the target edge to crop, and adjust the crop width using the Z-ring.

Select the target edge to crop by pressing the following buttons.
- [X] button: Crop width of top edge
- [Y] button: Crop width of left edge
- [Z] button: Crop width of right edge
- [CTR] button: Crop width of bottom edge

The target bank and resizer, and the current parameter and its value, are displayed in the display of the device control block. The edge parameters are indicated by the letter "T" (top edge), "L" (left edge), "R" (right edge), and "B" (bottom edge).

For details about parameter operations, see "Three-Dimensional Parameter Entry" (page 227).

Notes

- Pressing the [FINE] button, turning it on, enables fine adjustment of setting values (fine mode).
- If no target edge to crop is selected, operating the Z-ring adjusts the crop width of all edges.
- For cropping, the number of significant digits of the parameter after the decimal point is two.

Setting the border (menu)

1 In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.

2 In the <Resizer Effect/Rotation> group, press [Border/Crop].

The Border/Crop menu (1115.1) appears.

3 Press [Border], turning it on.

4 Set the following parameters.

No.	Parameter	Adjustment
1	H	Simultaneously adjust border width of left and right edges
2	V	Simultaneously adjust border width of top and bottom edges
3	All	Simultaneously adjust border width on all edges
4	Density	Border density

To apply color to a border

1 In the <Border Mode> group, press [Flat Color].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

To soften the inner edge of a border

1 Press [Border Soft].

2 Set the following parameter.

No.	Parameter	Adjustment
1	Inner Soft	Softness of inner edge of border

To add a beveled light edge

1 In the <Border Mode> group, press [Beveled Light Edge].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Top	Position of top side
2	Left	Position of left side
3	Right	Position of right side
4	Bottom	Position of bottom side
5	All	Position of all four sides

3 If setting the softness of the border, press [Border Soft], turning it on.

4 Set the following parameters.

No.	Parameter	Adjustment
1	Inner Soft	Softness of inner edge of border
2	Bound Soft	Softness of border boundary

To add a beveled color edge

1 In the <Border Mode> group, press [Beveled Color Edge].

2 In the <Color Adjust> group, select the edges for adjustment.

Select [Top], [Left], [Right], or [Bottom]. To adjust all four edges simultaneously, press [All].

3 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

4 If setting the softness of the border, press [Border Soft], turning it on.

5 Set the following parameters.

No.	Parameter	Adjustment
1	Inner Soft	Softness of inner edge of border
2	Bound Soft	Softness of border boundary

Setting the border (device control block)

You can adjust the border width of the top/bottom/left/right edges in the device control block (trackball).

Note

The [BDR/CROP] button must be assigned to the operation buttons beforehand in the Setup menu *(see page 411)*.

1 Enable the resizer as described in steps **1** to **3** in *"Reducing, enlarging, rotating, and moving keys (device control block)" (page 131)*.

2 In the M/E-1 >Key1 >Resizer >Border/Crop menu (1115.1), press [Border], turning it on.

3 In the device control block, press the [BDR/CROP] button, turning it on amber.

4 Adjust the border width using the trackball or Z-ring.

- Trackball (horizontal rotation): Adjusts the border width in the X-axis direction (left/right edges).
- Trackball (vertical rotation): Adjusts the border width in the Y-axis direction (top/bottom edges).
- Z-ring: Adjusts the border width simultaneously in the X-axis and Y-axis directions.

The target bank and resizer, and the current parameter and its value, are displayed in the display of the device control block.

For details about parameter operations, see "Three-Dimensional Parameter Entry" (page 227).

Notes

- Pressing the [FINE] button, turning it on, enables fine adjustment of setting values (fine mode).
- Pressing the [X], [Y], or [Z] button, turning it on, restricts operation to the selected axis.
- For borders, the number of significant digits of the parameter after the decimal point is two.

CG Border Settings

The resizers of two keys are used for CG border settings. The combination of key pairs used is fixed (keys 1 and 2, keys 3 and 4, keys 5 and 6, keys 7 and 8). The setting operations are performed using keys 1, 3, 5, and 7 only. You can also change the position and size of the image embedded in the border.

This section describes making settings using key 1 and key 2 as an example.

Notes

- This setting is available only when the signal format is 3840×2160P, 1080i.
- To change the position and size of the image embedded in the border, clean mode must be enabled on the target key. Enabling the CG border settings using key 1 automatically enables clean mode on both key 1 and key 2.
- Inserting key 1 also inserts key 2 in unison. Selecting/releasing key 1 in a next transition also selects/releases key 2 in unison. Inserting/removing key 2 only and transition operations using key 2 only are not possible.
- When a CG border is set, key 1 has the following limitations.
  - Dual resizer effects are not supported.
  - Resizer border and crop settings are disabled.
  - The target of resizer mosaic and defocus settings is fixed to the video signal only.
- A CG border cannot be set using key 1 if the state of key 2 is any of the following.
  - If key 2 is currently inserted or used in a transition.
  - When key 2 is selected in a next transition.
  - When the resizer of key 2 is enabled.
  - When DME wipe is selected for the transition type for key 2.

- The CG border settings are saved separately in key 1 and key 2 key snapshots. When recalling, it is necessary to recall the two key snapshots at the same time.

Four signals are required for a CG border.
The image to embed in the border and the key signal for keying the image must be selected using key 1 in advance.
The border image and the key signal for the image must be selected using key 2.

For details about signals used in a CG border, see "CG Border Settings" (page 230).

1 In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.

2 In the <Resizer Effect/Rotation> group, press [Border/Crop].

The Border/Crop menu (1115.1) appears.

3 In the <CG Border> group, press [CG Border], turning it on.

4 Set the position and size of the image to embed in the border using the following parameters.

No.	Parameter	Adjustment
1	Location X	Horizontal position
2	Location Y	Vertical position
3	Size	Size

To lock the border setting

You can lock the position and size of the border image of the CG border.
In the <CG Border> group, press [Frame Pos Lock] to lock the border.

Note

Locking the border returns all resizer parameters to their default values, and the settings cannot be changed.

Effect Settings

Restrictions on resizer effects

Restrictions on the use of effects

Of the resizer effects, using mask, drop shadow, or wide key border requires two resizer hardware units. These are called "dual resizer effects."
In a dual resizer effect, predetermined combinations of key 1 and key 2, key 3 and key 4, key 5 and key 6, key 7 and key 8 are used.

For example, if the resizer is enabled on either key 1 or key 2, the other key cannot be used for a dual resizer effect. The same restriction applies when using a resizer DME wipe in place of resizer.
There are also restrictions on the combination of effects that can be used simultaneously on the same keyer.

Unavailability of simultaneous use within the same keyer

The following combinations of resizer effects cannot be enabled simultaneously.
- Mosaic and edge enhance
- Defocus and wide key border
- Mask and drop shadow
- Mask and wide key border

Resizer effects setting menu

1 In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.

2 In the <Resizer Effect/Rotation> group, press [Enhanced Effect].

The Enhanced Effect menu (1115.2) appears.

Setting a wide key border

1 In the M/E-1 >Key1 >Resizer >Enhanced Effect menu (1115.2), press [Dual Rszr Effect], turning it on.

2 Press [Wide Key Border], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	H	Simultaneously adjust border width of left and right edges
2	V	Simultaneously adjust border width of top and bottom edges
3	All	Simultaneously adjust border width on all edges
4	Soft [a)]	Softness of border
5	Density	Border density

a) Common to the [Soft] drop shadow parameter.

4 To add an outline, press [Outline], turning it on.

5 To adjust the border color, press [Border Color].

6 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance

No.	Parameter	Adjustment
2	Saturation	Saturation
3	Hue	Hue

Setting a drop shadow

1 In the M/E-1 >Key1 >Resizer >Enhanced Effect menu (1115.2), press [Dual Rszr Effect], turning it on.

2 Press [Drop Shadow], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal position of shadow
2	V	Vertical position of shadow
3	Size	Size
4	Soft [a)]	Softness
5	Density	Density of shadow

a) Common to the [Soft] wide key border parameter.

Setting an edge enhance

Adjusting the gain sharpens the image.

1 In the M/E-1 >Key1 >Resizer >Enhanced Effect menu (1115.2), press [Edge Enhance], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal gain adjustment
2	V	Vertical gain adjustment
3	All	Horizontal and vertical adjustment

Setting a mosaic

1 In the M/E-1 >Key1 >Resizer >Enhanced Effect menu (1115.2), press [Mosaic], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Size	Size of tiles
2	Aspect	Aspect ratio of tiles • Negative values expand vertically. • Positive values expand horizontally.

3 In the <Mosaic/Defocus Mode> group, select the signal to which to apply the mosaic effect.

Video/Key: Video signal and key signal
Video: Video signal only

Note

Enabling mosaic and selecting [Video/Key] in the <Mosaic/Defocus Mode> group disables crop and mask.

To make the mosaic like a relief pattern

1 Press [Relief], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
3	Gain	Relief depth of mosaic pieces
4	Angle	Light source direction

Setting a defocus

1 In the M/E-1 >Key1 >Resizer >Enhanced Effect menu (1115.2), press [Defocus], turning it on.

2 In the <Mosaic/Defocus Mode> group, select the signal to which to apply the defocus effect.

Video/Key: Video signal and key signal
Video: Video signal only

3 Set the parameters.

Set the defocus settings in the same way as for the DME defocus settings.

For details, see "Defocus Settings" (page 241).

Note

Enabling defocus and selecting [Video/Key] in the <Mosaic/Defocus Mode> group disables crop and mask.

Setting a mask

1 In the M/E-1 >Key1 >Resizer >Enhanced Effect menu (1115.2), press [Dual Rszr Effect], turning it on.

2 Press [Mask], turning it on.

3 Press [Mask Menu].

The Mask menu (1115.4) appears.

4 In the <Mask Source> group, select one of the following.

Box: Use a box pattern as the mask signal.

Circle: Use a circle pattern as the mask signal.

5 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal position
2	V	Vertical position
3	Size	Size of mask
4	Soft	Softness of mask
5	Aspect	Aspect ratio

6 To invert the mask source, press [Mask Invert], turning it on.

7 To rotate a pattern, select the type of rotation in the <Rotation> group, and set the following parameter.

When [Angle] is selected

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern • A value of –1.00 corresponds to a rotation of one turn counterclockwise. • A value of +1.00 corresponds to a rotation of one turn clockwise. • A value of 0.00 corresponds to no rotation.

When [Speed] is selected

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern • A value of –100.00 corresponds to 4 rpm counterclockwise rotation. • A value of +100.00 corresponds to 4 rpm clockwise rotation. • A value of 0.00 corresponds to pause.

Notes

- When a mask effect is applied to a border, the boundary becomes discontinuous, giving an unnatural effect. Avoid applying a mask to a border.
- Enabling mosaic or defocus and selecting [Video/Key] in the <Mosaic/Defocus Mode> group disables the mask.

Key Freeze Setting

You can enable a resizer and freeze the key image.

Notes

- This setting is available only when the switcher signal format is 3840×2160P.
- When key freeze is set, the key cannot be adjusted.
- When key freeze is set, the resizer cannot be operated (except for the resizer and key freeze enable/disable setting operation).
- Even when key freeze is set, the following data is saved with the key freeze state released.
  - Key memory
  - Snapshots
  - Key snapshots
  - Initial status
- When key freeze is set and any of the following operations is performed, the key freeze is released.
  - M/E copy (copy destination only)/swap
  - Keyer copy (copy destination only)/swap
  - Creating and editing keyframes
- When key freeze is set and any of the following operations is performed, the initial key freeze setting cannot be restored, even if the undo function ([UNDO] button or [Undo] in the menu) is executed. If executed, the key freeze is released.
  - Recall snapshot
  - Recall key snapshot
  - M/E copy (copy destination only)/swap
  - Keyer copy (copy destination only)/swap
- When key freeze is set, the key freeze setting is retained in the following cases, even when a keyframe, snapshot, or key snapshot is recalled.
  - When key disable is set *(see page 468)*
  - When key modifiers are disabled *(see page 334)*

1 In the M/E-1 >Key1 >Resizer menu (1115), press [Resizer], turning it on.

2 Press [Key Freeze], turning it on.

Key freeze is set, and “Freeze” is displayed on the VF button of key 1 in the M/E-1 menu.

To release the key freeze

Press [Key Freeze], turning it off.

Key Snapshots

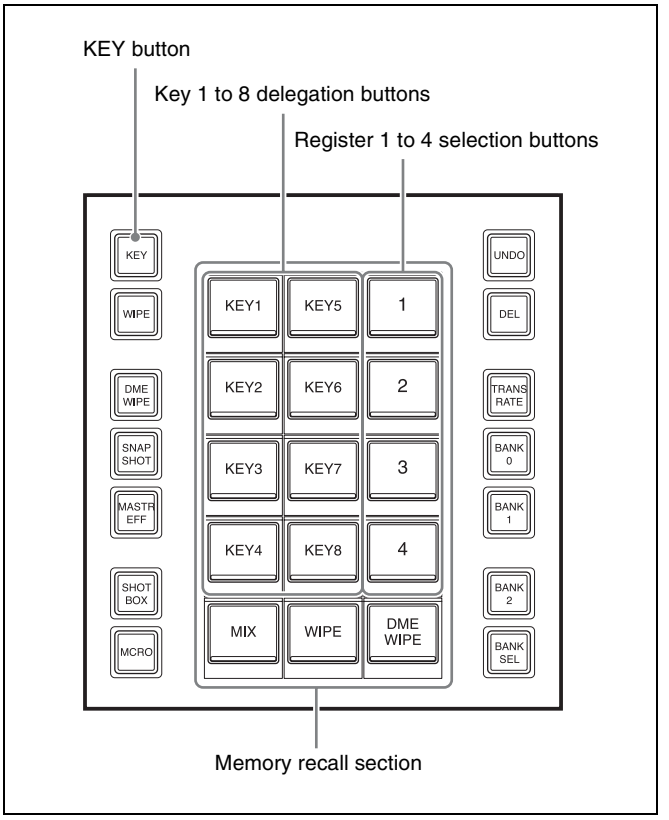
Key settings, other than the key on/off status and the key priority, can all be instantaneously saved in a dedicated register and recalled when required. A key snapshot comprises three values: a cross-point button number, key memory full mode, and independent key transition, and can be recalled in any combination.
There are four key snapshot registers for each keyer.

You perform key snapshot operations in the Flexi Pad control block or key fader control block.

Key Snapshot Operations (Flexi Pad Control Block)

Pressing the [KEY] button in the Flexi Pad control block switches the memory recall section to key operation mode for saving and recalling key snapshots.

This section describes operation of key snapshots on key 1 on the M/E-1 bank as an example.



Flexi Pad control block

Button display in the memory recall section

You press buttons in the memory recall section to select registers (1 to 4).

The register name is displayed on buttons for registers with a registered snapshot.

The button color varies as follows, according to the register state.
Gray characters on black: Register not containing a saved snapshot
White characters on dark blue: Register containing a saved snapshot
Lit orange: Last recalled register

Saving a key snapshot

1 In the M/E-1 bank Flexi Pad control block, press the [KEY] button.

This switches the memory recall section to key operation mode.

2 Press the [KEY1] button in the memory recall section.

3 While pressing the [KEY] button, press the button for the register you want to save.

The selected button is lit orange, and the key snapshot is saved.

Note

If you press a button in which a key snapshot is already saved, the existing contents of the register will be overwritten.

Recalling a key snapshot

1 In the M/E-1 bank Flexi Pad control block, press the [KEY] button.

This switches the memory recall section to key operation mode.

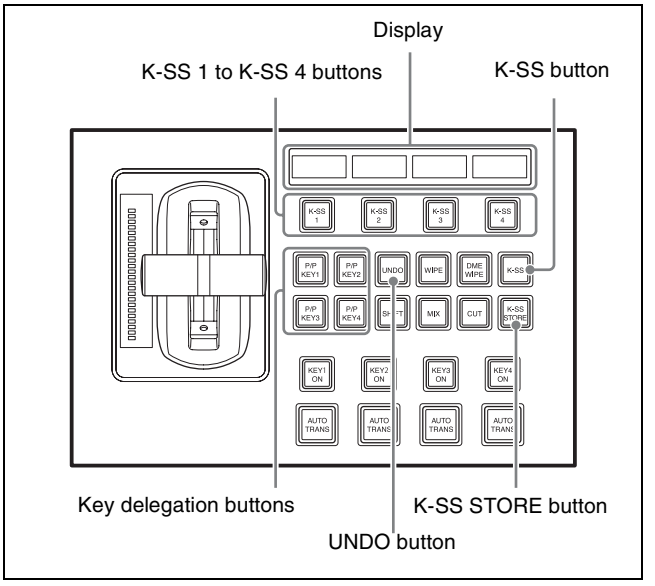
2 Press the [KEY1] button in the memory recall section.

3 Press the button for the register you want to recall.

The selected button is lit orange, and the key snapshot is recalled.
The recalled information varies depending on the settings in the Snapshot >Key Snapshot >Attribute menu (6351) *(see page 334)*.

Key Snapshot Operations (Key Fader Control Block)

Pressing the [K-SS] button in the fader control block switches the control block to key snapshot operation mode for saving and recalling key snapshots.



Key fader control block

You select registers 1 to 4 using the [K-SS 1] to [K-SS 4] buttons.
The buttons for registers that store a snapshot are lit amber, and the button for the last recalled register is lit green.
The register name is displayed on the display for buttons for registers with a registered snapshot.

Saving a key snapshot

1 Select the target key to operate using the key delegation buttons.

2 Press the [K-SS] button.

The [K-SS] button lights amber, and the control block switches to key snapshot operation mode.

3 While pressing the [K-SS STORE] button, press the button ([K-SS 1] to [K-SS 4]) for the register you want to save.

The selected button is lit green, and the key snapshot is saved.

Note

If you press a button in which a key snapshot is already saved, the existing contents of the register will be overwritten.

Recalling a key snapshot

1 Select the target key to operate using the key delegation buttons.

2 Press the [K-SS] button.

The [K-SS] button lights amber, and the control block switches to key snapshot operation mode.

3 Press the button ([K-SS 1] to [K-SS 4]) for the register you want to recall.

The selected button is lit green, and the key snapshot is recalled.
The recalled information varies depending on the settings in the Snapshot >Key Snapshot >Attribute menu (6351) *(see page 334)*.

To cancel a key snapshot recall operation

Press the [UNDO] button.

Wipes

Chapter 5

Overview

A wipe is a function that switches from the current image to a new image using a wipe pattern.
Changing the background by means of a wipe is referred to as a "background wipe," and inserting or removing a key with a wipe is termed a "key wipe."
There are two types of wipe: those that can be selected in a common transition, and those that can be selected in an independent key transition.

Types of Wipe Pattern

Wipe patterns are classified into the following groups. Only standard wipe patterns can be used in an independent key transition.

For images of patterns, see "Wipe Pattern List" (page 494).

Standard wipes
Patterns consisting of straight lines vertically, horizontally, or diagonally, and circular patterns.

Enhanced wipes
Patterns such as hearts, stars, and round corners.

Rotary wipes
Patterns that rotate an image about a point.

Mosaic wipes
Patterns that divide an image into small tiles.

Random/diamond dust wipes
Patterns that display small tiles randomly, and patterns that generate fine particles.

Basic Wipe Setting Operations

You carry out wipe setting operations using the Wipe menu on each of the switcher banks.
This section describes operations on the M/E-1 bank (M/E-1 >Wipe menu) as an example.

For details about independent key transition wipe settings, see "Basic Independent Key Transition Wipe Setting Operations" (page 150).

Selecting a Wipe Pattern

1. Open the M/E-1 >Wipe >Main Pattern menu (1151).
2. Press the button for the desired wipe pattern group to select it.

   The patterns from the selected pattern group appear on the screen.
3. Press the desired pattern to select it.

Adjusting wipe pattern parameters

Of the wipe patterns, the following have parameters that can be adjusted.

When a polygon wipe is selected (pattern number 49)

No.	Parameter	Adjustment
1	No	Number of corners
2	Star Rate	Degree of sharpness of the corner [a)]

a) A value of –100.00 completely replaces the corner with a rounded arc, and a value of +100.00 the corners are in the most pointed state.

When a mosaic wipe is selected (pattern numbers 200 to 203, 206 to 213, 224 to 247, 250 to 257, 260 to 269)

No.	Parameter	Adjustment
1	H Tile No	Number of tiles horizontally
2	V Tile No	Number of tiles vertically

When a karaoke wipe is selected (pattern numbers 220 to 223)

No.	Parameter	Adjustment
1	Start	Position of start tile [a]
2	Row No	Number of rows of tiles
3	Phase	Delay for next row [b]

a) At –100.00 tiles appear from the top edge (or left edge) of the screen; at +100.00 tiles appear from the bottom edge (or right edge) of the screen.
b) At –100.00 tiles in all rows appear simultaneously; at +100.00 tiles appear in the next row after the tiles in the previous row are completely displayed.

When a random wipe is selected (pattern number 273)

No.	Parameter	Adjustment
1	H Size	Tile width
2	V Size	Tile height
3	Volatility	Rate of tile generation

When a diamond dust wipe is selected (pattern number 274)

No.	Parameter	Adjustment
1	H Size	Particle width
2	V Size	Particle height
3	Flash Rate	Rate of generation of particles

Pattern Mix

You can create a new pattern by combining two selected patterns (main and sub).

Note

It is not possible to execute a pattern mix in an independent key transition.

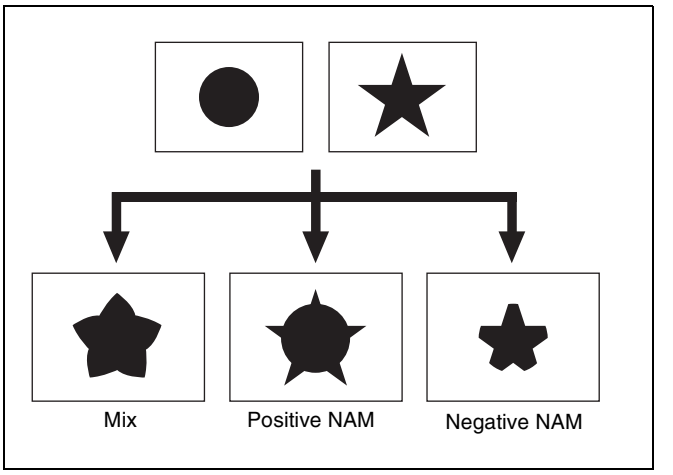
Types of pattern mix

The following four types of pattern mix can be selected.

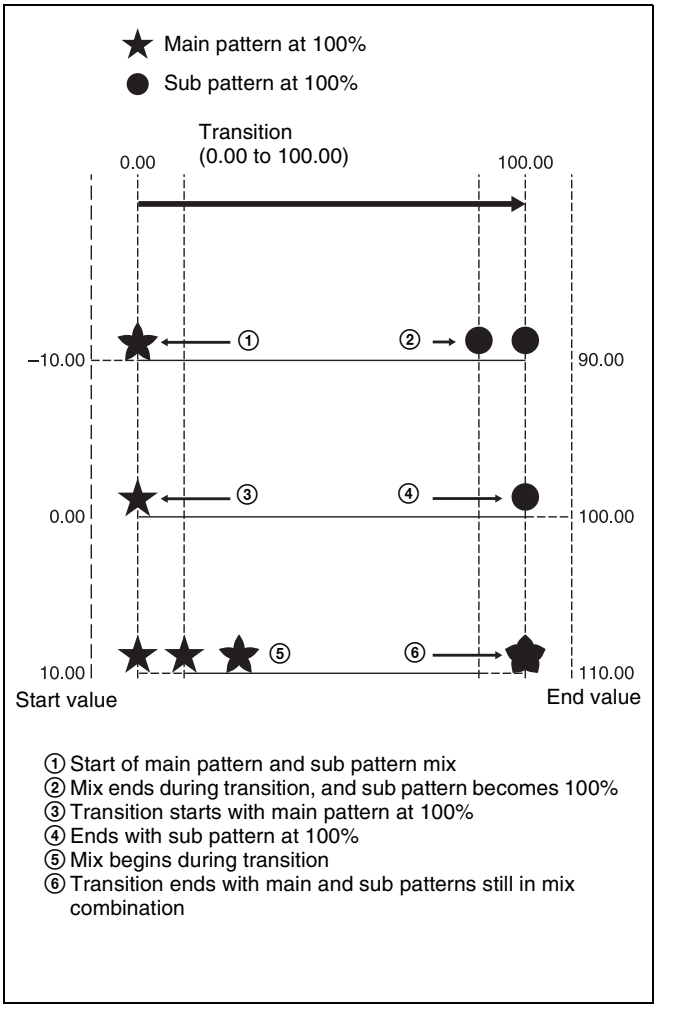
Mix: The effect of the sub pattern is applied to the main pattern, modifying the outline or nature of the main pattern.

Positive NAM (+Nam): Creates a pattern with an outline comprising the sub pattern superimposed on the main pattern.

Negative NAM (–Nam): Creates a pattern with an outline of the overlapping portion of the main pattern and the sub pattern.



Morphing: As the transition progresses, the pattern changes. It morphs from the main pattern, through a mix combination, to the sub pattern.



- Parameter settings

  Start: Point in the transition at which the main pattern is at 100%

  End: Point in the transition at which the sub pattern is at 100%

- A value of 0.00 corresponds to the start of the transition, and a value of 100.00 corresponds to the end of the transition.
- A negative Start value signifies that the main and sub patterns are already mixing when the transition starts.
- An End value of 100.00 or more signifies that the main and sub patterns are still mixing when the transition ends.
- If the Start and End values are the same, the main and sub patterns are interchanged instantaneously at a specified point in the transition.
- If the End value is less than the Start value, the transition changes from the sub pattern to the main pattern.

Dust mix

You can apply a diamond dust wipe to a selected pattern. You can also apply the diamond dust wipe effect to the pattern resulting from a pattern mix *(see page 143)*. When the pattern mix function is disabled, enabling dust mix mixes the main pattern and the diamond dust pattern. This state is the same as a pattern mix when the diamond dust pattern is selected for the sub pattern.

Note

When a random/diamond dust wipe (pattern numbers 270 to 274) is selected, the dust mix function is not available.

Main/sub modifier link

When carrying out a pattern mix, it is possible to link the modifier settings for the main pattern and sub pattern. There are two type of link mode, as follows.

Full link mode

In this mode, all modifier settings are the same for the main pattern and sub pattern. Changing the modifier settings for one pattern automatically changes the settings for the other.

Semi link mode

Only the parameter settings of the modifiers are linked. The modifier enable/disable settings are not linked. When the parameter values of the same modifiers for the main pattern and sub pattern are different and link mode is selected, changing the value of the parameter for one pattern also changes the value of the parameter for the other pattern to maintain the same difference between the two.

Note

When executing a wipe transition using a pattern mix, it is recommended that you set the modifier link function to full link mode. If the modifier link function is disabled or semi link mode is selected, the desired image may not be obtained at the start or end of the transition.

Combining two patterns

In the M/E-1 >Wipe >Main Pattern menu (1151), select a main pattern, then use the following procedure.

1 Open the M/E-1 >Wipe >Sub Pattern menu (1153).

2 Press the button for the desired wipe pattern group and then press the desired sub pattern to select it.

Some patterns may not be available for selection, depending on the selected main pattern.

Yes: Available, No: Not available

Main pattern	Sub pattern				
	Standard	Enhanced	Rotary	Mosaic	Random/ diamond dust
Standard	Yes	Yes	No	Yes	Yes
Enhanced	Yes	Yes	No	Yes	Yes
Rotary	No	No	No	No	No
Mosaic	Yes	Yes	No	No	Yes
Random/ diamond dust	Yes	Yes	No	Yes	No

3 Open the M/E-1 >Wipe >Pattern Mix menu (1152).

4 In the <Pattern Mix> group, select the type of pattern mix.

Mix: Mix
+Nam: Positive NAM
–Nam: Negative NAM
Morphing: Morphing

5 Depending on the selection in step **4**, set the following parameters.

When mix, positive NAM, or negative NAM is selected

No.	Parameter	Adjustment
1	Mix Ratio	Proportion of sub pattern relative to the main pattern

When morphing is selected

No.	Parameter	Adjustment
2	Start	Point in transition at which main pattern is at 100%
3	End	Point in transition at which sub pattern is at 100%

6 In the <Main/Sub Link> group, configure the main/sub modifier link.

Full: Full link mode
Semi: Semi link mode

Applying a diamond dust wipe effect to the selected pattern

1 In the M/E-1 >Wipe >Pattern Mix menu (1152), press [Dust Mix], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Mix Ratio	Mix level of diamond dust pattern
2	H Size	Particle width
3	V Size	Particle height
4	Flash Rate	Rate of generation of particles

Setting Wipe Modifiers

You can apply various modifiers to a wipe pattern, such as setting the wipe direction and pattern position.
Note that some modifiers may not be available, depending on the pattern *(see page 149)*.

Main pattern and sub pattern modifiers

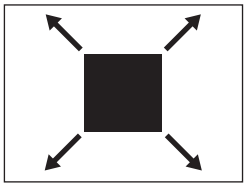
You can set the following modifiers independently for the main pattern and sub pattern.
- Positioner
- Rotation
- Aspect
- Multi
- Pairing
- Modulation
- Spring
- Spiral

Modifiers for the main pattern are set in the M/E-1 >Wipe >Main Modify menu (1155), and modifiers for the sub pattern are set in the M/E-1 >Wipe >Sub Modify menu (1156). The menu operations are common to both.
This section describes setting modifiers for the main pattern as an example.

Setting the wipe direction (Direction)

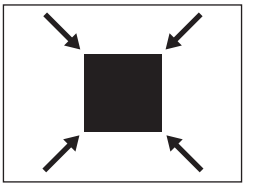
Specify the direction of the wipe effect.

Normal



Wipe in the normal direction.

Reverse



Wipe in the opposite direction of the normal direction.

Normal/Reverse

The wipe direction alternates between normal and reverse after each transition.

To specify the wipe direction in the menu

1 Open the M/E-1 >Wipe >Edge/Direction menu (1154).

2 In the <Direction> group, specify the wipe direction.

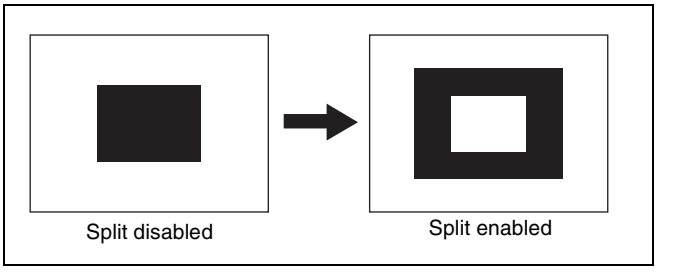
To specify the wipe direction using a button in the transition control block

In the transition control block of each bank, press the wipe direction selection buttons.
NORM: Normal [1)]
NORM/REV: Normal/reverse
REV: Reverse

1) When the [REV] button is not lit if using the transition control block (simple type).

Splitting the wipe pattern (Split)

This splits the pattern, making the parts of the wipe move in opposite directions.



1 Open the M/E-1 >Wipe >Edge/Direction menu (1154).

2 Press [Split], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Split No	Number of splits (1 to 4)
2	Spacing	Spacing between adjacent patterns

Modifying a wipe pattern edge (Edge)

You can apply a border to the pattern or soften the edges.

Border

Applies a border to the pattern.

Soft

Softens the pattern edges.

Soft Border

Softens the border applied to the pattern.

When a border or soft border is selected, the signal filling the edge is called an edge fill. For the edge fill, you can use a signal (matte) generated by a dedicated color matte generator, or the signal selected on the utility 2 bus. A matte has two colors, color 1 and color 2, which can be combined (color mix).

1 Open the M/E-1 >Wipe >Edge/Direction menu (1154).

2 In the <Edge> group, select the edge type.

3 Depending on the selection in step **2**, set the following parameters.

When [Border] is selected

No.	Parameter	Adjustment
1	Width	Border width

When [Soft] is selected

No.	Parameter	Adjustment
1	Soft	Edge softness

When [Soft Border] is selected

No.	Parameter	Adjustment
1	Width	Border width
2	Inner Soft	Degree of softness inside the border
3	Outer Soft	Degree of softness outside the border

4 When Border or Soft Border is selected, select the edge fill signal in the <Edge Fill> group.

Utility 2 Bus: Signal selected on the utility 2 bus
Matte: Signal from a dedicated color matte generator

5 Depending on the selection in step **4**, carry out the following operation.

When [Utility 2 Bus] is selected: On the cross-point control block, press delegation button [UTL2] on the cross-point pad and select a signal using the cross-point buttons.

Notes

- On the cross-point control block in key/AUX bus delegation mode, press the [UTIL2] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.
- You can assign the utility 2 bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.
- You can assign a utility 2 bus delegation button to the 1st row or 2nd row of the AUX bus control block (AUX bus operation mode) in the Setup menu *(see page 417)*.

When [Matte] is selected: Press [Matte Adjust] to open the Matte Adjust menu (1154.1), and select [Flat Color] (single color) or [Mix Color] (2-color mix) in the <Edge Matte> group.
If [Mix Color] is selected, set the color mixing *(see page 144)*.
If [Flat Color] is selected, set color 1 using the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Carrying out a color mix for the edge fill matte

If [Matte] is selected for the border or soft border edge fill, you can combine color 1 and color 2.
To combine colors, you can use not only a normal wipe generator pattern, but also a dedicated color mix pattern.

1 In the <Edge Fill> group of the M/E-1 >Wipe >Edge/Direction menu (1154), select [Matte] and press [Matte Adjust].

The Matte Adjust menu (1154.1) appears.

2 In the <Edge Matte> group, select [Mix Color].

3 In the <Mix Pattern> group, select one of the following.

Wipe: Wipe pattern selected for a transition
Pattern: Use a dedicated pattern.

4 Depending on the selection in step **3**, set the following parameters.

When [Wipe] is selected

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Edge softness

When [Pattern] is selected

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Edge softness
3	Pattern	Pattern number a)

a) The patterns are the same as standard wipe patterns 1 to 24.

You can also make a pattern selection by pressing [Mix Pattern Select] in the Matte Adjust menu to display the Mix Ptn Select menu (1154.2).
Press the desired pattern (1 to 24) to select it, and set the [Size] and [Soft] parameters.

5 If a pattern is selected in step **4**, set the pattern modifiers as required.

When selecting [Position] and setting the pattern position

No.	Parameter	Adjustment
1	Position H	Horizontal position a)
2	Position V	Vertical position a)

a) See *page 145*.

When selecting [Multi] and replicating the pattern

No.	Parameter	Adjustment
1	H Multi	Number of repetitions of pattern horizontally
2	V Multi	Number of repetitions of pattern vertically
3	Invert Type	Pattern layout a)

a) See *page 147*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 146*.

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) See *page 146*.

When selecting [Speed] in the <Rotation> group and rotating the pattern at a constant speed

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern a)

a) See *page 146*.

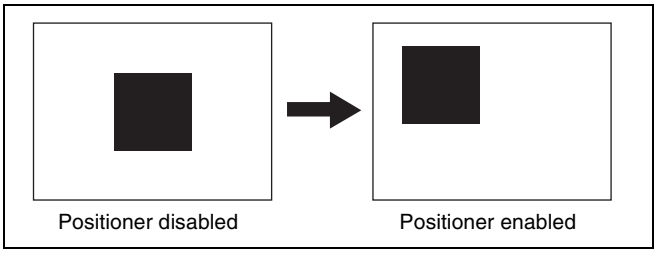
6 Select [Color 1] and [Color 2], respectively, and set the colors.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

7 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Setting the wipe pattern position (Positioner)

Move the pattern to a desired position.



1 Open the M/E-1 >Wipe >Main Modify menu (1155).

2 In the <Position> group, press [Position] and set the pattern position.

No.	Parameter	Adjustment
1	Position H	Horizontal position • Negative values move left. • Positive values move right.

No.	Parameter	Adjustment
2	Position V	Vertical position • Negative values move down. • Positive values move up.

To return the pattern position to the center of the screen

In the <Position> group, press [Center].

To move the pattern from its current position (set by Positioner) to the center of the screen during the course of a transition

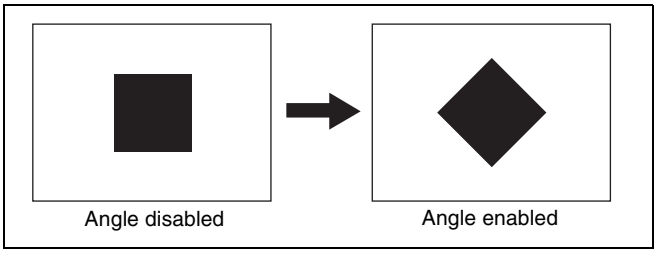
In the <Position> group, press [Auto Center], turning it on.

Rotating the wipe pattern (Rotation)

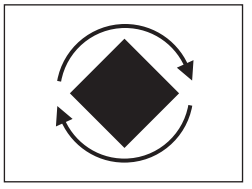
You can rotate a pattern.

Angle

This executes a wipe with the pattern at a fixed angle.

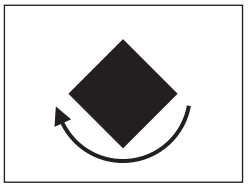


Speed



This rotates a wipe pattern at a fixed specified speed during a transition.

Magnitude



This rotates a wipe pattern rotates through the specified angle in a single transition.

1 Open the M/E-1 >Wipe >Main Modify menu (1155).

2 In the <Rotation> group, select the rotation type.

3 Depending on the selection in step **2**, set the following parameters.

When [Angle] is selected

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern • A value of –100.00 corresponds to a rotation of one turn counterclockwise. • A value of +100.00 corresponds to a rotation of one turn clockwise. • A value of 0.00 corresponds to no rotation.

When [Speed] is selected

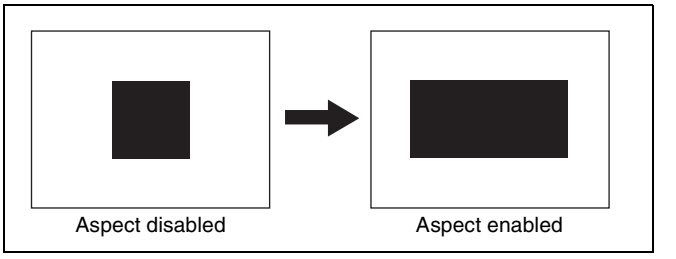
No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern • A value of –100.00 corresponds to 1 rpm counterclockwise rotation. • A value of +100.00 corresponds to 1 rpm clockwise rotation. • A value of 0.00 corresponds to pause.

When [Magnitude] is selected

No.	Parameter	Adjustment
1	Angle	Angle of pattern at start of transition • A value of –100.00 corresponds to a rotation of one turn counterclockwise. • A value of +100.00 corresponds to a rotation of one turn clockwise. • A value of 0.00 corresponds to no rotation.
2	Magnitude	Angle of rotation through course of transition • A value of –200.00 corresponds to a rotation of two turns counterclockwise. • A value of +200.00 corresponds to a rotation of two turns clockwise. • A value of 0.00 corresponds to no rotation.

Setting the aspect ratio of a wipe pattern (Aspect)

You can freely change the aspect ratio of the pattern.



1 Open the M/E-1 >Wipe >Main Modify menu (1155).

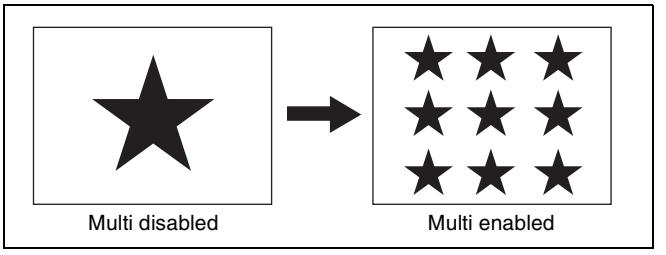
2 Press [Aspect], turning it on.

3 Set the following parameter.

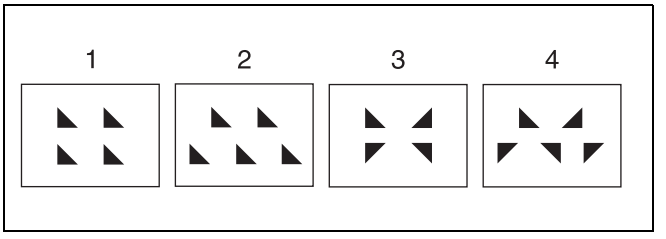
No.	Parameter	Adjustment
1	Aspect	Aspect ratio • Negative values expand vertically. • Positive values expand horizontally.

Replicating a wipe pattern (Multi)

The same pattern can be repeated horizontally and vertically or both, up to 63 times. You can also change the orientation of alternate patterns, or change the position.



For an independent key transition wipe, you can use the [Invert Type] parameter to select from the following types of replication pattern.



1: All patterns in the same orientation
2: Even-numbered rows moved horizontally
3: Even-numbered columns inverted horizontally, even-numbered rows inverted vertically
4: Even-numbered columns inverted horizontally, even-numbered rows inverted vertically and moved horizontally

1 Open the M/E-1 >Wipe >Main Modify menu (1155).

2 Press [Multi], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	H Multi	Number of repetitions of pattern horizontally
2	V Multi	Number of repetitions of pattern vertically
3	Shift	Pattern layout • Negative values move even-numbered columns to the left. • Positive values move even-numbered columns to the right.

4 Press [Multi Adjust].

The Multi Adjust menu (1155.1) appears.

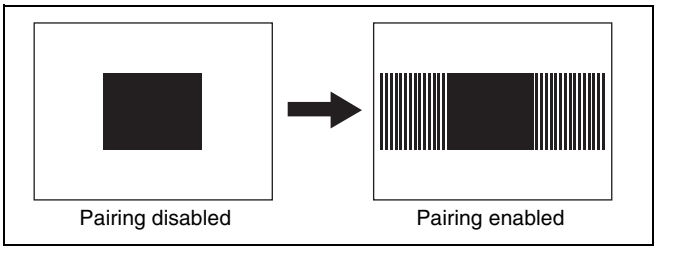
5 Make the following settings as required.

H Invert: Inverts the horizontal orientation of patterns alternately.
V Invert: Inverts the vertical orientation of patterns alternately.
Non-Mask: Ensure the pattern is always visible on the screen, even when the positioner function *(see page 145)* is used to move the pattern position.
Position: Moves the pattern position within the regions set in step **3** by adjusting the following parameters.

No.	Parameter	Adjustment
1	Position H	Horizontal position • Negative values move right. • Positive values move left.
2	Position V	Vertical position • Negative values move down. • Positive values move up.

Making a wipe pattern like a Venetian blind (Pairing)

This slits the pattern into multiple strips in the horizontal or vertical direction, similar to a venetian blind.



1 Open the M/E-1 >Wipe >Main Modify menu (1155).

2 In the <Pairing> group, select the slit direction.

H: Create slits in the horizontal direction.
V: Create slits in the vertical direction.

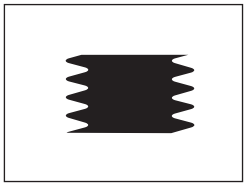
3 Set the following parameters.

No.	Parameter	Adjustment
1	Width	Width
2	H Offset	Spacing in the horizontal direction • Negative values move the even-numbered group to the left, and the odd-numbered group move to the right. • Positive values move the even-numbered group to the right, and the odd-numbered group move to the left.
3	V Offset	Spacing in the vertical direction • Negative values move the even-numbered group up, and the odd-numbered group down. • Positive values move the even-numbered group down, and the odd-numbered group up.

Applying modulation to a wipe pattern (Modulation)

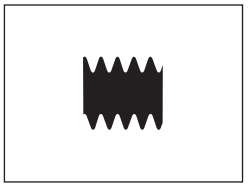
The pattern waveform signal can be modulated, creating ripples in the horizontal, vertical, or radial direction along the edges.

H (horizontal modulation)



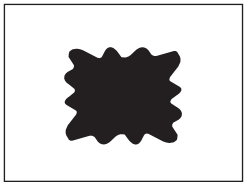
This modulates the pattern in the horizontal direction.

V (vertical modulation)



This modulates the pattern in the vertical direction.

Fringe (radial modulation)



This modulates the pattern in the radial direction.

1 Open the M/E-1 >Wipe >Main Modify menu (1155).

2 In the <Modulation> group, select the modulation type.

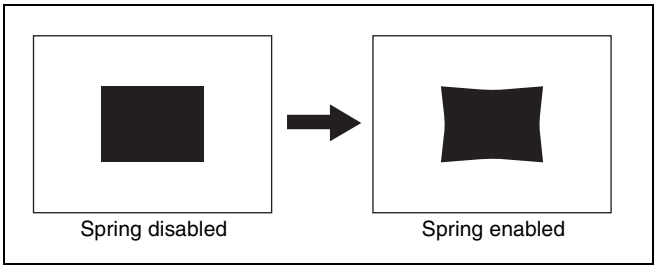
3 Set the following parameters.

No.	Parameter	Adjustment
1	Amplitude	Amplitude of modulation
2	Frequency	Frequency of modulation
3	Speed	Speed of ripples • Negative values create waves in the down, left, and counterclockwise directions. • Positive values create waves in the up, right, and clockwise directions.
4	Shape	Modulation waveform [a]

a) 1: sine wave, 2: triangular wave, 3: rectangular wave

Applying barrel or pincushion distortion to the edge of a wipe pattern (Spring)

As the transition progresses, the edge of the pattern is subjected to barrel or pincushion distortion.



1 Open the M/E-1 >Wipe >Main Modify menu (1155).

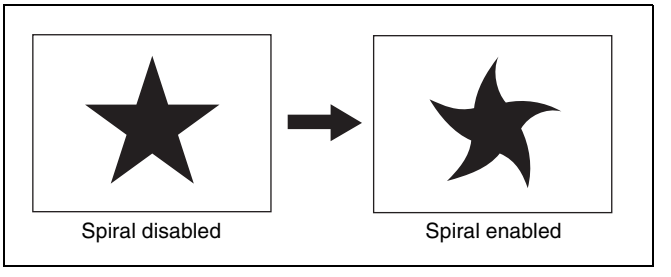
2 Press [Spring], turning it on.

3 Set the following parameter.

No.	Parameter	Adjustment
1	Gain	Size and direction of the warp • A value of –100 corresponds to maximum inward warpage. • A value of +100 corresponds to maximum outward warpage.

Applying a spiral effect to a wipe pattern (Spiral)

This transforms the pattern into a spiral pattern.



1 Open the M/E-1 >Wipe >Main Modify menu (1155).

2 Press [Spiral], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Magnitude	Size and direction of the spiral • A value of –100.00 represents the maximum movement in the counterclockwise direction. • A value of +100.00 represents the maximum movement in the clockwise direction.
2	Wave Speed	Speed of the lateral waves • Negative values set the speed from the left. • Positive values set the speed from the right.

Wipe patterns and supported modifiers

Yes: Available, No: Not available

Modifiers	Type of wipe				
	Standard	Enhanced	Rotary	Mosaic	Random/ diamond dust
Direction	Yes	Yes	Yes	Yes	Yes
Split	Yes	Yes	No	Yes	Yes
Edge	Yes	Yes	Yes	Yes	Yes
Positioner	Yes [a)]	Yes [b)]	Yes [c)]	No	No
Rotation	Yes	Yes	Yes [c)]	No	No
Aspect	Yes [d)]	Yes	No	No	No
Multi	Yes	Yes	Yes	Yes [e)]	No
Pairing	Yes [f)]	Yes	No	No	No
Modulation (H, V)	Yes	Yes	Yes	No	No
Modulation (Fringe)	No [g)]	Yes	No	No	No
Spring	No [g)]	Yes	No	No	No
Spiral	No [h)]	Yes	No	No	No

a) Pattern numbers 1 to 16, 19, and 20 are not available.
b) Pattern numbers 300 to 303 are not available.
c) Pattern numbers 100 to 103, 150, 151, 516, 518, 604, and 606 are not available.
d) Pattern numbers 1 to 8, 17, and 18 are not available.
e) Pattern numbers 220 to 223 are not available.
f) Pattern numbers 19 and 20 are not available.
g) Pattern numbers 21, 23, and 24 are available.
h) Pattern numbers 21 and 23 are available.

Wipe Modify Clear

Press [Default Recall] at the lower left of the menu display, turning it on, then press the VF5 button ([Wipe]) to return the wipe settings to their initial status.

For details about initial status, see "Power-On (Startup) State Selection" (page 397).

Basic Independent Key Transition Wipe Setting Operations

You configure independent key transition wipe settings using the Wipe Adjust menu for each keyer.

For details about independent key transitions, see "Independent Key Transitions" (page 99).

This section describes operations of key 1 on the M/E-1 bank (M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu) as an example.

Selecting an Independent Key Transition Wipe Pattern

Note

In an independent key transition, you can only use the standard wipe patterns (pattern numbers 1 to 24).

1 In the M/E-1 >Key1 >Transition/Video Process menu (1117), press [Wipe Adjust].

The Wipe Adjust menu (1117.1) appears.

2 Press [Pattern Select].

The Pattern Select menu (1117.2) appears.

3 Press the desired pattern to select it.

Setting Independent Key Transition Wipe Modifiers

You can use the following modifiers in an independent key transition wipe.
However, the available modifiers may depend on the pattern you are using.

- Direction
- Soft edge
- Positioner
- Rotation
- Aspect
- Multi

Setting the wipe direction (Direction)

In the <Direction> group of the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu (1117.1), select one of the following.

Normal: Wipe in normal direction.
Normal/Reverse: Wipe in the normal and reverse direction alternately for each transition.
Reverse: Wipe in the opposite direction to normal.

Softening the wipe pattern edge (Soft edge)

1 In the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu (1117.1), press [Soft], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Soft	Edge softness

Setting the wipe pattern position (Positioner)

1 In the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu (1117.1), press [Position], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Position H	Horizontal position [a]
2	Position V	Vertical position [a]

a) See *page 145*.

To move the pattern from its current position (set by Positioner) to the center of the screen during the course of a transition

Press the [Auto Center] button, turning it on.

Rotating the wipe pattern (Rotation)

1 In the <Rotation> group of the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu (1117.1), select the rotation type.

Angle: Incline the pattern at a fixed angle.
Speed: Rotate the pattern at a set speed.
Magnitude: Rotate the pattern through a fixed angle during the course of the transition.

2 Depending on the selection in step **1**, set the following parameters.

When [Angle] is selected

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) See *page 146*.

When [Speed] is selected

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern a)

a) See *page 146*.

When [Magnitude] is selected

No.	Parameter	Adjustment
1	Angle	Angle of pattern at start of transition a)
2	Magnitude	Amount of rotation through course of transition a)

a) See *page 146*.

Setting the aspect ratio of a wipe pattern (Aspect)

1 In the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu (1117.1), press [Aspect], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 146*.

Replicating a wipe pattern (Multi)

1 In the M/E-1 >Key1 >Transition/Video Process >Wipe Adjust menu (1117.1), press [Multi], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	H Multi	Number of repetitions of pattern horizontally
2	V Multi	Number of repetitions of pattern vertically
3	Invert Type	Pattern layout a)

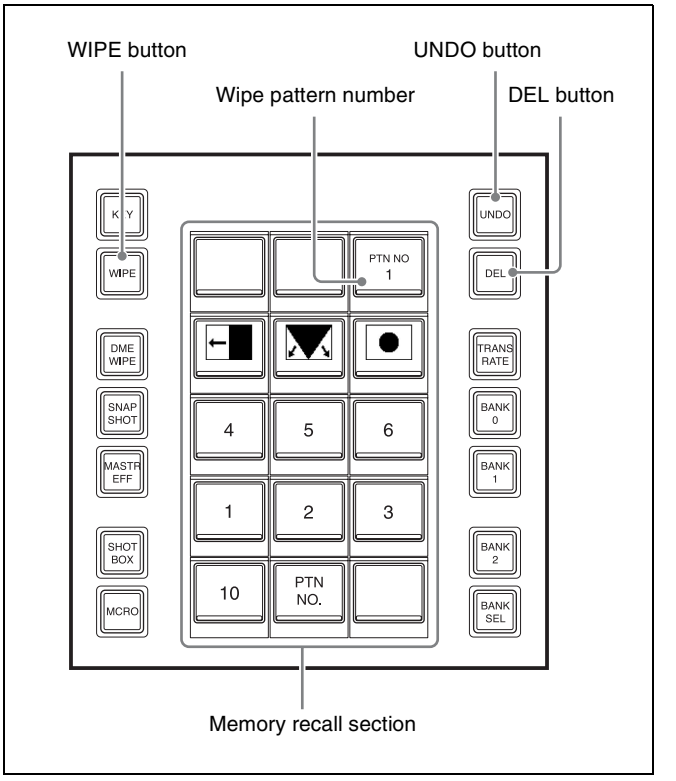
a) See *page 147*.

Wipe Snapshots

You can save a snapshot of a wipe pattern together with all modifiers and pattern limit settings in a dedicated register for recall when required. There are ten wipe snapshot registers on each switcher bank.
Use the Flexi Pad control block in each switcher bank or the menu to save and recall wipe snapshots.

Wipe Snapshot Operations (Flexi Pad Control Block)

Pressing the [WIPE] button in the Flexi Pad control block switches the memory recall section to wipe snapshot operation mode for saving, recalling, and deleting wipe snapshots.
This section describes operation of wipe snapshots on the M/E-1 bank as an example.



Flexi Pad control block

Button display in the memory recall section
You press buttons in the memory recall section to select registers (1 to 10).
The wipe pattern image is displayed on buttons for registers with a registered snapshot. You can also rename the register in the Setup menu *(see page 430)*.
The wipe pattern number is displayed on the top right button in the memory recall section.

The button color varies as follows, according to the register state.

Gray characters on black: Register not containing a saved snapshot

White icon/characters on dark blue: Register containing a saved snapshot

Lit orange: Last recalled register

Note

When both the main pattern and sub pattern are selected for a pattern mix, the main pattern image is displayed.

Selecting a wipe pattern

1. In the M/E-1 bank Flexi Pad control block, press the [WIPE] button.

   This switches the memory recall section to wipe snapshot operation mode.

2. Press the [PTN NO.] button in the memory recall section.

3. Use the numeric keypad to enter the pattern number consisting of up to three digits, and press the [ENTER] button.

   The entry is applied, and the memory recall section switches back to wipe snapshot operation mode. The selected wipe pattern number is displayed on the top right button in the memory recall section.

Saving a wipe snapshot

1. Configure the wipe you want to save.

2. In the Flexi Pad control block, press and hold the [KEY] button, and press the button for the register you want to save.

   The selected button is lit orange, and the set wipe pattern image is displayed. The set wipe pattern number is displayed on the top right button in the memory recall section.

   Note

   If you press a button in which a wipe snapshot is already saved, the existing contents of the register will be overwritten.

Recalling a wipe snapshot

1. In the Flexi Pad control block, press the [WIPE] button.

   This switches the memory recall section to wipe snapshot operation mode.

2. Press the register button for register with the wipe snapshot you want to recall.

   The selected button is lit orange, and the wipe snapshot is recalled.
   The set wipe pattern number is displayed on the top right button in the memory recall section.

To cancel a wipe snapshot recall operation

To cancel the wipe snapshot recall, press the [UNDO] button.

Deleting a wipe snapshot

1. In the Flexi Pad control block, press the [WIPE] button.

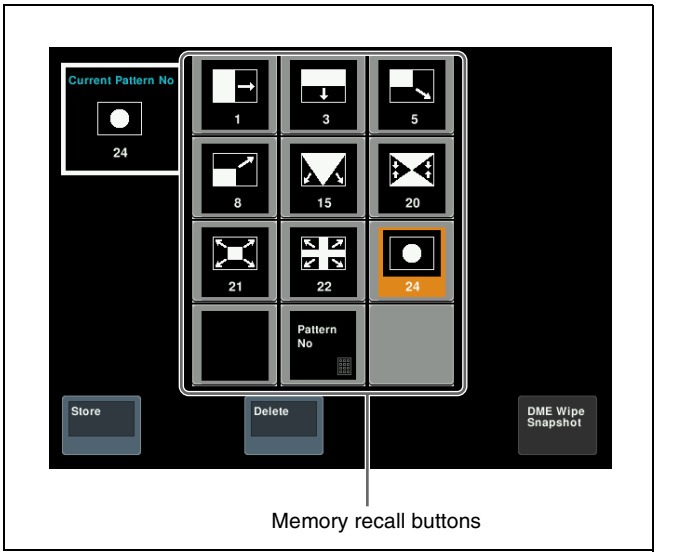
   This switches the memory recall section to wipe snapshot operation mode.

2. Press and hold the [DEL] button, and press the button of the register in which the wipe snapshot you want to delete is saved.

   The selected button changes to register number display.

Wipe Snapshot Operations (Menu)

Use the Wipe >Wipe Snapshot menu in each switcher bank.
This section describes operations on the M/E-1 bank (M/E-1 >Wipe >Wipe Snapshot menu) as an example.



Button displays

You press buttons in the memory recall section to select registers (1 to 10).

The wipe pattern image and pattern number are displayed on buttons for registers with a registered snapshot. You can also set to display the register name instead of the pattern number in the Setup menu *(see page 430)*.

Notes

- The menu settings of the memory recall buttons are linked to the Flexi Pad control block.
- When both the main pattern and sub pattern are selected for a pattern mix, the main pattern image and number are displayed.

Selecting a wipe pattern

1 In the M/E-1 >Wipe >Wipe Snapshot menu (1157), press the [Pattern No] memory recall button.

2 Use the numeric keypad window to enter the pattern number consisting of up to three digits, and press [Enter].

The entry is applied, and the selected wipe pattern image and pattern number are displayed in the "Current Pattern No" field on the top left.

Saving a wipe snapshot

1 Configure the wipe you want to save.

2 In the M/E-1 >Wipe >Wipe Snapshot menu (1157), press [Store], turning it on.

3 Press the memory recall button for the register you want to save.

The selected button is lit orange, and the set wipe pattern image and number are displayed.

Note

If you press a button in which a wipe snapshot is already saved, the existing contents of the register will be overwritten.

Recalling a wipe snapshot

In the M/E-1 >Wipe >Wipe Snapshot menu (1157), press the memory recall button for the register with the wipe snapshot you want to recall.
The selected button is lit orange, and the wipe snapshot is recalled.

Deleting a wipe snapshot

1 In the M/E-1 >Wipe >Wipe Snapshot menu (1157), press [Delete], turning it on.

2 Press the memory recall button for the register with the wipe snapshot you want to delete.

DME Wipes

Chapter 6

Overview

A DME wipe is an effect that uses a DME effect to switch from the current output image to a new image.
There are two types of DME wipes: those that can be selected in a common transition, and those that can be selected in an independent key transition.
You can also execute a DME wipe using a resizer (resizer DME wipe) in transitions and independent key transitions where a key is selected (inserted/removed) as the result of the transition (next transition event).

Notes

- When the switcher signal format is 3840×2160PsF SQD, DME wipes cannot be used.
- When the switcher signal format is 3840×2160P SQD, only resizer DME wipes can be used.
- When the switcher signal format is 3840×2160P 2SI, DME wipes are supported using an XKS-8475 DME Board. When not using an XKS-8475, only resizer DME wipes are supported.
- There are restrictions on the number of DME channels that can be used and on the functions, depending on the switcher and signal format.
  For differences in functions by switcher, see "XVS-9000/8000/7000/6000 System Configuration Comparison" (page 523).
  For details about restrictions for 4K format, see "4K Format Restrictions" (page 525).

Types of DME Wipe Patterns

The patterns used for a DME wipe fall into two broad classes.
Preset patterns: Patterns with predetermined effects
User programmable DME patterns: Patterns that you create using keyframe effects *(see page 166)*

DME wipe pattern groups

DME wipe patterns are classified into the following groups.

Notes

- On the XVS-6000, DME wipe patterns in 3-channel mode are not available when using an XKS-8470 HD DME Board.
- When using an XKS-8475 DME Board, the following restrictions apply in 4K format (3840×2160P 2SI).
  - On the XVS-8000/7000, DME wipe patterns in 3-channel mode are not supported.
  - On the XVS-6000, DME wipe patterns in 2-channel mode and 3-channel mode are not supported.
- The following DME wipe patterns for effects vary depending on the board used (XKS-8470 HD DME Board or XKS-8475 DME Board).
  Mosaic

Pattern group	Effect
Slide	The new video slides in over the old video.
Squeeze	The new video appears reduced over the old video, and is progressively enlarged to cover it.
Split	The old video splits, and the new video appears in the gap.
Door	The new video moves like a door closing, and progressively covers the old video.
Flip Tumble	The old video rotates about an axis and is replaced by the new video. During the transition, the signal from the utility 2 bus of the M/E bank appears as the background.
Mirror	The new video appears over the old video as a mirror effect slides in all four directions.
Sphere	The new video appears wrapped around a sphere over the old video. Next, the picture returns to the source video while unwrapping.
Character Trail	The new video appears over the old video, as if leaving a trail. Next, the picture gradually returns to the source from the periphery.
Wave	The new video appears with a wave-like effect over the old video. Next, the picture returns to the source video as the effect reduces.
Ripple	The new video appears over the old video like outwardly moving ripples.
Page Turn	The old video moves like a page turning, and the new video appears behind it.
Roll	The new video unrolls like a scroll over the old video. This is a type of page turn.
Frame I/O (Frame in-out)	Completed in two transitions. In the first transition, the new video appears, then on the second transition the new video goes out and the source video returns.
P in P (Picture-in-picture)	• In 1-channel mode, this completes in two transitions. - In the first transition, the old video shrinks, and the new video appears behind it. - In the second transition, the old video expands again until it is its original size. • In 2-channel mode, in the first half of the transition, the old video shrinks, and the new video appears. - In the second half of the transition, the new video expands, and the old video disappears. - You can move the pattern from the current position by a relative amount. - During the transition, the signal from the utility 2 bus of the M/E bank appears as the background.
2D Trans (2D transform)	The new video appears over the old video, while undergoing expansion, two-dimensional rotation and translation.
3D Trans (3D transform)	• In 1-channel mode, the new video appears over the old video, while undergoing expansion, three-dimensional rotation and translation. • In 2-channel mode, the old video changes to the new video while both undergo expansion, three-dimensional rotation and translation.
Sparkle	The new video appears over the old video with a nonlinear effect applied, such as broken glass, explosion, or melt. Next, the source picture returns as the effect gradually reduces.
Split Slide	The new video appears in strip form while sliding interleaved in the opposite direction over the old video.
Mosaic	In the first half of the transition, a mosaic is gradually applied to the old video, then at the 50% point the inner image changes to the new video. In the second half, the mosaic effect on the new video is gradually reduced, returning to the original image at 100%.
Defocus	In the first half of the transition, the old video is gradually defocused, then at the 50% point the inner image changes to the new video. In the second half, the defocusing effect on the new video is gradually reduced, returning to the original image at 100%.
Crop Slide	The old image is cropped in half and a new image appears, displaying both images side by side. Then, the cropped images slide sideways to show only the new image.
Brick	• In 2-channel mode, a brick such that the side surface is visible slides in over the old video, then rotates so that the new video can be seen. • In 3-channel mode, a brick appears over the old video as the image is expanding and rotating, and switches to the new video.

Pattern group	Effect
User Program (user programmable DME)	Executes a DME wipe using a DME keyframe effect created with a keyframe operation. *For details about creating keyframe effects, see "Creating User Programmable DME Patterns" (page 166).*
Resizer Slide	Executes a Slide DME wipe using a resizer.
Resizer Squeeze	Executes a Squeeze DME wipe using a resizer.
Resizer Frame I/O	Executes a Frame I/O DME wipe using a resizer.

DME wipe execution mode and supported pattern numbers

There are three DME wipe execution modes, depending on the number of DME channels available: 1-channel mode (1ch), 2-channel mode (2ch), and 3-channel mode (3ch).

The supported channel modes and pattern numbers supported in each pattern group are shown in the following table.

For details about pattern images (excluding user programmable DME), see "DME Wipe Pattern List" (page 495) and "Resizer DME Wipe Pattern List" (page 500).

Yes: Available, No: Not available

Pattern group	Execution mode	Pattern number	DME wipes for common transitions		DME wipes for independent key transitions
			Background	Key	
Slide	1ch	1001 to 1008	Yes	Yes	Yes
	2ch	2601 to 2608	Yes	No	No
Squeeze	1ch	1021 to 1033	Yes	Yes	Yes
	2ch	2621 to 2628	Yes	No	No
Split	1ch	1011 to 1013	Yes	Yes	Yes
Door	1ch	1041 to 1048	Yes	Yes	Yes
Flip Tumble	1ch	1101 to 1104, 1109, 1110, 1121, 1122, 1124, 1131 to 1133, 1135	Yes	No	No
Mirror	1ch	1355 to 1358	Yes	Yes	Yes
Sphere	1ch	1365	Yes	Yes	Yes
Character Trail	1ch	1371, 1372	Yes	Yes	Yes
Wave	1ch	1378, 1379	Yes	Yes	Yes
Ripple	1ch	1381	Yes	Yes	Yes
Page Turn	1ch	1301 to 1313, 1315 to 1318, 1341 to 1345	Yes	Yes	Yes
	2ch	2701 to 2713, 2715 to 2718, 2741 to 2745	Yes	Yes	Yes
Roll	1ch	1321 to 1333, 1335 to 1338, 1346 to 1350	Yes	Yes	Yes
	2ch	2721 to 2733, 2735 to 2738, 2746 to 2750	Yes	Yes	Yes
Frame I/O	1ch	1201 to 1209, 1221 to 1225	Yes	Yes	Yes
	2ch	2851 to 2854, 2861 to 2864	Yes	No	No
P in P	1ch	1251	Yes	No	No
	2ch	2651, 2652	Yes	No	No
2D Trans	1ch	1051 to 1058, 1061 to 1064, 1068	Yes	Yes	Yes

Pattern group	Execution mode	Pattern number	DME wipes for common transitions		DME wipes for independent key transitions
			Background	Key	
3D Trans	1ch	1071, 1072, 1074, 1076, 1077, 1088, 1091 to 1094	Yes	Yes	Yes
	2ch	2631 to 2634, 2642, 2644	Yes	No	No
Sparkle	1ch	1391, 1393, 1394, 1396, 1398, 1399	Yes	Yes	Yes
Split Slide	1ch	1384 to 1389	Yes	Yes	Yes
Mosaic	1ch	1701	Yes	No	No
Defocus	1ch	1702	Yes	No	No
Crop Slide	2ch	2661, 2662	Yes	No	No
Brick	2ch	2801 to 2804, 2811 to 2814	Yes	No	No
	3ch	3601	Yes	No	No
User Program	1ch	1901 to 1999	Yes	Yes	Yes
	2ch	2901 to 2999	Yes	No	No
	3ch	3901 to 3999	Yes	No	No
Resizer Slide	1ch	7001 to 7008	No	Yes	Yes
Resizer Squeeze	1ch	7021 to 7031	No	Yes	Yes
Resizer Frame I/O	1ch	7201 to 7208, 7221 to 7224	No	Yes	Yes

DME Wipe Pattern Variation and Modifiers

You can apply the following changes and modifiers to the selected DME wipe pattern in the same way as for an ordinary wipe pattern.

For details about the method of operation, see "Setting DME Wipe Modifiers" (page 160) and "Setting Independent Key Transition DME Wipe Modifiers" (page 164).

Direction: You can set the DME wipe direction to normal, reverse, or alternating normal/reverse *(see page 160)*. However, this can be specified for a key transition only when the following patterns are selected.

- 1204, 1207, 1221 to 1224, 7204, 7207, 7221 to 7224

Note

When pattern numbers 1201, 1202, 1203, 1205, 1206, 1208, 1209, 1225, 1251, 1701, and 1702 are selected, Direction cannot be used.

Edge: You can apply a border or soft border *(see page 161)*.
In the case of user programmable DME patterns for keys in which an edge has already been applied to the effect, the behavior is as follows.

- When the DME wipe edge is enabled, only part of the edge applied in the effect is enabled, and that portion can be adjusted.
- When the DME wipe edge setting is disabled, the edge applied in the effect is applied as-is.

Note

When pattern numbers 1011, 1012, 1013, 1701, and 1702 are selected, Edge cannot be used.

Positioner: You can move the DME wipe pattern or center of the effect to an arbitrary position *(see page 161)*. Using the position select function, you can also instantaneously move the pattern *(see page 161)*. This can only be used when one of the following pattern numbers is selected.

- 1031, 7031
  As the transition progresses, the pattern center automatically moves initially from the set position toward the center of the screen. In other words, the effect obtained is the same as in a normal wipe with the positioner set to [Auto Center].
- 1032, 1033
  You can set the position of the pattern at the start of the transition. As the transition, which starts after the dead band, progresses, the pattern automatically moves from the initial position toward the center of the screen.
- 1201 to 1209, 1221 to 1225, 1251, 7201 to 7208, 7221 to 7224
  You can set the pattern position when the first transition completes.
- 1381, 1391, 1393, 1394, 1396
  You can set the center of the transition effect.

- 2651, 2652
  You can move the pattern for each channel, or for two channels simultaneously depending on the relative values from the current positions *(see page 162)*.
- 2801 to 2804, 2811 to 2814
  You can set the vertical position as the brick slides in.
- 2851 to 2854, 2861 to 2864
  You can set the pattern position for each channel setting when the first transition completes.

Pattern limit: You can restrict the range of the transition execution as desired. However, this is not available for an independent key DME wipe.

For details, see "Pattern Limit" (page 93).

Size: You can set the size of the image. This can only be used when one of the following pattern numbers is selected.
- 1201 to 1209, 1221 to 1225, 1251, 2651, 2652, 2851 to 2854, 2861 to 2864, 7201 to 7208, 7221 to 7224

Crop: You can crop the image. It is also possible in 16:9 mode to crop both sides and convert the image to a 4:3 aspect ratio.
For the execution of the transition, you can select from the following three options.
- Cut
- Last 5%
- Linear

When [Last 5%] is selected, you can set the [Release Transition] as follows.
- Last 30%
- Last 5%
- Off

Note

When pattern numbers 1701, 1702, 2661, and 2662 are selected, Crop cannot be used.

DME Wipe Restrictions

Relation to common wipes
- DME wipes do not use the wipe generator built into the switcher. Therefore, during the execution of a DME wipe, you can still use a pattern produced by the wipe generator as the source for a pattern key or mask.
- A DME wipe pattern cannot be used as the source for a pattern key or mask.

Relation to processed keys
- When using the DME for a processed key, selecting a DME wipe automatically assigns an available DME for use for DME wipes. If all DMEs are in use, then it is not possible to select a DME wipe.
  If a DME has been assigned in the Setup menu, that setting takes precedence.
  For details, see "Setting DME Channel Assignments" (page 441).
- It is not possible to use a resizer DME wipe for a key with processed key enabled.

Relation to image effect
It is not possible to use background DME wipes when an image effect is set.

Relation to resizer
- When a resizer is enabled, it is not possible to select a DME wipe or resizer DME wipe.
- For the key 1 and key 2, key 3 and key 4, key 5 and key 6, or key 7 and key 8 combinations, if one key is used for a dual resizer effect, the other key cannot be used for a DME wipe or resizer DME wipe.

Resizer DME wipe restrictions
When the screen aspect ratio is 4:3 in HD format, reducing an image using the resizer reduces the 16:9 image as-is with the added image portions on the left and right sides. Use the crop function as required to extract the 4:3 image.

Number of DME wipes that can be used on a single M/E bank
DME wipes can be used in nine places, including eight independent key transitions.
When the switcher signal format is 3840×2160P 2SI, they can be used in three places, including two independent key transitions.

Note

The number of keys to which DME effects (including DME wipes) can be applied simultaneously for one M/E bank varies as follows depending on the execution mode of the DME wipe pattern selected for the background.

Key to which DME effects are applied	DME wipe pattern for background	Number of keys to which DME effects can be applied simultaneously
Keys 1 to 4	DME wipes not used	2
	1-channel mode	1
	2-channel or 3-channel mode	0
Keys 5 to 8	–	2

When the signal format is 3840×2160P 2SI, DME effects (including DME wipes) can be used simultaneously in only one place on an M/E bank. When not using background DME wipes, DME effects can be used on either key 1 or key 2.

Basic DME Wipe Setting Operations

You carry out DME wipe setting operations using the DME Wipe menu for each bank.
This section describes operations on the M/E-1 bank (M/E-1 >DME Wipe menu) as an example.

For details about independent key transition DME wipe settings, see "Basic Independent Key Transition DME Wipe Setting Operations" (page 164).

Note

You can display the input image filling the frame when executing a DME wipe by disabling the edge softness function in the Setup menu.

For details, see "Setting the DME Wipe Edge Softness Function" (page 467).

Selecting a DME Wipe Pattern

1 Display the DME wipe setting menu.

In 1-channel mode, open the M/E-1 >DME Wipe >1ch menu (1161).
In 2-channel mode, open the M/E-1 >DME Wipe >2ch menu (1162).
In 3-channel mode, open the M/E-1 >DME Wipe >3ch menu (1163).

2 Press the button for the desired DME wipe pattern group to select it.

The patterns from the selected pattern group appear on the screen.

If executing a DME wipe using a resizer
Select [Resizer Slide], [Resizer Squeeze], or [Resizer Frame I/O] in the DME wipe pattern group.
Resizer DME wipes can be used only when the next transition event is a key.

3 Press the desired pattern to select it.

Adjusting DME wipe pattern parameters

Of the DME wipe patterns, the following have parameters that can be adjusted.

Note

In an independent key transition, DME wipe pattern parameters cannot be configured.

When Squeeze (for one channel) is selected (pattern numbers 1032, 1033)
When Crop Slide (for two channels) is selected (pattern numbers 2661, 2662)

No.	Parameter	Adjustment
1	Holding Level	Position for entering the dead band [a]
2	Tolerance	Width of the dead band

a) Set relative to a transition start point of 0% and end point of 100%.

When Page Turn (for one channel) is selected (pattern numbers 1301 to 1313, 1315 to 1318, 1341 to 1345)
When Page Turn (for two channels) is selected (pattern numbers 2701 to 2713, 2715 to 2718, 2741 to 2745)
When Roll (for one channel) is selected (pattern numbers 1321 to 1333, 1335 to 1338, 1346 to 1350)
When Roll (for two channels) is selected (pattern numbers 2721 to 2733, 2735 to 2738, 2746 to 2750)

No.	Parameter	Adjustment
1	Radius	Radius of the turned page flap [a]
2	Magnitude	Angle of rotation through course of transition [b]
3	Start Angle	Angle at start of transition [b]

a) 0% is an effect like a turned page, 100% is normal curl, and 200% is radius with double the normal curl.
b) The angle of rotation range varies depending on the pattern.
–100.00 is rotation in the counterclockwise direction, +100.00 is rotation in the clockwise direction, and 0.00 is no rotation.

When Brick (for two channels) is selected (pattern numbers 2801 to 2804, 2811 to 2814)

No.	Parameter	Adjustment
1	Side V Size X	Horizontal scaling factor
2	Side V Size Y	Vertical scaling factor
3	Height	Height of brick
4	Center X	Horizontal center position [a]
5	Center Y	Vertical center position [b]

a) The horizontal center position of the video pasted on Side V. At –100.00, the center is at the left edge of the screen. At +100.00, the center is at the right edge of the screen.
b) The vertical center position of the video pasted on Side V. At –100.00, the center is at the bottom edge of the screen. At +100.00, the center is at the top edge of the screen.

When Frame I/O (for two channels) is selected (pattern numbers 2851 to 2854)

No.	Parameter	Adjustment
5	Delay	Timing for video selected on a utility bus to appear on the screen

When Frame I/O (for two channels) is selected (pattern numbers 2861 to 2864)

No.	Parameter	Adjustment
1	Rot X	Rotation on the Y axis (horizontal direction)
2	Rot Y	Rotation about the X axis (vertical direction)
3	Rot Z	Rotation about the Z axis
5	Delay	Timing for video selected on a utility bus to appear on the screen

When Brick (for three channels) is selected (pattern number 3601)

Parameter group [1/2]

No.	Parameter	Adjustment
1	Side V Size X	Side V horizontal scaling factor
2	Side V Size Y	Side V vertical scaling factor
3	Height	Height of brick a)
4	Side V Center X	Side V horizontal center position b)
5	Side V Center Y	Side V vertical center position c)

a) Common with the [Height] parameter in group 2.
b) The horizontal center position of the video pasted on Side V. At –100.00, the center is at the left edge of the screen. At +100.00, the center is at the right edge of the screen.
c) The vertical center position of the video pasted on Side V. At –100.00, the center is at the bottom edge of the screen. At +100.00, the center is at the top edge of the screen.

Parameter group [2/2]

No.	Parameter	Adjustment
1	Side H Size X	Side H horizontal scaling factor
2	Side H Size Y	Side H vertical scaling factor
3	Height	Height of brick a)
4	Side H Center X	Side H horizontal center position b)
5	Side H Center Y	Side H vertical center position c)

a) Common with the [Height] parameter in group 1.
b) The horizontal center position of the video pasted on Side H. At –100.00, the center is at the left edge of the screen. At +100.00, the center is at the right edge of the screen.
c) The vertical center position of the video pasted on Side H. At –100.00, the center is at the bottom edge of the screen. At +100.00, the center is at the top edge of the screen.

Setting the background image

When the switcher signal format is 3840×2160P 2SI, you can set a color signal to use as the background of DME wipes.

Note

When the signal format is other than 3840×2160P 2SI, the image selected on the utility 2 bus is used.

1 In the M/E-1 >DME Wipe >Edge/Direction menu (1164), press [DME Bkgd Matte Adjust].

The Matte Adjust menu (1154.1) appears.

2 In the <Edge Matte> group, select one of the following.

Flat Color: Use a single color signal. Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Mix Color: Use a mix color signal.

For details about color mix settings, see "Carrying out a color mix for the edge fill matte" (page 144).

Note

The color signal for the background image of DME wipes is shared with the color matte settings for wipe edge fills.

Setting DME Wipe Modifiers

You can apply various modifiers, such as setting the wipe direction or the pattern position.

For an overview of modifiers and supported pattern numbers, see "DME Wipe Pattern Variation and Modifiers" (page 157).

Specifying the DME wipe direction (Direction)

You can specify the DME wipe direction (normal/reverse).

To specify the wipe direction in the menu

1 Open the M/E-1 >DME Wipe >Edge/Direction menu (1164).

2 In the <Direction> group, specify the DME wipe direction.

Normal: DME wipe in the normal direction.
Normal/Reverse: DME wipe in the normal and reverse direction alternately for each transition.
Reverse: DME wipe in the opposite direction to normal.

To specify the DME wipe direction with a button in the transition control block

In the transition control block of each bank, press the wipe direction selection buttons.
NORM: Normal [1)]
NORM/REV: Normal/reverse
REV: Reverse

1) When the [REV] button is not lit if using the transition control block (simple type).

Modifying a DME wipe pattern edge (Edge)

1 Open the M/E-1 >DME Wipe >Edge/Direction menu (1164).

2 In the <Ch Select> group, select the target channels.

For a pattern in 1-channel mode: Select [1st Ch].
For a pattern in 2-channel mode or 3-channel mode: Select the corresponding channels. You can select more than one channel at the same time.

3 In the <Edge> group, select the edge type.

Border: Border
Soft Border: Soft border

4 Depending on the selection in step **3**, set the following parameters.

When [Border] is selected

No.	Parameter	Adjustment
1	Width	Border width
3	Luminance	Luminance of border color
4	Saturation	Saturation
5	Hue	Hue

When [Soft Border] is selected

No.	Parameter	Adjustment
1	Width	Border width
2	Inner Soft	Degree of softness inside the border
3	Luminance	Luminance of border color
4	Saturation	Saturation
5	Hue	Hue

Display indications when multiple channels are selected at the same time
The parameter setting value display shows the settings of the lowest-numbered channel. When you adjust the settings, this adjusts the settings on the other channels by the same amount.

Setting the DME wipe pattern position (Positioner)

1 Open the M/E-1 >DME Wipe >Modify menu (1165).

2 In the <Ch Select> group, select the target channels.

For a pattern in 1-channel mode: Select [1st Ch].
For a pattern in 2-channel mode: Select the corresponding channels. You can select more than one channel at the same time.

3 In the <Position> group, press [Position], turning it on.

4 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal position
2	V	Vertical position

Display indications when multiple channels are selected at the same time
The parameter setting value display shows the settings of the lowest-numbered channel. When you adjust the settings, this adjusts the settings on the other channels by the same amount.

To return the DME wipe pattern position to the center of the screen

In the <Position> group, press [Center].

Displaying/moving the DME wipe pattern position

1 Open the M/E-1 >DME Wipe >Modify menu (1165).

In the <Position Select> group, [Top Left], [Top Right], [Bottom Left], or [Bottom Right] is lit to indicate the current display position of the DME wipe pattern.

2 In the <Position> group, press [Position], turning it on.

3 In the <Ch Select> group, select the target channels.

For a pattern in 1-channel mode: Select [1st Ch].
For a pattern in 2-channel mode: Select the corresponding channels. You can select more than one channel at the same time.

4 In the <Position Select> group, press the button for the move destination, turning it on.

The DME wipe pattern displayed on the screen moves to the position of the specified button.

Moving the DME wipe pattern to a relative position

In 2-channel mode, there are also patterns that can move to a relative position.

1 Open the M/E-1 >DME Wipe >Modify menu (1165).

2 In the <Ch Select> group, select multiple target channels.

3 In the <Position> group, press [Position], turning it on.

4 Set the following parameters.

No.	Parameter	Adjustment
4	Relative H	Relative movement in the horizontal direction
5	Relative V	Relative movement in the vertical direction

Setting the DME wipe pattern size (Size)

1 Open the M/E-1 >DME Wipe >Modify menu (1165).

2 In the <Ch Select> group, select the target channels.

For a pattern in 1-channel mode: Select [1st Ch].
For a pattern in 2-channel mode: Select the corresponding channels. You can select more than one channel at the same time.

3 Press [Size], turning it on.

4 Set the following parameter.

No.	Parameter	Adjustment
1	Size	Effect size [a)]

a) 100% indicates the unchanged size state.

Display indications when multiple channels are selected at the same time
The parameter setting value display shows the settings of the lowest-numbered channel. When you adjust the settings, this adjusts the settings on the other channels by the same amount.

Adjusting the DME wipe pattern cropping (Crop)

1 Open the M/E-1 >DME Wipe >Modify menu (1165).

2 In the <Ch Select> group, select the target channels.

For a pattern in 1-channel mode: Select [1st Ch].
For a pattern in 2-channel mode or 3-channel mode: Select the corresponding channels. You can select more than one channel at the same time. For some patterns, the <Ch Select> group selection is fixed and requires no setting.

3 In the <Crop Mode> group, press [Crop], turning it on.

4 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	H	Crop the left and right of the image
2	V	Crop the top and bottom of the image
3	All	Crop the top, bottom, left, and right of the image

Parameter group [2/2]

No.	Parameter	Adjustment
1	Top	Crop the top of the image
2	Left	Crop the left of the image
3	Right	Crop the right of the image
4	Bottom	Crop the bottom of the image

Display indications when multiple channels are selected at the same time
The parameter setting value display shows the settings of the lowest-numbered channel. When you adjust the settings, this adjusts the settings on the other channels by the same amount.

To crop to 4:3 aspect ratio in 16:9 mode

In the <Crop Mode> group, press [4:3 Crop].

To set the action when a DME wipe crop transition is executed

1 Open the M/E-1 >DME Wipe >Modify menu (1165).

2 In the <Ch Select> group, select the target channels.

For a pattern in 1-channel mode: Select [1st Ch].
For a pattern in 2-channel mode or 3-channel mode: Select the corresponding channels. You can select more than one channel at the same time.

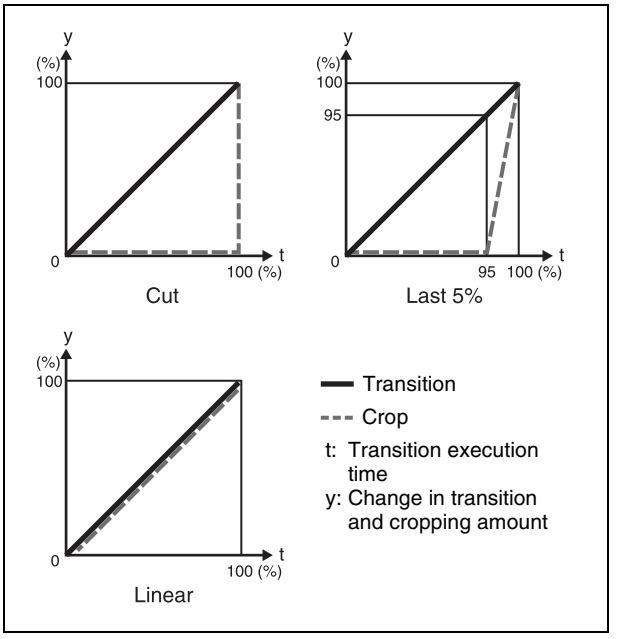
3 In the <Crop Mode> group, press [Crop], turning it on.

4 In the <Crop Mode> group, press [Remove From Begin].

The Remove From Begin menu (1165.1) appears.

5 In the <Crop Transition> group, select the execution mode for the DME wipe crop transition.

Cut: Cut mode. The cropping does not change during the transition, but at the end point of the transition the cropping is removed (enlarges).
Last 5%: The cropping is maintained for the first 95% of the transition, and is progressively removed during the last 5% of the transition (enlarges).
Linear: The cropping is removed linearly from the start of the transition through the whole course of the transition (enlarges).



To set the timing of transition completion

When the execution mode for a DME wipe crop transition is set to [Last 5%], you can select the timing of transition completion from 70% ([Last 30%]), 95% ([Last 5%]), and 100% ([Off]).

1 Open the M/E-1 >DME Wipe >Modify menu (1165).

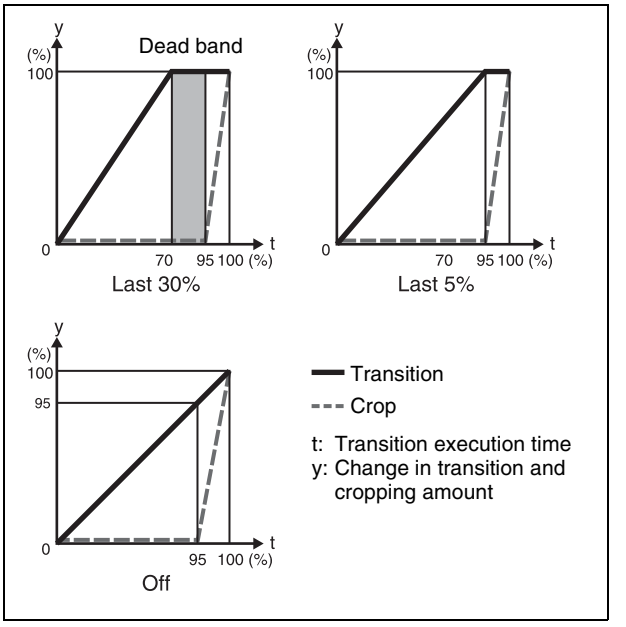
2 In the <Crop Mode> group, press [Remove From Begin].

The Remove From Begin menu (1165.1) appears.

3 In the <Release Transition> group, select the timing of transition completion.

Last 30%: The transition completes at the end of 70% of the transition execution time. The transition has a dead band from 70% to 95% of the transition time.

Last 5%: The transition completes at the end of 95% of the transition execution time. When the transition completes, the cropping is removed during the last 5% (enlarges).
Off: The transition completes at the end of the transition execution time. During the last 5% of the transition, the transition and cropping removal proceed together.



DME Wipe Modify Clear

Press [Default Recall] at the lower left of the menu display, turning it on, then press the VF6 button ([DME Wipe]) to return the DME wipe settings to their initial status.

For details about initial status, see "Power-On (Startup) State Selection" (page 397).

Basic Independent Key Transition DME Wipe Setting Operations

You carry out independent key transition DME wipe setting operations using the DME Wipe Adjust menu for each keyer.

For details about independent key transitions, see "Independent Key Transitions" (page 99).

This section describes operations of key 1 on the M/E-1 bank (M/E-1 >Key1 >Transition/Video Process >DME Wipe Adjust menu) as an example.

Selecting an Independent Key Transition Wipe Pattern

1 In the M/E-1 >Key1 >Transition/Video Process menu (1117), press [DME Wipe Adjust].

The DME Wipe Adjust menu (1117.3) appears.

2 In the <Pattern Select> group, press [1ch] for 1-channel mode or [2ch] for 2-channel mode.

The 1ch Pattern Select menu (1117.4) or 2ch Pattern Select menu (1117.5) appears.

3 Press the button for the desired DME wipe pattern group to select it.

The patterns from the selected pattern group appear on the screen.

If executing a DME wipe using a resizer
Select [Resizer Slide], [Resizer Squeeze], or [Resizer Frame I/O] in the DME wipe pattern group.

4 Press the desired pattern to select it.

Setting Independent Key Transition DME Wipe Modifiers

You can add modifiers, such as pattern position and size, to an independent key transition DME wipe.

For an overview of modifiers and supported pattern numbers, see "DME Wipe Pattern Variation and Modifiers" (page 157).

Specifying the DME wipe direction (Direction)

In the <Direction> group of the M/E-1 >Key1 >Transition/Video Process >DME Wipe Adjust menu (1117.3), select one of the following.
Normal: Wipe in normal direction.
Normal/Reverse: Wipe in the normal and reverse direction alternately for each transition.
Reverse: Wipe in the opposite direction to normal.

Modifying a DME wipe pattern edge (Edge)

1 In the <Edge> group of the M/E-1 >Key1 >Transition/Video Process >DME Wipe Adjust menu (1117.3), select one of the following.

Border: Border
Soft Border: Soft border

2 Set the following parameters.

When [Border] is selected

No.	Parameter	Adjustment
1	Width	Border width
3	Luminance	Luminance of border color
4	Saturation	Saturation
5	Hue	Hue

When [Soft Border] is selected

No.	Parameter	Adjustment
1	Width	Border width
2	Inner Soft	Degree of softness inside the border
3	Luminance	Luminance of border color
4	Saturation	Saturation
5	Hue	Hue

Setting the DME wipe pattern position (Positioner)

1 In the <Position> group of the M/E-1 >Key1 >Transition/Video Process >DME Wipe Adjust menu (1117.3), press [Position], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal position
2	V	Vertical position

To return the pattern position to the center of the screen

In the <Position> group, press [Center].

Setting the DME wipe pattern size (Size)

1 In the M/E-1 >Key1 >Transition/Video Process >DME Wipe Adjust menu (1117.3), press [Size], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Size	Effect size [a)]

a) 100% indicates the unchanged size state.

Adjusting the DME wipe pattern cropping (Crop)

1 In the <Crop Mode> group of the M/E-1 >Key1 >Transition/Video Process >DME Wipe Adjust menu (1117.3), press [Crop], turning it on.

2 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	H	Crop the left and right of the image
2	V	Crop the top and bottom of the image
3	All	Crop the top, bottom, left, and right of the image

Parameter group [2/2]

No.	Parameter	Adjustment
1	Top	Crop the top of the image
2	Left	Crop the left of the image
3	Right	Crop the right of the image
4	Bottom	Crop the bottom of the image

To crop to 4:3 in 16:9 mode

In the <Crop Mode> group, press [4:3 Crop].

To set the action when a DME wipe crop transition is executed

1 In the <Crop Mode> group of the M/E-1 >Key1 >Transition/Video Process >DME Wipe Adjust menu (1117.3), press [Crop], turning it on.

2 In the <Crop Mode> group, press [Remove From Begin].

The Remove From Begin menu (1117.7) appears. For subsequent operations, go to step **5** in *"To set the action when a DME wipe crop transition is executed" (page 162)*.

To set the timing of transition completion

1 In the <Crop Mode> group of the M/E-1 >Key1 >Transition/Video Process >DME Wipe Adjust menu (1117.3), press [Crop], turning it on.

2 In the <Crop Mode> group, press [Remove From Begin].

The Remove From Begin menu (1117.7) appears. For subsequent operations, go to step **3** in *"To set the timing of transition completion" (page 163)*.

DME Wipe Snapshots

You can save a snapshot of a DME wipe pattern together with all modifier and pattern limit settings in a dedicated register for recall when required.
There are ten DME wipe snapshot registers on each switcher bank.
Use the Flexi Pad control block in each switcher bank or the menu to save and recall DME wipe snapshots.

DME Wipe Snapshot Operations (Flexi Pad Control Block)

Pressing the [DME WIPE] button in the Flexi Pad control block switches the memory recall section to DME wipe snapshot operation mode for saving, recalling, and deleting DME wipe snapshots.
DME wipe snapshot operations are the same as wipe snapshot operations. However, a 4-digit pattern number is entered to select DME wipe patterns.

For details about the method of operation, see "Wipe Snapshot Operations (Flexi Pad Control Block)" (page 151).

DME Wipe Snapshot Operations (Menu)

You can save, recall, and delete DME wipe snapshots in the DME Wipe >DME Wipe Snapshot menu on each switcher bank.
DME wipe snapshot operations are the same as wipe snapshot operations. However, a 4-digit pattern number is entered to select DME wipe patterns.

For details about the method of operation, see "Wipe Snapshot Operations (Menu)" (page 152).

Creating User Programmable DME Patterns

With a user programmable DME, you can use DME effects created through the use of keyframes for a transition on the switcher.
Note the following points when creating a keyframe effect for use as a user programmable DME pattern.

Register numbers and pattern numbers

When saving a keyframe effect as a user programmable DME, specify the register number corresponding to the pattern number.

Execution mode	Register number	Pattern number
1-channel mode	101 to 199	1901 to 1999
2-channel mode	201 to 299	2901 to 2999
3-channel mode	301 to 399	3901 to 3999

For details about registers, see "Registers" (page 296).

Global channel keyframe effects

If an effect with the same number as the reference channel is present on the DME global channel, executing the user programmable DME will also execute the effect on the global channel simultaneously.
When executing a user programmable DME, take note of whether the effect is present on the global channel.

User Programmable DME Transition Mode

To create a user programmable DME, it is necessary to set the transition mode (the way in which the effect moves). To set the transition mode, use the Key Frame >DME User PGM menu (6114).

For details about the method of operation, see "Transition Mode Settings for User Programmable DME" (page 313).

The following transition modes are available.

Channel	Transition mode	Effect group
1-channel mode	Single transition mode	Slide, Split, Door, Page Turn, Roll, Squeeze, Mirror, Sphere, Character Trail, Wave, Ripple, 2D Trans, 3D Trans, Sparkle, Split Slide
	Flip tumble	Flip Tumble, Mosaic, Defocus
	Frame in-out	Frame I/O
	Frame in-out H [a)]	Frame I/O
	Frame in-out V	Frame I/O
	Picture-in-picture [b)]	P in P
	Compress [c)]	P in P
2-channel mode	Dual transition mode	Slide, Squeeze, 3D Trans, Crop Slide
	2-channel frame in-out	Frame I/O
	2-channel picture-in-picture	P in P

a) Transition according to DME wipe patterns 1202, 1203, or 1204
b) Transition according to DME wipe pattern 1201
c) Transition according to DME wipe pattern 1251

For details, see "Overview" (page 154).

Note

For the following group of effects available in 2-channel mode, user programmable DME wipe patterns cannot be created.
Page Turn, Roll, Brick

Notes on creating keyframe effects

When creating a keyframe effect to be used as a user programmable DME pattern, note the following, depending on the transition mode used.

Notes on single transition mode (1-channel mode)

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the last keyframe to be a full-size image.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [Single].

Notes on flip tumble (1-channel mode)

- Create the first keyframe with the image at full size. In the <Back> group of the DME >Input/Output >Video/Key menu (4162), press [H Invert] or [V Invert], turning it on, depending on the direction of the rotation you want during the transition.
- Create the last keyframe with the image inverted so the back side is visible, and with the size at full size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [Flip Tumble].

Notes on frame in-out (1-channel mode)

Create a minimum of three keyframe points.

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the first transition to end such that the image can be seen within the screen. At this point, press the [PAUSE] button in the utility/shotbox control block, turning it on, to set a pause for the keyframe.
- Either create the last keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [Frame I/O].

Notes on frame in-out H (1-channel mode)

Create a minimum of three keyframe points.

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- As the state after completion of the first transition, move the image horizontally to make it visible within the screen. At this point, press the [PAUSE] button in the utility/shotbox control block, turning it on, to set a pause for the keyframe.
- For the last keyframe move the image horizontally to place it outside the screen area or set the image size to zero, so that the image is not visible within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [Frame I/O H].

Notes on frame in-out V (1-channel mode)

Create a minimum of three keyframe points.

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- As the state after completion of the first transition, move the image vertically to make it visible within the screen. At this point, press the [PAUSE] button in the utility/shotbox control block, turning it on, to set a pause for the keyframe.
- For the last keyframe move the image vertically to place it outside the screen area or set the image size to zero, so that the image is not visible within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [Frame I/O V].

Notes on picture-in-picture (1-channel mode)

Create a minimum of three keyframe points.

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the first transition to end such that the image can be seen within the screen. At this point, press the [PAUSE] button in the utility/shotbox control block, turning it on, to set a pause for the keyframe.

- Either create the last keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [P In P].

Notes on compress (1-channel mode)

Create a minimum of three keyframe points.

- Create the first keyframe with the image at full size.
- Create the first transition to end such that the image can be seen within the screen. At this point, press the [PAUSE] button in the utility/shotbox control block, turning it on, to set a pause for the keyframe.
- Create the last keyframe to be a full-size image.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [Compress].

Notes on dual transition mode (2-channel mode)

- Create the first keyframe for each channel as follows.
  - **Channel 1:** Create the image full-size.
  - **Channel 2:** Either create the image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the last keyframe for each channel as follows.
  - **Channel 1:** Either create the image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
  - **Channel 2:** Create the image full-size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [Dual].

Notes on frame in-out (2-channel mode)

Create a minimum of three keyframe points.

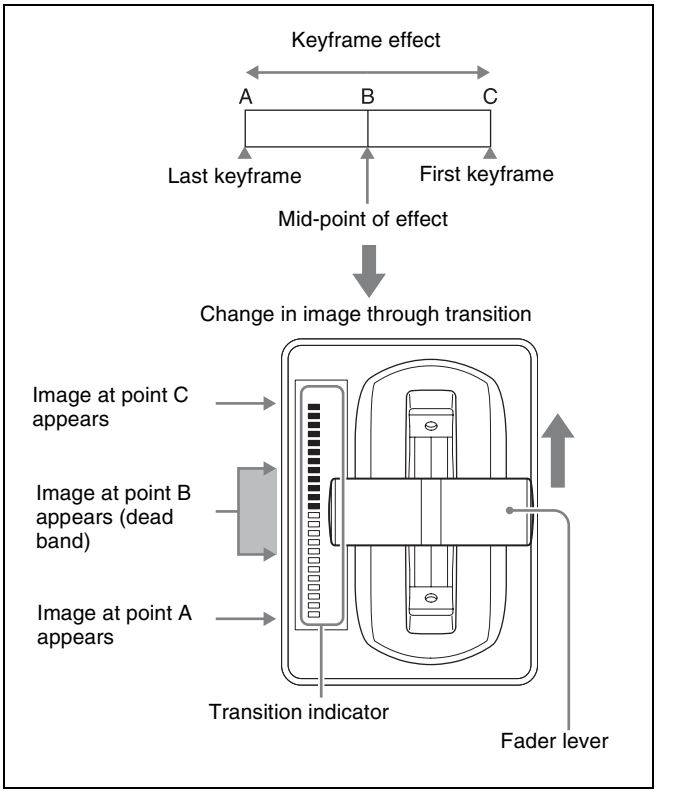
- Create the first keyframe for each channel as follows.
  - **Channel 1:** Either create the image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
  - **Channel 2:** Either create the image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the first transition to end such that the image can be seen within the screen. At this point, press the [PAUSE] button in the utility/shotbox control block, turning it on, to set a pause for the keyframe.
- Create the last keyframe for each channel as follows.
  - **Channel 1:** Either create the image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
  - **Channel 2:** Either create the image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [Frame I/O].

Notes on picture-in-picture (2-channel mode)

Create a minimum of three keyframe points.

- Create the first keyframe for each channel as follows.
  - **Channel 1:** Create the image full-size.
  - **Channel 2:** Since the priority is low, it will not be visible on the screen, so no particular restrictions apply.

  In the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211), set the channel 1 priority higher when setting the priority of channel 1 and channel 2.
- In the intermediate part of the transition, create the two images so that both are visible within the screen. In the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211), set the channel 1 priority higher when setting the priority of channel 2 and channel 2.
  It is recommended to make the priority settings at a keyframe point at which the two images are not overlapping.
- During the course of a transition, there is a dead band corresponding to the intermediate point of the whole effect (see following figure), during which the image does not change. Therefore, it is necessary to create the effect so that the image in the intermediate part of the transition is the keyframe for the mid-point of the whole effect. The range of the dead band is between 1/3 to 2/3 of the transition indicator. This also applies to an auto transition.



- Create the last keyframe for each channel as follows.
  - **Channel 1:** Since the priority is low, it will not be visible on the screen, so no particular restrictions apply.
  - **Channel 2:** Create the image full-size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu (6114), select [P In P].

Frame Memory

Chapter 7

Overview

A frame memory is a function that freezes and captures a single frame of the input video feed as a still image for later use. You can also specify a range in the input video to create still images to form a frame memory clip.

Note

Installation of the XKS-8440 Frame Memory Board is required to use the frame memory function.

Frame memory storage area

There are two storage areas on the frame memory board.

Memory: Volatile memory used for operation. When the system is powered off, files and folders in memory are lost.

Storage: Non-volatile memory for storage. This space is used for storing created image data files. When used for frame memory operations, the target file is loaded into memory.

Note

After loading a file, performing a file operation in storage, such as renaming or deleting, will delete the file from memory.

Image data storage capacity

The number of images that can be stored in memory is given below.

Signal format	Storage capacity
• 3840×2160P/59.94 • 3840×2160PsF/29.97	Approx. 1,300
• 3840×2160P/50 • 3840×2160PsF/25 • 3840×2160PsF/24 • 3840×2160PsF/23.98	Approx. 1,100
• 1080P/59.94 • 1080i/59.94 • 720P/59.94 • 720P/50 • 1080PsF/29.97	Approx. 5,500
• 1080P/50 • 1080i/50 • 1080PsF/25	Approx. 4,600
• 1080PsF/24 • 1080PsF/23.98	Approx. 4,400

Frame Memory Image Data

The following two types of image data can be manipulated in frame memory. When there is no distinction being made between image data types, image data is referred to as just an “image.”

Still image: A single image in the input video is frozen and saved. Each file (still file) holds just one still image.

Clip: A clip is created by a series of still images, which is played back like a video. The collection of files constituting a clip is referred to as a “clip file.”

Notes on saving or recalling a frame memory in a snapshot/keyframe

- Only still images and clips recalled to FM outputs (FM1 to FM20) can be the target of snapshots or keyframes.
- If a frame memory is recalled due to a snapshot or keyframe, the still image or clip must exist in memory under the same conditions as when it was saved. Load the target image in memory beforehand so that it is available for use when the recall operation occurs.

Frame memory input and output

There are two lines for frame memory input: frame memory source 1 bus and frame memory source 2 bus. There are 20 frame memory output channels, FM1 to FM20, and each channel independently allows an image to be saved or recalled. By assigning FM1 to FM20 to cross-point buttons you can use the image output from each channel as input material.

Notes

- In 4K format, only four channels comprising FM1 to FM4 can be used.
- Only eight channels comprising FM1 to FM8 (FM1&2 Clip, FM3&4 Clip, FM5&6 Clip, FM7&8 Clip) can be used in a clip transition.

Correspondence between input and output

The two frame memory input systems are assigned to a pair of consecutive FM outputs (odd-numbered output and even-numbered output, such as FM1&2 or FM3&4) for use.
Frame memory source 1 bus is assigned to an odd-numbered FM output, and frame memory source 2 bus is assigned to an even-numbered FM output.

Pair mode and single mode

Pair mode

Enabling pair mode allows you to link operation of a pair of FM outputs. For example, performing an operation, such as a freeze, on FM1 will perform the same operation on FM2.
The image data saved in pair mode is referred to as a "pair file." In a pair file, the image data processed on the odd-numbered FM output is the main file, and the image data processed on the even-numbered FM output is the sub file.
You can also create a pair file from two single files (Couple function).
Only pair files can be selected when performing frame memory operations in pair mode.

Single mode

In single mode (pair mode disabled), you can perform operations on a pair of FM outputs independently.
The image data saved in single mode is referred to as a "single file." You can also split a pair file into two single files (Separate function).
Both single files and pair files can be selected when performing frame memory operations in single mode.
Selecting a pair file will recall the main file only on the FM output.

V/K mode

When V/K mode is enabled, selecting a signal on the frame memory source 1 bus will automatically select the paired key signal on the frame memory source 2 bus.

Files and folders

In frame memory, files are stored and managed in folders you create.
The names of folders can comprise up to 16 characters, and the names of files can comprise up to 32 characters.

Notes

- The created folder hierarchy can have up to three levels below the root level.
- The following characters cannot be used for folder/file names.
  space, \, /, :, ;, , (comma), . (period), <, >, *, ?, ", |
- The following names cannot be used for files/folders.
  CON, PRN, AUX, CLOCK$, NUL
  COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
  LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9
- When a file name is too long to be displayed in full, ".." is displayed after the name.

Frame memory audio data

In a frame memory clip, in addition to the video image, audio data is recorded.

Audio data playback

You can play recorded audio data using normal clip playback or by an auto transition in a clip transition. You can also play audio data while a clip is recording to monitor the data.
To play audio data, first enable audio data on the target FM output for operation.

Notes

- Audio data can be enabled/disabled for each FM output in single mode, or for each pair of FM outputs in pair mode.
- Audio data is recorded in a clip, even if a clip is created with audio data disabled on the FM output. Audio data recording cannot be disabled.
- To play audio data, set the signal output to through mode *(see page 457)*.
  Only the AUX bus and edit preview bus can output audio data.
- In variable-speed playback, audio data is not played.
- In loop playback, audio data fades in at the playback start point and fades out at the playback stop point. In reverse playback, audio data is not played.
- Importing/exporting a frame memory file discards any audio data.
- Noise may occur if a frame memory source bus cross-point is switched during audio data playback.
- The audio sampling frequency is 48 kHz only.

Frame Memory Operations

Preparations

Assigning the frame memory outputs (FM1 to FM20) to cross-point buttons

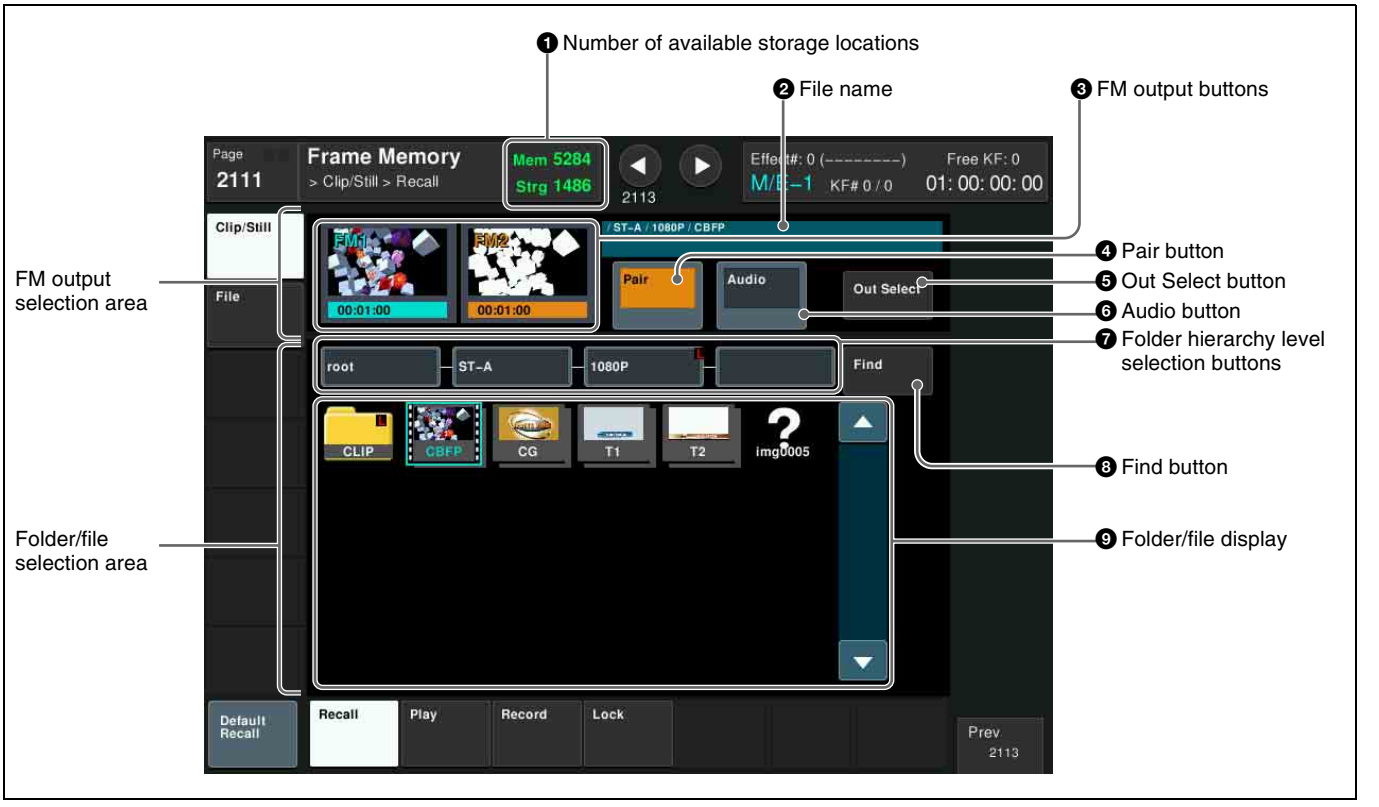
To output a frame memory image to a monitor, for example, the output signal from the frame memory (FM1 to FM20) must be assigned to a cross-point button. The assignment is configured in the Setup menu.

Note

In 4K format, only FM1 to FM4 can be used.

Frame Memory Menu

The following are the main parts of the frame memory menu screen.



❶ Number of available storage locations

Displays the remaining number of storage locations in memory and storage.

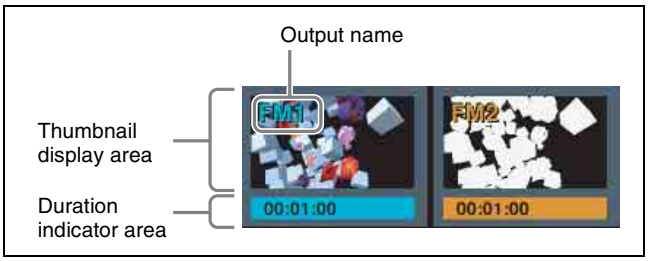
Note

When the switcher signal format is 3840×2160P or 3840×2160PsF, the number of storage locations becomes 1/4 of the number displayed.

❷ File name

Displays the path and name of the file recalled on the selected FM output (reference FM output selected in pair mode).

❸ FM output buttons



The odd-numbered FM output is displayed on the left, and the even-numbered FM on the right. Pressing a button selects the FM output as the target for operation.
You can check the button selection state by the color of the output name and duration indicator area.

- Light blue: Selected FM output (reference FM output selected in pair mode)
- Orange: Non-reference FM output selected in pair mode
- White output name and black duration indicator area: Unselected FM output

Thumbnail display area

Displays a thumbnail when a file is recalled on the FM output.
The following information is also displayed.

- Through: When the input image is output
- Black: When a black signal is output
- Play: During playback
- Record: During recording
- No Thumbnail: File without thumbnail

Duration indicator area

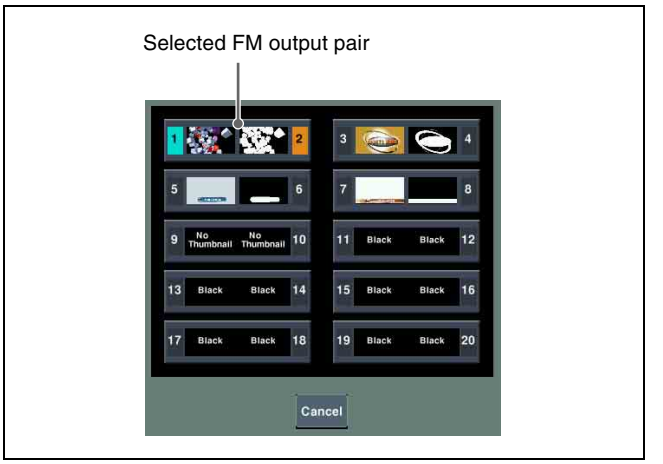
Displays “Still” for a still image, or the duration in “mm:ss:ff (minutes:seconds:frames)” format for a clip. Also, if audio data is enabled for an FM output, “A” is displayed. If an FM output is locked, “L” is displayed.

❹ Pair button

Pressing this button, turning it on, enables pair mode.

❺ Out Select button

Pressing this button displays a pop-up window where you can select the FM output pair to display in the FM output buttons.
Selected FM outputs are displayed in light blue or orange.



❻ Audio button

Pressing this button, turning it on, enables audio data.

❼ Folder hierarchy level selection buttons

Displays the names of the selected folders in hierarchy levels 1 to 3. Pressing a button switches the folder hierarchy level.
If the selected folder is locked, “L” is displayed at the top right of the button.

❽ Find button

Pressing this button displays a pop-up window, in which you can specify a folder/file name to carry out a search.

❾ Folder/file display

Displays the folders and files that exist in the selected folder.
Selects the file used on the FM output, or the folder/file for editing.
You can check the folder/file type using the following icons.

	Folder: The name of the folder is displayed on the icon. “L” is displayed at the top right of icons for locked folders.
	Still image file: A thumbnail and the name of the file is displayed on the icon. For a pair file, the icon shows the paired files overlapped.
	Clip file: A thumbnail and the name of the file is displayed on the icon. For a pair file, the icon shows the paired files overlapped.

	File existing in memory only: A “?” mark is displayed on the icon.

Selecting an Input Image

You can use the signal selected on the frame memory 1 bus or 2 bus for the input image to frame memory. Select the signal using the following procedure.

Selecting frame memory source bus signal

This section describes selecting the signal on the frame memory source 1 bus as an example.

1 On the AUX bus control block (AUX bus operation mode), press the [FMS 1] button on the 1st row (or 2nd row) to assign the frame memory source 1 bus to the cross-point button row.

Notes

- You can assign a frame memory source bus delegation button to the cross-point pad of the cross-point control block in free assign mode in the Setup menu *(see page 433)*.
- You can assign a frame memory source bus delegation button to the 1st row of the cross-point control block in key/AUX bus delegation mode in the Setup menu *(see page 432)*.

2 Select the signal to be used for the input image using the cross-point buttons.

To select a signal with a key or DME effect applied on the frame memory source bus (frame memory feed)

Press the [FM FEED] button *(see page 128)* in the key control block or press [FM Feed] in the Processed Key menu *(see page 123)*.
This automatically assigns the key fill and key source signals being keyed by the currently selected keyer to the frame memory source 1 bus and 2 bus.
When DME is selected on the keyer, the key fill and key source signals with DME effect applied are assigned.

Note

In 4K format, the frame memory feed function cannot be used.

Selecting an FM Output

This section describes the display and selection of the FM1 and FM2 pair as an example.

Selecting the target FM output for operation

1 In the FM output selection area of the Frame Memory >Clip/Still menu, press [Out Select].

2 Select the FM1 and FM2 pair in the pop-up window.

FM1 and FM2 appear on the FM output buttons.

3 Press [Pair] to set pair mode or single mode.

Pair mode is selected when [Pair] is lit, and single mode is selected when it is not lit.

For details, see “Pair mode and single mode” (page 170).

4 Press an FM output button to select the target FM output (FM1 or FM2).

In pair mode, the selected FM output becomes the reference, and both FM1 and FM2 are selected.

Locking FM outputs

You can lock an FM output when a still image file or clip file is recalled on the FM output.
The following operations are inhibited on a locked FM output.

- Recalling a file
- Creating a file (freeze, record)
- Enabling/disabling audio data
- Trimming a clip file
- Editing a folder/file (supported if selected as the copy source)
- Deleting a file/folder from memory

Notes

- Each FM output can be locked in single mode, and each pair of FM outputs can be locked in pair mode.
- On each locked FM output, the image does not change even if a frame memory recall is executed by a snapshot, keyframe, or macro. Playback operations of clip files using a snapshot or keyframe are also inhibited.

1 Open the Frame Memory >Clip/Still >FM Out Lock menu (2114).

2 Select the target FM output for operation.

Only FM outputs with a recalled still image file or clip file can be selected.
A white frame is displayed for the selected FM output.

3 Press [Lock], turning it on.

The FM output is locked, and “L” is displayed in the duration indicator area.

To release the lock

Select a locked FM output, and press [Lock], turning it off.

Loading Image Data

Image data files saved in storage need to be loaded in memory in order to use them on an FM output.

Note

Loading image data is supported only when the switcher signal format matches the file signal format.

Loading a folder/file into memory

1 Open the Frame Memory >File >Load menu (2121).

Icons for folders/files that exist in storage and memory are displayed.
An orange frame is displayed on the icons of files currently loaded in memory.

Note

Files that exist only in memory are not displayed.

2 Select the folder/file to load into memory.

For details about the method of operation, see "Folder and File Selection" (page 174).

3 Press [Load to Memory].

To delete a folder/file from memory

Select the folder/file, and press [Unload].

Note

A file that is being played back or is recalled on a locked FM output, or a folder containing such a file cannot be deleted.

Folder and File Selection

Selecting the target folder/file for operation

Press the icons for folders and files to select them in the folder/file selection area.
You can also enter the name of a folder/file to search for.

To switch folders

Press [SEL], turning it off.
Press the folder hierarchy level selection button or folder icon to switch the folder for display.

To select a folder/file

Press [SEL], turning it on.
Press the icon for a folder/file to select it. When selected, a check mark is displayed on the icon. Pressing an icon displaying a check mark will deselect it.
The last used icon is displayed with a light-blue frame, and the name, duration, signal format, and creation date are displayed in the status area at the top of the screen.
You can select all files/folders in the displayed folder by pressing [ALL].

Note

Pressing [SEL], turning it off, will deselect all files/folders.

To search by folder/file name

1 Press [Find].

2 Press [Find] in the pop-up window.

3 Enter the string you want to search for in the keyboard window, and press [Enter].

This starts the search, and the indicator is lit.
When the search ends, the matching folders/files are displayed selected.
To scroll through the selected folders/files, press [< Prev] or [Next >].
To close the pop-up window, press outside the pop-up window on the menu screen.

Note

The selected folder and the folders/files within the hierarchy of that folder are the search target.

Locking folders

You can lock frame memory folders individually.
The following operations are inhibited on a locked folder and the files in a locked folder.

- Trimming a clip file
- Editing a folder/file (supported if selected as the copy source)
- Saving a file from memory to storage
- Creating a folder
- Loading/importing a file from the File menu

1 Open the Frame Memory >File >Folder Lock menu (2125).

2 Select a folder in the folder/file selection area.

For details about the method of operation, see "Folder and File Selection" (page 174).

3 Press [Lock], turning it on.

The selected folder and all folders below it in the hierarchy are locked, and “L” is displayed on the folder icons.

To release the lock
Select a locked folder, and press [Lock], turning it off.

Notes

- A selected folder that is within a locked folder cannot be unlocked.
- When a folder is unlocked, the folders below it in the hierarchy return to the lock state they had before it was locked.

Still Image Operations

Creating a Still Image (Freeze)

Assigning a frame memory source bus signal to an FM output and then executing a freeze captures a still image and saves it in memory.
In a freeze, an image can be captured either as a video frame (a “frame freeze”) or a video field (“field freeze”).

Notes

- When the system is powered off, files and folders in memory are lost. Save any required files in storage.
- A field freeze is supported only when the signal format is 1080i.
- When the available number that can be saved in each signal format equals the following values, the freeze operation cannot be executed.
  - 1080P, 1080PsF, 1080i, 720P: “0” (“1” in pair mode)
  - 3840×2160P, 3840×2160PsF: “3” (“7” in pair mode)

1 Open the Frame Memory >Clip/Still >Record menu (2113).

2 Select the target FM output for operation in the FM output selection area.

For details about the method of operation, see “Selecting an FM Output” (page 173).

3 Press [Through], turning it on.

The input image on the frame memory source bus is output on the target FM output.

Note

The output on the FM output is delayed by one frame.

4 Select the save destination folder in the folder/file selection area.

To create a folder
Press [New], and enter the folder name using the keyboard window.

Note

A folder cannot be created within a locked folder.

5 Set the name of the file to create.

Press [Name], and enter the file name using the keyboard window. The specified file name is displayed in the status area in the center of the screen.

6 In the <Freeze> group, select one of the following.

Frame: Execute a frame freeze, saving a still image file in memory.
Field: Execute a field freeze, saving a still image file in memory.

To enable V/K mode

Press [V/K Mode], turning it on.

For details, see "V/K mode" (page 170).

To save still image files in storage

Select a file stored in memory in the folder/file selection area. A confirmation message appears.
Select [Yes] to start saving the file in storage.

Note

A file within a locked folder cannot be saved in storage.

Recalling Still Images

Selecting a still image file in memory recalls the file on an FM output.

1 Open the Frame Memory >Clip/Still >Recall menu (2111).

2 Select the target FM output for operation in the FM output selection area.

For details about the method of operation, see "Selecting an FM Output" (page 173).

3 Select the file to recall in the folder/file selection area.

You can also enter the name of a folder/file to search for *(see page 174)*.
A light-blue frame is applied to the selected file, and the image is recalled on the target FM output.

Clip Operations

Creating a Clip (Recording)

Assigning a frame memory source bus signal to an FM output and then executing recording captures a clip and saves it in memory.

Notes

- When the system is powered off, files and folders in memory are lost. Save any required files in storage.
- When the available number that can be saved in each signal format equals the following values, the record operation cannot be executed.
  - 1080PsF, 1080i: "1" ("3" in pair mode)
  - 1080P, 720P: "3" ("7" in pair mode)
  - 3840×2160PsF: "7" ("15" in pair mode)
  - 3840×2160P: "15" ("31" in pair mode)

1 Open the Frame Memory >Clip/Still >Record menu (2113).

2 Select the target FM output for operation in the FM output selection area.

For details about the method of operation, see "Selecting an FM Output" (page 173).

3 Press [Through], turning it on.

The input image on the frame memory source bus is output on the target FM output.

Note

The output on the FM output is delayed by one frame.

4 Select the save destination folder in the folder/file selection area.

To create a folder
Press [New], and enter the folder name using the keyboard window.

Note

A folder cannot be created within a locked folder.

5 Set the name of the file to create.

Press [Name], and enter the file name using the keyboard window. The specified file name is displayed in the status area in the center of the screen.

6 Press [Record Start] at the position you want to start recording.

7 Press [Record Stop] at the position you want to stop recording.

The clip file is saved in memory.

To enable V/K mode

Press [V/K Mode], turning it on.

For details, see "V/K mode" (page 170).

To create a clip by specifying the duration

Press [Clip Duration], and enter a timecode value or number of frames using the numeric keypad window. The specified duration is displayed in the status area in the center of the screen.
Pressing [Record Start] starts recording, and then recording stops when the specified duration elapses.
If "0" is specified for the duration, recording continues until the free capacity in memory has been consumed.

To play audio data during recording

Press [Audio], turning it on.

For details about audio data, see "Frame memory audio data" (page 170).

To save clip files in storage

Select a file stored in memory in the folder/file selection area. A confirmation message appears.
Select [Yes] to start saving the file in storage.

Note

A file within a locked folder cannot be saved in storage.

Recalling Clips

Selecting a clip file in memory recalls the file on an FM output.

1 Open the Frame Memory >Clip/Still >Recall menu (2111).

2 Select the target FM output for operation in the FM output selection area.

For details about the method of operation, see "Selecting an FM Output" (page 173).

3 Select the file to recall in the folder/file selection area.

You can also enter the name of a folder/file to search for *(see page 174)*.
A light-blue frame is applied to the selected file, and the image is recalled on the target FM output.

Playing a Clip

You can play a clip recalled on an FM output from the menu or by using the device control block (trackball).

Note

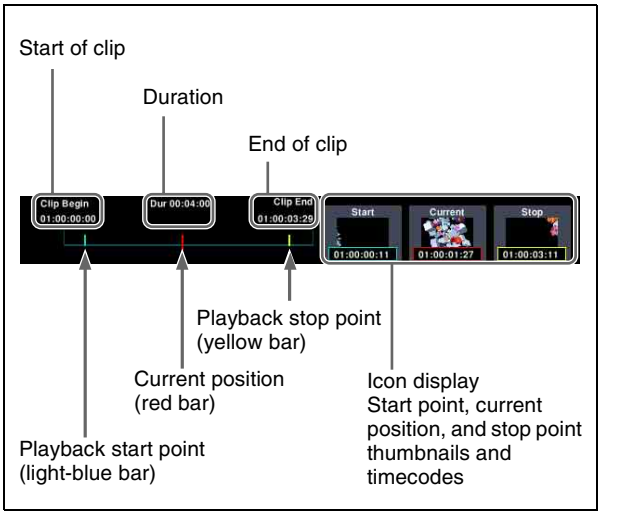
With a pair file recalled, it is possible to disable pair mode and carry out single file operations, but if you then re-enable pair mode, the output of frame memory may become black. If this occurs, recall the pair file again.

Playing a clip (menu)

1 In the Frame Memory >Clip/Still >Recall menu (2111), recall the file to play on the target FM output.

2 Open the Frame Memory >Clip/Still >Play menu (2112).

The following information is displayed in the status area in the center of the screen.



Note

If a playback operation is performed immediately after a clip is created, the icon display thumbnail may not be displayed (black display). Some time may be required, depending on the clip file, before the thumbnail is displayed.

3 Press [Play].

Playback starts. To stop playback, press [Stop].

To repeat playback (looping)

In the <Loop Type> group, select one of the following.
Loop: When the playback stop point is reached, playback continues from the playback start point, and then repeats.

Ping-Pong: When the playback stop point is reached, playback continues in the reverse direction until the playback start point, and then repeats.

To play audio data
Press [Audio], turning it on.

For details about audio data, see "Frame memory audio data" (page 170).

To change the playback speed
Press [Variable Speed], turning it on, and set the following parameter.

No.	Parameter	Adjustment
3	Speed	Playback speed

To cue up
Press [Cue].

To move to the start of a clip
Press [Rewind].

To move to the end of a clip
Press [FF].

To set the playback start point
To set the current position as the playback start point, press [Set] in the <Start TC> group.
To set a different position, press the [Start] icon display in the status area, and enter a timecode value in the numeric keypad window.
Pressing [Clear] in the <Start TC> group clears the set playback start point.

To set the playback stop point
To set the current position as the playback stop point, press [Set] in the <Stop TC> group.
To set a different position, press the [Stop] icon display in the status area, and enter a timecode value in the numeric keypad window.
Pressing [Clear] in the <Stop TC> group clears the set playback stop point.

To change the current position
Press the [Current] icon display in the status area, and enter a timecode value in the numeric keypad window.

To delete regions outside the playback range (trimming)
You can delete the region before the set playback start point and the region after the set playback stop point.
Press [Trim], check the message, then press [Yes].

Note

The following clip files cannot be trimmed.
- A file being played back
- A file recalled on a locked FM output
- A file in a locked folder

Playing a clip (device control block)
You can play a clip recalled on an FM output, from the menu, using the device control block (trackball).

For details about the buttons in the device control block (trackball), see "Device Control Block (Trackball)" (page 40) and "Controlling the Tape/Disk Transport" (page 286).

Note

The [FM1 CLIP] to [FM20 CLIP] buttons must be assigned to the channel selection buttons beforehand in the Setup menu *(see page 411)*.

1 Press the [DEV] button.

2 Select the target frame memory clip (FM1 CLIP to FM20 CLIP) using the channel selection buttons.

In pair mode, the channel selection buttons for main and sub are lit.

3 Press the [PLAY] button.

The [PLAY] button is lit amber, and playback starts. To stop playback, press the [STOP], [SHTL], [JOG], [CUE], [REW], [FF], or [ALL STOP] button.

To set the playback start point
To make the current position the playback start point, press the [START TC] button.

To set the playback stop point
To make the current position the playback stop point, press the [STOP TC] button.

To repeat playback (looping)
Press the [FM LOOP] button.

To control variable speed playback
Press the [JOG], [SHTL], or [VAR] button, then turn the Z-ring. The image changes in the forward direction when you turn the Z-ring clockwise, and in the reverse direction when you turn it counterclockwise.
When the [JOG] button is pressed: Playback is at a speed corresponding to the turning speed of the Z-ring.
When the [SHTL] button is pressed: Playback is at a speed corresponding to the angle of the Z-ring.
When the [VAR] button is pressed: Playback is at a speed in the range –1 to +3 times normal speed corresponding to the angle of the Z-ring.

Clip Transitions

You can play a frame memory clip linked to a background transition, such as a mix or wipe.
Only eight channels comprising FM1 to FM8 (FM1&2 Clip, FM3&4 Clip, FM5&6 Clip, FM7&8 Clip) can be used in a clip transition.

Clip transition restrictions

- Pattern limits cannot be used.
- Transition preview cannot be used.
- It is not possible to set the transition rate of a clip transition.
- Keyframe capture is not possible.
- The state of a clip transition during execution cannot be saved as a snapshot.
- When recalling a snapshot that includes a clip transition while executing another clip transition, the subsequent transition does not operate properly. Recall the snapshot after the transition completes.
- Transitions executed in two strokes, such as a preset color mix with the stroke mode set to [Normal], or a DME wipe with a picture-in-picture pattern, will not execute correctly.

Notes

- In 4K format, only four channels comprising FM1 to FM4 (FM1&2 Clip, FM3&4 Clip) can be used.
- When a clip transition is selected as the transition type, the wipe direction selection button in the transition control block that is lit indicates the direction of clip playback.

Clip Transition Settings

This section describes clip transitions using FM1&2 Clip on the M/E-1 bank as an example.

Note

To use a clip transition effectively, the image from the frame memory clip image that is played back during the clip transition must be reflected in the M/E-1 program image beforehand. For example, the settings for inserting a key using FM1 and FM2.

1 In the <Transition Type> group of the M/E-1 >Misc >Transition menu (1171), select [FM1&2 Clip].

2 Press [Clip Transition].

The Clip Transition menu (1176) appears.

3 Press [Clip >Recall].

The Frame Memory >Clip/Still >Recall menu (2111) appears.

4 Select a clip file in memory, and recall the file on the FM1 and FM2 output.

For details about the method of operation, see "Recalling Clips" (page 177).

5 Return to the Clip Transition menu (1176), and select the background transition type in the <BKGD Transition Type> group.

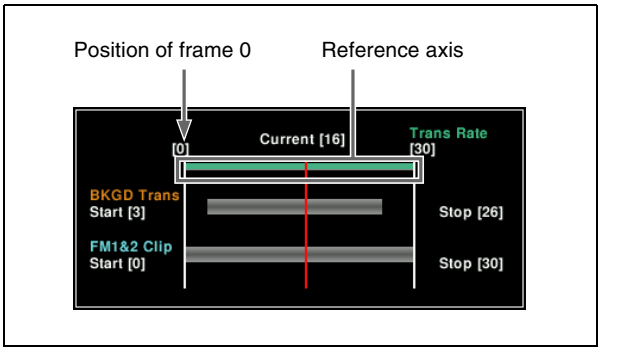
Note

In the M/E-1 >Misc >Transition menu (1171) or other menus, configure a background transition, as required.

6 In the <Select> group, press [BKGD Transition].

7 Using one of the following methods, set the start point of the background transition.

- Move the fader lever to the start point, and press [Start] in the <BKGD Transition Set Timing> group.
- Set the number of frames using the [BKGD Trans Start] parameter (left edge of the reference axis is frame 0).



8 Using one of the following methods, set the end point of the background transition.

- Move the fader lever to the end point, and press [Stop] in the <BKGD Transition Set Timing> group.
- Set the number of frames using the [BKGD Trans Stop] parameter.

9 If [Wipe] or [DME Wipe] is selected in the <BKGD Transition Type> group, select the wipe direction in the <BKGD Transition Direction> group.

10 In the <Select> group, press [FM1&2 Clip].

11 Using one of the following methods, set the start point of the clip.

- Move the fader lever to the start point, and press [Start] in the <Clip Transition Set Timing> group.

- Set the number of frames using the [Clip Start] parameter.

Note

It is not possible to set the clip end point.

12 In the <Clip Transition Direction> group, select the playback direction of the clip.

To reset the start point and end point

Press [Timing Reset].
The background transition start point and end point, and the clip start point are all reset.

Editing Folders and Files

The following editing operations for frame memory folders and files are supported.

- Pair file processing
- Copying folders/files
- Moving folders/files
- Creating folders
- Deleting folders/files
- Renaming folders/files
- Saving files from memory to storage

Notes on folders/files being played back or locked

Editing operations cannot be performed if the target folders/files include any of the following types of folders/files.

- File being played back, or a folder containing the file being played back
  - Target file for pair file processing
  - Copy destination file that would be overwritten
  - Source folder/file for a move operation
  - Move destination file that would be overwritten
  - Folder/file to be deleted
  - Folder/file to be renamed
- File recalled on a locked FM output, or a folder containing a file recalled on a locked FM output
  - Target file for pair file processing
  - Copy destination file that would be overwritten
  - Source folder/file for a move operation
  - Move destination file that would be overwritten
  - Folder/file to be deleted
  - Folder/file to be renamed
- Locked folder, or a folder/file in a locked folder
  - Target file for pair file processing
  - Copy destination folder, or copy destination file that would be overwritten
  - Source folder/file for a move operation
  - Move destination folder, or move destination file that would be overwritten
  - Folder/file to be deleted
  - Folder/file to be renamed
  - Folder in which to create a new folder
  - File to be stored in storage
- Folder containing a locked folder lower in the hierarchy
  - Copy destination folder that would be overwritten
  - Source folder for a move operation
  - Move destination folder that would be overwritten
  - Folder to be deleted
  - Folder to be renamed

Pair File Processing

You can create a pair file from two single files, and split a pair file into two single files.
This section describes the operation using FM1 and FM2 as an example.

Creating a pair file from two single files (Couple function)

Notes

- A pair file cannot be created using a still image file and a clip file.
- A pair file cannot be created using two clip files that have a different duration.

1. In the Frame Memory >Clip/Still >Recall menu (2111), recall two single files in FM1 and FM2.
2. Open the Frame Memory >File >Recombination menu (2124).
3. Press [Couple].
4. Check the message, then press [Yes].

   A pair file is created, and pair mode is automatically enabled.
   The name of the file recalled in the odd-numbered FM output is set as the name of the pair file.

Splitting a pair file into two single files (Separate function)

1. In the Frame Memory >Clip/Still >Recall menu (2111), recall a pair file in FM1 and FM2.
2. Open the Frame Memory >File >Recombination menu (2124).
3. Press [Separate].
4. Check the message, then press [Yes].

   The pair file is split into two, and pair mode is automatically disabled.
   The name of the single file in the odd-numbered FM output is the same as the pair file before the separation, and the name of the single file in the even-numbered FM output is also the same but with a "~" suffix.

Notes

- If the name of the pair file is 32 characters long, the last character of the name of the single file in the even-numbered FM output is changed to a "~" character.
- If the name of the pair file is 32 characters long and the name ends with a "~" character, the pair file cannot be split into single files. First rename the pair file, and then split the pair file.

Copying and Moving Folders/Files

Notes

- Files that exist only in memory cannot be copied/moved.
- If the folder hierarchy level exceeds the maximum in the copy destination or move destination, the copy function or move function is not performed.
- Files with a signal format that is different from the switcher signal format cannot be copied.

1. Open the Frame Memory >File >Copy/Move/New Folder menu (2122).
2. Select the copy source or move source folder/file in the folder/file selection area in the top row.

   For details about the method of operation, see "Folder and File Selection" (page 174).
3. Select the copy destination or move destination folder in the folder/file selection area in the bottom row.
4. Press [Copy] if copying, or [Move] if moving.

   When the same folder is specified as the copy source and copy destination
   Press [Duplicate] instead of [Copy]. Enter the folder name used for the copy using the keyboard window, and press [Enter].

Creating Folders

1. Open the Frame Memory >File >Copy/Move/New Folder menu (2122).
2. Select a location (folder) in which to create a folder in the lower folder/file selection area.

   For details about the method of operation, see "Folder and File Selection" (page 174).

Note

The created folder hierarchy can have up to three levels below the root level. A folder cannot be created when a folder in the 3rd level of the hierarchy is selected.

3 Press [New].

4 Enter the folder name using the keyboard window, and press [Enter].

Deleting Folders/Files

1 Open the Frame Memory >File >Delete/Rename/Store menu (2123).

2 Select a folder/file in the folder/file selection area.

For details about the method of operation, see "Folder and File Selection" (page 174).

3 Press [Delete].

4 Check the message, then press [Yes].

Renaming Folders/Files

Note

Files that exist only in memory cannot be renamed.

1 Open the Frame Memory >File >Delete/Rename/Store menu (2123).

2 Select a folder/file in the folder/file selection area.

For details about the method of operation, see "Folder and File Selection" (page 174).

Note

Multiple folders/files cannot be selected at the same time.

3 Press [Rename].

4 Enter a new folder/file name using the keyboard window, and press [Enter].

Saving Files (Store)

You can save files that only exist in memory (files with "?" mark displayed) in storage.

1 Open the Frame Memory >File >Delete/Rename/Store menu (2123).

2 Select a file in the folder/file selection area.

For details about the method of operation, see "Folder and File Selection" (page 174).

3 Press [Store].

Color Backgrounds, Copy and Swap, and Other Settings

Chapter 8

Color Backgrounds

A color background is a function used to create color background video, using a color signal created by a dedicated generator.

Color background selection

There are two color backgrounds, color background 1 and color background 2, which you use by assigning to cross-point buttons.

Note

In 4K format, color background 2 cannot be used.

Color mix

The color generators can output the result of combining two colors, which are color 1 and color 2.
Using a pattern from a dedicated pattern generator, color 1 and color 2 can be combined in the boundary region, forming a color gradation. This is referred to as a "color mix."
You can also apply modifiers to the selected pattern.
When the "color mix" function is not used, the result is a flat color, and color 1 is always output.

You carry out color background settings in the Color Bkgd menu.
This section describes setting color background 1 as an example.

Basic Color Background Setting Operations

Making a single-color matte (flat color)

If you are not using the "color mix" function to combine two colors, use the following procedure.

1 In the <Matte> group of the Color Bkgd >Color Bkgd1 menu (2210), press [Flat Color], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Making a color combination (color mix)

To combine color 1 and color 2, use the following procedure.

1 In the <Matte> group of the Color Bkgd >Color Bkgd1 menu (2210), press [Mix Color], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Size	Pattern size
2	Soft	Degree of softness of pattern edge
5	Pattern	Pattern number [a]

a) The patterns are the same as standard wipe patterns 1 to 24.

You can also make a pattern selection by pressing [Mix Pattern Select] in the Color Bkgd1 menu to display the Mix Ptn Select menu (2210.1).
Press the desired pattern (1 to 24) to select it, and set the [Size] and [Soft] parameters.

3 Select [Color 1] and [Color 2], respectively, and set the colors.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

4 Set pattern modifiers, as required.

When selecting [Position] and setting the pattern position

No.	Parameter	Adjustment
1	Position H	Horizontal position [a]

No.	Parameter	Adjustment
2	Position V	Vertical position [a)]

a) See *page 145*.

When selecting [Multi] and replicating the pattern

No.	Parameter	Adjustment
1	H Multi	Number of repetitions of pattern horizontally
2	V Multi	Number of repetitions of pattern vertically
3	Invert Type	Pattern layout [a)]

a) See *page 147*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio [a)]

a) See *page 146*.

When selecting [Pairing] and making a pattern like a Venetian blind

No.	Parameter	Adjustment
1	Width	Width

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern [a)]

a) See *page 146*.

When selecting [Speed] in the <Rotation> group and rotating the pattern at a constant speed

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern [a)]

a) See *page 146*.

When selecting [H] (horizontal) or [V] (vertical) in the <Modulation> group and applying a wave to the pattern

No.	Parameter	Adjustment
1	Amplitude	Amplitude of modulation
2	Frequency	Frequency of modulation
3	Speed	Speed of ripples [a)]

a) See *page 148*.

Notes

- The modulation is always a sine wave.
- When the signal format is 1080PsF, modulation cannot be used.

5 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Copy and Swap

Overview

You can copy or swap the settings between switcher banks or between keyers.
The following settings can be copied or swapped.
- Settings for the M/E banks and PGM/PST bank
- Keyer settings
- Wipe settings
- Independent key wipe settings
- DME wipe settings
- Independent key DME wipe settings
- Matte color settings (color 1, color 2, and how to compose them)
- Color settings
- DME channel settings

You can also copy settings using simple button operations *(see page 186)*.

For details about copying a cross-point pad, see "Copying Cross-Point Pad Settings" (page 435).

M/E copy and M/E swap

You can copy and swap all bank settings between the M/E-1 and PGM/PST banks.

Target bank	Target data
M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	Bank settings, excluding the following data items. • Setup data • Wipe snapshots • DME wipe snapshots • Snapshots • Keyframe effects • Key snapshots • Key memory

Note

If a DME is being used on the copy source M/E bank, then if for example there are insufficient DME channels, it may not be possible to select the DME.
There are no such restrictions on a swap.

Keyer copy and keyer swap

You can copy and swap the key settings between keyers.

Target bank	Target keyer	Target data
M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	Key 1 to key 8	Key settings, excluding the following data items. • Setup data • Key snapshots • Key memory

Note

If a DME is being used on the copy source keyer, swap source keyer, or swap destination keyer, then if for example there are insufficient DME channels, or the limit on using DME channels within an M/E bank is exceeded, it may not be possible to select the DME.

Wipe copy and wipe swap

You can copy and swap wipe settings between banks.

Target bank	Target data
M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	Wipe settings. However, It is not possible to copy or swap between independent key transition wipes.

Wipe copy and wipe swap for independent key transitions

You can copy and swap wipe settings between keyers.

Target bank	Target keyer	Target data
M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	Key 1 to key 8	Wipe settings for independent key transitions.

DME wipe copy and DME wipe swap

You can copy and swap DME wipe settings between banks.

Target bank	Target data
M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	DME wipe settings. However, it is not possible to copy or swap between independent key transition DME wipes.

DME wipe copy and DME wipe swap for independent key transitions

You can copy and swap DME wipe settings between keyers.

Target bank	Target keyer	Target data
M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	Key 1 to key 8	DME wipe settings for independent key transitions.

Matte data copy and swap

You can copy or swap matte data between color generators.

Target bank	Target keyer and data	
M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	Key 1 to key 8	• Matte data for key fill • Matte data for key edge fill
	Matte data for wipe border edge	
Color background	• Matte data for color background 1 • Matte data for color background 2	

Color data copy and swap

You can copy or swap color data between color generators.

Target bank	Target keyer and data	
M/E-1 M/E-2 M/E-3 M/E-4 M/E-5 PGM/PST	Key 1 to key 8	• Colors 1 and 2 for key fill • Colors 1 and 2 for key edge fill • Zabton color data
	Colors 1 and 2 for wipe border	
	Color data for preset color mix	
Color background	• Colors 1 and 2 for color background 1 • Colors 1 and 2 for color background 2	
DME ch1 to ch4	• Background • Border • Sepia • Light • Shade • Drop shadow [a)] • Trail	

a) Excluding DME ch4.

DME channel copy and swap

You can copy and swap the channel data between DME channels.

Basic Copy and Swap Operations

Copy/Swap menu

Carry out copy/swap operations in the Copy/Swap menu. You can select the following targets in the Copy/Swap >Copy/Swap menu.

- M/E: Copying and swapping M/E data
- Key: Copying and swapping key data
- Wipe: Copying and swapping wipe data
- DME Wipe: Copying and swapping DME wipe data
- Matte: Copying and swapping matte data
- Color: Copying and swapping color data
- DME: Copying and swapping data for each DME channel

Copying or swapping

This section describes copying or swapping wipe data as an example.

1 Open the Copy/Swap >Copy/Swap >Wipe menu (3113).

The status area shows lists for the copy/swap source on the left, and the copy/swap destination on the right.

2 In the <Data Select> group, select one of the following.

Wipe: The operation applies to wipe settings.
Key Wipe: The operation applies to independent key wipe settings.

3 Select data for the copy/swap source and copy/swap destination

4 Press [Copy] to copy, or [Swap] to swap.

To undo a copy or swap

Press [Undo] to return to the state before the copy or swap was carried out.

Coping using button operation

You can carry out the following copy using button operations on the control panel.

Copy	Using buttons
M/E copy	[SNAPSHOT] button on the Flexi Pad control block
Keyer copy	Copy source selection: [KEY1] to [KEY8] delegation buttons on the key control block Copy destination selection: [KEY1] to [KEY8] key operation buttons on the Flexi Pad control block
Wipe copy	[WIPE] button on the Flexi Pad control block
DME wipe copy	[DME WIPE] button on the Flexi Pad control block

Basic button operation

Press and hold the copy source button and press the copy destination button.
You can undo the last operation using [Undo] in the Copy/Swap menu *(see page 186)*.

Example of copying

This example describes copying of key 1 on the M/E-1 bank to key 2 on the M/E-2 bank.

1 Press the [M/E1] button in the key control block, assigning the M/E-1 bank.

2 Press the [KEY] button in the M/E-2 bank Flexi Pad control block to switch to key operation mode.

3 Press and hold the [KEY1] button in the key control block and press the [KEY2] button in the Flexi Pad control block.

Register Groups

You can group various registers used by the system, and then recall them together.
16 groups are available, and each group consists of the following register data.

- Snapshots
- Wipe snapshots
- DME wipe snapshots
- Key snapshots
- Master snapshots
- Shotboxes
- Master timeline
- Keyframe effects
- Macros
- Macro attachments

Notes

- When recalling registers from or saving registers to the local drive and removable drives using the File menu, only the data in the currently selected group is targeted. To recall/save data for another group, the group must first be changed.
- Menu macros are not included in a register group.

Selecting a register group

1 Open the Copy/Swap >Register Group menu (3121).

2 In the <Register Group Select> group, select a group (Group 1 to Group 16).

The registers in the selected group are recalled together.

Copying Data Between Control Panels

You can copy data for the following registers at the same time between control panels
- Shotbox
- Master timeline
- Master snapshot
- Macro
- Macro timeline
- Menu macro

Notes

- Copying is possible only from a control panel that has a different unit ID than the menu panel to a target control panel that has the same unit ID as the menu panel.
- Before data is copied, the existing register data in the copy destination is deleted.

Copying register data

1. Open the Copy/Swap >Panel Data Copy menu (3131).
2. Select the copy source control panel in the list on the right and the copy destination control panel in the list on the left.
3. Press [← Copy].
4. Check the message, then press [Yes].

Misc Menu

In the Misc menu, you can carry out the following operations.
- Set the DME override function.
- Enable or disable operations from Virtual Shot Box/ Virtual Menu/Virtual Panel.
- Enable or disable side flags on the background bus of each bank.
  For details about side flags, see "Side Flags" (page 196).
- Enable or disable the safe title for each switcher output.
- Display the transition rate, independent key transition rate, and fade-to-black transition rate for each bank, and change the settings.
- Set the AUX mix transition rate.

Setting DME Override (DME Forced Select Mode)

When DME override is enabled and a snapshot or effect is recalled, the DME channel that was used when saving can be forcibly selected.

Note

If effects using the same DME channel are recalled simultaneously in two or more regions, the DME is selected in the order of precedence PGM/PST >M/E-1 >M/E-2 >M/E-3 >M/E-4 >M/E-5.

1. Open the Misc >Enable >Port Enable menu (3211).
2. In the <DME Override> group, press [DME Override] to enable/disable the function.

   The setting switches between enabled (button is lit) and disabled (button is not lit) each time [DME Override] is pressed.

   To disable DME channel selection while on-air
   In the <DME Override> group, press [On Air Protect]. Even when DME override is enabled, the DME channel being used on the switcher bank which is currently on-air will not be forcibly selected.

Enabling Operation from an Application

You can operate the switcher system from a web browser-based application (Virtual Shot Box, Virtual Menu, Virtual Panel). You can also disable operation from an application to prevent such operation.

Note

The enable/disable setting is applied to all Virtual Shot Box, Virtual Menu, and Virtual Panel instances connected to the control panel.

1 Open the Misc >Enable >Port Enable menu (3211).

2 Press [Web UI Enable] to enable/disable the function.

The setting switches between enabled (button is lit) and disabled (button is not lit) each time [Web UI Enable] is pressed.

Setting the Safe Title Area

You can enable/disable the safe title area for each output.

1 Open the Misc >Safe Title menu (3221).

2 Select the target signal.

Notes

- It is not possible to change the setting for outputs for which the safe title area is disabled in the Setup menu.
  For details, see "Setting the Safe Title Area" (page 457).
- If an input with through mode enabled is selected for output on an AUX bus or edit preview bus with through mode enabled, the safe title area becomes disabled.

3 Press [Safe Title] to enable/disable the function.

The safe title area switches to enabled (button is lit) or disabled (button is not lit) each time the button is pressed.

Displaying a List of Transition Rates and Changing the Settings

In the Misc >Transition >Key/ME/FTB menu (3231), you can display a list of the M/E (or PGM/PST) transition rates and independent key transition rates for each bank, and change the settings.
These settings are linked to the corresponding transition rate setting operations on each bank.
You can also display and set the fade-to-black transition rate.

Misc >Transition >Key/ME/FTB menu

The display of the independent key transition rate in the Misc >Transition >Key/ME/FTB menu (3231) depends on the selection in the <Key Transition> group of the Engineering Setup >Switcher >Transition menu (7334) on each bank.

When [Same] (same setting for key insertion and key removal) is selected in the <Key Transition> group: Only "Key" appears.

When [Independ] (independent settings for key insertion and key removal) is selected in the <Key Transition> group: "Key (On)" and "Key (Off)" appear.

For details, see "Selecting independent key transition mode" (page 467).

Setting the transition rate

To set the M/E transition rate

This section describes setting on the M/E-1 bank as an example.

1 In the status area of the Misc >Transition >Key/ME/FTB menu (3231), select [M/E-1].

2 In the <Transition Rate> group, press [Transition].

3 Set the transition rate.

No.	Parameter	Adjustment
1	Transition Rate	Transition rate

Note

When a clip transition is selected as the transition type, it is not possible to change the transition rate in the Key/ME/FTB menu.

To set the independent key transition rate

This section describes setting key 1 to key 4 on the M/E-1 bank as an example.

1 In the status area of the Misc >Transition >Key/ME/FTB menu (3231), select [M/E-1].

2 In the <Transition Rate> group, press [Key K1-K4].

When [Independ] is selected in the <Key Transition> group of the Engineering Setup >Switcher >Transition menu (7334), press [Key (On) K1-K4] or [Key (Off) K1-K4].

3 Set the transition rate.

No.	Parameter	Adjustment
1	Key1 Trans Rate	Key 1 transition rate

No.	Parameter	Adjustment
2	Key2 Trans Rate	Key 2 transition rate
3	Key3 Trans Rate	Key 3 transition rate
4	Key4 Trans Rate	Key 4 transition rate

Setting the fade-to-black transition rate

1 In the Misc >Transition >Key/ME/FTB menu (3231), press [FTB].

2 Set the transition rate.

No.	Parameter	Adjustment
1	Transition Rate	Transition rate

Setting the AUX Mix Transition Rate

For details about AUX mix transitions, see "AUX Mix Transitions" (page 105).

1 Open the Misc >Transition >Aux Mix menu (3232).

2 Select the AUX bus (odd-numbered bus) to set.

No.	Parameter	Adjustment
1	No	AUX bus selection

3 Set the transition rate.

No.	Parameter	Adjustment
2	Transition Rate	Transition rate

Aux Menu

You can configure the color corrector for an AUX bus in the Aux menu.

Setting the Color Corrector for an AUX Bus

You can set the following color corrector functions for the AUX bus assigned to an output connector.
- Video process
- Primary color correction
- RGB clip

You can set a color corrector link group, and then apply the same setting to multiple AUX buses.

Notes

- When AUX mix transitions are enabled, even-numbered AUX buses cannot be selected as the target.
- If an input with through mode enabled is selected for output on an AUX bus with through mode enabled, the color corrector function becomes disabled.

1 In the status area of the Aux >Aux Bus >CCR menu (2311), select the target AUX bus.

2 In the <CCR> group, press [CCR], turning it on.

The color correction function is enabled for the selected AUX bus.
Configure each function, as required.

To return color corrector settings to their default values

Press [Unity] in the <CCR> group, check the message, then press [Yes].
The parameter settings for each function are restored to their default values.

Applying the video process effect

1 In the <Video Process> group of the Aux >Aux Bus >CCR menu (2311), press [Video Process], turning it on.

2 Set the following parameters.

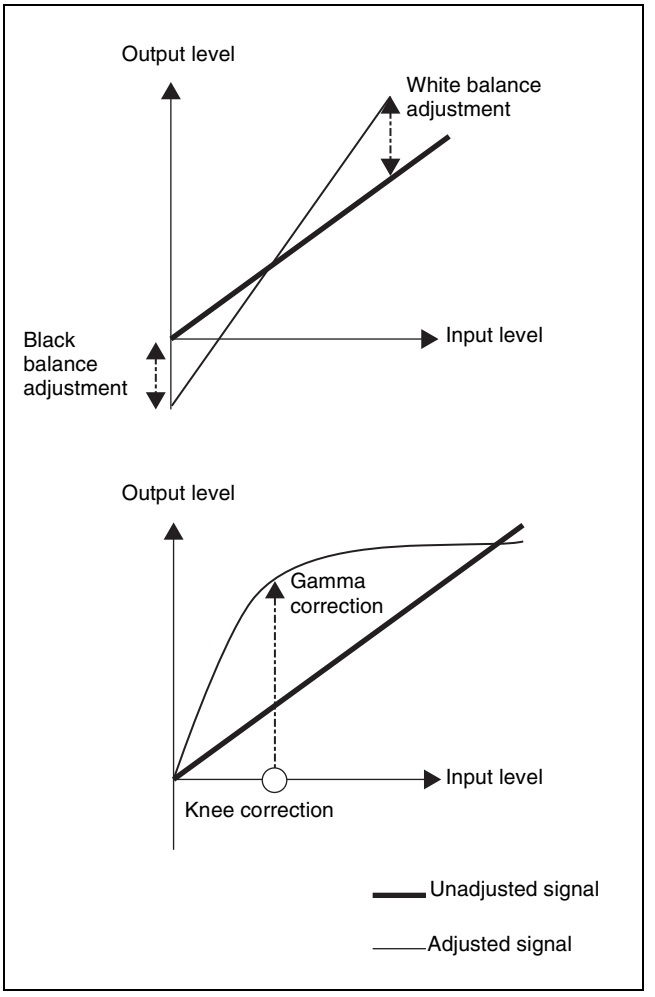
No.	Parameter	Adjustment
1	Video Gain	Video signal gain
2	Y Gain	Luminance signal gain
3	C Gain	Chrominance signal gain
4	Hue Delay	Hue delay

No.	Parameter	Adjustment
5	Black Level	Black level

To return the parameters to their default settings
In the <Video Process> group, press [Unity].

Applying the primary color correction effect

Carry out the following types of correction to each of the R, G, and B signals.
- Black balance adjustment: Sets the output level for a 0% level input signal.
- White balance adjustment: Sets the output level for a 100% level input signal.
- Gamma correction: Adjusts the curvature of the gamma curve.
- Knee correction: Adjusts the position of the peak of the gamma curve.



1 In the <Primary CCR> group of the Aux >Aux Bus >CCR menu (2311), press [Primary CCR], turning it on.

2 In the <Primary CCR Adjust> group, select the target item to set.

Black: Black balance adjustment
White: White balance adjustment
Gamma: Gamma correction
Knee: Knee correction

3 Set the following parameters.

No.	Parameter	Adjustment
1	Red	R signal adjustment
2	Green	G signal adjustment
3	Blue	B signal adjustment
4	All	Simultaneous RGB adjustment a)

a) [Red] value is shown.

To return the parameters to their default settings
In the <Primary CCR> group, press [Unity].

Applying the RGB clip effect

1 In the <RGB Clip> group of the Aux >Aux Bus >CCR menu (2311), press [RGB Clip], turning it on.

2 In the <RGB Clip Adjust> group, select the target item to set.

Dark: Dark clip adjustment
White: White clip adjustment

3 Set the following parameters.

No.	Parameter	Adjustment
1	Red	R signal adjustment
2	Green	G signal adjustment
3	Blue	B signal adjustment
4	All	Simultaneous RGB adjustment a)

a) [Red] value is shown.

To return the parameters to their default settings
In the <RGB Clip> group, press [Unity].

Enabling/disabling a link group

When link group is enabled, selecting a specific AUX bus and setting the color corrector will apply the same setting to all the AUX buses in the same link group.
You can temporarily disable a link group to set an individual setting for a specific AUX bus within the link group.

For details about link group settings, see "Setting a Color Corrector Link Group" (page 470).

Note

The enable/disable setting is applied to all link groups.

1 Open the Aux >Aux Bus >CCR menu (2311).

2 Press [Link Enable] to enable/disable link groups.

To enable, press [Link Enable], turning it on. To disable, press [Link Enable], turning it off.

To apply the same setting to color correctors in the group

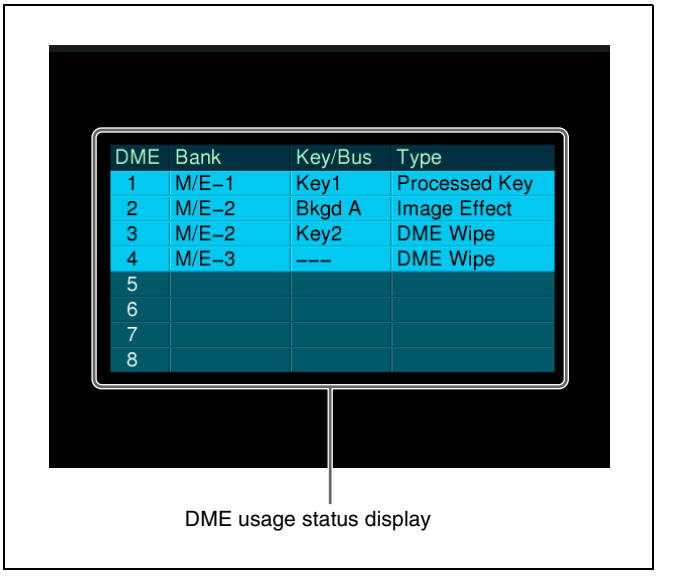
If the setting of color correctors in the group is different, select a specific AUX bus and press [Copy in Link]. The color corrector of all AUX buses in the group are set to the same setting as the selected AUX bus.

Status Menu

You can check the state of DME usage in the Status menu.

Displaying DME usage status

Open the Status >DME Status menu (3311).



The usage status for each DME channel is displayed. You can check the following status according to the background color of the display.

Blue: The DME is currently being used in other than the final program output.

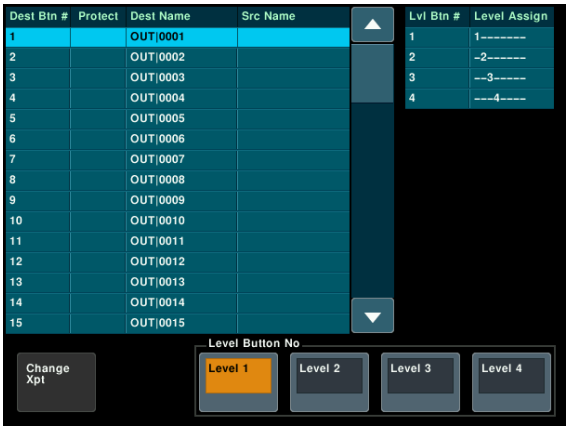
Red: The DME is currently being used in the final program output.

Router Menu

You can carry out router switching operations in the Router menu.

Destination Input List Display

You can check the list of signals currently input for each destination.
Open the Router >Router Control >Router Control menu (5111).



The left side of the status area shows a list for destination assignments.
Destination rows for which [Inhibit] is enabled in the Engineering Setup >Panel >Aux Assign >RTR Mode Setting menu (7323.1) appear as gray text. Also, if [PROT] (protect) is set to ON for a source, using a BKS-R3xxx or R1xxx series Router remote control, a padlock icon appears.
The right side of the status area shows a list of levels assigned to the level selection buttons ([Level 1] to [Level 4] in the <Level Button No> group.

Selecting a level

In the <Level Button No> group of the Router >Router Control >Router Control menu (5111), select a level.

Switching the Source for a Destination

You can switch the input for each destination directly in the menu.
You use the Engineering Setup >Panel >Aux Assign >RTR Mode Setting menu (7323.1) to assign to destination and source buttons.

For details, see "Setting the Router Operation Mode" (page 417).

1 In the Router >Router Control >Router Control menu (5111), press [Change Xpt].

The Change Xpt menu (5111.1) appears.
The destination selection buttons appear by group (16 buttons) at the top.
The source selection buttons appear by group (maximum 24 buttons) at the bottom.

2 Select a destination to switch using the destination selection buttons.

To change the group
Press the [1-16], [17-32], [33-48], or [49-64] button.

3 Select a source using the source selection buttons.

To change the group
Press the [1-24], [25-48], [49-72], [73-96], [97-120], or [121-128] button.

Video Process

Overview

The “video process” is a function that adjusts the luminance and hue of the input signal.
For the following buses on each switcher bank, you can enable/disable the video process and set the parameters (Video Gain, Y Gain, C Gain, Hue Delay, and Black Level).
- Key 1 fill bus to key 8 fill bus
- Background A bus and background B bus
- Utility 1 bus and utility 2 bus

The video process settings also apply to keyframes and snapshots.

Video Process Memory

When using video process adjustments for an image effect on a bus, this function saves the final values for each pair number of the signals selected on the bus. The video process enable/disable setting is not saved.
When you change the adjustments, the values are automatically saved and these last values are recalled when the pair number is selected.
In other words, by enabling video process memory, regardless of the video process information for each bus, you can carry out video process adjustments for each input signal.
The parameters saved are as follows.
Video Gain, Y Gain, C Gain, Hue Delay, Black Level

You enable/disable the video process memory in the Setup menu.

For details, see “Setting the Video Process Memory” (page 468).

Setting the Video Process

The settings for the background A and B buses and for the utility 1 and 2 buses are made in the Misc >Transition >Video Process menu on each bank.

For details about the video process of the key fill bus, see “Video Process” (page 123).

This section describes setting the video process on the background A bus of the M/E-1 bank as an example.

Setting the video process for a bus

1 In the M/E-1 >Misc >Transition menu (1171), press [Video Process].

The Video Process menu (1171.1) appears.

2 In the <Bkgd-A> group, select [Video Process].

3 Set the following parameters.

No.	Parameter	Adjustment
1	Video Gain	Video signal gain
2	Y Gain	Luminance signal gain
3	C Gain	Chrominance signal gain
4	Hue Delay	Hue delay
5	Black Level	Black level

To return the parameters to their default settings
In the <Bkgd-A> group, press [Unity].

Image Effect

An image effect is a function used to apply a DME effect to the signal selected on the background A bus or B bus.

Notes

- When the switcher signal format is 3840×2160P SQD or 3840×2160PsF SQD, the image effect cannot be used.
- There are restrictions on the number of DME channels that can be used and on the functions, depending on the switcher and signal format.
  For differences in functions by switcher, see "XVS-9000/8000/7000/6000 System Configuration Comparison" (page 523).
  For details about restrictions for 4K format, see "4K Format Restrictions" (page 525).
- An image effect cannot be set when using a background DME wipe.
- To use the image effect function, assignment of the [IMAGE] button for the target button row for operation to the cross-point pad is required in the Setup menu *(see page 433)*.
- Setting an image effect introduces a one-frame delay in the video.

This section describes setting an image effect on the background A bus on the M/E-1 bank as an example.

Assigning a DME to a background bus

Note

Only one DME channel can be used on each background bus.

1 Open the M/E-1 >Misc >Image Effect menu (1172).

2 In the <Image Effect> group, select [Bkgd A].

To set background B bus, select [Bkgd B].

3 In the <DME Select> group, select the DME channel (DME1 to DME4) to be used.

The lit colors of [DME1] to [DME4] indicate the DME assignment.
Lit green: DME assigned to the currently selected bus
Lit amber: DME assigned to another bus or key
Not lit: Unassigned DME

To select a DME being used by another bus/key
Press [Override], turning it on, then select a DME channel that is lit amber.
The selected DME channel becomes available, and the button is lit green.

Setting an image effect

Notes

- The DME effect to use in the image effect must be configured for the target DME channel for operation beforehand.
- In flip-flop mode, interchanging the background A bus and B bus signals also interchanges their image effect settings at the same time.
- If an image effect is set, the number of keys that can simultaneously use a DME (including DME wipes) on an M/E bank is as follows.

Key to which DME effects are applied	Image effect setting	Number of keys to which DME effects can be applied simultaneously
Keys 1 to 4	No setting	2
	Background A or B	1
	Background A and B	0
Keys 5 to 8	–	2

When the signal format is 3840×2160P 2SI and the image effect is not set, DME effects can be used on either key 1 or key 2.

1 On the cross-point control block, press the [IMAGE] button in the cross-point pad, turning it on.

Use the [IMAGE] button for the button row assigned with the background A bus.

2 Select the signal on the background A bus.

The signal with the DME effect set beforehand is output.

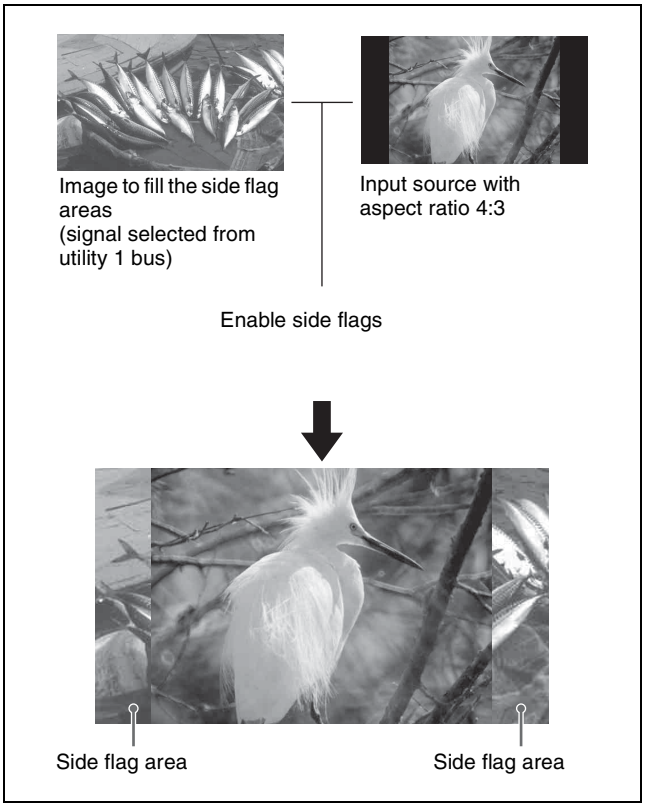
Special Functions

Chapter 9

Side Flags

Overview

The term “side flags” refers to the areas to left and right of an image with aspect ratio 4:3 embedded within a 16:9 frame, filled with a separate image selected from the utility 1 bus.
You can adjust the width of the side flag area.



Side Flag Settings

Setting the side flag video material and operation

The following settings can be made for side flags in the Setup menu.

For details, see “Setting the Side Flag Material and Operation” (page 441).

Aspect ratio 4:3 setting

Sets the input signal to an aspect ratio of 4:3. If set to 16:9, the side flags are disabled.

Auto side flag setting

This function automatically applies side flags when a 4:3 signal is selected in the cross-point control block.

Auto crop setting

When carrying out a DME wipe, this function automatically crops the image during transition to 4:3.

Adjusting the width of the side flag areas

You can set the width of the left and right sides to separate values.

Enabling and disabling side flags (menu)

You can enable or disable side flags for each background (A and B) on the M/E and PGM/PST banks.
This section describes enabling side flags on background B on the M/E-1 bank as an example.

1 Open the Misc >Enable >Side Flags menu (3213).

The status area shows the [Bkgd A] and [Bkgd B] buttons for each bank.

2 In the <M/E-1 Side Flags> group, press [Bkgd B], turning it on.

To set the side flag video material and operation

Press [Setup >SWER Side Flags] to open the Engineering Setup >Switcher >Config >Side Flags menu (7331.7) and configure the settings *(see page 441)*.

To assign side flag operation buttons to cross-point buttons

Press [Side Flags Button Assign] to open the Engineering Setup >Panel >Xpt Assign >Side Flags Button Assign menu (7322.10) and configure the settings *(see page 416)*.

Enabling and disabling side flags (cross-point control block)

You can assign the [SIDE FLAG] button to the right hand edge of the cross-point button row for enabling and disabling side flags.
You assign the [SIDE FLAG] button in the Setup menu.

For details, see "Assigning the [SIDE FLAG] Button" (page 416).

When the [SIDE FLAG] button assigned to the right hand edge of the cross-point button row for background A bus or B bus on the cross-point control block is pressed, turning it on amber, the side flags are enabled.

Notes

- The side flag enable/disable setting in the menu is linked to the setting using the [SIDE FLAG] button.
- When auto side flags are enabled, selecting a 4:3 video material automatically turns the [SIDE FLAG] button on, but if you press this button, turning it off, the side flags are temporarily disabled.
  However, when you select a different 4:3 video material, the [SIDE FLAG] button automatically turns on once again, enabling the side flags.

Creating an image with side flags

This section describes creating images with side flags on background B on the M/E-1 bank as an example.

1 In the M/E-1 bank cross-point control block, press the delegation button [UTL1] in the cross-point pad and select the signal (utility 1 bus signal) to insert in the side flag areas using the cross-point buttons.

Notes

- On the cross-point control block in key/AUX bus delegation mode, press the [UTIL1] button in the 1st row and select a signal using the cross-point buttons in the 2nd row.
- You can assign the utility 1 bus using the [UTIL] button on the cross-point pad of the cross-point control block *(see page 79)*.

2 In the background B bus cross-point button row, press the button corresponding to the 4:3 video material.

If auto side flags are enabled, this automatically adds side flags to the 4:3 video material.

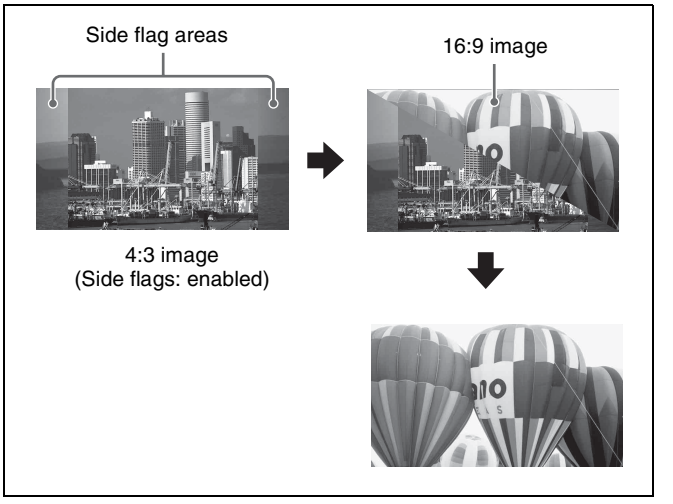
3 Enable side flags in the menu *(see page 196)* or using the [SIDE FLAG] button *(see page 197)*.

Side flags are added to the 4:3 video material.

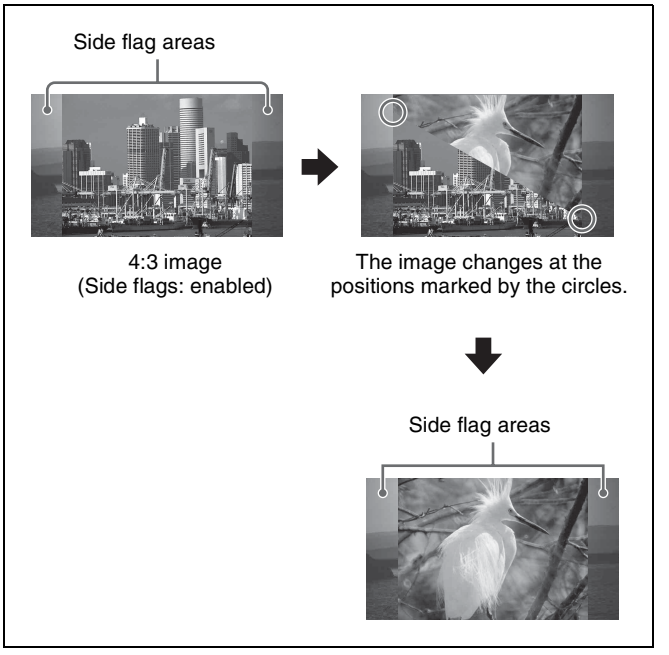
Wipe Action on Images with Side Flags

When a wipe is executed on an image with side flags, all wipe patterns can be used.
The following illustration shows the action in a wipe.

Wipe from 4:3 image to 16:9 image



Wipe from a 4:3 image to another 4:3 image (side flags enabled for both images)



DME Wipe Action on Images with Side Flags

When a DME wipe is executed on an image with side flags, all DME wipe patterns can be used.
Depending on the setting (On/Off) of [Auto Crop] in the Engineering Setup >Switcher >Config menu (7331), the appearance of the 4:3 image changes.

Note

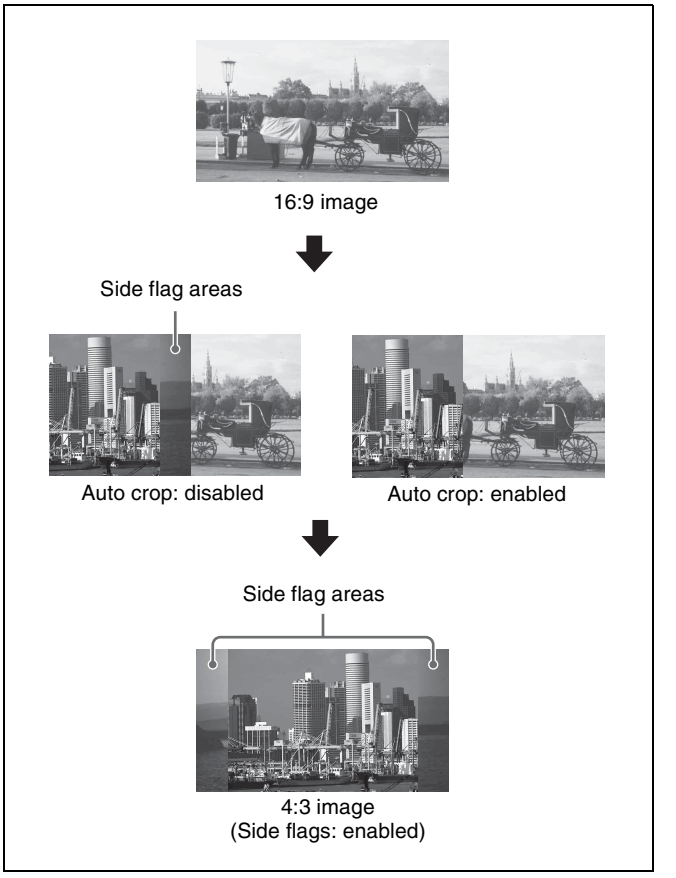
If auto side flags are disabled, side flags are not added to signals selected on the DME external video bus (gray part shown in the pattern illustration) for the following DME wipe patterns.

- 2-channel page turn
- 2-channel roll
- 2-channel frame in-out
- 2-channel brick
- 3-channel brick

The following illustration shows the action in a DME wipe.

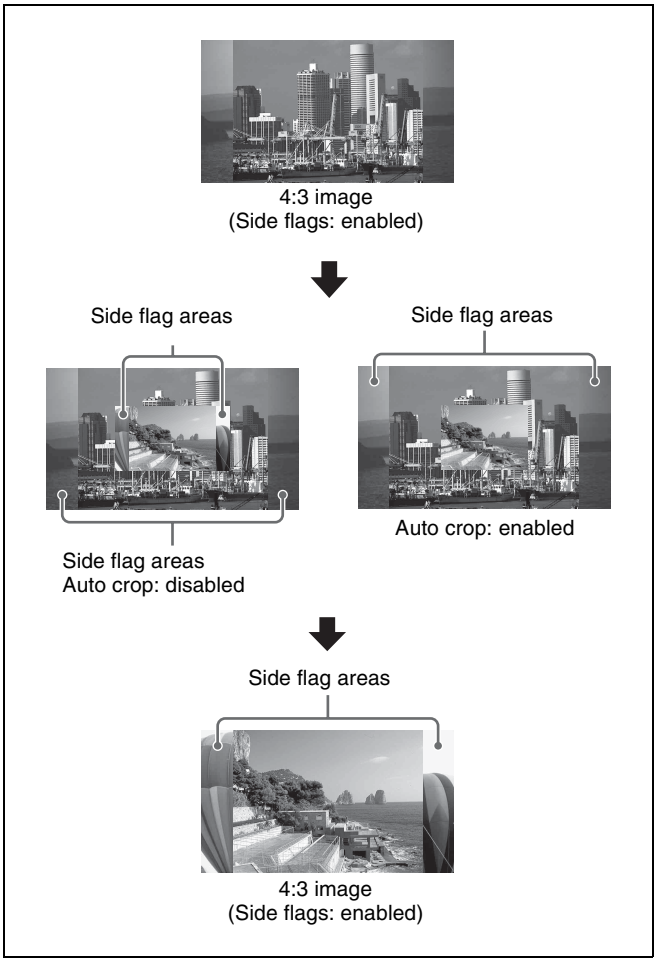
DME wipe from a 4:3 image to a 16:9 image

Wipe action using slide (pattern number 1001)



DME wipe from a 4:3 image to another 4:3 image (side flags enabled for both images)

Wipe action using squeeze (pattern number 1031)

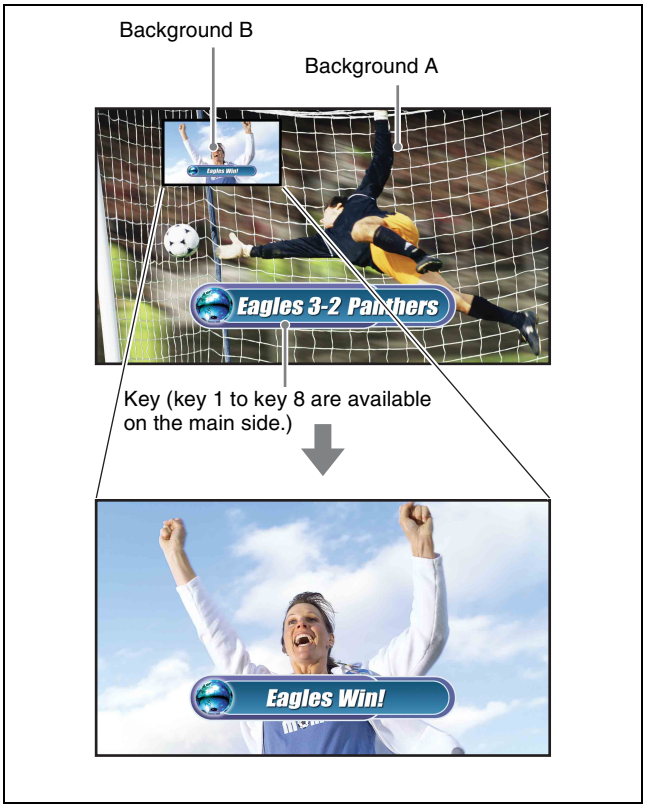


Multi Program 2

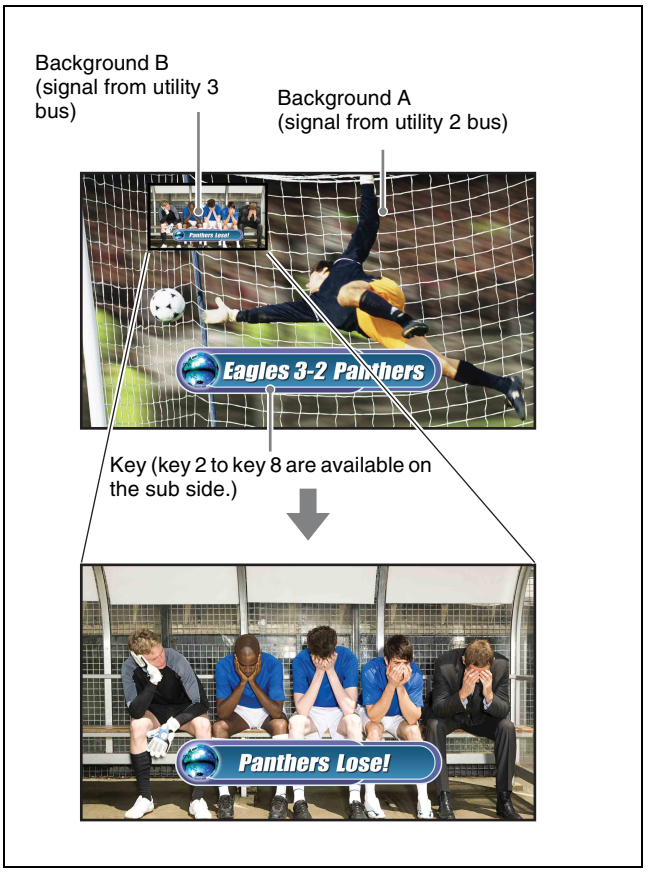
Overview

By operating the switcher in Multi Program 2 mode, single switcher M/E hardware can be subdivided to create separate main and sub video outputs. You can set separate backgrounds, keys, and transitions for the main and sub outputs. However, keys 2 to 8 are common to main and sub.

Program output for “Main”



Program output for “Sub”



Notes

- To enable this function requires XZS-9200 (for XVS-9000), XZS-8200 (for XVS-8000), XZS-7200 (for XVS-7000), or XZS-6200 (for XVS-6000) Multi Program 2 Software.
- In 4K format, the Multi Program 2 function cannot be used.

Use of software

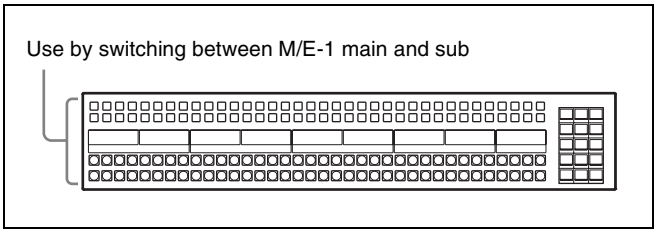
An install key must be entered to enable the Multi Program 2 software for use (entry of the install key is not required if the software is installed at the factory).
For details about entering the install key, contact your Sony representative.
To obtain a key, you may be required to submit the unique device ID of the switcher you are using.
You can check the unique device ID in the Engineering Setup >System >Install/Unit Config >License menu (7316.6).

For details, see “Configuring Settings to Use the Software” (page 400).

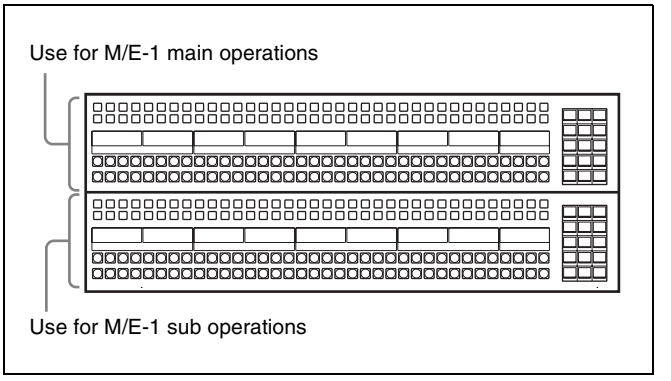
About main and sub assignments

For Multi Program 2 operations, a single switcher bank may be shared between main and sub, or two separate switcher banks may be used, each dedicated to main or sub.

Example 1: Assigning M/E-1 main and sub to a single switcher bank and switching between them



Example 2: Assigning separate switcher banks as “M/E-1 dedicated main” and “M/E-1 dedicated sub”



The operation of the main bank and sub bank in Multi Program 2 mode varies from standard mode.

For details, see “Differences Between Multi Program 2 Mode and Standard Mode” (page 205).

Sequence of operations in Multi Program 2 mode

Basic operation

Enter the Multi Program 2 Software install key (first time only).
↓
Set Multi Program 2 operation mode for each switcher bank.
↓
Set output signal assignments, backgrounds, keys, and key preview configuration.
↓
For each switcher bank, assign main and sub (dedicated main, dedicated sub, or shared main and sub).
↓
Create an image and execute a transition.

Optional operations

- Assigning transition control block buttons for main/sub
- Setting cross-point assign tables for main/sub
- Enabling DME wipe operations on the sub bank
- Inhibiting utility 2 bus signal selection
- Inhibiting key operations for main/sub

- Setting the Multi Program 2 data to recall in keyframes and snapshots
- Changing the key assignment for program output
- Assigning sub bank preview output to buttons
- Changing the matrix size to standard
- Making settings for keyframe timeline operation
- Setting extended re-entry

Multi Program 2 Mode Settings (Basic Operation)

Entering the software install key (first time only)

After installing XZS-9200 (for XVS-9000), XZS-8200 (for XVS-8000), XZS-7200 (for XVS-7000), or XZS-6200 (for XVS-6000) Multi Program 2 Software in the switcher, carry out the following procedure.

1 In the status area of the Engineering Setup >System >Install/Unit Config menu (7316), select SWR1 or SWR2, and press [License].

The License menu (7316.6) appears.

2 Enter the software install key.

For details, see "Configuring Settings to Use the Software" (page 400).

3 Turn the switcher off and then on again.

Setting the operating mode for a switcher bank

Set Multi Program 2 mode for each switcher bank.

1 Open the Engineering Setup >Switcher >Config menu (7331).

2 In the status area, select the target switcher bank.

3 In the <M/E Config> group, select [Multi Program2].

4 Repeat steps **2** and **3** as required, to set the operation mode for all target switcher banks.

Assigning output signals for Multi Program 2 mode

To assign a signal to an output

Use the Engineering Setup >Switcher >Config >M/E Output Assign menu (7331.1).
In Multi Program 2 mode, you can assign signals in the following configuration to six outputs (Out1 to Out6).
- Out1: Main program output (PGM1) (fixed)
- Out2: Main output signals assignable
- Out3, Out4: Main and sub output signals assignable
- Out5: Sub output signals assignable
- Out6: Sub program output (PGM2) (fixed)

For details, see "Assigning the output of each bank in multi-program mode" (page 440).

Note

When M/E split 2M/E mode is set on the XVS-9000, there are four available outputs which can be assigned with signals with the following configuration in Multi Program 2 mode.
- Out1: Main program output (PGM1) (fixed)
- Out2: Main output signals assignable
- Out3, Out4: Main and sub output signals assignable

By default, the Out6 output signal on each switcher bank is assigned to the sub re-entry buttons on the cross-point pad *(see page 434)*. To use the sub re-entry buttons in M/E split 2M/E mode, the video/key pair number assignments must be changed to the sub program output (PGM2) signal as shown below.
Example: When PGM2 is assigned to Out4

V/K pair number	Video signal	Key signal
216	P/P OUT4	P/P OUT4
226	M/E-1 OUT4	M/E-1 OUT4
236	M/E-2 OUT4	M/E-2 OUT4
246	M/E-3 OUT4	M/E-3 OUT4
256	M/E-4 OUT4	M/E-4 OUT4
266	M/E-5 OUT4	M/E-5 OUT4

To set the background and key configuration

Use the Engineering Setup >Switcher >Config >PGM Config menu (7331.2).
The differences from operation in standard mode are as follows.
Background configuration: Consists of the following combinations.
- Main bank: Clean, Bkgd A, Bkgd B
- Sub bank: Sub Clean, Utility 2, Utility 3

Key configuration: Key1 can be enabled only when the background is Clean, Bkgd A, or Bkgd B.

For details, see "Setting the output configuration for each bank" (page 440).

To set the key preview configuration

Use the Engineering Setup >Switcher >Config >K-PVW Config menu (7331.3).
The differences from operation in standard mode are as follows.
Background configuration: Clean or Sub Clean
Key configuration: Key1 can be set to [On] or [Link] only when the background is Clean.

For details, see "Setting the key preview configuration" (page 440).

To assign sub bank outputs to output connectors

Use the Engineering Setup >Switcher >Output >Output Assign menu (7333.1).
You can assign a sub bank output signal to a switcher output connector number.

For details, see "Assigning Output Signals" (page 456).

Assigning main/sub to switcher banks

For each switcher bank for which Multi Program 2 mode is selected, set whether the bank is dedicated main (Main), dedicated sub (Sub), or shared main and sub (Main&Sub).

To assign main and sub to a single switcher bank

1. In the status area of the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu (7321.11), select the switcher bank.
2. In the <Main/Sub Assign> group, select [Main&Sub].

To assign main and sub to two consecutive switcher banks

This section describes assigning the first switcher bank to M/E-1 main (called the 1st row), and the second switcher bank to M/E-1 sub (called the 2nd row) as an example.

1. In the status area of the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu (7321.11), select the "1st Row" (M/E-1), then press [Main] in the <Main/Sub Assign> group.
2. Press [Dual M/E Assign].

   Two switcher bank rows are assigned as a single M/E. In this state, both the "1st Row" and "2nd Row" are set to main.
3. Select "2nd Row" and press [Sub] in the <Main/Sub Assign> group.

Notes

- This cancels the shift/non-shift assignment set using [Dual M/E Assign] in standard mode.
- It is not possible to assign combinations of [Main] and [Main&Sub], or [Sub] and [Main&Sub].

Image creation operation flow

This section describes the operation of an M/E bank shared between main and sub as an example.
To switch between main and sub, press the [MAIN] or [SUB] button on the cross-point pad of the cross-point control block.

1. On the cross-point control block, press the [MAIN] button in the cross-point pad to select main.

   If the [SUB] button is selected, press the button to deselect it.
2. Create the main bank video image.
3. Press the [SUB] button to select it, and press the [MAIN] button to deselect it.
4. Create the sub bank video image.

   On the sub bank, the utility 2 bus signal is assigned to background A, and the utility 3 bus signal is assigned to background B.
   Only keys 2 to 8 and standard wipe patterns can be used on the sub bank.

   For details, see "Differences Between Multi Program 2 Mode and Standard Mode" (page 205) and "Multi Program 2 Mode Restrictions" (page 206).
5. Press the [MAIN] button so that both the [MAIN] button and [SUB] button are selected.

   If both buttons are selected, the control panel shows the status of the main bank.
6. Execute a transition.

   Both main bank and sub bank video images are switched.

Multi Program 2 Mode Settings (Other Operations)

Assigning transition control block buttons to main/sub

If you are using two switcher M/E banks dedicated to main bank and sub bank, you can make separate transition control block button assignments for the main bank and sub bank.

Note

When using one M/E bank as shared main and sub (Main&Sub), separate settings are not possible.

This section describes the assignment of buttons on the left side of the transition control block or transition control block (simple type) as an example.
To assign buttons on the right side of the transition control block (independent key transition execution section buttons), use the same procedure in the Engineering Setup >Panel >Config >Link/Program Button >Transition Module2 menu (7321.34).

1 In the Engineering Setup >Panel >Config menu (7321), press [Link/Program Button].

The Link/Program Button menu (7321.8) appears.

2 Press [Transition Module1].

The Transition Module1 menu (7321.9) appears.

3 In the <Bank Select> group, press [Main].

4 In the <Bank Select> group, select the bank of the transition control block you want to set.

5 Set the assignment for the main bank.

For details, see "Setting Transition Control Block Button Assignments" (page 410).

6 In the <Bank Select> group, press [Sub] and set the assignment for the sub bank.

Note

You can also set main and sub sides independently on the following control blocks.
- Independent key transition control block *(see page 410)*
- Flexi Pad control block *(see page 410)*

Setting cross-point assign tables for main/sub

Cross-point assign tables can be set not only for the main bank, but also for the sub bank.
You can set cross-point assign tables for the following banks.
- M/E-1 SUB to M/E-5 SUB
- P/P SUB

On the cross-point control block, the table for the main bank is used when the [MAIN] button in the cross-point pad is selected, and the table for the sub bank is used when the [SUB] button is selected.

For details, see "Selecting Cross-Point Assign Tables" (page 415).

Enabling DME wipe operations on the sub bank

By factory default, DME wipe operations are inhibited for backgrounds on the sub bank.
To enable DME wipe operations, in the Engineering Setup >Switcher >Config menu (7331), press [DME Wipe Sub Enable], turning it on.
This setting applies to all of the M/E and PGM/PST banks.

Note

If a DME wipe is recalled on the sub bank in a snapshot or keyframe, the image will not be handled correctly.

Inhibiting utility 2 bus signal selection

In Multi Program 2 mode, you can inhibit other uses of the utility 2 bus signal in order to use the signal as the background on the sub bank.
To inhibit use, in the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu (7321.11), press [Util 2 Inhibit], turning it on.
This setting applies to all of the M/E and PGM/PST banks.
The utility 2 bus delegation buttons on the cross-point control block become disabled.

Inhibiting key operations for main/sub

Use the Engineering Setup >Panel >Config >Operation Inhibit >M/E Operation Inhibit menu (7321.18).
You can inhibit key operations independently for the main bank and sub bank.

For details, see "Inhibiting Utility 2 Bus and Key Operations" (page 411).

Making Multi Program 2 data the recall target in keyframes and snapshots

In the Engineering Setup >Switcher >Config menu (7331), press [Recall M/E Config], turning it on.
When a keyframe or snapshot is stored or recalled, the following data becomes the target.
M/E Config, PGM Config, M/E Output Assign, K-PVW Config

For details about data, see "Setting the operating mode for a switcher bank" (page 201) and "Assigning output signals for Multi Program 2 mode" (page 201).

This setting applies to all of the M/E and PGM/PST banks.

Note

M/E Config data is saved, even when [Recall M/E Config] is disabled.

Changing the key assignment for program output

In Multi Program 2 mode, you can change the key assignments independently.
This section describes the settings on the M/E-1 bank as an example.

Notes

- Settings are linked with the Engineering Setup >Switcher >Config >PGM Config menu (7331.2).
- Cannot be configured when the Engineering Setup >Switcher >Config >PGM Config menu (7331.2) is locked or when [Recall M/E Config] is disabled in the Engineering Setup >Switcher >Config menu (7331).

1 Open the M/E-1 >Misc >Key Assign menu (1175).

The current key assignment is shown in the status area.

2 Change the key assignment in the "Key Enable" field.

Keys recalled in a snapshot recall

If a snapshot is recalled independently on the main bank or sub bank, this only retrieves the settings for the key assigned to the recalled bank. For example, if key 1 and key 2 are assigned on the main bank, and key 3 and key 4 are assigned on the sub bank, then if you recall a snapshot on the main bank, this only retrieves the settings for key 1 and key 2, and the state of key 3 and key 4 assigned on the sub bank is not affected.

Assigning sub bank preview output to buttons

The "Sub Preview" utility command on each switcher bank can be assigned to the following buttons.

- Cross-point buttons on the cross-point control block in utility/shotbox mode
- Memory recall buttons in the utility/shotbox control block
- User preference buttons in the menu panel

For details, see "Settings Relating to Button Assignment" (page 419).

Setting the matrix size

When using a router, if the matrix size is set to [128×128], it is not possible to control the utility 3 bus on the S-Bus/NS-Bus.
When using Multi Program 2, select a size other than [128×128] in the <Matrix Size> group of the Engineering Setup >Router/Tally >Router menu (7361).

For details, see "Assigning Switcher Inputs/Outputs to S-Bus/NS-Bus Space" (page 484).

If [136×138] is selected in the <Matrix Size> group, the bus number of the DME Key bus is used as the bus number of the utility 3 bus.

No.	Bus (Standard)	Bus (MP2)
70	M/E-1 DME Key	M/E-1 Utility3
85	M/E-2 DME Key	M/E-2 Utility3
100	M/E-3 DME Key	M/E-3 Utility3
115	P/P DME Key	P/P Utility3

Making settings for keyframe timeline operation

To assign a sub bank region to a region selection button in the numeric keypad control block

In the Engineering Setup >Panel >Config >10 Key Region Assign menu (7321.7), assign sub bank region to the region selection button in the numeric keypad control block.

For details, see "Assigning a Region to the Region Selection Buttons in the Numeric Keypad Control Block" (page 409).

To select a region or reference region using the menu

During snapshot or keyframe operations, you can select a region (including sub bank) in the Key Frame >Region Select menu (6117).
This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

For details, see "Recalling regions to edit (menu)" (page 307).

To assign regions shown in the timeline menu

The timeline and other information is displayed for each region assigned in the numeric keypad control block in the Key Frame >Time Line menu (6111).
You can set the display method in the Key Frame >Timeline Assign menu (6115).

For details, see "Timeline Menu Display Settings" (page 304).

Setting extended re-entry

For multi program 2, enabling extended re-entry enables re-entry between main and sub, between main and main, and between sub and sub on the same switcher bank.

For details, see "Setting Extended Re-Entry" (page 442).

Functions Added in Multi Program 2 Mode

- You can set the video process for the utility 3 bus signal.
- "Sub Cut" and "Sub Auto Trans" on each switcher bank are added to the selectable actions in the SIU (DCU function) GPI input settings.
- "Main&Sub" and "Sub" are added to the macro event configuration parameters and macro attachment settings.
- "Sub Program," "Sub Preset," and "Sub Trans PGM" on each switcher bank are added to the link source bus for cross-point button link settings.
- Snapshot attributes can be set independently for main and sub.
- Menus for the sub bank are added to menus that can be recalled by pressing a button twice.
- [MP2 Auto Correct] settings are available in the Effect menu or Snapshot menu. For example, enabling this determines whether the copy destination and copy source data is the main bank or sub bank, and automatically switches the data.
- The [SUB TRANS] button on the key control block is enabled. This functions as the [TRANS] button for the sub bank.
- You can display whether key 1 to key 8 are assigned to the main bank or the sub bank in the display of the transition control block.
- On the cross-point pad of the cross-point control block, cross-point hold of the utility 3 bus can be set. Also, main and sub information is displayed on the switcher bank display buttons.
- The [MAIN] button and [SUB] button are enabled on the transition control block and transition control block (simple type).

Differences Between Multi Program 2 Mode and Standard Mode

The differences from operation in standard mode are as follows.

Item		Main	Sub
Keys [a)]		Key 1 to key 8 can be used	Key 2 to key 8 only can be used
Wipes (background)	Patterns	Same as standard mode	• Only standard wipe patterns can be used • Pattern mix cannot be used
	Modifiers	Same as standard mode	• Split, pairing, modulation, spring, and spiral cannot be used • Edge fill mattes are single color only • Four types of multi replication are available for selection.
Wipes (keys)	Patterns	• Only standard wipe patterns can be used • Pattern mix cannot be used	
	Modifiers	• Split, pairing, modulation, spring, and spiral cannot be used • Edge fill mattes are single color only • Four types of multi replication are available for selection.	
DME wipes	Use	Supported	Cannot be used (Can be used, with a setting change)
	Patterns for 1 channel	Main and sub can be used separately.	
	Patterns for 2 channels	Only one of main and sub can be used. For each M/E, the number of DMEs that can be used is the same as in standard mode.	
	Patterns for 3 channels		
	Backgrounds	Wipe edge fill matte (including color mix and other settings in the Matte Adjust menu)	Wipe edge fill matte (single color only)
	Modifiers	Same as standard mode	Wipe border colors are single color only
Transitions	Key priority	Not supported	
	Transition preview	Not supported	
	Preset color mix	Color matte or video signal selected on the utility 2 bus	Color matte only

Item		Main	Sub
Snapshots	Cross-point hold	Utility 2 cannot be set	• Utility 3 is added. • BKGD A/B and Key1 cannot be set.

a) Key 2 to key 8 are common on both main and sub.

Notes

- Allow a transition to complete before carrying out main and sub delegation switching.
- The sub bank background A bus (utility 2 bus) is shared with wipe edge border fill. Making a change to one affects the other.
- Even if the wipe border width is set to the same numeric value for main and sub, the same image is not obtained.

Multi Program 2 Mode Restrictions

- The following functions are not available on the sub bank.
  - Data copy and swap
  - Default recall (except for parametric recall)
  - [AUTO PVW] button (button assigned with the “Auto Preview” utility command)
  - Split fader
- In Region Simul mode, the control target region on the sub side is the same region as on the main side.
- In the following cases, a transition using the fader lever may not be performed correctly:
  - When the main and sub bus toggle modes are set differently
  - For a pattern mix, preset color mix, and so on
- For an Internal bus link or External bus link, the “Utility 2” bus cannot be selected.
- Show key and [MACRO ATTACH ENABLE] button settings are common to main and sub.
- If a snapshot is recalled simultaneously for main and sub or a keyframe is executed simultaneously for main and sub, then the settings on the main bank are reflected in the following shared data on main and sub.
  - Keys
  - M/E Config
  - DME external video bus and utility 1 bus
- When a macro attachment is set on the DME utility 1 bus or DME utility 2 bus, it is not possible to make separate main and sub settings.
- When snapshots with different M/E Config settings are recalled:
  - If M/E Config data is not to be included in the snapshot data, the current system settings are used for snapshot reproduction.
  - If M/E Config data is to be included in the snapshot data, first M/E Config data is set and then other snapshot data is recalled.
- The bus override function is only available on the following buses:
  - M/E-1 to M/E-5 Main BKGD A/B buses
  - M/E-1 to M/E-5 Sub BKGD A/B buses (Util 2, Util 3 bus)
  - P/P Main PGM/PST bus
  - P/P Sub PGM/PST bus (Util 2, Util 3 bus)
- When a master snapshot or master timeline is executed with a key assigned to both main and sub, it is uncertain which data will be reflected.
- When recalling a master snapshot with different register numbers for main and sub, the recall timing may differ by one field or more between main and sub.
- The link state is maintained even when M/E Config is changed. Set the link setting again, as required.
- Since key 2 to key 8 are shared between main and sub, if the main and sub fader lever positions are different and you move the fader lever, the video changes instantaneously to the value of the most recently moved fader lever.
- When the transition type for main or sub is set to preset color mix, it is not possible to carry out independent key transition operation (common to main and sub).
- Up to two background buses (on main and/or sub banks) can set an image effect.

M/E Configuration Switching (M/E Split)

An XKS-8210 (for XVS-9000/8000) or XKS-7210 (for XVS-7000/6000) Mix Effect Board can be subdivided into two M/Es for use (M/E split).
You can select either 1M/E mode (not split) or 2M/E mode (split in two) for each board.

Notes

- M/E configurations up to 6M/Es (XVS-9000/8000/7000) or 4M/Es (XVS-6000) are supported.
- In 4K format, the M/E split function cannot be used.
- In 2M/E mode, only key 1 to key 4 can be used on each M/E.
- On the XVS-9000, switcher banks set to 2M/E mode have the following restrictions.
  - Out5 and Out6 outputs cannot be used
  - PROC V and PROC K signals cannot be used

M/E Split Mode Settings

1 In the Engineering Setup >System >Install/Unit Config >Unit Config menu (7316.8), press [M/E Split].

The M/E Split menu (7316.11) appears.

2 Select 1M/E mode or 2M/E mode on each board.

In the <M/E Split (1st Board)> to <M/E Split (5th Board)> groups (XVS-9000/8000), <M/E Split (1st Board)> to <M/E Split (3rd Board)> groups (XVS-7000), or <M/E Split (1st Board)> to <M/E Split (2nd Board)> groups (XVS-6000), select [1ME] or [2ME].

Note

On the XVS-9000/8000, if [2ME] is selected on the selected board, exceeding the 6M/E configuration limit, the setting of the board with the lowest board number that is already set to [2ME] will change to [1ME].

3 Press [Execute].

4 Check the message, then press [Yes].

Resource Sharing

Overview

Resource sharing is a function that subdivides a physical switcher into two logical switchers where the switcher resources, such as the switcher banks and input/outputs, are assigned to each logical switcher.

Note

Resource sharing can be enabled when only one physical switcher is present on the same network.

Configuring Resource Sharing

The resource sharing system structure is configured using a computer connected to the same network as the switcher control station.

For details about the method of operation, see "Resource Sharing Configuration Operations" (page 526).

Enabling/disabling resource sharing

When resource sharing is enabled, the physical switcher is subdivided into logical switcher 1 and logical switcher 2.

Signal format settings

The combinations of signal formats that can be set on each logical switcher are as follows.

Logical switcher 1	Logical switcher 2
• 3840×2160P 2SI • 3840×2160P SQD • 1080P	• 3840×2160P 2SI • 3840×2160P SQD • 1080P
• 3840×2160PsF SQD • 1080PsF	• 3840×2160PsF SQD • 1080PsF
• 1080i	• 1080i
• 720P	• 720P

The frame frequency/field frequency and input reference signal (Tri Sync or BB) settings are common to logical switchers 1 and 2.

Frame memory folder mode

Frame memory folders can be set to shared mode or dedicated mode.
In shared mode, logical switchers 1 and 2 can share and use all image data (folders/files). In dedicated mode, logical switchers 1 and 2 can only use the image data in the corresponding dedicated folders.

Resource assignment

The following resources are subdivided and assigned to each logical switcher.

Resource	Unit of subdivision
Inputs	1 group: 16
Outputs	1 group: 16 a)
	1 group: 12 b) c)
Switcher banks (M/E boards)	1 board
DMEs (DME boards)	1 board
Frame memory sources	2 systems
Frame memory outputs	4 channels
Color backgrounds	1 system
Internal format converters b)	16 channels
Multi viewer outputs a)	8
Multi viewers	1 system

a) XVS-9000 only
b) XVS-8000/7000/6000 only
c) 12 outputs (excluding format converter output connectors and spare connectors)

The following resources can be configured for sharing on logical switchers 1 and 2.

- Inputs
- Frame memory outputs: Sharing is supported only when the signal formats of logical switchers 1 and 2 are the same.
- Color backgrounds: Sharing is supported only when the signal formats of logical switchers 1 and 2 are the same.
- Internal format converters: If the signal formats of logical switchers 1 and 2 are the same, sharing is supported only for FC channels configured for input use.

When resources are shared, operation using the menu is available from logical switcher 1 only.[1)]
On logical switcher 2, only the selection of cross-points of shared resources is available. Information for shared resources are also displayed in the menu of logical switcher 2, but configuration and other operations are not available.

1) Excludes the Engineering Setup >Panel >Xpt Assign >Src Name/Src Color menu (7322.6). Independent menu operation for shared resources is available on logical switchers 1 and 2.

Notes

- Software licenses for 4K format support are required according to the number of M/E board assigned to the 4K format logical switchers *(see page 400)*.
- Subdivided resources have resource numbers that are set for each logical switcher. For example, frame memory outputs 17 to 20 assigned to logical switcher 2 are referred to as FM1 to FM4.
- Format converter output connectors and spare connectors are assigned in conjunction with the internal format converter assignments.
- If both an XKS-8470 and XKS-8475 are assigned to a single logical switcher, only the DME function of the XKS-8475 is available.
- DME functionality on up to four channels can be used on a single logical switcher.
- When an internal format converter is shared, the input assigned to the target FC channel must also be shared. Also, the FC channel configured for output use can be used on logical switcher 1 only.
- The XVS-9000 has the following restrictions.
  - The inputs and outputs on an XKS-C9121/ XKS-C9121N board can be set in groups of 16, but if the logical switchers are set to a combination of 4K format and HD format, both the inputs and outputs must be assigned to the same logical switcher.
  - Multi viewer outputs can be set in groups of 8, but if the logical switchers are set to a combination of 4K format and HD format, all multi viewer outputs must be assigned to the same logical switcher.
- The XVS-8000 has the following restrictions.
  - Dedicated inputs are assigned to logical switcher 1. However, they can be used only when output connectors connected to the dedicated inputs are also assigned to logical switcher 1.
  - M/E dedicated outputs are assigned to logical switcher 1.
  - Output connectors 49 to 52 are assigned to logical switcher 1.
  - When logical switchers 1 and 2 are both set to 4K format, DME Monitor Video is linked to the assignment setting of DME channel 1 of the physical switcher.
- The XVS-7000 has the following restrictions.
  - The same signals on output connectors 9 to 16 of the physical switcher are assigned to the FC9 to FC16 internal format converters. If an output is not assigned to the logical switcher to which the corresponding internal format converter is assigned, a black signal is output from the format converter.
  - If only one of the logical switchers is 4K format and a color background is assigned to the 4K format logical switcher, selecting a black or white signal on the DME utility 1 bus/2 bus of the other logical switcher will cause the color background image configured on the 4K logical switcher to be output.

Setup menu when resource sharing is enabled

Checking resource sharing settings

When resource sharing is enabled, “On” is displayed in the “Resource Share Mode” field in the Engineering Setup >System >System Config menu (7312).
You can press [Resource Share] to display the Resource Share menu (7312.1) to check the logical switcher signal format and resource assignment status.

To check the assignment status details of each resource, press [Detail] in the Resource Share menu (7312.1) to display the Detail menu (7312.2). The details for the resource selected in the upper list in the status area are displayed.

Setup menu operation

[SWR1] displayed in the Setup menu refers to logical switcher 1, and [SWR2] refers to logical switcher 2. These can be configured in the same way as the physical switcher.
The resource numbers for the logical switchers and physical switcher are also displayed in the input/output display in the following menus.

- Engineering Setup >Switcher >Input menu (7332)
- Engineering Setup >Switcher >Output menu (7333)
- Engineering Setup >Switcher >Output >Output Assign menu (7333.1)

However, only physical switcher resource numbers are displayed for XVS-9000 outputs 81 to 96 (multi viewer outputs 1 to 16).

Notes

- Changing the signal format in the Engineering Setup >System >Format menu (7313) may also change the setting of the other logical switcher.
  - If the combination of signal formats that would result from changing signal format is not supported for resource sharing, the other logical switcher is set to the same format as the currently selected logical switcher, and reboots.
  - If the field frequency/frame frequency is changed, the other logical switcher also changes in conjunction with the currently selected logical switcher, and reboots.
  - If the input reference signal is changed, the other logical switcher also changes in conjunction with the currently selected logical switcher.
- The Engineering Setup >System >Start Up menu (7314) [Resume FM Status] and [Init Status with FM] settings are disabled.
- Executing [Reset] in the Engineering Setup >System >Initialize menu (7315) will reset both logical switchers 1 and 2, regardless of which logical switcher is currently selected. Executing [All Clear] will initialize the currently selected logical switcher and reset the other logical switcher.
- When installing software using the Engineering Setup >System >Install/Unit Config >Install menu (7316.10), the other logical switcher cannot be operated.
- The following menus can be configured only from logical switcher 1. All inputs and outputs are the target of settings, regardless of the resource assignments.
  - Engineering Setup >System >Network Config >Net I/F Initialize menu (7311.1)
  - Engineering Setup >System >Network Config >IP Address menu (7311.2)
  - Engineering Setup >System >Network Config >Net I/F Protocol menu (7311.3)
  - Engineering Setup >System >Network Config >FEC menu (7311.4)
  - Engineering Setup >System >Network Config >Input/Output menu (7311.5)
  - Engineering Setup >System >Network Config >Genlock menu (7311.6)
  - Engineering Setup >System >Network Config >NMOS menu (7311.7)
  - Engineering Setup >System >Maintenance >SDI Output Enable menu (7317.3)
- The reference phase (System Phase) setting in the Engineering Setup >Switcher >Config menu (7331) is common to logical switchers 1 and 2.
- Setup menu operation for shared resources is available from logical switcher 1 only.
  However, Engineering Setup >Panel >Xpt Assign >Src Name/Src Color menu (7322.6) independent operation for shared resources is available on logical switchers 1 and 2.

Frame Memory Operations

Frame memory data

The image data (folders/files) that can be used by each logical switcher varies depending on the frame memory folder mode setting.

Shared mode

All frame memory data is shared between logical switchers 1 and 2.
All folders and files are displayed as the target for operations in the menu for each logical switcher.

Notes

- When the signal formats of logical switchers 1 and 2 are different and Dual Simul mode is enabled, shared mode cannot be used.
- When an FM output is locked on either logical switcher, file operations on the file loaded in the locked FM output are not available from the other logical switcher.
- The following operations are available on either logical switcher for a file loaded in an FM output on the other logical switcher.
  Copy, move, delete, rename, Couple function, Separate function, trim, and unload (remove from memory)
- The folder lock/unlock settings are linked on logical switchers 1 and 2.

Dedicated mode

When a switcher is started with resource sharing enabled, dedicated folders with the following names are created for each logical switcher.

- Logical switcher 1: !L_SWR1

• Logical switcher 2: !L_SWR2
Only folders and files in the dedicated folder are displayed as the target for operations in the menu for each logical switcher.

Notes

- In dedicated mode, up to 2-level hierarchy folders are supported using frame memory.
- When resource sharing is enabled, the dedicated folder of the logical switcher is not displayed in the menu. Only folders and files in the dedicated folder are displayed. When resource sharing is disabled, the dedicated folder is also displayed in the menu, and folder and file operations are supported. Note that it is not possible to lock the dedicated folder.
- If the same file structure is used in the dedicated folders for logical switchers 1 and 2, frame memory operations on both logical switchers are linked when Dual Simul mode is set.

Frame memory outputs

Frame memory outputs (FM1 to FM20) are assigned to logical switchers 1 and 2 in groups of four channels. Sharing is supported when the signal formats of logical switchers 1 and 2 are the same.

Shared frame memory output restrictions

Shared FM outputs have the following restrictions.

- On logical switcher 2, only the selection of cross-points of FM outputs is available. Other FM output operations are not available.
- Logical switcher 1 information is linked to and displayed on the FM output button in the Frame Memory menu of logical switcher 2 (excludes audio data and lock setting).
- During clip creation (recording), the FM output button in the Frame Memory menu is displayed as follows.
  Logical switcher 1: Thumbnail is black, and "Recording" is displayed.
  Logical switcher 2: Thumbnail is black, and "Through" is displayed.
- When a frame memory folder is set to dedicated mode and a shared FM output is selected, the thumbnail for files are not displayed in the Frame Memory menu of logical switcher 2.

Leveraging Resources using Resource Sharing

Signals on logical switcher 2 can be configured for selection as input signals on logical switcher 1 by using the resource sharing and internal format converter functions. The following logical switcher 2 signals can be used on logical switcher 1.

- Frame memory output signals
  Signals selected on frame memory outputs assigned to logical switcher 2 can be used on logical switcher 1.
- Switcher bank output signals (re-entry signals)
  Switcher bank output signals on logical switcher 2 can be used on logical switcher 1.

Notes

- Enabled only when logical switcher 1 signal format is 3840×2160P 2SI or 3840×2160P SQD, and logical switcher 2 signal format is 1080P.
- On the XVS-8000/7000/6000, internal format converter resources must be assigned to logical switcher 1.
  On the XVS-9000, internal format converter resources are automatically assigned to logical switcher 1.

Set the internal format converters and cross-points on logical switcher 1.

Internal format converter settings

- Set the FC channels of internal format converters for use as inputs (XVS-8000/7000/6000 only)
- Set logical switcher 2 signals as format converter input signals.
  The following logical switcher 2 signals can be selected.
  - L2 FM1 to L2 FM4: Frame memory outputs
  - L2 P/P Out1 to L2 P/P Out6, L2 M/E-x Out1 to L2 M/E-x Out6 (x = 1 to 5): Switcher bank output signals

  On the XVS-9000, signals can be assigned to FC channels using the Engineering Setup >Switcher >Input >Internal FC >Internal FC Re-Entry Select menu (7332.11) *(see page 210)*.
  On the XVS-8000/7000/6000, signals can be assigned to FC channels using the Engineering Setup >Switcher >Input >Internal FC >FC Input Select menu (7332.3) *(see page 445)*.
- Set the format converter input signal format to 1080P (XVS-8000/7000/6000 only).

Cross-point settings

- Assign the FC channels with the configured logical switcher 2 signals to the cross-point buttons.
  You can select a format-converted logical switcher 2 signal on logical switcher 1 by pressing the cross-point button assigned with the corresponding FC channel.

Setting XVS-9000 internal format converter inputs

When an XKS-8460 Format Converter Board is installed in the XVS-9000, the internal format converters can be configured on logical switcher 1 when resource sharing is enabled.

Notes

- The internal format converter function is enabled only when the logical switcher 1 signal format is 3840×2160P 2SI or 3840×2160P SQD, and the logical switcher 2 signal format is 1080P.
- The FC channels of internal format converters are set for use as inputs (fixed).
- The format converter input signal format is set to 1080P (fixed).
- The frame delay level is set to 1 frame (fixed).
- The format converter conversion method can be set to Enhancer only.

You can assign an input signal to be converted by the format converter to an FC channel.
The following signals can be selected as inputs.

- Logical switcher 2 frame memory output signals
- Logical switcher 2 switcher bank output signals (re-entry signals)

1 In the Engineering Setup >Switcher >Input menu (7332), press [Internal FC Re-Entry Select].

The Internal FC Re-Entry Select menu (7332.11) appears.
The status area shows the FC channel list on the left and the list of input signals that can be assigned to FC channels on the right.

2 In the list on the left, select the target FC channel to set.

3 In the list on the right, select an input signal.

4 Press [Set].

To set the source name of the converted input signal

1 Select the target FC channel to set, and press [FC Name].

2 Enter a name of up to 16 characters in the keyboard window, and press [Enter].

To configure the enhancer

1 Select the target FC channel to set, and press [Enhancer] in the <FC Adjust> group.

2 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
3	Detail Gain	Adjust the edge enhancement sharpness
4	Limiter	Adjust the maximum signal level to be added to the original signal

Parameter group [1/2]

No.	Parameter	Adjustment
5	Crisp	Set the amplitude value for which low-amplitude signals are not enhanced

Parameter group [2/2]

No.	Parameter	Adjustment
3	Level Depend	Set the luminance range for edge enhancement
4	Frequency	Set the center frequency for edge enhancement [a)]

a) 0 (high frequency) to 2 (low frequency)

To return the settings to the defaults
In the <FC Adjust> group, press [Default].

DMEs

Chapter 10

Overview

DME (Digital Multi Effects) allows you to add three-dimensional effects such as image movement, rotation, magnification and shrinking, as well as a wide variety of special effects.
Up to four DME channels are available. Multiple DME channels can be combined, which allows you to create advanced effects with more complexity.

About DME boards

XKS-8470 HD DME Board

This board is an HD format (1080P, 1080PsF, 1080i, 720P) DME board.
It supports DME functionality on two channels per board.

XKS-8475 DME Board

This board is a 4K format (3840×2160P 2SI) and HD format (1080P, 1080PsF, 1080i, 720P) DME board.
It supports DME functionality on one channel in 4K format or four channels in HD format per board.

Notes

- When the switcher signal format is 3840×2160P SQD or 3840×2160PsF SQD, the DME function cannot be used.
- The maximum number of DME boards that can be installed on each switcher and the maximum number of DME channels available are as follows.

Switcher	Number of boards	Number of channels
XVS-9000	XKS-8470: 2 boards XKS-8475: 4 boards [a)]	4 channels
XVS-8000 XVS-7000	2 boards	4K format: 2 channels HD format: 4 channels
XVS-6000	1 board	4K format: 1 channel HD format: 4 channels [b)]

a) Maximum of 4 boards in combination with XKS-8470
b) Maximum of 2 channels on the XKS-8470

- If there is a mix of both XKS-8470 and XKS-8475 in a single switcher, only the DME function of the XKS-8475 is available.
- If Ext Out is set as an M/E dedicated output on the XVS-8000, DME effects cannot be used in 4K format. *For details, see "Setting the Ext Out mode" (page 458).*

About Ext In inputs

The signal that is input on DME Ext In (AUX bus output) is set using the Setup menu.

For details about Ext In settings, see "Assigning an AUX Bus to Ext In on a DME" (page 471).

Notes

- In 4K format, the Ext In input signal cannot be used.
- On the XVS-8000, only primary input and color background signals can be used on Ext In. However, XKS-T8110 IP Input Connector Board input signals cannot be used.
  When a dedicated input is used, you can select the configured signal in the Engineering Setup >Switcher >Input >Dedicated Input Assign menu (7332.10).

About DME function restrictions

There are restrictions on the number of DME channels that can be used and on the functions, depending on the switcher and signal format.

For differences in functions by switcher, see "XVS-9000/8000/7000/6000 System Configuration Comparison" (page 523).

For details about restrictions for 4K format, see "4K Format Restrictions" (page 525).

Transforms in Three-Dimensional Space (Transforms)

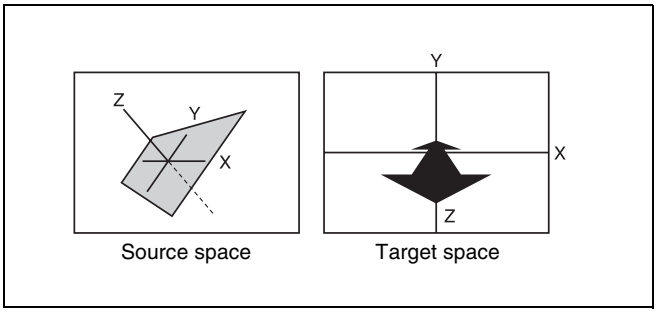
A transform is the process of a DME placing a video image in a three-dimensional space and subjecting it to manipulation, such as movement, rotation, magnification, or shrinking.

Three-dimensional space

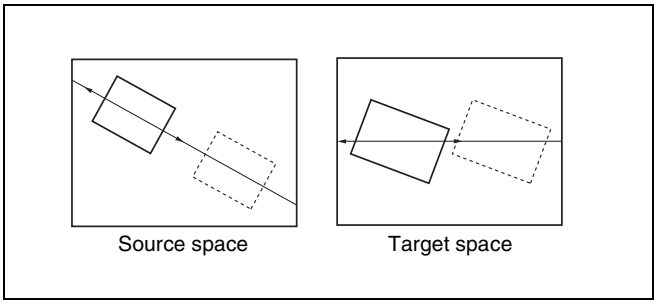
Source space and target space

Images are placed in one of two types of space: source space and target space.

- Source space is a three-dimensional space using the image itself for reference. The X- and Y-axes are defined along the plane of the image, and the Z-axis is defined perpendicular to the plane of the image. When you move the image, the coordinate axes also move.
- Target space is a three-dimensional space using the output monitor screen for reference. The X- and Y-axes are defined as the horizontal and vertical to the plane of the monitor screen, and the Z-axis is defined perpendicular to the plane of the monitor screen. The coordinates do not change even if the image moves.



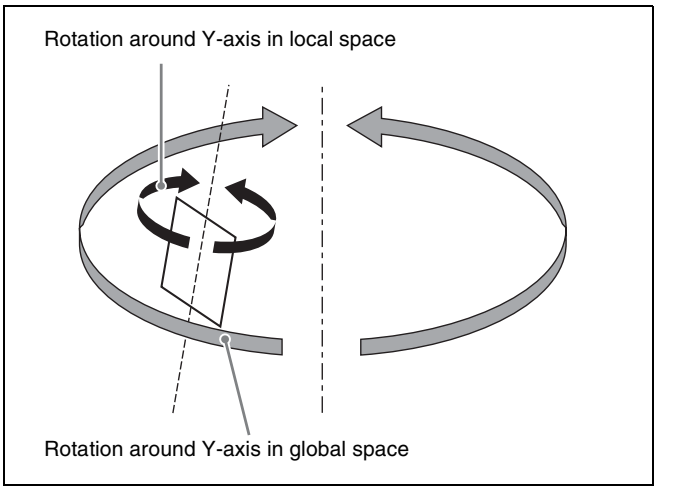
For example, as shown in the following figure, the image moves in a different direction when you move it along the X-axis of source space and along the X-axis of target space.



Local space and global space

The coordinates of an individual DME channel are called its local space. The coordinates common to all channels are called the global space.

By switching from local to global space, you can add new movement to the movement of images in individual channels, and also apply transform effects to multiple channels that have been combined using global effects *(see page 275)*.



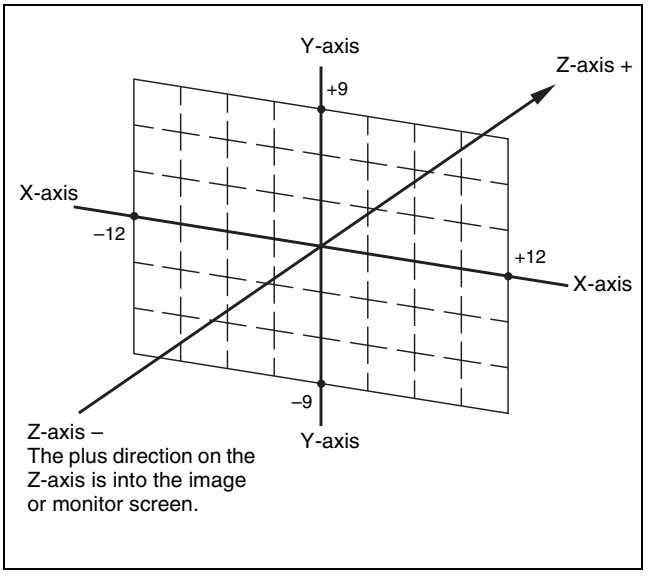
Three-dimensional parameters

Three-dimensional parameters are X, Y, and Z values which define the position of an image, its axis of rotation, the position of the virtual viewpoint of the image, and so on.

The standard values of parameters are as follows, depending on the aspect ratio of the monitor (4:3 or 16:9).

Values for 4:3 mode

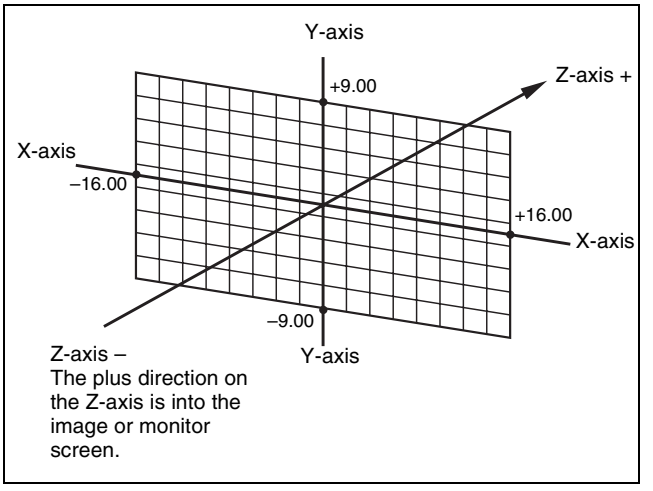
- Origin at center of image (source space) or center of monitor (target space)
  X = 0.00, Y = 0.00, Z = 0.00
- Upper right corner of image or monitor
  X = 12.00, Y = 9.00, Z = 0.00
- Lower left corner of image or monitor
  X = –12.00, Y = –9.00, Z = 0.00



Values for 16:9 mode

- Origin at center of image (source space) or center of monitor (target space)
  X = 0.00, Y = 0.00, Z = 0.00

- Upper right corner of image or monitor
  X = 16.00, Y = 9.00, Z = 0.00
- Lower left corner of image or monitor
  X = –16.00, Y = –9.00, Z = 0.00



Valid values of three-dimensional parameters

The following table shows the valid range of three-dimensional parameters for transforms. The three-dimensional parameters of an image change when you use the trackball or Z-ring to execute a transform. You can also execute a transform by changing parameter values entered on the numeric keypad control block.

Operation mode	Valid range of parameter values
Move image (Location XYZ)	–999.9999 to +999.9999
Rotate image (Rotation, Spin)	–999.9999 to +999.9999
Move rotation axis (Axis Location)	–999.9999 to +999.9999
Scale image (Location Size)	0.0000 to +999.9999
Change image aspect ratio (Aspect)	0.0000 to +2.0000
Change image perspective (Perspective <X, Y>)	–999.9999 to +999.9999
Change image perspective (Perspective <Z>)	0.0000 to 999.9999
Change image slope (Skew)	–9.9999 to +9.9999

Detents

The system defines points called detents at regular intervals in three-dimensional space. You can change the current three-dimensional parameter values to the nearest detent point values by pressing the [CTR] button in the device control block.

The following table shows the interval between detents defined for each transform operation mode *(see page 215)*.

Operation mode	Detent interval
Move image (Location XYZ)	1.0000
Rotate image (Rotation, Spin)	0.1250
Move rotation axis (Axis Location)	1.0000
Scale image (Location Size)	0.2500
Change image aspect ratio (Aspect)	0.1000
Change image perspective (Perspective <X, Y>)	1.0000
Change image perspective (Perspective <Z>)	0.0100
Change image slope (Skew)	0.1000

Three-dimensional parameter default values

Each of the transform operation modes has default values for three-dimensional parameters. If required, you can return the current value to the defaults by pressing the [CTR] button in the device control block twice in rapid succession.
The following table shows the default parameter values for each transform operation mode.

Operation mode	Default value
Move image (Location XYZ)	0.0000
Rotate image (Rotation, Spin)	0.0000
Move rotation axis (Axis Location)	0.0000
Scale image (Location Size)	1.0000
Change image aspect ratio (Aspect)	1.0000
Change image perspective (Perspective <X, Y>)	0.0000
Change image perspective (Perspective <Z>)	1.0000
Change image slope (Skew)	0.0000

Resetting of parameter values set in source space

In some transform operation modes, if you switch to target space after setting up a three-dimensional transform in source space, the setting values in source space (three-dimensional parameter values) are converted to values in target space (source/target conversion).
Once a conversion has taken place, the original source space parameters do not return to their original values when you switch back to source space. They are reset.
Source/target conversion occurs in the following operation modes:
- Move image (Location XYZ)
- Rotate image (Rotation)

Transform Operation Modes

The following operation modes are available for three-dimensional DME transforms. These operations are performed using the device control block (trackball) *(see page 224)*.

Move image (Location XYZ)

Moves the image on the X-axis, Y-axis, or Z-axis. The direction of movement differs depending on whether source space or target space is selected.

Image movement in source space

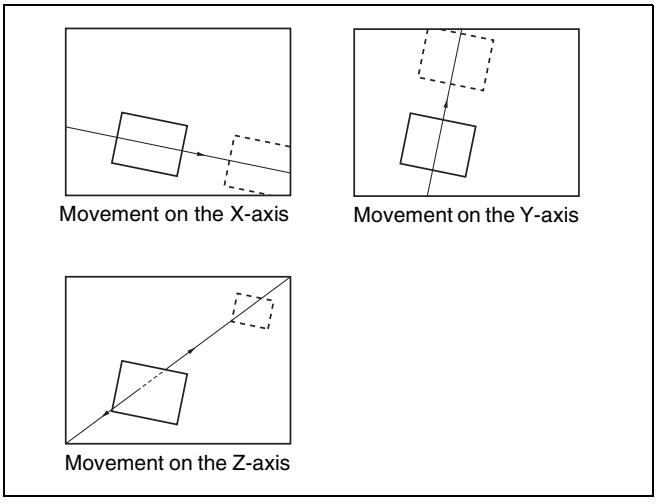
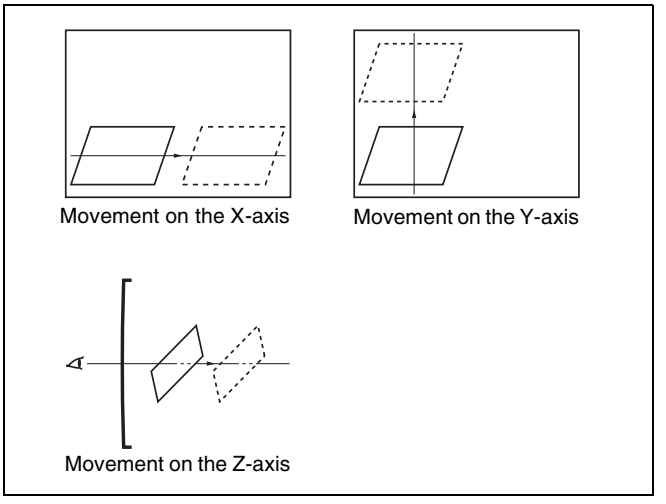


Image movement in target space



Rotate image (Rotation)

Rotates the image on the X-axis, Y-axis, or Z-axis. The type of rotation differs depending on whether source space or target space is selected.

Image rotation in source space

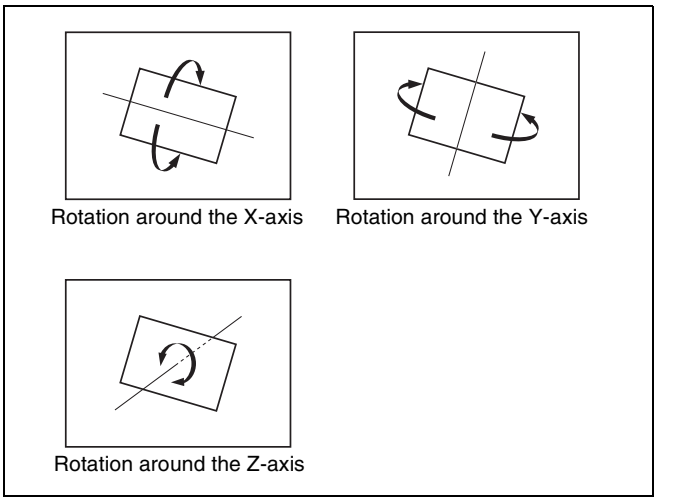
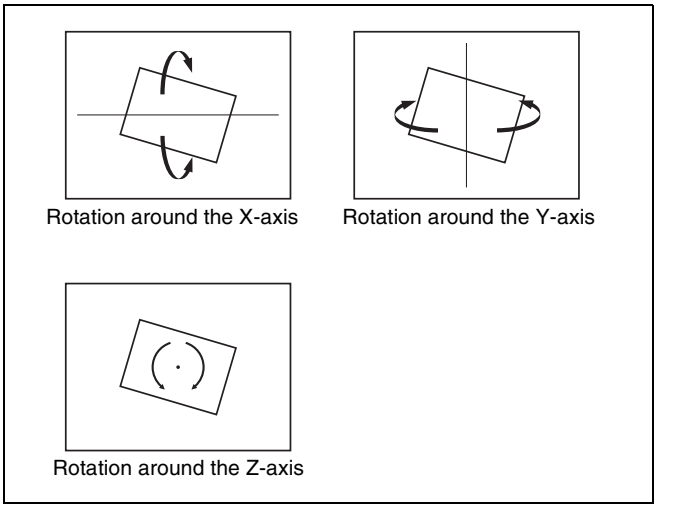


Image rotation in target space



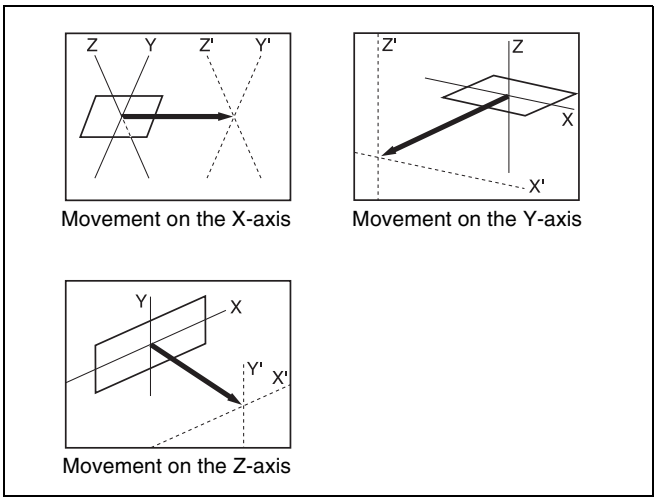
Rotate image (Spin)

When rotating the image in Rotation mode, it may not always be possible to achieve the kind of rotation around an axis that you want. Combining Rotation mode with Spin mode creates an effect that rotates the image around a specified axis. The type of rotation differs depending on whether source space or target space is selected. The way the image rotates around an axis is the same as in Rotation mode.

Move rotation axis (Axis Location)

Moves an axis of rotation in source space.

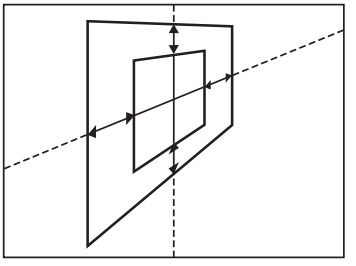
Image axis movement



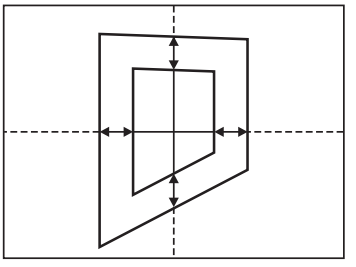
Scale image (Location Size)

Changes the size of the whole image.
Because shrinking and magnification of the image in source space is done in three-dimensional space, magnifying the image enhances perspective.
Because shrinking and magnification of the image in target space is a conversion to a two-dimensional image displayed on the monitor, shrinking and magnification does not change the shape of the image.

Scaling in source space

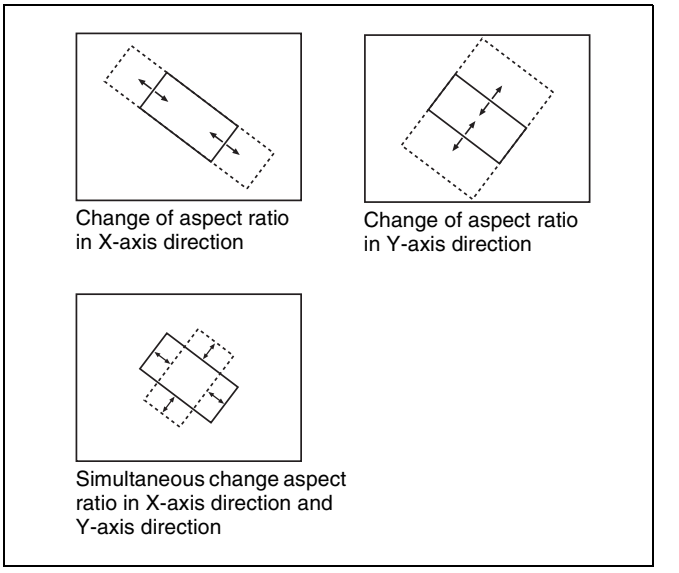


Scaling in target space



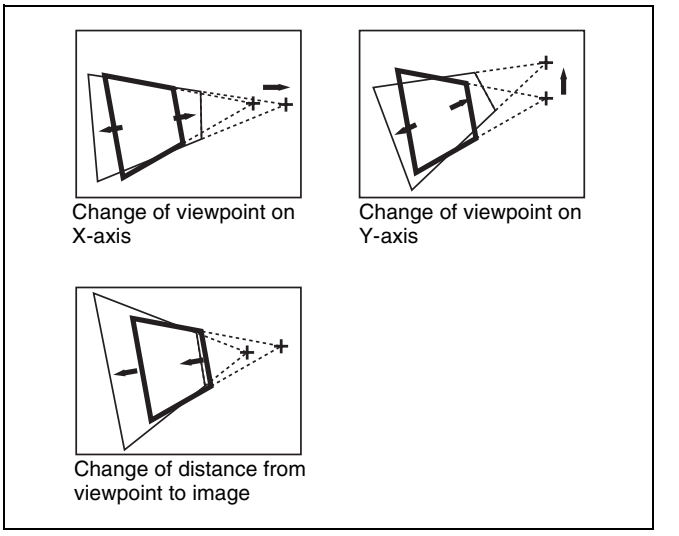
Change image aspect ratio (Aspect)

In source space, changes the aspect ratio in the X-axis direction and Y-axis direction, either independently or simultaneously.



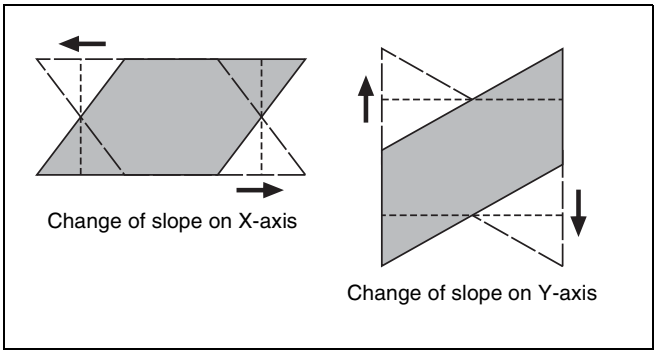
Change image perspective (Perspective)

In target space, changes the perspective of the image by changing the virtual viewpoint, without changing the position of the image.
The X-axis and Y-axis values define the position of the view point, and the Z-axis value defines its distance from the image.



Change image slope (Skew)

In source space, changes the slope of the image on the X-axis or Y-axis.



Graphics Display

Graphics display is a function that allows you to display wire frames, coordinate axes, and a grid over the current DME image, making it easier to create effects in three-dimensional space.
To make graphics display settings, use the DME menu *(see page 228)*.
You can display the following kinds of graphics.

Wire frame

A wire frame displays an image enclosed in a frame. This allows you to check the position and size of the image. If there is a shadow *(see page 279)*, a frame is shown for the shadow as well.

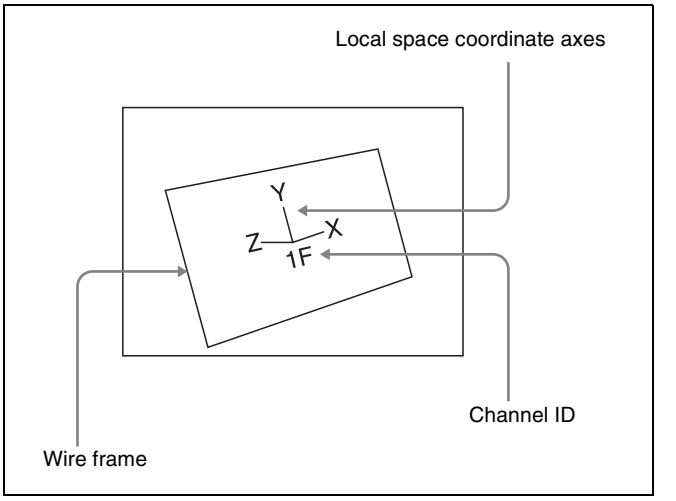
Coordinate axes

This is a three-dimensional display of coordinates in local or global space.
This allows you to check the origin and the directions of the X-, Y-, and Z-axes.

Channel ID

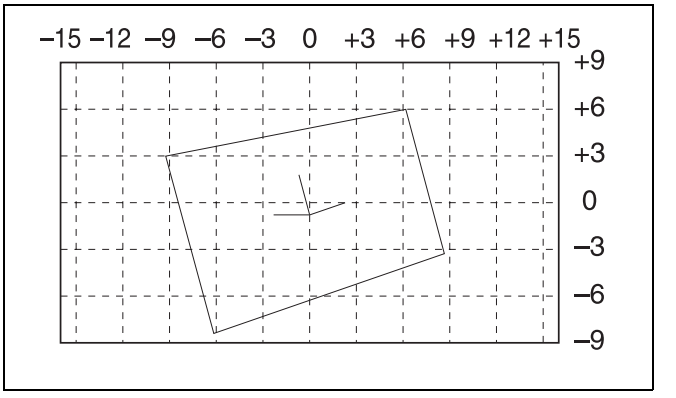
This displays the channel number so that you can check which channel is being used. This is a useful feature when you are working with multiple channels.
Channel IDs are displayed differently in local and global space.

- In local space, the channel number is displayed along with “F” or “B” to indicate whether you are looking at the front (F) or back (B) of the current wire frame. For example, “1F” means the front of the wire frame on channel 1 in local space.
- In global space, the channel number is displayed along with “G” to indicate global. For example, “G2” means channel 2 in global space.



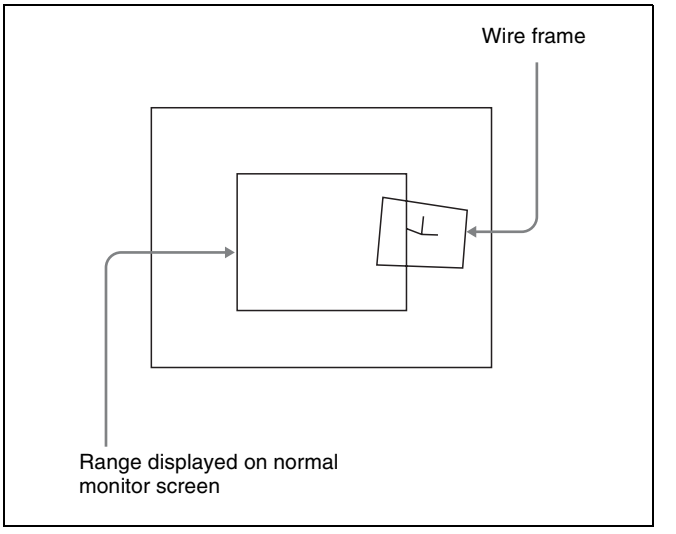
Grid

This is a grid pattern covering the whole of the monitor screen.
The grid makes it easy to set the position of an image in two-dimensional space.



Graphics display, shrinking

You can shrink the graphics display so that you can see beyond the range displayed on the normal monitor screen. This makes it possible to visually set the location of images in a larger space. The range displayed on a normal monitor screen is indicated by a frame.



Automatically erasing the graphic display

Enable [Auto Erase] to automatically erase the graphics display when a keyframe is executed. The graphics display is redisplayed after the keyframe ends, after the time set by the [Recover Time] parameter.

Flex shadow center axis

When using the flex shadow function *(see page 235)*, enabling [Flex Shadow Axis] displays the center axis of the flex shadow shape. This is an effective aid when configuring a flex shadow.

Three-Dimensional Parameter Display

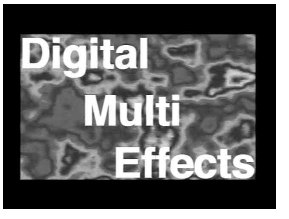
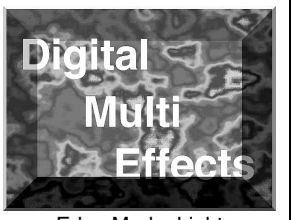
You can check the three-dimensional parameters for the current image.
When more than one DME channel is selected, the status of the reference channel is displayed.

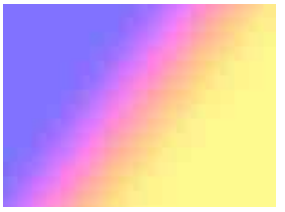
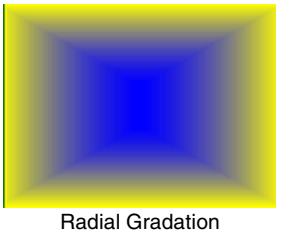
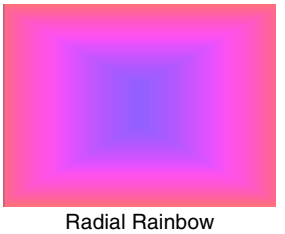
For details about the parameter display, see "Three-Dimensional Parameter Display" (page 226).

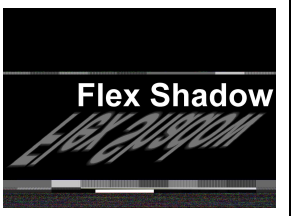
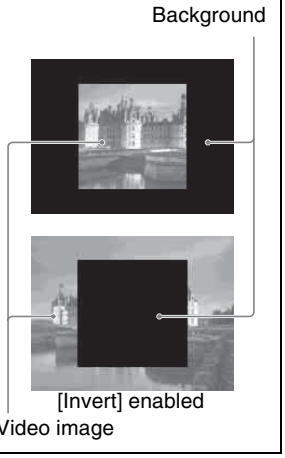
Special Effects

You can use DME to add a variety of special effects.

Edge effects

Effect	Description/Image
Border *(see page 229)*	Adds a border to an image frame. You can adjust the width (or thickness) of the border, its color, and the softness of the border edges. 
CG border *(see page 230)*	Adds a border to an image created using CG.
Crop *(see page 231)*	Crops away the edges of an image. You can crop the top, bottom, left, and right sides individually or all together. You can also soften the cropped edges. 
Beveled Edge *(see page 232)*	Gives an image a beveled edge. You can set the edge width and color. The inner edge softness and edge boundary softness can also be set.  Edge Mode: Color  Edge Mode: Light
Key border *(see page 232)*	Adds a border to a key or produces a key consisting of an outline only. 

Effect	Description/Image
Art Edge *(see page 233)*	Adds edges to the inner and outer side of the input image. The following items can be set. • Adjusting the width and position of art edges • Separate softening of the art edge inner and outer sides • Adding color to art edges **Art Edge source examples**  Gradation Matte  Rainbow Matte  Radial Gradation  Radial Rainbow **Example effect using Rainbow Matte** 

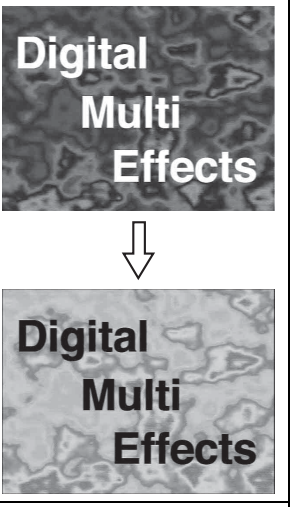
Effect	Description/Image
Flex Shadow *(see page 235)*	Adds a shadow to the image using only one DME channel. An input key signal or full-size key signal generated internally is used to create the shadow. The scale, position, hue and saturation, center axis of shape, skew, and perspective can be adjusted.  Flex Shadow source: External  Flex Shadow source: Internal
Wipe Crop *(see page 238)*	Crops the video image to be visible inside or outside a wipe pattern. 

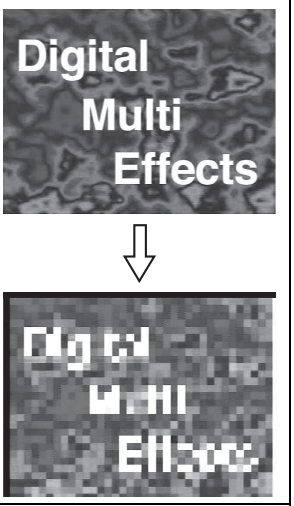
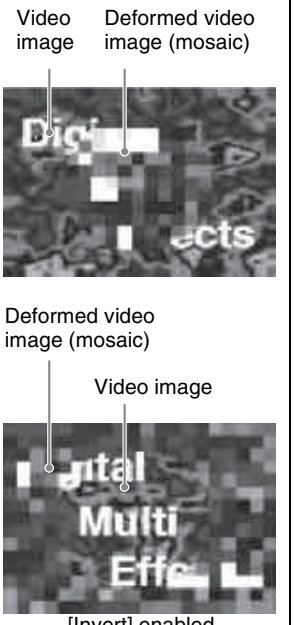
Whole image effects

Effect	Description/Image
Defocus *(see page 241)*	Defocuses the whole image. You can also cancel the black level leaking that occurs at the edges of the screen when the Defocus effect is used. 
Blur *(see page 242)*	Blurs the whole image, like Defocus, but applies a rounded blurring to the whole image.

Effect	Description/Image
Multi Move *(see page 242)*	Shrinks the image and replicates the image vertically and horizontally. You can specify the center point of the shrinking, the shrinking ratio, and the aspect ratio of the image screen. 

Video effects

Effect	Description/Image
Sepia *(see page 242)*	Overlays a specified color onto the image. You can adjust the sepia color that is overlaid, and specify the degree of mixing between the original image and the sepia image.
Mono *(see page 242)*	Converts the image into a monochrome image.
Posterization *(see page 243)*	Coarsens the luminance gradations of the image, for a painting-like effect.
Solarization *(see page 243)*	Coarsens the chroma gradations of the image, for a painting-like effect.
Nega *(see page 243)*	Reverses the luminance or chroma of the image. 
Contrast *(see page 243)*	Changes the contrast of the luminance and chroma of the image.

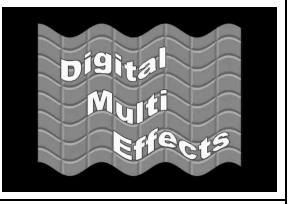
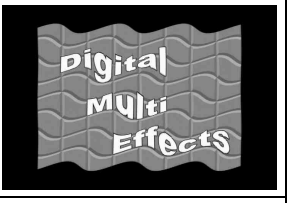
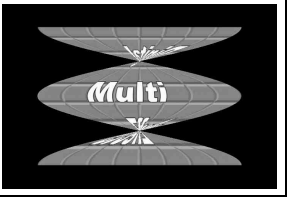
Effect	Description/Image
Mosaic *(see page 243)*	Divides the image into small tiles so that it looks like a mosaic. You can specify the size and aspect ratio of the tiles. 
Mask *(see page 246)*	Masks part of the picture, so that special effects are applied only inside a selected pattern.  [Invert] enabled
Sketch *(see page 244)*	Produces a sketch-like effect based on the outlines in the image using different touches, such as sketch, edge color, drawing, relief, and sharp.  Sketch
Metal *(see page 245)*	Produces a metallic gloss, like that from gold, silver, or a rainbow colored surface. A metallic gloss can also be given to an arbitrary color. 

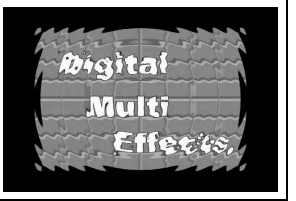
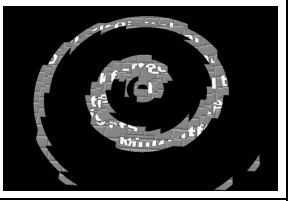
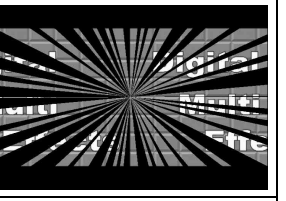
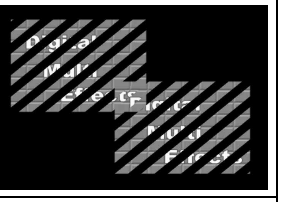
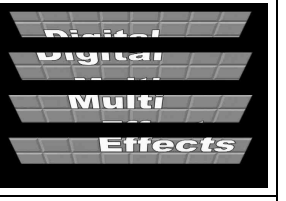
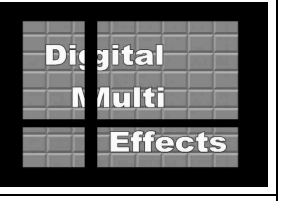
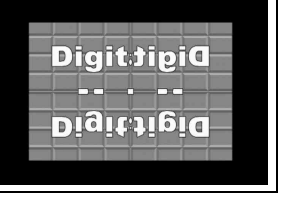
Effect	Description/Image
Dim and Fade *(see page 245)*	Dim makes the image darker as it recedes into the distance. Fade makes the image fade into the background as it recedes into the distance.  Fade
Glow *(see page 245)*	Softens the edges of highlights, giving an effect like being struck by a soft light. 

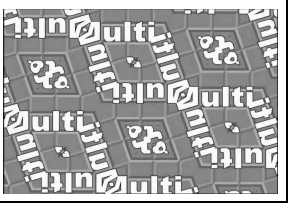
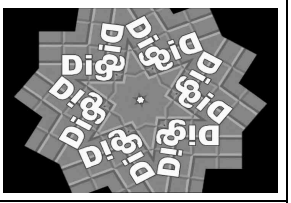
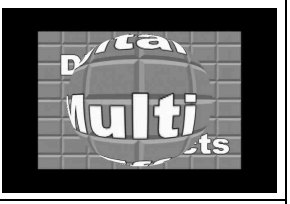
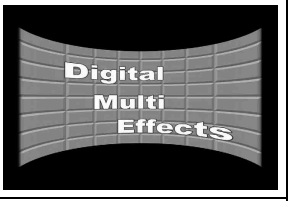
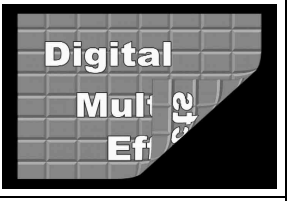
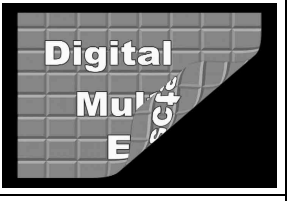
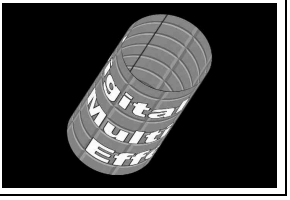
Freeze effects

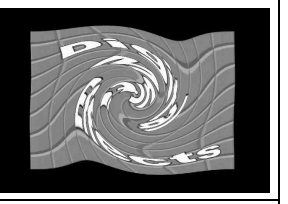
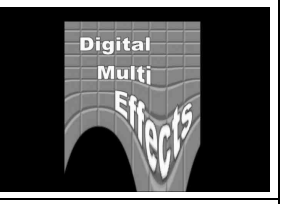
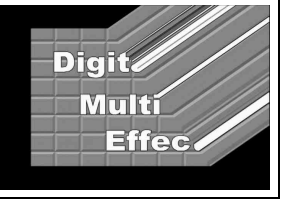
Freezes the input video. The video can also be frozen for a specified interval *(see page 247)*.

Nonlinear effects

Effect	Description/Image
Wave *(see page 248)*	Produces a wave-like effect in the image. 
Mosaic Glass *(see page 250)*	Compresses and stretches the image at a specified interval. 
Flag *(see page 250)*	Applies an effect like a flag waving in the wind. 
Twist *(see page 250)*	Twists the image. 

Effect	Description/Image
Ripple *(see page 250)*	Applies an effect like ripples spreading out across the image. 
Rings *(see page 252)*	Partitions the image into a ring shape that moves in one direction while turning. 
Broken Glass *(see page 253)*	Partitions the image like broken glass, with shards flying outward. 
Flying Bar *(see page 253)*	Divides the image into bars which peel off in two blocks as they move. 
Blind *(see page 253)*	Divides the image into bars or wedges, with blocks rotating like the slats of venetian blinds. 
Split *(see page 254)*	Splits the image into upper, lower, left, and right. 
Split Slide *(see page 254)*	Divides the image into bars which slide alternately in opposite directions. 
Mirror *(see page 254)*	Partitions the image vertically and horizontally, creating an image like a reflection in a mirror. 

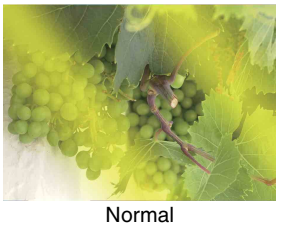
Effect	Description/Image	
Multi Mirror *(see page 255)*	Divides parts of the image into repetitions of originals and reflections, lining them up vertically and horizontally.	
Kaleidoscope *(see page 255)*	Creates an image like a view in a kaleidoscope.	
Lens *(see page 255)*	Creates an image like a view through a lens.	
Circle *(see page 256)*	Makes the image circular.	
Panorama *(see page 256)*	Curves the upper and lower edges of the image to enhance the perspective.	
Page Turn *(see page 256)*	Turns the image like a turning page.	
Roll *(see page 257)*	Rolls the image up.	
Cylinder *(see page 257)*	Winds the whole image onto a cylinder.	

Effect	Description/Image	
Sphere *(see page 257)*	Wraps the whole image around a sphere.	
Explosion *(see page 258)*	Divides the image into fragments which spread out as they fly out.	
Swirl *(see page 258)*	Swirls the image into a spiral.	
Melt *(see page 258)*	Melts the image away from a specified part.	
Character Trail *(see page 259)*	Extends the edge of the image like a trail.	

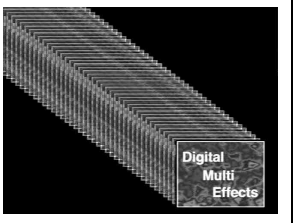
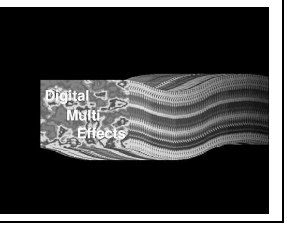
Corner pinning effect

Effect	Description/Image
Corner Pinning *(see page 274)*	Pins the four corners of the foreground to arbitrary positions on the background and inserts the foreground image, modifying the foreground shape to fit the quadrilateral shape defined by the corners.  Background  Foreground (cropped state)  Corner pinning [Crop Link] enabled

Lighting effects

Effect	Description/Image
Lighting *(see page 260)*	Produces the effect of light striking the image.  Normal  Specular  Mat
Spotlighting *(see page 266)*	Produces the effect of a spotlight striking the surface of the image.

Recursive effects

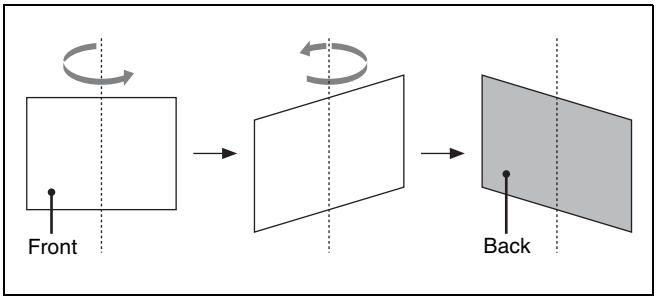
Effect	Description/Image
Trail *(see page 262)*	Recursively freezes the input video at regular intervals so that a trail of afterimages is created. You can also turn the afterimages into stardust trails. 
Motion Decay *(see page 263)*	Blurs the motion of a moving video by creating blurred afterimages of the moving video. You can also turn the afterimages into stardust trails. 
Keyframe Strobe *(see page 264)*	Freezes the video each time the effect passes through a keyframe. You can also turn the afterimages into stardust trails.
Wind *(see page 265)*	Strobes the image at regular intervals, and moves the frozen image in a fixed direction, leaving an afterimage. 

Background color settings

You can add color to the background of an image or input an external signal for the background *(see page 272)*.

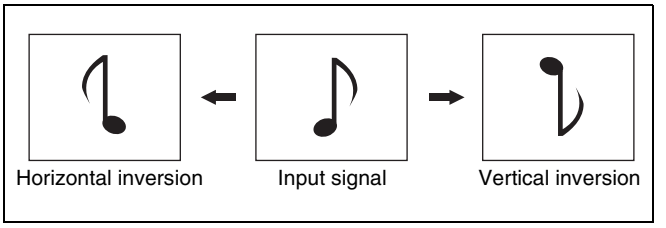
Separate sides (inserts separate images for front and back)

Allows you to select separate video signals and key signals for the front and back of the image *(see page 272)*.



Signal inversion (Invert)

Inverts the input video signal and/or key signal horizontally or vertically. You can make separate settings for the front and back *(see page 272)*.



Key density adjustment

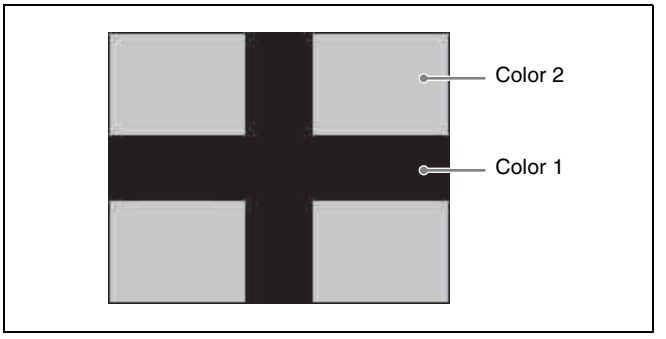
You can adjusts the key density for the key signal input to the DME *(see page 272)*.

Key source selection

You can select either the key signal received from the switcher or the key signal generated in the DME for application for the front and back *(see page 223)* of the image *(see page 272)*.

Color mix settings

You can combine two colors with a pattern generator, which can be used to fill parts such as a background or border *(see page 240)*.



Global Effects

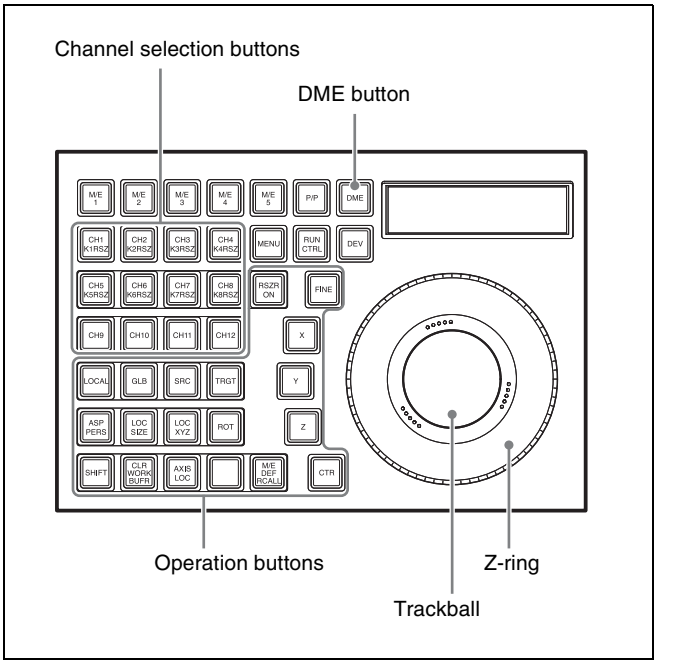
Global effects are special effects created by combining the images of successive channels. The following types of global effects are available.

- Combiner
- Brick
- Shadow

Three-Dimensional Transform Operations

Use the device control block (trackball) to execute three-dimensional DME transforms.

Three-Dimensional Transform Basic Operations



Device control block (trackball)

Buttons used in three-dimensional transform operation mode

LOCAL: Enables operations in local space (selectable simultaneously with [GLB] button).

GLB (global): Enables operations in global space (selectable simultaneously with [LOCAL] button).

SRC (source): Enables operations in DME source space (not selectable simultaneously with [TRGT] button).

TRGT (target): Enables operations in DME target space (not selectable simultaneously with [SRC] button).

AXIS LOC (axis location): Moves the rotational axis of the image in the X-axis and Y-axis directions using the trackball, and in the Z-axis direction using the Z-ring.

ASP PERS (aspect/perspective): When the [SRC] button is lit, this changes the aspect ratio of the image in the X-axis and Y-axis directions independently using the trackball, or in the X-axis and Y-axis directions simultaneously using the Z-ring. When the [SHIFT] button is held down and this button is pressed, the trackball controls the skew of the image in the X-axis

and Y-axis directions.
When the [TRGT] button is lit, this changes the perspective of the image in the X-axis and Y-axis directions using the trackball and the distance of the viewpoint position using the Z-ring.

LOC SIZE (location size): Changes the image size using the Z-ring, and moves the image in the X-axis and Y-axis directions using the trackball.

LOC (location) XYZ: Moves the image in the X-axis and Y-axis directions using the trackball, and in the Z-axis direction using the Z-ring.

SHIFT: Enables the [ASP PERS] button and [ROT] button shifted-state functions.

CLR WORK BUFR (clear work buffer): Press this button once to clear only the three-dimensional transform parameters of the information held in the work buffer. Press twice in rapid succession to clear all of the parameters, and return to the default state.

ROT (rotation): Rotates the image about the X- and Y-axes using the trackball, and about the Z-axis using the Z-ring. Press the [ROT] while holding down the [SHIFT] button enables rotation of the image in Spin mode.

X, Y, Z: Restricts the axes (X, Y, Z) that the trackball and Z-ring controls. Multiple selections are supported. You can enter the parameter value for the corresponding axis using the numeric keypad control block.

CTR (center): Press this button once to changes the values of the three-dimensional parameters currently controlled by the trackball and Z-ring to the closest detent values. Press twice in rapid succession to return the parameter values to their defaults.

FINE: Enables fine control using the trackball and Z-ring (fine mode).

Transforming an image in three-dimensional space

1 Press the [DME] button on the device control block.

The [DME] button is lit amber, and the device control block switches to three-dimensional transform operation mode.

2 Using the channel selection buttons, select the target channel (CH1 to CH4) of the operation.

You can select more than one channel. The first selected button becomes the reference channel, and is lit green. Subsequent selected buttons are lit amber.

3 Using the operation buttons, select the three-dimensional space in which to perform the transform.

[LOCAL] button: Selects local space.
[GLB] button: Selects global space.
The [LOCAL] and [GLB] buttons can be selected at the same time.

[SRC] button: Selects source space.
[TRGT] button: Selects target space.
Only the [SRC] button or the [TRGT] button can be selected.

4 Press the button for the desired operation, turning it on, to select the transform operation mode *(see page 215)*.

To move the image: Press the [LOC XYZ] button, turning it on.
You can move the image on the X- and Y-axes using the trackball and move it on the Z-axis using the Z-ring. Or you can pressing the [LOC SIZE] button, turning it on, to move the image on the X- and Y-axes using the trackball.

To rotate the image: Press the [ROT] button, turning it on.
You can rotate the image on the X- and Y-axes using the trackball and rotate it on the Z-axis using the Z-ring.
To rotate the image in Spin mode, press and hold the [SHIFT] button and press the [ROT] button, turning it on, to operate in the same way using the trackball and Z-ring.

To move an axis of rotation of the image: With the [SRC] button selected in step **3**, press the [AXIS LOC] button, turning it on.
You can move the axis of rotation of the image on the X- and Y-axes of the image using the trackball, and on the Z-axis using the Z-ring.

To magnify or shrink the image: Press the [LOC SIZE] button, turning it on.
This enables you to magnify and shrink the image using the Z-ring. Rotate counterclockwise to shrink, and clockwise to magnify.

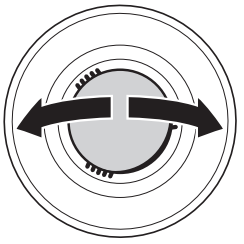
To change the aspect ratio of the image: With the [SRC] button selected in step **3**, press the [ASP PERS] button, turning it on.
You can change the aspect ratio independently on the X- and Y-axes using the trackball, and change it simultaneously on both the X- and Y-axes using the Z-ring.

To change the perspective of the image: With the [TRGT] button selected in step **3**, press the [ASP PERS] button, turning it on.
You can change the perspective of the image on the X- and Y-axes using the trackball, and change the distance to the viewpoint position using the Z-ring.

To change the skew of the image: With the [SRC] button selected in step **3**, press and hold the [SHIFT] button and press the [ASP PERS] button, turning it on.
You can change the skew of the image along the X- and Y-axes using the trackball.

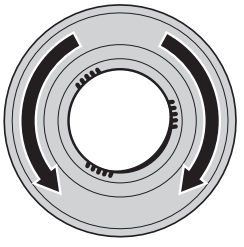
5 Depending on the axis of the change, operate the trackball and Z-ring as follows.

- To change on the X-axis, rotate the trackball horizontally.
  Parameter values increase as you rotate to the right, and decrease as you rotate to the left.



- To change on the Y-axis, rotate the trackball vertically.
  Parameter values increase as you rotate upward, and decrease as you rotate downward.

- To change on the Z-axis, rotate the Z-ring.
  Parameter values increase as you rotate clockwise, and decrease as you rotate counterclockwise. However, if you have pressed the [LOC XYZ] button or [AXIS LOC] button, the parameter values increase as you rotate counterclockwise, and decrease as you rotate clockwise.



To reduce the rate of change of the parameters (fine mode)
Press the [FINE] button, turning it on.
This enables fine control using the trackball and Z-ring.

6 To restrict the change in the transform to a specific axis, press the [X], [Y], or [Z] button, tuning it on.

This enables the trackball and Z-ring operations on the selected axis only.

Functions assignable to trackball and Z-ring operations

Operation buttons	Operation space	Trackball X-direction	Trackball Y-direction	Z-ring
LOC XYZ	Source/ target space	Move image on X-axis	Move image on Y-axis	Move image on Z-axis
ROT	Source/ target space	Rotate image on Y-axis	Rotate image on X-axis	Rotate image on Z-axis
SHIFT+ ROT	Source/ target space	Rotate image on Y-axis (Spin mode)	Rotate image on X-axis (Spin mode)	Rotate image on Z-axis (Spin mode)
AXIS LOC	Source space	Move X-axis of rotation	Move Y-axis of rotation	Move Z-axis of rotation
LOC SIZE	Source/ target space	Move image on X-axis	Move image on Y-axis	Magnify and shrink image
ASP PERS	Source space	Change aspect ratio on X-axis	Change aspect ratio on Y-axis	Change aspect ratio on X- and Y-axes simultaneously
	Target space	Shift view point on X-axis	Shift view point on Y-axis	Change distance of viewpoint position
SHIFT+ ASP PERS	Source space	Change skew on X-axis	Change skew on Y-axis	Change aspect ratio on X- and Y-axes simultaneously

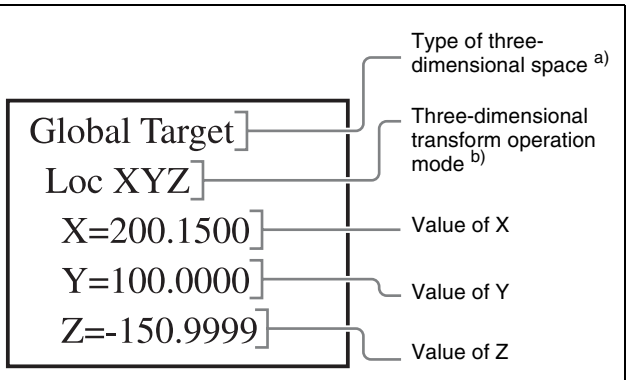
Three-Dimensional Parameter Display

You can check the values of three-dimensional parameters in the DME menu or on the device control block (trackball).

Display in the DME menu

The status area of the DME menu shows the three-dimensional parameters currently controlled by the device control block.

- When multiple DME channels are selected, this shows the parameters for the reference channel.
- When both Global and Local are selected, the three-dimensional parameters are shown for the channel (the reference channel) for which the button is lit green.



a) This shows one of Local Target, Local Source, Global Target, and Global Source.
b) This shows one of Loc XYZ, Loc Size, Rot, Spin, Axis Loc, Skew, Asp, and Pers.

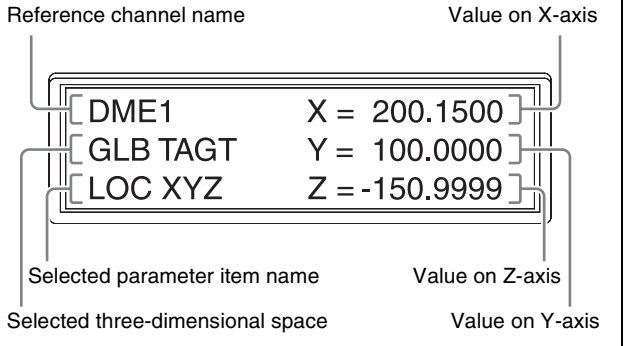
To display a detailed list of three-dimensional parameters

In the DME menu, press the menu title button (the [DME] in the upper left part of the screen).
The DME >Status menu (4100) appears.
The three-dimensional parameters for the DME reference channel currently selected in the device control block are displayed.

Display on the device control block

The following information appears on the display of the device control block (trackball).

- Reference channel name: DME1 to DME4
- Currently selected three-dimensional space: LOCAL/ GLB and SRC/TRGT
- Currently selected parameter item: LOC XYZ, ASP PERS, LOC SIZE, ROT, AXIS LOC, SPIN, SKEW
- Parameter setting values



Three-Dimensional Parameter Entry

In addition to setting three-dimensional parameter values using the trackball and Z-ring, you can enter numeric values directly from the numeric keypad control block.

Entering three-dimensional parameter values

1 In the device control block, press the [X], [Y], or [Z] button, turning it on.

The parameter item and setting value appears on the numeric keypad control block display.

2 Enter a parameter value using the numeric keypad buttons on the numeric keypad control block.

The number of significant digits after the decimal point is four.

3 Press the [ENTER] button.

The parameter value is changed, and the image changes.

To enter a difference value

Press the [+/–] button and enter a difference from the current value, and press the [TRIM] button to confirm.
Each time you press the [+/–] button, it toggles between plus (+) and minus (–).

Resetting three-dimensional parameters

To set the current three-dimensional parameter values to the closest detent points *(see page 214)*, press the [CTR] button once in the device control block.
To reset three-dimensional parameter values to the default values *(see page 214)* for the currently selected transform operation mode, press the [CTR] button twice in rapid succession.

Returning three-dimensional parameters to default state (clear work buffer)

To clear and reset to default state only the three-dimensional transform parameters contained in the work buffer, depending on the DME operation, press the [CLR WORK BUFR] button once in the device control block.
To clear all parameters in the work buffer and return the DME to the default state, press the [CLR WORK BUFR] button twice in rapid succession.
It is necessary to do this for both the local space and global space.
For the DME default state, you can select either the factory default settings or user settings.

For details, see "Power-On (Startup) State Selection" (page 397).

Graphics Display

Use the DME menu to make graphics display settings. You can make separate settings for separate channels. Select the desired DME channel in the device control block.

For the types of graphics displayed, see "Graphics Display" (page 217).

Displaying graphics

1 Open the DME >Input/Output >Graphic menu (4164).

2 Press [Graphic], turning it on.

3 In the <Graphic Type> group, select the type of graphic.

Axis: Displays coordinate axes.
Axis Name: Displays axis names.
Ch ID: Display Channel IDs.
Wire Frame: Displays a wire frame.
Grid: Displays a grid.
Flex Shadow Axis: Displays the flex shadow center axis.

The selected graphic appears on the monitor screen.

4 To shrink the graphics display to show the range not displayed on a normal monitor, press [Scale], turning it on, and set the following parameter.

As the value of the setting increases, the picture on the monitor shrinks toward the center.

No.	Parameter	Adjustment
1	Scale	Degree to which the graphics display is reduced

5 To automatically erase the graphics display during keyframe execution, press [Auto Erase], turning it on, and then set the following parameter.

No.	Parameter	Adjustment
1	Recover Time	Time until graphics display appears again after keyframe execution

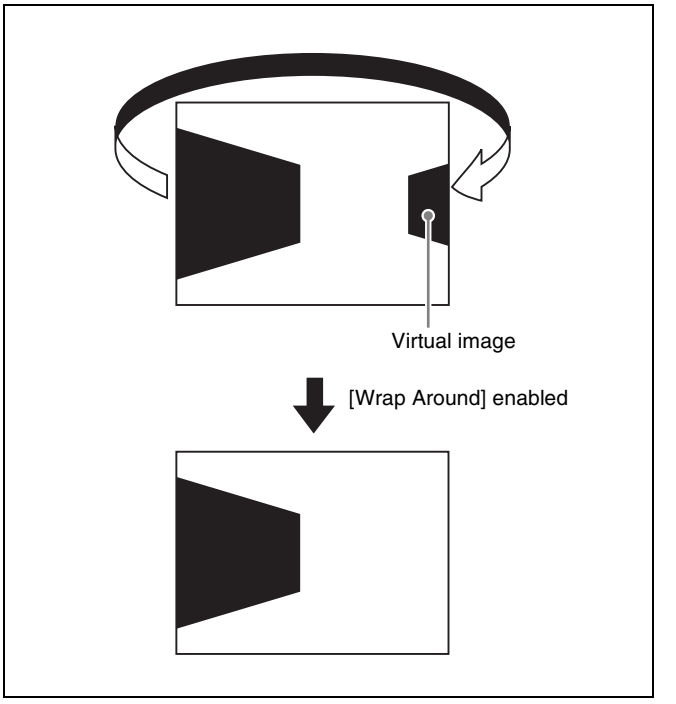
Virtual Image Cancelation

When a three-dimensional transform is executed with an extreme degree of perspective set for an image, the part of the image exceeding the virtual viewpoint is displayed wrapped around on the monitor screen. This is referred to as a virtual image.
Using the DME menu, you can make a setting not to show the virtual images.

Canceling virtual images

1 Open the DME >Input/Output >Video/Key menu (4162).

2 Press [Wrap Around], turning it on.



Applying Special Effects (Common Operations)

This section describes the operation of each effect using the setup procedure in the DME menu.
Select the DME channel in the device control block (trackball) before operating the menu.

Selecting a DME channel

1 Press the [DME] button on the device control block.

2 Using the channel selection buttons, select the target channel (CH1 to CH4) of the operation.

3 Configure each effect in the DME menu.

Applying Special Effects (Edge Effects)

Border Settings

Adding a border

1 Open the DME >Edge >Border/Crop menu (4111).

2 Press [Border], turning it on.

3 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	H	Simultaneously adjust border width of left and right edges
2	V	Simultaneously adjust border width of top and bottom edges
3	All	Simultaneously adjust border width on all edges
5	Density	Border density

Parameter group [2/2]

No.	Parameter	Adjustment
1	Top	Border width on top side
2	Left	Border width on left side
3	Right	Border width on right side
4	Bottom	Border width on bottom side
5	Density	Border density

Selecting the border color

1 In the <Border Fill> group of the Border/Crop menu (4111), select one of the following.

Flat Color: Single color
Mix Color: Mix color signal set in the DME >Edge >Color Mix menu (4117) *(see page 240)*
Ext Video: External video signal input from Ext In

2 When [Flat Color] is selected in step **1**, set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Softening the border edges

1 In the Border/Crop menu (4111), press [Border Soft], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Soft	Softness of inner edge of border

CG Border Settings

This sets the CG border for the selected DME channel. Using two DME channels enables you to change the position and size of the image embedded in the border.

Notes

- This setting is available only when the signal format is 1080i.
- The CG border cannot be set if the DME channel is used for the combiner function.
- CG border settings on DME channel 2 or 4 are available only when the key and DME channel for the CG border are not assigned in the Engineering Setup >Switcher >Config >CG Border Int Video Channel Assign menu (7331.15).
- A CG image video signal must be input on Ext In of channel 1 (or channel 3) and a CG image key signal must be input on Ext In of channel 2 (or channel 4) beforehand.

The following four signals are required for a CG border.

① Border image

Set the background of the border image to black.

② Border image key signal

③ Image to be embedded within the border

④ Key signal for cropping the image within the border

Set the same shape as the inner contour of the border image key signal.

The CG border using these signals is rendered as follows.

Adding a CG border (without changing the position/size of the image)

The operation can be performed for each DME channel, however, channels 1 and 2 and channels 3 and 4 will have the same effect.

1 Open the DME >Edge >Border/Crop menu (4111).

2 In the <CG Border> group, press [CG Border], turning it on.

Adding a CG border (changing the position/size of the image)

To change the position and size of the image embedded in the CG border, use two DME channels.
The combination of the two DME channels to use is channels 1 and 2 or channels 3 and 4 only.
The keys and DME channels for the CG border must be configured in the Setup menu beforehand.

For details about key and DME channel settings, see "Setting the Keys and DME Channels used in a CG Border" (page 442).

Assigning DME channels to keys

Assign the DME channels for the CG border configured in the Setup menu to the target keys.
Assigning one of the two DME channels will automatically assign the other channel.

For details about key assignment operations, see "Assigning a DME to a key" (page 121) and "Assigning a DME to a key" (page 128).

Notes

- It is not possible to assign only one of the DME channels.
- It is not possible to assign one of the DME channels if either of the channels is in use.

- Selecting a DME channel using the override function allows you to assign both channels to keys. If either channel is selected on another key when using the override function, the assignment of both channels is canceled.
- The combiner function cannot be used on the two DME channels assigned to a CG border.

Setting a CG border

The setting operations are performed using DME channel 1 or 3 only.

Notes

- The key assigned with the DME channel for the CG border must have clean mode enabled beforehand.
- The following DME effects cannot be used on the DME channel (1 or 3) that sets the CG border.
  - Border
  - Crop
  - Flex Shadow
  - Defocus
  - Mosaic
  - Background
- The CG border settings are saved separately in a snapshot and keyframe register for each DME channel. When recalling, it is necessary to recall the registers for the two channels at the same time.

1 Open the DME >Edge >Border/Crop menu (4111).

2 In the <CG Border> group, press [CG Border], turning it on.

3 In the <CG Border> group, press [Int Video Loc/Size], turning it on.

4 Set the position and size of the image to embed in the border using the following parameters.

No.	Parameter	Adjustment
1	Location X	Horizontal position
2	Location Y	Vertical position
3	Size	Size

Note

Canceling the DME channel assignment on a target key will disable the [Int Video Loc/Size] setting.

Crop Settings

Cropping an image

1 Open the DME >Edge >Border/Crop menu (4111).

2 Press [Crop], turning it on.

3 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	H	Crop level on left and right sides
2	V	Crop level on top and bottom sides
3	All	Crop level on all sides

Parameter group [2/2]

No.	Parameter	Adjustment
1	Top	Position of top crop
2	Left	Position of left crop
3	Right	Position of right crop
4	Bottom	Position of bottom crop

Signs of numeric settings

For H, V, and All settings, it is not necessary to enter the sign (+/–). For example, in the case of an H setting, the value for Left is automatically converted to a negative value, and the value for Right to a positive value, to display the image. The following shows example input settings.

Parameter	Input	Setting
H	1.5	Left=–1.50
		Right=1.50
	–1.5	Left=–1.50
		Right=1.50

4 To soften the edges of the image, press [Edge Soft], turning it on, and set the following parameter.

No.	Parameter	Adjustment
1	Soft	Edge softness

Note

Edges of an image cannot be softened when cropping is disabled.

To select whether to also invert the crop area when inverting

In the <Invert/Crop Process> group, select one of the following.

Crop –>Invert: Set an axis of symmetry at the center of the input video, and invert both the desired area of video and the crop area horizontally and vertically around that axis of symmetry. The order of effect application for the input image is Crop and then Invert.

Invert –>Crop: Sets an axis of symmetry at the center of the input video, and inverts only the image horizontally and vertically around that axis of

symmetry, depending on the invert settings. The order of effect application is Invert and then Crop.

Beveled Edge Settings

Applying a beveled edge

1 Open the DME >Edge >Beveled Edge menu (4112).

2 Press [Beveled Edge], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	H	Simultaneously adjust width of left and right edges
2	V	Simultaneously adjust width of top and bottom edges
3	All	Simultaneously adjust width of all four edges

4 In the <Edge Mode> group, select the type of edge.

Light: Effect of light striking the edge.
When [Light] is selected, set the following parameters.

No.	Parameter	Adjustment
1	Top	Adjust luminance of top edge
2	Left	Adjust luminance of left edge
3	Right	Adjust luminance of right edge
4	Bottom	Adjust luminance of bottom edge
5	All	Simultaneously adjust luminance of all four edges

Color: Colored edges.
When [Color] is selected, select the item to adjust in the <Color Adjust> group and set the following parameters.

- To set the density

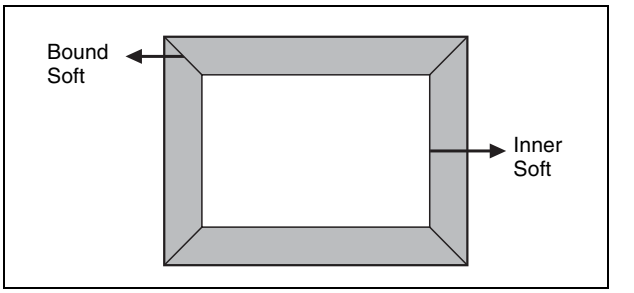
No.	Parameter	Adjustment
1	Density	Adjust the color density

- To set the colors for each edge (Top, Left, Right, Bottom, All)

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

5 To soften the inside edges and the boundaries between adjacent edges, press [Edge Soft], turning it on, and set the following parameters.

No.	Parameter	Adjustment
1	Inner Soft	Softness of the inside of edges
2	Bound Soft	Softness of the edge boundaries



Key Border Settings

Applying key borders

1 Open the DME >Edge >Key Border menu (4113).

2 Press [Key Border], turning it on.

Note

The Key Border function and Glow function cannot be enabled at the same time. The most recently set function is enabled.

3 Set the following parameters.

No.	Parameter	Adjustment
1	H	Simultaneously adjust width of left and right key borders
2	V	Simultaneously adjust width of top and bottom key borders
3	All	Simultaneously adjust width of all four key borders
4	Soft	Softness of the key borders
5	Density	Density of the key borders

4 To set the key border color, press [Flat Color] and set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

To select an outline-only key

Press [Outline], turning it on.

Art Edge Settings

Applying art edges

1 Open the DME >Edge >Art Edge menu (4114).

2 Press [Art Edge], turning it on.

Note

The Defocus, Blur, Key Border, and Glow effects cannot be applied to the Art Edge sections.

3 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	H	Simultaneously adjust width of left and right edges
2	V	Simultaneously adjust width of top and bottom edges
3	All	Simultaneously adjust width of all four edges
5	Density	Density of edges

Parameter group [2/2]

No.	Parameter	Adjustment
1	Top	Width of top edge
2	Left	Width of left edge
3	Right	Width of right edge
4	Bottom	Width of bottom edge
5	Density	Density of edges

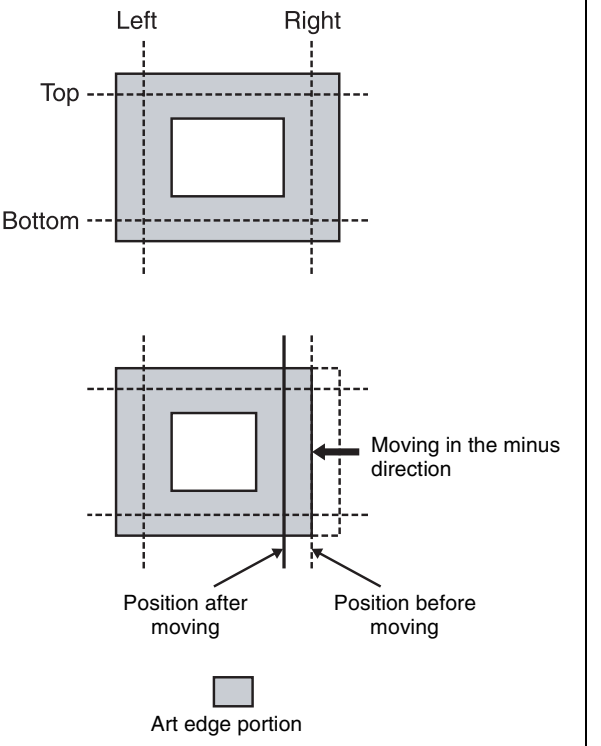
Adjusting the position of art edges

1 In the Art Edge menu (4114), press [Edge Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Top	Position of top edge
2	Left	Position of left edge
3	Right	Position of right edge
4	Bottom	Position of bottom edge
5	All	Adjust the position of all four edges

Example: Moving the right edge position in the “minus” direction.



Softening the inner and outer sides of art edges

1 In the Art Edge menu (4114), press [Soft], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Inner H	Simultaneously adjust softness of left and right inner edges
2	Inner V	Simultaneously adjust softness of top and bottom inner edges
3	Outer H	Simultaneously adjust softness of left and right outer edges
4	Outer V	Simultaneously adjust softness of top and bottom outer edges
5	All	Simultaneously adjust softness of all inner and outer edges.

Setting the way in which art edge colors change

1 In the <Art Edge Source> group of the Art Edge menu (4114), select the color pattern to apply to the art edges.

Flat Color: Uses color 1 *(see page 235)* as a flat color.

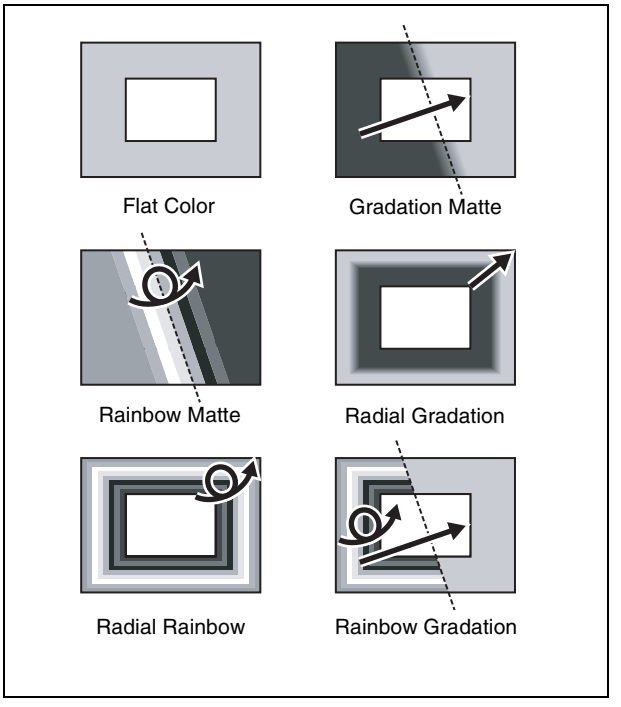
Gradation Matte: If using boundary lines as borders (see step **2**), this transitions from color 1 to color 2) *(see page 235)*.

Rainbow Matte: The color gradually changes hue from color 1 to color 2 on the border lines.

Radial Gradation: Color 1 on the inner side is mixed into color 2 on the outer side, according to the shape of the art edge.

Radial Rainbow: The hue of color 1 on the inner side transitions to color 2 on the outer side, according to the shape of the art edge.

Rainbow Gradation: Color 3 *(see page 235)* overwrites Radial Rainbow, giving a gradation effect.



2 When other than [Flat Color] is selected, set the gradation border lines for each pattern.

When [Gradation Matte] or [Rainbow Matte] is selected

No.	Parameter	Adjustment
1	H	Position of gradation border in horizontal direction
2	V	Position of gradation border in vertical direction
3	Soft	Softness of gradation border region

When [Radial Gradation] or [Radial Rainbow] is selected

No.	Parameter	Adjustment
3	Soft	Softness of gradation border region

When [Rainbow Gradation] is selected

No.	Parameter	Adjustment
1	H	Position of gradation border in horizontal direction
2	V	Position of gradation border in vertical direction
3	RBW Soft	Softness of rainbow border region
4	GRD Soft	Softness of gradation border region

3 When [Gradation Matte] or [Rainbow Matte] is selected, set modifiers as required.

When selecting [Angle] in the <Rotation> group and slanting the pattern

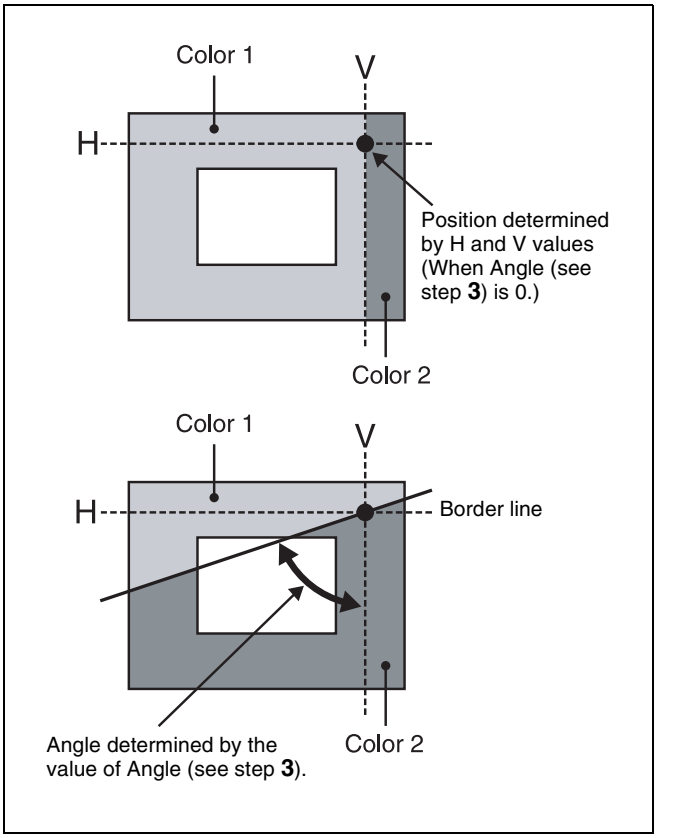
No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern [a]

a) –1.00 is one rotation in the counterclockwise direction. +1.00 is one rotation in the clockwise direction. 0.00 is no rotation.

When selecting [Speed] in the <Rotation> group and rotating the pattern at a constant speed

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern [a]

a) –100.00 is four rotations per second in counterclockwise direction. +100.00 is four rotations per second in clockwise direction. 0.00 is in stationary state.



Setting art edge colors

1 In the <Color Adjust> group of the Art Edge menu (4114), select the color (Color 1 to Color 3) to set.

2 Set the following parameters.

When Color 1 is selected

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

When Color 2 is selected

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue Offset	Hue range

Note

Color 2 cannot be set when [Flat Color] is selected in the <Art Edge Source> group.

When Color 3 is selected

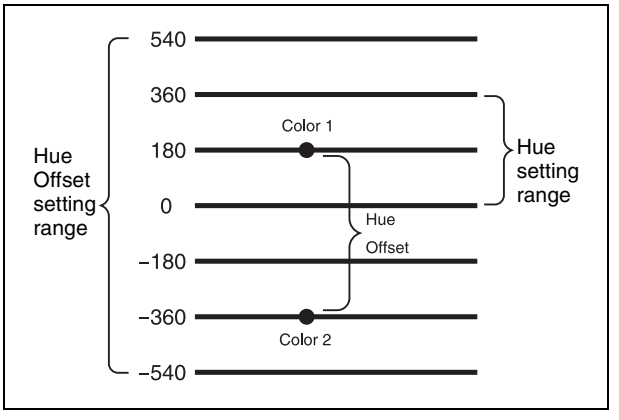
No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue Offset	Hue range

Note

Enabled only when [Rainbow Gradation] is selected in the <Art Edge Source> group.

Relationship between Hue and Hue Offset

For example, when the Hue value of Color 1 is 180.00 and the Hue Offset value of Color 2 is –540.00, the hue changes within the Hue Offset range of Color 1 and Color 2 as shown below.



Rounding art edge corners

In the Art Edge menu (4114), press [Round Corner], turning it on.

The art edge corners on the inner and outer sides are rounded.

Note

This function is only enabled when [Soft] is selected.

Flex Shadow Settings

Notes

- When the signal format is 3840×2160P 2SI or 1080P, the following flex shadow functions cannot be used.
  - [External] in the <Flex Shadow Source> group
  - [Ext Video] in the <Flex Shadow Fill> group
- [Mix Color] or [Ext Video] can only be applied to one of the background *(see page 272)*, flex shadow, trail *(see page 262)*, and wind *(see page 265)* effects. If [Mix Color] or [Ext Video] is selected for one of these effects, the [Mix Color] or [Ext Video] for the other effects is disabled, and [Flat Color] is selected in its place.
- When executing a 4-channel combination, the [Mix Color] and [Ext Video] for flex shadow and background effects cannot be selected.

Applying a flex shadow effect

1 Open the DME >Edge >Flex Shadow menu (4115).

2 Press [Flex Shadow], turning it on.

Note

The flex shadow function cannot be enabled when the following functions are enabled.

- All nonlinear effects
- Brick and shadow global effects

3 Set the following parameters.

No.	Parameter	Adjustment
1	H	Move shadow horizontally
2	V	Move shadow vertically
3	Size All	Enlarge or shrink horizontally and vertically
4	Soft [a)]	Softness of shadow
5	Density	Density of shadow

a) The Soft parameter is valid only when [Internal] is selected in the <Flex Shadow Source> group.

4 In the <Flex Shadow Source> group, select the signal to use for the flex shadow.

External: Generate using an input key signal.
Internal: Generate using a full-size key signal.

5 In the <Flex Shadow Fill> group, select the signal for the flex shadow portion.

Flat Color: Single color
Mix Color: Mix color signal set in the DME >Edge >Color Mix menu (4117) *(see page 240)*
Ext Video: External video signal input from Ext In

6 When [Flat Color] is selected in step **5**, set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Adjusting the size of the flex shadow

1 In the Flex Shadow menu (4115), press [Size].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Size H	Enlarge or shrink horizontally
2	Size V	Enlarge or shrink vertically
3	Size All	Enlarge or shrink horizontally and vertically
4	Soft a)	Softness of shadow
5	Density	Density of shadow

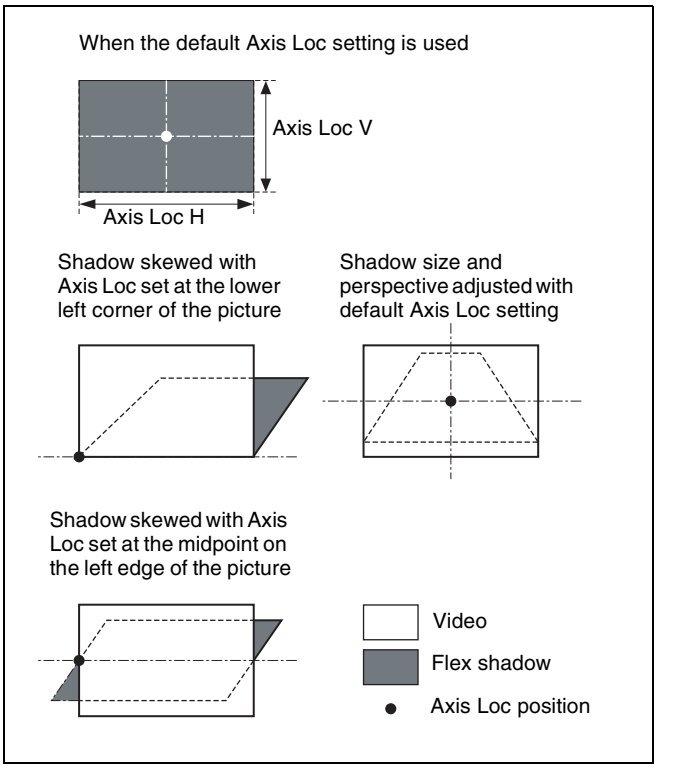
a) The Soft parameter is valid only when [Internal] is selected in the <Flex Shadow Source> group.

Setting the center point of the flex shadow

1 In the Flex Shadow menu (4115), press [Axis Loc].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Axis Loc H	Move the shadow center axis horizontally
2	Axis Loc V	Move the shadow center axis vertically



The flex shadow center axis appears when [Flex Shadow Axis] is enabled in the <Graphic Type> group of the DME >Input/Output >Graphic menu (4164).

For details, see "Displaying graphics" (page 228).

Skewing the flex shadow

1 In the Flex Shadow menu (4115), press [Skew].

2 Set the following parameters.

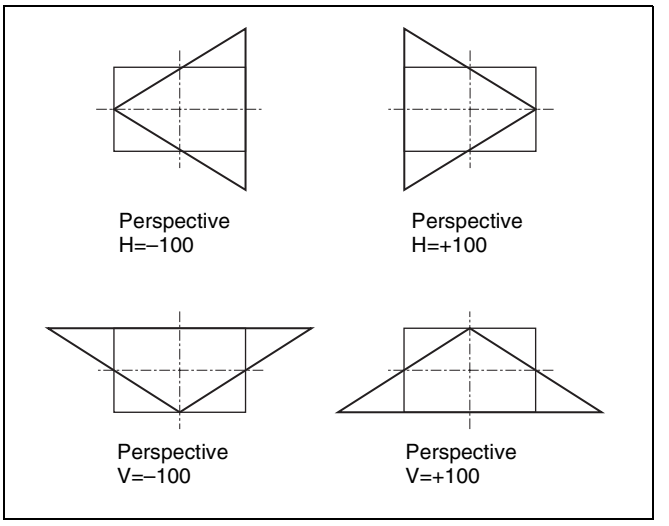
No.	Parameter	Adjustment
1	Skew H	Skew horizontally
2	Skew V	Skew vertically

Adding perspective to the flex shadow

1 In the Flex Shadow menu (4115), press [Perspective].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Perspective H	Add horizontal perspective
2	Perspective V	Add vertical perspective

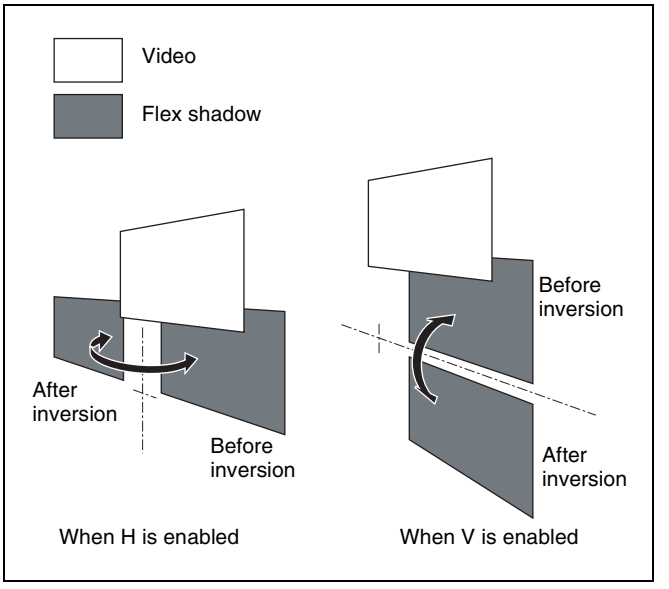


Inverting the flex shadow

In the <Invert> group of the Flex Shadow menu (4115), select the direction to invert the shadow.

H: Invert the shadow in the horizontal direction. The inversion is applied around the [Axis Loc V] parameter axis set using [Axis Loc].

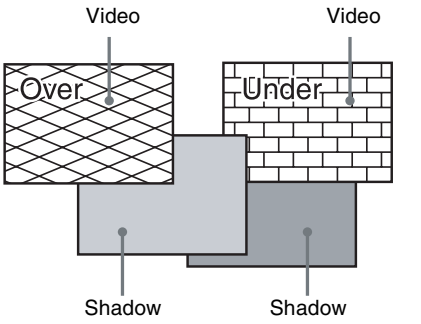
V: Invert the shadow in the vertical direction. The inversion is applied around the [Axis Loc H] parameter axis set using [Axis Loc].



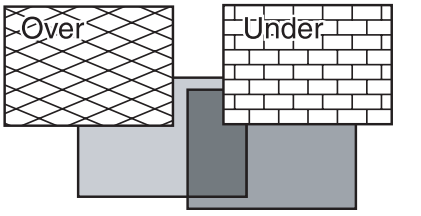
Setting a combine shadow

When there are several images, a flex shadow can be added to the rear of the image or overlay multiple flex shadows.

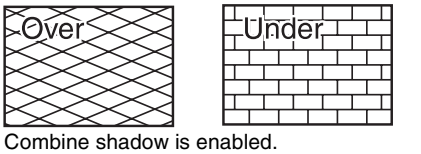
Example 1: When Flex Shadow is enabled on both of two channels.



No combine shadow is set.

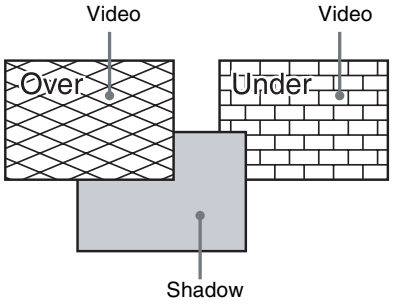


Combine shadow is enabled.
Density is set to 100.00.

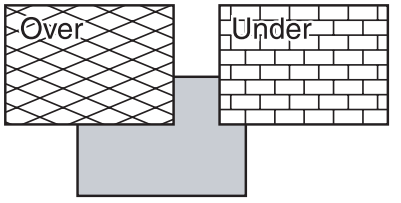


Combine shadow is enabled.
Density is set to 0.00.

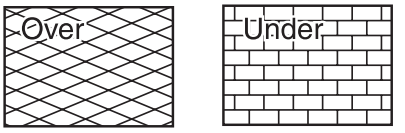
Example 2: Flex Shadow is enabled on one channel only.



No combine shadow is set.



Combine shadow is enabled.
Density is set to 100.00.



Combine shadow is enabled.
Density is set to 0.00.

1 In the Flex Shadow menu (4115), press [Combine Shadow], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Density	Density of combine shadow

Notes

- The Combine Shadow effect is applied to all shadows, not only the sections where shadows overlap.
- Enabling the Combiner global effect when flex shadow is enabled will enable the Combine Shadow effect. In this state, Combine Shadow remains enabled even if the global effect is disabled.
- In Combine Shadow, the setting for the channel with the lowest number among the channels being combined is enabled.

Flex shadow creation example

This section describes the flex pattern creation flow for the following pattern as an example.

1 In the DME >Edge >Flex Shadow menu (4115), press [Flex Shadow], turning it on.

2 In the <Flex Shadow Source> group, select [External].

3 Select [Axis Loc] and set the [Axis Loc V] parameter so that the center of the flex shadow deformation is at the bottom of the picture.
(In 16:9 mode: Axis Loc V = –9.00)

It is recommended that the operation is performed by displaying the flex shadow center axis by enabling [Flex Shadow Axis] in the DME >Input/Output >Graphic menu (4164).

4 In the <Invert> group, select [V] to invert the flex shadow vertically.

5 Select [Size] and set the [Size V] parameter so that the shadow extends vertically.
(In 16:9 mode: Size V = –1.50)

6 Select [Skew] and set the [Skew H] parameter so that the parallel lines appear to emerge from the rear at the right.
(In 16:9 mode: Skew H = –50.00)

Wipe Crop Settings

Notes

- Enabling Wipe Crop disables Mask if it is set.
- When Brick is set, Wipe Crop cannot be enabled. Brick must be disabled in order to enable Wipe Crop.

Applying the wipe crop effect

To select a pattern

1 Open the DME >Edge >Wipe Crop menu (4116).

2 Press [Wipe Crop], turning it on.

3 Press [Pattern Select].

The Pattern Select menu (4116.1) appears.

4 From the displayed patterns (standard wipe patterns 1 to 24 and 304), press any pattern to select it.

You can adjust the size of the pattern using the [Size] parameter.

To set the pattern size and position

1 In the Wipe Crop menu (4116), press [Position/Size].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal position
2	V	Vertical position
3	Size	Pattern size
5	Pattern	Pattern number

Note

When pattern number 304 is selected, the <Edge> group effect varies according to the [Size] parameter setting.

To invert the regions with video signal inserted and not inserted

In the DME >Edge >Wipe Crop menu (4116), press [Invert], turning it on.

To set the radius of pattern corners

You can set the radius of the four corners when wipe pattern 304 is selected.

Note

This setting is available only when the signal format is 1080i.

1 In the Wipe Crop menu (4116), press [Radius].

2 Set the following parameter.

No.	Parameter	Adjustment
1	Radius	Corner radius

Setting the aspect ratio of the wipe crop pattern (Aspect)

1 In the Wipe Crop menu (4116), press [Aspect].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Aspect	Aspect ratio [a]

a) When a minus value is specified, the picture is extended in the vertical direction. When a plus value is specified, the picture is extended in the horizontal direction.

Rotating the wipe crop pattern (Rotation)

1 In the <Rotation> group of the Wipe Crop menu (4116), select one of the following.

Angle: Incline the pattern at a fixed angle.
Speed: Rotate the pattern at a set speed.

2 Depending on the selection in step **1**, set the following parameters.

When [Angle] is selected

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern [a]

a) –1.00 is one rotation in the counterclockwise direction. +1.00 is one rotation in the clockwise direction. 0.00 is no rotation.

When [Speed] is selected

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern [a]

a) –100.00 is four rotations per second in counterclockwise direction. +100.00 is four rotations per second in clockwise direction. 0.00 is in stationary state.

Applying modulation to the wipe crop pattern (Modulation)

1 In the <Modulation> group of the Wipe Crop menu (4116), select one of the following.

H: Modulate the pattern to apply waving in the horizontal direction.
V: Modulate the pattern to apply waving in the vertical direction.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Amplitude	Amplitude of modulation
2	Frequency	Frequency of modulation
3	Speed	Speed of ripples

Replicating the wipe crop pattern (Multi)

1 In the Wipe Crop menu (4116), press [Multi], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	H Multi	Number of repetitions of pattern horizontally

No.	Parameter	Adjustment
2	V Multi	Number of repetitions of pattern vertically
3	Invert Type	Pattern layout a)

a) See *page 147*.

Modifying the wipe crop pattern edge (Edge)

You can apply a border to the wipe crop pattern, or soften the boundary.

1 In the <Edge> group of the Wipe Crop menu (4116), select one of the following.

Border: Border
Soft: Soft edge
Soft Border: Soft border

2 Depending on the selection in step **1**, set the following parameters.

When [Border] is selected

No.	Parameter	Adjustment
1	Width	Border width

When [Soft] is selected

No.	Parameter	Adjustment
1	Soft	Edge softness

When [Soft Border] is selected

No.	Parameter	Adjustment
1	Width	Border width
2	Inner Soft	Degree of softness inside the border
3	Outer Soft	Degree of softness outside the border

Setting the signal or color to be inserted in the wipe crop border

When a border or soft border is applied to a wipe crop, you can set the signal or color to be inserted in the border.

1 In the <Border Fill> group of the Wipe Crop menu (4116), select one of the following.

Flat Color: Single color
Mix Color: Mix color signal set in the DME >Edge >Color Mix menu (4117) *(see page 240)*
Ext Video: External video signal input from Ext In

2 When [Flat Color] is selected in step **1**, set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Color Mix Settings

Creating a combination pattern

To select a pattern

1 Open the DME >Edge >Color Mix menu (4117).

2 Press [Mix Pattern Select].

The Mix Pattern Select menu (4117.1) appears.

3 Press any of the displayed patterns (standard wipe patterns 1 to 24) to select it.

You can adjust the size and softness of the pattern using the [Size] parameter and [Soft] parameter.

To set the pattern size and position

1 In the Color Mix menu (4117), press [Position/Size].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal position
2	V	Vertical position
3	Size	Pattern size
4	Soft	Softness of the pattern
5	Pattern	Pattern number

To invert the regions of the two colors

In the Color Mix menu (4117), press [Color Invert], turning it on.

Adjusting color 1 and color 2

1 In the Color Mix menu (4117), press [Color1] to adjust color 1, or [Color2] to adjust color 2.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Modifying the combination pattern

For details about modifying patterns, see the following pages.

- *"Setting the aspect ratio of the wipe crop pattern (Aspect)" (page 239)*
- *"Replicating the wipe crop pattern (Multi)" (page 239)*
- *"Rotating the wipe crop pattern (Rotation)" (page 239)*
- *"Applying modulation to the wipe crop pattern (Modulation)" (page 239)*

Applying Special Effects (Effects on the Overall Signal)

Defocus Settings

Applying the Defocus effect

1 Open the DME >Video Modify >Defocus/Blur menu (4121).

2 Press [Defocus], turning it on.

3 In the <Defocus Mode> group, select the signal to which to apply the defocus effect.

Video/Key: Video signal and key signal
Video: Video signal only

4 Set the following parameters.

When [Video/Key] is selected

No.	Parameter	Adjustment
1	H	Simultaneous horizontal defocusing of video and key signals
2	V	Simultaneous vertical defocusing of video and key signals
3	All	Simultaneous horizontal and vertical defocusing of video and key signals

When [Video] is selected

No.	Parameter	Adjustment
1	H	Horizontal defocusing of video signal
2	V	Vertical defocusing of video signal
3	All	Horizontal and vertical defocusing of video signal

5 To cancel black level leaking that can occur at the edge of the screen when the Defocus effect is enabled, press [Clean Defocus], turning it on.

To mask the Defocus effect with a selected pattern

Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Blur Settings

Applying the Blur effect

1 Open the DME >Video Modify >Defocus/Blur menu (4121).

2 Press [Blur], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	H	Simultaneous horizontal blurring of video and key signals
2	V	Simultaneous vertical blurring of video and key signals
3	All	Simultaneous horizontal and vertical blurring of video and key signals

To mask the Blur effect with a selected pattern
Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Multi Move Settings

Applying the Multi Move effect

1 Open the DME >Video Modify >Multi Move menu (4122).

2 Press [Multi Move], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Center X	X-value of shrinking center point
2	Center Y	Y-value of shrinking center point
3	Size	Scaling reduction ratio
4	Aspect	Aspect ratio of scaled images a)

a) When a minus value is specified, the picture is extended in the vertical direction. When a plus value is specified, the picture is extended in the horizontal direction.

Sepia Settings

Note

Enabling Sepia disables Mono if it is set.

Applying the Sepia effect

1 Open the DME >Video Modify >Color Modify menu (4123).

2 Press [Sepia], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Mix Y	Luminance signal mix amount
2	Mix C	Chrominance signal mix amount
3	Mix All	Luminance signal and chrominance signal mix amount simultaneous adjustment

4 To set the color of the sepia image, press [Sepia Color], and set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

To mask the Sepia effect with a selected pattern
Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Mono Settings

Note

Enabling Mono disables Sepia if it is set.

Applying the Mono effect

1 Open the DME >Video Modify >Color Modify menu (4123).

2 Press [Mono], turning it on.

To mask the Mono effect with a selected pattern
Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Posterization/Solarization Settings

Posterization allows you to specify the degree of luminance coarsening.
Solarization allows you to specify the degree of chrominance coarsening.

Applying the Posterization/Solarization effect

1 Open the DME >Video Modify >Color Modify menu (4123).

2 Press [Poster/Solar], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Poster	Coarseness of luminance gradations (posterization parameter)
2	Solar	Coarseness of chrominance gradations (solarization parameter)

To mask the Posterization/Solarization effect with a selected pattern

Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Nega Settings

Applying the Nega effect

1 Open the DME >Video Modify >Color Modify menu (4123).

2 To invert the luminance, press [Nega Y], turning it on.

3 To invert the chrominance, press [Nega C], turning it on.

To mask the Nega effect with a selected pattern

Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Contrast Settings

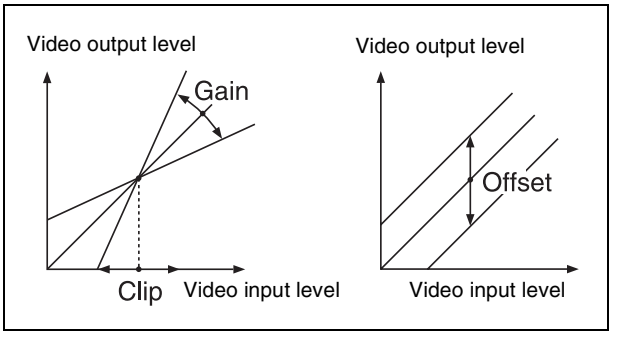
Applying the Contrast effect

1 Open the DME >Video Modify >Color Modify menu (4123).

2 Press [Contrast], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Y Clip	Luminance clip level
2	Y Gain	Luminance contrast intensity
3	Y Offset	Luminance offset level increment
4	C Gain	Chrominance contrast intensity



To mask the Contrast effect with a selected pattern

Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Mosaic Settings

Note

There are differences in the Mosaic effect between the XKS-8470 and XKS-8475.

Applying the Mosaic effect

1 Open the DME >Video Modify >Mosaic menu (4124).

2 Press [Mosaic], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Size	Size of tiles
2	Aspect	Aspect ratio of tiles [a)]

a) Specify minus values to stretch the tiles in the vertical direction. Specify plus values to stretch the tiles in the horizontal direction.

To mask the Mosaic effect with a selected pattern

Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Sketch Settings

Applying the Sketch effect

1 Open the DME >Enhanced Video Modify >Sketch menu (4171).

2 Press [Sketch], turning it on.

3 In the <Sketch Mode> group, select the method for applying outlines.

Sketch: Apply touches like a sketch.
Edge Color Enhance the outlines.
Draw: Apply touches like a line drawing.
Relief: Apply touches like a bas-relief effect.
Sharp: Apply touches that increase the apparent resolution.

4 Depending on the selection in step **3**, set the following parameters.

When [Sketch] is selected

No.	Parameter	Adjustment
1	Mix	Mix level for Sketch effect video and input video [a]
2	Clip	Reference level for outline extraction [b]
3	Gain	Gain level for outline extraction image
4	C Gain	Chrominance gain of input video

When [Edge Color] is selected

No.	Parameter	Adjustment
1	Mix	Mix level for Edge Color effect video and input video [a]
2	Clip	Reference level for outline extraction [b]

When [Draw] is selected

No.	Parameter	Adjustment
1	Mix	Mix level for Draw effect video and input video [a]
2	Clip	Reference level for outline extraction [b]
3	Gain	Gain level for outline extraction image

When [Relief] is selected

No.	Parameter	Adjustment
1	Mix	Mix level for Relief effect video and input video [a]
2	Offset	Relief luminance level
3	Gain	Gain level for outline extraction image
4	Angle	Direction of relief image light source

When [Sharp] is selected

No.	Parameter	Adjustment
1	H	Simultaneously adjust the left and right resolution
2	V	Simultaneously adjust the top and bottom resolution
3	All	Simultaneously adjust the resolution of all four sides
5	Coring	Minimum value of edge to emphasize

a) 0.00 is the original input image, and 100.00 gives an image transformed by the effect.
b) The larger the [Clip] value, the narrower the outline width.

5 If a setting other than [Sharp] is selected in step **3**, use the following procedure as required.

To adjust the outline color for [Edge Color] or [Draw]

Press [Edge Matte], and set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

To apply color to sections other than the [Draw] outlines

Press [Matte], and set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

To select the signal to mix with for [Relief]

In the <Chroma Type> group, select the signal to mix with the relief pattern.
Matte: Select a single color matte. You can adjust the following parameters.

No.	Parameter	Adjustment
2	Saturation	Saturation
3	Hue	Hue

Video: Select the input video signal.

To use the Nega effect with [Sketch], [Edge Color], or [Draw]
To invert white and black in the extracted video, or to invert the outlines and the sections other than the outlines, press [Nega], turning it on.

To mask the Sketch effect with a selected pattern
Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Metal Settings

Applying the Metal effect

1 Open the DME >Enhanced Video Modify >Metal menu (4172).

2 Press [Metal], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Mix Ratio	Mix level for Metal effect video and input video
2	Y Clip	Clip level of input signal luminance level
3	Y Gain	Gain level for clip-adjusted input signal luminance level
4	Y Offset	Offset added to clip and gain-adjusted input luminance signal

4 In the <Metal Mode> group, select the type of metallic gloss.

Gold: Give a gold gloss to the input video.
Silver: Give a silver gloss to the input video.
Rainbow: Give a rainbow color gloss to the input video.
Variable: Give a metallic gloss to the input video in any color. You can set the following parameters.

No.	Parameter	Adjustment
2	Saturation	Saturation
3	Hue	Hue

To mask the Metal effect with a selected pattern
Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Dim and Fade Settings

Applying the Dim effect

1 Open the DME >Enhanced Video Modify >Dim & Fade menu (4173).

2 Press [Dim], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Start	Point where dimming starts (dim start point)
2	Gain	Degree of dimming

4 Press [Flat Color] and set the parameters for the color of the rear of the picture.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Applying the Fade effect

1 Open the DME >Enhanced Video Modify >Dim & Fade menu (4173).

2 Press [Fade], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Start	Point where fading starts (fade start point)
2	Gain	Degree of fading

Glow Settings

Applying the Glow effect

1 Open the DME >Enhanced Video Modify >Glow menu (4174).

2 Press [Glow], turning it on.

Note

The key border function and glow function cannot be enabled at the same time. The most recently set function is enabled.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Clip	Reference level for highlight detection
2	Gain	Gain level for highlights
3	Soft	Softness

4 Press [Matte] and set the glow color.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

To invert the highlight areas

Press [Glow Invert], turning it on.
The highlight and non-highlight areas are inverted.

To mask the Glow effect with a selected pattern

Press [Mask] to open the DME >Video Modify >Mask menu (4127), and set the type of pattern and modifiers *(see page 246)*.

Note

When the signal format is 1080P, masking will cause the edges to become blurred.

Mask Settings

Applying the Mask effect

1 Open the DME >Video Modify >Mask menu (4127).

2 In the <Mask> group, select the effect group you want to apply the mask.

Effect Gp1: Posterization, Solarization, Nega, Sepia, Mono, Contrast, Mosaic, Sketch, Metal
Effect Gp2: Defocus, Blur, Glow

3 Press [Position/Size].

4 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal position
2	V	Vertical position
3	Size	Size of mask
4	Soft	Softness of mask
5	Pattern	Pattern number a)

a) Pattern numbers 21, 24, and 304

5 To invert the mask source, press [Invert], turning it on.

6 Set the modifiers for the mask pattern as required.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) When a minus value is specified, the picture is extended in the vertical direction. When a plus value is specified, the picture is extended in the horizontal direction.

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) –1.00 is one rotation in the counterclockwise direction. +1.00 is one rotation in the clockwise direction. 0.00 is no rotation.

When selecting [Speed] in the <Rotation> group and rotating the pattern at a constant speed

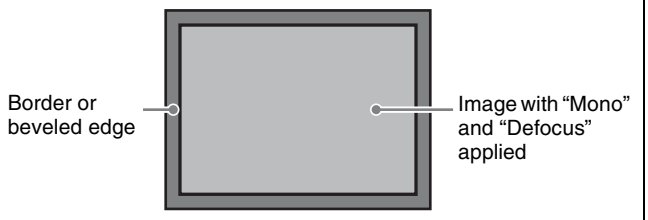
No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern a)

a) –100.00 is four rotations per second in counterclockwise direction. +100.00 is four rotations per second in clockwise direction. 0.00 is in stationary state.

Notes on applying a mask effect with a DME

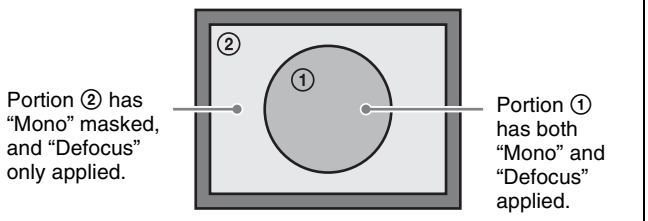
If [Effect Gp1] and [Effect Gp2] are simultaneously enabled in the <Mask> group of the DME >Video Modify >Mask menu (4127), then the border or beveled edge is also masked.
The following describes masking using a round pattern as an example.

Image 1: Image before applying mask



⬇

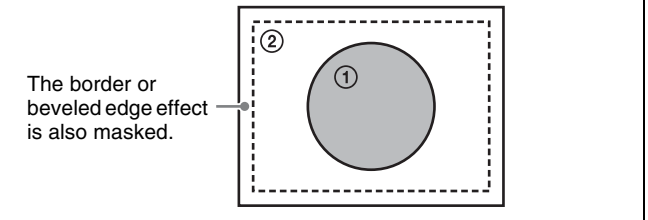
Image 2: State with [Effect Gp1] only enabled



⬇

If [Effect Gp2] is enabled from image 2, then the mask should be applied to portion ② only, but in fact the border or beveled edge is also masked.

Image 3: State with [Effect Gp1] and [Effect Gp2] enabled



Freeze Settings

The following types of effect are available to freeze the input video.

Hard Freeze: Freezes the input video and pauses at an arbitrary position.

Time Strobe: Freezes the input video and pauses at specified intervals and duration.

Film: Frame advance effect like in movie films. You can specify the frame advance rate.

Freezing using Hard Freeze

1 Open the DME >Freeze >Freeze menu (4131).

2 In the <Freeze Timing> group, select the freeze timing.

Frame: Freeze the signal using frame units.
Field1: Freeze the first field of the signal.

Note

When the signal format is 3840×2160P 2SI, 1080P, 1080PsF, or 720P, the freeze timing cannot be specified.

3 In the <Freeze> group, press [Hard Freeze], turning it on.

Freezing using Time Strobe

1 Open the DME >Freeze >Freeze menu (4131).

2 In the <Freeze Timing> group, select the freeze timing.

Frame: Freeze the signal using frame units.
Field1: Freeze the first field of the signal.

Note

When the signal format is 3840×2160P 2SI, 1080P, 1080PsF, or 720P, the freeze timing cannot be specified.

3 In the <Freeze> group, press [Time Strobe], turning it on.

4 Set the following parameters.

No.	Parameter	Adjustment
1	Duration	Freeze interval
2	Live	Proportion of time between frozen images for inserting live video

Freezing using Film

Note

When the signal format is 1080PsF or 720P, [Film] cannot be selected.

1 Open the DME >Freeze >Freeze menu (4131).

2 In the <Freeze> group, press [Film], turning it on.

3 Set the following parameter.

No.	Parameter	Adjustment
1	Film	Rate of film frame advance

Applying Special Effects (Nonlinear Effect Settings)

You can add a variety of effects that change the shape of the image as a whole as nonlinear effects.

Non-Linear effect setting menu

1 Open the DME >Non Linear/Corner Pin >Non Linear menu (4141).

2 Press a button for the desired effect to select it and open the setting menu.

3 Configure settings for the selected effect.

Notes

- It is not possible to apply two or more nonlinear effects at the same time. Enabling an effect automatically disables the previously enabled effect.
- The Flex Shadow function cannot be enabled when the Page Turn, Roll, Cylinder, or Sphere nonlinear effect is enabled.
- There may be differences in the nonlinear effects depending on the board used (XKS-8470 or XKS-8475).

To disable an effect

Press the button for the effect name, turning it off, in the corresponding effect setting menu.
Or, in the Non Linear menu (4141), press [OFF] in the lower right of the display.

Wave Settings

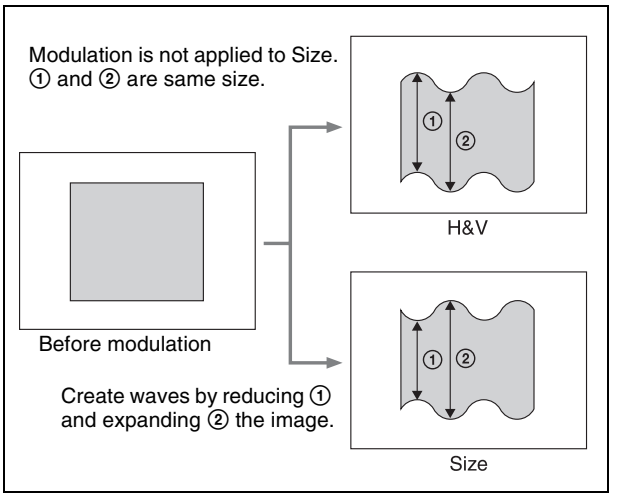
There are two modes: H&V and Size. You can set the size and frequency of the waves, the waveform, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

Applying the Wave effect

1 In the <Mode> group of the Non Linear >Wave menu (4141.1), select the wave modulation mode.

H&V: Modulate vertically and horizontally without changing the size of the image. This mode allows waves to be created in both the vertical and horizontal directions at the same time.

Size: Create waves by reducing and expanding the image. This mode allows waves to be created in one direction only.



2 Set the following parameters, according to the selected modulation mode.

When [H&V] is selected

Parameter group [1/2]

No.	Parameter	Adjustment
1	Amp H	Amplitude of wave in horizontal direction
2	Freq H	Frequency of wave in horizontal direction
3	Offset H [a)]	Phase shift direction and offset of wave in horizontal direction
4	Speed H [b)]	Direction of travel and speed of wave in horizontal direction
5	Slant	Slant of wave

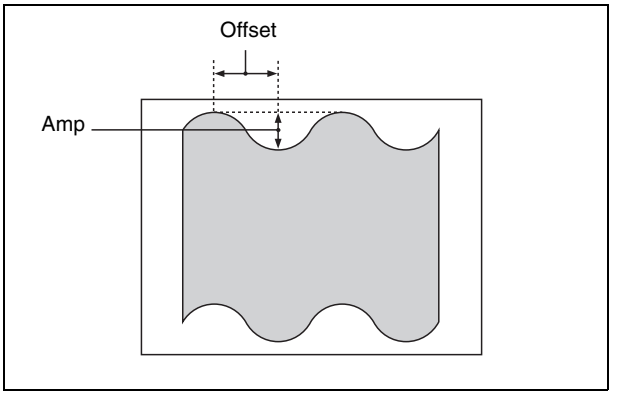
Parameter group [2/2]

No.	Parameter	Adjustment
1	Amp V	Amplitude of wave in vertical direction
2	Freq V	Frequency of wave in vertical direction
3	Offset V [a)]	Phase shift direction and offset of wave in vertical direction
4	Speed V [b)]	Direction of travel and speed of wave in vertical direction
5	Slant	Slant of wave

When [Size] is selected

No.	Parameter	Adjustment
1	Amp H	Amplitude of wave
2	Freq H	Frequency of wave
3	Offset H [a)]	Phase shift direction and offset of wave in horizontal direction
4	Speed H [b)]	Direction of travel and speed of wave
5	Slant	Slant of wave

a) Set when [Lock] is enabled.
b) Set when [Lock] is disabled.



To stop the wave

Press [Lock], turning it on.
The wave alternately stops and starts each time the button is pressed.

To select the waveform

1 Press [Form].

2 Set the following parameters.

When [H&V] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Form H	Type of waveform in horizontal direction [a)]
2	Form V	Type of waveform in vertical direction [a)]

When [Size] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Form H	Type of waveform [a)]

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabolic wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave
5 (CIRCLE): Circular wave
6 (CUBIC): Cubic curve wave

To randomize the modulated waveform

1 Press [Random], turning it on.

2 Set the following parameters.

When [H&V] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Random H	Degree of randomness in horizontal waveform modulation
2	Random V	Degree of randomness in vertical waveform modulation
3	Random All	Degree of randomness in both vertical and horizontal directions

When [Size] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Random H	Degree of randomness in waveform modulation

To limit the wave range

1 Press [Range], turning it on.

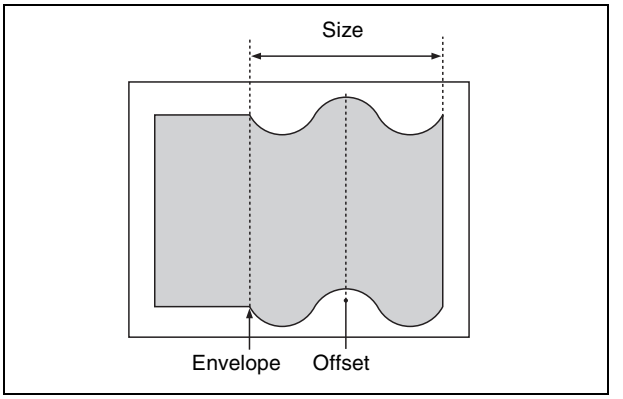
2 Set the following parameters.

When [H&V] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Size H	Level of horizontal wave modulation
2	Offset H	Center point of horizontal modulation range
3	Size V	Level of vertical wave modulation
4	Offset V	Center point of vertical modulation range

When [Size] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Size H	Level of wave modulation
2	Offset H	Center point of modulation range



To smooth the range envelope when the wave range is limited

1 Press [Range Envelope], turning it on.

2 Set the following parameters.

When [H&V] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Envelope H	Smoothness of envelope in horizontal direction
2	Envelope V	Smoothness of envelope in vertical direction

When [Size] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Envelope H	Smoothness of envelope

To reverse the wave range

To reverse the horizontal wave range set with [Range], press [Range Rev H], turning it on.
To reverse the vertical wave range set with [Range], press [Range Rev V], turning it on.

Mosaic Glass Settings

There are two modes: H&V and Size. You can set the size and frequency of waves in the image, the waveform, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

Applying the Mosaic Glass effect

Open the Non Linear >Mosaic Glass menu (4141.2).
The items and parameters displayed in the Mosaic Glass menu are the same as for the Wave menu *(see page 248)*.

Flag Settings

There are two modes: H&V and Size. You can set the size and frequency of waves in the flag, the waveform, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

Applying the Flag effect

Open the Non Linear >Flag menu (4141.3).
The items and parameters displayed in the Flag menu are the same as for the Wave menu *(see page 248)*.

Twist Settings

You can twist the image in the horizontal or vertical direction.
You can set the size and frequency of waves in the image, the waveform, the amount of wave movement, and other parameters.

Applying the Twist effect

In the Non Linear >Twist menu (4141.4), set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	Amp V	Amplitude of twist in vertical direction
2	Freq V	Frequency of twist in vertical direction
3	Offset V a)	Phase shift offset of twist in vertical direction
4	Speed V b)	Speed and direction of twist movement in vertical direction
5	Slant	Slant of twist

Parameter group [2/2]

No.	Parameter	Adjustment
1	Amp H	Amplitude of twist in horizontal direction
3	Offset H	Phase shift offset of twist in horizontal direction
5	Slant	Slant of twist

a) Set when [Lock] is enabled.
b) Set when [Lock] is disabled.

To stop the wave

Press [Lock], turning it on.
The wave alternately stops and starts each time the button is pressed.

To select the waveform

Press [Form] and set the following parameters.

No.	Parameter	Adjustment
1	Form H	Type of waveform in horizontal direction a)
2	Form V	Type of waveform in vertical direction a)

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabolic wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave
5 (CIRCLE): Circular wave
6 (CUBIC): Cubic curve wave

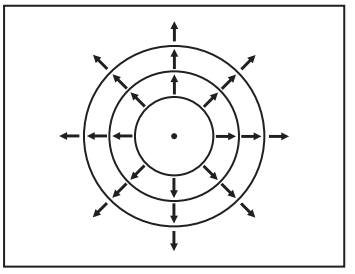
Ripple Settings

There are four modes: Radial, Angular, Both, and Shape. The direction of modulation differs depending on the mode. You can set the size and frequency of the ripples, their direction and speed, their center point, and other parameters. In Shape mode, you can select ripple shapes other than circles (stars, etc.).

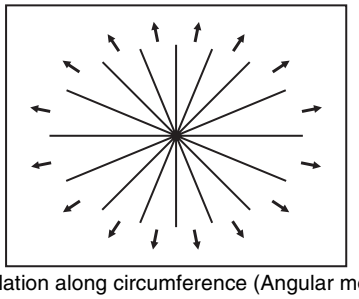
Applying the Ripple effect

1 In the <Mode> group of the Non Linear >Ripple menu (4141.5), select the ripple modulation mode.

Radial: Points on radii of the same length from the center of the ripples behave in the same way.
Angular: Points at the same angle from the center of the ripples behave in the same way.
Both: Radial and Angular ripples are applied simultaneously.
Shape: The ripples can have shapes such as stars or hearts, in addition to circles.



Modulation along radii (Radial mode)



Modulation along circumference (Angular mode)

2 Set the following parameters, according to the selected modulation mode.

When [Radial] is selected

No.	Parameter	Adjustment
1	Amp R	Amplitude of ripple along radius
2	Freq R	Frequency of ripple along radius
3	Offset R [a]	Phase shift direction and offset of ripple along radius
4	Speed R [b]	Direction of travel and speed of ripple along radius
5	Amp A	Amplitude of ripple along circumference

When [Angular] is selected

No.	Parameter	Adjustment
1	Amp A	Amplitude of ripple along circumference
2	Freq A	Frequency of ripple along circumference
3	Offset A [a]	Phase shift direction and offset of ripple along circumference
4	Speed A [b]	Direction of travel and speed of ripple along circumference
5	Amp R	Amplitude of ripple along radius

When [Both] is selected

Parameter group [1/2]

No.	Parameter	Adjustment
1	Amp R	Amplitude of ripple along radius
2	Freq R	Frequency of ripple along radius
3	Offset R [a]	Phase shift direction and offset of ripple along radius
4	Speed R [b]	Direction of travel and speed of ripple along radius

Parameter group [2/2]

No.	Parameter	Adjustment
1	Amp A	Amplitude of ripple along circumference
2	Freq A	Frequency of ripple along circumference
3	Offset A [a]	Phase shift direction and offset of ripple along circumference
4	Speed A [b]	Direction of travel and speed of ripple along circumference

When [Shape] is selected

Parameter group [1/2]

No.	Parameter	Adjustment
1	Amp R	Amplitude of ripple
2	Freq R	Frequency of ripple
3	Offset R [a]	Phase shift direction and offset of ripple
4	Speed R [b]	Direction of travel and speed of ripple
5	Shape	Shape of ripple [c]

Parameter group [2/2]

No.	Parameter	Adjustment
1	Aspect	Aspect ratio of ripple
2	Angle	Angle of ripple

a) Set when [Lock] is enabled.
b) Set when [Lock] is disabled.
c) 1 (Circle): Circular shape
2 (Rectangle): Rectangular shape
3 (Star): Star shape
4 (Heart): Heart shape

To limit the direction in which modulation is applied

Press [Plus Only], turning it on.
You can limit the direction in which modulation is applied (the direction in which the image expands) to the plus direction only.

To set the ripple center position

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Ripple center point in horizontal direction
2	V	Ripple center point in vertical direction

To limit the ripple range

1 Press [Range], turning it on.

2 Set the following parameters.

When [Radial] or [Shape] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Size R	Modulation level of ripple along radius
2	Offset R	Center of modulation range along radius

When [Angular] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Size A	Modulation level of ripple along circumference
2	Offset A	Center of modulation range along circumference

When [Both] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Size R	Modulation level of ripple along radius
2	Offset R	Center of modulation range along radius
3	Size A	Modulation level of ripple along circumference
4	Offset A	Center of modulation range along circumference

To reverse the ripple range

When [Radial], [Both], or [Shape] is selected in the <Mode> group, press [Range Rev R], turning it on.
When [Angular] or [Both] is selected in the <Mode> group, press [Range Rev A], turning it on.

Other settings

You can configure [Lock], [Form], [Random], and [Range Envelope].
The operation is the same as [Lock], [Form], [Random], and [Range Envelope] in the Wave menu (4141.1).

For details, see "Wave Settings" (page 248).

Rings Settings

You can set the degree of transition, the degree of randomness in the distance moved by each block, the amount of movement, the width of the partitions, the degree of randomness in partition width, the center point, the starting angle, and other parameters.

To apply the Rings effect

1 Open the Non Linear >Rings menu (4141.7).

2 To make transition settings, press [Transition] and set the following parameters.

No.	Parameter	Adjustment
1	Transition	Degree of transition
2	Random	Degree of randomness in distance moved by each block
3	Spiral	Amount of movement toward circumference accompanying transition

3 To set the partition method, press [Partition] and set the following parameters.

No.	Parameter	Adjustment
1	Width	Width of partition
2	Random	Degree of randomness in partition width
3	Angle	Starting angle of effect

4 To set the ring center position, press [Position] and set the following parameters.

No.	Parameter	Adjustment
1	H	Center point in horizontal direction
2	V	Center point in vertical direction

5 To partition into pixels, press [Pixel], turning it on, and set the following parameters.

No.	Parameter	Adjustment
1	Density	Degree to which image disappears around periphery

No.	Parameter	Adjustment
2	Random	Degree of jaggedness at block edges

Broken Glass Settings

You can set the degree of transition, the degree of randomness in the distance moved by each block, the amount of movement, the width of the partitions, the degree of randomness in partition width, the center point, the starting angle, and other parameters.
You can also fix the direction in which shards scatter.

To apply the Broken Glass effect

Open the Non Linear >Broken Glass menu (4141.8).
The items and parameters displayed in the Broken Glass menu, excluding [Direction], are the same as for the Rings menu *(see page 252)*.

To fix the direction in which shards scatter

Press [Direction], turning it on.

Flying Bar Settings

You can set the degree of transition, the degree of randomness in the distance moved by each block, the direction of movement, the width of the partitions, the degree of randomness in partition width, the partition angle, and other parameters.

To apply the Flying Bar effect

1 Open the Non Linear >Flying Bars menu (4141.9).

2 To make transition settings, press [Transition] and set the following parameters.

No.	Parameter	Adjustment
1	Transition	Degree of transition
2	Random	Degree of randomness in distance moved by each block
3	Angle	Direction of movement

3 To set the partition method, press [Partition] and set the following parameters.

No.	Parameter	Adjustment
1	Width	Width of partition
2	Random	Degree of randomness in partition width
3	Angle	Partition angle

Blind Settings

You can set the number of rotations by blocks, the perspective, the width and position of blocks, the direction, the center position, and other parameters. There are two modes: Bar and Wedge.

To apply the Blind effect

1 In the <Mode> group of the Non Linear >Blind menu (4141.10), select the mode.

Bar: Bar mode
Wedge: Wedge mode

2 To make transition settings, press [Transition] and set the following parameters.

No.	Parameter	Adjustment
1	Rotation	Number of rotations of the blocks
2	Perspective	Degree of randomness in distance moved by each block

3 To set the partition method, press [Partition] and set the following parameters.

When [Bar] is selected in the <Mode> group

No.	Parameter	Adjustment
1	Width	Width of partition
2	Offset	Degree of randomness in partition width
3	Angle	Starting angle of effect

When [Wedge] is selected in the <Mode> group

No.	Parameter	Adjustment
4	No	Width of blocks
5	Phase	Partition position

To set the wedge center position

When [Wedge] is selected in the <Mode> group, you can set the wedge center position.

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Center point in horizontal direction
2	V	Center point in vertical direction

Split Settings

You can set the degree to which the image is split, the split positions, and other parameters.

Applying the Split effect

1 In the <Mode> group of the Non Linear >Split menu (4141.11), select the separation method.

Single: Leave gaps between splits as-is.
Double: Fill gaps between splits with the same image.

2 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	Transition H	Degree of left and right separation
2	Transition V	Degree of top and bottom separation

Parameter group [2/2]

No.	Parameter	Adjustment
1	Top	Offset of top edge
2	Left	Offset of left edge
3	Right	Offset of right edge
4	Bottom	Offset of bottom edge

To set the split position

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Degree of left and right separation
2	V	Degree of top and bottom separation

Split Slide Settings

You can set the degree of transition, the degree of randomness in the distance moved by each block, the degree of sliding, block width, block angle, and other parameters.

Applying the Split Slide effect

In the Non Linear >Split Slide menu (4141.12), set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
1	Transition H	Degree of transition in horizontal direction
2	Random H	Degree of randomness in distance moved by blocks in horizontal direction
3	Skew H	Degree of skew in horizontal direction
4	Width H	Horizontal width of partition
5	Angle	Angle of partition line

Parameter group [2/2]

No.	Parameter	Adjustment
1	Transition V	Degree of transition in vertical direction
2	Random V	Degree of randomness in distance moved by blocks in vertical direction
3	Skew V	Degree of skew in vertical direction
4	Width V	Vertical width of partition
5	Angle	Angle of partition line

To set the partition position

1 Press [Position].

2 Set the following parameters.

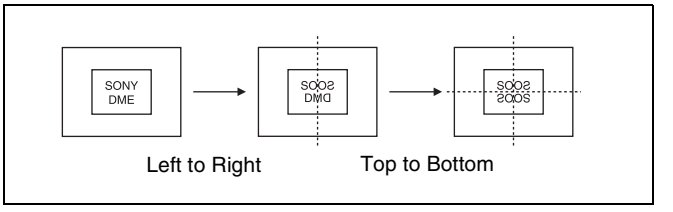
No.	Parameter	Adjustment
1	H	Horizontal partition position
2	V	Vertical partition position

Mirror Settings

You can create an image reflected in the directions left to right, right to left, bottom to top, top to bottom, or any combination of directions. You can also set the position of the border between the original and reflections.

Applying the Mirror effect

In the Non Linear >Mirror menu (4141.13), set the reflection method (multiple selection supported).
Left to Right: Reflect left side on right.
Right to Left: Reflect right side on left.
Top to Bottom: Reflect top side on bottom.
Bottom to Top: Reflect bottom side on top.



To set the position of the border between the original and reflection

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal border position
2	V	Vertical border position

Multi Mirror Settings

You can set the width of the original, the center position of the original, the offset of the image with fixed mirrors, the direction of the mirrors, and other parameters.

Applying the Multi Mirror effect

In the Non Linear >Multi Mirror menu (4141.14), set the following parameters.

No.	Parameter	Adjustment
1	Interval H	Horizontal distance between mirrors (original width)
2	Offset H	Horizontal offset of image with fixed mirrors
3	Interval V	Vertical distance between mirrors (original width)
4	Offset V	Vertical offset of image with fixed mirrors
5	Angle	Mirror angle

To set the center position of original image

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Original image center position in horizontal direction
2	V	Original image center position in vertical direction

Kaleidoscope Settings

You can set the number of blocks, the partition reference point and angle, horizontal and vertical offsets, a reflection position, and other parameters.

Applying the Kaleidoscope effect

In the Non Linear >Kaleidoscope menu (4141.15), set the following parameters.

No.	Parameter	Adjustment
1	Number	Number of blocks
2	Phase	Angle of partition reference point
3	Offset H	Horizontal offset
4	Offset V	Vertical offset

To reflect the kaleidoscope image as if in a mirror

To reflect in the horizontal direction, press [Mirror H], turning it on.
To reflect in the vertical direction, press [Mirror V], turning it on.

To set the reflection position

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal reflection position
2	V	Vertical reflection position

To cyclically repeat part of the original and its reflection

Press [Cyclic], turning it on.

Lens Settings

You can set the shape and aspect ratio of the lens, the angle, the magnification ratio, the curvature, the size, the center position, and other parameters.
You can also choose to display only the portion of the image that is seen through the lens.

Applying the Lens effect

1 In the <Mode> group of the Non Linear >Lens menu (4141.16), select the lens shape.

Circle: Circular shape
Rectangle: Rectangular shape
Star: Star shape
Heart: Heart shape
Bar: Bar shape
Cross: Cross shape

2 Set the following parameters, according to the selected lens shape.

When [Circle], [Rectangle], [Star], or [Heart] is selected

No.	Parameter	Adjustment
1	Magnify H	Magnification ratio
2	Curve H	Curvature
3	Size H	Size
4	Angle	Slant angle
5	Aspect	Aspect ratio

When [Bar] is selected

No.	Parameter	Adjustment
1	Magnify H	Magnification ratio
2	Curve H	Curvature
3	Size H	Size
4	Angle	Slant angle

When [Cross] is selected

Parameter group [1/2]

No.	Parameter	Adjustment
1	Magnify H	Horizontal magnification ratio
2	Curve H	Horizontal curvature
3	Size H	Horizontal size

Parameter group [2/2]

No.	Parameter	Adjustment
1	Magnify V	Vertical magnification ratio
2	Curve V	Vertical curvature
3	Size V	Vertical size

To make only the lens part visible

Press [Lens Only], turning it on.
The parts of the image outside the lens are removed.

To set the lens center position

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Lens center position in horizontal direction
2	V [a)]	Lens center position in vertical direction

a) Disabled when [Bar] is selected.

Circle Settings

You can set the size of the circle. You can also make the axis of modulation vertical.

Applying the Circle effect

In the Non Linear >Circle menu (4141.17), set the following parameter.

No.	Parameter	Adjustment
1	Radius	Size of circle

To make the axis of modulation vertical

Press [Mod V], turning it on.
The axis of modulation when modulating to a circle becomes vertical.

Panorama Settings

You can set the horizontal and vertical curvature, and the curve center position.

Applying the Panorama effect

In the Non Linear >Panorama menu (4141.18), set the following parameters.

No.	Parameter	Adjustment
1	Curve H	Horizontal curvature
2	Curve V	Vertical curvature
3	Position H	Horizontal curve center position
4	Position V	Vertical curve center position

Page Turn Settings

There are four modes: H&V, H, V, and Off. You can select the turn position, the radius of the turned portion, the amount and angle of turning, and the input video for the front and back pages.

Applying the Page Turn effect

1 In the <Split Mode> group of the Non Linear >Page Turn menu (4141.19), select the partition method.

H&V: The image turns as it is split from the center into 4 parts: left, right, upper, lower.
H: The image turns as it is split from the center into 2 parts: left, right.
V: The image turns as it is split from the center into 2 parts: upper, lower.
When nothing is selected (Off): There are no splits and the image turns from the edge.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Radius	Radius of turn part
2	Offset	Amount of turn
3	Angle	Angle of turn

To set the input signal for the back page

1 In the <Back Video> group, select the signal input for the back page.

Self: Use the same signal as the front page.
Flat: Use a single color.
Hue Rotation: Gradually vary the hue.
2nd Ch: Use the 2nd channel video signal.
To select 2nd Ch, you must select the DME for the second channel beforehand.

For details, see "DME Effects for Keys" (page 121) and "DME Effects for Keys" (page 127).

2 Set the following parameters, according to the selected input signal.

When [Flat] is selected

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

When [Hue Rotation] is selected

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Speed	Speed at which the hue changes

Note

If Page Turn is used on one channel when the signal format is 3840×2160P 2SI or 1080P (for example, when the input is a title), parts of the back page other than the title appear as black.

Roll Settings

There are four modes: H&V, H, V, and Off. You can select the turn position, the radius of the turned portion, the amount and angle of turning, and the input video for the front and back pages.

Applying the Roll effect

Open the Non Linear >Roll menu (4141.20).

The items and parameters displayed in the Roll menu are the same as for the Page Turn menu *(see page 256)*.

Note

If Roll is used on one channel when the signal format is 3840×2160P 2SI or 1080P (for example, when the input is a title), parts of the back page other than the title appear as black.

Cylinder Settings

You can set the degree of winding onto the cylinder, the radius, the horizontal position of the wound image, and front and back side output for the image.

Applying the Cylinder effect

In the Non Linear >Cylinder menu (4141.21), set the following parameters.

No.	Parameter	Adjustment
1	Radius	Degree to which image is wound onto the cylinder
2	Min R	Radius of the cylinder
3	Offset	Horizontal position of the image wound onto cylinder

To set the input signal for the back image

The operation is the same as for the <Back Video> group of the Page Turn menu (4141.19) *(see page 257)*.

Note

If Cylinder is used on one channel when the signal format is 1080P (for example, when the input is a title), parts of the rear surface other than the title appear as black.

Sphere Settings

You can set the degree of wrapping onto the sphere, the radius, the horizontal position of the wrapped image, and front and back side output for the image.

Note

You cannot monitor the part of a rotating sphere that corresponds to the axis on the monitor screen.

Applying the Sphere effect

Open the Non Linear >Sphere menu (4141.22).
The items and parameters displayed in the Sphere menu are the same as for the Cylinder menu *(see page 257)*.

Note

If Sphere is used on one channel when the signal format is 1080P (for example, when the input is a title), parts of the rear surface other than the title appear as black.

Explosion Settings

You can set the pattern shape and aspect ratio, the center position, the amount of movement by fragments, the curvature of the transition path, and other parameters.

Applying the Explosion effect

1 In the <Mode> group of the Non Linear >Explosion menu (4141.25), select the explosion shape.

Circle: Circular shape
Rectangle: Rectangular shape
Star: Star shape
Heart: Heart shape
Ellipse: Elliptical shape

2 Set the following parameters, according to the selected shape.

When [Circle] is selected

No.	Parameter	Adjustment
1	Transition	Degree of transition
2	Curve	Degree of image periphery expansion
3	Spiral	Degree of curvature of transition path

When [Rectangle], [Star], [Heart], or [Ellipse] is selected

No.	Parameter	Adjustment
1	Transition	Degree of transition
2	Curve	Degree of image periphery expansion
3	Aspect	Aspect ratio of waveform
4	Angle	Slant of waveform

To turn the fragments into stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Density	Degree to which image disappears
2	Random	Degree of randomness in flying fragments

To set the explosion center point

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Center point in horizontal direction
2	V	Center point in vertical direction

Swirl Settings

You can set the amount of swirl, the swirl region, the amount of rotation, and the swirl center position.

Applying the Swirl effect

In the Non Linear >Swirl menu (4141.26), set the following parameters.

No.	Parameter	Adjustment
1	Transition	Swirl amount
2	Center	Amount of rotation in center of swirl
3	Outer	Amount of rotation outside of Area
4	Area	Region of swirl

To turn the tip of the swirl into stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Density	Degree to which image disappears
2	Random	Trail type and amount of stardust

To set the center position of the swirl

1 Press [Position].

2 Set the following parameters.

No.	Parameter	Adjustment
1	H	Horizontal center position of swirl
2	V	Vertical center position of swirl

Melt Settings

You can set the degree of transition, the degree of extension in the image, the jaggedness of the melting sections, the amplitude and frequency, amount of movement, the speed of the melting sections, the slant of

the borders, the shape of the sections that begin to melt, and other parameters.

Applying the Melt effect

1 In the <Direction> group of the Non Linear >Melt menu (4141.27), select the melt method.

Up: Melting occurs upward.
Down: Melting occurs downward.

2 To make transition settings, press [Transition] and set the following parameters.

No.	Parameter	Adjustment
1	Transition	Degree of transition
2	Curve	Degree to which image stretches
3	Random	Degree of jaggedness at melted part

3 To make wave settings for the melting part, press [Border] and set the following parameters.

No.	Parameter	Adjustment
1	Amp	Amplitude of wave
2	Freq	Frequency of wave
3	Offset [a]	Wave phase shift offset
4	Speed [b]	Direction of travel and speed of wave
5	Slant	Slant of border

a) Set when [Lock] is enabled.
b) Set when [Lock] is disabled.

To stop the wave in the melting part

Press [Lock], turning it on.
The wave alternately stops and starts each time the button is pressed.

To select the shape of the part that starts to melt

1 Press [Form].

2 Set the following parameter.

No.	Parameter	Adjustment
1	Form	Type of waveform [a]

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabolic wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave
5 (CIRCLE): Circular wave
6 (CUBIC): Cubic curve wave
7 (MELT1): Melt waveform 1
8 (MELT2): Melt waveform 2

To turn the melting part into stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Density	Degree to which image disappears
2	Random	Degree to which pixel positions become more randomized further from the center

Character Trail Settings

You can set the effect starting position, the degree of expansion, the slant angle of the effect region, and trail direction, the degree to which the image disappears, the trail type and amount of stardust, and other parameters.

Applying the Character Trail effect

In the Non Linear >Character Trail menu (4141.28), set the following parameters.

No.	Parameter	Adjustment
1	Transition	Position where effect starts
2	Expand	Degree of expansion
3	Trans Angle	Angle of slanting in effect region
4	Trail Angle	Direction of trail

To turn the tip of the trail into stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Density	Degree to which image disappears
2	Random	Trail type and amount of stardust

Applying Special Effects (Lighting/Recursive Effects)

Lighting Settings

You can specify the intensity and color of the light and the lighting pattern. The following lighting patterns are available:
Plane: Illumination of the entire screen.
Bar: Bar illumination. You can specify the width and angle of the bar, and its softness.
Preset: Lighting pattern suitable for nonlinear effects.

When [Bar] is selected, the following modes can be selected.
Normal: Emphasizes the bar highlight area.
Specular: Creates an effect like light striking a surface with metallic reflections.
Mat: Creates an effect like light striking paper, cloth, or another diffusively reflective surface.

Note

When the signal format is 3840×2160P 2SI or 1080P and the following nonlinear effects are used on one channel, the [Preset] setting of the lighting pattern is disabled.
Page Turn, Roll, Cylinder, Sphere

Applying the Lighting effect

1 Open the DME >Light/Trail >Lighting menu (4151).

2 Press [Lighting], turning it on.

3 In the <Light Pattern> group, select the lighting pattern (Plane, Bar or Preset).

4 Set the following parameters, according to the selected pattern.

You can make the Lighting effect more effective by adjusting the [Total Ambient] parameter to lower the brightness of the entire image.
The [Total Ambient] setting is common to the Spotlighting function.

When [Plane] is selected

No.	Parameter	Adjustment
1	Light	Intensity of light in highlight area
5	Total Ambient	Brightness of whole image

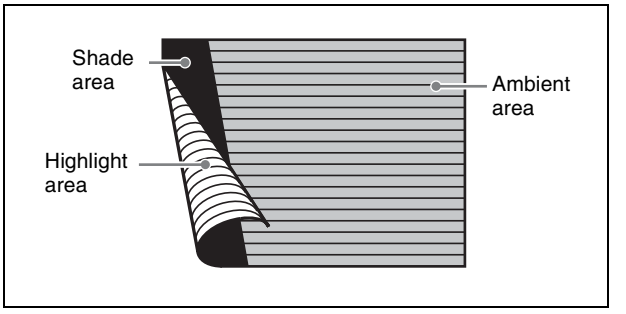
When [Bar] is selected

No.	Parameter	Adjustment
1	Light	Intensity of light in highlight area
2	Ambient	Intensity of light in ambient area
5	Total Ambient	Brightness of whole image

When [Preset] is selected

No.	Parameter	Adjustment
1	Light	Intensity of light in highlight area
2	Ambient	Intensity of light in ambient area
3	Shade a)	Intensity of light in shade area
5	Total Ambient	Brightness of whole image

a) Setting is available for Page Turn, Roll, Cylinder, and Sphere nonlinear effects.



Setting the bar shape of the highlight area

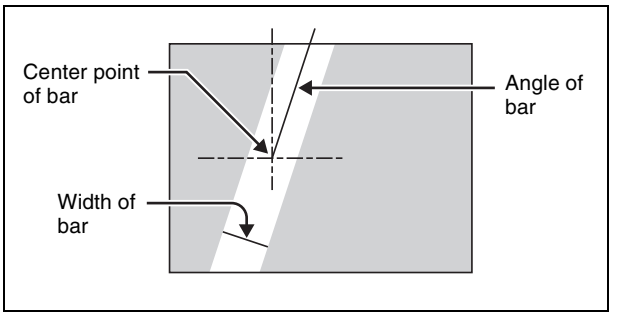
When [Bar] or [Preset] is selected in step **3** of *"Applying the Lighting effect" (page 260)*, set the bar shape.

1 In the DME >Light/Trail >Lighting menu (4151), press [Light Modify].

2 Set the following parameters.

No.	Parameter	Adjustment
1	X	X-value of bar center point
2	Y a)	Y-value of bar center point
3	Angle a)	Angle of bar
4	Width	Width of bar
5	Soft	Softness of boundary

a) There are some nonlinear effects for which this cannot be set.



Setting the color of the light in the highlight area

1 In the DME >Light/Trail >Lighting menu (4151), press [Light Color].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Setting the bar shape of the shade area

When [Preset] is selected in step **3** of *"Applying the Lighting effect" (page 260)*, set the bar shape of the shade area.

1 In the DME >Light/Trail >Lighting menu (4151), press [Shade Modify].

2 Set the following parameters.

No.	Parameter	Adjustment
1	X	X-value of bar center point
4	Width	Width of bar
5	Soft	Softness of boundary

Setting the color of the light in the shade area

1 In the DME >Light/Trail >Lighting menu (4151), press [Shade Color].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Setting the bar mode of the highlight area

When [Bar] is selected in step **3** of *"Applying the Lighting effect" (page 260)*, set the bar mode of the highlight area.

1 In the <Bar Light Mode> of the DME >Light/Trail >Lighting menu (4151), select the bar mode.

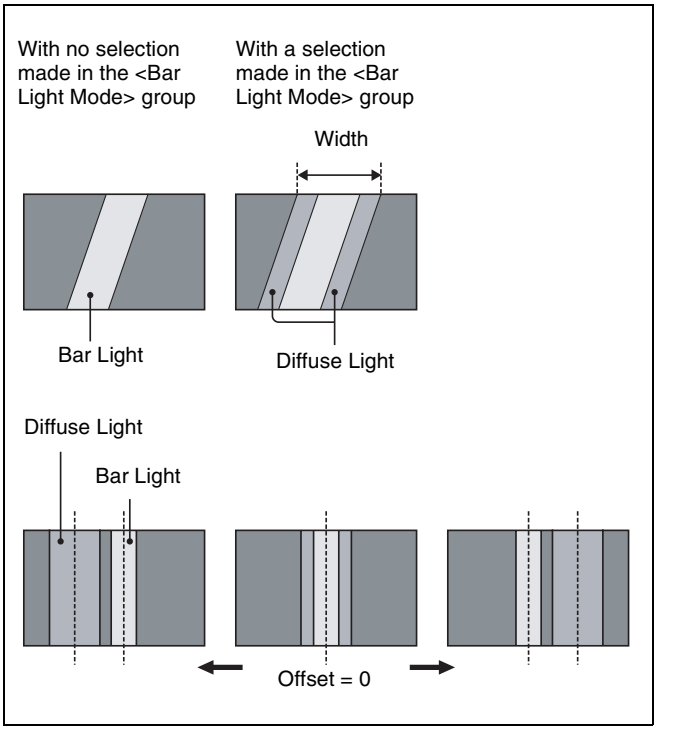
Normal: Emphasizes the bar highlight area.
Specular: Creates an effect like light striking a surface with metallic reflections.
Mat: Creates an effect like light striking paper, cloth, or another diffusively reflective surface.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Intensity	Intensity of diffuse light area
2	Offset	Offset of center of diffuse light area
3	Width	Width of diffuse light area
4	Soft	Softness of diffuse light area

3 When [Normal] or [Mat] is selected in step **1**, press [Bar Diffuse Color] to set the color of the diffuse light area and set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue



Trail Settings

Note

Enabling Trail automatically disables Motion Decay, Keyframe Strobe, or Wind if it is set.

Applying the Trail effect

1 Open the DME >Light/Trail >Trail menu (4152).

2 Press [Trail], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Decay	Amount of afterimage displayed [a]
2	Interval	Freeze interval
3	Live	Proportion of time between frozen images for inserting live video

a) 0.00 represents no afterimage. 100.00 represents no decay in the afterimage.

Selecting the priority between the current image and superimposed trail

In the <Priority> group of the DME >Light/Trail >Trail menu (4152), select the way in which the images are overlaid.
Over: Input image is on top.
Under: Afterimage trail is on top.

Selecting the signal for the afterimage portion

In the <Trail Source> group of the DME >Light/Trail >Trail menu (4152), select the image to insert in the afterimage trail.

Notes

- Only [Mix Color] or [Ext Video] can be used between the Background *(see page 272)*, Flex Shadow *(see page 235)*, Trail, and Wind *(see page 265)* effects. If [Mix Color] or [Ext Video] is selected for one of these effects, the [Mix Color] or [Ext Video] for the other effects is disabled, and [Flat Color] is selected in its place.
- When executing a 4-channel combination, [Mix Color] and [Ext Video] cannot be selected.

Freeze Video: Freeze the input image to use as the afterimage.
Flat Color: Uses a single color matte as the afterimage. You can set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Hue Rotate: Use a color matte whose hue varies slightly with each frame for the trail of the afterimages. You can set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue Speed	Speed at which the hue changes

Mix Color: Insert a mix color signal *(see page 240)* in the afterimage portion.
Ext Video: Insert an external video signal input from Ext In in the afterimage portion.
Rainbow: Use a freeze image with the hue changing every frame in the afterimage portion. The difference from [Hue Rotate] is that many colors appear simultaneously. You can set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue Speed	Speed at which the hue changes

Erasing the afterimages that remain in memory whenever a keyframe is passed

In the DME >Light/Trail >Trail menu (4152), press [Trail Eraser], turning it on.
When the effect passes a keyframe, the afterimage is erased before writing a new afterimage.

Selecting the freeze timing

In the <Trail Freeze Timing> group of the DME >Light/Trail >Trail menu (4152), select the timing for freezing a trail.
Frame: Freeze in frame units.
Field: Freeze in field units.

Note

When the signal format is 3840×2160P 2SI, 1080P, 1080PsF, or 720P, the freeze timing cannot be specified.

Defocusing the afterimage portion (Defocus)

1 In the DME >Light/Trail >Trail menu (4152), press [Defocus], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Defocus V	Degree of defocusing of the video signal
2	Defocus K	Degree of defocusing of the key signal

To turn the afterimage portion into stardust

The afterimage portion becomes stardust, and gradually disappears.

1 In the DME >Light/Trail >Trail menu (4152), press [Dust], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Trail Dust	Amount of the afterimage disappearing as stardust [a]
2	Dust Soft	Timing with which stardust disappears
3	Dust Size	Size of stardust
4	Dust Aspect	Aspect ratio of stardust

a) The way in which the afterimage disappears is affected by both the trail [Decay] and [Trail Dust] parameter adjustments.

Setting a combine process

Select whether to add the Trail effect before or after the combine.

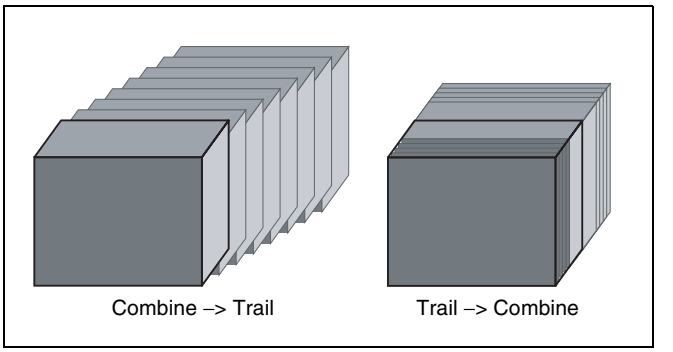
Notes

- When you change the selection in the <Combine Process> group, the afterimages which had been added up to then disappear.
- When you do not combine images, the Trail effect only is applied, regardless of the selection in the <Combine Process> group.

In the <Combine Process> group of the DME >Light/Trail >Trail menu (4152), select one of the following.

Combine –> Trail: Add the Trail effect after the combine. The parameter data for the channel with the lowest number among the channels being combined is enabled.

Trail –> Combine: Add the Trail effect before the combine. Parameters can be set independently for each channel.



Motion Decay Settings

Note

Enabling Motion Decay automatically disables Trail, Keyframe Strobe, or Wind if it is set.

Applying the Motion Decay effect

1 Open the DME >Light/Trail >Motion Decay menu (4153).

2 Press [Motion Decay], turning it on.

3 Set the following parameter.

No.	Parameter	Adjustment
1	Video Decay	Degree of decay of the video signal [a]

a) 0.00 represents no afterimage. 100.00 represents no decay in the afterimage.

4 In the <Decay Mix Mode> group, select the way in which the video signal is blurred.

Soft: Mix the live image and the afterimage.
Hard: Show the brighter parts of the live image and afterimage.

Erasing the afterimages that remain in memory whenever a keyframe is passed

In the DME >Light/Trail >Motion Decay menu (4153), press [Decay Eraser], turning it on.
When the effect passes a keyframe, the afterimage is erased before writing a new afterimage.

Selecting the freeze timing

In the <Decay Freeze Timing> group of the DME >Light/Trail >Motion Decay menu (4153), select the timing for freezing motion decay.
Frame: Freeze in frame units.

Field: Freeze in field units.

Note

When the signal format is 3840×2160P 2SI, 1080P, 1080PsF, or 720P, the freeze timing cannot be specified.

To turn the afterimage portion into stardust

The afterimage portion becomes stardust, and gradually disappears.

1 In the DME >Light/Trail >Motion Decay menu (4153), press [Dust], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Decay Dust	Amount of the afterimage disappearing as stardust a)
2	Dust Soft	Timing with which stardust disappears
3	Dust Size	Size of stardust
4	Dust Aspect	Aspect ratio of stardust

a) The way in which the afterimage disappears is affected by both the motion decay [Video Decay] and [Decay Dust] parameter adjustments.

Keyframe Strobe Settings

Note

Enabling Keyframe Strobe automatically disables Trail, Motion Decay, or Wind if it is set.

Applying the Keyframe Strobe effect

1 Open the DME >Light/Trail >KF Strobe menu (4154).

2 Press [KF Strobe], turning it on.

3 Set the following parameter.

No.	Parameter	Adjustment
1	Decay	Degree of decay of the video signal a)

a) 0.00 represents no afterimage. 100.00 represents no decay in the afterimage.

Selecting the overlay priority for movie and still images (video freeze image)

In the <Priority> group of the DME >Light/Trail >KF Strobe menu (4154), select the way in which the images are overlaid.

Over: The movie is on top, and the still image is underneath.

Under: The movie is underneath, and the still image is on top.

Mix: The movie and still images are mixed. You can set the following parameter.

No.	Parameter	Adjustment
1	Mix	Mix amount of the still image with respect to the movie a)

a) The 0.00 setting is the same as [Over]. 100.00 is the same as [Under].

Selecting the freeze timing

In the <KF Freeze Timing> group of the DME >Light/Trail >KF Strobe menu (4154), select the timing for freezing a keyframe strobe.

Frame: Freeze in frame units.

Field: Freeze in field units.

Note

When the signal format is 3840×2160P 2SI, 1080P, 1080PsF, or 720P, the freeze timing cannot be specified.

Erasing the afterimages that remain in memory whenever a keyframe is passed

In the DME >Light/Trail >KF Strobe menu (4154), press [KF Strobe Eraser], turning it on.

When the effect passes a keyframe, the afterimage is erased before writing a new afterimage.

To turn the afterimage portion into stardust

The afterimage portion becomes stardust, and gradually disappears.

1 In the DME >Light/Trail >KF Strobe menu (4154), press [Dust], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	KF Strobe Dust	Amount of the afterimage disappearing as stardust a)
2	Dust Soft	Timing with which stardust disappears
3	Dust Size	Size of stardust

No.	Parameter	Adjustment
4	Dust Aspect	Aspect ratio of stardust

a) The way in which the afterimage disappears is affected by both the keyframe strobe [Decay] and [KF Strobe Dust] parameter adjustments.

Disabling the afterimage trail

In the DME >Light/Trail >KF Strobe menu (4154), press [KF Strobe Disable], turning it on.
If this function is enabled when creating a keyframe, even as the effect passes a keyframe, no afterimage remains.

Setting a combine process

Select whether to add the Keyframe Strobe effect before or after the combine.

Notes

- When you change the selection in the <Combine Process> group, the afterimages which had been added up to then disappear.
- When you do not combine images, the Keyframe Strobe effect only is applied, regardless of the selection in the <Combine Process> group.

In the <Combine Process> group of the DME >Light/Trail >KF Strobe menu (4154), select one of the following.

Combine –> KF STRB: Add the Keyframe Strobe effect after the combine. The parameter data for the channel with the lowest number among the channels being combined is enabled.

KF STRB –> Combine: Add the Keyframe Strobe effect before the combine. Parameters can be set independently for each channel.

Wind Settings

Notes

- Enabling Wind automatically disables Trail, Motion Decay, or Keyframe Strobe if it is set.
- There are differences in the Wind effect between the XKS-8470 and XKS-8475.

Applying the Wind effect

1 Open the DME >Light/Trail >Wind menu (4155).

2 Press [Wind], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Decay	Amount of afterimage displayed [a)]
2	Shift H	Extension in the horizontal direction
3	Shift V	Extension in the vertical direction

a) 0.00 represents no afterimage. 100.00 represents no decay in the afterimage.

Selecting the signal for the afterimage portion

In the <Wind Source> group of the DME >Light/Trail >Wind menu (4155), select the image to insert in the afterimage trail.

Notes

- Only [Mix Color] or [Ext Video] can be used between the Background *(see page 272)*, Flex Shadow *(see page 235)*, Trail *(see page 262)*, and Wind effects. If [Mix Color] or [Ext Video] is selected for one of these effects, the [Mix Color] or [Ext Video] for the other effects is disabled, and [Flat Color] is selected in its place.
- When executing a 4-channel combination, [Mix Color] and [Ext Video] cannot be selected.

Freeze Video: Freeze the input image to use as the afterimage.

Flat Color: Uses a single color matte as the afterimage. You can set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Hue Rotate: Use a color matte whose hue varies slightly with each frame for the trail of the afterimages. You can set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue Speed	Speed at which the hue changes

Mix Color: Insert a mix color signal *(see page 240)* in the afterimage portion.

Ext Video: Insert an external video signal input from Ext In in the afterimage portion.

Rainbow: Use a freeze image with the hue changing every frame in the afterimage portion. The difference from [Hue Rotate] is that many colors appear simultaneously. You can set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue Speed	Speed at which the hue changes

Modulating the afterimage portion (Modulation)

1 In the DME >Light/Trail >Wind menu (4155), press [Modulation], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Amp H	Horizontal amplitude of the wave
2	Freq H	Frequency of wave in horizontal direction
3	Amp V	Vertical amplitude of the wave
4	Freq V	Frequency of wave in vertical direction

Other settings

In the DME >Light/Trail >Wind menu (4155), you can set <Priority> group, <Wind Freeze Timing> group, <Combine Process> group, [Wind Eraser], [Defocus], and [Dust] settings.
The operation is the same as <Priority> group, <Trail Freeze Timing> group, <Combine Process> group, [Trail Eraser], [Defocus], and [Dust] in the Trail menu (4152).

For details, see "Trail Settings" (page 262).

Spotlighting Settings

You can set up to three light sources (lights 1 to 3).

Note

When the global effect combiner function is enabled, the settings of the lowest-numbered channel selected for the combiner are enabled.

Image surface settings

The following adjustments can be made to the image surface struck by the light.
- Adjusting the brightness of the whole image
- Selecting the image surface effect
- Test sphere function
- Adjusting the roughness of the image surface
- Coordinate axis on surface of image

Selecting the image surface effect

Flat: The image surface is unchanged, causing the selected light source to appear as the effect.
Non Linear: Spotlighting effect is applied to an area to which a DME nonlinear effect is applied.

Test sphere function

A test sphere is a translucent sphere virtually embedded in the center of the input picture to provide an intuitive way for you to check the position and direction of the spotlight. When you change the position or direction of a light source, the side of the sphere closest to the light source grows brighter.

For details, see "Relation between test spheres and parallel light rays" (page 267).

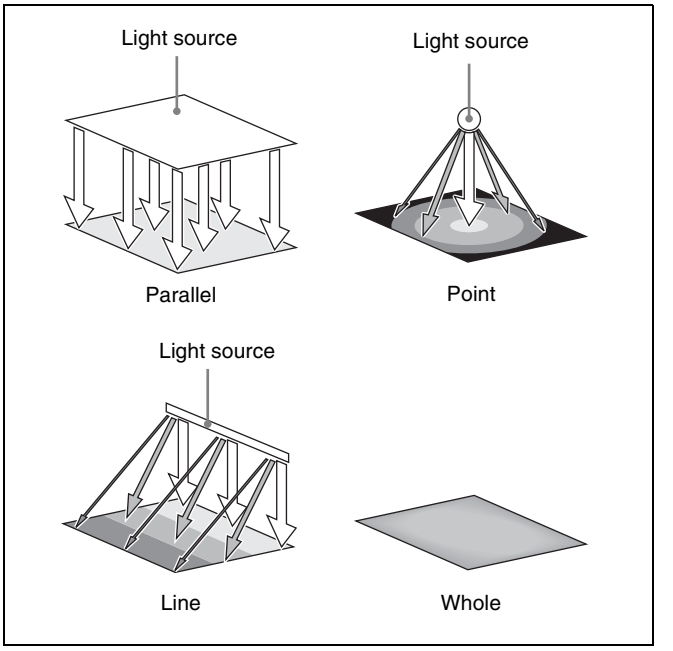
Coordinate axis on surface of image

This sets whether the coordinates of a test sphere on a surface move in conjunction with a DME image.
Move: The test sphere moves together with the DME image.
Fix: The test sphere does not move, even if the DME image moves.

Light source settings

Light source types

The following type of spotlight light sources are available.
Parallel: Parallel light source
Point: Point light source. As the light source is placed further away, the illuminated range becomes wider and the light becomes weaker.
Line: Line light source
Whole: Non-directional light source which illuminates the whole image

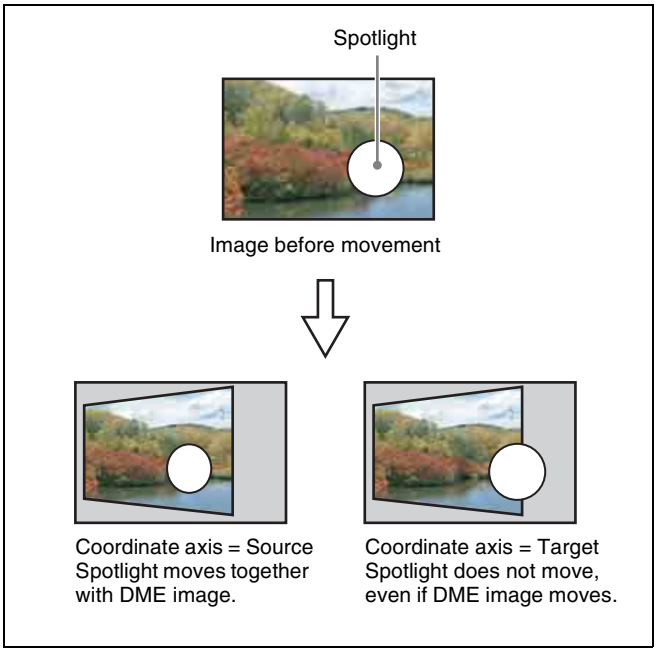


Linking and unlinking image and spotlight

The spotlight can move together with a DME image, or be fixed in place.

Source: Place the light source in source space. The spotlight is linked and moves when the image moves.

Target: Place the light source in target space. The spotlight does not move, even when the image moves.



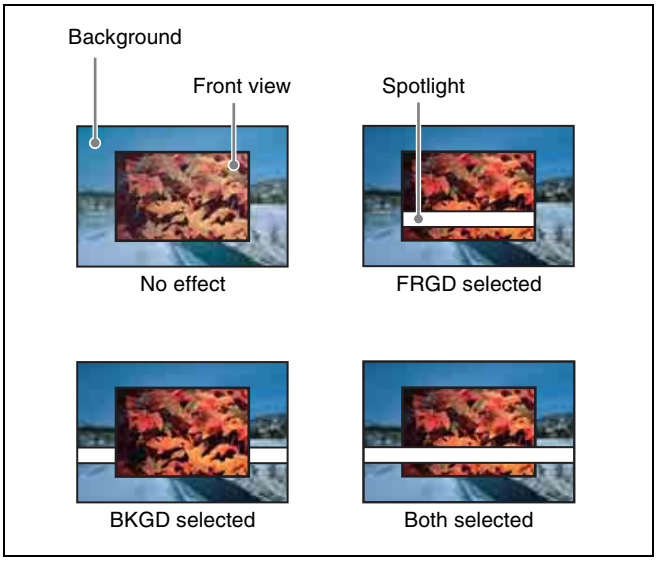
Selecting the illuminated area

You can select the area lit by the spotlight.

FRGD: The light strikes the image foreground.

BKGD: The light strikes the image background.

Both: The light strikes both the image foreground and background.



Surface Flat settings

For the currently selected light source only, you can forcibly make the image surface effect flat.

Lighting shape

Creates the spotlight shape.

- Shape pattern selection

Shape	
 Pattern 1	 Pattern 2

- Set the size, degree of deformation, softness, and rotation angle.

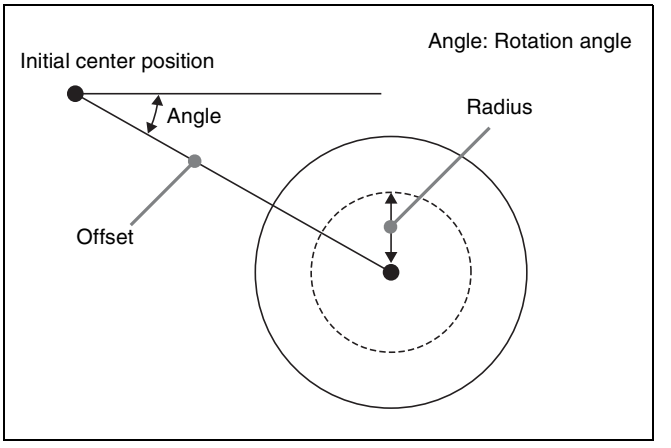
Ring settings

Shines the light with a hole in the middle, like a doughnut. Adjust the following parameters.

Offset: Distance to move the center of the ring from the initial position (the position set when selecting the light source in the <Spot Mode> group).

Radius: Inner side radius of the ring.

Angle: When Offset is set, the rotation angle of the ring around the initial center position.



Fill blending modes

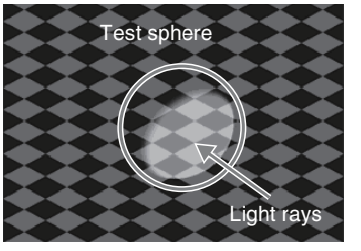
Specifies the way in which the light is blended with the image.

Mix: Lighting as if reflected from a mirror. The light source can be given a color.

Multiply: Lighting as if reflected from a dull surface (diffuse reflection).

Relation between test spheres and parallel light rays

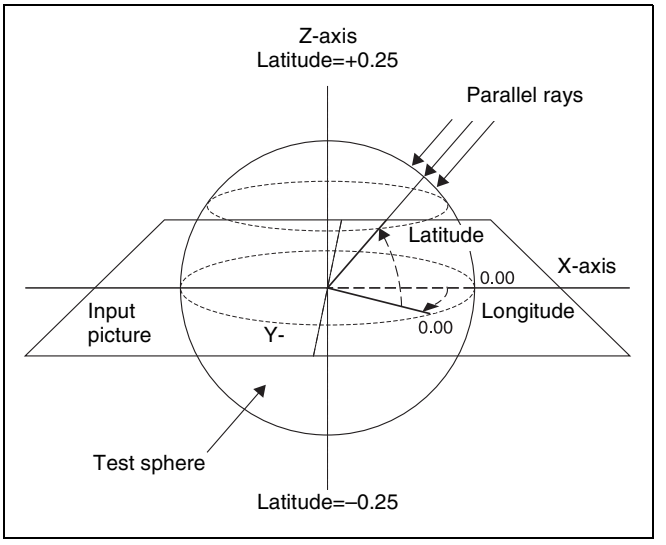
The following figure shows an example of the effect of parallel rays on a test sphere.



The direction of the light is defined by longitude and latitude.

- Longitude: A direction (angle), expressed as a plus value for clockwise rotation in the plus direction with respect to the X axis of the input picture.
- Latitude: Latitude

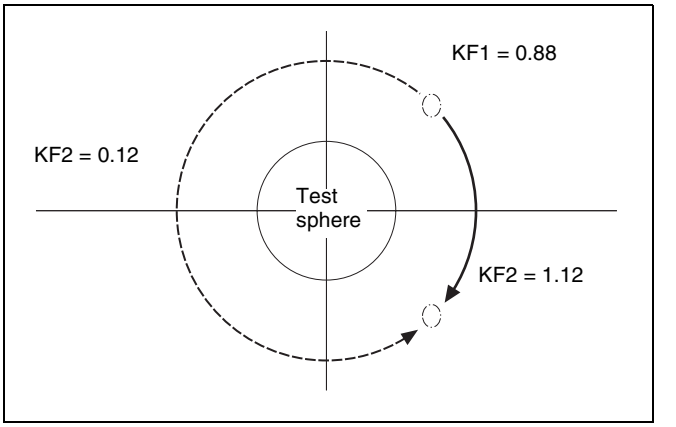
The following figure shows the relationship between the longitude and latitude of parallel rays, input picture, and test sphere.



The measurement unit of direction parameters is the number of rotations, with 360° (1 rotation) expressed as 1.00.
The following relationships apply in the example shown in the figure.

Parameter	Setting	Angle
Longitude	0.12	45°
Latitude	0.12	45°

The fractional part of the setting after the decimal point corresponds to an angle 0° to 360°. If the fractional parts of two setting values are the same, the effect is the same even if the integral parts are different.
The integral part of a setting value is used when moving a light source with keyframes.
For example, when the longitude of a light source rotates in the clockwise direction from 0.88 (315°) to 0.12 (45°), it rotates in the counterclockwise direction (the angle grows smaller) if the above values are used. In this case, the value of the second keyframe can be set to 1.12 (360° + 45°).



Setting the image surface

1 Open the DME >Light/Trail >Spot Lighting menu (4156).

2 Press [Spot Lighting], turning it on.

3 Set the following parameter.

You can make the Spot Lighting effect more effective by adjusting the [Total Ambient] parameter to lower the brightness of the entire image.
The [Total Ambient] setting is common to the Lighting function.

No.	Parameter	Adjustment
1	Total Ambient	Brightness of whole image

4 In the <Surface Select> group, select the state of the surface struck by the light.

Flat: The image surface is unchanged. This causes the selected light source to appear as the effect.
Non Linear: Spotlighting effect is applied to an area to which a DME nonlinear effect is applied.

Note

The Spotlighting [Non Linear] setting is effective for the following nonlinear effects. For other effects, the result is the same as selecting [Flat].
Wave, Mosaic Glass, Flag, Ripple, Lens, Panorama, Page Turn, Roll.

5 When [Non Linear] is selected in step **4**, set the following parameter.

No.	Parameter	Adjustment
5	Amp	Emphasize unevenness [a)]

a) Plus emphasizes bumps in texture, minus emphasizes depressions. 0.00 is a flat surface.

To set a test sphere

1 In the Spot Lighting menu (4156), press [Test Sphere], turning it on.

A test sphere effect appears on the surface of the image.

2 Set the following parameter.

No.	Parameter	Adjustment
5	Amp	Light separation distance [a]

a) Light appears from Z direction. –100.00 indicates light that is furthest away, and +100.00 indicates light that is closest. 0.00 indicates the whole image is lit like a flat effect.

For details about the relationship of test spheres and light sources, see "Relation between test spheres and parallel light rays" (page 267).

3 In the <Surface Axis> group, select one of the following.

Move: The test sphere moves together with the image.
Fix: The test sphere does not move, even if the image moves.

Setting light sources

Up to three light sources (Light 1 to Light 3) for Spotlighting can be set in the menu.
The following three light source menus are available.

Light source	Menu (Page No.)
Light 1	DME >Light/Trail >Spot Lighting >Light 1 (4156.3)
Light 2	DME >Light/Trail >Spot Lighting >Light 2 (4156.5)
Light 3	DME >Light/Trail >Spot Lighting >Light 3 (4156.7)

This section describes setting Light 1 as an example.

1 In the <Spot Lighting Adjust> group of the DME >Light/Trail >Spot Lighting menu (4156), press [Light 1].

The Light 1 menu (4156.3) appears.

2 Press [Light 1], turning it on.

3 Set the following parameters.

You can make the Spot Lighting effect more effective by adjusting the [Total Ambient] parameter to lower the brightness of the entire image.
The [Total Ambient] setting is common to the Lighting function.

No.	Parameter	Adjustment
1	Total Ambient	Brightness of whole image
2	Intensity	Intensity (brightness) of the light source
3	Soft	Softness of the illuminated area

4 In the <Spot Mode> group, select the type of light source *(see page 266)*.

Parallel: Parallel light source The direction can be set.
Point: Point light source The position can be set.
Line: Line light source The position and angle can be set.
Whole: Non-directional light source which illuminates the whole image

5 Set the following parameters, according to the selected light source type.

When [Parallel] is selected

No.	Parameter	Adjustment
1	Longitude	Longitude [a]
2	Latitude	Latitude

When [Point] is selected

No.	Parameter	Adjustment
1	X	Movement in X-axis direction [b]
2	Y	Movement in Y-axis direction [c]
3	Z	Movement in Z-axis direction [d]

When [Line] is selected

No.	Parameter	Adjustment
1	X	Movement in X-axis direction [b]
2	Y	Movement in Y-axis direction [c]
3	Z	Movement in Z-axis direction [d]
4	Longitude	Longitude [a]

a) Minus moves counterclockwise, plus moves clockwise.
b) Minus moves left, plus moves right.
c) Minus moves down, plus moves up.
d) Minus moves forward, plus moves toward the rear.

6 In the <Axis Select> group, select the space in which to place the light source.

Source: Place the light source in source space. The spotlight moves when the image moves.
Target: Place the light source in target space. The spotlight does not move, even when the image moves.

For details about the space in which to place the light source, see "Linking and unlinking image and spotlight" (page 267).

To set a test sphere

1 In the Light 1 menu (4156.3), press [Test Sphere], turning it on.

A test sphere effect appears on the surface of the image.

2 Set the following parameter.

No.	Parameter	Adjustment
5	Amp	Light separation distance [a]

a) Light appears from Z direction. –100.00 indicates light that is furthest away, and +100.00 indicates light that is closest. 0.00 indicates the whole image is lit like a flat effect.

To set the illuminated area

In the <Area Select> group of the Light 1 menu (4156.3), select one of the following.

FRGD: The light strikes the image foreground.
BKGD: The light strikes the image background.
Both: The light strikes both the image foreground and background.

For details about the illuminated area, see "Selecting the illuminated area" (page 267).

Notes

- When [Multiply] is selected in the <Fill Blending Mode> group of the Light Color Adjust menu (4156.4) *(see page 271)*, the lighting effect is not applied to the background, even if [BKGD] or [Both] is selected.
- When [Brilliancy] is set to 100.0 in the <Fill Source> group of the Light Color Adjust menu (4156.4) *(see page 271)*, the lighting effect is not applied to the background, even if [BKGD] or [Both] is selected.
- When the global effect combiner is set to [Mix] or [Depth], the lighting effect is not applied to the background, even if [BKGD] or [Both] is selected.

To set Surface Flat

In the Light 1 menu (4156.3), press [Surface Flat], turning it on.

When [Non Linear] is selected in the <Surface Select> group of the Spot Lighting menu (4156), only the part of the surface being illuminated by light from the currently set light source has the state as if [Flat] had been selected.

To set the shape of the lighting

1 In the Light 1 menu (4156.3), press [Shape], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Shape Ptn	Shape pattern [a]
2	Size	Shape size
3	Deform	Amount of shape deformation [b]
4	Soft	Softness of shape pattern
5	Angle	Angle of shape pattern rotation [c]

a) See *page 267*.
b) 0 is a round shape, and 100 is the shape of the pattern. Smaller values make the pattern more rounded.
c) –1.00 is one rotation in the counterclockwise direction. +1.00 is one rotation in the clockwise direction.

To rotate the shape pattern

1 In the Light 1 menu (4156.3), press [Shape Speed], turning it on.

When [Shape] is selected, the display of the 5th parameter changes.

2 Set the following parameters.

No.	Parameter	Adjustment
5	Speed	Rotation speed and direction [a]

a) –100.00 is four rotations per second in the counterclockwise direction, and +100.00 is four rotations per second in the clockwise direction. 0.00 stops the rotation.

To change the light to a ring shape

Note

When [Parallel] or [Whole] is selected in the <Spot Mode> group, the Ring parameter cannot be set if Shape is disabled.

1 In the Light 1 menu (4156.3), press [Ring].

2 Set the following parameters.

No.	Parameter	Adjustment
1	Offset	Offset from center position (radius)
2	Radius	Radius of ring
3	Angle	Rotation angle of ring [a]

a) –1.00 is one rotation in the counterclockwise direction. +1.00 is one rotation in the clockwise direction.

Note

There is no [Radius] parameter setting when [Line] is selected in the <Spot Mode> group.

To rotate the ring

1 In the Light 1 menu (4156.3), press [Ring Speed], turning it on.

When [Ring] is selected, the display of the 3rd parameter changes.

2 Set the following parameter.

No.	Parameter	Adjustment
3	Speed	Rotation speed and direction [a]

a) –100.00 is four rotations per second in the counterclockwise direction, and +100.00 is four rotations per second in the clockwise direction. 0.00 stops the rotation.

To invert the illuminated area

In the Light 1 menu (4156.3), press [Light Invert], turning it on.

To add color to the light source

1 In the Light 1 menu (4156.3), press [Light Color Adjust].

The Light Color Adjust menu (4156.4) appears.

2 In the <Fill Blending Mode> group, select how the light and image should be blended.

Mix: Lighting as if reflected from a mirror.
Multiply: Light as if reflected from a dull surface (diffuse reflection).

3 When [Mix] is selected, select the fill color in the <Fill Source> group.

Flat Color: A single color matte
Hue Rotation: Color matte with a color that gradually varies

4 Set the following parameters, according to the fill color selection.

When [Flat Color] is selected

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue
4	Brilliancy	Brilliance of surface struck by light [a]

When [Hue Rotation] is selected

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Speed	Speed at which the hue changes [b]
4	Brilliancy	Brilliance of surface struck by light [a]

a) At 100.00, the image beneath the light shines through.
b) –12.00 is a 360° rotation every second in the counterclockwise direction. +12.00 is a 360° rotation every second in the clockwise direction.

Copying or swapping light source settings

You can copy or swap the setting from one light source (Light 1 to Light 3) to another light source.

1 In the Spot Lighting menu (4156), press [Copy/Swap].

The Copy/Swap menu (4156.2) appears.
In the status area, two lists appear. The copy or swap sources are displayed on the left, and the copy or swap destinations are displayed on the right.

2 Select the target data.

3 Press [Copy] to copy, or [Swap] to swap.

To undo a copy or swap

Press [Undo] to return settings to their values before the copy or swap.

Applying Special Effects (Other Effects)

Background Settings

You can add a color to the background or input an external signal to use as the background of the image.

Setting the background

1 Open the DME >Input/Output >Bkgd menu (4161).

2 Press [Bkgd], turning it on.

3 In the <Bkgd Fill> group, select one of the following.

Flat Color: Single color
Mix Color: Mix color signal set in the DME >Edge >Color Mix menu (4117) *(see page 240)*
Ext Video: External video signal input from Ext In

Notes

- Only [Mix Color] or [Ext Video] can be used between the Background, Flex Shadow *(see page 235)*, Trail *(see page 262)*, and Wind *(see page 265)* effects. If [Mix Color] or [Ext Video] is selected for one of these effects, the [Mix Color] or [Ext Video] for the other effects is disabled, and [Flat Color] is selected in its place.
- When executing a 4-channel combination, [Mix Color] and [Ext Video] cannot be selected.

4 When [Flat Color] is selected in step **3**, set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

Separate Sides Settings

This applies different video signals and key signals to the front and back of the image.

Setting Separate Sides

1 Open the DME >Input/Output >Video/Key menu (4162).

2 Press [Separate Side], turning it on.

Separate Sides is enabled. If the video and key signals currently being output to the monitor are the front side, you can select the Front signals. If they are the back side, you can select the Back signals. Video and key signals are selected using the cross-point control blocks of each M/E bank or the PGM/PST bank.

Invert Settings

This effect inverts the input video signal and/or key signal horizontally or vertically. You can make separate settings for the front and back.

Applying the Invert effect

1 Open the DME >Input/Output >Video/Key menu (4162).

2 Select the invert direction in the <Front> group for the front input signal and in the <Back> group for the back input signal.

H Invert: Invert video and key signals horizontally.
V Invert: Invert video and key signals vertically.

Key Density Settings

You can adjust the key density for the key signal input to the DME.

Setting the key density

1 Open the DME >Input/Output >Video/Key menu (4162).

2 Press [Key Density], turning it on.

3 Set the following parameter.

No.	Parameter	Adjustment
1	Key Density	Key density

Key Source Selection

You can select either the key signals received from the switcher or the key signals generated in the DME for application to the front and back of the image.

Selecting the key source

Note

When combined, a key source cannot be selected on the channel with the lowest number. It is fixed to [Ext Key].

1 Open the DME >Input/Output >Video/Key menu (4162).

2 Select the key source in the <Front Key> group for the front input signal and in the <Back Key> group for the back input signal.

Ext Key: Use the key signal sent from the switcher as the key source.
Int Key: Use the full-size DME internal key signal as the key source.
Lum Key: Use the input video luminance signal as the key source.

3 When [Ext Key] or [Lum Key] is selected, set the following parameters.

No.	Parameter	Adjustment
1	Clip	Reference level for key signal generation
2	Gain	Key sensitivity

Notes

- [Ext Key] and [Lum Key] in the <Front Key> group share the [Clip] and [Gain] parameter settings. Similarly, [Ext Key] and [Lum Key] in the <Back Key> group share the [Clip] and [Gain] parameter settings.
- When combined, the [Ext Key] parameter is disabled on the channel with the lowest number.

Interpolation Settings

This specifies the methods used for interpolation processing of input video signals and input key signals.
For input video signals, you can select from the following four methods.
- Detect changes in the luminance and chrominance signals separately, and switch automatically between fields and frames. You can select the degree of change detection.
- Detect changes in the luminance signal separately, and switch automatically between fields and frames. You can select the degree of change detection.
- Do interpolation in field units.
- Do interpolation in frame units.

For input key signals, you can select from the following three methods.
- Detect changes in the luminance signal separately, and switch automatically between fields and frames. You can select the degree of change detection.
- Do interpolation in field units.
- Do interpolation in frame units.

You can also select the number of pixels used in interpolation processing.
You can also select the method used to show the picture reduced or expanded.

Notes

- The <Video Field/Frame Mode> group and <Key Field/Frame Mode> group settings are available only when the signal format is 1080i or 1080PsF.
- When the signal format is 1080PsF, only [Field] or [Frame] in the <Video Field/Frame Mode> group and <Key Field/Frame Mode> group can be selected. When the DME is rebooted, the setting changes to [Frame].
- There is no restriction on the <Interpolation Mode> group and <Filter Mode> group settings due to the signal format.

Selecting an interpolation method

1 Open the DME >Input/Output >Process menu (4163).

2 In the <Video Field/Frame Mode> group, select the interpolation method for the video signal.

Adaptive Y/C: Detect changes in the luminance and chrominance components of the video signal separately, and switch automatically between fields and frames.
Adaptive Y: Detect changes in the luminance component of the video signal separately, and switch automatically between fields and frames.
Field: Do interpolation in field units. This gives natural movement, suitable for movies.
Frame: Do interpolation in frame units. This gives higher image precision, suitable for still pictures.

3 When [Adaptive Y/C] or [Adaptive Y] is selected in step **2**, set the following parameter.

No.	Parameter	Adjustment
1	Mode	Degree of change detection

4 In the <Key Field/Frame Mode> group, select the interpolation method for the key signal.

Adaptive: Detect changes in the luminance component of the key signal separately, and switch automatically between fields and frames.

Field: Do interpolation in field units. This gives natural movement, suitable for movies.
Frame: Do interpolation in frame units. This gives higher image precision, suitable for still pictures.

5 When [Adaptive] is selected in step **4**, set the following parameter.

No.	Parameter	Adjustment
1	Mode	Degree of change detection

6 In the <Interpolation Mode> group, set the number of pixels to use in interpolation.

Multi: Use multi-point interpolation. This gives higher picture quality.
Linear: Use two-point interpolation.

7 In the <Filter Mode> group, select the method used to control picture reduction or expansion.

Mode1: Even when the picture is reduced, add compensation so that it can be seen clearly (standard).
Mode2: Suppress aliasing when expanding or reducing the picture (soft).
Mode3: Do not suppress aliasing when expanding or reducing the picture (sharp).

Corner Pinning Settings

Note

When the Brick function is enabled, Corner Pinning cannot be used.

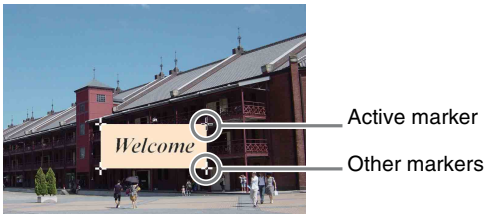
Setting the foreground corner

1 Open the DME >Non Linear/Corner Pin >Corner Pinning menu (4142).

2 Press [Corner Pinning], turning it on.

3 Press [Corner Marker], turning it on.

A marker appears for each corner. The marker for the selected corner is distinguished from the other markers.



4 In the <Corner Select> group, select the target corner to set.

Top Left: Top left corner
Top Right: Top right corner
Bottom Left: Bottom left corner
Bottom Right: Bottom right corner
All: All four corners

5 Set the position of the corner selected in step **4**.

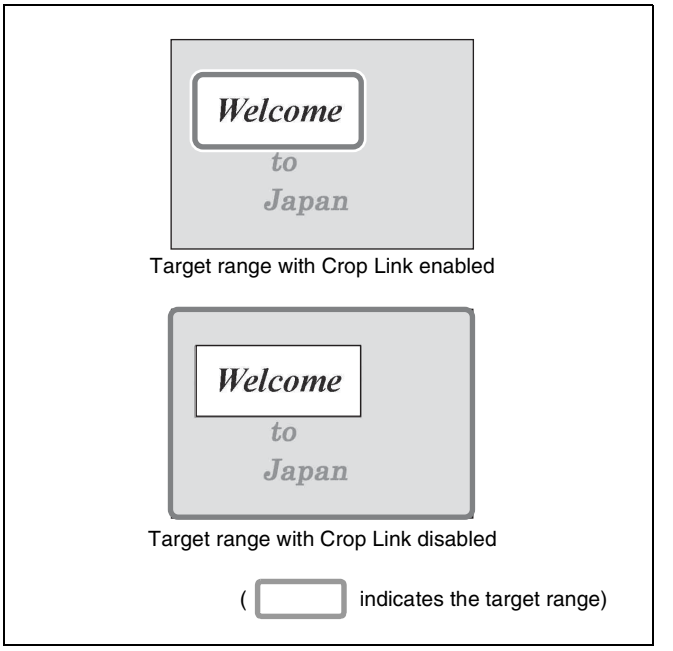
No.	Parameter	Adjustment
1	Pos X	Movement in X-axis direction
2	Pos Y	Movement in Y-axis direction

To reset the corner positions

In the Corner Pinning menu (4142), press [Reset Corner].

To select the target area of the foreground

When the foreground is cropped, select the target range. In the Corner Pinning menu (4142), press [Crop Link], turning it on, to set the cropped image as the target range. When [Crop Link] is disabled, the whole picture, including the invisible cropped portions (gray portions in the following diagram), become the target range.



To adjust the density of the foreground

You can adjust the density of the foreground image to be translucent so that the background shows through, making it easier to position the corners.

Note

This setting is not saved in a keyframe or snapshot.

1 In the Corner Pinning menu (4142), press [Video Through], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
4	Density	Image density

To adjust the zoom

You can enlarge the image around the corner being adjusted, to allow fine positioning of the corner.

Notes

- This setting is not saved in a keyframe or snapshot.
- This function is only enabled when combine is set.
- When all four corners are being positioned, this function cannot be used.

1 In the Corner Pinning menu (4142), press [Zoom Enable], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
5	Zoom	Degree of zooming in on the corners

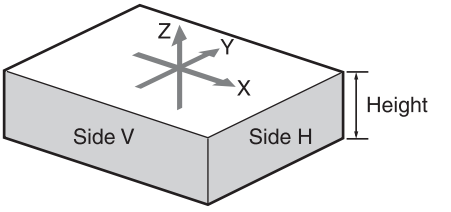
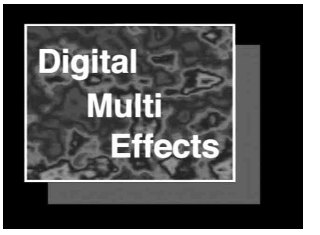
Zoom disabled

Zoom enabled

Global Effects

Overview

Global effects are special effects created by combining the images of successive channels. The Global Effect menu is used to add these effects.
The following types of global effects are available.

Effect	Description/Image
Combiner	Automatically combines the selected images when multiple channels are selected on one keyer or for one transition.
Brick	Creates a cuboid using three successive channels. 
Shadow	Gives the image a shadow. 

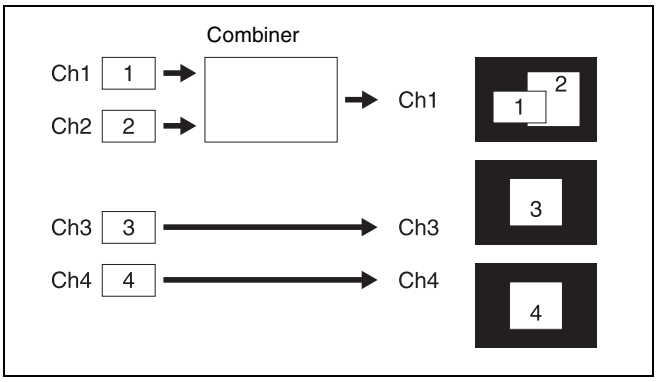
Note

On the XVS-6000, global effects cannot be used when the signal format is 3840×2160P 2SI.

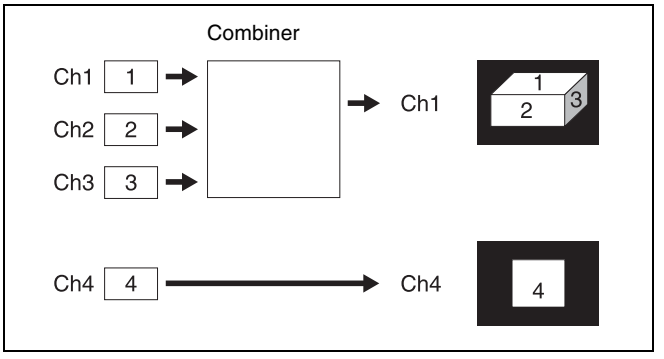
Combiner Settings

When multiple channels (Ch) are selected on one keyer or for one transition, the Combiner automatically combines the selected images. Up to four channels can be combined. You can control the mix of images, and also the image overlap priority automatically. For a mix, you can control the relative amounts of each channel.
Images can also cross in three dimensions.

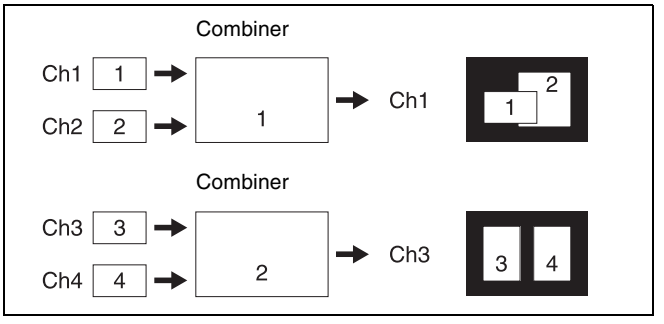
Combination of Ch1 and Ch2



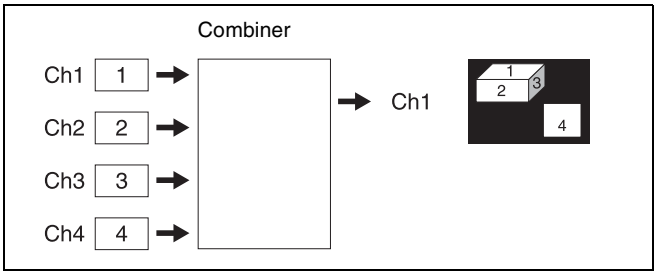
Combination of Ch1, Ch2, and Ch3



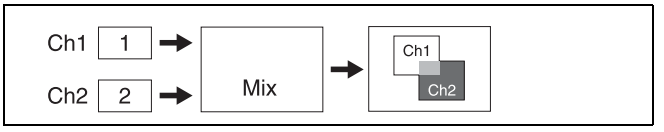
Combination of Ch1 and Ch2 / combination of Ch3 and Ch4



Combination of Ch1, Ch2, Ch3, and Ch4



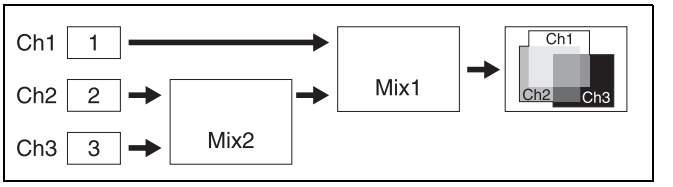
Mix of Ch1 and Ch2



If the Mix setting is set to 70, the proportion of the channels in the mixed portion in the previous illustration is as shown in the following table.

Combination	Color in figure	Ch1	Ch2
Ch1 and Ch2		30%	70%

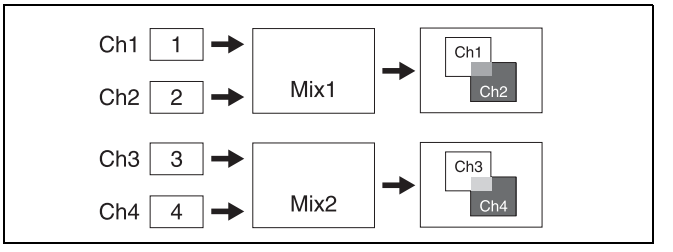
Mix of Ch1, Ch2, and Ch3



If the Mix1 setting is set to 70 and the Mix2 setting is set to 40, the proportions of the channels in the mixed portions in the previous illustration are as shown in the following table.

Combination	Color in figure	Ch1	Ch2	Ch3
Ch1 and Ch2		30%	70%	–
Ch2 and Ch3		–	60%	40%
Ch1 and Ch3		30%	–	70%
Ch1, Ch2, and Ch3		30%	42%	28%

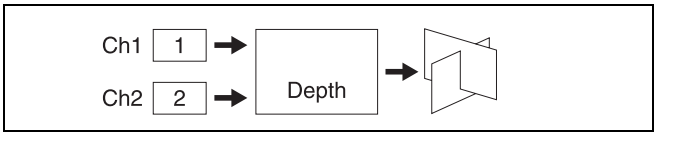
Mix of Ch1 and Ch2 / mix of Ch3 and Ch4



If the Mix1 setting is set to 70 and the Mix2 setting is set to 40, the proportions of the channels in the mixed portions in the previous illustration are as shown in the following table.

Combination	Color in figure	Ch1	Ch2	Ch3	Ch4
Ch1 and Ch2		30%	70%	–	–
Ch3 and Ch4		–	–	60%	40%

Ch1 crossed with Ch2



To check the set status of channels

Press the menu title button at the top left of the Global Effect menu.

The Global Effect >Status menu (4200) appears.
You can check the channel combinations, output, and other settings.

Setting the combiner

The setup menu display varies depending on the combiner usage status.
This section describes “Ch1+Ch2+Ch3” and “Ch1+Ch2, Ch3+Ch4” as examples.

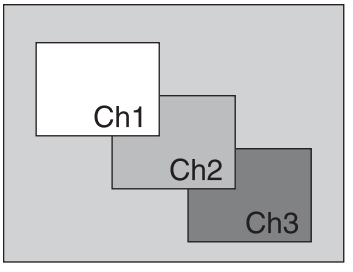
1 Open the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211).

2 Disable [Mix], [Auto], and [Depth], if enabled.

Press [Mix], [Auto], and [Depth], as required, turning them off.

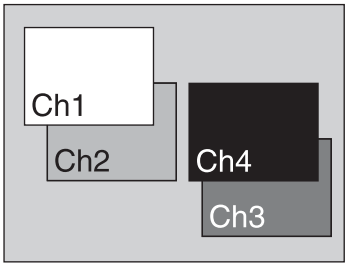
3 Carry out the following operation, depending on the type of combination.

For “Ch1+Ch2+Ch3”
In the <Priority1> to <Priority3> groups, press [Ch1], [Ch2], and [Ch3], respectively, to set the overlap priority.
Priority1: Select the channel with the highest priority.
Priority2: Select the channel with the second highest priority.
Priority3: Select the channel with the lowest priority.



Priority1: Ch1
Priority2: Ch2
Priority3: Ch3

For “Ch1+Ch2, Ch3+Ch4”
Press [Ch1] and [Ch2] in the <Combiner1 Priority1> and <Combiner1 Priority 2> groups, respectively, and press [Ch4] and [Ch3] in the <Combiner2 Priority1> and <Combiner2 Priority2> groups, respectively, to set the priorities for overlaying the images.



Combiner1 Priority1: Ch1
Combiner1 Priority2: Ch2
Combiner2 Priority1: Ch4
Combiner2 Priority2: Ch3

Mixing the images of up to four consecutive channels

1 In the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211), press [Mix], turning it on.

2 Set the following parameters.

For “Ch1+Ch2”

No.	Parameter	Adjustment
1	Mix	Degree of mixing [a]

a) See *page 276*.

For “Ch1+Ch2+Ch3”

No.	Parameter	Adjustment
1	Mix1	Degree of mixing of channel 1 with result of Mix2 [a]
2	Mix2	Degree of mixing of channels 2 and 3 [a]

a) See *page 276*.

For “Ch1+Ch2+Ch3+Ch4”

No.	Parameter	Adjustment
1	Mix1	Degree of mixing of channel 1 with result of Mix2
2	Mix2	Degree of mixing of channel 2 with result of Mix3
3	Mix3	Degree of mixing of channels 3 and 4

Mixing channels 1 and 2 and channels 3 and 4 separately

1 In the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211), press [Combiner1 Mix], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Mix1	Degree of mixing of channels 1 and 2 a)

a) See *page 276*.

3 Press [Combiner2 Mix], turning it on.

4 Set the following parameter.

No.	Parameter	Adjustment
1	Mix2	Degree of mixing of channels 3 and 4 a)

a) See *page 276*.

Automatically setting the priority of overlapping images

In the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211), press [Auto] (or [Combiner1 Auto] or [Combiner2 Auto]), turning it on, to set the priority of overlapping images so that they are automatically determined by their position on the Z-axis.

Note

It is not possible to cross images. If an image is rotated, the priority is determined by the position on the Z-axis of the center of the image.

Crossing images from up to four consecutive channels in three dimensions

1 In the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211), press [Depth], turning it on.

2 Set the following parameters.

For "Ch1+Ch2"

No.	Parameter	Adjustment
1	Soft	Softness of edges of crossed section

For "Ch1+Ch2+Ch3"

No.	Parameter	Adjustment
1	Soft1	Softness of edges of channel 1 and channel 2 crossed section
2	Soft2	Softness of edges of channel 2 and channel 3 crossed section

For "Ch1+Ch2+Ch3+Ch4"

No.	Parameter	Adjustment
1	Soft1	Softness of edges of channel 1 and channel 2 crossed section
2	Soft2	Softness of edges of channel 2 and channel 3 crossed section
3	Soft3	Softness of edges of channel 3 and channel 4 crossed section

Crossing images from channels 1 and 2, and channels 3 and 4 separately in three dimensions

1 In the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211), press [Combiner1 Depth], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Soft1	Softness of edges of channel 1 and channel 2 crossed section

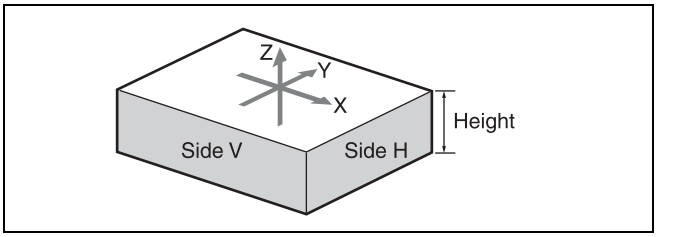
3 Press [Combiner2 Depth], turning it on.

4 Set the following parameter.

No.	Parameter	Adjustment
1	Soft2	Softness of edges of channel 3 and channel 4 crossed section

Brick Settings

Brick allows you to create a cuboid by using images of three consecutive channels (Ch).
The Brick effect can combine Ch1, Ch2, and Ch3, or combine Ch2, Ch3, and Ch4. The images are displayed on the three surfaces as shown in the following figure.



Combinations of Ch1, Ch2, and Ch3
Upper side: Ch1 image
Side V: Ch2 image
Side H: Ch3 image

Combinations of Ch2, Ch3, and Ch4

Upper side: Ch2 image
Side V: Ch3 image
Side H: Ch4 image

You can adjust the height of the brick, the overlap between the three images, and the way to insert the side images.

Creating a Brick

1 Open the Global Effect >Ch1-Ch4 >Brick menu (4212).

2 Press [Brick], turning it on.

The Brick effect is enabled, and a cuboid (brick) showing the images of three channels appears. Adjust parameters for the height of the brick and the overlap between the three images.

Notes

- When Brick is enabled, the Z-axis position of the Front image in source space is shifted by 1/2 the height, magnifying the image slightly.
- The flex shadow function cannot be enabled when Brick is enabled.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Height	Height of brick
2	Front Overlap	Front overlap
3	Side H Overlap	Side H overlap
4	Side V Overlap	Side V overlap

4 Select how to insert the image for the side view with changed value for Height in <Side V> for Side V and in <Side H> for Side H.

Crop: Crop the parts that do not fit into the side without shrinking the picture. You can set the following parameters.

No.	Parameter	Adjustment
1	H	Position of left crop
2	V	Position of top crop
3	Rotation	Angle of rotation, when rotated around the Z-axis of source space

The set position becomes the upper left corner of Side V or Side H. The right and bottom sides of the inserted image are set automatically.

Compress: Images are inserted after being reduced. You can set the following parameters.

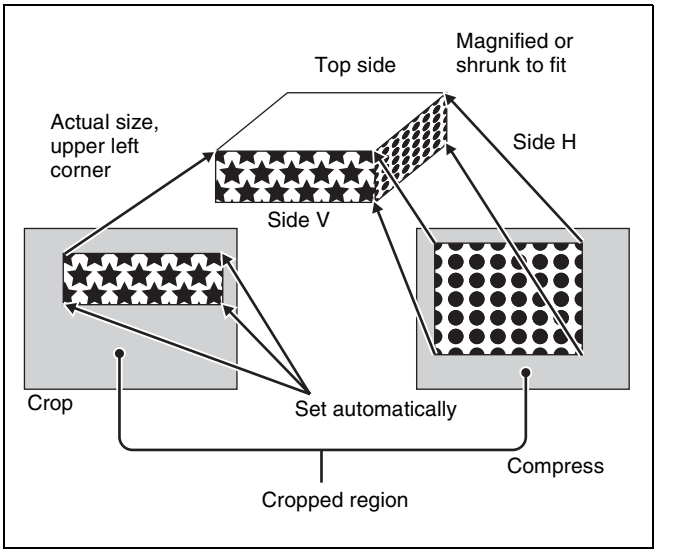
No.	Parameter	Adjustment
1	Top	Position of top crop
2	Left	Position of left crop
3	Right	Position of right crop
4	Bottom	Position of bottom crop
5	Rotation	Angle of rotation, when rotated around the Z-axis in source space

The parts of the image defined by Top, Left, Right, and Bottom are magnified or shrunk to fit into Side V or Side H.

To invert the image in a side view

For example, to invert the image on the front of Side H, press the following buttons in the <Side H Front> group, turning them on.
Invert H: Invert horizontally.
Invert V: Invert vertically.
For the images on the other sides, use a similar operation in the following groups:

- Back image of Side H: <Side H Back> group
- Front image of Side V: <Side V Front> group
- Back image of Side V: <Side V Back> group



Shadow Settings

This effect uses two successive channels (Ch).
You can adjust the position and density of the shadow with respect to the image, and the color of the shadow.
The channel with the largest number (for example, Ch2 in the case of Ch1 and Ch2) becomes the shadow.

Note

When the combiner function is disabled, the shadow function cannot be used.

Applying a Drop Shadow

Depending on the combiner channel selection, the buttons that can be used varies as follows.

Combiner channel selection	Button				
	Ch1 Shadow	Ch2 Shadow	Ch3 Shadow	Ch1+ Ch2 Shadow	Ch2+ Ch3 Shadow
Ch1+Ch2	Valid				
Ch2+Ch3		Valid			
Ch3+Ch4			Valid		
Ch1+Ch2+ Ch3	Valid	Valid		Valid	
Ch2+Ch3+ Ch4		Valid	Valid		Valid
Ch1+Ch2+ Ch3+Ch4	Valid	Valid	Valid	Valid	

This section describes adding a drop shadow using Ch1 and Ch2 as an example.

1 Open the Global Effect >Ch1-Ch4 >Shadow menu (4213).

2 Press [Ch1 Shadow], turning it on.

Drop Shadow is enabled, and channel 2 becomes the channel for the shadow to the image.
You can adjust the position and density of the shadow.

Note

The flex shadow function cannot be enabled when Drop Shadow is enabled.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Position H	Horizontal shadow position
2	Position V	Vertical shadow position
3	Density	Density of shadow

4 In the <Ch1 Shadow Source> group, select the shadow signal.

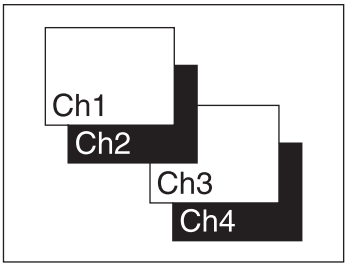
Video: Select Ch2 video input as the shadow.
Flat Color: Select a single color matte as the shadow.

5 When [Flat Color] is selected in step **4**, set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

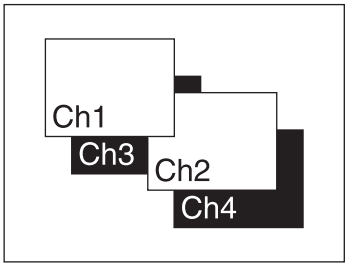
To combine images after applying a shadow

Select Ch1+Ch2 and Ch3+Ch4 using the combiner, then in the Global Effect >Ch1-Ch4 >Shadow menu (4213), select [Ch1 Shadow] and [Ch3 Shadow].



To apply a shadow after combining images

Select Ch1+Ch2+Ch3+Ch4 using the combiner, then in the Global Effect >Ch1-Ch4 >Shadow menu (4213), select [Ch1+Ch2 Shadow].



External Devices

Chapter 11

Control of External Devices

You can control operations on the following types of external device.
- P-Bus (Peripheral II protocol) devices
- GPI devices
- VTRs (Sony 9-pin VTR protocol)
- Disk recorders (video disk communications protocol, Odetics protocol)
- Extended VTRs (Abekas A53 protocol) 1)
- AMP (Advanced Media Protocol) compatible devices 1)

1) Unless otherwise specifically stated in this document, "disk recorder" includes Extended VTRs and AMP compatible devices.

You can also operate external devices controlled by other protocols over a network using general-purpose TCP/IP connection settings.
For details about the devices that can be connected, consult your Sony representative.

Control of GPI devices

Operate external devices using the GPI output port of an SIU.

Control of P-Bus devices, VTRs, and disk recorders

Operate external devices using the 9-pin serial ports or network port of an SIU.

Notes

- The maximum number of ports that can be used for external device control on a single SIU, including 9-pin serial ports and network ports, is 40.
- Control of P-Bus compatible devices, AMP compatible devices, and TCP/IP connected devices is supported on network ports.
- Control of AMP compatible devices is not supported on 9-pin serial ports.
- The connection ports must be configured in order to operate devices connected to the 9-pin serial ports or network ports.

  For details, see "Configuring the Connection Port of External Devices" (page 478).
- To use a disk recorder, the target file from the file list must be loaded.
  For details, see "Disk Recorder File Operations" (page 293).

Shared Functions for External Device Control

Keyframe functions

There are 250 registers, numbered 1 to 250, holding external device control data as keyframe data *(see page 296)* (only 99 registers for the GPI timeline).
The available keyframe functions are as follows.
- RECALL (1 to 250), STORE (1 to 250), RECALL UNDO, STORE UNDO, empty register search, AUTO SAVE, RECALL MODE (RECALL, RECALL & REWIND)
- EDIT ENABLE, EDIT UNDO
- CONST DUR, EFF DUR, KF DUR, DELAY, PAUSE, INSERT BEFORE, INSERT AFTER, MODIFY, DELETE, COPY, PASTE BEFORE, PASTE AFTER, FROM TO, ALL
- PREV KF, NEXT KF, GOTO TC, GOTO KF, RUN, REWIND, FF, STOP NEXT KF, NORMAL, JOG, KF FADER

Notes

- An action set for a keyframe is only executed when the keyframe effect is executed in the forward direction. Take care when executing simultaneously with a switcher or DME keyframe effect, since the actions are not executed in the reverse direction.
- The following keyframe functions cannot be used.
  - KF LOOP, EFFECT LOOP, REVERSE, NORMAL/REVERSE
  - PATH

Saving to registers

Set the data for controlling external devices in the Device menu. You can save the set data to a register *(see page 296)* as keyframe effect data. You can recall the register in which the data is saved, and carry out operations on it with the utility/shotbox control block.

Editing registers

You can carry out the following operations on the registers in which the data for controlling external devices is saved.

- Copy
- Move
- Swap
- Merge (this cannot be carried out for registers holding VTR or disk recorder control data.)
- Lock
- Name

File related functions

As effect data, you can save and recall, using the File menu.

Control of P-Bus Devices

You can control P-Bus (Peripheral Bus II protocol) external devices through the 9-pin serial port or network port of an SIU.

P-Bus device control modes

There are two modes of P-Bus device control, as follows.

Trigger: Operating a previously specified button outputs the command for an action assigned to that button.

Timeline: Carrying out a keyframe effect under the control of the center control panel controls external devices.

In the Setup menu, select which of Trigger mode and Timeline mode to use.

You can set the following actions (set what action command is output to which device) in both modes.

- Store
- Recall
- Trigger

Creating and Editing the P-Bus Timeline

You can set actions at keyframe points on the P-Bus timeline. At any single keyframe point, you can set actions for a maximum of 24 devices.

For details about keyframe creation, see "Creating and Editing Keyframes" (page 308).

For the action setting (P-Bus timeline editing), use the Device menu.

The data set in the Device menu can be saved in a keyframe effect register. Recalling the register starts execution of the keyframe effect, and when this reaches the keyframe point at which actions are set, action commands are output to external devices from the port of the SIU.

Note

To use the P-Bus timeline, the P-Bus control mode must be set to [Timeline] in the Setup menu *(see page 427)*.

Setting an action

1 Open the Device >P-Bus Timeline >P-Bus Timeline menu (5321).

In the status area, two lists appear. The left list displays combinations of devices and actions. The content of this list is saved as keyframe point data. In the "Action" list on the right, select the action.

2 Select the ID (0 to 23) of the device you want to set.

3 Select the action.

You can select “2” (Store), “3” (Recall), or “4” (Trigger).

4 Set the register number or trigger number.

No.	Parameter	Adjustment
3 a)	Store No	Register number for Store
	Recall No	Register number for Recall
	Trigger No	Trigger number

a) The parameters will vary depending on the selected action.

5 Press [Set].

To set other devices, repeat steps **2** to **5**.

To test an action command output

Press [Test Fire].
The action command is output from the port of the SIU.

Clearing an action setting

1 In the Device >P-Bus Timeline >P-Bus Timeline menu (5321), select the ID of the device for which you want to clear the setting.

2 In the list on the right, select “1” (Off).

3 Press [Set].

To clear the settings for all devices

Press [All Off].

Setting the action for a rewind operation

On the P-Bus timeline, when the [REWIND] button in the utility/shotbox control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.
To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To set the Rewind Action, press [Rewind Action] in the Device >P-Bus Timeline >P-Bus Timeline menu (5321) to open the Rewind Action menu (5321.1). Operate in the same way as in the P-Bus Timeline menu (5321), and press [Rewind Action Set] to carry out the setting.
Alternatively, you can make settings in the Setup menu so that when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details, see “Setting the first keyframe when rewind is executed” (page 429).

Carrying out a Direct Store

You can carry out a Learn with the register number specified for the device selected in the menu.

1 In the Device >P-Bus Timeline >P-Bus Timeline menu (5321), select the ID of the device.

2 Press [Direct Store].

3 Enter the register number (1 to 4095) for which you want to carry out the Learn in the numeric keypad window.

4 Press [Enter].

P-Bus Trigger

“P-Bus trigger” is a function whereby a button operation in the numeric keypad control block or utility/shotbox control block outputs an action command to a P-Bus device.

Note

To use the P-Bus trigger, the P-Bus control mode must be set to [Trigger] in the Setup menu *(see page 427)*.
The relation between the operation in each of the control blocks and the action command output is as follows.

Action command for an operation in the numeric keypad control block

- RCALL: Recall
- STORE: Store

This recalls the register specified in the numeric keypad control block, and a Recall or Store is carried out, according to the setting.

Action command for an operation in the utility/ shotbox control block

- RUN: Trigger 1
- REWIND: Trigger 4
- NEXT KF: Trigger 7
- PREV KF: Trigger 8

Outputting an action command

This section describes how to output a Recall as an example.

1 In the numeric keypad control block, press the [EFF] button.

The control block switches to effect operation mode, and the [EFF] button and [RCALL] button light amber.

2 Press the [P-BUS] button to select the P-Bus region.

3 Enter the register number (1 to 250) to be recalled using the numeric keypad buttons.

4 Press the [ENTER] button.

Control of GPI Devices

You can control GPI devices through the GPI output port of an SIU.

GPI timeline

For a keyframe effect controlled from the control panel, the GPI timeline allows you to set an action (setting a trigger output from a particular GPI output port) at a keyframe point on the GPI timeline. At any keyframe point, you can make a maximum of eight GPI output port settings.

GPI timeline actions

The actions that can be used on the GPI timeline are as follows.

- SIU GPI output port

Creating and Editing the GPI Timeline

You can set actions at keyframe points on the GPI timeline. Up to eight GPI output ports that output a trigger pulse can be configured.

For details about keyframe creation, see "Creating and Editing Keyframes" (page 308).

For the action settings (GPI timeline editing), use the Device menu.
The data set in the Device menu can be saved in a keyframe effect register. Recalling the register starts execution of the keyframe effect, and when this reaches the keyframe point at which actions are set, a trigger pulse is output to external devices from the GPI output port.

GPI output port settings

1 Open the Device >GPI Timeline >GPI Timeline menu (5311).

In the status area, two lists appear.
The left list shows the relation between ports 1 to 8 for the GPI timeline and the trigger pulse output destination ports. The content of this list is saved as keyframe point data. The "GPI Port" list on the right, select the GPI trigger pulse output destination.

2 Select the GPI timeline port.

3 Select the trigger pulse output destination.

To select the GPI output port of the SIU, select "2" (DCU).

4 Set the port number.

No.	Parameter	Adjustment
3	DCU Port No	SIU GPI output port number

Note

For the output port you have set here, be sure to set the trigger type to "Rising Edge," "Falling Edge," or "Any Edge."

For details, see "Configuring GPI Outputs" (page 477).

5 Press [Set].

To set other GPI timeline ports, repeat steps **1** to **5**.

To test trigger output

Press [Test Fire].
This outputs a pulse from the selected GPI output port.

Clearing port settings

1 In the Device >GPI Timeline >GPI Timeline menu (5311), select the GPI timeline port for which you want to clear the setting.

2 In the list on the right, select "1" (Off).

3 Press [Set].

To clear the settings for all ports

Press [All Off].

Setting the action for a rewind operation

On the GPI timeline, when the [REWIND] button in the utility/shotbox control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.
To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To set the Rewind Action, press [Rewind Action] in the Device >GPI Timeline >GPI Timeline menu (5311) to open the Rewind Action menu (5311.1). Operate in the same way as in the GPI Timeline menu (5311), and press [Rewind Action Set] to carry out the setting.
Alternatively, you can make settings in the Setup menu so that when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details, see "Setting the first keyframe when rewind is executed" (page 429).

Control of VTRs and Disk Recorders

You can control VTRs, disk recorders, and other external devices through the 9-pin serial ports and network port of an SIU. Up to 12 devices can be controlled.

The following operations are available for a device connected to an SIU port.

- Device control block (trackball)
  Operation using the operation buttons and channel selection buttons in the device control block.
  - Operating device selection
  - Tape/disk transport control
  - Start point/stop point setting
  - Recording to VTR/disk recorder
  - Loop/Recue setting
- Cueup & Play
  Saving the following information in registers, recalling registers, and carrying out operations using the buttons in the utility/shotbox control block.
  - Start point/stop point
  - Start delay time
- DDR/VTR timeline
  Registering the following actions in keyframe points on the timeline, recalling registers, and issuing action commands.
  - Start/stop
  - Cueing up to the start point
  - Variable speed

To control a device connected to a port on an SIU, the following settings are required.

Button assignment: Assign the port of the target device to a channel selection button in the device control block.

For details, see "Assigning the Target Port to a Channel Selection Button" (page 427).

Port setting: Set the protocol (device type) to match the device connected to the port.

For details, see "Configuring the Connection Port of External Devices" (page 478).

Note

External devices connected via general-purpose TCP/IP connection cannot be operated using the device control block buttons, Cueup & Play, DDR/VTR timeline, or similar functions. Control of external devices is supported by sending commands using macros.

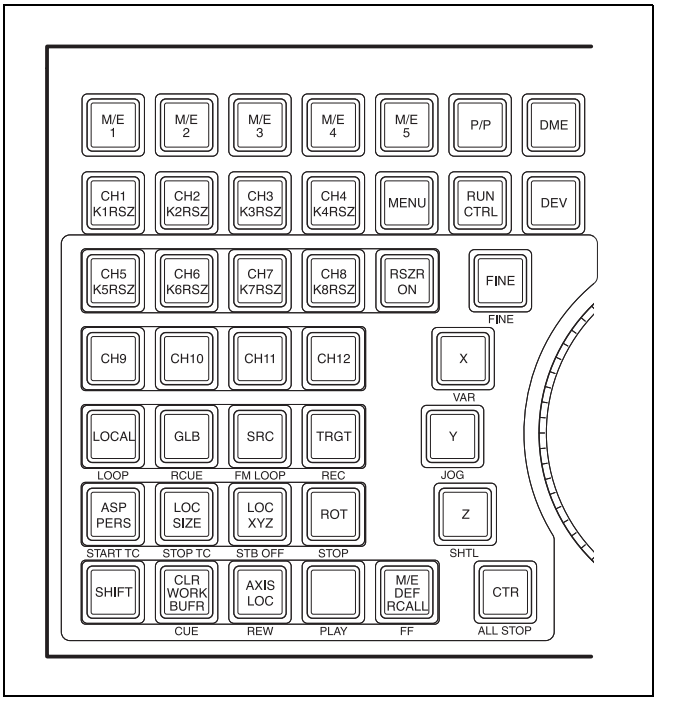
Controlling the Tape/Disk Transport

Switching to the VTR/disk recorder/frame memory operation mode

Press the [DEV] button on the device control block.
The [DEV] button lights amber, and the control block switches to the VTR/disk recorder/frame memory operation mode.
The operation button assignment will be as follows.

Note

The [SHIFT] button and [RSZR ON] button are not used in VTR/disk recorder/frame memory operation mode.



Device control block in the VTR/disk recorder/frame memory operation mode (trackball)

Operation buttons

Button	Operation
LOOP [a)]	(Only available when video disk communications protocol is used) Return to the start point when playback finishes, and repeat playback in a continuous loop.
RECUE [a)]	(Only available when video disk communications protocol is used) Return to the start point when playback finishes.
FM LOOP (frame memory loop)	Return to the start point when playback of a frame memory clip finishes, and repeat playback in a continuous loop.

Button	Operation
REC (record) a)	Press the [REC] button at the same time as the [PLAY] button to start recording.
START TC (start timecode)	Update the timecode of the start point to the current time.
STOP TC (stop timecode)	Update the timecode of the stop point to the current time.
STB OFF (standby off) a)	Switch to standby off mode.
STOP	Stop operation.
CUE	Cue up to the start point.
REW (rewind)	Rewind.
PLAY	Play.
FF (fast forward)	Fast forward.
ALL STOP	Stop all tapes, disks, and frame memory clips.
FINE a)	(Only available when video disk communications protocol is used) Enable fine adjustment through Z-ring operation while the [SHTL] button or [JOG] button is pressed (fine mode).
VAR (variable playback)	Enable playback or rewind at variable speed.
SHTL (shuttle)	Enable playback or rewind in shuttle mode.
JOG	Enable playback or rewind in jog mode.

a) This button cannot be used for frame memory clip operations.

Selecting the target device

Press the channel selection buttons (CH1 to CH12) on the device control block to make the selection.
You can select more than one channel. The first selected button becomes the reference channel, and is lit green. Subsequent selected buttons are lit amber.

For details about frame memory clip operations, see "Clip Operations" (page 176).

Controlling the tape/disk transport

You can use the operation buttons in the device control block to control the tape transport or the disk transport. You can also assign play, stop, and cuing to buttons in the transition control block using the Setup menu to perform these operations.

For details, see "Setting Transition Control Block Button Assignments" (page 410).

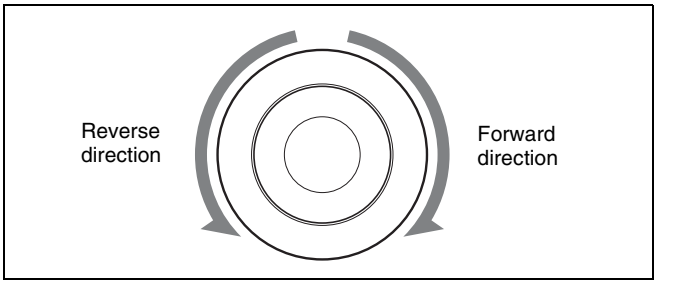
Variable speed playback

With the device control block, you can play back the material on an external device in variable speed.

If you turn the Z-ring during video playback, the direction and speed of playback are determined by the direction and angle of rotation. Perform operation in one of three modes; jog, shuttle, or variable.

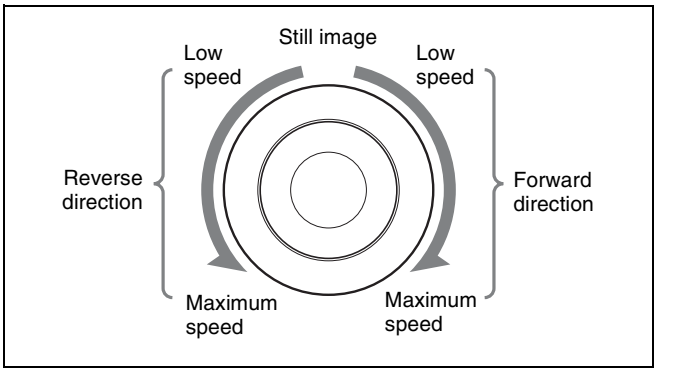
Jog mode

Press the [JOG] button, lighting the button amber, to switch the Z-ring to jog mode. In this mode, you can advance material frame by frame at a speed proportional to the rotation speed of the Z-ring. To show a still image, stop turning the Z-ring.



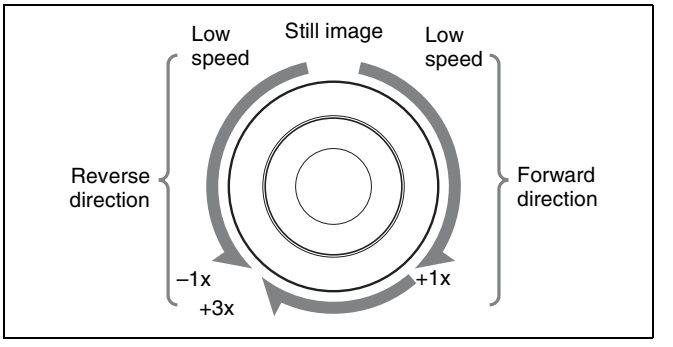
Shuttle mode

Press the [SHTL] button, lighting the button amber, to switch the Z-ring to shuttle mode. In this mode, the playback speed varies in steps according to the rotation angle of the Z-ring, to a maximum of 50 times normal.



Variable mode

Press the [VAR] button, lighting the button amber, to switch the Z-ring to variable mode. In this mode, the playback speed varies according to the rotation angle of the Z-ring from –1 to +3 times normal speed.



To disable the Z-ring and end a variable speed playback mode, press the [STOP] button. Additionally, pressing any of the [REW], [PLAY], [FF], [STB OFF], and [ALL

STOP] editing buttons ends the variable speed playback mode.

Recording

You can record to a VTR or disk recorder (video disk communications protocol) selected in the device control block.

Notes

- Recording is not possible when using the Odetics protocol, AMP protocol, or Extended VTR.
- The following limitations apply for a disk recorder (video disk communications protocol).
  - The disk recorder type must be set to "Recorder" *(see page 480)*.
  - A new file for recording must be created *(see page 294)*.
  - The maximum length of time that can be recorded in one operation is 30 minutes.

1 Use the channel selection buttons of the device control block to select the target device.

You can select more than one button.

2 Holding down the [REC] button, press the [PLAY] button.

Recording starts. During recording, the [REC] button lights red and the [PLAY] button lights amber.

To stop recording
Press the [STOP] button or the [ALL STOP] button.

Note

To record to a different file than the selected file on a disk recorder (video disk communications protocol), press [Unload] in the Device >DDR/VTR >File List menu (5333) to unload the file, and then create a new file.
If recording is started again without unloading the file, recording starts in the same file from the location when recording was previously stopped.

Displaying VTR/Disk Recorder Information

You can check the following information in the Device >DDR/VTR >Cueup & Play menu (5331).
DEV (device): Device number (DEV1 to DEV12).
Reg (register): Number of the target register to set.
Status: Status of each device.

Operating status display	When VTR is used	When video disk communications protocol, Odetics protocol, AMP protocol, or Extended VTR is used
XXXX	Communications with the device are being carried out normally, but status information is not received.	Not communicating. Or communicating but the device type cannot be read.
Local	The REMOTE/ LOCAL switch of the device is set to LOCAL.	Port is not open.
Tape Out	No tape is loaded.	No file loaded. a)
Rec	Recording.	Recording. a) b)
Cue>	Cueing up in the forward direction.	–
Cue<	Cueing up in the reverse direction.	–
Eject	Ejecting cassette.	–
Stb Off	Stopped in standby off mode.	–
Stop	Stopped in standby on mode.	Stopped.
Play	Playing.	Playing.
FF	Fast forwarding.	–
Rewind	Rewinding.	–
Shtl>	Playing in the forward direction in shuttle mode.	–
Shtl<	Playing in the reverse direction in shuttle mode.	–
Var>	Playing in the forward direction in variable mode.	Playing in the forward direction in variable mode.
Var<	Playing in the reverse direction in variable mode.	Playing in the reverse direction in variable mode.
Jog>	Playing in the forward direction in jog mode.	Playing in the forward direction in jog mode.
Jog<	Playing in the reverse direction in jog mode.	Playing in the reverse direction in jog mode.
Still	Playing still image.	–

a) Not supported for the Odetics protocol and AMP protocol.
b) Not supported for Extended VTR.

Current: Shows timecode for current device position.
Start TC: Shows timecode for start point set on device.
Stop TC: Shows timecode for stop point set on device.
Variable: Shows the variable speed set for each device.
Delay: Shows start delay time set on device.

Mode: Shows playback mode (Loop or Recue) set for the device.

Device control block display

The current time, start point, and stop point can be viewed in the device control block (trackball) display.

Cueup & Play

You can use the device control block or Device >DDR/VTR >Cueup & Play menu (5331) to save Cueup & Play settings (start point timecode, stop point timecode, and so on) in an effect register.
Recall the register in which Cueup & Play settings are saved, and control operations using the following buttons in the utility/shotbox control block.
[REWIND] button: Cue up to the start point timecode.
[RUN] button: Play (stops at the stop point timecode).

You can also set loop/recue as the playback mode for the video disk communications protocol.
Loop: Repeated playback between the start point and stop point.
Recue: Playback from the start point to the stop point, then return to the start point and stop.

Cueup & Play usage notes

- Cueup & Play cannot be configured for registers in which a DDR/VTR timeline is configured.
- When using a disk recorder with Cueup & Play, if you carry out the following sequence of operations, playback may freeze on the frame of the start point.
  - Press the [RUN] button to play to a point close to the end of a file ⟶ stop playback ⟶ press the [RUN] button again.

  Perform the following operation if playback freezes.
  - Recall another register ⟶ recall the target register ⟶ press the [REWIND] button ⟶ press the [RUN] button.

Making Cueup & Play settings

1 In the numeric keypad control block, press the [EFF] button.

The control block switches to effect operation mode, and the [EFF] button and [RCALL] button light amber.

2 Select the target region to set using the region selection buttons.

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

3 Enter the register number to recall using the numeric keypad buttons.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

4 Press the [ENTER] button.

This recalls the specified register.

5 Press the [DEV] button on the device control block.

6 Use the channel selection buttons of the device control block to select the target device to set.

You can select more than one button.

7 Set the start point.

- Using the [START TC] button: Play the target device using the device control block. Press the [START TC] button at the desired start point. Each press of the [START TC] button will overwrite the previous start point.
- Using the Cueup & Play menu: Use the menu to set the start point *(see page 290)*.

8 Set the stop point.

When the start point and stop point are set, the duration is automatically determined.
- Using the [STOP TC] button: Play the target device using the device control block. Press the [STOP TC] button at the desired stop point. Each press of the [STOP TC] button will overwrite the previous stop point.
- Using the Cueup & Play menu: Use the menu to set the stop point *(see page 290)*.

9 To set a start delay time, use the Cueup & Play menu *(see page 290)*.

10 In the numeric keypad control block, press the [STORE] button, turning it on.

11 Enter the number of the register in which you want to save using the numeric keypad buttons.

Entry is not required when overwriting the settings in the register recalled in step **3**.

12 Press the [ENTER] button.

Automatically executing Cueup & Play

You can control device operations automatically by recalling a register in which Cueup & Play settings are saved.

1 In the numeric keypad control block, press the [EFF] button.

The control block switches to effect operation mode, and the [EFF] button and [RCALL] button light amber.

2 Select the target region of the operation using the region selection buttons.

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

3 Enter the register number to be recalled using the numeric keypad buttons, and press the [ENTER] button to confirm.

4 Press the [REWIND] button in the utility/shotbox control block.

The target device cues up to the start point timecode. During the operation, the [ALL STOP] button in the device control block flashes amber, and then lights green when the start point is reached. If the target device is selected as the reference region, the [CUE] button also flashes and lights up in the same way as the [ALL STOP] button. When the start point is reached, the [STOP] button lights amber.

5 Press the [RUN] button in the utility/shotbox control block.

The target device is controlled according to the Cueup & Play settings.

Setting the start point, stop point, and start delay time (menu)

1 Open the Device >DDR/VTR >Cueup & Play menu (5331).

The status area shows the device number, register number, status information, current time, start point, stop point, and start delay time.

2 Select a device.

3 Carry out any of the following operations as required.

- To set the start point, press [Set] in the <Start TC> group.
- To set the stop point, press [Set] in the <Stop TC> group.
- To set the start delay time, press [Set] in the <Delay> group.

4 Enter the timecode for the start point, stop point, or start delay time in the numeric keypad window.

Note

You can enter a start delay time in the range that depends on the signal format as follows:
00:00 to 59:xx (where xx = (number of frames per second) – 1 frame)

5 Press [Enter].

To clear the setting of the start point, stop point, or start delay time

Press [Clear] in the <Start TC> group, <Stop TC> group, or <Delay> group.

Setting loop/recue

You can set loop or recue as the playback mode for disk recorders (video disk communications protocol).

Loop: Carry out playback from the start point of a file to the stop point, then indefinitely repeat playback from the start point.

Recue: Carry out playback from the start point of a file to the stop point, then return to the start point and stop.

Notes

- Loop/recue are only available when using the video disk communications protocol. Note that these may not operate, depending on the connected device.
- To use the loop or recue function, it is necessary to enable the function in the Setup menu *(see page 480)*.

1 Open the Device >DDR/VTR >Cueup & Play menu (5331).

The status area shows the device number, register number, status information, current time, start point, stop point, start delay time, and playback mode.

2 In the status area, select the target device to set.

3 In the <Mode> group, select the playback mode.

Loop: Set loop.
Recue: Set recue.

DDR/VTR Timeline

The DDR/VTR timeline is a keyframe effect controlled by the control panel. You can configure actions at keyframe points on the timeline to operate a device, such as VTRs and disk recorders.

DDR/VTR timeline actions

You can configure the following actions:

- Start
- Stop
- Cueup

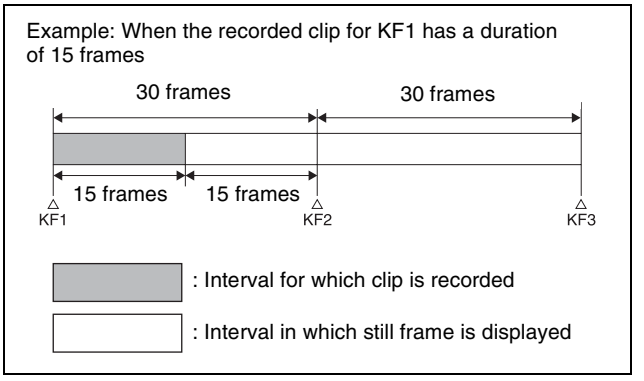
• Variable Speed

DDR/VTR timeline actions are configured using the Device >DDR/VTR >Timeline menu (5332). You can save the configured timeline in an effect register. Recalling a register and executing the effect will output an action command for the target device when the keyframe point configured with that action is reached.

DDR/VTR timeline usage notes

When controlling a disk recorder, AMP compatible device, or Extended VTR using a DDR/VTR timeline, note the following.

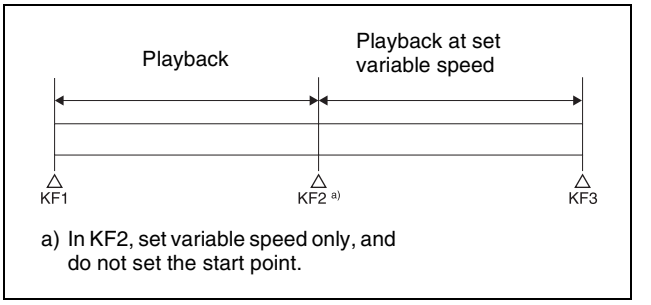
- Up to eight files can be configured for a single timeline.
- When carrying out keyframe settings, be sure to recall the file for operation first.
- If the duration of the recorded video clip is less than the keyframe duration, after playback to the end of the clip, the remainder of the keyframe duration is filled with a still of the last frame of the clip.



In this example, when keyframe 1 is executed, the first 15 frames consist of clip playback and the remaining 15 frames show the 15th frame as a still image.

When controlling a disk recorder or AMP compatible device using a DDR/VTR timeline, note the following.

- Set the keyframe duration to at least 30 frames.
- From pressing the [RUN] button to the time when the effect actually starts execution may take around one second.
  In order that pressing the [RUN] button after [REWIND] makes the effect start execution as soon as possible, set cueing up of the file for operation as a rewind operation[1)]. In the first keyframe[2)] to be executed with [RUN], for the cued-up file, do not set the start point, but set only the start command.
  1) If the setting when the [REWIND] button is pressed is for the first keyframe to be executed, then the first keyframe is executed, and otherwise the setting for the Rewind Action is carried out.
  2) If the setting when the [REWIND] button is pressed is for the first keyframe to be executed, then the second keyframe is executed, and otherwise the first keyframe is executed.
- To execute an effect, be sure to carry out a Rewind. For example, when the start command only is set for a keyframe, playback starts from the current position, in the same way as with a VTR (no automatic cue-up).
- During file playback, to play the next keyframe at variable speed, for the next keyframe set variable speed only, and do not set the start point.

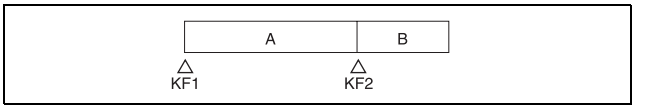


- When using a disk recorder with a timeline, if you carry out the following sequence of operations, playback may freeze on the frame of the start point.
  - Press the [RUN] button to play to a point close to the end of a file ⟶ stop playback ⟶ press the [RUN] button again.

  Perform the following operation if playback freezes.
  - Recall another register ⟶ recall the target register ⟶ press the [REWIND] button ⟶ press the [RUN] button.

The following limitations may apply depending on the protocol of the target device.

- Some operating limitations apply when the video disk communications protocol is used.
  These are explained with reference to the following figure, which illustrates creation of a timeline that plays from the video of file A to the video of file B.



  - Black video or still image appears momentarily when play switches from file A to file B:

KF1 action setting	Operating status of file A	KF2 action setting
Start	Playback	Start
Start	Playback	Cueup
Variable Speed set	Playing at variable speed	Cueup
Cueup	Cueup	Cueup

  - Partial operating limitation:

KF1 action setting	Operating status of file A	KF2 action setting
Start	Playback	Variable Speed set [a)]
Variable Speed set	Playing at variable speed	Variable Speed set [a)]
Cueup	Cueup	Variable Speed set [a)]

a) Failure to operate when variable speed is set to minus value. However, operates when the file B action is set to "Start", and then variable speed is set to minus after file B starts playing.

- Play does not switch from file A to file B:

KF1 action setting	Operating status of file A	KF2 action setting
Variable Speed set	Playing at variable speed	Start
Cueup	Cueup	Start

If play continues to show video of file A without switching to file B, a "Stop" action is required in file A in order to switch to file B.

- Loop/recue cannot be set on a timeline for the video disk communications protocol.
- When using the Odetics protocol, the variable speed action may not operate, depending on the connected device.
- Folder selection cannot be set on a timeline for the AMP protocol.

Editing a timeline

You can set actions at keyframe points on a timeline.

For details about keyframe creation, see "Creating and Editing Keyframes" (page 308).

To set an action in the menu

1 Open the Device >DDR/VTR >Timeline menu (5332).

In the status area, two lists appear.
The upper list shows the device number, register number, keyframe number, and the configured action (start point, stop point, variable speed).
The lower list shows the port name of the device selected in the upper list, currently loaded file name, current time, status information, target file name, start point, stop point, and variable speed.

2 In the status area, select a device.

3 For a disk recorder, select the target file.

Load the file using the Device >DDR/VTR >File List menu (5333).

Notes

- Up to eight files can be configured for a single timeline.
- If you have not set a file name, the file loaded at the keyframe point when the effect is executed becomes the target of the action.
- AMP protocol folder selection cannot be set on a timeline. The folder loaded at the keyframe point when the effect is executed becomes the target of the action.

4 In the <Action> group, select the action.

Cueup: Output a command to cue up to the currently displayed start point.
Start: Output a Play command.
Stop: Output a Stop command.

Notes

- When [Start] is selected and both the stop point and variable speed are set, the variable speed setting takes priority.
- When [Stop] is selected and the timecode for the stop point or the disk recorder end of file is reached before executing the Stop command, then the device stops at that point.

5 To set the start point, press [Set] in the <Start TC> group.

Enter the timecode for the start point in the numeric keypad window, and press [Enter].

Note

If you have not set a start point on a disk recorder, the file that is loaded at the keyframe point when the effect is executed becomes the target of the action.

6 To set the stop point, press [Set] in the <Stop TC> group.

Enter the timecode for the stop point in the numeric keypad window, and press [Enter].

7 To set the variable speed, select one of the following in the <Variable Speed> group.

Fit: Without setting a speed value, automatically carry out playback according to automatically calculated values for the duration and keyframe duration to fit the set start point and stop point.
Set: Set the speed that is adjusted with the following parameter.

No.	Parameter	Adjustment
2	Variable	Variable speed

To test an action command output

In the upper list of the status area, select the device, and press [Test Fire].
The action command is output from the port of the SIU.

To clear the start point, stop point, and variable speed settings

In the upper list of the status area, select the device, and press [Clear] in the <Start TC> group, <Stop TC> group, or <Variable Speed> group.

To set the action for a rewind operation

On the DDR/VTR timeline, when the [REWIND] button in the utility/shotbox control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.
To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To set the Rewind Action, press [Rewind Action] in the Device >DDR/VTR >Timeline menu (5332) to open the Rewind Action menu (5332.1). Operate in the same way as in the DDR/VTR >Timeline menu (5332), and press [Rewind Action Set] to carry out the setting. To set the currently loaded file as the target of Rewind Action, press [File Set].
Alternatively, you can make settings in the Setup menu so that when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details, see "Setting the first keyframe when rewind is executed" (page 429).

Disk Recorder File Operations

Recorded material on a disk recorder is managed as files.

Loading files

To control playback and other operations on a disk recorder, a target file from the file list in the disk recorder must be loaded.
The name of the loaded file is displayed on the display of the device control block.

Notes

- For Extended VTR, "Effect file #xx" (where xx is the register number) is displayed for the file name.
- Folder selection is required for the AMP protocol. The files in the selected folder are displayed in the file list.

File list sharing

You can share the file list between serial ports connected to the same disk recorder.

For details, see "Configuring file list sharing" (page 428).

Note

A file list cannot be shared for the AMP protocol.

Updating a file list

Note

The files in the selected folder are displayed in the file list for the AMP protocol.

For details, see "Selecting a folder" (page 294).

1 Open the Device >DDR/VTR >File List menu (5333).

The upper part of the status area shows the device number selected as the target, and the path and name of the selected file.
The lower part of the status area shows the file list for the selected device. The file list shows the file name, the length of the file (timecode value), and the update date and time of the files.

Notes

- The update date and time of the files are not displayed for the video disk communications protocol. When "Simple VDCP" is selected as the device type, the file length is also not displayed.
- The file length and update date and time are not displayed for the Odetics protocol and Extended VTR.
- The file update date and time are not displayed for the AMP protocol.

2 Select a device.

No.	Parameter	Adjustment
1	DEV	Device number

3 Press [File List Update].

The file list is updated.

To sort the files in the list
In the <Sort> group, select the sorting method.
File No: Sort by file number (low → high order)
File Name: Sort by file name (ASCII code order)
Update: Sort by file update date and time (new → old order)

Notes

- Files cannot be sorted for Extended VTR.
- Files cannot be sorted by the file update date and time for the video disk communications protocol, Odetics protocol, and AMP protocol.

Selecting a folder

A target folder must be selected for the AMP protocol.

1 In the Device >DDR/VTR >File List menu (5333), press [Folder List].

The Folder List menu (5334) appears.
The upper part of the status area shows the device number selected as the target and the name of the selected folder. The lower part of the status area shows a list of selectable folders.

2 Select a device.

No.	Parameter	Adjustment
1	DEV	Device number

3 Press [Folder List Update] to update the folder list.

To sort the folders in the list
In the <Sort> group, select the sorting method.
Folder No: Sort by folder number (low → high order)
Folder Name: Sort by folder name (ASCII code order)

4 Select a folder.

5 Press [Set].

The selected folder is loaded as the target.

Loading files

You can select and load a file for playback.

Note

If the type of disk recorder (video disk communications protocol) is set to "Recorder," a file cannot be loaded.

1 Open the Device >DDR/VTR >File List menu (5333).

2 Select a device.

3 Select the target file in the file list.

4 Press [Load].

Creating new files

A new file must be created to record on a disk recorder (video disk communications protocol).

Notes

- If the type of disk recorder (video disk communications protocol) is set to "Player," a file cannot be created.
- A file cannot be created for the Odetics protocol, AMP protocol, or Extended VTR.

1 Open the Device >DDR/VTR >File List menu (5333).

2 Select a device.

3 Press [New File].

4 Enter the file name using the keyboard window, and press [Enter].

You can enter up to 8 characters (in Fixed 8 Character mode) or 23 characters (in Variable Length mode).

For details about character entry modes, see "Configuring detailed settings for a disk recorder (video disk communications protocol)" (page 480).

To release the selected recording file

Press [Unload].

Keyframes

Chapter 12

Regions

The term “region” refers to a functional block of the system.
When saving or recalling snapshot registers and effect registers, or creating or editing effects, you first select the region to which the operation applies. You can also select multiple regions simultaneously.

Classification of the regions

The regions are classified as follows.

- Master region
- The following regions
  - Switcher: M/E-1 to M/E-5, PGM/PST, User1 to User8
  - DME: DME ch1 to DME ch4 (inclusive of Global)
  - External devices: P-Bus, Router, Device1 to Device12, GPI, Macro

Only the regions assigned to the region selection buttons of the numeric keypad control block can be used simultaneously *(see page 409)*.

Note

The following DME regions are disabled, depending on the switcher signal format.

- For 3840×2160P 2SI: DME ch3 to DME ch4 on the XVS-8000/7000 and DME ch2 to DME ch4 on the XVS-6000
- For 3840×2160P SQD, 3840×2160PsF SQD: DME ch1 to DME ch4

Regions applicable to keyframe operations

The above regions less the Router region.

Regions applicable to snapshot operations

The above regions less the external devices’ regions (P-Bus, Device1 to Device12, and GPI) and the Macro region.

“User” regions

You can optionally assign the following regions to the regions User1 to User8 *(see page 441)*.
The User regions shown in parenthesis are the default assignments.

- Color backgrounds 1 and 2 (User1)
- AUX1 to AUX48 (User2)
- Frame Memory 1 to 20 (User4)

Reference region

When multiple regions are selected, only one region appears in the displays for menu and numeric keypad control block operations. This is called the “reference region.”
The reference region is determined according to the following precedence.
M/E-1 >M/E-2 >M/E-3 >M/E-4 >M/E-5 >PGM/PST >User1 >User2 >User3 >User4 >User5 >User6 >User7 >User8 >DME ch1>DME ch2 >DME ch3 >DME ch4 >Device1 >Device2 >Device3 >Device4 >Device5 >Device6 >Device7 >Device8 >Device9 >Device10 >Device11 >Device12 >P-Bus >GPI >Router >Macro

Master region

The regions saved in a master snapshot register or master timeline register and the register numbers saved in such regions can be recalled at a time as the master region.

Registers

A register is an area of memory in a device which holds a keyframe, snapshot *(see page 327)*, shotbox *(see page 339)*, macro *(see page 345)*, and so on.

Keyframe effect registers

Dedicated effect registers

There are 99 dedicated registers for keyframe effects in each region, numbered 1 to 99.

Shared user programmable DME registers

In addition to the 99 DME registers for each region (i.e. each channel), there are shared registers used in user programmable DMEs.

Register number	Register allocation
101 to 199	Shared register for 1-channel effects
201 to 299	Shared register for 2-channel effects
301 to 399	Shared register for 3-channel effects

Note

When operating with shared registers, be sure to select the appropriate regions depending on the number of channels. When recalling registers in the 200 range, select two consecutive channels for the regions (for example [DME1] and [DME2]). Similarly, for registers in the 300 range, select three consecutive registers.

P-Bus and Device registers

There are 250 registers for P-Bus and Device1 to Device12 in each region, numbered 1 to 250.

Work register

This is a temporary register used when editing keyframes. When you recall an effect, it is read from the effect register into the work register, and when you save, the contents of the work register are written to the effect register.

Master timeline registers

There are 99 master snapshot registers, numbered 1 to 99, for each control panel. They store keyframe effect regions and the register numbers saved in the regions.

Snapshot registers

These are registers for snapshots, and there are 99, numbered 1 to 99, for each region.

Master snapshot registers

There are 99 master snapshot registers, numbered 1 to 99, for each control panel. They store snapshot regions and the register numbers saved in the regions.

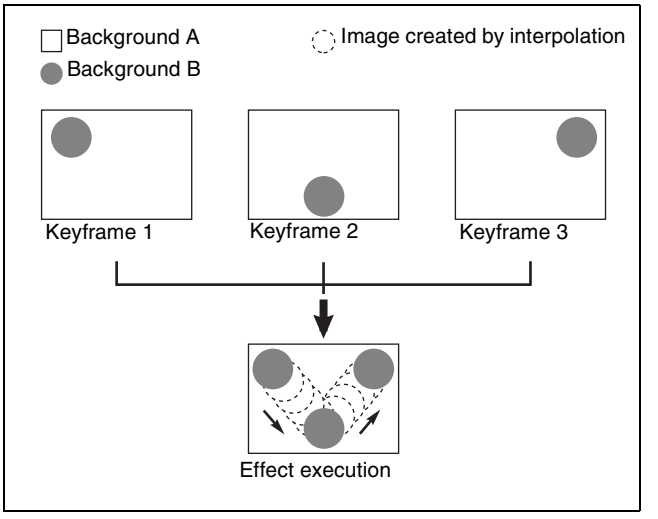
Keyframes

A keyframe is a function that loads the conditions of the video at a point in time as data which can then be recalled to reproduce the same conditions.

Effects

By arranging multiple keyframes on the time axis (timeline) and interpolating between successive keyframes, you can create an effect in which there is a continuous change from each keyframe to the next (keyframe effect). You can save the effect in memory (effect register) and then reproduce the same effect by recalling it from memory as required.

Example of keyframes and effect execution



Saving and Recalling Effects

To create a new effect, first recall an empty register, then create the keyframes one at a time in this register. To run an effect, it is also necessary to set the time and the path. To edit an existing effect, recall the register holding the effect, then make the changes.
When you have finished creating or editing the effect, save it in the recalled register or another specified register.

Auto save function

When you recall an effect, the currently recalled effect is automatically saved in a register. This is referred to as the auto save function. You can disable this function in the Setup menu.

Effect Attributes

An individual effect may also have attached special conditions relating to switcher or DME operation when the effect is recalled. These conditions are called “attributes” of the effect, and can be added when the keyframe effect is saved or recalled.

Types of attribute

The attribute that can be attached to an effect is as follows.

Effect dissolve: The transition from the state before the effect recall to the state at the effect start point is carried out smoothly, by a dissolve.

Temporary attributes

When a keyframe is recalled, independently of the attributes held in the register, you can also enable or disable attributes. These attributes are called temporary attributes. Temporary attributes are set when a keyframe effect is recalled.

Effect Editing

For editing operations such as to insert, delete, or modify a keyframe, it is necessary to stop the effect at the corresponding point on the time axis. This is termed an “edit point.”

You can edit either on a keyframe within the effect, or at any point between keyframes.

Insert: Insert the current image as a keyframe. Inserting a keyframe in an existing effect may change the duration of the effect *(see page 298)*.

Modify: Modify a keyframe. You can modify a single keyframe or a range of keyframes in the effect together.

Delete: Delete a keyframe. You can delete a single keyframe or a range of keyframes in the effect together.

Deleting keyframes from an effect reduces the duration of the effect *(see page 298)*.

After deleting a keyframe, you can reinsert the keyframe with a paste operation.

Copy: Copy a keyframe. You can copy a single keyframe or a range of keyframes in the effect together.

Paste: Paste the keyframe last copied or deleted anywhere within the effect.

Pause: Set a pause on a particular keyframe, so that when the effect is run it pauses on this keyframe. You can make this setting on any number of keyframes. To restart the paused effect, repeat the operation to run the effect.

KF Loop: Execute the effect the specified number of times through the keyframes in the specified range.

Undo an edit operation: Undo the effect of the last operation to insert, modify, delete, or paste a keyframe.

Duration modes

In keyframe editing, there are two duration modes; switch between them in the utility/shotbox control block *(see page 313)*.

Variable duration mode: In this mode, inserting or deleting a keyframe increases or reduces the duration.

Constant duration mode: In this mode, inserting or deleting a keyframe does not change the duration. This is useful for keyframe editing of an effect with a fixed duration.

In the variable and constant duration modes, the keyframes to which a modify operation applies, and the effect of a paste operation are different.

Difference in keyframes to which a modify operation applies

Effect position	Variable duration mode	Constant duration mode
On a keyframe	Applies to currently selected keyframe	Applies to currently selected keyframe
Between two keyframes	Applies to previous keyframe	Modify operation not possible [a)]

a) A new keyframe is inserted at the effect position.

Difference in the effect of a paste operation

Variable duration mode: The copied keyframe is inserted at the specified position.

Constant duration mode: The copied keyframe is written over the specified position.

Transition mode

You can use an effect created with keyframes as a DME wipe pattern on the switcher. In this case, it is necessary to set the transition mode (the way in which the effect behaves) *(see page 313)*.

Time Settings

Keyframe duration and effect duration

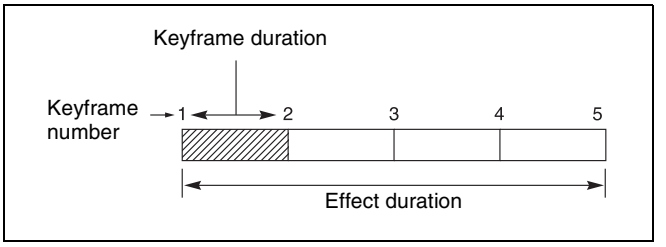
You can determine the execution time of an effect by setting either the keyframe durations or the effect duration.

Keyframe duration: This is the time from the keyframe to the next keyframe. You can set this time in the utility/shotbox control block *(see page 316)*.

In constant duration mode *(see page 297)*, it is not possible to change the keyframe duration setting.

Effect duration: This is the total execution time of the effect, from the first keyframe to the last. You can change this time in the utility/shotbox control block

(see page 316).
When you change the effect duration, the keyframe duration for each keyframe in the effect is automatically recalculated proportionally.



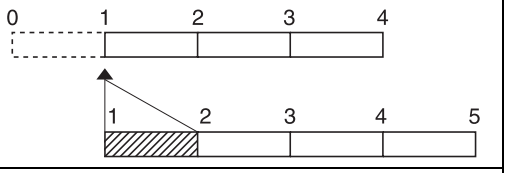
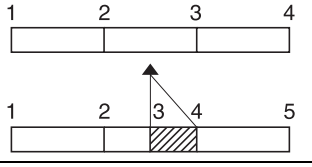
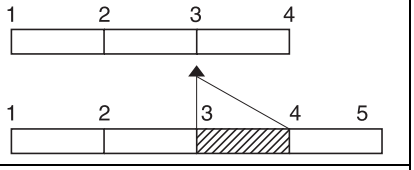
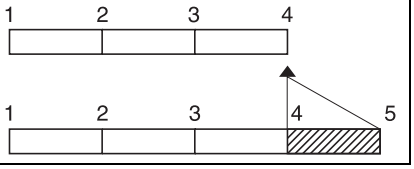
The effect duration may also be changed by inserting or deleting keyframes.

Changes in the effect duration caused by inserting a keyframe

- When the effect is stopped on a keyframe, inserting a keyframe increases the effect duration by the duration of the inserted keyframe.
- When the effect is stopped between two keyframes, inserting a keyframe does not change the effect duration.

Note

In constant duration mode *(see page 297)*, the duration of the current keyframe is reduced to zero, and the new keyframe is inserted with the previous duration of the current keyframe. Thus the effect duration does not change.

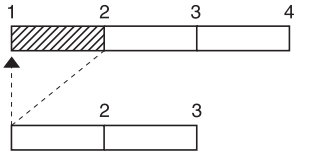
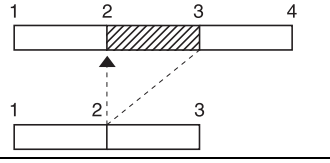
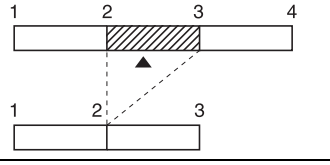
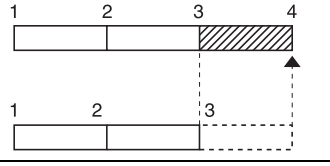
Insertion position	Change in effect duration
Insertion before the first keyframe	
Insertion between two keyframes	
Insertion at an existing keyframe	
Insertion at the last keyframe	

Changes in the effect duration caused by deleting a keyframe

- When the effect is stopped on a keyframe, a delete operation deletes the keyframe, and reduces the effect duration by the duration of the deleted keyframe.
- When the effect is stopped between two keyframes, a delete operation deletes the preceding keyframe, and reduces the effect duration by the duration of the deleted keyframe.

Note

In constant duration mode *(see page 297)*, the duration of the keyframe before the deleted keyframe is increased by the duration of the deleted keyframe. Thus the effect duration does not change.

Deletion position	Change in effect duration
Deletion of the first keyframe	
Deletion of an intermediate keyframe	
Deletion between two keyframes	
Deletion of the last keyframe	

Delay Setting

You can set the delay from the time of executing an operation to run the effect, and the effect actually starting (that is, the delay until the first keyframe). You can make this setting in the utility/shotbox control block.
Changing the delay does not alter the effect duration.

Paths

The term “path” refers to the specification of how interpolation is carried out from one keyframe to the next. Images are interpolated from an edit point to the next one according to the path setting.

For details, see “Path Settings” (page 317).

Switcher path settings

Carry out path settings in the Key Frame menu.
For each menu, the following settings are available.

M/E-1 to M/E-5, and P/P menus

Item		Paths that can be set
M/E1 to M/E5, P/P All		For each M/E and PGM/PST, path settings for the following items are made simultaneously.
Key1 to Key8		Overall path settings for items relating to keys 1 to 8 are made simultaneously.
	Key1 All to Key8 All	
	Source	Key source path for keys 1 to 8
	Fill	Key fill path for keys 1 to 8
	Proc	Proc path for keys 1 to 8
	Trans	Transition path for keys 1 to 8
Bkgd/Util		Overall path settings for items relating to backgrounds and utility buses are made simultaneously.
	Bkgd/Util All	
	Bkgd A	Path for background A
	Bkgd B	Path for background B
	Util 1	Path for utility 1
	Util 2	Path for utility 2
	DME 2nd Video	Path for video to be used for second DME channel
Wipe/DME Wipe		Overall path settings for items relating to wipes and DME wipes are made simultaneously.
	Wipe/DME Wipe All	
	Wipe	Path for wipes
	DME Wipe	Path for DME wipes
Trans	–	Transition path for each M/E and P/P bank

User1 to User8 menus

The items that can be adjusted depend on the settings in the Setup menu.

For details, see "Setting User Regions" (page 441).

Item		Paths that can be set
User1 All to User8 All		Overall path settings for the following items for each "User" are made simultaneously.
FM		Overall path settings for frame memory output items are made simultaneously.
	FM All	
	FM 1 to 20	Paths for frame memory outputs 1 to 20
Aux		Overall path settings for AUX bus items are made simultaneously.
	Aux All	
	Aux 1 to 48	Paths for AUX 1 to 48
Color Bkgd		Overall path settings for color background items are made simultaneously.
	Color Bkgd All	
	Color Bkgd 1	Paths for color background 1
	Color Bkgd 2	Paths for color background 2

Paths relating to DMEs

DME 3D Trans Local menu

Item		Paths that can be set
3D Trans Local All		Overall path settings for local channel three-dimensional transform items are made simultaneously.
Loc Size		Overall path settings for items relating to image size changes and movement are made simultaneously.
	Loc Size All	
	Size	Path for image size
	Post Loc X, Post Loc Y	Paths for the X- and Y-axes
	Post Size	Path for size
Loc XYZ		Overall path settings for items relating to image movement are made simultaneously.
	Loc XYZ All	
	Loc X, Loc Y, Loc Z	Paths for the X-, Y- and Z-axes
Rot		Overall path settings for items relating to image rotation are made simultaneously.
	Rot All	
	Rot X, Rot Y, Rot Z	Paths for the X-, Y- and Z-axes
Spin		Overall path settings for items relating to spin are made simultaneously.
	Spin All	
	Spin Src X, Spin Src Y, Spin Src Z	Paths for the X-, Y- and Z-axes
	Spin X, Spin Y, Spin Z	Paths for the X-, Y- and Z-axes
Asp		Overall path settings for items relating to aspect ratio are made simultaneously.
	Asp All	
	Rate X, Rate Y	Paths for the X- and Y-axes
Skew		Overall path settings for items relating to skew are made simultaneously.
	Skew All	
	Skew X, Skew Y	Paths for the X- and Y-axes
	Aspect	Path for aspect ratio

Item		Paths that can be set
Pers		Overall path settings for items relating to perspective are made simultaneously.
	Pers All	
	Pers X, Pers Y, Pers Z	Paths for the X-, Y-, and Z-axes
Axis Loc		Overall path settings for items relating to image rotation axis are made simultaneously.
	Axis All	
	Axis X, Axis Y, Axis Z	Paths for the X-, Y-, and Z-axes

DME 3D Trans Global menu

Item		Paths that can be set
3D Trans Global All		Overall path settings for three-dimensional transform items in the global channel are made simultaneously.
Loc Size		Overall path settings for items relating to image size changes and movement are made simultaneously.
	Loc Size All	
	Size	Path for image size
	Post Loc X, Post Loc Y	Paths for the X- and Y-axes
	Post Size	Path for size
Loc XYZ		Overall path settings for items relating to image movement are made simultaneously.
	Loc XYZ All	
	Loc X, Loc Y, Loc Z	Paths for the X-, Y- and Z-axes
Rot		Overall path settings for items relating to image rotation are made simultaneously.
	Rot All	
	Rot X, Rot Y, Rot Z	Paths for the X-, Y-, and Z-axes
Spin		Overall path settings for items relating to spin are made simultaneously.
	Spin All	
	Spin Src X, Spin Src Y, Spin Src Z	Paths for the X-, Y- and Z-axes
	Spin X, Spin Y, Spin Z	Paths for the X-, Y- and Z-axes
Pers		Overall path settings for items relating to perspective are made simultaneously.
	Pers All	
	Pers X, Pers Y, Pers Z	Paths for the X-, Y-, and Z-axes
Axis Loc		Overall path settings for items relating to image rotation axis are made simultaneously.
	Axis All	
	Axis X, Axis Y, Axis Z	Paths for the X-, Y-, and Z-axes

DME Effect menu

Item		Paths that can be set
Effect All		Overall path settings for DME effect items are made simultaneously.
Edge		Overall path settings for edge items are made simultaneously.
	Edge All	
	Border	Path for border
	Crop/Edge Soft	Path for crop/edge softness
	Beveled Edge	Path for beveled edge
	Key Border	Path for key border
	Art Edge	Path for art edge
	Flex Shadow	Path for flex shadow
	Wipe Crop	Path for wipe crop
	Color Mix	Path for color mix
Video Modify		Overall path settings for video modify items are made simultaneously.
	Video Modify All	
	Defocus/Blur	Path for defocus/blur
	Multi Move	Path for multi-move
	Color Modify	Path for color modify
	Mosaic	Path for mosaic
	Mask	Path for mask
	Sketch	Path for sketch
	Metal	Path for metal
	Dim/Fade	Path for dim/fade
	Glow	Path for glow
Freeze		Path for freeze
Non-Linear		Path for nonlinear effects
Corner Pin		Path for corner pinning
Light		Overall path settings for lighting items are made simultaneously.
	Light All	
	Lighting	Path for lighting
	Spot Lighting	Path for spotlighting
Trail		Path for trails
In/Out		Overall path settings for items relating to input/output are made simultaneously.
	In/Out All	
	Bkgd	Path for background
	Video/Key	Path for video/key

DME Global Effect menu

Item	Paths that can be set
Global Effect All	Overall path settings for DME global effect items are made simultaneously.
Combine	Path for combiner

Item	Paths that can be set
Shadow	Path for shadow
Brick	Path for brick

Types of path

Path types for Curve

There are five types, as follows.

OFF: Executing the effect causes no change.

Step: There is no interpolation between keyframes, so that the effect parameters are updated each time a keyframe is passed.

Linear: Linear interpolation between keyframes, resulting in constant speed movement.

S-Curve: The rate of change accelerates and decelerates before and after a keyframe, so that the rate of change is maximum midway between two keyframes.

Spline: The effect follows a smooth curved path from each keyframe to the next.

Path types for Hue

There are four types, as follows.

CW: Rotate clockwise.

CCW: Rotate counterclockwise.

Short: The hue changes in whichever of the clockwise and counterclockwise directions is shorter.

Long: The hue changes in whichever of the clockwise and counterclockwise directions is longer.

Path types for Xpt

There are two types, as follows.

Xpt Hold off: When replaying a keyframe, change the inputs to the settings saved in memory.

Xpt Hold on: When replaying a keyframe, do not change the inputs.

Effect Execution

By using the [RUN] button in the utility/shotbox control block, you can replay the effect as a continuous sequence of images. This is referred to as effect execution.

Range of execution

Each time the [RUN] button is pressed, the range of execution of the effect is from timecode 01:00:00:00 or the current time (the position at which the current effect is stopped) to the end point of the effect. However, if there is a pause set on a keyframe, the execution range is up to that point. Pressing the [RUN] button again resumes the effect, which then runs to the next pause point or the end of the effect.

Run mode setting

You can select from the following run modes for when the effect is executed.

DIRECTION: Specify the effect execution direction.

STOP NEXT KF: Repeatedly execute/stop effects for each keyframe.

EFFECT LOOP: Repeatedly execute the effect.

You can make these settings in the utility/shotbox control block.

For details, see "Setting the Run Mode" (page 319).

Master Timelines

You can save the regions selected for a keyframe effect and the register numbers saved in the regions in a master timeline register so that operation can be applied to two or more regions at a time.

To save master timeline registers, use the numeric keypad control block or menu; to recall them use the numeric keypad control block, or Flexi Pad control block.

For details, see "Creating and Saving a Master Timeline" (page 321) and "Recalling and Executing a Master Timeline" (page 323).

Sequence of Keyframe Operations

The following table shows the principal operations involved in the sequence from creating keyframes to executing an effect.

Recalling a register *(see page 305)*
To create a new effect, recall an empty register; to edit an effect, open the register containing it.

⬇

Specifying the region and edit points *(see page 307)*
Select the region in which editing applies, and set the edit points.

⬇

Creating and editing keyframes *(see page 308)*
Create the keyframes that make up the effect, using operations to create, insert, modify, or delete keyframes.

⬇

Time settings *(see page 316)*
Set the overall duration of the effect or the duration of each keyframe.

⬇

Path setting *(see page 317)*
Set the type of interpolation used between successive keyframes.

⬇

Executing effects *(see page 319)*
This provides a smooth effect, based on the time and path settings.

⬇

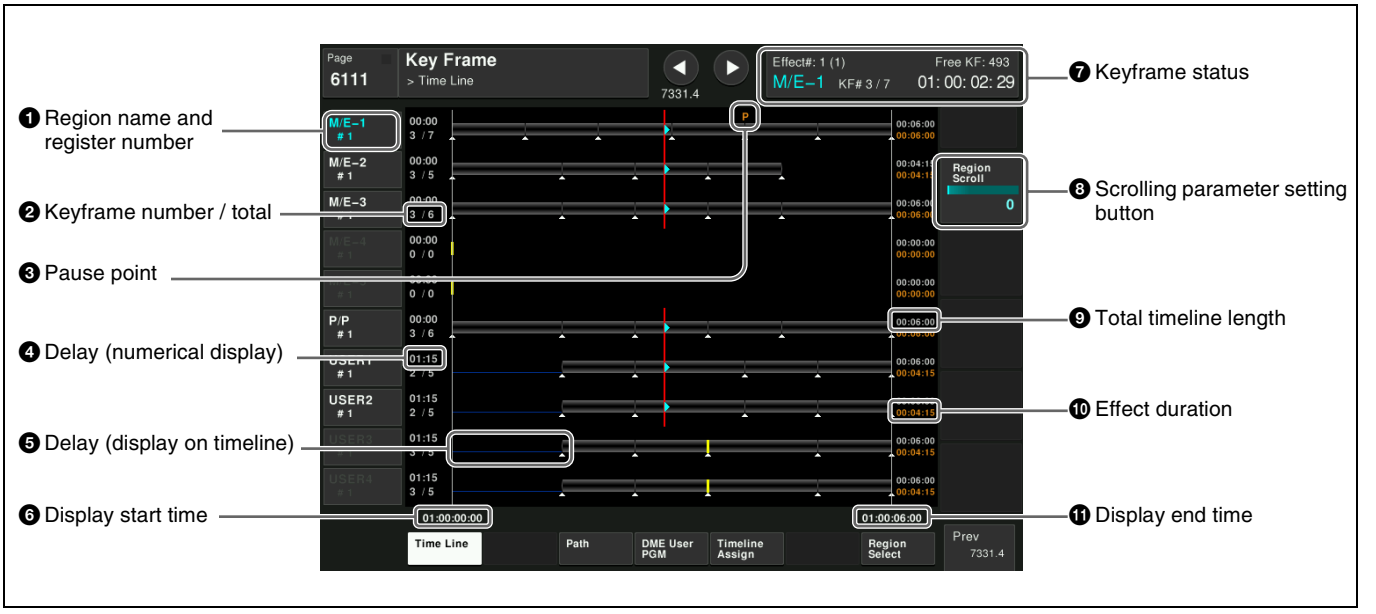
Saving effects *(see page 320)*
Save a completed effect in a register.

Displaying the Timeline Menu

By displaying the Key Frame >Time Line menu (6111), you can view keyframe effects on the timeline for each region, and the associated information.

Interpreting the Timeline Menu

The following are the main parts of the menu screen.



❶ Region name and register number
This shows the region name and the number of the register recalled in this region. The display color indicates the region selection as follows.
Blue: Reference region
White: Selected region
Gray: Not selected region

❷ Keyframe number / total
This shows the number of the keyframe at the cursor position, and the total number of keyframes in the register.

❸ Pause point
A "P" appears where a pause is set.

❹ Delay (numerical display)
This shows the delay between carrying out an effect operation, and the start of the actual effect.

❺ Delay (display on timeline)
When a delay is set, the interval is shown by a blue line.

❻ Display start time
This shows the timecode value for the timeline display start point.

❼ Keyframe status
This shows the region name, register number, register name, number of remaining keyframes, current position and timecode with regard to the reference region.

❽ Scrolling parameter setting button
This is used for scrolling the display.
If a desired region timeline does not appear on the display, scroll the display until it appears.

❾ Total timeline length
The total time of delays and effect duration appears in white.

❿ Effect duration
The total duration of the effect appears in orange.

⓫ Display end time
This shows the timecode value for the timeline display end point.

Timeline Menu Display Settings

The Timeline menu shows a timeline for each region, but you can also restrict the regions to be shown.

Timeline Assign menu

Open the Key Frame >Timeline Assign menu (6115). The right of the status area shows a list of the regions (including Global) assigned to the region selection buttons in the numeric keypad control block. The left shows the regions in order of precedence, and whether each region is shown on the Timeline menu.

Setting Timeline menu display items

In the Key Frame >Timeline Assign menu (6115), press [Active Region] to carry out the setting.

When [Active Region] is enabled (lit): The regions for which the region selection buttons in the numeric keypad control block are lit are shown in the precedence order set in this menu, followed by the regions for which the buttons are off, in the same order.

When [Active Region] is disabled (off): The regions appear according to the precedence order and display on/off setting set in this menu.

Setting the display order of regions

To change the precedence order, insert and delete regions in the list, in the desired order.

1 In the Key Frame >Timeline Assign menu (6115), select the desired precedence order position and the region you want to insert.

2 In the <Priority> group, press [Insert].

This inserts the selected region before the specified precedence order.
If the inserted region is already present in a different precedence order, it is deleted from that precedence order.

3 To delete a region from the precedence order, select the precedence assigned to the region.

4 In the <Priority> group, press [Delete].

This deletes the selected region from the precedence order list.

Setting the display of regions on or off

When [Active Region] is disabled, select which regions are displayed in the Timeline menu.

1 In the Key Frame >Timeline Assign menu (6115), select the region.

2 Press the [Display] button to set the display on or off.

To disable the display, press [Display], turning it off.
To enable the display, press [Display], turning it on.

To return to the default precedence order and timeline menu display settings

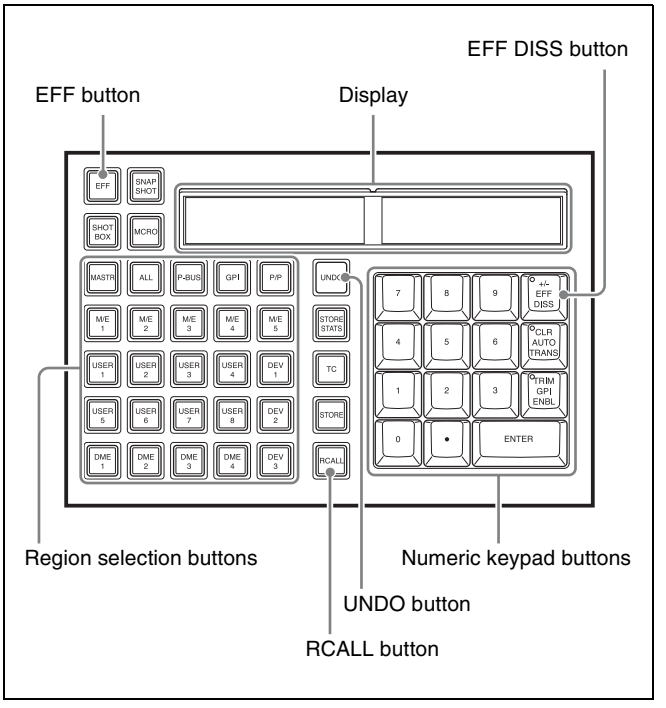
In the <Priority> group, press [Default].

Recalling a Register

Use the numeric keypad control block to recall a register. For each region there are 99 registers dedicated to keyframes, numbered from 1 to 99.
When creating an effect as a user programmable DME, use a 3-digit register number which is commonly used for all DME regions (channels).

For details about regions and registers, see "Regions" (page 295) and "Registers" (page 296).

Recalling a Register (Numeric Keypad Control Block)



Numeric keypad control block

Region selection in the numeric keypad control block

Select the target region using the following region selection buttons.
[M/E1] to [M/E5], [P/P]: M/E-1 to M/E-5, PGM/PST regions
[USER1] to [USER8]: User regions
[DME1] to [DME4]: DME channels
[DEV1] to [DEV12]: Devices
[PBUS]: P-Bus
[GPI]: GPI
[MCRO]: Macro
[RTR]: Router
[ALL]: Select all regions at the same time
[MASTR]: Master timeline / master snapshot

You can select more than one region. The first selected button becomes the reference region, and is lit green. Subsequent selected buttons are lit amber.
Pressing one of the amber-lit region selection buttons, while holding down [EFF] or [SNAPSHOT], turns the button green to indicate its corresponding region as the new reference region.

When [ALL] is selected or a selected reference region is released, the reference regions will be set according to the precedence order.

For details about the precedence order for reference regions, see "Reference region" (page 295).

The display shows the selected region name. The reference region is displayed highlighted. If multiple regions are assigned to a green-lit button, an asterisk (*) will appear on the left side of the region name.

Notes

- The regions that can be selected simultaneously are those assigned to the region selection buttons in the numeric keypad control block.
- It is not possible to select the master timeline and other regions simultaneously. If selected simultaneously, the master timeline takes precedence.
- For region selection buttons that not set by default, assignment is required in the Setup menu. Up to four regions can be assigned to a button.
- The regions that can be selected will differ depending on the function *(see page 295)*.
- The regions that are selected when [ALL] is pressed are set in the Setup menu *(see page 409)*.
- When [ALL] is pressed while no region is selected, all regions that are currently set will be selected. When [ALL] is pressed while regions are selected, all the selected regions will be deselected.

Register selection in the numeric keypad control block

Enter the register number using the numeric keypad buttons.
The display shows the selected register number and the following information.
e: The selected register is empty for the currently selected region.
E: The selected register is empty for all selectable regions.
L: The selected register is locked.

To search for an empty register without specifying a register number, press the [.] (period) numeric keypad button.
To search for an empty register common to all selectable regions, press the [.] button again.

To search for an empty register in the 100 range, press [1], [0], [0], [.] (period) in this order.
Similarly, to search for an empty register in the 200 range, press [2], [0], [0], [.] (period), and to search for an empty register in the 300 range, press [3], [0], [0], [.] (period).

Note

When a register number is shown in the display, pressing the mode selection button currently in operation displays the register name.

Recalling a register

1 In the numeric keypad control block, press the [EFF] button.

The control block switches to effect operation mode, and the [EFF] button and [RCALL] button light amber.

2 Select the target region of the operation using the region selection buttons.

You can select more than one button.
The following region selection buttons can be operated for effects.
M/E1 to M/E5, P/P, USER1 to USER8, DME1 to DME4, PBUS, GPI, MCRO, ALL, MASTR

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

3 Enter the register number to be recalled using the numeric keypad buttons.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

4 To apply a temporary attribute (effect dissolve), press the [EFF DISS] button.

Note

It is not possible to apply temporary attributes to the master timeline.

5 Press the [ENTER] button.

This recalls the specified register.
When the master timeline is recalled, the region selection buttons light according to the saved region information.

To undo the recall of a register

Immediately after recalling the register, press the [UNDO] button to undo the operation.

Note

After recalling the master timeline, you cannot undo the recall.

Specifying the Region and Edit Points

Region Selection

Recalling regions to edit (numeric keypad control block)

Select the region in which the editing is applied by the effect consisting of keyframes, using the region selection buttons in the numeric keypad control block.

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

Recalling regions to edit (menu)

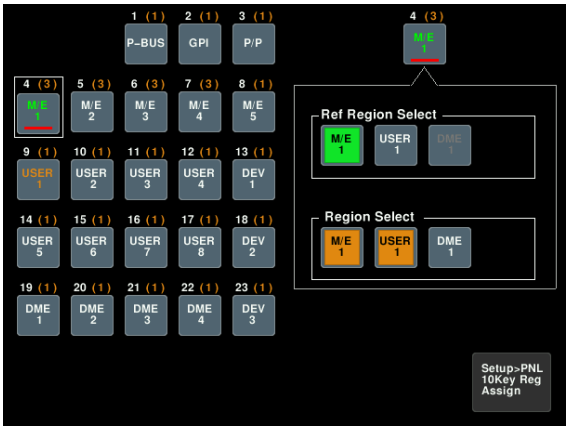
This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

Note

The function of region selection buttons in the numeric keypad control block is linked to the menu. If you carry out region selection by pressing a region selection button, then the regions assigned to that button are selected.

1 Open the Key Frame >Region Select menu (6117).

On the left of the status area, region selection buttons appear.
The button text color varies as follows, according to the region selection state.
Green text: The assigned regions include the reference region.
Orange text: One of the assigned regions is selected.
White text: No assigned region is selected.
When multiple regions are assigned to the region selection buttons and any one or more of them is not selected, a red bar appears on the button. The [RCALL] and [STORE] buttons in the numeric keypad control block flash amber.



2 Press a button on the left of the status area, to select the button you want to assign.

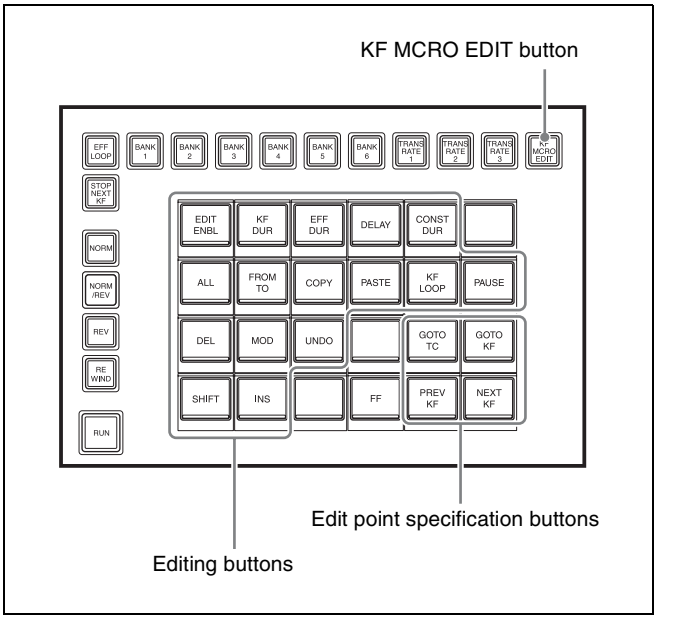
The regions assigned to the selected button appear on the right side of the status area.

3 In the <Region Select> group, press the button for the region you want to select, turning it on.

4 In the <Ref Region Select> group, press the button you want to make the reference region.

The selected button lights green.

Edit Point Specification



Utility/shotbox control block

Press the [KF MCRO EDIT] button in the utility/shotbox control block to switch the memory recall buttons to keyframe/macro editing mode.

To set the edit points, use any of the following operations with the memory recall buttons.

- To move the edit point to the keyframe immediately after the current time (the position at which the effect is currently stopped), press the [NEXT KF] button.
- To move the edit point to the keyframe immediately before the current time, press the [PREV KF] button.
- To move the edit point to a keyframe specified by number, press the [GOTO KF] button, then enter the keyframe number with the numeric keypad buttons in the numeric keypad control block, and press the [ENTER] button to confirm.
- To move the edit point to a specified timecode, press the [GOTO TC] button, then enter the timecode value with the numeric keypad buttons in the numeric keypad control block, and press the [ENTER] button to confirm.

To enter a difference value

When moving to an edit point with the [GOTO KF] button or [GOTO TC] button, you can also enter the difference from the current keyframe number or timecode value.
In the numeric keypad control block, press the numeric keypad [+/–] button, and enter the difference, then press the [TRIM] button. The [+/–] button toggles between "+" (plus) and "–" (minus) each time it is pressed.

Creating and Editing Keyframes

Keyframe creation is performed in the utility/shotbox control block.
Press the [KF MCRO EDIT] button in the utility/shotbox control block to switch the memory recall buttons to keyframe/macro editing mode. You can create and edit keyframes using the keyframe operation buttons and the memory recall buttons.

Creating Keyframes

To create new keyframes, recall an empty register and then use the following procedure to create and insert each new keyframe.

1 Press the [KF MCRO EDIT] button.

The [KF MCRO EDIT] button lights amber, and the memory recall buttons switch to keyframe/macro editing mode.

2 Press the [EDIT ENBL] button, turning it on orange.

This enables effect editing operation.

3 Create the image you want to be the first keyframe.

4 Press the [INS] button.

This takes the current image as the first keyframe.
You can make a setting in the Setup menu so that when you recall an empty register, the system state at that point is automatically captured as the first keyframe.

5 Create the next keyframe image.

6 Press the [INS] button.

This inserts the current image as the second keyframe after the first keyframe.
Repeat steps **5** and **6** to create the required number of keyframes.

To insert a new keyframe before an existing keyframe

Press and hold the [SHIFT] button, and press the [INS] button.
This inserts the new keyframe before the current keyframe.

Inserting Keyframes

You can insert a keyframe in an existing effect.

1. Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.
2. Stop the effect at the desired edit point.
3. Create the image for the keyframe you want to insert.
4. Press the [INS] button.

   When the edit point is on a keyframe, to insert the new keyframe before the existing keyframe, hold down the [SHIFT] button and press the [INS] button.
   This inserts the current image as the new keyframe.
   Inserting a keyframe may change the total duration of the effect.

   For details, see "Time Settings" (page 297).

Modifying Keyframes

1. Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.
2. Stop the effect at the desired edit point.

   If the edit point is on a keyframe, this is what you modify. If the edit point is between two keyframes, the previous keyframe is what you modify.

   Note

   In constant duration mode *(see page 297)*, modification is only possible when the edit point is on a keyframe.
3. Using image transformations or adding special effects, modify the keyframe.
4. Press the [MOD] button.

Modifying more than one keyframe simultaneously

You can modify a number of keyframes simultaneously. There are three different cases for this modification operation.

- Modifying from the edit point to a particular keyframe
- Modifying all keyframes in the effect
- Modifying the keyframes in a specified range

To modify from the edit point to a particular keyframe

1. Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.
2. Stop the effect at the first keyframe of the range to be modified.
3. Carry out the necessary modifications.
4. Press the [FROM TO] button.

   The display in the numeric keypad control block shows the current keyframe number and the indication "TO."
5. Enter the number of the last keyframe to be modified from the numeric keypad control block and press the [ENTER] button to confirm.
6. Press the [MOD] button, or press the [MOD] button while pressing the [SHIFT] button.

   For the difference in the result, see "Differences in the changes when a number of keyframes are modified" (page 310).

To modify all keyframes in the effect

1. Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.
2. Carry out the necessary modifications on any keyframe.
3. Press the [ALL] button, turning it on orange.
4. Press the [MOD] button, or press the [MOD] button while pressing the [SHIFT] button.

   For the difference in the result, see "Differences in the changes when a number of keyframes are modified" (page 310).

To modify the keyframes in a specified range

1. Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.
2. Stop the effect at any keyframe within the range to be modified.
3. Carry out the necessary modifications.
4. Press the [FROM TO] button.

The display in the numeric keypad control block shows the current keyframe number and the indication "TO."

5 Using the numeric keypad in the numeric keypad control block, carry out the following operations.

- To set the first keyframe in the range to be modified, press the [CLR] button, then enter the keyframe number using the numeric keypad buttons, and press the [ENTER] button to confirm.
- To set the last keyframe in the range to be modified, enter the keyframe number using the numeric keypad, and press the [ENTER] button to confirm.

6 Press the [MOD] button, or press the [MOD] button while pressing the [SHIFT] button.

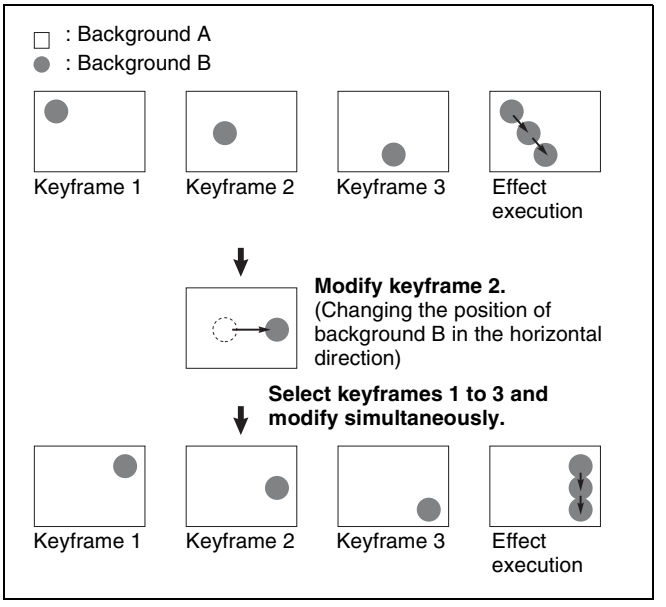
For the difference in the result, see "Differences in the changes when a number of keyframes are modified" (page 310).

Differences in the changes when a number of keyframes are modified

When you select a number of keyframes to modify, and press the [MOD] button alone or in combination with the [SHIFT] button, the result of the operation differs as shown below.

Modifying the keyframes by pressing the [MOD] button alone

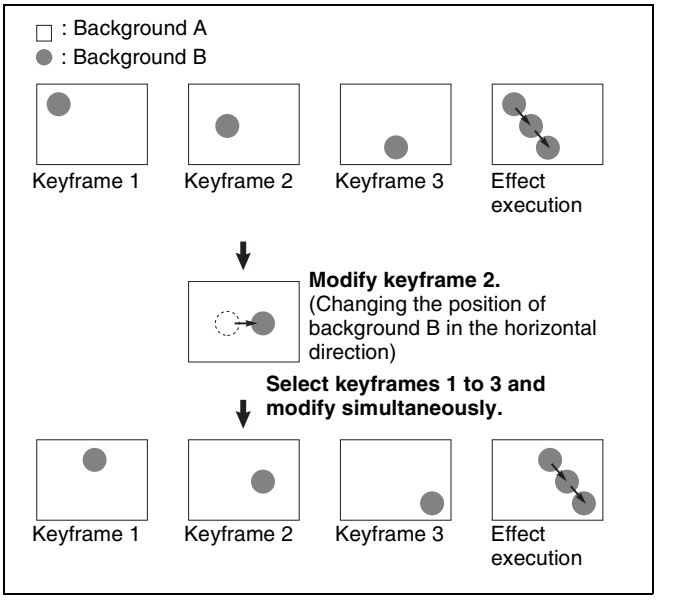
The modified parameter values are taken as absolute values, and applied to all of the selected keyframes.



Result:
The horizontal position of background B in keyframes 1 and 3 is now the same as that in keyframe 2.
In all keyframes, the vertical position remains unchanged as the parameter is not changed.

Modifying the keyframes by holding down the [SHIFT] button and pressing the [MOD] button

The modified parameter values are taken as relative values, which modify all of the selected keyframes.



Result:
Background B of keyframes 1 and 3 is moved in the horizontal direction by the same amount as in keyframe 2.

Deleting Keyframes

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Stop the effect at the desired edit point.

When the edit point is on a keyframe, this is what you delete. If the edit point is between two keyframes, the previous keyframe is what you delete.

3 To delete a number of keyframes in a single operation, press the [FROM TO] button or the [ALL] button.

If you press the [FROM TO] button, specify the keyframe range.

For details about specifying a range, see "Modifying more than one keyframe simultaneously" (page 309).

4 Press the [DEL] button.

This deletes the keyframe.
Deleting a keyframe reduces the total duration of the effect.
In constant duration mode *(see page 297)*, however, the duration does not change.

For details, see "Changes in the effect duration caused by deleting a keyframe" (page 298).

Moving Keyframes

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Stop the effect at the edit point you want to move.

3 To move a number of keyframes in a single operation, press the [FROM TO] button and specify the keyframe range.

For details about specifying a range, see "Modifying more than one keyframe simultaneously" (page 309).

4 Press the [DEL] button.

This deletes the specified keyframe and stores it in the paste buffer.

5 Move the edit point to the position to which you want to move the keyframe.

6 Press the [PASTE] button.

This inserts the keyframe you have moved after the current keyframe.
In constant duration mode, the moved keyframe overwrites the edit point.

To insert the target keyframe to move before another keyframe

Press and hold the [SHIFT] button, and press the [PASTE] button.
This inserts the target keyframe to move before the current keyframe.

Copying Keyframes

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Stop the effect at the edit point you want to copy.

3 To copy a number of keyframes in a single operation, press the [FROM TO] button or the [ALL] button.

If you press the [FROM TO] button, specify the keyframe range.

For details about specifying a range, see "Modifying more than one keyframe simultaneously" (page 309).

4 Press the [COPY] button.

This copies the specified keyframe and stores it in the paste buffer.

5 Move the edit point to the position where you want to insert the copied keyframe.

6 Press the [PASTE] button.

This inserts the keyframe you have copied after the current keyframe.
In constant duration mode, the copied keyframe overwrites the edit point.

To insert the copied keyframe before a keyframe

Press and hold the [SHIFT] button, and press the [PASTE] button.
This inserts the keyframe you have copied before the current keyframe.

Pause

You can apply a pause to a keyframe.

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Stop the effect on the keyframe to which you want to apply a pause.

3 Press the [PAUSE] button.

Keyframe Loop (Repeated Execution of a Specified Range)

By setting the range of the loop within the effect, and the number of loop executions, you can execute the loop range repeatedly.

Note

It is only possible to set one keyframe loop for each region.

Setting keyframe loop

Specify the loop range and loop count.

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Stop the effect on the keyframe you want to make the first of the loop range (start point).

Here, by way of example, keyframe 2 is taken as the start point.

3 Press the [KF LOOP] button, turning it on blue.

The numeric keypad control block display shows the start point keyframe number.

FROM 2 TO

"FROM" indicates the start point of the loop range, while "TO" indicates the end point.

4 With the numeric keypad buttons of the numeric keypad control block, enter the number of the last keyframe in the loop range (end point).

Here, by way of example, keyframe 5 is the end point.

FROM 2 TO 5

5 Press the [ENTER] button to confirm the entry.

The display changes, prompting you to enter the loop count.

COUNT

6 Enter the loop count.

To specify a loop count, enter a number in the range 1 to 99.
To specify an endless loop, enter "0" (zero).
Here, by way of example, "15" is entered.

COUNT 15

7 Press the [ENTER] button to confirm the entry.

The start point, end point, and loop count that you have set are reflected in the Timeline menu.
If you enter the loop count as "0" (endless loop), the count is shown as "inf" (infinity).

Modifying the keyframe loop settings

You can modify the loop range or count for the currently recalled effect.

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Press the [KF LOOP] button, turning it on blue.

The numeric keypad control block display shows the current loop range.

3 To modify the loop range, press the [CLR] button in the numeric keypad control block.

To modify only the loop count, press the [ENTER] button and skip to step **6**.

4 Enter the keyframe number for the new start point, and press the [ENTER] button.

5 Enter the keyframe number for the new end point, and press the [ENTER] button.

The display shows the currently set loop count.

6 To modify the loop count, press [CLR] and enter the new loop count.

7 Press the [ENTER] button.

Executing a keyframe loop

Press the [RUN] button.
The set loop range is executed repeatedly for the set loop count number of times.
The total loop count and the number of loops remaining are displayed in the timeline menu. If the loop count is infinite (inf), the remaining number is not shown.
If the [REV] button is lit, the loop is played in the reverse order.

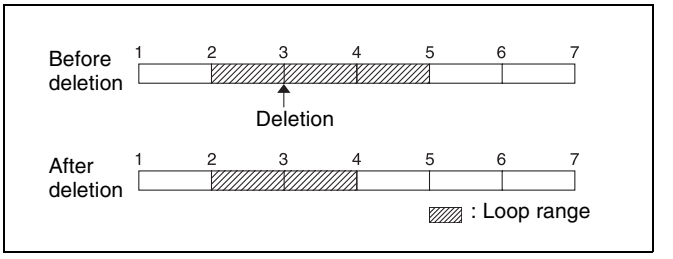
Canceling keyframe loop execution

Press the [REWIND] button.

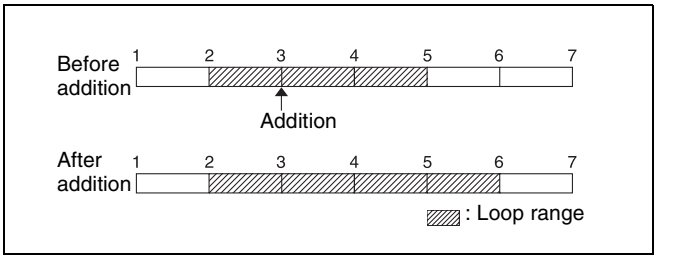
Changes to the loop range caused by keyframe insertion/deletion

When a keyframe is inserted or deleted within the loop range, the loop range also changes. The following are examples.

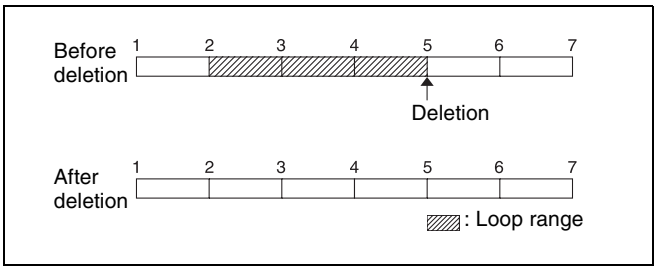
Example 1: If keyframe 3 is deleted, the loop end point moves forward as follows.



Example 2: If keyframe 3 is added, the end point keyframe number moves back.



Example 3: If the keyframe at the end of the loop range (the end point) is deleted, the keyframe loop settings are all cleared, as follows, and the [KF LOOP] button goes off. The same occurs if the first keyframe in the loop range (the start point) is deleted.



Undoing an Edit Operation

To undo a keyframe insert, modify, delete, or paste operation immediately after execution, press the [UNDO] button.

Duration Mode Setting

There are two keyframe duration modes: variable duration mode, and constant duration mode in which the effect duration is fixed *(see page 297)*.

- To select variable duration mode, press the [CONST DUR] button, turning it dark blue.
- To select constant duration mode, press the [CONST DUR] button, turning it orange.

Transition Mode Settings for User Programmable DME

To create an effect for user programmable DME, it is necessary to set the transition mode.

User programmable DME transition mode

For the transition mode set when creating a keyframe effect for a user programmable DME pattern, the following can be used.

Single: Single transition mode

Flip tumble (Flip Tumble): Flip tumble transition mode

Dual: Dual transition mode

Picture-in-picture (P in P): 1-channel and 2-channel picture-in-picture transition mode

Compress: A type of picture-in-picture, in which the new image is the background, and the currently visible image shrinks, and then expands to its original size *(see page 313)*.

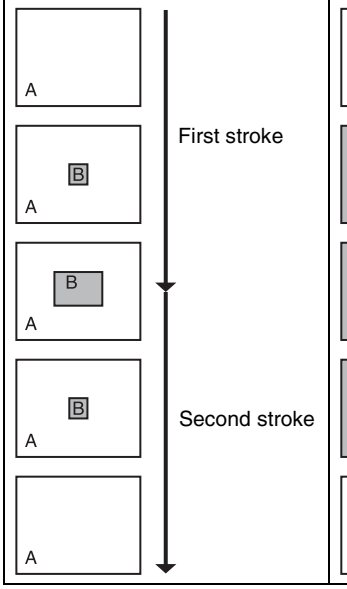
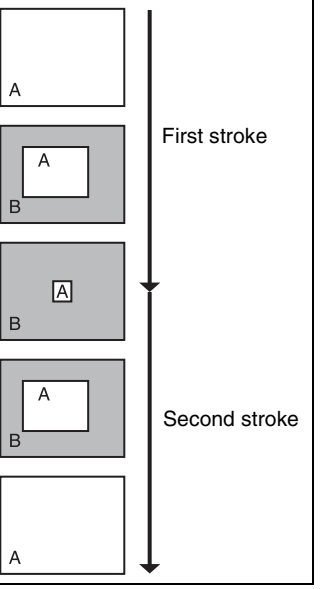
Frame in-out (Frame I/O): 1-channel or 2-channel, frame in-out transition mode. When the first transition completes, if you move the position of the image, you can move it both horizontally and vertically *(see page 313)*.

Frame in-out H (Frame I/O H): A type of frame in-out, which is specified when creating a transition effect in the horizontal direction. The image movement is reflected at both the transition start point and end point *(see page 314)*.
The operation is carried out according to DME wipe patterns 1201, 1203, or 1204.

Frame in-out V (Frame I/O V): A type of frame in-out, which is specified when creating a transition effect in the vertical direction. The image movement is reflected at both the transition start point and end point *(see page 314)*.

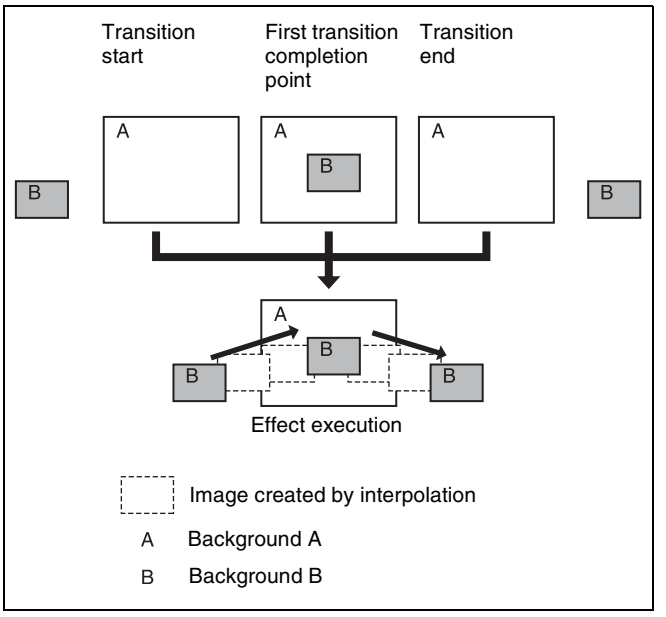
Transition mode “Compress”

The change in the image when the transition mode is set to “Compress” is as follows, in comparison to the case of “Picture-in-picture.”

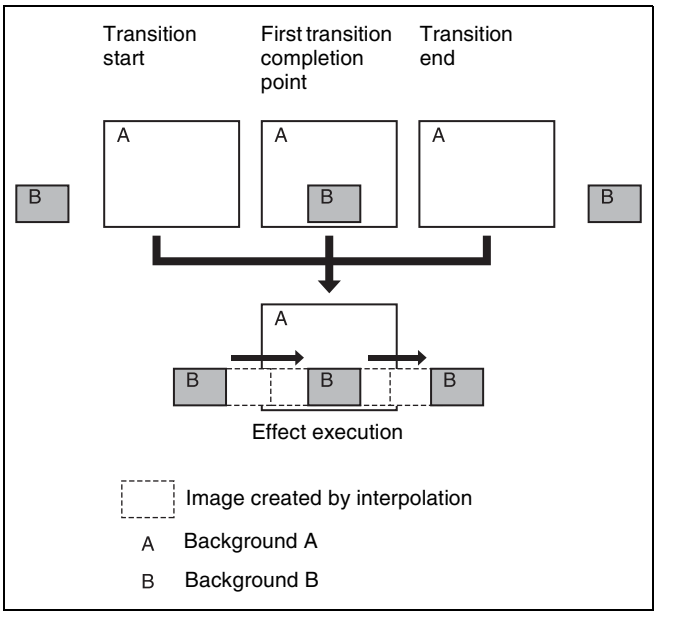
Example of the image change in the transition mode “Picture-in-picture” (1-channel mode)	Example of the image change in the transition mode “Compress”
	

Transition mode “Frame in-out”

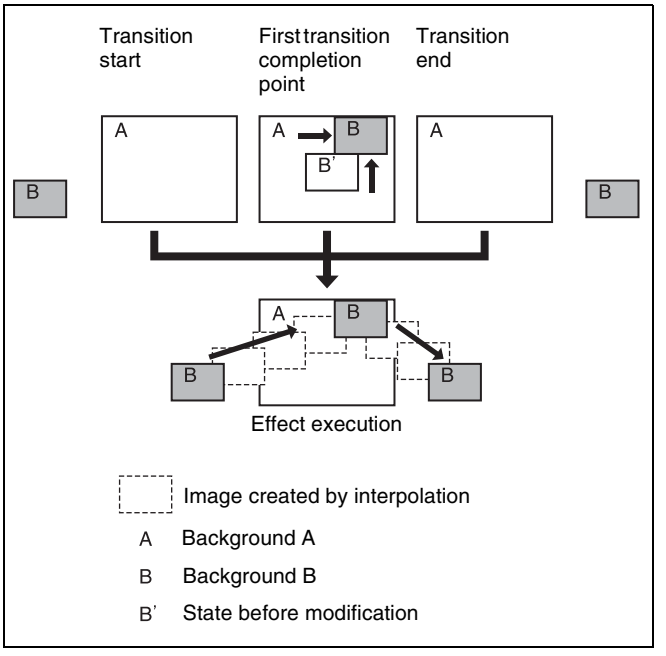
In this mode, when the first transition has completed, you can move the image with the positioner in both horizontal and vertical directions, but the image position at the transition start point and end point does not change.
The description is of an example of creating an effect such as the following.



At the first transition completion point, if you move the image with the positioner, the transition appears as follows.



At the first transition completion point, if you move the image with the positioner, the transition appears as follows.

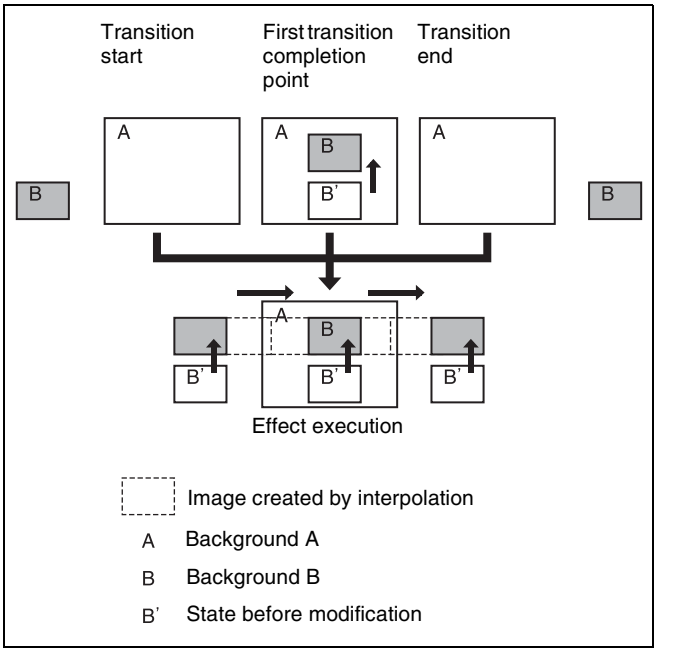


Transition mode “Frame in-out H”

This mode is specified when creating a transition effect in the horizontal direction.

In this mode, when the first transition has completed, you can move the image with the positioner in both horizontal and vertical directions. The image at the transition start point and end point also moves.

The description is of an example of creating an effect such as the following.

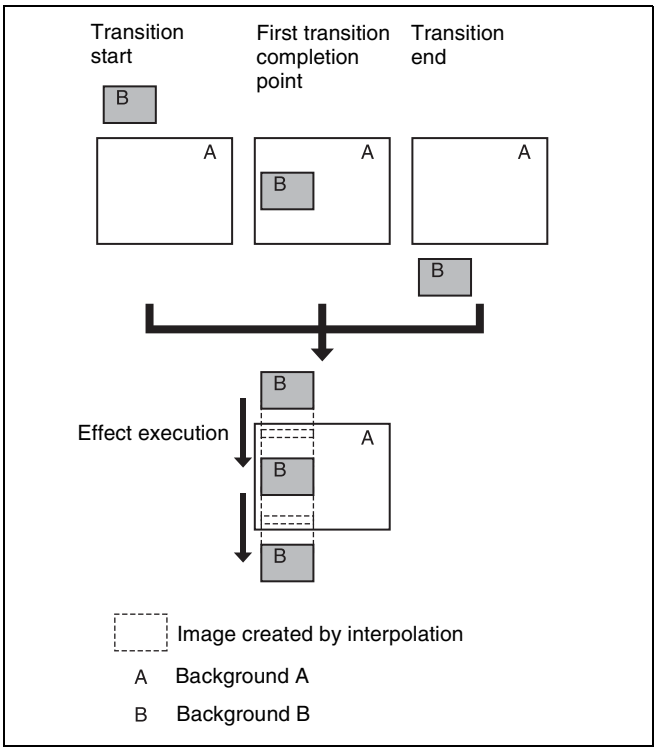


Transition mode “Frame in-out V”

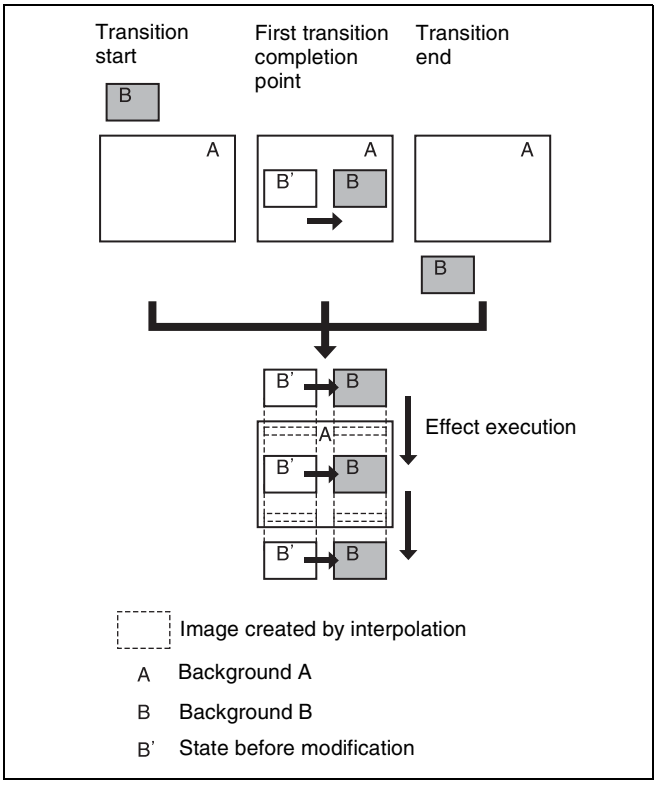
This mode is specified when creating a transition effect in the vertical direction.

In this mode, in the state at completion of the first transition, you can move the image with the positioner in both horizontal and vertical directions. The image at the transition start point and end point also moves.

The description is of an example of creating an effect such as the following.



At the first transition completion point, if you move the image with the positioner, the transition appears as follows.



Signals forming part of the background for a DME wipe

For a 2-channel mode page turn, roll, brick, frame in-out, and so on, the part of the pattern image shown in gray is filled with the signal selected on the DME external video bus.

For 3-channel mode brick, the part of the pattern image shown in dark gray is filled with the signal selected on the DME external video bus, and the light gray portion is filled with the signal selected on the DME utility 1 bus.

For details about patterns, see "DME Wipe Pattern List" (page 495).

Setting the transition mode

1 Open the Key Frame >DME User PGM menu (6114).

2 In the <Transition Mode> group, select the transition mode according to the DME wipe action.

Single: Select single transition mode.
Flip Tumble: Select flip tumble transition mode.
Dual: Select dual transition mode.
P in P: Select picture-in-picture transition mode.
Compress: Select compress transition mode.
Frame I/O: Select frame in-out transition mode.
Frame I/O H: Select frame in-out transition mode in the horizontal direction.
Frame I/O V: Select frame in-out transition mode in the vertical direction.

For details about user programmable DME, see "Creating User Programmable DME Patterns" (page 166).

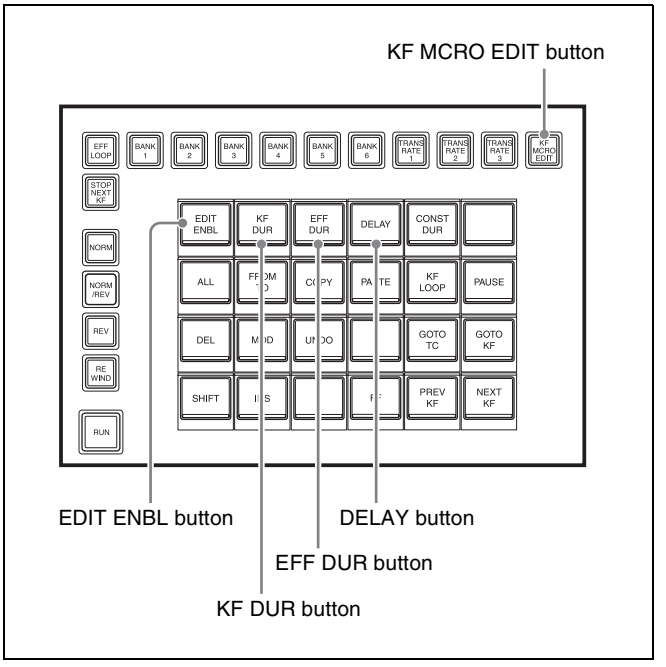
Note

The DME channel selected as the reference region (lit green) in the numeric keypad control block is reflected in the <Transition Mode> group display.

Time Settings

You can determine the execution time of an effect by setting either the keyframe durations or the effect duration *(see page 297)*.
You can make execution time settings in the utility/shotbox control block.

Setting the Keyframe Duration



Utility/shotbox control block

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Stop the effect on the keyframe for which you want to set the duration.

The time from this keyframe to the following keyframe is what you set.

3 Press the [KF DUR] button.

The display in the numeric keypad control block shows "KF DUR" followed by the duration of the current keyframe (seconds:frames).

4 Using the numeric keypad in the numeric keypad control block, enter the timecode value, as a maximum of four digits.

For example, to set 9 seconds and 20 frames, enter 920.

You can also use the [TRIM] button to enter a difference value *(see page 308)*.

5 Press the [ENTER] button to confirm the entry.

Note

The keyframe duration may also be automatically changed as a result of changing the effect duration.

For details, see "Time Settings" (page 297).

Setting the Effect Duration

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Press the [EFF DUR] button.

The display in the numeric keypad control block shows "DUR" followed by the effect duration (minutes:seconds:frames).

3 Using the numeric keypad in the numeric keypad control block, enter the timecode value, as a maximum of six digits.

For example, to set 3 minutes 7 seconds and 15 frames, enter 30715.
You can also use the [TRIM] button to enter a difference value *(see page 308)*.

4 Press the [ENTER] button to confirm the entry.

Note

The effect duration may also be changed by inserting or deleting keyframes.

For details, see "Time Settings" (page 297).

Delay Setting

1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

2 Press the [DELAY] button.

The display in the numeric keypad control block shows "DELAY" followed by the delay time (seconds:frames).

3 Using the numeric keypad in the numeric keypad control block, enter the timecode value, as a maximum of four digits.

You can also use the [TRIM] button to enter a difference value *(see page 308)*.

4 Press the [ENTER] button to confirm the entry.

Path Settings

The term "path" *(see page 298)* refers to the specification of how interpolation is carried out from one keyframe to the next.
Set keyframe paths in the Key Frame >Path menu (6113).

Basic Path Setting Operations

This section describes an example using key 1 on the M/E-1 bank to make path settings.

Selecting the category

In the Key Frame >Path menu (6113), from the buttons in the function button area, select the category for which you want to make the setting.
First row: Path settings for the switcher M/E-1 to M/E-5, and PGM/PST banks
Second and third rows: Path settings for User1 to User8
Fourth row: Path settings for DME local channel and global channel 3D transforms and effects

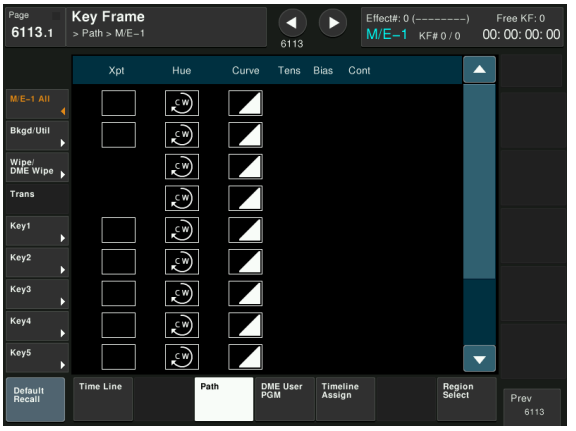
To select the M/E-1 bank, select [M/E-1] in the first row, and open the M/E-1 menu (6113.1).

Making switcher path settings

The area for the VF buttons in the Key Frame >Path >M/E-1 menu (6113.1) shows the names of items.
A ▶ sign by a button indicates that pressing it opens a more detailed setting menu.
The status area shows the settings for Xpt, Hue, and Curve. However, depending on the item, these parameters may or may not be present.

Note

Whenever you set a path or modify its setting, be sure to press the [KF MCRO EDIT] button in the utility/shotbox control block to switch to keyframe/macro editing mode, and press the [EDIT ENBL] button and then [MOD] button. The setting does not become effective unless the [MOD] button is pressed.



Changing the path type for Curve

1 In the Key Frame >Path menu (6113), press [M/E-1].

The M/E-1 menu (6113.1) appears.

2 Press the "Curve" path type indication for the [Key1] item that you want to change.

A path selection window appears.

3 Press the indication for the desired path type, to select it.

OFF: Executing the effect causes no change.

Step: There is no interpolation between keyframes, so that the effect parameters are updated each time a keyframe is passed.

Linear: Linear interpolation between keyframes, resulting in constant speed movement.

S-Curve: The rate of change accelerates and decelerates before and after a keyframe, so that the rate of change is maximum midway between two keyframes.

Spline: The effect follows a smooth curved path from each keyframe to the next.

The status area reflects the selected path type.
At this point, depending on the setting for Curve, the effect for Hue and Xpt is also affected as shown in the following table. In the menu, the Hue and Xpt settings do not change, but the path type indication is dimmed out.

Curve setting	Hue change	Xpt change
OFF	Does not change	Hold
Step	Changes with the Step setting	Is not affected

4 If you selected [Spline] as the path type, set the following parameters.

No.	Parameter	Adjustment
1	Tens	Spline interpolation tension
2	Bias	Spline interpolation bias
3	Cont	Spline interpolation continuity

Changing the path type for Hue

1 In the Key Frame >Path menu (6113), press [M/E-1].

The M/E-1 menu (6113.1) appears.

2 Press the "Hue" path type indication for the [Key1] item that you want to change.

A path selection window appears.

3 Press the indication for the desired path type, to select it.

CW: Rotate clockwise.

CCW: Rotate counterclockwise.

Short: The hue changes in whichever of the clockwise and counterclockwise directions is shorter.

Long: The hue changes in whichever of the clockwise and counterclockwise directions is longer.

Changing the path type for Xpt

1 In the Key Frame >Path menu (6113), press [M/E-1].

The M/E-1 menu (6113.1) appears.

2 Press the "Xpt" path type indication for the [Key1] item that you want to change.

A path selection window appears.

3 Press the indication for the desired path type, to select it.

Xpt Hold off: When replaying a keyframe, change the inputs to the settings saved in memory.

Xpt Hold on: When replaying a keyframe, do not change the inputs.

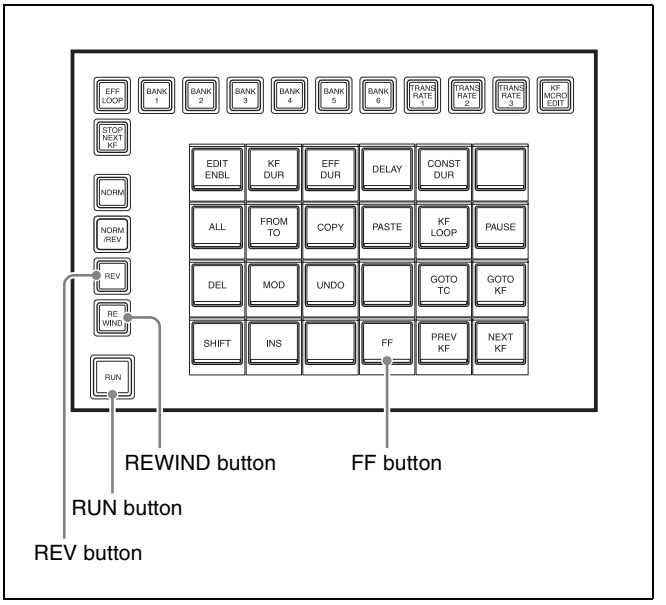
Effect Execution

By using the [RUN] button in the utility/shotbox control block, you can replay the effect as a continuous sequence of images. This is referred to as effect execution *(see page 301)*.
It is also possible to execute an effect from the Flexi Pad control block or device control block.

For details about effect operations in the device control block, see "Device Control Block (Trackball)" (page 40).

Effect Execution (Utility/Shotbox Control Block)

Use the keyframe control buttons in the utility/shotbox control block to execute the keyframe effect recalled using the numeric keypad control block.



Utility/shotbox control block

Executing an effect automatically

1 Use the region selection buttons in the numeric keypad control block to select the target region of the operation.

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

2 Use the numeric keypad to enter the number of the register in which the effect you want to execute is saved, and press the [ENTER] button to confirm.

This recalls the effect saved in the register.

3 Press the [RUN] button in the utility/shotbox control block.

The [RUN] button lights amber and the effect is executed automatically.

Executing an effect manually (fader lever)

Use the transition control block fader lever as a keyframe fader.
In step **3** of *"Executing an effect automatically" (page 319)*, operate the fader lever.

To use the transition control block fader lever as a keyframe fader

You can also assign the [KF] button functions to a button in the transition control block *(see page 410)*.
Press the [KF] button, turning it on, to execute a keyframe effect with the fader lever.

Notes

- It is not possible for the [KF] button to be enabled for multiple banks (M/E or PGM/PST) at the same time. If you press the [KF] button in more than one bank, only the last button pressed remains enabled.
- If a macro is assigned to the transition control block fader lever, then while in use as a keyframe fader the macro is not executed.

Moving to the first keyframe of the effect

Press the [REWIND] button.

Moving to the last keyframe of the effect

Press the [FF] button. Alternatively, press the [REV] button, turning it on, and press the [REWIND] button.

Setting the Run Mode

You can set the mode for executing effects using the [RUN] button in the utility/shotbox control block.

Specifying the effect execution direction

To specify the effect execution direction, press the [NORM] button or the [REV] button, turning it on.
To execute the effect so as to obtain the effects of the [NORM] and [REV] buttons alternately, press the [NORM/REV] button, turning it on.
When the [NORM] button is lit: The effect is executed in the direction from the first keyframe to the last keyframe.

When the [REV] button is lit: The effect is executed in the direction from the last keyframe to the first keyframe.
When the [NORM/REV] button is lit: Each time the effect is executed, the direction reverses.

Executing an effect up to the next keyframe

1 Press the [STOP NEXT KF] button, turning it on.

2 Press the [RUN] button.

This executes the effect as far as the next keyframe. When the [REV] button is lit, it is executed as far as the previous keyframe.

Repeating an effect

1 Press the [EFF LOOP] button, turning it on.

2 Press the [RUN] button.

This executes the effect repeatedly, from the first keyframe to the last keyframe.
When the [REV] button is lit, the effect is executed in the reverse direction.

3 To stop the repeating effect, press the [EFF LOOP] button, turning it off, or press the [REWIND] button.

Saving Effects

When you recall an effect, the currently recalled effect is automatically saved in a register. This is referred to as the auto save function.
You can disable the auto save function in the Setup menu.
You can also specify a register and save an effect in it.

Saving an effect in a specified register

Specify the register using the numeric keypad control block.

1 In the numeric keypad control block, press the [EFF] button.

The control block switches to effect operation mode, and the [EFF] button and [RCALL] button light amber.

2 Select the region using the region selection buttons.

You can select more than one button.
The following region selection buttons can be operated for effects.
M/E1 to M/E5, P/P, USER1 to USER8,
DME1 to DME4, PBUS, GPI, MCRO, ALL

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

For details about saving a master timeline, see "Creating and saving a master timeline" (page 321).

3 Press the [STORE] button, turning it on.

4 Enter the number of the register in which you want to save using the numeric keypad buttons.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

5 Press the [ENTER] button.

This saves the effect in the specified register.
The [RCALL] button and the [STORE STATS] button light amber.

To undo the saving of an effect

While the [STORE STATS] button is lit amber, press and hold the [STORE STATS] button and press the [UNDO] button.

Creating and Saving a Master Timeline

You can save region information (information on any regions, including the register numbers associated with the regions) referred to as a master timeline in a dedicated register. By recalling that register, you can manipulate the regions and registers together.

Creating and Saving a Master Timeline (Numeric Keypad Control Block)

Creating and saving a master timeline

1 Press the [EFF] button.

The control block switches to effect operation mode, and the [EFF] button and [RCALL] button light amber.

2 Recall the effect to save on the master timeline by specifying the register number for each region.

For details about the method of operation, see "Recalling a register" (page 306).

3 Press the buttons for the regions you want to save on the master timeline, turning them on.

4 Press the region selection button [MASTR], turning it on.

The display shows "MASTR" and the last recalled master timeline register number.

5 Press the [STORE] button, turning it on.

6 With the numeric keypad buttons, enter the number of the register in which you want to save the master timeline.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

7 Press the [ENTER] button.

This saves the effect in the specified register. The [RCALL] button and the [STORE STATS] button light amber.

Notes

- It is not possible to undo a master timeline save.
- Saving the master timeline does not carry out a save of effects. Save the effects for each region first, then carry out the master timeline save.

Modifying a master timeline

This section describes changing the M/E-1 register from Effect 5 to Effect 10 as an example.

Example: Master timeline register information before and after modification

Region	Register	
	Before modification	After modification
M/E-1	Effect 5	Effect 10
P/P	Effect 5	Effect 5

1 Recall the master timeline register you want to change *(see page 306)*.

This simultaneously recalls M/E-1 register 5 and P/P register 5, and the [M/E1] and [P/P] region selection buttons light.

2 Press the region selection button [MASTR], turning it off.

3 Turn on only the button for the region you want to change ([M/E1]), and recall the desired register (Effect 10).

This recalls M/E-1 register 10, while on P/P register 5 remains selected.

4 Press the buttons for the regions you want to save on the master timeline ([M/E1] and [P/P]), turning them on.

5 Press the region selection button [MASTR], turning it on.

The display shows the last recalled master timeline register number.

6 Press the [STORE] button, turning it on.

7 Use the numeric keypad buttons to enter the number of the register in which you want to save the master timeline, and press the [ENTER] button.

This saves M/E-1 register 10 and P/P register 5 in the master timeline register.

Checking the regions saved on a master timeline

For example in the course of changing a master timeline, you can check which regions are saved in the register.
With the [MASTR] button lit, hold down the [STORE] button.
While the [STORE] button is pressed, the region selection button for the saved region lights amber.

Creating and Saving a Master Timeline (Menu)

1 Open the Effect >Master Timeline >Store menu (6211).

The status area shows the master timeline register names, register lock status, register number for each region, and so on.

2 Switch the region display as required.

Press the button corresponding to the region you want to display.
M/E: M/E-1 (“ME1”), M/E-2 (“ME2”), M/E-3 (“ME3”), M/E-4 (“ME4”), M/E-5 (“ME5”)
P/P: PGM/PST (“P/P”)
User: User1 (“USR1”), User2 (“USR2”), User3 (“USR3”), User4 (“USR4”), User5 (“USR5”), User6 (“USR6”), User7 (“USR7”), User8 (“USR8”)
DME: DME ch1 (“DME1”), ch2 (“DME2”), ch3 (“DME3”), ch4 (“DME4”)
DEV1-8: Device1 (“DEV1”), Device2 (“DEV2”), Device3 (“DEV3”), Device4 (“DEV4”), Device5 (“DEV5”), Device6 (“DEV6”), Device7 (“DEV7”), Device8 (“DEV8”)
DEV9-12: Device9 (“DEV9”), Device10 (“DEV10”), Device11 (“DEV11”), Device12 (“DEV12”)
Misc: P-Bus (“PBUS”), GPI (“GPI”), Macro (“MCRO”)

3 In the status area, select the target master timeline register to set.

4 Press [Edit].

The Edit menu (6211.1) appears.
You can also use the [Master Reg] parameter to select the master timeline register in this menu.
The status area shows the information for the selected master timeline register and the region selection buttons.

5 Press a region selection button to select a region.

You can select more than one region.

To select all regions, press [ALL]. To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].

6 Press [Assign], turning it on, and select a register using the following parameter.

No.	Parameter	Adjustment
3	Effect Reg	Effect register number

7 Repeat steps **5** and **6** as required to set all effects to be saved in the master timeline register.

8 In the <Store> group, press [Store].

To return to the state before saving the master timeline content

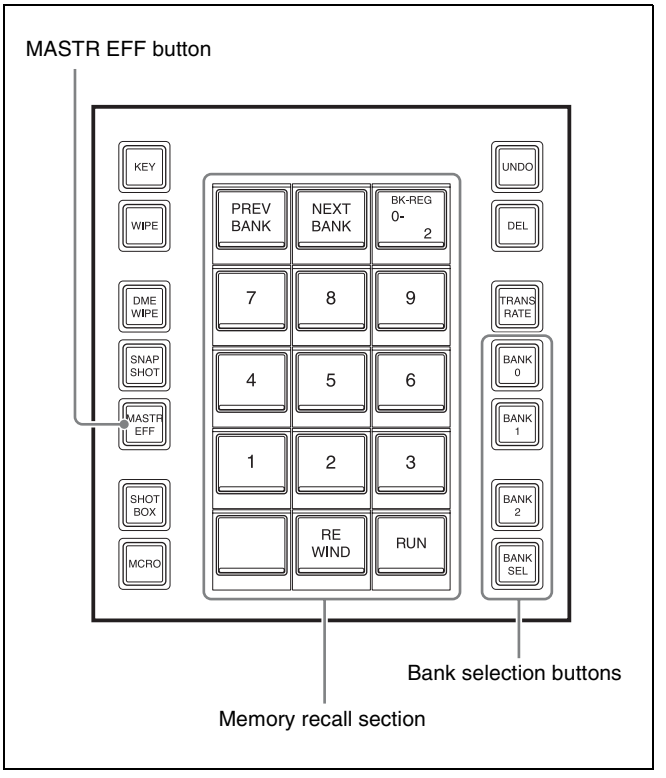
In the <Store> group, press [Undo].

Recalling and Executing a Master Timeline

For details about recalling a master timeline in the numeric keypad control block, see "Recalling a Register (Numeric Keypad Control Block)" (page 305).

Recalling and Executing a Master Timeline (Flexi Pad Control Block)

Pressing the [MASTR EFF] button in the Flexi Pad control block switches the memory recall section to effect operation mode for recalling and executing master timelines. The region set when the master timeline was saved is recalled.



Flexi Pad control block

1 In the Flexi Pad control block, press the [MASTR EFF] button.

This switches the memory recall section to effect operation mode.
The bank recalled last and register number are displayed on the top right button in the memory recall section.

2 Select the target bank for operation using the bank selection buttons.

Select from bank 0 to 9 (register number 1 to 99) for the effect.

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

3 Press the button for the register to be recalled.

The selected button lights orange, and this recalls the master timeline. The selected bank and register number are displayed on the top right button in the memory recall section.

4 Execute the effect.

Pressing the [REWIND] button in the memory recall section moves to the first keyframe of the effect.
Pressing the [RUN] button executes the effect.
If a pause is set in the effect, the display of the [RUN] button will switch to [PAUSE] at the pause point. When you press the [PAUSE] button, the display returns to [RUN] and effect execution resumes.

Editing Registers

Using the Effect menu, you can carry out the following effect register operations.
- Effect status display *(see page 324)*
- Effect attribute settings *(see page 324)*
- Effect register editing *(see page 324)*

This section describes the menu for effect registers 1 to 99 as an example.
Carry out similar operations in the User DME Wipe Effect 101-199 menu, User DME Wipe Effect 201-299 menu, and User DME Wipe Effect 301-399 menu for user programmable DME registers.
Carry out similar operations in the DEV/PBUS Effect 1-250 menu for P-Bus and Device1 to Device12 registers.

Effect Status Display

The Effect >Effect 1-99 menu displays the following information.
Region name: The selected region name appears in the upper part of the list.
Register number
Register name
Write-protected status: When the register is write-protected, an "L" appears.
Empty status: When the register is empty, an "E" appears.

Effect Attribute Settings

Applying effect dissolve

Apply the "effect dissolve" attribute to a keyframe effect.

1 Open the Effect >Effect 1-99 >Attribute menu (6221).

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window.

You can select more than one region.
To select all regions, press [ALL]. To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].

3 Press [OK].

4 Select a register.

To select all registers, press [ALL]. To select multiple registers, set the [Num] parameter.

To select multiple registers with the [Num] parameter
Specify the register number in the [Register] parameter, and set the quantity in the [Num] parameter.
The specified amount of registers is selected from the specified register number.

5 Press [Effect Dissolve], turning it on.

6 Set the duration.

No.	Parameter	Adjustment
4	Eff Diss Duration	Dissolve duration

To set the duration for a temporary attribute
Set the duration for a temporary attribute set in the numeric keypad control block using the following parameters.

No.	Parameter	Adjustment
5	Temp Dur	Temporary attribute dissolve duration

Effect Register Editing

You can carry out the following editing on effect registers and master timeline registers.
- **Lock:** Write-protect the data contents of the register.
- **Copy:** Copy data between registers.
- **Merge:** Merge the data of two registers. It is not possible to merge master timeline registers.
- **Move:** Move data between registers.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the data contents of a register.
- **Name:** Attach a name to a register.

Write-protecting the contents of the effect register

Note

It is not possible to write-protect an empty register.

1 Open the Effect >Effect 1-99 >Lock menu (6222).

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window.

You can select more than one region.
To select all regions, press [ALL]. To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].

3 Press [OK].

4 Select a register.

To select all registers, press [ALL]. To select multiple registers, set the [Num] parameter *(see page 324)*.

5 Press [Lock], turning it on.

To release the lock
Select the register you want to unlock, and press [Lock], turning it off.

Copying, moving, and swapping data between effect registers

This section describes the procedure for copying data as an example. You can move or swap data using a similar procedure.

1 Open the Effect >Effect 1-99 >Copy/Merge menu (6223).

The left side of the status area shows the register number of the copy source, and the right side shows the register number of the copy destination.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window.

Operation between regions
Operation between regions is possible in the following cases.
- Two of the M/E-1, M/E-2, M/E-3, M/E-4, M/E-5, and PGM/PST regions
- Two of the User1 to 8 regions of the same configuration
- Two of the DME ch1 to ch4 (including Global) regions

3 Select the source and destination registers.

To select all registers, press [ALL]. To select multiple registers, set the [Num] parameter *(see page 324)*.

4 To copy without transferring the name, in the <Copy> group, press [W/o Name], turning it on.

5 In the <Copy> group, press [Copy].

Merging effect registers

1 Open the Effect >Effect 1-99 >Copy/Merge menu (6223).

The left side of the status area shows a list for the register to be placed at the back when merged. The right side shows a list for the register to be placed at the front when merged.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window.

3 Select the register to be at the back and the register to be at the front after the merge.

4 Press [Merge].

Deleting data from effect registers

1 Open the Effect >Effect 1-99 >Delete menu (6226).

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window.

You can select more than one region.
To select all regions, press [ALL]. To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].

3 Press [OK].

4 Select a register.

To select all registers, press [ALL]. To select multiple registers, set the [Num] parameter *(see page 324)*.

5 Press [Delete].

Attaching a name to an effect register

1 Open the Effect >Effect 1-99 >Rename menu (6227).

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window.

You can select more than one region.
To select all regions, press [ALL]. To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].

3 Press [OK].

4 Select a register.

5 Press [Rename].

6 Enter a name of up to 8 characters in the keyboard window, and press [Enter].

Note

The following names cannot be used.
CON, PRN, AUX, CLOCK$, NUL

COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Effect Register List View and Editing

You can display a list of effect registers including status information (whether data is present and so on), then carry out lock, copy, delete, and rename operations.

Displaying the list of effect registers

Press the menu title button at the top left of the Effect menu.
The Effect >Status menu (6200) appears.
The status area shows a list of effect registers (1 to 99).

Register name displays

For the same number, the register name for the M/E-1 region takes precedence.
If there is no data for the M/E-1 region, then the register name appears in the sequence M/E-2 >M/E-3 >M/E-4 >M/E-5 >PGM/PST >User1 to User8 >DME ch1 to DME ch4 >Device1 to Device12 >P-Bus >GPI >Macro.

Indication colors

Each register has a color-coded border, indicating its status.
Selected register: Pale blue border
Register containing data: Shown orange within the border. If, however, there are one or more locked regions, the display is in red.

Write-protecting the contents of the effect register

This applies to all regions.

1. In the Effect >Status menu (6200), select the register.
2. Press [Lock].

   The register is locked, and the background of the register indication appears in red.

To release the lock

Press [Lock] once more, turning the contents of the frame to orange.

Copying data in effect registers

This applies to all regions.

1. In the Effect >Status menu (6200), select the copy source register.
2. In the <Copy> group, press [From __].
3. Select the copy destination register.
4. In the <Copy> group, press [To __].

Deleting data from effect registers

This applies to all regions.

1. In the Effect >Status menu (6200), select the register.
2. Press [Delete].

Renaming an effect register

This applies to all regions.

1. In the Effect >Status menu (6200), select the register.
2. Press [Rename].
3. Enter a name of up to 8 characters in the keyboard window, and press [Enter].

Note

The following names cannot be used.
CON, PRN, AUX, CLOCK$, NUL
COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Chapter 13 Snapshots

Overview

A snapshot is a function that saves the conditions configured for applying an effect to an image as data in memory (snapshot register) which can be recalled to reproduce the same conditions as required.
You perform snapshot operations using the numeric keypad control block, Flexi Pad control block, or the menu.

Note

If the switcher bank is set to [Inhibit] setting, it is not possible to recall a snapshot on that bank *(see page 406)*.

Snapshot Types

Snapshots are classified as follows.

Snapshots applying to a particular region (functional block of the switcher or DME)

The term "snapshot" alone usually refers to this type of snapshot. This only applies to regions assigned to region selection buttons in the numeric keypad control block.

For details about regions, see "Regions" (page 295).

Master snapshot: In a snapshot that targets the region, this applies to the selected region and the register numbers saved in the region.

Snapshots applying only to particular functions

This type of snapshot includes the following.

Key snapshot: This includes the key on/off state and all key settings other than key priority for each keyer *(see page 138)*.

Wipe snapshot: This includes the wipe settings of each of the banks *(see page 151)*.

DME wipe snapshot: This includes the DME wipe settings of each of the banks *(see page 166)*.

This section describes the snapshots that apply to a particular region.

Snapshot Attributes

An individual snapshot may also have attached special conditions relating to switcher or DME operation when the snapshot is recalled.
These conditions are called "attributes" of the snapshot, and can be added when the snapshot is saved or recalled.

Types of attribute

There are seven snapshot attributes, as follows.

Cross-point hold (Xpt Hold): When the snapshot is recalled, the cross-point button selection information remains unchanged. This can be set independently for each bus.

Key disable: When the snapshot is recalled, the key settings remain unchanged.
This can be set independently for each keyer.
A Setup menu allows you to select whether or not the key on/off state should also remain unchanged.

For details, see "Setting the operation mode of a cross-point hold button on the key bus" (page 468).

Effect dissolve: The transition from the state before the snapshot recall to the snapshot settings changes smoothly (dissolve). The dissolve duration can be set in the Snapshot menu.

Auto transition: An auto transition starts simultaneously after the snapshot is recalled. The auto transition setting is valid only for M/E-1, M/E-2, M/E-3, M/E-4, M/E-5, and PGM/PST.

Note

If both effect dissolve and auto transition are selected as attributes, the auto transition takes precedence.

Clip Auto Play: Plays a frame memory clip immediately after the snapshot is recalled.

Table of available attributes

The attributes that can be used depend on the region, as follows.

Yes: Available, No: Not available

Attributes	Region		
	M/E-1, M/E-2, M/E-3, M/E-4, M/E-5, PGM/PST	User1 to 8	DME ch1 to ch4
Cross-point hold	Yes	Yes	Yes
Key disable	Yes	No	No
Effect dissolve	Yes	Yes	Yes
Auto transition	Yes	No	No
Clip auto play	No	Yes	No

Attribute display

You can check the attributes added to a snapshot in the Snapshot menu *(see page 334)*.

Temporary attributes

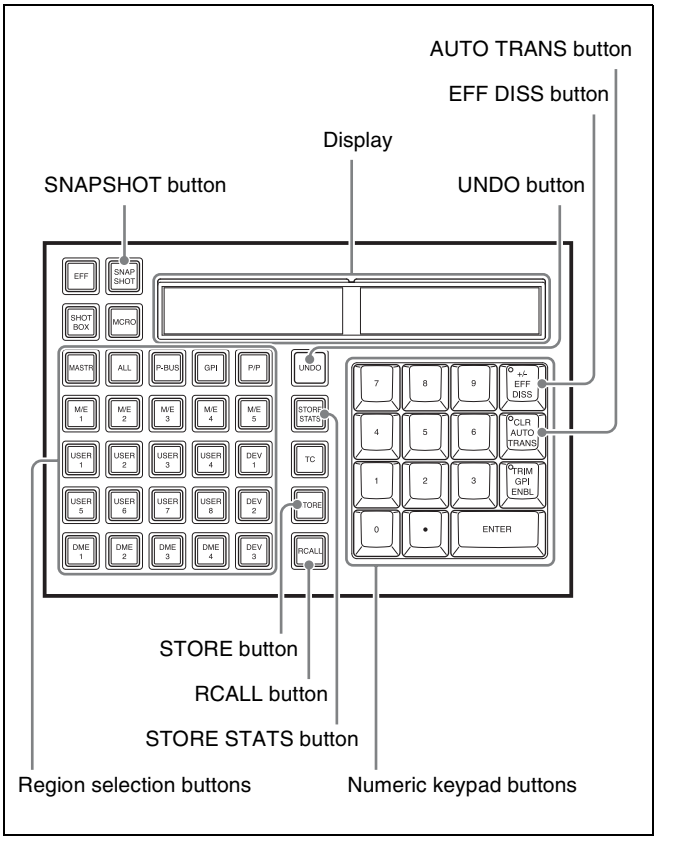
When recalling a snapshot, you can temporarily enable attributes distinct from the attributes set for each register. These are called “temporary attributes.”
You set temporary attributes when recalling a snapshot.

Bus override

If you recall a snapshot while holding down an A or B bus button, the selection of the signal on the A or B bus does not change when the snapshot is recalled. This function is called “bus override.”
This function is effective when cross-point hold is not set, and you want to temporarily maintain the cross-point setting. When cross-point hold is set, bus override operation is not necessary.

Snapshot Operations (Numeric Keypad Control Block)

Saving and Recalling Snapshots



Numeric keypad control block

Saving a snapshot

1 Set the state you want to save as a snapshot.

2 In the numeric keypad control block, press the [SNAPSHOT] button.

The control block switches to snapshot operation mode, and the [SNAPSHOT] button and [RCALL] button light amber.

3 Use the region selection buttons to select the target region of the operation.

You can select more than one button.
The following region selection buttons can be operated for snapshots.

M/E1 to M/E5, P/P, USER1 to USER8,
DME1 to DME4, RTR, ALL

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

For details about saving a master snapshot, see "Creating and saving a master snapshot" (page 330).

The display shows the selected region name and the last recalled register number.

4 Press the [STORE] button, turning it on.

5 Use the numeric keypad to enter the number of the register in which you want to save.

The display shows the selected register number.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

Note

If you press a button in which a snapshot is already saved, the existing contents of the register will be overwritten.

6 To add attributes *(see page 327)*, press the following buttons, turning them on.

Attribute	Button
Effect dissolve	[EFF DISS] button
Auto transition	[AUTO TRANS] button

Note

In the numeric keypad control block, it is not possible to add the cross-point hold attribute. When adding attributes, use the menu *(see page 333)*.

7 Press the [ENTER] button.

This saves the snapshot in the specified register.
The [RCALL] button and the [STORE STATS] button light amber.

To cancel a snapshot save operation

While the [STORE STATS] button is lit amber, press and hold the [STORE STATS] button and press the [UNDO] button.

Recalling a snapshot

1 In the numeric keypad control block, press the [SNAPSHOT] button.

The control block switches to snapshot operation mode, and the [SNAPSHOT] button and [RCALL] button light amber.

2 Use the region selection buttons to select the target region of the operation.

You can select more than one button.
The following region selection buttons can be operated for snapshots.
M/E1 to M/E5, P/P, USER1 to USER8,
DME1 to DME4, RTR, ALL, MASTR

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

3 Use the numeric keypad buttons to enter the register number to be recalled.

The display shows the selected register number.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

4 To add temporary attributes *(see page 327)*, press the following buttons, turning them on.

Control block	Temporary attribute	Button
Cross-point control block	A/B bus cross-point hold	[XPTHLD A] and [XPTHLD B] buttons of the cross-point pad
	Key cross-point hold	[XPTHLD KEY1] to [XPTHLD KEY8] buttons of the cross-point pad [a]
	Key disable	[XPTHLD KEY1] to [XPTHLD KEY8] buttons of the cross-point pad [b]
Numeric keypad control block	Effect dissolve	[EFF DISS] button
	Auto transition	[AUTO TRANS] button

a) When the operation mode is set to [Xpt Hold] in the Setup menu.
b) When the operation mode is set to [Key Disable] or [Key Dsbl with Status] in the Setup menu.

For details about operation modes, see "Setting the operation mode of a cross-point hold button on the key bus" (page 468).

Notes

- The cross-point hold and key disable settings are maintained until you next press and release the cross-point hold button.
- Adding a temporary attribute does not affect the attribute settings saved in registers.

- It is not possible to add temporary attributes to a master snapshot.

5 Press the [ENTER] button.

The specified snapshot is recalled.
When a master snapshot is recalled, the region selection buttons are lit according to the saved region information.

To cancel a snapshot recall operation

To cancel the snapshot recall, press the [UNDO] button.

Note

It is not possible to cancel recalling of a master snapshot.

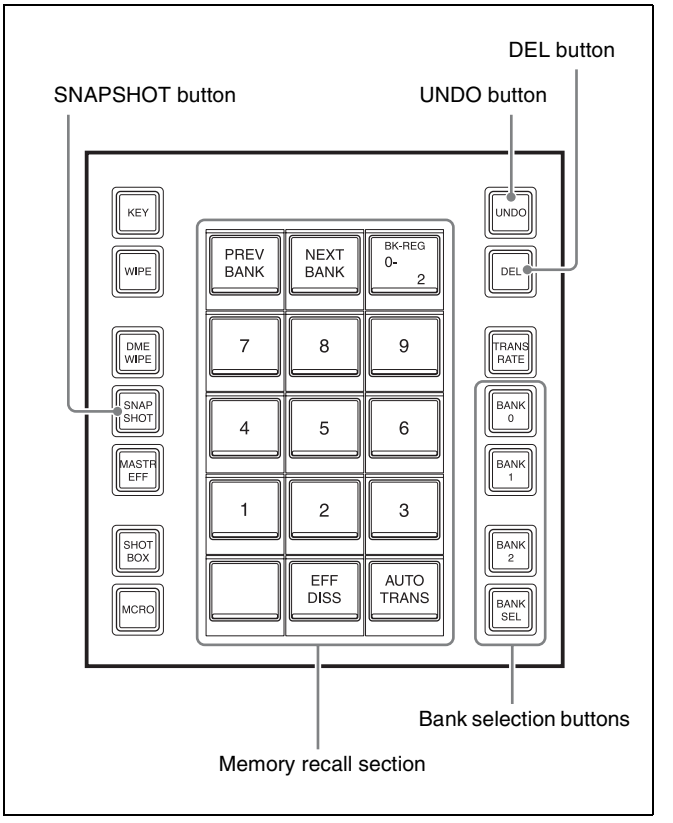
Creating and saving a master snapshot

Use the same procedure for creating and saving a master timeline.
For master snapshot operations, use the [SNAPSHOT] button instead of the [EFF] button.

For details, see "Creating and Saving a Master Timeline (Numeric Keypad Control Block)" (page 321).

Snapshot Operations (Flexi Pad Control Block)

In the Flexi Pad control block on each M/E bank and PGM/PST banks, you can only carry out operations on snapshots for that bank.



Flexi Pad control block

Banks and Registers

To allow operations on the 250 registers, the Flexi Pad control block treats the registers in groups. These groups are called "banks." There are 26 banks, numbered 0 to 25, and the following registers correspond to each bank.

Bank number	Register number
Bank 0	1 to 9
Bank 1	10 to 19
Bank 2	20 to 29
Bank 3	30 to 39
Bank 4	40 to 49
Bank 5	50 to 59
Bank 6	60 to 69
Bank 7	70 to 79

Bank number	Register number
Bank 13	130 to 139
Bank 14	140 to 149
Bank 15	150 to 159
Bank 16	160 to 169
Bank 17	170 to 179
Bank 18	180 to 189
Bank 19	190 to 199
Bank 20	200 to 209

Bank number	Register number
Bank 8	80 to 89
Bank 9	90 to 99
Bank 10	100 to 109
Bank 11	110 to 119
Bank 12	120 to 129

Bank number	Register number
Bank 21	210 to 219
Bank 22	220 to 229
Bank 23	230 to 239
Bank 24	240 to 249
Bank 25	250

Notes

- The banks and number of registers that can be selected vary depending on the function.
- A register number is not assigned to the bottom left button of bank 0 by default. You can assign a register number in the Setup menu.
  For details, see "Setting Flexi Pad Control Block Button Display and Operation" (page 430).

Bank and register selection in the Flexi Pad control block

Select the bank corresponding to the target register using the bank selection buttons.
To select bank 0: Press the [BANK0] button.
To select bank 1: Press the [BANK1] button.
To select bank 2: Press the [BANK2] button.
To select bank 0 to 25: Press the [BANK SEL] button, and enter the desired bank with the numeric keypad buttons in the memory recall section.

When a bank is selected, the memory recall section changes to display the register numbers.
The register name is displayed on buttons for registers with registered data.
The button color varies as follows, according to the register state.
Gray characters on black: Register not containing saved data
White characters on dark blue: Register containing saved data
Lit orange: Last recalled register

You can switch to the register display of the previous or next bank number using the [PREV BANK] button or [NEXT BANK] button.

Press the button for the target register to select it, turning it on orange.
The selected bank and register number are displayed on the top right button in the memory recall section.

Saving and Recalling Snapshots

This section describes operation of snapshots on M/E-1 bank as an example.

Saving a snapshot

1 In the M/E-1 bank, make the settings for the state you want to save as a snapshot.

2 In the M/E-1 bank Flexi Pad control block, press the [SNAPSHOT] button.

This switches the memory recall section to snapshot operation mode.
The last recalled bank is displayed on the M/E-1 bank.

3 Select the target bank for operation using the bank selection buttons.

Select from bank 0 to 9 (register number 1 to 99) for the snapshot.

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

4 To add an attribute *(see page 327)*, press and hold the [SNAPSHOT] button, and press the following button in the memory recall section, turning it on.

Attribute	Button
Effect dissolve	[EFF DISS] button
Auto transition	[AUTO TRANS] button

Note

In the Flexi Pad control block, it is not possible to add cross-point hold attributes. When adding attributes, use the menu *(see page 333)*.

5 Still holding down the [SNAPSHOT] button from step **4**, press the save destination register button.

The selected button is lit orange, and the snapshot is saved.

Note

If you press a button in which a snapshot is already saved, the existing contents of the register will be overwritten.

Recalling a snapshot

Note

If a switcher bank region is not assigned to a region selection button in the numeric keypad control block, the Flexi Pad control block cannot be used to recall a snapshot.

For details, see "Assigning a Region to the Region Selection Buttons in the Numeric Keypad Control Block" (page 409).

1 In the M/E-1 bank Flexi Pad control block, press the [SNAPSHOT] button.

This switches the memory recall section to snapshot operation mode.
The last recalled bank is displayed on the M/E-1 bank.

2 Select the target bank for operation using the bank selection buttons.

Select from bank 0 to 9 (register number 1 to 99) for the snapshot.

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

3 To add temporary attributes *(see page 327)*, press the following buttons, turning them on.

Control block	Temporary attribute	Button
Cross-point control block	A/B bus cross-point hold	[XPTHLD A] and [XPTHLD B] buttons of the cross-point pad
	Key cross-point hold	[XPTHLD KEY1] to [XPTHLD KEY8] buttons of the cross-point pad a)
	Key disable	[XPTHLD KEY1] to [XPTHLD KEY8] buttons of the cross-point pad b)
Flexi Pad control block	Effect dissolve	[EFF DISS] button
	Auto transition	[AUTO TRANS] button

a) When the operation mode is set to [Xpt Hold] in the Setup menu.
b) When the operation mode is set to [Key Disable] or [Key Dsbl with Status] in the Setup menu.

For details about operation modes, see "Setting the operation mode of a cross-point hold button on the key bus" (page 468).

Notes

- The cross-point hold and key disable settings are maintained until you next press and release the cross-point hold button.
- Adding a temporary attribute does not affect the attribute settings saved in registers.

4 Press the button for the register to be recalled.

The selected button is lit orange, and the snapshot is recalled.
The selected bank and register number are displayed on the top right button in the memory recall section.

Deleting a snapshot

1 In the M/E-1 bank Flexi Pad control block, press the [SNAPSHOT] button.

This switches the memory recall section to snapshot operation mode.
The last recalled bank is displayed on the M/E-1 bank.

2 Select the target bank for operation using the bank selection buttons.

Select from bank 0 to 9 (register number 1 to 99) for the snapshot.

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

3 Press and hold the [DEL] button, and press the button of the register in which the snapshot you want to delete is saved.

The selected button changes to register number display.

Snapshot Operations (Menu)

Operations in the Snapshot menu

You use the Snapshot menu to make snapshot settings. The Snapshot menu displays the status of each register, and is used to perform operations, such as to set snapshot attributes or copy/delete snapshot registers.

Operations in the Misc >Snapshot menu on a switcher bank

You can limit the snapshot setting to M/E or PGM/PST banks.

Selecting a Region or Reference Region

During snapshot operations, you can select a region in the menu. This is convenient for selecting some of the regions assigned to the numeric keypad control block or when changing the reference region.

For details about the method of operation, see "Recalling regions to edit (menu)" (page 307).

Setting Snapshot Attributes

Adding attributes to a snapshot

1 Open the Snapshot >Snapshot >Attribute menu (6321).

The status area shows the region names, register numbers and status, and attribute settings.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window.

You can select more than one region.
To select all regions, press [ALL]. To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].

3 Press [OK].

4 Select a register.

To select all registers, press [ALL]. To select multiple registers, set the [Num] parameter *(see page 324)*.

5 In the <Attribute> group, select the attribute *(see page 327)* you want to add.

Configure the attribute, as required.

To add the cross-point hold attribute

Note

You can set whether or not to add key disable to cross-point hold in the Setup menu.

For details, see "Setting the operation mode of a cross-point hold button on the key bus" (page 468).

1 Press [Xpt Hold].

The Xpt Hold menu (6321.1) appears.
The status area shows the currently selected region name and a list of buses.

2 Select a bus.

When the region is set to RTR (Router), select a destination.
To select one or more buses/destinations, press [Plural] and then select. To select all buses/destinations, press [ALL].

3 When RTR (Router) is selected for region, select the target level to set.

Press [RTR Level Select], select the level in the pop-up window, and press [OK].
To select all levels, press [ALL].

4 In the <Xpt Hold> group, press [ON].

This enables cross-point hold on the selected bus or buses.

To add the effect dissolve attribute

1 Press [Effect Dissolve], turning it on.

2 Set the dissolve duration.

No.	Parameter	Adjustment
3	Eff Diss Duration	Dissolve duration

To set the duration for an effect dissolve temporary attribute

To set the duration for an effect dissolve temporary attribute in the numeric keypad control block or Flexi Pad control block, set the following parameter.

No.	Parameter	Adjustment
5	Temp Dur	Temporary attribute dissolve duration

To add the auto transition attribute

Press [Auto Transition], turning it on.

To add clip auto play

Note

Only the region in frame memory assigned to the user region is configurable.

For details, see "Setting User Regions" (page 441).

1 Press [Clip Auto Play].

The Clip Auto Play menu (6321.2) appears.

2 In the <Frame Memory Select> group, select the target frame memory to set.

3 Press [Auto Play], turning it on.

Snapshot Status Display

The Snapshot >Snapshot >Attribute menu (6321) displays the following information.

Region name: The selected region name appears in the upper part of the list.

Register number

Register name

Lock status: When the register is locked (write-protected), "L" is displayed.

Empty status: When the register is empty, "E" is displayed.

Attribute settings: The attributes set for a register are shown by the following character codes.

- When the cross-point hold attribute is added

Displayed character codes	Attributes set
A, B	Cross-point hold is set for the A or B background bus.
1, 2, 3, 4, 5, 6, 7, 8	Cross-point hold is set for key bus 1, 2, 3, 4, 5, 6, 7 or 8.
U1, U2	Cross-point hold is set for the utility 1 or utility 2 bus.
D2	Cross-point hold is set for video bus selected for 2nd DME channel.
FvFkBvBk	Cross-point hold is set for all of the DME front video bus, DME front key bus, DME back video bus, and DME back key bus.
Aux	Cross-point hold is set for one of the AUX buses.
RTR	Cross-point hold is set for the Router region.

- When the effect dissolve attribute is added

Displayed character codes	Attributes set
Duration value	The effect dissolve attribute is set, with the displayed duration.

- When the auto transition attribute is added

Displayed character codes	Attributes set
T	Auto transition is set.

- When clip auto play is added

Displayed character codes	Attributes set
On	When clip auto play is set

Setting Key Snapshot Attributes

Adding attributes to a key snapshot

1 Open the Snapshot >Key Snapshot >Attribute menu (6351).

The status area shows the region names, register numbers, and the lock status.

2 Press the region display in the upper part of the list, then select the region in the selection window.

3 Select a register.

4 In the <Recall Mode> group, set the state when saving and recalling the register.

XPT: Only the key material selection data is saved or recalled.

Modifier: The key modifier settings are saved or recalled.

Transition: The independent key transition settings are saved or recalled.

Creating and Saving a Master Snapshot

Open the Snapshot >Master Snapshot >Store menu (6311), and use the same procedure for creating and saving a master timeline.

For details, see "Creating and Saving a Master Timeline (Menu)" (page 322).

Snapshot >Master Snapshot >Store menu

1 Open the Snapshot >Master Snapshot >Store menu (6311).

The status area shows the master snapshot register names, lock status, register number for each region, and so on.

2 Switch the region display as required.

Press the button corresponding to the region you want to display.
M/E: M/E-1 (“ME1”), M/E-2 (“ME2”), M/E-3 (“ME3”), M/E-4 (“ME4”), M/E-5 (“ME5”)
P/P: PGM/PST (“P/P”)
User: User1 (“USR1”) to User8 (“USR8”)
DME: DME ch1 (“DME1”), ch2 (“DME2”), ch3 (“DME3”), ch4 (“DME4”)
Misc: Router (“RTR”)

Snapshot Register Editing

You can carry out the following editing on snapshot registers.
You can also perform the same operations on master snapshot, wipe snapshot, DME wipe snapshot, and key snapshot registers.
- **Lock:** Write-protect the data contents of the register.
- **Copy:** Copy data between registers.
- **Move:** Move data between registers.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the data contents of a register.
- **Name:** Attach a name to a register.

In the menu for each snapshot, use the same procedure as when editing an effect register.

For details, see “Effect Register Editing” (page 324).

Snapshot Register List View and Editing

You can display a list of snapshot register status (whether data is present and so on), then carry out lock, copy, delete, and rename operations.

Displaying a list of snapshot registers

Press the menu title button at the top left of the Snapshot menu.
The Snapshot >Status menu (6300) appears.
The status area shows a list of snapshot registers (1 to 99).
Use the same procedure as when locking, copying, deleting, or renaming an effect register.

For details, see “Effect Register List View and Editing” (page 326).

Register name display

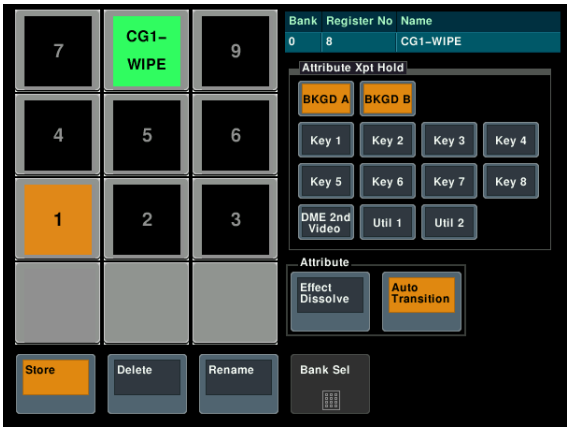
For the same number, the register name for the M/E-1 region takes precedence.
If there is no data for the M/E-1 region, then the register name appears in the sequence M/E-2 >M/E-3 >M/E-4 >M/E-5 >PGM/PST >User1 to 8 >DME ch1 to ch4 >Router.

Operations in the Misc >Snapshot Menu on a Switcher Bank

To limit snapshot settings to the M/E or PGM/PST banks, use the Misc menu on each bank.
This section describes the operation on the M/E-1 bank as an example.

Recalling a snapshot

1 Open the M/E-1 >Misc >Snapshot menu (1177).



2 As required, change the bank.

Press [Bank Sel], and enter a bank number in the numeric keypad window.

3 Press the button for the number or name you want to recall.

The snapshot is recalled, and the selected button is lit green.

Saving a snapshot

1 Open the M/E-1 >Misc >Snapshot menu (1177).

2 Set the state you want to save as a snapshot.

3 Press [Store].

4 As required, change the bank.

Press [Bank Sel], and enter a bank number in the numeric keypad window.

5 Press the button for the number or name you want to save.

Adding attributes to a snapshot

You can add attributes to a snapshot whose button is lit green in the M/E-1 >Misc >Snapshot menu (1177).

1 To add the cross-point hold attribute, select the target bus in the <Attribute Xpt Hold> group.

Note

You can set whether or not to add key disable to cross-point hold in the Setup menu.

For details, see "Setting the operation mode of a cross-point hold button on the key bus" (page 468).

2 Select the following attributes in the <Attribute> group as required.

Effect Dissolve: Add the effect dissolve attribute.
Auto Transition: Add the auto transition attribute.

Deleting a snapshot

1 In the M/E-1 >Misc >Snapshot menu (1177), press [Delete].

2 As required, change the bank.

Press [Bank Sel], and enter a bank number in the numeric keypad window.

3 Press the button for the number or name you want to delete.

Renaming a snapshot register

1 In the M/E-1 >Misc >Snapshot menu (1177), press [Rename].

2 As required, change the bank.

Press [Bank Sel], and enter a bank number in the numeric keypad window.

3 Press the number or name button for the name you want to change.

4 Enter a new name using the keyboard window, and press [Enter].

Utility/Shotbox

Chapter 14

Utility Overview

A utility is a function that is used to assign a specific action or a shortcut for a frequently used menu to a button, which can then be recalled by pressing the button.
The functions you can assign include menu shortcuts, setting functions (recalling utility commands), and recalling shotbox registers or macro registers.

Utility Execution

You can execute utility functions using the menu panel, utility/shotbox control block, or cross-point control block.

For details about shotbox execution, see "Shotbox Execution" (page 342).

Utility Execution (Menu Panel)

In the menu panel, you can assign actions to the 16 user preference buttons.
The [PREFS1] to [PREFS8] user preference buttons 1 to 8 are assigned by default.

Action and button assignments are made in the Setup menu.

For details about action assignment, see "Assigning Functions to User Preference Buttons" (page 419).

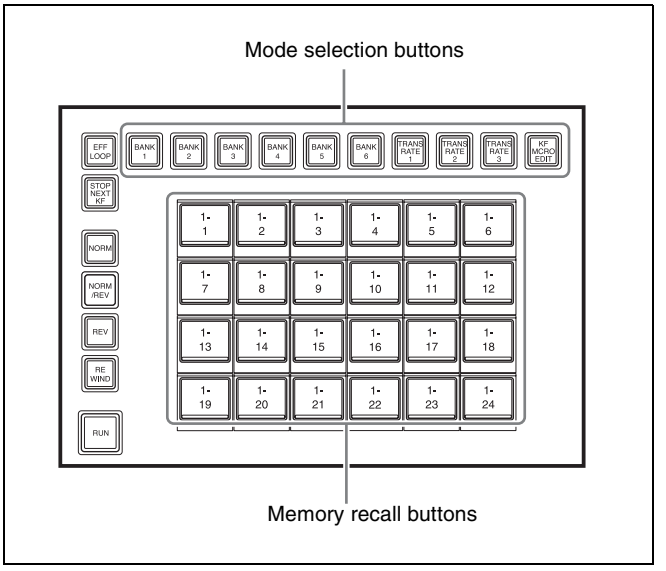
For details about user preference button assignment, see "Setting Menu Panel Button Assignments" (page 411).

To execute an assigned action

Press the target [PREFS1] to [PREFS16] user preference button.

- For actions that enable/disable a function, the selected button is lit amber, and the function is enabled. To disable the function, press the button again.
- For other actions, the selected button is momentarily lit amber, and the function is executed.

Utility Execution (Utility/Shotbox Control Block)



Utility/shotbox control block

In the utility/shotbox control block, you can assign actions to 24 memory recall buttons on each of banks 1 to 20. The bank is switched using the mode selection buttons. The [BANK1] to [BANK6] bank 1 to 6 mode selection buttons are assigned by default.

Action and button assignments are made in the Setup menu.

For details about action assignment, see "Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block" (page 423).

For details about mode selection button assignment, see "Setting Utility/Shotbox Control Block Button Assignments" (page 411).

To execute an assigned action

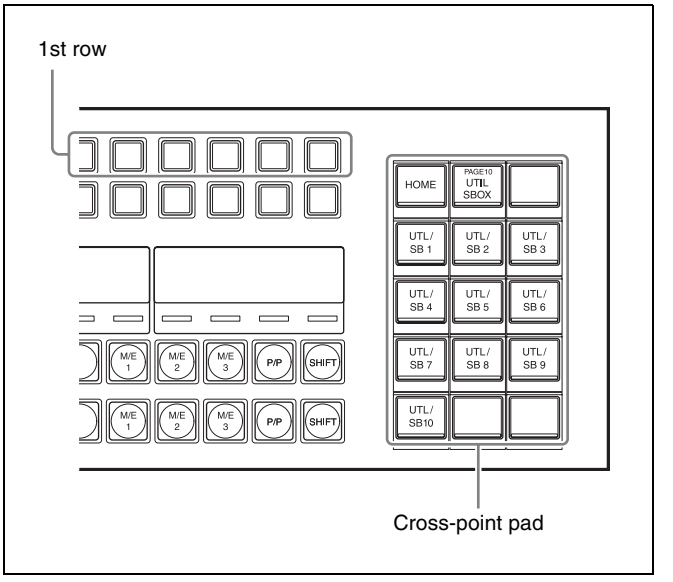
1 Select the target bank using the mode selection buttons.

The selected button is lit amber, and the control block switches to function recall mode.
The functions for the selected bank are assigned to the memory recall buttons, and the function numbers "n-1" to "n-24" (where n is the bank number) are displayed. The function name is displayed if a name has been specified for the function in the Setup menu.

2 Press the memory recall button with the registered action you want to execute.

- For actions that enable/disable a function, the selected button is lit orange, and the function is enabled. To disable the function, press the button again.
- For other actions, the function for the selected button is executed.

Utility Execution (Cross-Point Control Block)



Cross-point control block

You can assign actions to the cross-point buttons on the cross-point control block, and then select them in utility/shotbox mode. You can set assignments for each button on utility/shotbox banks 1 to 10. The settings are common to the M/E and PGM/PST banks.
To switch to utility/shotbox mode, use the bank 1 to 10 delegation buttons [UTL/SB 1] to [UTL/SB10] in the cross-point pad.

Action and button assignments are made in the Setup menu.

For details about action assignment, see "Assigning Functions to Cross-Point Buttons of the Cross-Point Control Block" (page 426).

For details about delegation button assignment, see "Assigning a function to a cross-point pad button" (page 433).

Note

You can assign the bank 1 to 10 delegation buttons for utility/shotbox operation to the 1st row of the cross-point control block in key/AUX bus delegation mode in the Setup menu *(see page 432)*.

To execute an assigned action

This section describes assignment of bank 1 to the 1st row for utility/shotbox operation as an example.

1 Press the delegation button [UTL/SB 1] on the cross-point pad.

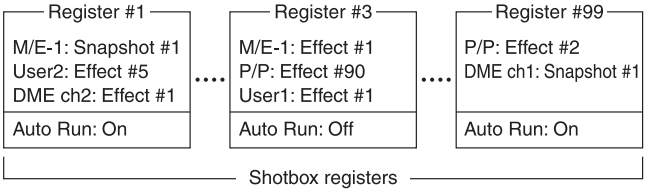
Use the [UTL/SB 1] button for the 1st row.

2 Press the cross-point button with the registered action you want to execute in the 1st row.

- For actions that enable/disable a function, the selected button is lit amber, and the function is enabled. To disable the function, press the button again.
- For other actions, the function for the selected button is executed.

Shotbox Overview

A shotbox is a function that is used to save any combination of snapshots or keyframe effects specified for a region in memory (shotbox register) and then recall them simultaneously as required.
There are 99 shotbox registers on each control panel.



The diagram above shows the settings in the 99 shotbox registers, conceptually.
Each register may contain any combination of target region with the snapshots or effects to be recalled.
The Auto Run function is an attribute which can be set for each register. When enabled, an effect recalled by executing a shotbox operation is automatically executed.

- When register 1 is executed, this recalls M/E-1 snapshot 1, User2 effect 5, and DME ch2 effect 1. Auto run is enabled for register 1, hence User2 and DME ch2 effects are executed at the same time they are recalled.
- When register 3 is executed, M/E-1 effect 1, P/P effect 90, and User1 effect 1 are recalled. Auto run is disabled for register 3, hence you must press the [RUN] button in the utility/shotbox control block to execute the effects.

Shotbox Register Creation

You can create a shotbox register using the numeric keypad control block or the menu.

Shotbox Register Creation (Numeric Keypad Control Block)

When you create a shotbox register in the numeric keypad control block, you carry out separate operations to save the snapshot setting data and the effect setting data in the register.
This section describes configuring the snapshot settings followed by the effect settings as an example.

Creating a shotbox register

1 In the numeric keypad control block, press the [SNAPSHOT] button.

The control block switches to snapshot operation mode, and the [SNAPSHOT] button and [RCALL] button light amber.

2 Recall the snapshots to save in the shotbox register by specifying the register number for each region.

For details about the method of operation, see "Recalling a snapshot" (page 329).

3 Press the [SHOTBOX] button.

The control block switches to shotbox operation mode, and the [SHOTBOX] button lights amber.

4 Press the [STORE] button, turning it on.

The [SNAPSHOT] button lights green.
If not lit, press the [SNAPSHOT] button, turning it on green.

Note

When the [STORE] button is lit in shotbox operation mode, the [SNAPSHOT] button or [EFF] button is lit green to indicate that an operation is in progress to save snapshot data or effect data in the shotbox register.

5 Select the snapshot register region to save using the region selection buttons.

For details about region selection, see "Region selection in the numeric keypad control block" (page 305).

6 Enter the save destination shotbox register number using the numeric keypad buttons.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

7 Press the [ENTER] button.

The snapshot data is saved in the shotbox register. The [STORE] button turns off and the [RCALL] button turns on.

8 Press the [EFF] button.

The control block switches to effect operation mode, and the [EFF] button lights amber.

9 Recall the effects to save in the shotbox register by specifying the register number for each region.

For details about the method of operation, see "Recalling a register" (page 306).

10 Refer to steps **3** to **5** and save the recalled effects data.

In step **4**, press the [EFF] button instead of the [SNAPSHOT] button, turning it on green.

11 Enter the shotbox register number specified in step **6** using the numeric keypad buttons.

12 Press the [ENTER] button.

The effects data is saved in the shotbox register. The [STORE] button turns off and the [RCALL] button turns on.

Note

While the [STORE] button is lit, you cannot switch to another operation mode using the mode selection buttons. To change the operation mode, press the [RCALL] button or [SHOTBOX] button to turn the [STORE] button off.

To change the contents of a shotbox register

After recalling the shotbox register, change the contents and save the register by referring to *"Creating a shotbox register" (page 340)*.

To check the region saved in a shotbox register

1 While the [SHOTBOX] button is lit, press the [STORE] button, turning it on.

2 Select the target to check.

To check the snapshot region: Press the [SNAPSHOT] button, turning it on.
To check the effects region: Press the [EFF] button, turning it on.

3 Press and hold the [STORE] button.

While the button is pressed, the button for the saved region lights amber.

Shotbox Register Creation (Menu)

Creating a shotbox register

1 Open the Shotbox >Register >Store/Recall menu (6411).

The status area shows the following information for each register.
Register: Displays the shotbox register number and name.
Lock status: Displays "L" when the register is locked (write-protected).
Register empty status: Displays "E" when the register is empty.
Auto run setting: Displays "AR" when auto run is enabled.
Region settings: Displays "Sxxx" if a snapshot is registered, and displays "Exxx" if an effect is registered (where xxx is the register number). Displays "KSS" when a key snapshot is registered.

2 Switch the region display as required.

Press the button corresponding to the region you want to display.
M/E: M/E-1 ("ME1"), M/E-2 ("ME2"), M/E-3 ("ME3"), M/E-4 ("ME4"), M/E-5 ("ME5")
P/P: PGM/PST ("P/P")
User: User1 ("USR1"), User2 ("USR2"), User3 ("USR3"), User4 ("USR4"), User5 ("USR5"), User6 ("USR6"), User7 ("USR7"), User8 ("USR8")
DME: DME ch1 ("DME1"), ch2 ("DME2"), ch3 ("DME3"), ch4 ("DME4")
DEV1-8: Device1 ("DEV1"), Device2 ("DEV2"), Device3 ("DEV3"), Device4 ("DEV4"), Device5 ("DEV5"), Device6 ("DEV6"), Device7 ("DEV7"), Device8 ("DEV8")
DEV9-12: Device9 ("DEV9"), Device10 ("DEV10"), Device11 ("DEV11"), Device12 ("DEV12")
Misc: P-Bus ("PBUS"), GPI ("GPI"), Router ("RTR"), Macro ("MCRO")

3 In the status area, select the target register to set.

4 Press [Edit].

The Edit menu (6411.1) appears.
You can also select the register in this menu using the [Shotbox Reg] parameter.
The status area shows the information for the selected shotbox register and the region selection buttons.

5 Press a region selection button to select a region.

You can select more than one region.
To select all regions, press [ALL]. To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].

6 In the <Assign> group, select a snapshot or effect.

Snapshot: Set a snapshot. Select the register to register using the following parameter.

No.	Parameter	Adjustment
3	Snapshot	Snapshot register number

Effect: Set an effect. Select the register to register using the following parameter.

No.	Parameter	Adjustment
3	Effect	Effect register number

The region selection button shows the selected register number.

7 Repeat steps **5** and **6** as required to set all snapshots/effects to be registered in the shotbox register.

8 To enable auto run, press [Auto Run], turning it on.

When auto run is enabled, the effects are executed at the same time the register is recalled.

9 In the <Store> group, press [Store].

To return to the state before saving the setting

In the <Store> group, press [Undo].

Registering key snapshots in a shotbox register

Note

Only a snapshot/effect or a key snapshot can be set in an M/E region.

1 In the Shotbox >Register >Store/Recall menu (6411), select the target register to set.

2 Press [Key Snapshot Edit].

The Key Snapshot Edit menu (6411.2) appears.
You can also select the register in this menu using the [Shotbox Reg] parameter.

The status area shows the information for the selected shotbox register and the key selection buttons.

3 In the status area, select a switcher bank.

To select all switcher banks, press [ALL].

4 Press a key selection button to select a key.

You can select more than one key.

5 Press [Key SS Assign], turning it on, and select a register to register using the following parameter.

No.	Parameter	Adjustment
3	Key Snapshot	Key snapshot register number

The key selection button shows the selected register number (KSS1 to KSS4).

6 Repeat steps **3** to **5** as required to set all key snapshots to be registered in the shotbox register.

7 In the <Store> group, press [Store].

To return to the state before saving the setting
In the <Store> group, press [Undo].

Recalling a shotbox register

1 In the Shotbox >Register >Store/Recall menu (6411), select a register.

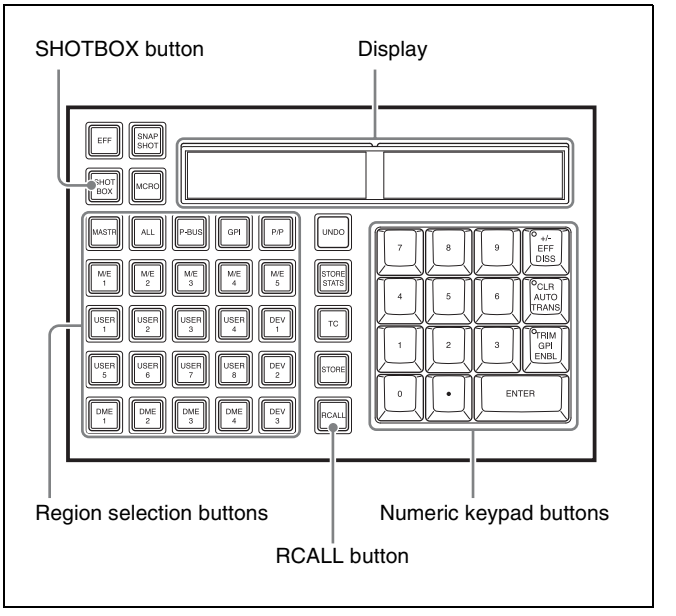
2 Press [Recall].

If auto run is set for the register, the effects are executed at the same time the register is recalled.

Shotbox Execution

You can execute a shotbox using the numeric keypad control block, Flexi Pad control block, utility/shotbox control block, or cross-point control block.

Shotbox Execution (Numeric Keypad Control Block)



Numeric keypad control block

1 In the numeric keypad control block, press the [SHOTBOX] button.

The control block switches to shotbox operation mode, and the [SHOTBOX] button and [RCALL] button light amber.
The display shows the last recalled register number.

2 Enter the register number to recall using the numeric keypad buttons.

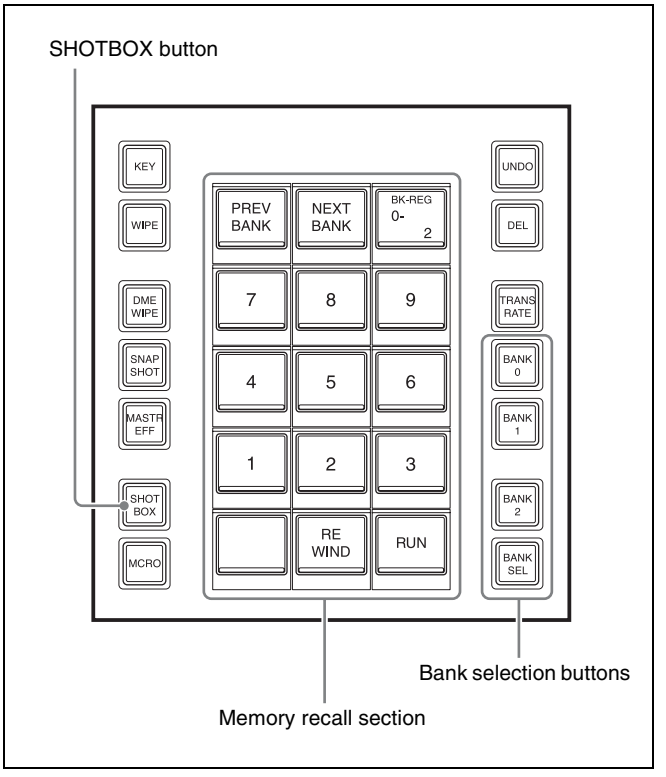
For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

3 Press the [ENTER] button.

The selected shotbox register is executed.
If auto run is set, the effects are executed at the same time they are recalled.
The region selection buttons corresponding to the regions for which effects are set turn on.

When auto run is not set for the recalled register
Simply recalling the register does not execute the effects. Press the [RUN] button in the utility/shotbox control block to execute the effects.

Shotbox Execution (Flexi Pad Control Block)



Flexi Pad control block

1 In the Flexi Pad control block, press the [SHOTBOX] button.

The memory recall section switches to shotbox operation mode.
The last recalled bank is displayed.

2 Select the target bank for operation using the bank selection buttons.

In the shotbox, select from bank 0 to 9 (register number 1 to 99).

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

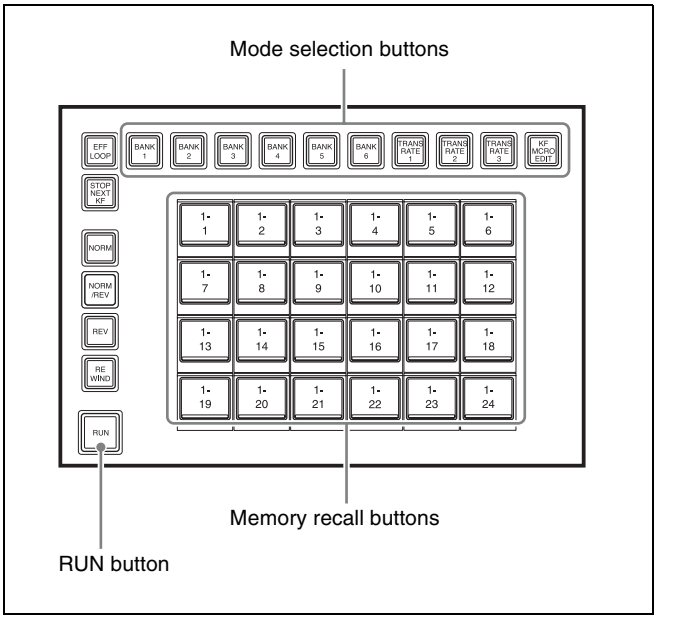
3 Press the button for the register you want to execute.

The selected button lights orange, and the shotbox register is executed. The selected bank and register number are displayed on the top right button in the memory recall section.

If auto run is set, the effects are executed at the same time they are recalled.

When auto run is not set for the recalled register
Simply recalling the register does not execute the effects. Press the [RUN] button in the memory recall section to execute the effects.

Shotbox Execution (Utility/Shotbox Control Block)



Utility/shotbox control block

In the utility/shotbox control block, you can assign shotbox registers (1 to 99) to 24 memory recall buttons on each of banks 1 to 20.
The bank is switched using the mode selection buttons. The [BANK1] to [BANK6] bank 1 to 6 mode selection buttons are assigned by default.

Shotbox register and button assignments are made in the Setup menu.

For details about assigning a shotbox register, see "Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block" (page 423).

For details about mode selection button assignment, see "Setting Utility/Shotbox Control Block Button Assignments" (page 411).

1 Select the target bank using the mode selection buttons.

The selected button is lit amber, and the control block switches to function recall mode.

The functions for the selected bank are assigned to the memory recall buttons.
The register names (white characters on a dark blue background) is displayed on the buttons of the registers with a registered shotbox. Empty register buttons display the register number (gray characters on a black background).

2 Press the memory recall button with the registered register you want to execute.

The selected button lights orange, and the shotbox register is executed.
If auto run is set, the effects are executed at the same time they are recalled.

When auto run is not set for the recalled register
Simply recalling the register does not execute the effects. The region selection buttons on the numeric keypad control block corresponding to the regions for which effects are set turn on. Press the [RUN] button in the utility/shotbox control block to execute the effects.

Shotbox Execution (Cross-Point Control Block)

You can assign shotbox registers to the cross-point buttons on the cross-point control block, and then select them in utility/shotbox mode. You can set assignments for each button on utility/shotbox banks 1 to 10. The settings are common to the M/E and PGM/PST banks.

For details about assigning a shotbox register, see "Assigning Functions to Cross-Point Buttons of the Cross-Point Control Block" (page 426).

To execute a shotbox register, you use the same procedure as executing a utility.

For details, see "Utility Execution (Cross-Point Control Block)" (page 338).

When auto run is not set for the recalled register
Simply recalling the register does not execute the effects. The region selection buttons on the numeric keypad control block corresponding to the regions for which effects are set turn on. Press the [RUN] button in the utility/shotbox control block to execute the effects.

Shotbox Register Editing

You can carry out the following editing on shotbox registers.
- **Lock:** Write-protect the data contents of the register.
- **Copy:** Copy data between registers.
- **Move:** Move data between registers.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the data contents of a register.
- **Name:** Attach a name to a register.

In the Shotbox menu, use the same procedure as when editing an effect register.
However, it is not necessary to specify a region for shotbox registers.

For details, see "Effect Register Editing" (page 324).

Macros

Chapter 15

Macros

Overview

A macro is a function that is used to store a sequence of control panel operations (events) as data in memory (macro register), which you can recall to reproduce the same sequence of operations as required.
To record menu operations in memory, see *"Menu Macros" (page 367)*.

Macro registers

The area of memory that holds a macro is termed a "macro register." For each control panel, there are 250 macro registers, numbered 1 to 250.

Events

The individual control panel operations constituting a macro are termed "events." One macro can contain a maximum of 99 events.
The following table shows the operations for each control block of the control panel that can be saved as events in a macro.

Control block	Event
Cross-point control block	• Cross-point selection • Recalling a function assigned to a cross-point button • AUX mix transition enable/ disable • Page recall on cross-point pad • Delegation selection in cross-point button rows (free assign mode only) • Cross-point assign table selection in cross-point button rows
AUX bus control block (AUX bus operation mode)	• Cross-point selection • AUX mix transition enable/ disable • Page recall on cross-point pad
AUX bus control block (router operation mode)	• Cross-point selection • Page recall on cross-point pad
Transition control block	• Auto transition and cut in the transition execution section • Auto transition and key on/off in the independent key transition execution section [a)] • Next transition selection • Transition type selection • Pattern limit enable/disable [b)] • VTR/disk recorder/frame memory clip playback, stop, cue-up [b)]
Transition control block (simple type)	• Auto transition • Cut [b)] • Transition type selection • Pattern limit enable/disable • VTR/disk recorder/frame memory clip playback, stop, cue-up [b)]
Independent key transition control block	Auto transition and key on/off [a)]
Flexi Pad control block	• Selection of transition type of independent key transition • Recalling the following data - Key snapshots - Snapshots - Wipe snapshots - DME wipe snapshots - Shotboxes - Master timelines • Executing effects, rewind
Key fader control block	• Auto transition and key on/off in the independent key transition execution section [a)] • Transition type selection • Recalling key snapshots
Numeric keypad control block	Recalling the following data - Effects - Snapshots - Shotboxes - Master snapshots - Master timelines

Control block	Event
Device control block (trackball)	• VTR/disk recorder/frame memory clip playback, stop, fast forward, rewind, cue-up, start point setting • Recording to VTR/disk recorder • Frame memory clip loop setting
Utility/shotbox control block	• Recalling functions assigned to memory recall buttons • Selection of effect execution, rewind, execution direction
Menu panel	• Loading of disk recorder files • Recalling the functions assigned to [PREFS 1] to [PREFS 16] buttons • Executing menu macros • Recalling frame memory clips • Trigger test output from GPI port

a) In the case of an event that inserts or removes a key, the state at the time of event registration (inserted or not inserted) is also saved in the macro. When the macro is executed, the event is only replayed if the key state matches the saved state.
Example: For a macro with an event that removes a key, when the macro is executed, the key is removed if it is inserted, but otherwise remains unchanged.
b) Enabled if a function is assigned to the button in the Setup menu.

Macro Creation and Editing

You can create or edit a macro by recalling a macro register.
To create a new macro, recall an empty macro register, and create the desired sequence of events (by executing the sequence of operations on the control panel that you want to save as events in the macro).
To add an event to an existing macro, recall the register holding the macro, and create the event you want to add.

Note

While editing a macro, it is not possible to execute another macro.

Creating a macro

To include all information associated with an operation when registering a macro event

When registering an auto transition operation as an event, you can register the auto transition event to include the transition rate and background A/B bus selection status. When registering an effect execution, rewind, or fast forward as an event, you can also save the region to which this applies.
The following functions can be assigned to the user preference buttons on the menu panel, the memory recall buttons on the utility/shotbox control block, or the cross-point buttons on the cross-point control block (utility/shotbox mode).

Macro AT with Rate (Macro Auto Trans Event with Rate): When registering an auto transition macro event in the transition control block or transition control block (simple type), include the transition rate.

Macro AT with A/B Bus (Macro Auto Trans Event with A/B Bus): When registering an auto transition macro event in the transition control block or transition control block (simple type), include the background A/B bus cross-point.

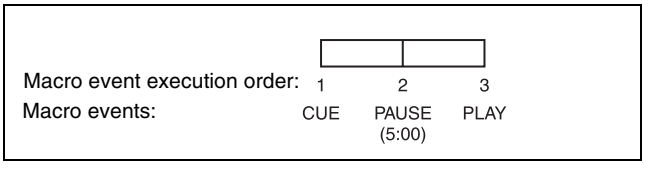
Macro TL with Region (Macro Timeline with Region): When registering an effect execution, rewind, or fast forward as a macro event, include the target region.

Events requiring adjustment when creating a macro

The following events require time for execution to complete, and therefore when executed within a macro sequence, a pause event must be inserted to adjust the timing.

- Rewinding effects involving external device control
- VTR/disk recorder cue-up

For example, create a macro to cue up a VTR and then play back as follows.



Editing a macro

You can carry out the following macro editing operations.

Event insertion

Insert the control panel operation as an event in a macro.

Event modification

Modify any event.

Event deletion

Delete an event. You can delete all events within a macro, or events within a specified range in a single operation. You can then paste the deleted event using the paste function.

Event copy

Copy an event. You can copy all events within a macro, or events within a specified range in a single operation.

Event paste

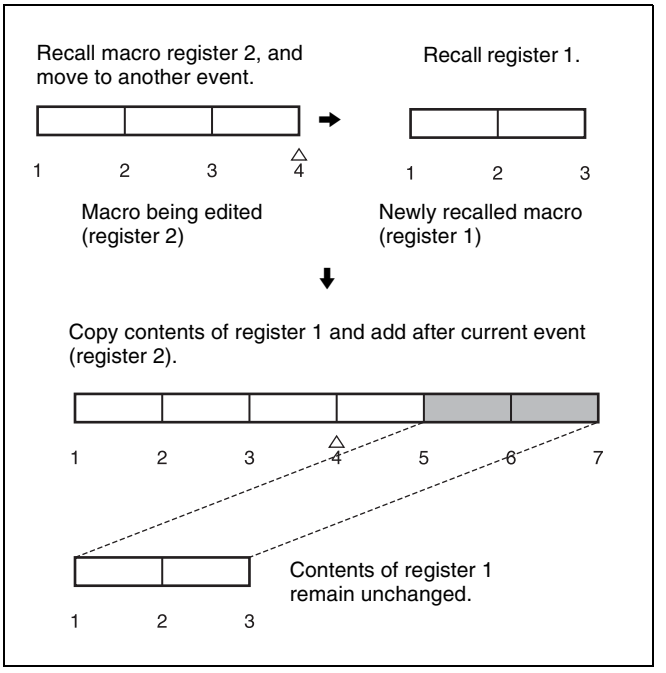
You can paste a copied or deleted event at a desired position within a macro.

Undoing an editing operation

You can undo the last event insertion, modification, or paste operation.

Macro merging

During macro editing, you can recall and copy another register to merge it with the macro being edited.
For example, while editing macro register 2 you can recall register 1 and merge it as shown in the following figure.



Auto insert mode

In auto insert mode, when creating or editing a macro, an operation carried out on the control panel is automatically inserted as an event.
When you start to create or edit a macro with the macro execution mode set to normal execution mode, auto insert mode is automatically enabled. In step execution mode, it is disabled.

Auto pause insert mode

In addition to the auto insert mode functionality, auto pause insert mode automatically inserts a pause event between events.
The time between an event being inserted and the next event being inserted is set as the pause time.

Note

When macros are merged, pause events are not automatically inserted.

Macro Execution

To execute a macro, recall the register in which the macro is saved. All events registered in the macro are played back (executed) in sequence.

Pausing and restarting macro execution

Pause event

To adjust the execution timing of a particular event (to delay the start of execution of the event by a particular time interval), you can store a special event which pauses macro execution. This event is called a "pause event." When you store a pause event, you can set the interval for which the macro is paused (the pause length) to any value in the range 1 to 999 frames. When the set time has elapsed, the macro is automatically executed.

Pause zero event

By including a pause event with the time set to zero, you can make macro execution pause at the pause event.

Take operation

When a paused macro is restarted, this is referred to as a "Take" operation.
To execute a take operation, use the [TAKE] button in the Flexi Pad control block. "Take" operation functions can be assigned to the cross-point pad buttons of the cross-point control block, memory recall buttons of the utility/shotbox control block, and buttons in the transition control block (simple type) in the Setup menu.

Macro execution mode

The following two types of execution mode can be selected. The execution mode is set in the Engineering Setup >Panel >Operation >Macro menu (7326.6).

For details, see "Setting the Macro Operation Mode" (page 432).

Normal execution mode

When execution of an event ends, the next event is automatically executed.

Step execution mode

When execution of an event ends, execution is paused. The next event is executed by a take operation.

Simultaneous multiple macro execution (multi mode)

Normally, a single macro can be executed at a time, but setting multi mode enables multiple macros to be executed.
Simultaneous execution of multiple macros is supported only when macro registers are recalled using the following buttons.

- Cross-point buttons of the cross-point control block configured with a macro attachment
- Cross-point buttons of the cross-point control block assigned with macro register recall function (utility/shotbox mode)
- Memory recall buttons in the utility/shotbox control block assigned with macro register recall function

- User preference buttons in the menu panel assigned with macro register recall function

Multi mode is set in the Engineering Setup >Panel >Operation >Macro menu (7326.6).

For details, see "Setting the Macro Operation Mode" (page 432).

Notes

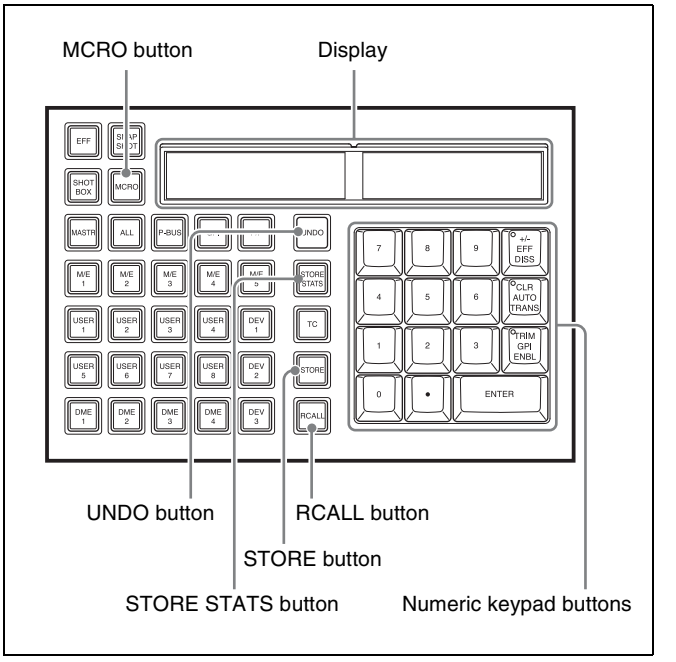
- In multi mode, macros are executed in normal execution mode, regardless of the execution mode setting.
- Up to 16 macros can be executed simultaneously.
- The editing operations cannot be used for macros that are being executed simultaneously.
- If operations due to events executing simultaneously conflict with each other, the events may not be reproduced with the registered settings or sequence.
- To resume all paused macros within the macros executed simultaneously, press the button assigned with the "Macro All Take" utility command.
- To stop all macros executed simultaneously, press the button assigned with the "Macro All Cancel" utility command.

Macro operation triggered by GPI input

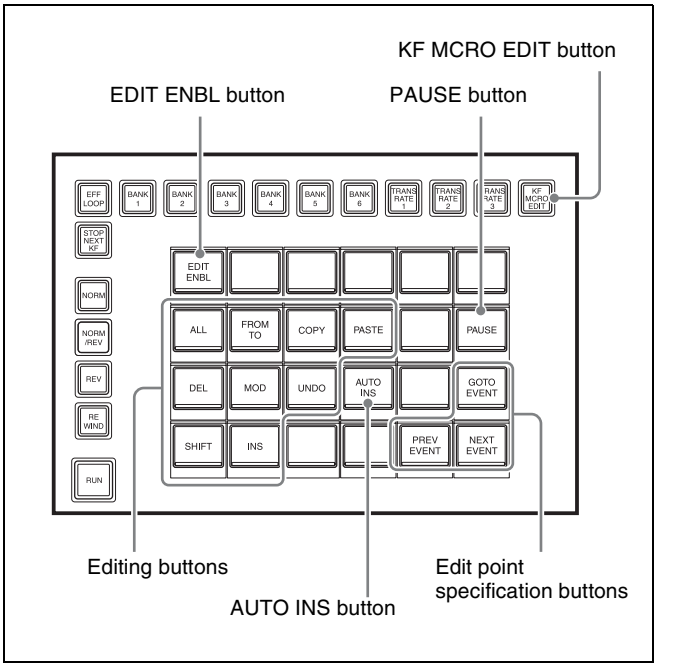
You can execute a macro take operation using a GPI input on the SIU (DCU function).

For details about GPI inputs, see "Configuring GPI Inputs" (page 474).

Macro Operations (Numeric Keypad Control Block and Utility/Shotbox Control Block)



Numeric keypad control block



Utility/shotbox control block

Recalling a Macro Register and Executing a Macro

A macro operation is performed by recalling a macro register.

Recalling a macro register

1 In the numeric keypad control block, press the [MCRO] button.

The control block switches to macro operation mode, and the [MCRO] button and [RCALL] button light amber.

2 Use the numeric keypad buttons to enter the register number (1 to 250) to be recalled.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

3 Press the [ENTER] button.

When you recall a register holding a macro
This immediately executes the macro.

When you recall an empty register
This switches the numeric keypad control block to macro editing mode.
Selecting keyframe/macro editing mode in the utility/shotbox control block switches the memory recall buttons to the assignments for macro editing.

Notes

- Multi mode *(see page 347)* is disabled if a macro register is recalled using the numeric keypad control block. Only one macro can be executed at a time.
- If the same macro is recalled during macro execution or when the macro is paused, the following operation depends on a setting in the Setup menu.
  For details, see "Setting the Macro Operation Mode" (page 432).
- Events registered in a macro are executed according to the setup and the device configuration in force when the events were registered. If the state has changed since registration, the contents of the macro may not be reproduced correctly when the macro is recalled.
- During macro execution, if you switch the control panel to macro editing mode, the macro currently being executed stops.
- It is not possible to execute a macro during macro editing.
- While executing a macro, the operation performed if another macro is recalled from the numeric keypad control block depends on a setting in the Setup menu.
  For details, see "Setting the Macro Operation Mode" (page 432).

Macro Creation and Editing

Note

After carrying out creation and editing, be sure to carry out a save operation, using the numeric keypad control block.

For details about saving after editing, see "Saving a Macro" (page 353).

Setting auto insert mode

Auto insert mode settings are made using the memory recall buttons in the utility/shotbox control block.
To enable auto insert mode, press the [AUTO INS] button, turning it on orange.
When you start to create or edit a macro with the macro execution mode set to normal execution mode, auto insert mode is automatically enabled.

To set auto pause insert mode
To enable auto pause insert mode, press and hold the [AUTO INS] button. The button indication changes to [AUTO PAUSE] button, and turns on blue.
To disable auto pause insert mode, press and hold the [AUTO PAUSE] button or exit macro creation/editing.

For details about auto insert mode, see "Auto insert mode" (page 347).

Creating a macro

1 In the numeric keypad control block, press the [MCRO] button.

The control block switches to macro operation mode, and the [MCRO] button and [RCALL] button light amber.

2 Recall an empty register *(see page 349)*.

This switches the numeric keypad control block to macro editing mode. The [STORE] button blinks red, and the [MCRO] button changes color to red.

3 Press the [KF MCRO EDIT] button in the utility/shotbox control block.

Selecting keyframe/macro editing mode in the utility/shotbox control block when the numeric keypad control block is in macro editing mode switches the memory recall buttons to the assignments for macro editing, and the [EDIT ENBL] button turns on red.

4 If required, set auto insert mode *(see page 349)*.

5 Create the events (carry out the control panel operations to be registered as events in the macro).

You can also include pause events *(see page 352)*.

For details about the events that can be registered, see "Events" (page 345).

When auto insert mode is enabled, the event is registered automatically.
When auto insert mode is disabled, press the [INS] button in the utility/shotbox control block to register events.

Notes

- During macro editing, if you press any of the mode selection buttons in the numeric keypad control block other than the [MCRO] button, the executed operation is also registered as an event. In this case, the [MCRO] button remains lit red.
- Even during macro editing, you can switch and operate the memory recall buttons using the mode selection buttons in the utility/shotbox control block. The following buttons can also be used for keyframe operations.
  [EFF LOOP], [STOP NEXT KF], [NORM], [REV], [NORM/REV], [REWIND], [RUN]
- For details about the operation when a button with a macro attachment is pressed during macro editing, see *"To merge a macro set in a macro attachment" (page 350)*.

6 Repeat steps **4** and **5** to register the required events in the macro.

This registers the events in the macro, in the order the operations were carried out on the control panel.

7 In the numeric keypad control block, press the [STORE] button.

Macro editing mode finishes, and the [MCRO] button and [STORE] button in the numeric keypad control block light amber.
The memory recall buttons in the utility/shotbox control block switch to the assignments for keyframe editing.

8 Use the numeric keypad to enter the number (1 to 250) of the register in which you want to save.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

9 Press the [ENTER] button.

The created macro is saved in the register, and the [STORE STATS] button and [RCALL] button are lit amber.
The display shows the saved register number.

Note

While carrying out macro editing in the numeric keypad control block and utility/shotbox control block, no macro operation other than macro recalling is possible in other control blocks.

To cancel the saving of a macro

While the [STORE STATS] button is lit amber, press and hold the [STORE STATS] button and press the [UNDO] button.

To merge a macro set in a macro attachment

While creating/editing a macro, if you press a button for which a macro attachment is set, the macro in the register assigned to the button is recalled, and the following occurs.

- When auto insert mode is enabled, it is merged with the macro being edited. However, the macro assigned to the button is not executed.
- When auto insert mode is disabled, it is stored in the paste buffer. Pressing the [PASTE] button in the utility/shotbox control block merges it with the macro being edited.

Specifying an edit point

1 In the numeric keypad control block, press the [MCRO] button.

The control block switches to macro operation mode, and the [MCRO] button and [RCALL] button light amber.

2 Recall the target register for operation *(see page 349)*.

3 Holding down the [MCRO] button, press the [STORE] button.

This switches the numeric keypad control block to macro editing mode. The [STORE] button blinks red, and the [MCRO] button changes color to red.

4 Press the [KF MCRO EDIT] button in the utility/shotbox control block.

Selecting keyframe/macro editing mode in the utility/shotbox control block when the numeric keypad control block is in macro editing mode switches the memory recall buttons to the assignments for macro editing, and the [EDIT ENBL] button turns on red.

5 Specify an edit point using buttons in the utility/shotbox control block.

- To move the edit point to the event immediately following the current macro event, press the [NEXT EVENT] button.
- To move the edit point to the event immediately preceding the current macro event, press the [PREV EVENT] button.
- To move the edit point by specifying an event number, press the [GOTO EVENT] button, then enter the event number using the numeric keypad control block, and press the [ENTER] button.

Inserting an event

1 Specify an edit point *(see page 350)*.

2 If required, set auto insert mode *(see page 349)*.

3 Create an event.

When auto insert mode is enabled, the event is registered automatically.
Auto insert mode is disabled, press the [INS] button in the utility/shotbox control block to register events.

4 Repeat steps **2** and **3** to insert the required events in the macro.

Modifying an event

1 Specify an edit point *(see page 350)*.

2 Disable auto insert mode if it is enabled.

3 Create an event.

4 Press the [MOD] button in the utility/shotbox control block.

Deleting an event

1 Specify an edit point *(see page 350)*.

2 Press the [DEL] button in the utility/shotbox control block.

Deleting a particular range of events

1 Specify an edit point *(see page 350)*.

2 Press the [FROM TO] button in the utility/shotbox control block.

The display in the numeric keypad control block shows the current event number and the indication "TO."

3 Using the numeric keypad in the numeric keypad control block, carry out the following operations.

- To set the first event in the range to be deleted, press the [CLR] button, then enter the event number using the numeric keypad buttons, and press the [ENTER] button to confirm.
- To set the last event in the range to be deleted, enter the event number using the numeric keypad, and press the [ENTER] button to confirm.

4 Press the [DEL] button in the utility/shotbox control block.

Deleting all events

1 Specify an edit point *(see page 350)*.

2 Press the [ALL] button in the utility/shotbox control block, turning it on orange.

3 Press the [DEL] button in the utility/shotbox control block.

Moving events

1 Specify the edit point for the start of the range to be moved *(see page 350)*.

2 To move a number of events in a single operation, press the [FROM TO] button in the utility/shotbox control block and specify the event range.

For details about specifying a range, see "Deleting a particular range of events" (page 351).

3 Press the [DEL] button in the utility/shotbox control block.

This deletes the specified events and stores them in the paste buffer.

4 Move the edit point to the position to which you want to move the events.

5 Carry out the following operations using the buttons in the utility/shotbox control block.

- To insert the move target events after the edit point, press the [PASTE] button.

- To insert the move target events before the edit point, press and hold the [SHIFT] button and press the [PASTE] button.

Copying events

1 Specify the edit point for the start of the range to be copied *(see page 350)*.

2 To copy a number of events in a single operation, press the [FROM TO] button or the [ALL] button in the utility/shotbox control block.

If you press the [FROM TO] button, specify the event range.

For details about specifying a range, see "Deleting a particular range of events" (page 351).

3 Press the [COPY] button in the utility/shotbox control block.

This copies the specified events and stores it in the paste buffer.

4 Move to the edit point to the destination you want to copy the events.

5 Carry out the following operations using the buttons in the utility/shotbox control block.

- To insert the copy target events after the edit point, press the [PASTE] button.
- To insert the copy target events before the edit point, press and hold the [SHIFT] button and press the [PASTE] button.

Inserting a pause event

1 Specify an edit point *(see page 350)*.

2 If required, set auto insert mode *(see page 349)*.

3 Press the [PAUSE] button in the utility/shotbox control block, turning it on blue.

The indication "PAUSE" appears in the numeric keypad control block display.

4 Enter the pause duration using the numeric keypad of the numeric keypad control block (0, or 1 to 999 frames), and press the [ENTER] button.

When auto insert mode is enabled, the pause event is registered automatically.
When auto insert mode is disabled, press the [INS] button in the utility/shotbox control block to register the pause events.

Note

In auto pause insert mode, the [PAUSE] button operation is automatically registered as an event, but a pause event is not inserted automatically between the event and the next event.

Merging macro register data

1 Specify an edit point *(see page 350)*.

2 Press the [RCALL] button in the numeric keypad control block, turning it on amber.

3 Use the numeric keypad to enter the number of the register you want to copy.

The display shows the selected register number.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

4 Press the [ENTER] button.

The specified register data is stored in the paste buffer.
When auto insert mode is enabled, the data from the specified register is included after the edit point.
When auto insert mode is disabled, skip to step **5**.

5 When auto insert mode is disabled, carry out the following operations using the buttons in the utility/shotbox control block.

- To merge the register data after the edit point, press the [PASTE] button.
- To merge the register data before the edit point, press and hold the [SHIFT] button and press the [PASTE] button.

Notes

- You can also specify the register in another control block that supports macro register recalling.
- You can specify a register in the same way using buttons configured with a macro attachment. In this case, the data from the assigned macro register is stored in the paste buffer.

Undoing a macro edit operation

Immediately after inserting, modifying, or pasting an event, you can undo the operation by pressing the [UNDO] button in the utility/shotbox control block.

Saving a Macro

Always save the register after editing a macro.

1 In the numeric keypad control block, press the [MCRO] button.

2 Press the [STORE] button, turning it on.

3 Use the numeric keypad to enter the number (1 to 250) of the register in which you want to save.

For details about selecting a register, see "Register selection in the numeric keypad control block" (page 305).

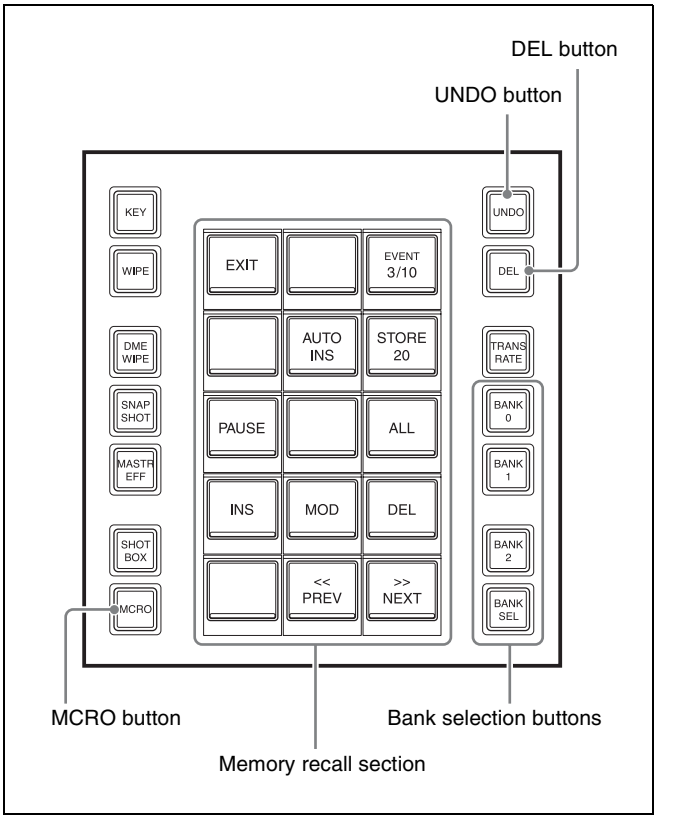
4 Press the [ENTER] button.

The edited macro is saved in the register, and the [STORE STATS] button and [RCALL] button are lit amber.
The display shows the saved register number.

To cancel the saving of a macro

While the [STORE STATS] button is lit amber, press and hold the [STORE STATS] button and press the [UNDO] button.

Macro Operations (Flexi Pad Control Block)



Flexi Pad control block

Banks and registers

To allow operations on the 250 registers, the Flexi Pad control block treats the registers in groups. These groups are called "banks." There are 26 banks, numbered 0 to 25.

For details about the correspondence between banks and registers, see "Banks and Registers" (page 330).

Recalling a Macro Register and Executing a Macro

A macro operation is performed by recalling a macro register. The operation varies depending on the macro execution mode.

Executing a macro in normal execution mode

1 In the Flexi Pad control block, press the [MCRO] button.

This switches the memory recall section to macro operation mode.
The last recalled bank is displayed.

2 Use the bank selection buttons to select the target bank for operation.

Select from bank 0 to 25 (register number 1 to 250).

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

3 Press the button for the target register.

The macro register is recalled, and the macro is executed. During macro execution, the selected button blinks orange.
The selected bank and register number are displayed on the top right button in the memory recall section, and the number of executed events and total number of events are displayed on the center button in the bottom row.

Notes

- Multi mode *(see page 347)* is disabled if a macro register is recalled using the Flexi Pad control block. Only one macro can be executed at a time.
- If the same macro is recalled during macro execution or when the macro is paused, the following operation depends on a setting in the Setup menu.
  For details, see "Setting the Macro Operation Mode" (page 432).
- Events registered in a macro are executed according to the setup and the device configuration in force when the events were registered. If the state has changed since registration, the contents of the macro may not be reproduced correctly when the macro is recalled.
- During macro execution, if you switch the control panel to macro editing mode, the macro currently being executed stops.
- It is not possible to execute a macro during macro editing.
- While executing a macro, the operation performed if another macro is recalled from the Flexi Pad control block depends on a setting in the Setup menu.
  For details, see "Setting the Macro Operation Mode" (page 432).

When a pause event is configured

When execution of a macro is paused, the [TAKE] button is displayed in the memory recall section.
Press the [TAKE] button to resume the macro.

Executing a macro in step execution mode

1 Recall a macro register using steps **1** to **3** in *"Executing a macro in normal execution mode" (page 353).*

The selected bank and register number are displayed on the top right button in the memory recall section, and the number of executed events and total number of events are displayed on the center button in the bottom row.

2 Press the [TAKE] button in the memory recall section.

This executes one event registered in the macro, then stops.

3 Repeat step **2**, executing the macro event by event.

Macro Creation and Editing

Setting auto insert mode

To enable auto insert mode, press the [AUTO INS] button in the memory recall section, turning it on orange.
When you start to create or edit a macro with the macro execution mode set to normal execution mode, auto insert mode is automatically enabled.

To set auto pause insert mode

To enable auto pause insert mode, press and hold the [AUTO INS] button. The button indication changes to [AUTO PAUSE] button, and turns on blue.
To disable auto pause insert mode, press and hold the [AUTO PAUSE] button or exit macro creation/editing.

For details about auto insert mode, see "Auto insert mode" (page 347).

Creating a macro

1 In the Flexi Pad control block, press the [MCRO] button.

This switches the memory recall section to macro operation mode.
The last recalled bank is displayed.

2 Use the bank selection buttons to select the target bank for operation.

Select from bank 0 to 25 (register number 1 to 250).

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

3 While pressing the [MCRO] button, press the button for the target register for operation.

This switches the Flexi Pad control block to macro editing mode, and the [MCRO] button changes color to red.
The selected bank and register number are displayed on the top right button in the memory recall section, and the number of the current event and total number of events are displayed on the center button in the bottom row.

4 If required, set auto insert mode *(see page 354)*.

5 Create the events (carry out the control panel operations to be registered as events in the macro).

You can also include pause events *(see page 356)*.

For details about the events that can be registered, see "Events" (page 345).

When auto insert mode is enabled, the event is registered automatically.
When auto insert mode is disabled, press the [INS] button to register the event.

Notes

- During macro editing, if you press any of the mode selection buttons in the Flexi Pad control block other than the [MCRO] button, the executed operation is also registered as an event. In this case, the [MCRO] button remains lit red.
- While editing a macro in the Flexi Pad control block, pressing a button which has macro attachment does not execute the macro.

6 Repeat steps **4** and **5** to register the required events in the macro.

This registers the events in the macro, in the order the operations were carried out on the control panel.

7 Press the [STORE XXX] button (where XXX is the number of the currently selected register).

This saves the created macro in the register.
To exit macro creation without saving, press the [EXIT] button.

Specifying an edit point

1 In the Flexi Pad control block, press the [MCRO] button.

This switches the memory recall section to macro operation mode.
The last recalled bank is displayed.

2 Use the bank selection buttons to select the target bank for operation.

Select from bank 0 to 25 (register number 1 to 250).

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

3 While pressing the [MCRO] button, press the button for the target register for operation.

This switches the Flexi Pad control block to macro editing mode, and the [MCRO] button changes color to red.
The selected bank and register number are displayed on the top right button in the memory recall section, and the number of the current event and total number of events are displayed on the center button in the bottom row.

4 Specify an edit point.

- To move the edit point to the event immediately following the current event, press the [>> NEXT] button.
- To move the edit point to the event immediately preceding the current event, press the [<< PREV] button.

Inserting an event

1 Specify an edit point *(see page 355)*.

2 If required, set auto insert mode *(see page 354)*.

3 Create an event.

When auto insert mode is enabled, the event is registered after the current event automatically.
When auto insert mode is disabled, press the [INS] button to register the event after the current event.

4 Repeat steps **2** and **3** to insert the required events in the macro.

Modifying an event

1 Specify an edit point *(see page 355)*.

2 Disable auto insert mode if it is enabled.

3 Create an event.

4 Press the [MOD] button.

Deleting an event

1 Specify an edit point *(see page 355)*.

2 Press the [DEL] button in the memory recall section.

Deleting all events

You can delete all events within the selected macro register.

1 Specify an edit point *(see page 355)*.

2 Press the [ALL] button, turning it on orange.

3 Press the [DEL] button in the memory recall section.

Inserting a pause event

1 Specify an edit point *(see page 355)*.

2 If required, set auto insert mode *(see page 354)*.

3 Press the [PAUSE] button.

This switches the memory recall section to numeric keypad mode.

4 Enter the pause duration (0, or 1 to 999 frames), and press the [ENTER] button.

When auto insert mode is enabled, the pause event is registered after the current event automatically.
When auto insert mode is disabled, press the [INS] button to register the pause event after the current event.

Note

In auto pause insert mode, the [PAUSE] button operation is automatically registered as an event, but a pause event is not inserted automatically between the event and the next event.

Saving a Macro

Press the [STORE XXX] button in the memory recall section (where XXX is the number of the currently selected register).
This saves the edited macro in the register.
To exit macro editing without saving, press the [EXIT] button.

Deleting a Macro

1 In the Flexi Pad control block, press the [MCRO] button.

This switches the memory recall section to macro operation mode.
The last recalled bank is displayed.

2 Use the bank selection buttons to select the target bank for operation.

Select from bank 0 to 25 (register number 1 to 250).

For details about bank selection, see "Bank and register selection in the Flexi Pad control block" (page 331).

3 Holding down the [DEL] button, press the button of the register in which the macro you want to delete is saved.

Macro Operations (Cross-Point Control Block)

You can assign the macro register recall function to the cross-point pad buttons or cross-point buttons in utility/ shotbox mode on the cross-point control block.

To recall a macro register using cross-point buttons

Assign a macro register to a cross-point button on the cross-point control block, and then select it in utility/ shotbox mode. The settings are common to the M/E and PGM/PST banks.

For details about assigning a macro register, see "Assigning Functions to Cross-Point Buttons of the Cross-Point Control Block" (page 426).

To recall a macro register, you use the same procedure as executing a utility.

For details, see "Utility Execution (Cross-Point Control Block)" (page 338).

To recall a macro register using cross-point pad buttons

Assign a macro register to a cross-point pad button, and then press the button to recall the macro register.
You can assign the macro status (number of executed events and number of total events) display function to buttons in the cross-point pad.

For details about button assignment, see "Assigning a function to a cross-point pad button" (page 433).

Macro Operations (Menu)

You can edit macro registers and macro events using the following menus.

Menu	Function	Operations
Register menu (macro register editing)	Carry out macro register editing.	• Locking a register • Copying a register • Deleting a register • Naming a register
On Line Edit menu (online editing of macro events)	Edit events in a macro register, using the control panel and menus.	• Inserting an event • Deleting an event • Modifying an event
Off Line Edit menu (offline editing of macro events)	Edit events in a macro register, local drive, or removable drive, using the menus.	• Inserting an event • Adding an event • Deleting an event • Creating a new macro

Macro Register Editing

In the Macro >Register menu, you can check the status and edit macro registers.
For details about the status display, see *"Effect Status Display" (page 324)*. However, region names are not displayed.
You can carry out the following editing on macro registers.
- **Lock:** Write-protect the data contents of the register.
- **Copy:** Copy data between registers.
- **Delete:** Delete the data contents of a register.
- **Name:** Attach a name to a register.

In the Macro >Register menu, use the same procedure as when editing an effect register.
However, the region selection operation is not necessary for macro registers.

For details, see "Effect Register Editing" (page 324).

Online Editing of Macro Events

You use the On Line Edit menu to carry out online editing of macro events.
In the On Line Edit menu, you can check the control panel operating sequence in the menu. You can also edit using the control panel and menu.

To display the On Line Edit menu

1 Recall the macro register (1 to 250) you want to edit using the control panel, and select macro editing mode[1)].

1) State with numeric keypad control block *(see page 349)*, utility/shotbox control block *(see page 349)*, or Flexi Pad control block *(see page 354)* switched to macro editing mode.

2 In any of the following menus, select the same register recalled in step **1**, and press [On Line Edit].

- Macro >Register >Attach menu (5411)
- Macro >Register >Lock menu (5412)
- Macro >Register >Delete menu (5416)
- Macro >Register >Rename menu (5417)
- File >Shotbox, Macro >Macro >File Edit menu (7142.1)

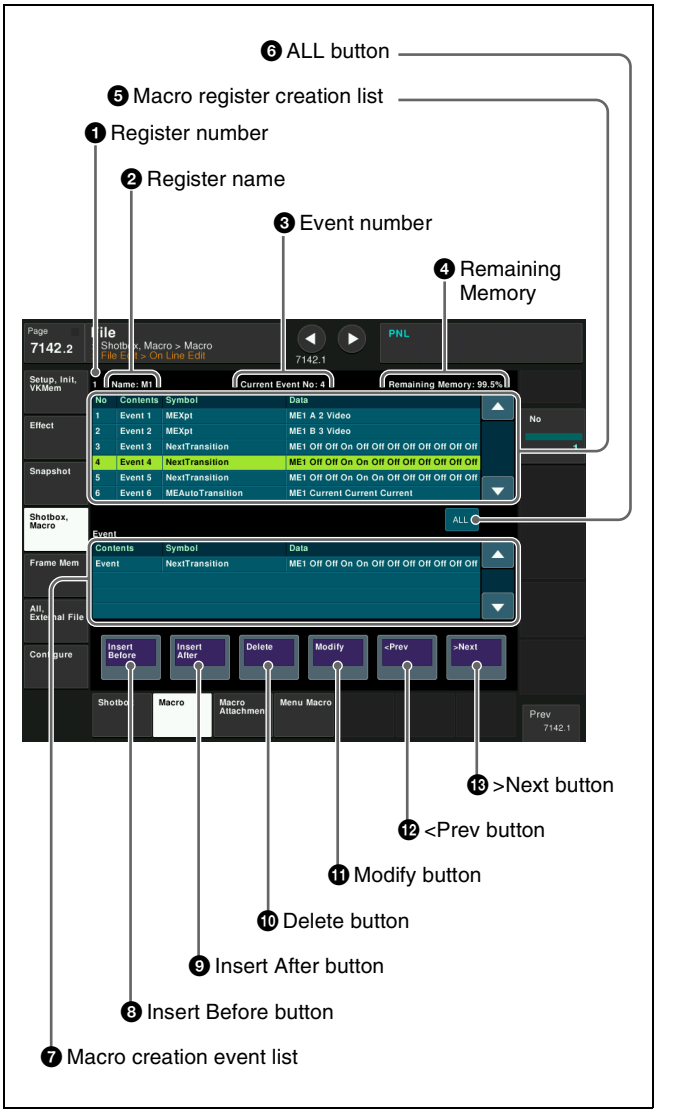
The On Line Edit menu (7142.2) appears, and you can now carry out online editing of the events for the recalled register. Also, the control block of the control panel operated in step **1** is assigned to control editing operations.

Note

In the following cases, [On Line Edit] is disabled and it is not possible to display the On Line Edit menu.

- When the recalled register and the register selected in the menu are different.
- When a device other than [Register] is selected in the File >Shotbox, Macro >Macro >File Edit menu (7142.1).
- If the recalled register is locked.

On Line Edit menu



❶ Register number

Shows the number of the register (1 to 250) being edited.

❷ Register name

Shows the name of the register being edited.

❸ Event number

Shows the current event number. When the [FROM TO] button in the utility/shotbox control block is pressed to select a range of events, this appears as a range, “From X To Y.”

The event number reflects the position of the cursor in the macro register creation list.

❹ Remaining Memory

Shows the percentage of memory still available for recording events.

❺ Macro register creation list
When a macro is stored in the register, this shows a list of the macro events. Each macro event consists of the following components, which you can check in the list.
- **Contents:** Event statement, Continue statement, or event number
- **Symbol:** Type of event (ASCII character string)
- **Data:** Event details in the form of parameters and data

For details about event components, see "Macro File Editing Rules" (page 536).

The cursor indicates the current event in the list (highlighted in reverse video). You can scroll the list using the [No] parameter, but this does not change the cursor position.

❻ ALL button
Selects all events in the macro register creation list.

❼ Macro creation event list
Shows the event being created or executed in the control panel.

❽ Insert Before button
Inserts a created event immediately before the selected event in the macro register creation list.

❾ Insert After button
Inserts a created event immediately after the selected event in the macro register creation list.

❿ Delete button
Deletes the selected event in the macro register creation list.

⓫ Modify button
Replaces the selected event in the macro register creation list with a created event.

⓬ <Prev button
Moves the cursor to the event immediately before the selected event in the macro register creation list.

⓭ >Next button
Moves the cursor to the event immediately after the selected event in the macro register creation list.

Online editing of macro events

Note

It is not possible to save editing results using the On Line Edit menu. Operate the control panel to save the edited register.

To insert an event

1. On the control panel, disable auto insert mode if it is enabled.
2. On the control panel, create a macro event.

   The created event appears in the macro creation event list.

   For details about the content displayed, see "Macro File Editing Rules" (page 536).
3. In the macro register creation list, press [<Prev] or [>Next] to select the position where you want to insert the created event.
4. Carry out one of the following.

   To insert before the event selected in the list: Press [Insert Before].
   To insert after the event selected in the list: Press [Insert After].

   This inserts the created event either before or after the specified event.

   Note

   In the following cases, [Insert Before] and [Insert After] are disabled, and it is not possible to insert the event.
   - When the memory or register is full.
   - When the size of the created macro event is larger than the memory or register space available.
   - When multiple events are selected.
   - When the number of events exceeds 99.
   - When not in macro editing mode. [1)]

   1) While a macro is being executed on the control panel, when macro saving has been executed, or when the [EXIT] button in the Flexi Pad control block has been pressed.
5. Operate the control panel to save the editing result.

To delete an event

1. In the macro register creation list, press [<Prev] or [>Next] to select the event you want to delete.

   To select all events in the register, press [ALL].
2. Press [Delete].

   Note

   If not in macro editing mode[1)], [Delete] is disabled and it is not possible to delete the selected event.

   1) While a macro is being executed on the control panel, when macro saving has been executed, or when the [EXIT] button in the Flexi Pad control block has been pressed.

3 Operate the control panel to save the editing result.

To modify an event

1 On the control panel, disable auto insert mode if it is enabled.

2 In the macro register creation list, press [<Prev] or [>Next] to select the event you want to modify.

3 On the control panel, modify the macro event.

The modified event appears in the macro creation event list.

For details about the content displayed, see "Macro File Editing Rules" (page 536).

4 Press [Modify].

Note

If not in macro editing mode[1], [Modify] is disabled and it is not possible to modify the event.

1) While a macro is being executed on the control panel, when macro saving has been executed, or when the [EXIT] button in the Flexi Pad control block has been pressed.

5 Operate the control panel to save the editing result.

Offline Editing of Macro Events

You use the Off Line Edit menu to carry out offline editing of macro events.
In the Off Line Edit menu, you can carry out editing in the menu only, unrelated to operation of the control panel.

To display the Off Line Edit menu

In any of the following menus, select the register or device holding the macro you want to edit, and press [Off Line Edit].

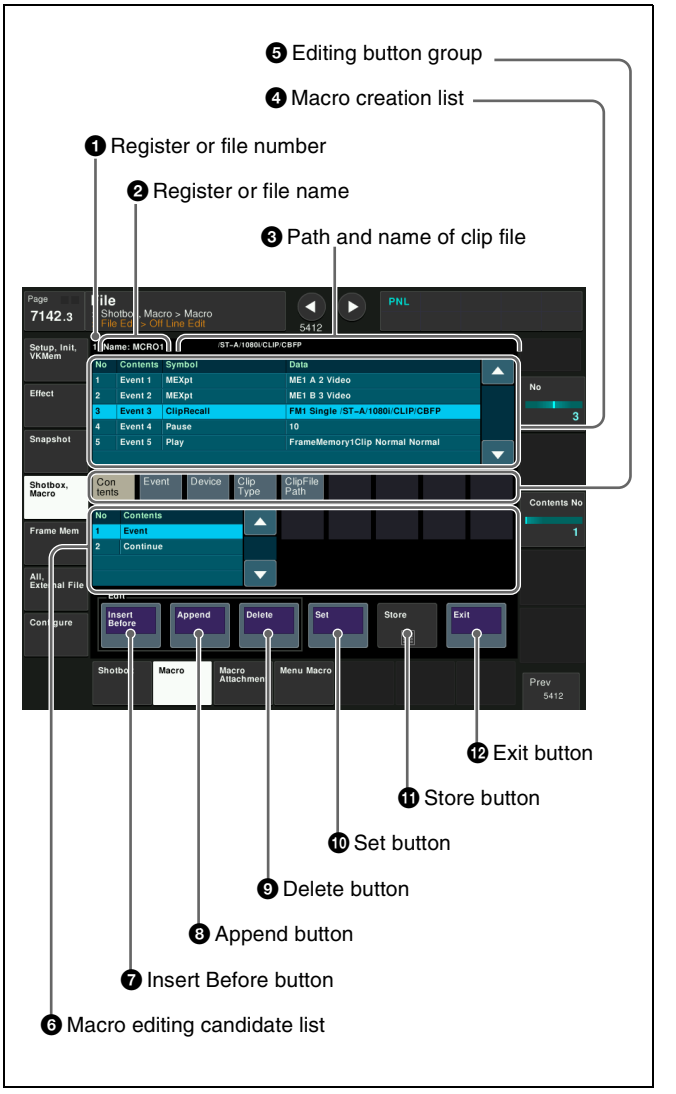
- Macro >Register >Attach menu (5411)
- Macro >Register >Lock menu (5412)
- Macro >Register >Delete menu (5416)
- Macro >Register >Rename menu (5417)
- File >Shotbox, Macro >Macro >File Edit menu (7142.1)

The Off Line Edit menu (7142.3) appears, and the selected macro register or macro file is recalled, enabling offline editing.

Note

If the selected register is locked, [Off Line Edit] is disabled and it is not possible to display the Off Line Edit menu.

Off Line Edit menu



❶ Register or file number
Shows the number of the register or file being edited.

❷ Register or file name
Shows the name of the register or file being edited.

❸ Path and name of clip file
Displays the clip folder and file name, if set, in a frame memory clip recall event (ClipRecall).

❹ Macro creation list
Lists the macro events that are saved in the register or file. The cursor moves to the selected event. Each macro event consists of the following components, which you can check in the list.

- **Contents:** Event statement, Continue statement, comment (#), or event number selected using [Contents] in the editing button group.
- **Symbol:** Event type (ASCII character string) selected using [Event] in the editing button group.

- **Data:** Parameters and data set in the editing button group.

For details about event components, see "Macro File Editing Rules" (page 536).

❺ Editing button group
This row of buttons shows the components of an event. To carry out event editing: (1) press an editing button, then (2) select an item from the list of macro editing candidates, and repeat this process as required.

❻ Macro editing candidate list
Shows the list of editing candidates for the selection from the editing button group.

❼ Insert Before button
Inserts immediately before the event selected in the macro creation list.

❽ Append button
Adds an empty row at the end of the macro creation list.

❾ Delete button
Deletes the event selected in the macro creation list.

❿ Set button
Reflects the item selected in the macro editing candidate list, in the macro creation list and editing buttons.

⓫ Store button
Saves the editing results of the macro register or macro file.

⓬ Exit button
Closes the Off Line Edit menu without saving the editing results of the macro register or macro file, and returns to the previously displayed menu.

Offline editing of macro events

To insert an event

1 In the macro creation list, select the event at the position where you want to insert, and select one of the following.

To insert before the event selected in the list: Press [Insert Before].
To insert at the end of the list: Press [Append].

A blank row is added at the end of the macro creation list.

2 Press [Contents] in the editing button group.

The following items relating to event types appear in the macro editing candidate list.

- **Event:** Event
- **Continue:** Event continuation
- **#:** Comment

For details about the items, see "Macro File Syntax" (page 536).

3 Select the desired item from the macro editing candidate list, and press [Set].

The selected item appears at the event insertion position in the macro creation list as an event component. Additionally, in the leftmost blank position of the editing button group (to the right of [Contents]), a button appears, corresponding to the item in the macro editing candidate list. For example, if "Event" is selected, an [Event] button appears.

4 In the editing button group, press the button that has just appeared.

The item corresponding to the button appears in the macro editing candidate list.
If you press [Event], the symbol indicating the event contents appears *(see page 537).*

5 Select the desired item from the macro editing candidate list, and press [Set].

At the event insertion position of the macro creation list, the selected item is added as an event component. Additionally, in the left to right blank positions of the editing button group, buttons appear, corresponding to the item in the macro editing candidate list. For example, if "MEAutoTransition" is selected, buttons for the parameters and data for the MEAutoTransition appears.

6 Repeat steps **4** and **5**, to edit the event components.

At the event insertion position of the macro creation list, the item is added as an event component.
To add further events, repeat steps **1** to **6**.

7 Press [Store].

8 Enter a register number as required in the numeric keypad window, and press [Enter].

The current macro is stored in the specified register. The display returns to the menu displayed immediately before offline editing.

To delete an event

1 In the macro creation list, select the event you want to delete.

2 Press [Delete].

The selected event is deleted.
If a deleted Event statement is followed by a Continue statement, the Continue statement is converted to an Event statement.

3 Press [Store].

To create a new macro

1 From the list in any of the following menus, select an empty register or file, and press [Off Line Edit].

- Macro >Register >Attach menu (5411)
- Macro >Register >Lock menu (5412)
- Macro >Register >Delete menu (5416)
- Macro >Register >Rename menu (5417)
- File >Shotbox, Macro >Macro >File Edit menu (7142.1)

The Off Line Edit menu (7142.3) appears.

2 Carry out steps **2** to **7** in *"To insert an event" (page 361)* to create an the event.

To close the Off Line Edit menu without saving the editing results

Press [Exit].

Macro Attachments

A macro attachment is a function whereby a macro register is assigned to a control panel button or a particular position of a fader lever, linking the execution of the button function or a fader lever operation with a macro execution.

Setting a macro attachment

Select one of the following three linking modes to make the macro attachment.

Pre-macro: Mode in which the button function is executed after macro execution has completed.

Post-macro: Mode in which the macro is executed after carrying out the button function.

Macro only: Mode in which the button function is not executed, and the macro only is executed.

Select each mode using the following buttons.

Mode	Button
Pre-macro	Press [PRE MACRO] on the cross-point pad of the cross-point control block.
Post-macro	Press [POST MACRO] on the cross-point pad of the cross-point control block.
Macro only	Press the [PRE MACRO] button and [POST MACRO] button simultaneously.

You can assign any one of the 250 macro registers to a button.

For a button whose function is switched by delegation, you can make a separate macro attachment for each function.

Macro attachments can be set for the following buttons.

Control block	Button
Cross-point control block	• Cross-point buttons of the bus assigned to the 1st row to 4th row • Disabled buttons (set to "Inhibit")
AUX bus control block (AUX bus operation mode)	Cross-point buttons of the bus assigned to the 3rd row/4th row
Transition control block	Fader lever and buttons assigned with the following functions. • Next transition selection • Transition type selection • Auto transition, cut • Device operation (CUE, PLAY, STOP) • Pattern limit enable/disable • Independent key transition auto-transition and key on/off [a)]
Transition control block (simple type)	Fader lever and buttons assigned with the following functions. • Auto transition, cut • Transition type selection • Pattern limit enable/disable • Device operation (CUE, PLAY, STOP)

Control block	Button
Independent key transition control block	Buttons assigned with the following functions. • Auto transition [a)] • Key on/off [a)]
Key fader control block	Buttons operating the following functions. • Auto transition [a)] • Key on/off [a)] • Transition type selection
Device control block (trackball)	VTR/disk recorder/frame memory operation mode [PLAY], [CUE], [STOP], and [START TC] buttons

a) In the case of an event that inserts or removes a key, the state at the time of event registration (inserted or not inserted) is also saved in the macro. When the macro is executed, the event is only replayed if the key state matches the saved state.
Example: For a macro with an event that removes a key, when the macro is executed, the key is removed if it is inserted, but otherwise remains unchanged.

Notes

- After setting a macro attachment to a cross-point button in the AUX bus control block (AUX bus operation mode), if in the Setup menu you change the assignment of buses to the 1st row/2nd row delegation buttons, the macro attachment setting disappears.
- After setting a macro attachment to a 2nd row cross-point button in the cross-point control block in key/AUX bus delegation mode, if in the Setup menu you change the assignment of buses to the 1st row delegation buttons, the macro attachment setting disappears.
- After setting a macro attachment to a button for which you can perform function replacement or function assignment, if you change the function assignment to the button, the macro attachment setting disappears.
- After setting a macro attachment to a cross-point button in the cross-point control block, if you change the function assignment to the button, the macro attachment setting disappears.

Executing a macro attachment

To execute a macro assigned to a button or fader lever in a macro attachment, macro attachments must be enabled. The enable/disable setting is switched using buttons on the cross-point pad of the cross-point control block or buttons assigned with a utility command. You can set to permanently enable or disable macro attachments in the Setup menu.

Setting and Canceling a Macro Attachment

Setting the register to assign in a macro attachment

You can select a macro register (1 to 250) to assign to a control panel button or a fader lever.

Notes

- When a macro register is recalled, for example on the numeric keypad control block or Flexi Pad control block, the macro attachment register setting is also changed in conjunction.
- The name of the macro attachment register is displayed on the macro register display button while the [PRE MACRO] button or [POST MACRO] button is pressed on the cross-point pad of the cross-point control block.

1 Open the Macro >Register >Attach menu (5411).

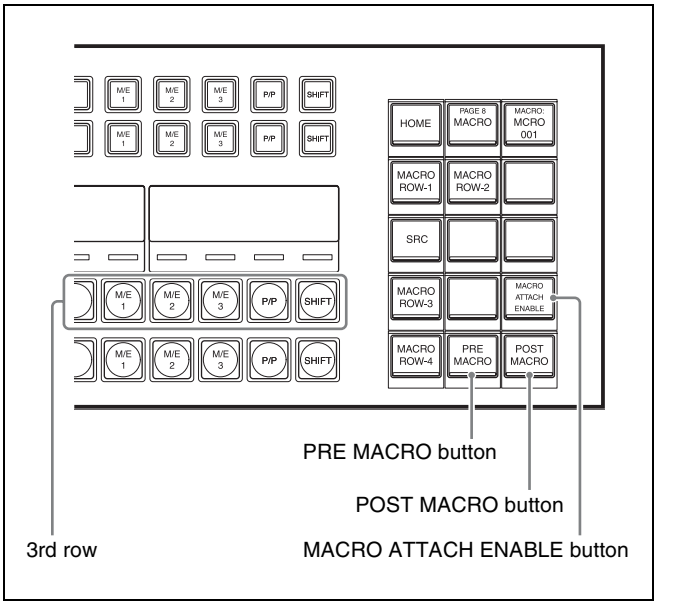
2 In the list on the left of the status area, select the macro attachment register.

3 Press [Set].

The selected register name appears on the right side of the status area.

Setting a macro attachment to a button

This section describes setting a macro attachment to a 3rd row cross-point button in the cross-point control block as an example.



Cross-point control block

1 Select the macro attachment register.

For details about the method of operation, see "Setting the register to assign in a macro attachment" (page 363).

2 To set to pre macro mode, press and hold the [PRE MACRO] button in the cross-point pad and press a 3rd row cross-point button. To set to post macro mode, use the [POST MACRO] button instead.

The selected cross-point button blinks amber, and the register set in step **1** is assigned to the button.

If you make both pre macro and post macro settings for the same button

The latter setting is enabled.

To disable a button function when a macro attachment is set

When a macro attachment is assigned to a button, you can configure it so that the button function is not executed.

For details, see "Setting the Macro Operation Mode" (page 432).

To set a macro attachment in macro only mode

1 Select the macro attachment register.

For details about the method of operation, see "Setting the register to assign in a macro attachment" (page 363).

2 Press and hold the [PRE MACRO] and [POST MACRO] buttons at the same time in the cross-point pad and press a 3rd row cross-point button.

The selected cross-point button blinks green, and the register set in step **1** is assigned to the button.

To check macro attachment settings

Press and hold the [PRE MACRO] button or [POST MACRO] button. While the button is pressed, the buttons for which a macro attachment is set blink as follows.

While the [PRE MACRO] button is pressed:

- Buttons set in pre macro mode: Blink amber
- Buttons set in macro only mode: Blink green

While the [POST MACRO] button is pressed:

- Buttons set in post macro mode: Blink amber
- Buttons set in macro only mode: Blink green

Setting a macro attachment to a fader lever

You can set a macro attachment to any particular position of a fader lever in the transition control block.

Notes

- In macro only mode, it is not possible to set a macro attachment.
- On a split fader, you can set a macro attachment to the main fader lever (for background A bus).

1 Select the macro attachment register.

For details about the method of operation, see "Setting the register to assign in a macro attachment" (page 363).

2 Move the fader lever to the position where you want to set the macro attachment.

3 Press and hold the [PRE MACRO] button or [POST MACRO] button[1)] in the cross-point pad, and press the [PRIOR SET] button or [LIMIT SET] button in the control block containing the fader lever operated in step **2**.

1) Only when setting a macro attachment to the start point or end point of fader lever operation, the use of the [PRE MACRO] and [POST MACRO] buttons is different.
- To set the operation start point (0%): Press and hold the [PRE MACRO] button.
- To set the operation end point (100%): Press and hold the [POST MACRO] button.

This assigns the register set in step **1** to the fader lever position selected in step **2**.

To check macro attachment settings

Press and hold the [PRE MACRO] button or [POST MACRO] button. While the button is pressed, the fader lever position where the macro attachment is set appears in the following places.

Transition indicator in the transition execution section: The indicator lights at the position where the macro attachment is set.

Transition rate indication in the transition execution section: This shows the fader lever position where the macro attachment is set, as a percentage value (fader lever start position as 0%, end position 100%).

Removing macro attachment settings

To cancel a macro attachment to a button

Press and hold the [PRE MACRO] or [POST MACRO] button in the cross-point pad and press the blinking 3rd row cross-point button. The macro attachment setting is canceled.

To cancel a macro attachment to a fader lever

Press and hold the [PRE MACRO] button or [POST MACRO] button in the cross-point pad, and press the [PRIOR SET] button or [LIMIT SET] button in the control block containing the fader lever with the macro attachment.

To delete individual macro attachment settings

You can delete individual settings of a macro attachment assigned to a button.

1. Open the Macro >Attachment >Attachment menu (5421).
2. Select the macro attachment setting you want to delete.
3. Press [Delete].
4. Check the message, then press [Yes].

To delete all macro attachment settings in a single operation

1. Open the Macro >Attachment >Attachment menu (5421).
2. Press [All Clear].
3. Check the message, then press [Yes].

Switching macro attachment assignment mode (button number mode and pair number mode)

When assigning a macro attachment to a cross-point button, you can select button number mode or pair number (video and key) mode.

Note

If you change the mode using the following procedure, all macro attachment data relating to cross-point buttons is lost.

1. Open the Macro >Attachment >Attachment menu (5421).
2. In the <Xpt Attachment Mode> group, select one of the following.

   Button Mode: Button number mode. Assign a macro attachment for the combination of bus and button numbers.

   Pair Mode: Pair number mode. Assign a macro attachment for the combination of bus and pair numbers.
3. Check the message, then press [Yes].

Notes

- In pair number mode, carry out operations as follows.
  - When a single pair number is assigned to multiple cross-point buttons, pressing any of them executes the macros of all cross-point buttons to which the same pair number is assigned. Further, if you delete any of these assignments, this deletes all assignments to the same pair number.
  - If you assign a pair number to a different cross-point button, the macro attachment settings are also transferred to the new cross-point button.
- When macro attachment data is loaded and overwrites existing data, this also changes the button number mode or pair number mode setting.

Displaying the Macro Attachment Settings

In the Macro >Attachment >Attachment menu (5421), you can display the macro attachment list to check the macro attachment settings.
The following items are displayed in the list.

- **Block:** Panel block names.
- **Button:** Names of buttons with macro attachments (up to 30 characters).
- **Reg:** Assigned register numbers.
- **Name:** Names of macro registers.
- **Mode:** Macro modes (Pre/Post/Only/---) [1)]

Above the list is shown the name of the block and macro attachment assigned button selected in the list.

1) "---" indicates no macro mode is set.

For details about macro modes, see "Setting a macro attachment" (page 362).

For details about the macro attachment list contents, see "Content Displayed in Macro Attachment List" (page 544).

To move within the list by blocks

You can move quickly from the current block to another block to check the settings for that block by pressing the buttons in the <Block Select> group.

- **P/P:** Move to a block in the PGM/PST row.
- **M/E-1:** Move to a block in the M/E-1 row.
- **M/E-2:** Move to a block in the M/E-2 row.
- **M/E-3:** Move to a block in the M/E-3 row.
- **M/E-4:** Move to a block in the M/E-4 row.
- **M/E-5:** Move to a block in the M/E-5 row.
- **Aux:** Move to a block in the AUX row.
- **Others:** Move to a block other than in the PGM/PST, M/E-1 to M/E-5, and AUX rows.

Executing a Macro by Macro Attachment

A macro assigned to a button or fader lever in a macro attachment becomes executable when macro attachments

are enabled. Macro attachments are enabled/disabled using the following buttons.

Macro attachment location	Button
M/E and PGM/PST banks	Press [MACRO ATTACH ENABLE] on the cross-point pad of the cross-point control block.
Other than M/E and PGM/PST banks	Press the following buttons assigned with the "Macro Attachment Enbl" utility command. • User preference buttons in the menu panel • Memory recall buttons in the utility/shotbox control block • Cross-point buttons of the cross-point control block (utility/shotbox mode)

You can set to permanently enable or disable macro attachments without using buttons.

For details, see "Setting the Macro Operation Mode" (page 432).

Executing a macro assigned to a button

1 Depending on the location of the button you want to execute, press the [MACRO ATTACH ENABLE] button (or button assigned with the "Macro Attachment Enbl" command), turning it on.

If using the [MACRO ATTACH ENABLE] button on the cross-point pad or a memory recall button in the utility/shotbox control block, press it, turning it on orange.

2 Press the button with a set macro attachment.

This recalls the macro register assigned to the button, and the macro is executed as follows, according to the operation mode.

Pre macro mode: The macro is executed first, and then the button function is executed.

Post macro mode: The button function is executed first, and then the macro is executed.

Macro only mode: The button function is not executed, and the macro only is executed.

During macro execution, the selected button blinks.

Notes

- When set to multi mode *(see page 347)*, simultaneous execution of multiple macros is supported using the cross-point buttons on the cross-point control block. Multi mode is disabled if any other buttons or fader levers are operated.
- If a button is pressed twice during macro execution or when the macro is stopped, or if another macro is recalled, the following operation depends on a setting in the Setup menu.
  For details, see "Setting the Macro Operation Mode" (page 432).
- Events registered in a macro are executed according to the setup and the device configuration in force when the events were registered. If the state has changed since registration, the contents of the macro may not be reproduced correctly when the macro is recalled.
- During macro execution, if you switch the control panel to macro editing mode, the macro currently being executed stops.
- During macro editing, pressing a button for which a macro attachment is set does not execute the macro.

To disable macro attachment settings

Depending on the location of the button you want to disable, press the [MACRO ATTACH ENABLE] button (or button assigned with the "Macro Attachment Enbl" command), turning it off.
If using the [MACRO ATTACH ENABLE] button on the cross-point pad or a memory recall button in the utility/shotbox control block, press it, turning it on dark blue.
In this state, pressing a button for which a macro attachment is set does not execute the macro.

Executing a macro assigned to a fader lever

1 In the cross-point control block for the fader lever on which you want to execute the macro, press the [MACRO ATTACH ENABLE] button in the cross-point pad, turning it on orange.

2 Move the fader lever from the start position to the end position.

When the fader lever passes the position at which the macro attachment is set, the macro register is recalled, and the macro is executed.

Notes

- Unless you move the fader lever to the end position (completing the travel), it is not possible to execute the macro again.
- When the preset color mix stroke mode is [Normal], the first lever operation executes the macro, but the second lever operation does not.
  For details about setting the stroke mode, see "Setting a Preset Color Mix" (page 466).
- If a button is pressed twice during macro execution or when the macro is stopped, or if another macro is recalled, the following operation depends on a setting in the Setup menu.
  For details, see "Setting the Macro Operation Mode" (page 432).

- Events registered in a macro are executed according to the setup and the device configuration in force when the events were registered. If the state has changed since registration, the contents of the macro may not be reproduced correctly when the macro is recalled.
- During macro execution, if you switch the control panel to macro editing mode, the macro currently being executed stops.
- During macro editing, even if you operate a fader lever with a macro attachment set, the macro is not executed.

To disable macro attachment settings

In the cross-point control block for the fader lever you want to disable the macro, press the [MACRO ATTACH ENABLE] button in the cross-point pad, turning it on orange.
In this state, operating a fader lever with a macro attachment set does not execute the macro.

Menu Macros

The term "menu macro" refers to the function whereby a sequence of menu operations is saved as data in memory, so that it can be recalled as required to automatically execute the same sequence of operations.
You can operate menu macros using the following menus.

Menu	Function	Operations
Menu Macro Register menu (menu macro register editing)	• Editing a menu macro register • Recalling and executing a menu macro register.	• Recalling and executing a register • Locking a register • Copying a register • Deleting a register • Naming a register
Menu Macro Edit menu (editing of menu macro events)	Editing events in a menu macro register	• Inserting an event • Deleting an event • Modifying an event

Menu macro registers

The area of memory that holds a menu macro is termed a "menu macro register." For each control panel there are 99 menu macro registers, numbered 1 to 99. You can edit these in the Menu Macro Register menu.

Menu macro events

The events that can be registered in a menu macro are operations carried out in a menu.

For details about menu operations which are not used in menu macros, see "Menu Operations Not Registered in a Menu Macro" (page 547).

Recalling a Menu Macro Register and Executing a Menu Macro

Menu macro operation is carried out by recalling a menu macro register.

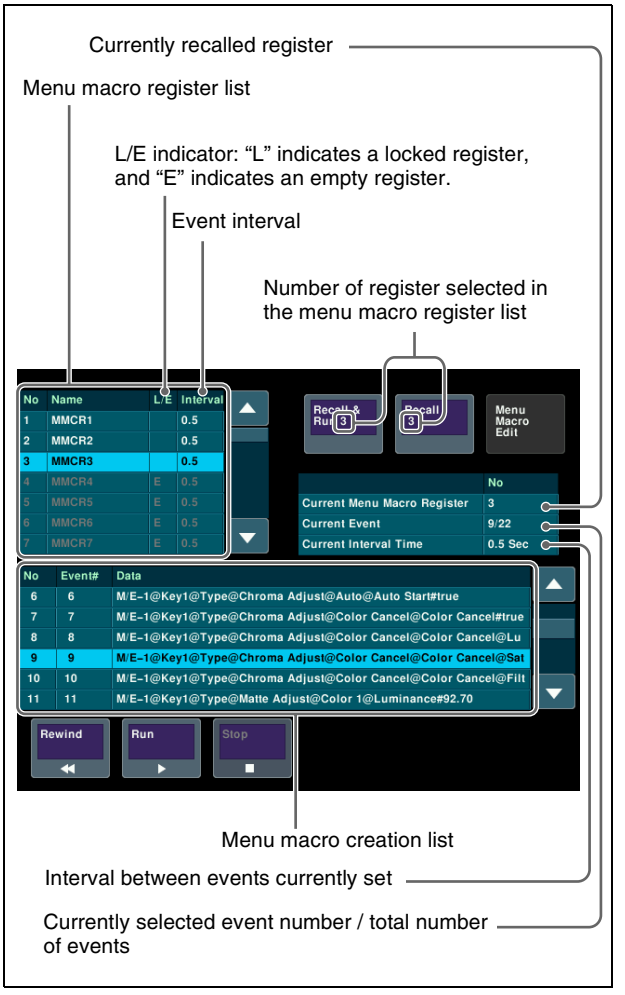
Notes

- Menu macros and macros recalled with a control panel button operate independently. Therefore, to synchronize these, adjustment of the execution timing is required.
- Events registered in a menu macro are executed according to the setup and the device configuration in force when the events were registered. If the state has changed since registration, the contents of the menu macro may not be reproduced correctly when the menu macro is recalled.

- Recalling a menu macro register and executing a menu macro are not supported during menu macro execution or in menu macro editing mode.

Recalling a menu macro register

1 Open the Macro >Menu Macro Register >Recall & Run menu (5431).



2 Select a register.

3 Press [Recall X] (X is the number of the register selected in the menu macro register list).

To execute the menu macro at the same time as recalling the register
Press [Recall & Run X].

Executing a menu macro

1 In the Macro >Menu Macro Register >Recall & Run menu (5431), recall the target menu macro register for operation.

2 In the menu macro creation list, select the start event to execute.

To change the event execution interval
Set the following parameter.

No.	Parameter	Adjustment
4	Current Interval (Sec)	Event interval (seconds)

3 Press [Run].

To stop execution of a menu macro
Press [Stop].

To jump to the first event
Press [Rewind].

Recalling a menu macro register from a macro register

Menu macro recall and execution operations can be saved as events in a control panel macro, and then recalled.
If you execute a menu macro with the control panel in macro editing mode, then this operation is recorded as an event.

For details about operations for registering events, see the following.
- *“Macro Operations (Numeric Keypad Control Block and Utility/Shotbox Control Block)” (page 348)*
- *“Macro Operations (Flexi Pad Control Block)” (page 353)*
- *“Macro Operations (Menu)” (page 357)*

Registering a menu macro in the shortcut menu

1 In the Home >Favorites >Button Edit menu (0023), select a button to register.

2 Press [MenuMacro Set].

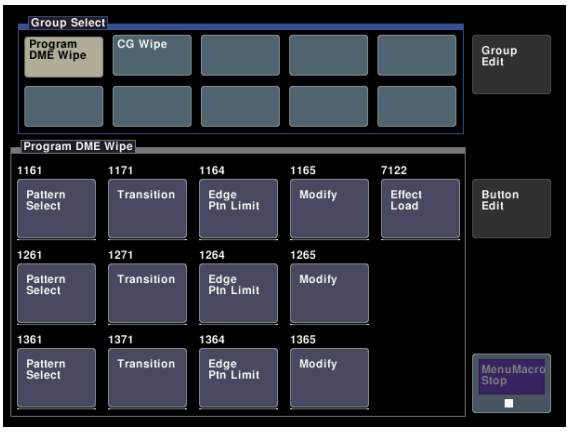
The Menu Macro Set menu (0023.1) appears.
The L/E indicator indicates the following status.
L: Locked register
E: Empty register

3 In the list on the left, select the button number to assign.

4 Press [Set].

Executing a menu macro in the shortcut menu

1 Open the Home >Favorites >Shortcut menu (0021).



2 Press the group name button.

3 Press the button to which the menu macro is assigned.

To stop execution of a menu macro

Press [MenuMacro Stop].

Creating and Editing a Menu Macro

You can create and edit a menu macro using the Menu Macro Edit menu.

To display the Menu Macro Edit menu

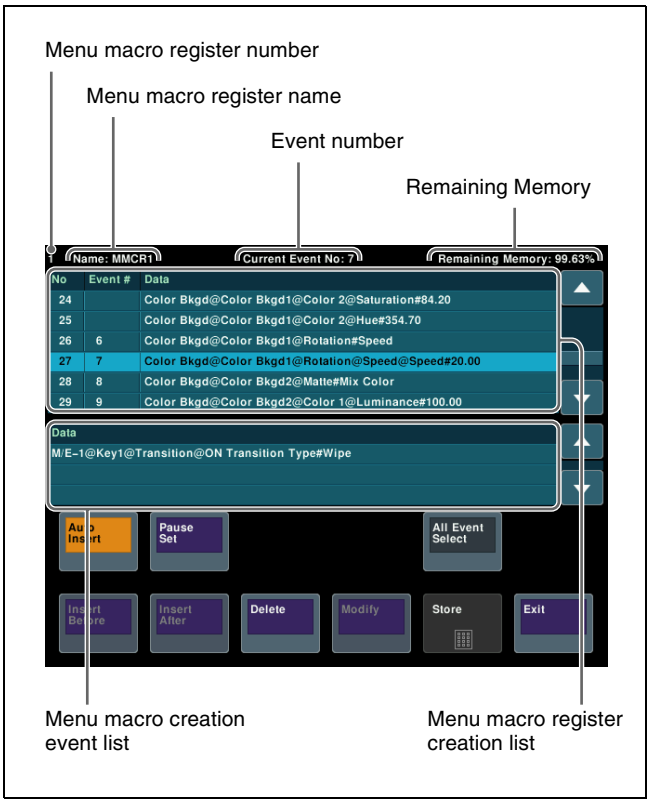
Select a menu macro register in the following menus, and press [Menu Macro Edit].

- Macro >Menu Macro Register >Recall & Run menu (5431)
- Macro >Menu Macro Register >Lock menu (5432)
- Macro >Menu Macro Register >Delete menu (5436)
- Macro >Menu Macro Register >Rename menu (5437)
- File >Shotbox, Macro >Menu Macro >File Edit menu (7144.1)

The Menu Macro Edit menu (7144.2) appears. The selected register is recalled, and menu macro editing mode is invoked.

Note

Recalling a menu macro register and executing a menu macro are not supported in menu macro editing mode.



To scroll the events display in the menu macro register creation list

You can scroll the “Data” field display for an event horizontally to check the content.
Select the target event, and then scroll the display using the [H Scroll] parameter.

Creating a new menu macro

1 Select an empty menu macro register and display the Menu Macro Edit menu (7144.2).

For details about the method of operation, see “To display the Menu Macro Edit menu” (page 369).

2 If required, press [Auto Insert] to enable/disable auto insert mode.

3 Create an event (carry out the menu operation you want to register as an event in the menu macro).

For details about menus that can be registered, see “Menu macro events” (page 367).

When auto insert mode is enabled, the event is registered automatically.
When auto insert mode is disabled, press [Insert Before] or [Insert After] to register the event.

4 Repeat steps **2** and **3** to register the required events in the menu macro.

5 Set the event execution interval.

No.	Parameter	Adjustment
5	Interval Time (Sec)	Event interval (seconds)

The settings are applied to each menu macro register.

6 Press [Store].

To exit editing mode without saving a menu macro
Press [Exit].

7 Enter a menu macro register number as required in the numeric keypad window, and press [Enter].

The created menu macro is saved in the specified register.

To insert a pause event

1 Set the pause time.

No.	Parameter	Adjustment
4	Pause Time (Sec)	Pause duration (seconds)

2 Press [Pause Set].

When auto insert mode is enabled, the pause event is registered automatically.
When auto insert mode is disabled, press the [Insert Before] or [Insert After] button to register the pause event.

Editing a menu macro

1 Select the target menu macro register and display the Menu Macro Edit menu (7144.2).

For details about the method of operation, see "To display the Menu Macro Edit menu" (page 369).

2 Select the event you want to edit.

3 If required, press [Auto Insert] to enable/disable auto insert mode.

4 Carry out the editing operations.

When auto insert mode is enabled: Menu operations are automatically inserted after the selected event.
When auto insert mode is disabled: Perform one of the following.
- To overwrite the selected event, carry out the new menu operation, then press [Modify].
- To insert an event before the selected event, carry out the new menu operation, then press [Insert Before].
- To insert an event after the selected event, carry out the new menu operation, then press [Insert After].

To insert a pause event
Set the pause time, and press [Pause Set] *(see page 370).*

To delete the selected event
Press [Delete].
To delete all events, press [All Event Select], turning it on, and press [Delete].

5 Set the event execution interval.

No.	Parameter	Adjustment
5	Interval Time (Sec)	Event interval (seconds)

The settings are applied to each menu macro register.

6 Press [Store].

To exit editing mode without saving a menu macro
Press [Exit].

7 Enter a menu macro register number as required in the numeric keypad window, and press [Enter].

The edited menu macro is saved in the specified register.

About the menu macro editing mode display

If you switch to another menu while in menu macro editing mode, the menu screen display is as shown below.

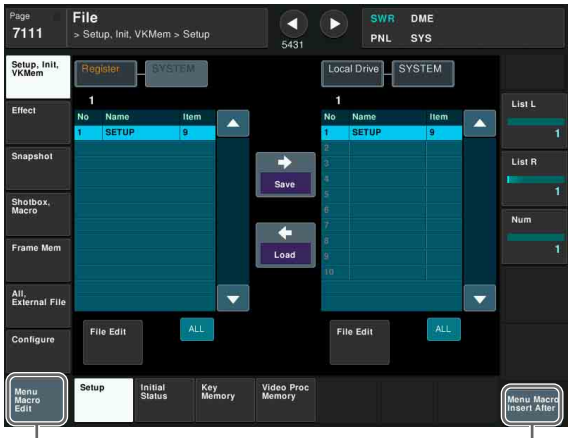
Screen when the keyframe status is displayed

The keyframe status section appears as follows.
- Menu macro register number
- Menu macro register name
- Current event number / total number of events
- Remaining memory

Menu shortcut button to Menu Macro Edit menu

The Previous page button position shows one of the following.
- When [Auto Insert] is enabled, “Menu Macro Auto Insert” appears.
- When [Auto Insert] is disabled, “Menu Macro Insert After” appears, and operates as [Insert After].

Screen when the keyframe status is not displayed



The Default Recall button position shows the following.
Menu shortcut button to Menu Macro Edit menu

The Previous page button position shows one of the following.
- When [Auto Insert] is enabled, “Menu Macro Auto Insert” appears.
- When [Auto Insert] is disabled, “Menu Macro Insert After” appears, and operates as [Insert After].

Menu Macro Register Editing

In the Macro >Menu Macro Register menu, you can check the status and edit menu macro registers.
For details about the status display, see *“Effect Status Display” (page 324)*. However, region names are not displayed.
You can carry out the following editing on menu macro registers.
- **Lock:** Write-protect the data contents of the menu macro register.
- **Copy:** Copy data between menu macro registers.
- **Delete:** Delete the data contents of a menu macro register.
- **Name:** Attach a name to a menu macro register.

In the Macro >Menu Macro Register menu, use the same procedure as when editing an effect register.
However, the region selection operation is not necessary for menu macro registers.

For details, see “Effect Register Editing” (page 324).

Macro Timeline

You can automatically execute a sequence of macro recall/execute actions by registering them on a timeline, in the same way as for keyframes in an effect. This timeline is called a "macro timeline," and one macro timeline can have up to 99 macros being executed simultaneously in parallel.
There are 99 registers in the Macro region that can be registered on the macro timeline, numbered 1 to 99. These registers are distinct from the registers where individual macros are stored.

Note

If you use a macro timeline to superimpose more than one macro, the macros may not be executed according to the timing information registered in the timeline.

Available keyframe functions

The keyframe functions that can be used in the macro timeline are as follows.

- RECALL (1 to 99), STORE (1 to 99), RECALL UNDO, STORE UNDO, search for empty register, AUTO SAVE, RECALL MODE (RECALL, RECALL & REWIND)
- EDIT ENABLE, EDIT UNDO
- CONST DUR, EFF DUR, KF DUR, DELAY, PAUSE, INSERT BEFORE, INSERT AFTER, MODIFY, DELETE, COPY, PASTE BEFORE, PASTE AFTER, FROM TO, ALL
- PREV KF, NEXT KF, GOTO TC, GOTO KF, RUN, REWIND, FF, STOP NEXT KF, NORMAL, JOG, KF FADER

The following keyframe functions cannot be used

- KF LOOP, EFFECT LOOP, REVERSE, NORMAL/REVERSE
- PATH

Saving to a register

Set the recall and execute actions for the macros to be registered in the timeline using the Macro >Timeline >Timeline menu (5441). The setting data can be saved in a register as keyframe data. You can recall the register in which the data is saved, and carry out operations on it with the utility/shotbox control block.

Note

An action set for a keyframe is only executed when the keyframe effect is executed in the forward direction. It is important to remember that actions are not executed in the reverse direction when executing simultaneously with switcher and DME keyframe effects.

Forcibly ending a macro timeline

- If the timeline has completed but a macro is still executing, press the [REWIND] or [RUN] button in the utility/shotbox control block to forcibly end the macro timeline.
- In a macro timeline, since a take operation is not possible, if a macro included in the timeline has a pause event with a pause time of zero, the remainder of the timeline after the pause is ignored, and the macro timeline ends at that point.

Register editing functions

You can use the following editing functions on a register in which a macro timeline is stored.

- Copying
- Moving
- Swapping
- Merging
- Locking
- Naming
- Deleting

File related functions

You can save and recall a created macro timeline as effect data, in the File menu.

Macro timeline operation

Timeline operations are carried out on a macro timeline in the same way as for normal effects.

For details about timeline operations, see "Keyframes" (page 295).

Note

When using a macro timeline, note the following.

- To use a macro timeline, the Macro region must be assigned to a region selection button in the numeric keypad control block.
  For details, see "Assigning a Region to the Region Selection Buttons in the Numeric Keypad Control Block" (page 409).
- On a macro timeline, only macro recall and execution actions can be registered. The data for a macro to be recalled on the macro timeline is not included on the timeline. It is necessary to create the macro data first.
- A macro timeline can be saved and recalled on the master timeline or in a shotbox register, but cannot be saved as a snapshot.

Creating and Editing a Macro Timeline

This section describes how to set actions, and add keyframe points. Path settings are not needed for a macro timeline.

For details about keyframe creation, see "Creating and Editing Keyframes" (page 308).

Registering a keyframe

The operations for registering use the Macro >Timeline >Timeline menu (5441) and the [INS] button in the utility/shotbox control block.

1 Press the [KF MCRO EDIT] button in the utility/shotbox control block, and press the [EDIT ENBL] button, turning it on.

This switches the memory recall section to effect editing mode.

2 Open the Macro >Timeline >Timeline menu (5441).

3 In the "Action" list on the right, select the action (Recall, Take, Take All, or No Action).

When Recall or Take is selected, select the number of the macro register.

No.	Parameter	Adjustment
3 a)	Recall No	Number of macro register to recall
3 b)	Take No	Number of macro register to execute

a) When Recall is selected
b) When Take is selected

4 Press [Set].

The selected action appears in the list on the left.

5 Press the [INS] button in the utility/shotbox control block.

This creates keyframe 1 on the macro timeline.

To set the action for a rewind operation

On the macro timeline, when the [REWIND] button in the utility/shotbox control block is pressed, the action set for the first keyframe is not executed, but when the [RUN] button is pressed, then the first keyframe action is executed.
To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To set the Rewind Action, press [Rewind Action] in the Macro >Timeline >Timeline menu (5441) to open the Rewind Action menu (5441.1). Operate in the same way as in the Timeline menu (5441).

Alternatively, you can make settings in the Setup menu so that when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still enabled.

For details, see "Setting the first keyframe when rewind is executed" (page 429).

Files

Chapter 16

Overview of File Operations

You can save register data, including setup information and snapshot information, as a file on the local drive or removable drive, and recall it as required.
For frame memory file operations, you can convert the file format of image data and save files between a removable drive and frame memory storage (import/export).

About local drives and removable drives

In this document and in the File menu, "Local Drive" refers to the internal flash memory drive and "Removable Drive" refers to general-purpose external USB-compatible storage devices connected to the system.

Notes

- There is a risk that files saved on the local drive may become unusable if the local drive experiences trouble. Save a backup of important files on a removable drive.
- Format a commercially available removable drive before using it for the first time *(see page 402)*.

Supported files

The following types of files can be saved and recalled.

- Operation mode setup data for system as a whole and individual devices
- Device status data for system startup
- Key memory setting information
- Video process memory setting information
- Keyframe effect setting information
- Snapshot setting information
- Wipe snapshot setting information
- DME wipe snapshot setting information
- Key snapshot setting information
- Shotbox setting information
- Macro setting information
- Macro attachment data
- Menu macro setting information
- Frame memory image data

File operations

You can carry out the following file operations.

When operating on individual files or registers

Save: Save the data in a register to the local drive or removable drive.
Load: Load a file from the local drive or removable drive.
Copy: Copy a file within a directory or between directories.
Rename: Rename a file on the local drive or removable drive.
Delete: Delete a file from the local drive or removable drive.

When operating on files or registers in batch

The Save, Load, and Copy operations are available.

Directory operations

You can create a new directory within the local drive or removable drive, and carry out other operations, such as renaming and deleting *(see page 385)*.
You can also inhibit operations on files, such as saving and deleting, for a directory.

Copying files between unit IDs

Switcher and DME files on the local drive or removable drive are managed by unit ID.
You can copy files between different unit IDs *(see page 386)*.

Locking file loading operations

You can lock the loading of files for the following categories in the Setup menu *(see page 404)*.
Setup (SWR), Setup (DME), Setup (PNL&GUI), Setup (TLY&RTR), Initial Status, Key Memory, Video Proc Memory, Effect, Snapshot, Wipe Snapshot, DME Snapshot, Key Snapshot, Shotbox, Macro, Macro Attachment, Menu Macro.
A locked category file cannot be recalled from the File menu.

File transfer errors

If a file transfer related error occurs, the error messages appear in the Error Information menu (9900).
If this occurs, save the data or load the data again. If the error message persists, contact a Sony service representative.

Operations on Individual Files

You can save or load the contents of an individual file or register.

For details about frame memory file operations, see "Frame Memory File Operations" (page 380).

Detailed File Information

This section describes snapshot file information as an example.

1 Open the File >Snapshot >Snapshot menu (7131).

The status area shows the device status and a list of files on the device.

2 Press [File Edit].

The File Edit menu (7131.1) appears.
The file details appear (reference region file name, creation date, regions including data) in list view.

Selecting a particular file displays detailed information about that file in the detail display area at the top right of the list.

Region Selection

You can carry out a file operation on a number of regions simultaneously. However, a region selection is not required for the following files.

- Key memory
- Video process memory
- Shotbox
- Macro
- Macro attachment

To select a region

1 In the File menu, press the region selection area at the top right of the screen.

The region selection window appears.

2 Select the target region for operation.

For regions you do not want to select, press the corresponding button, turning it off.

3 Press [OK].

Selecting a Device for Operation

To carry out file operations, you need to specify the register, local drive, removable drive, or other storage device as the location of the data or file. You can also specify a directory.

If NFS (Network File System) is enabled in the Setup menu, [Network] is added to the device for operations.

For details about NFS, see "Configuring the NFS Server" (page 387).

To select a device

1 In the File menu, press the button on the left in the device selection area above the list.

A pull-down menu appears.

2 Select the target device for operation.

Register: Register
Local Drive: Local drive
Removable Drive: Removable drive
Network: Files on a network (NFS)
The selected device name is displayed on the button on the left in the device selection area.

3 Press the button on the right in the device selection area.

The directory selection window appears.
Up to 40 directories are displayed per page, and you can move between pages using the ◀ and ▶ buttons.
The maximum number of directories that can be created is 120 for a removable drive and 200 for the local drive or NFS.

4 Press the button for the target directory to use.

The selected directory name is displayed on the button on the right in the device selection area.

Notes

- The devices that can be selected in the device selection area vary depending on the function and the menu.
- When [Register] is selected in the device selection area, a directory cannot be specified.

Saving Files

This section describes saving snapshot register data to the local drive or a removable drive as an example.

1 Open the File >Snapshot >Snapshot menu (7131).

2 In the device selection area in the list on the left, select [Register].

3 In the device selection area in the list on the right, select [Local Drive] or [Removable Drive], then specify a directory.

4 Select the register to save and the destination file.

You can select more than one register.
To select all registers, press [ALL].

5 Press [⟶ Save].

The data from the selected registers is saved.
If the specified destination already contains data, a confirmation message appears. Select [Yes] to overwrite the existing data.

Loading Files

This section describes loading a snapshot file from the local drive or removable drive into a register as an example.

1 Open the File >Snapshot >Snapshot menu (7131).

2 In the device selection area in the list on the left, select [Register].

3 In the device selection area in the list on the right, select [Local Drive] or [Removable Drive], then specify a directory.

4 Select the register to which you want to load, and the file to be loaded.

You can select more than one file.
To select all files, press [ALL].

5 Press [⟵ Load].

The selected file is loaded.

Copying Files

You can copy files either within a directory or between directories on the local drive or a removable drive.
This section describes copying a snapshot file from a removable drive to the local drive as an example.

1 Open the File >Snapshot >Snapshot menu (7131).

2 In the device selection area in the list on the left, select [Removable Drive], then specify a directory.

3 In the device selection area in the list on the right, select [Local Drive], then specify a directory.

4 Select the source and destination files.

You can select more than one file.
To select all files, press [ALL].

5 Press [⟶ Copy].

The selected files are copied.
If there is already data present in the destination location, a confirmation message appears. Select [Yes] to overwrite the data.

Renaming Files

You can rename files on the local drive or a removable drive, and rename registers.
This section describes renaming a snapshot file as an example.

1 Open the File >Snapshot >Snapshot menu (7131).

2 Press [File Edit].

The File Edit menu (7131.1) appears.
You can also select a device and specify a directory in this menu *(see page 376)*.

3 Select the file to rename.

4 Press [Rename].

5 Enter a name of up to 8 characters in the keyboard window, and press [Enter].

Notes

- Within the switcher, the names for Initial Status and Setup data are reserved.
  You can rename files on the local drive or removable drive, but reloading will revert files to the default names.
- The following names cannot be used.
  CON, PRN, AUX, CLOCK$, NUL
  COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
  LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Deleting Files

You can delete data from the local drive or a removable drive, and delete register data.
This section describes deleting a snapshot file as an example.

1 Open the File >Snapshot >Snapshot menu (7131).

2 Press [File Edit].

The File Edit menu (7131.1) appears.

You can also select a device and specify a directory in this menu *(see page 376)*.

3 Select the file to delete.

You can select more than one file.
To select all files, press [ALL].

4 Press [Delete].

5 Check the message, then press [Yes].

Batch File Operations

You can process all files or registers in batch.

Note

You can also save and recall system configuration data between the switcher system and a computer using the file manager.

For details, see "File Manager" (page 530).

Saving Files in Batch

You can save the data in registers to the local drive or removable drive in batch.

1 Open the File >All, External File >All menu (7161).

2 Select the target device for operation *(see page 376)*.

In the device selection area on the left, select [Register].
In the device selection area on the right, select [Local Drive] or [Removable Drive], then specify a directory.

3 In the <Category> group, select the category of the target registers to save.

For categories you do not want to save, press the corresponding button, turning it off.
To select all categories, press [All Select], turning it on.

For details about target data for operations, see "Supported files" (page 374).

4 Press [⟶ Save].

5 Check the message, then press [Yes].

Loading Files in Batch

You can load files from the local drive or removable drive in batch.

Note

It is not possible to load a file from a category for which loading operations are locked *(see page 404)*.

1 Open the File >All, External File >All menu (7161).

2 Select the target device for operation *(see page 376)*.

In the device selection area on the left, select [Register].
In the device selection area on the right, select [Local Drive] or [Removable Drive], then specify a directory.

3 In the <Category> group, select the category of the target files to load.

For categories you do not want to load, press the corresponding button, turning it off.
To select all categories, press [All Select], turning it on.

For details about target data for operations, see "Supported files" (page 374).

4 Press [← Load].

5 Check the message, then press [Yes].

If there is already data present in the destination location, a confirmation message appears. Select [Yes] to overwrite the data.

To clear region data before loading

Before pressing [← Load], press [CLR Before Load], turning it on.
The following data can be cleared before loading.
Effect, Snapshot, Wipe Snapshot, DME Wipe Snapshot, Key Snapshot, Shotbox, and Macro

Copying Files in Batch

You can copy files between the local drive and removable drive in batch.

1 Open the File >All, External File >All menu (7161).

2 Select the target device for operation *(see page 376)*.

In the device selection area on the left, select the copy source ([Local Drive] or [Removable Drive]), then specify a directory.
In the device selection area on the right, select the copy destination ([Local Drive] or [Removable Drive]), then specify a directory.

3 In the <Category> group, select the category of the target files to copy.

For categories you do not want to copy, press the corresponding button, turning it off.
To select all categories, press [All Select], turning it on.

For details about target data for operations, see "Supported files" (page 374).

4 Press [→ Copy].

The selected files are copied.

Frame Memory File Operations

Basic Operation

You can perform folder and file operations using frame memory.

Note

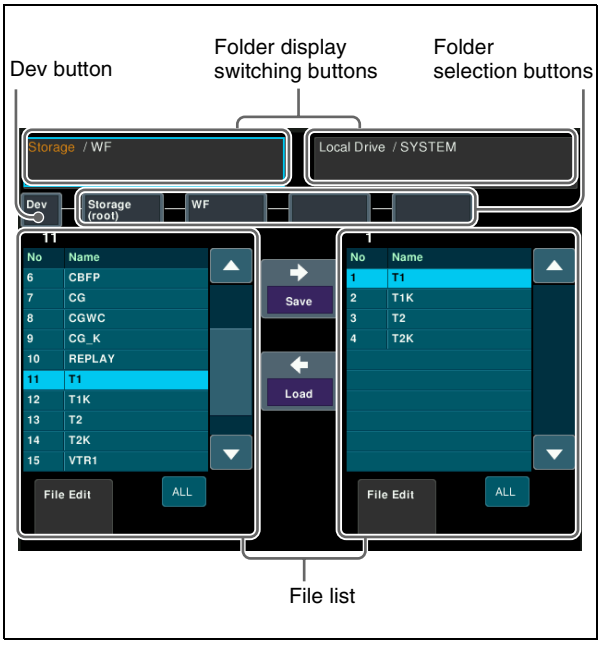
In frame memory file operations, only SWR (switcher) is the target of operations, and region selection is not required. However, if in Dual Simul mode, you must select the target switcher for operations.

For details about region selection, see "Region Selection" (page 376).

Selecting the target folder/file for operations

Select the target device and folder for operation, and select a file from the displayed list.

1 Open the File >Frame Memory >Frame Memory menu (7151).



2 Switch the folder display.

The device name and folder path selected in the lists on the left and right are displayed in the folder display switching buttons.
Pressing a folder display switching button switches the display of the folder selection buttons.

Pressing the folder display switching button on the left displays folders for the list on the left, and pressing the folder display switching button on the right displays folders for the list on the right. The selected button has a light blue border.

3 Select a device.

Press [Dev], and select the target device for operations in the pop-up window.
Storage (root): Frame memory storage
Local Drive: Local drive
Removable Drive: Removable drive
Network: Files on a network (NFS)
The selected device name is displayed on the next folder selection button on the right.

Note

[Network] is displayed only when NFS (Network File System) is enabled in the Setup menu *(see page 387)*.

4 Select a folder.

Press the folder selection button displaying the device name, and select a top-level folder in the hierarchy from the pop-up window.
The selected folder name is displayed on the next folder selection button on the right.
If a "▼" mark is displayed on a button displaying the folder name, press the button to select a lower level folder in the hierarchy.

Notes

- Folders in frame memory storage may have up to three levels of hierarchy.
- Only a top-level folder in the hierarchy can be selected on the local drive or a removable drive.
- When a folder in frame memory storage is locked *(see page 174)*, "L" is displayed at the top right of the folder selection button and folder icon.

5 Select a file.

Select the target file for operations from the displayed list.
To select all files, press [ALL]. To select multiple files, set the [Num L] or [Num R] parameter.

To select multiple files with the [Num L] or [Num R] parameter
Specify the file number in the [List L] parameter (list on the left) or [List R] parameter (list on the right), then set the amount in the [Num L] (list on the left) or [Num R] (list on the right) parameter.
The specified amount of files are selected starting from the specified file number.

Displaying detailed file information

1 Open the File >Frame Memory >Frame Memory menu (7151).

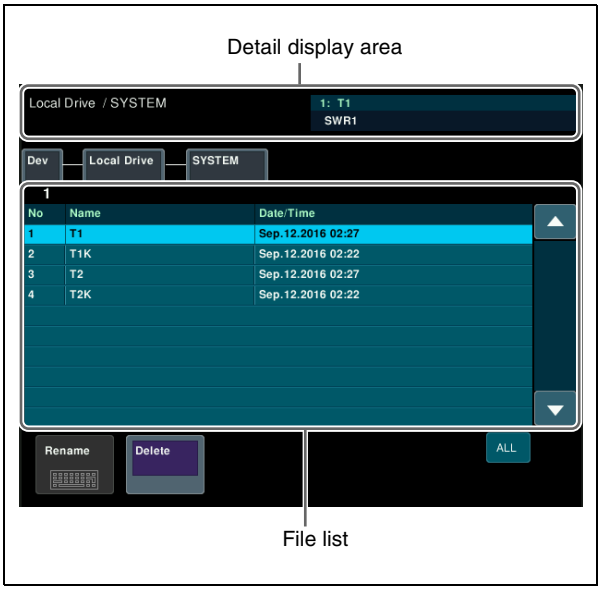
2 Press [File Edit].

The File Edit menu (7151.1) appears.

3 Select the device and folder to display.

For details about the method of operation, see "Selecting the target folder/file for operations" (page 380).

You can check information about the files that exist within the currently selected folder.



The target device name and folder path for operations are displayed on the left side of the detail display area, and the file name and region selected in the list are displayed on the right side.
The following information is displayed in the file list.
No: File number
Name: File name
Date/Time: Creation date and time of the file

File Operations

Notes

- Loading frame memory files is supported only when the switcher signal format matches the file signal format.
- If saving to local drive or removable drive is canceled while still in progress, images may not be able to be reproduced correctly.
- Frame memory batch file operations are not supported.

Saving a file

You can save a file in frame memory storage to the local drive or a removable drive.
This section describes selecting storage in the list on the left as an example.

1 Open the File >Frame Memory >Frame Memory menu (7151).

2 In the list on the left, select the file (storage) you want to save, then select the destination folder (local drive or removable drive) in the list on the right.

For details about the method of operation, see "Selecting the target folder/file for operations" (page 380).

3 Press [⟶ Save].

If a file with the same name already exists in the save destination, it is overwritten.

Loading a file

You can load a file from the local drive or removable drive to storage in frame memory.
This section describes selecting storage in the list on the left as an example.

1 Open the File >Frame Memory >Frame Memory menu (7151).

2 In the list on the right, select the file (local drive or removable drive) you want to load, then select the destination folder (storage) in the list on the left.

For details about the method of operation, see "Selecting the target folder/file for operations" (page 380).

Note

A file cannot be loaded into a locked folder.

3 Press [⟵ Load].

Copying a file

You can copy a frame memory file on the local drive or removable drive.
This section describes selecting the copy source in the list on the left as an example.

1 Open the File >Frame Memory >Frame Memory menu (7151).

2 In the list on the left, select the file (local drive or removable drive) you want to copy, then select the

destination folder (local drive or removable drive) in the list on the right.

For details about the method of operation, see "Selecting the target folder/file for operations" (page 380).

3 Press [⟶ Copy].

If a file with the same name already exists in the copy destination, it is overwritten.

Deleting a file

Note

Files in frame memory storage cannot be deleted.

1 Open the File >Frame Memory >Frame Memory >File Edit menu (7151.1).

2 Select a file.

For details about the method of operation, see "Selecting the target folder/file for operations" (page 380).

3 Press [Delete].

4 Check the message, then press [Yes].

Renaming a file

Note

Files in frame memory storage cannot be renamed.

1 Open the File >Frame Memory >Frame Memory >File Edit menu (7151.1).

2 Select a file.

For details about the method of operation, see "Selecting the target folder/file for operations" (page 380).

Note

Multiple files cannot be selected at the same time.

3 Press [Rename].

4 Enter a new file name using the keyboard window, and press [Enter].

Note

The following names cannot be used for files.
CON, PRN, AUX, CLOCK$, NUL
COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Importing and Exporting

You can convert the file format of image data and save files between frame memory storage and a removable drive.
The supported conversion formats when importing/exporting are given below.

- TIF (TIFF files, ".tif" file name extension)
- BMP (Bitmap files, ".bmp" file name extension)
- TGA (Targa files, ".tga" file name extension)
- PNG (PNG files, ".png" file name extension)

Note

You can also import files between the frame memory storage and a computer using the file manager.

For details, see "File Manager" (page 530).

Importing

Importing converts the format of files on a removable drive, and save the files in frame memory storage.
When multiple files are selected having a "character_string + number" (or character_string + # + number) name format, files with the same "character_string" portion are imported as a frame memory clip where "character_string" is the clip file name.
Example: Importing Targa files

File name before importing	File name after importing (file type)
CAM1#000000.tga CAM1#000001.tga CAM1#000002.tga	CAM1 (clip file)
CAM2#000005.tga	CAM2#000005 (still image file)
CAM3.tga	CAM3 (still image file)
MON101.tga MON102.tga MON103.tga	MON (clip file)

Notes

- File names after importing can have a maximum of 32 characters. The 33rd and subsequent characters, if present, are deleted.
- The files that can be imported for each format are given below.
  - TIFF files (TIF): RGB uncompressed
  - Bitmap files (BMP): 24-bit Windows format

- Targa files (TGA): RGB uncompressed/compressed
- PNG files (PNG): RGB compressed

• Files with an alpha channel are imported as pair files. However, Bitmap files with an alpha channel cannot be imported.
• RGB 16-bit format files are not supported.

Exporting

Exporting converts the format of files in frame memory to a specified format, and saves the files on a removable drive.
When a frame memory clip is selected, a separate file with "clip_name + # + 6-digit number" format name is exported for each frame image. The 6-digit numbers are allocated from 000000 to 999999 in sequence.
Example: Converting and exporting Targa files

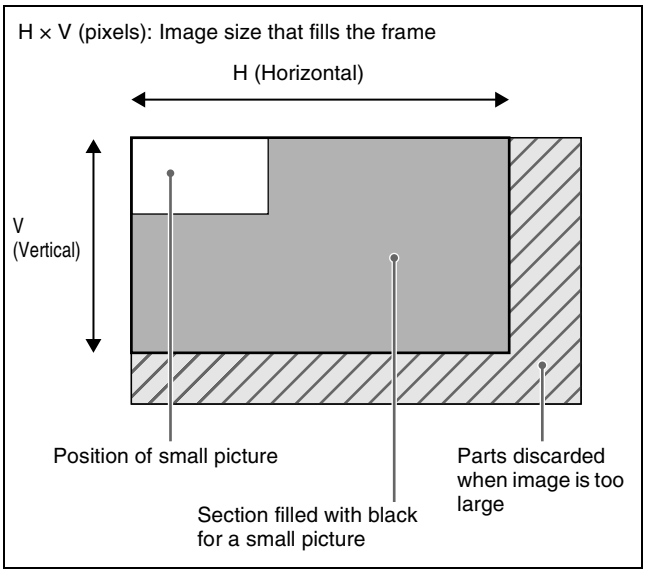
File name before exporting (file type)	File name after exporting
CAM1 (clip file)	CAM1#000000.tga CAM1#000001.tga CAM1#000002.tga and so on (saves each frame as a file with sequential file name)
CAM3 (still image file)	CAM3.tga

Note

Pair files are exported as a file with an alpha channel. However, alpha channels are not added when converting to Bitmap files.

Import image size

Images are placed with the upper left of the frame as the origin. When an image is smaller than the frame, the remainder of the screen is filled with black. When it is larger, parts which extend beyond the frame are discarded.

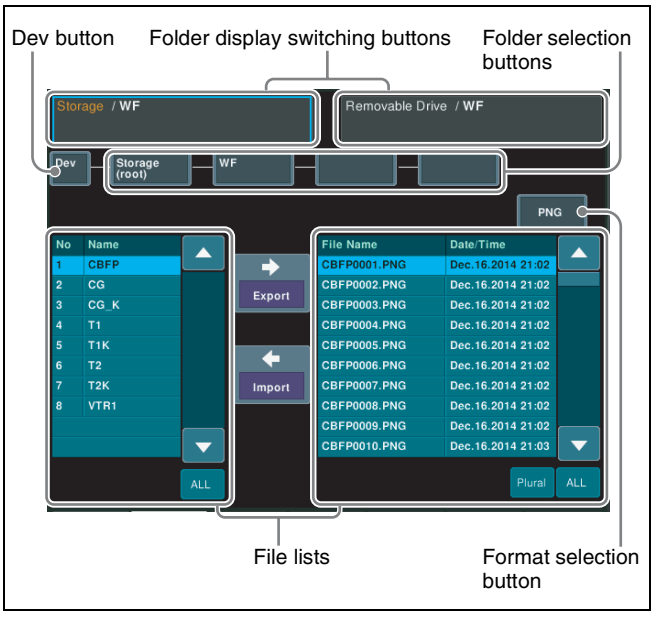


The following table shows the image sizes which will fill the picture frame for various signal formats.

Signal format	Size (H × V)
3840×2160P/59.94, 50 3840×2160PsF/29.97, 25, 24, 23.98	3840×2160 pixels
1080P/59.94, 50 1080PsF/29.97, 25, 24, 23.98 1080i/59.94, 50	1920×1080 pixels
720P/59.94, 50	1280×720 pixels

Folder and file selection operations

In the File >All, External File >Import/Export menu (7162), select the frame memory storage file in the list on the left and select the removable drive file in the list on the right.
The selected device name (Storage or Removable Drive) and folder path are displayed in the folder display switching buttons on the left and right.



To switch the folder display

Pressing a folder display switching button switches the display of the folder selection buttons.
Pressing the folder display switching button on the left displays folders for the list on the left, and pressing the folder display switching button on the right displays folders for the list on the right. The selected button has a light blue border.

To select a device

Press [Dev] to display a pop-up window. Select [Storage (root)] in the list on the left, or select [Removable Drive (root)] in the list on the right.
The selected device name is displayed on the next folder selection button on the right.

To select a folder

Press the folder selection button displaying the device name, and select a top-level folder in the hierarchy from the pop-up window.
The selected folder name is displayed on the next folder selection button on the right. If a "▼" mark is displayed on the folder selection button, press the button to select a lower level folder in the hierarchy.
When a folder in frame memory storage is locked *(see page 174)*, "L" is displayed at the top right of the folder selection button and folder icon.

To select a file

The files in the selected folder are displayed in the list. For a removable drive, only the files with the file format specified by the format selection button are displayed. Select the target file for operations from the list. To select all files, press [ALL].

Importing data into frame memory

1 Open the File >All, External File >Import/Export menu (7162).

2 Press the format selection button, and select a file format (TIF, BMP, TGA, PNG) in the pop-up window.

The name of the specified file format is displayed on the format selection button.

3 In the list on the right, select the removable drive file to import.

To select more than one file, press [Plural] and then select. To select all files, press [ALL].

Note

Only a top-level folder in the hierarchy can be selected. Also, folders with a name exceeding 15 characters cannot be selected.

4 In the list on the left, select the import destination folder in storage.

Note

A file cannot be imported into a locked folder.

5 Press [← Import].

Exporting data from frame memory

1 Open the File >All, External File >Import/Export menu (7162).

2 Press the format selection button, and select a file format (TIF, BMP, TGA, PNG) in the pop-up window.

The name of the specified file format is displayed on the format selection button.

3 In the list on the left, select the file in storage to export.

To select multiple files, set the [Num] parameter. To select all files, press [ALL].

To select multiple files with the [Num] parameter
Specify the file number in the [List L] parameter, and set the quantity in the [Num] parameter. The specified number of files are selected starting from the specified file number.

4 In the list on the right, select the export destination removable drive folder.

Note

Only a top-level folder in the hierarchy can be selected.

5 Press [⟶ Export].

The selected file is converted to the specified file format, and then saved on the removable drive.
If a file with the same name already exists in the export destination, it is overwritten.

Directory Operations

You can create a new directory within the local drive or removable drive, and carry out other operations, such as renaming and deleting. You can also inhibit operations on files, such as saving and deleting, for a directory.

Creating a Directory

You can create up to 120 directories on a removable drive, or 200 on the local drive or NFS.

1 Open the File >Configure >Directory menu (7171).

2 In the device selection area, select the target device for operation *(see page 376)*.

3 Press [New].

4 Enter a name of up to 8 characters in the keyboard window, and press [Enter].

Note

The following names cannot be used.
CON, PRN, AUX, CLOCK$, NUL
COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Renaming a Directory

1 Open the File >Configure >Directory menu (7171).

2 In the device selection area, select the target device for operation *(see page 376)*.

3 Select a directory.

4 Press [Rename].

5 Enter a name of up to 8 characters in the keyboard window, and press [Enter].

Protecting (Write Inhibit) a Directory

The following operations can be prohibited for a directory.
- Saving files
- Copying files (including copying between unit IDs)
- Renaming files

- Deleting files
- Offline editing of macro files
- Deleting directories

1 Open the File >Configure >Directory menu (7171).

2 In the device selection area, select the target device for operation *(see page 376)*.

3 Select a directory.

4 Press [Protect].

Write inhibit is set for the selected directory, and "🔒" is displayed in the "Protect" field in the status area.

Deleting a Directory

1 Open the File >Configure >Directory menu (7171).

2 In the device selection area, select the target device for operation *(see page 376)*.

3 Select a directory.

4 Press [Delete].

5 Check the message, then press [Yes].

Copying Files Between Unit IDs

Switcher and DME files on the local drive or removable drive are managed by unit ID *(see page 387)*.
Files with a different unit ID cannot be copied using ordinary file operations. To copy files, use the menu for copying files between different unit IDs.

Note

If there is already data present in the copy destination, note that all data will be overwritten.

Copying Files Between Different Unit IDs

1 Open the File >Configure >Unit ID Copy menu (7172).

2 Press the region selection area at the top right of the screen and select a category.

For categories you do not want to copy, press the corresponding button, turning it off.
You can also select all categories using [ALL], switcher-related categories using [SWR ALL], or DME-related categories using [DME ALL].

3 Press [OK].

4 Select the target device for operation *(see page 376)*.

In the device selection area on the left, select the copy source device, then specify a directory.
In the device selection area on the right, select the copy destination device, then specify a directory.

5 Select the copy source and copy destination unit IDs.

6 Press [⟶ Copy].

7 Check the message, then press [Yes].

System Setup

Chapter 17

About system setup

This configures the setup for the whole system.
Here, the “whole system” refers to all devices connected on the switcher system LAN.

Unit ID settings

When there are two switchers on the same network, the unit IDs are set as follows.

Switcher	Unit ID
1st switcher	1
2nd switcher	2

The unit IDs for DMEs are automatically assigned as follows.

DME	Unit ID
DME of 1st switcher (Ch1 to Ch4)	1
DME of 2nd switcher (Ch1 to Ch4)	3

Menu panel unit IDs are set in the Engineering Setup >System >Network Config menu (7311) *(see page 387)*.

For details about unit IDs of devices other than the menu panel, refer to the installation manual for each device.

Settings Relating to the Network

This section describes the configuration of devices connected to the switcher system LAN.

Setting the Group ID and Unit ID of the Menu Panel

1 In the Engineering Setup >System >Network Config menu (7311), press [Group ID].

2 Enter the group ID number (1 to 8) using the numeric keypad, then press [Enter].

3 Perform the following operations.

To set the group ID only: Check the message, then press [Yes] to exit the settings.
To set the unit ID: Check the message, then press [No] and skip to step **4**.

4 Press [Unit ID].

5 Enter the unit ID number (1 to 4) using the numeric keypad, then press [Enter].

6 Check the message, then press [Yes].

Configuring the NFS Server

Set the address of the NFS server to use.

1 In the Engineering Setup >System >Network Config menu (7311), press [NFS Server].

2 Enter the server address using the keyboard window, then press [Enter].

The NFS server address is displayed in the “NFS Server Address” field.

3 To register the setting as a power-on default, press [Define].

4 Check the message, then press [Yes].

Mounting the NFS server

In the Engineering Setup >System >Network Config menu (7311), press [NFS Mount], turning it on.
The configured NFS server is mounted, ready for use.

Note

Resetting the menu panel will unmount the NFS server. To use an NFS server after resetting the menu panel, mount the server again.

Initializing Network Interface Settings

You can initialize the network interface settings for a network connector board.

For details about network interface settings, see “Configuring a Network Interface” (page 388).

1 In the Engineering Setup >System >Network Config menu (7311), press [Net I/F Initialize].

The Net I/F Initialize menu (7311.1) appears.

2 In the <Device> group, select the target switcher to set.

3 In the status area, select the target slot to set.

To select all slots, press [ALL].

4 Press [Factory Reset].

To reset a connector board only
Press [Reset].

5 Press [Execute].

6 Check the message, then press [Yes].

Setting the Network Connector Board Service Port

The service port can be enabled/disabled when an XKS-C8111/XKS-C9111/XKS-C9111N/XKS-C9121/XKS-C9121N/XKS-C8166 is installed.

The service port is used for board maintenance.

Note

The unit is equipped with a function to perform board maintenance via a network. If maintenance is required, this function is used with the consent of the customer. For details, consult your Sony service or sales representative.

1 In the Engineering Setup >System >Network Config menu (7311), press [Net I/F Initialize].

The Net I/F Initialize menu (7311.1) appears.

2 In the <Device> group, select the target switcher to set.

3 In the status area, select the target slot to set.

To select all slots, press [ALL].

4 Enable or disable the service port.

To enable, press [Service Port], turning it on.
To disable, press [Service Port], turning it off.

5 Press [Execute].

6 Check the message, then press [Yes].

The connector board in the selected slot is reset, and the service port setting is applied.

Note

If the network interface is initialized *(see page 388)* and the service port setting is applied simultaneously to the same slot, the initialization operation takes precedence, and the service port setting is not changed.

Configuring a Network Interface

You can configure the interface for a network connector board.
The network interface settings are for the slots in which the following network connector boards are installed.
XVS-9000:
- XKS-C9111
- XKS-C9111N
- XKS-C9121
- XKS-C9121N

XVS-8000/7000/6000:
- XKS-T8110
- XKS-Q8111
- XKS-C8111
- XKS-T8165
- XKS-Q8166
- XKS-C8166

The network interface settings <Net I/F Setting> group contains the following five menus.

- Engineering Setup >System >Network Config >FEC menu (7311.4)
  FEC type setting (available for XKS-C8111/XKS-C9111/XKS-C9121/XKS-C8166 only)
- Engineering Setup >System >Network Config >IP Address menu (7311.2)
  IP address and LSM settings (available for all network connector boards)
- Engineering Setup >System >Network Config >Input/Output menu (7311.5)
  Functions relating to input/output and audio format settings (available for XKS-C8111/XKS-C9111/XKS-C9121/XKS-C8166 only)
- Engineering Setup >System >Network Config >Genlock menu (7311.6)
  Network sync settings (available for XKS-C8111/XKS-C9111/XKS-C9121/XKS-C8166 only)
- Engineering Setup >System >Network Config >NMOS menu (7311.7)
  NMOS settings (available for XKS-C8111/XKS-C9111/XKS-C9121/XKS-C8166 only)

Note

If either the IP Address menu (7311.2) or NMOS menu (7311.7) is locked using the Engineering Setup >System >Maintenance >Setup Operation Lock menu (7317.1), the other menu is also locked automatically.

Common operations

The following operations are common to the five menus.

To display the latest information in the status area

The status area shows the slot number in which each network connector board is installed and the settings of each menu.
To update the display of the status area to the latest information, press [Refresh].

Note

Pressing [Refresh] in any menu updates the display of the status area for all menus.

To select the target to set

Select the item (for example, network or input/output) that you want to change in the status area.
To select multiple items, set the number using the [Num] parameter. The specified number of items are selected from the currently selected items.
To select all items in the status area, press [ALL].

To apply changes to settings

When a setting is changed, the value is displayed in yellow in the status area.
To apply the changes, press [Execute], check the message, then press [Yes]. The changes are applied, and the display in the status area changes to white.
To cancel the changes, press [Clear], check the message, then press [Yes]. The display in the status area is restored to the state before the changes were made, and the display changes to white.

Notes

- Pressing [Execute] for any menu applies the changes made to settings in all menus.
- You cannot cancel the changes to settings after using [Execute].

Network name display

The network names are displayed in the following formats in the status area.
XVS-9000:

- Main network (LAN1): 1-1/1, 1-1/2, 1-1/3, 1-1/4
- Sub network (LAN1): 1-2/1, 1-2/2, 1-2/3, 1-2/4
- Main network (LAN2): 2-1/1, 2-1/2, 2-1/3, 2-1/4
- Sub network (LAN2): 2-2/1, 2-2/2, 2-2/3, 2-2/4

XVS-8000/7000/6000:

- Main network: 1/1, 1/2, 1/3, 1/4
- Sub network: 2/1, 2/2, 2/3, 2/4

Notes

- On the XVS-9000, the "/3" and "/4" network settings are invalid when the signal format is 1080P or 1080i.
- On the XVS-9000, the "/4" network cannot be used when an XKS-C9111N/XKS-C9121N is installed.

Setting the FEC type

You can set the FEC type for each network.

1 In the <Net I/F Setting> group of the Engineering Setup >System >Network Config menu (7311), press [FEC].

The FEC menu (7311.4) appears.

2 In the <Device> group, select the target switcher to set.

The status area shows the slot number and network settings status.
You can check the following information.
Link Speed: Link speed ("10G×4" or "25G×4")
FEC Type: FEC type ("RS-FEC," "FC-FEC," or "None")
Link Status: Link status ("Up" or "Down")

3 In the status area, select the target network to set.

4 In the <FEC Type> group, select one of the following.

RS-FEC: Use Reed-Solomon FEC (CL108). [1)]
FC-FEC: Use Fire-Code FEC (CL74).
None: Do not use FEC.

1) RS-FEC defines CL91 for 100G, and CL108 for 25G. The unit supports 25G×4 to achieve 100G, so only CL108 is used.

5 Repeat steps **3** and **4** as required.

6 Press [Execute].

7 Check the message, then press [Yes].

Setting the IP address

You can set the IP address and enable/disable LSM (Live System Manager) for each network.

Note

Enabling LSM for an XKS-C8111/XKS-C9111/XKS-C9121/XKS-C8166 board will disable the NMOS settings in the NMOS menu (7311.7).

1 In the <Net I/F Setting> group of the Engineering Setup >System >Network Config menu (7311), press [IP Address].

The IP Address menu (7311.2) appears.

2 In the <Device> group, select the target switcher to set.

The status area shows the slot number, network settings status, and the MAC address of the selected network interface.

3 In the status area, select the target network to set.

Note

When multiple networks are selected, if the network with the lowest number is a main network, only main networks are the target for configuration. Likewise for sub networks.

4 Enable or disable DHCP.

To disable, press [DHCP] in the <Network Interface> group, turning it off.
To enable, press [DHCP] in the <Network Interface> group, turning it on, and skip to step **8**.

Note

The DHCP settings for main and sub on a single network are linked. Disable DHCP when not performing the initial setup.

5 In the <Network Interface> group, press [IP Address], and set the IP address.

Enter the IP address using the keyboard window, then press [Enter].
If multiple networks are selected, this sets the IP address for the network with the lowest number, and the IP addresses of subsequent networks are incremented by 1 for each network.

6 In the <Network Interface> group, press [Subnet Mask], and set the subnet mask.

Enter the subnet mask using the keyboard window, then press [Enter].
If multiple networks are selected, the same subnet mask is set for each network.

7 In the <Network Interface> group, press [Gateway], and set the default gateway IP address.

Enter the IP address using the keyboard window, then press [Enter].
If multiple networks are selected, the same IP address is set for each network.

8 Enable or disable LSM.

To enable, press [Enable] in the <LSM> group, turning it on.
To disable, press [Enable] in the <LSM> group, turning it off, and skip to step **10**.

Notes

- LSM is enabled on the main network. It is not possible to change the setting.
- If an XKS-C8111/XKS-C9111/XKS-C9121/XKS-C8166 is installed, LSM cannot be disabled by pressing [Enable]. When NMOS is enabled in the NMOS menu (7311.7), [Enable] turns off and all LSM instances on the network of the target board become disabled.

9 In the <LSM> group, press [IP Address], and set the LSM IP address.

Enter the IP address using the keyboard window, then press [Enter].
If multiple networks are selected, the same IP address is set for each network.

Note

The IP address cannot be set when DHCP is enabled.

10 Repeat steps **3** to **9** as required.

11 Press [Execute].

12 Check the message, then press [Yes].

Configuring input/output

You can enable/disable the hitless failover function for each board. You can also set the audio format for each input/output.

1 In the <Net I/F Setting> group of the Engineering Setup >System >Network Config menu (7311), press [Input/Output].

The Input/Output menu (7311.5) appears.

2 In the <Device> group, select the target switcher to set.

The status area shows the slot number and input/output settings status.

3 In the status area, select the target slot in which the board is installed.

4 Enable or disable hitless failover.

You can configure hitless failover for each board.
To enable, press [Hitless Fail Over], turning it on.
To disable, press [Hitless Fail Over], turning it off.

Note

The same setting is applied to both inputs and outputs when an XKS-C9121 is installed.

5 In the status area, select the target input/outputs to set.

6 Set the audio format of the input/outputs.

Press [Audio Format], and select an audio format from the pop-up window.
The following formats (sampling frequency/packet time/number of channels) are supported.
- 48kHz/0.125ms/2ch, 4ch, 8ch, 16ch
- 48kHz/1ms/2ch, 4ch, 8ch

7 Repeat steps **3** to **6** as required.

8 Press [Execute].

9 Check the message, then press [Yes].

Configuring network synchronization

You can set network synchronization (Genlock) for each main network and sub network.

1 In the <Net I/F Setting> group of the Engineering Setup >System >Network Config menu (7311), press [Genlock].

The Genlock menu (7311.6) appears.

2 In the <Device> group, select the target switcher to set.

The status area shows the slot number and network settings status of the main and sub networks.
You can check the following information.
Genlock: Network synchronization enable/disable
Domain: Domain
Com Mode: Communication mode

3 In the status area, select the target network to set.

4 Enable/disable network synchronization.

To enable, press [Genlock], turning it on.
To disable, press [Genlock], turning it off, and skip to step **7**.

5 Press [Domain], turning it on, and set the domain using the following parameter.

No.	Parameter	Adjustment
4	Domain	Domain (0 to 255)

6 In the <Communication Mode> group, select the communication mode.

Multicast: Multicast
Mixed: Combination of multicast and unicast

7 Repeat steps **3** to **6** as required.

8 Press [Execute].

9 Check the message, then press [Yes].

Setting NMOS

The XKS-C8111/XKS-C9111/XKS-C9121/XKS-C8166 support NMOS (Networked Media Open Specifications). To manage operations using NMOS, configure the IP address and port number of the RDS server on each board.

Note

Enabling NMOS will disable the LSM settings in the IP Address menu (7311.2).

1 In the <Net I/F Setting> group of the Engineering Setup >System >Network Config menu (7311), press [NMOS].

The NMOS menu (7311.7) appears.

2 In the <Device> group, select the target switcher to set.

The status area shows the slot number and NMOS settings status.

3 In the status area, select the target slot in which the board is installed.

4 Enable NMOS.

Press [NMOS], turning it on.

Note

When LSM is enabled in the IP Address menu (7311.2), [NMOS] turns off and NMOS of the target board becomes disabled.

5 Enable or disable obtaining an address automatically.

To disable, press [RDS Discovery], turning it off.
To enable, press [RDS Discovery], turning it on, and skip to step **10**.

6 In the <Primary RDS> group, press [IP Address], and set the IP address of the primary RDS server.

Enter the IP address using the keyboard window, then press [Enter].

7 In the <Primary RDS> group, press [Port], and set the port number of the primary RDS server.

Enter the port number using the numeric keypad window, then press [Enter].

8 In the <Secondary RDS> group, press [IP Address], and set the IP address of the secondary RDS server.

Enter the IP address using the keyboard window, then press [Enter].

9 In the <Secondary RDS> group, press [Port], and set the port number of the secondary RDS server.

Enter the port number using the numeric keypad window, then press [Enter].

10 Repeat steps **3** to **9** as required.

11 Press [Execute].

12 Check the message, then press [Yes].

Setting the Network Interface Protocol

On the XVS-8000/7000/6000 with an XKS-Q8111/XKS-Q8166 installed, you can set the network interface protocol. NMI (Networked Media Interface) and ST2110 (SMPTE ST 2110 compliant) protocols can be selected.

Notes

- On the XVS-9000, the protocol cannot be set. Only the following protocols are supported on each network connector board.
  - XKS-C9111/XKS-C9121: ST2110
  - XKS-C9111N/XKS-C9121N: NMI
- On the XVS-8000/7000/6000, the protocol cannot be set when the following network connector boards are installed. Only the following protocols are supported on each network connector board.
  - XKS-T8110/XKS-T8165: NMI
  - XKS-C8111/XKS-C8166: ST2110
- The protocol setting is common to all slots in which an XKS-Q8111/XKS-Q8166 is installed. If different protocols are displayed among the slots, reconfigure the protocol setting.
  Network connector boards that use different protocols cannot be installed in a switcher at the same time.

1 In the Engineering Setup >System >Network Config menu (7311), press [Net I/F Protocol].

The Net I/F Protocol menu (7311.3) appears.

2 In the <Device> group, select the target switcher to set.

3 In the status area, select a slot.

4 In the <Net I/F Protocol> group, select one of the following.

NMI: Set to NMI.
ST2110: Set to SMPTE ST 2110 compliant.
The selected protocol is displayed for all slots in which an XKS-Q8111/XKS-Q8166 is installed.

5 Press [Execute].

6 Check the message, then press [Yes].

Settings Relating to System Configuration

Selecting the Operation Mode

You can set the switcher system operation mode to the following three modes.

Single Proc mode: A single control panel controls a single switcher (including DMEs).

Dual Simul mode: A single control panel controls two switchers (including DMEs) simultaneously.
This allows operation to continue on one switcher if the other switcher cannot communicate due to device failure or other cause.

Region Simul mode: A single control panel controls a single switcher (including DMEs) and regions of another switcher (including DMEs) simultaneously.
The target regions to control are set in the Region Simul Config menu (7312.3).

Notes

- To enable region simultaneous control using Region Simul mode, press the button assigned with the "Region Simul Enable" utility command.
  When region simultaneous control is disabled, the operation is the same as Single Proc mode.
- Before region simultaneous control is enabled, the region selection status of both switchers must be the same. Execute a snapshot, for example, to set the same status.

1 In the <Operation Mode> group of the Engineering Setup >System >System Config menu (7312), select the operation mode.

Single Proc: Single Proc mode
Dual Simul: Dual Simul mode
Region Simul: Region Simul mode

To select the Dual Simul mode setup target
Select the setup target switcher for Dual Simul mode in the <Setup Target> group.
To set SWR1, select [System1]. To set SWR2, select [System2]. To set both switchers simultaneously, select both [System1] and [System2].

To clear the setting
Press [Clear].

2 Press [Execute].

3 Check the message, then press [Yes].

Setting the regions to control in Region Simul mode

1 In the Engineering Setup >System >System Config menu (7312), press [Region Simul Config].

The Region Simul Config menu (7312.3) appears.

2 Select the target regions to control.

M/E-1 to M/E-5, P/P, User1 to User8, and DME1 to DME4 regions can be selected.
Press the buttons for the regions to control, turning them on.

Specifying the Switcher Controlled by the Control Panel

1 In the status area of the Engineering Setup >System >System Config menu (7312), select the target control panel to set.

2 Specify the switcher to control.

If there is only one switcher on the network: In the <1st Switcher> group, select [SWR1] or [SWR2]. In the <2nd Switcher> group, disable both [SWR1] and [SWR2].

If there are two switchers on the same network: In the <1st Switcher> group and <2nd Switcher> group, select the switchers.
When the operation mode is set to [Dual Simul], the status of the switcher set in the <1st Switcher> group appears on the control panel.

3 To set the selected control panel as the tally control master panel, press [Tally Master], turning it on.

If there are multiple control panels and switchers, the control panel on which [Tally Master] is enabled performs tally control for the whole system.

Notes

- When there are multiple control panels, make sure that one of them has [Tally Master] enabled.
- If the master panel is changed, be sure to copy and save the setup tally (TLY) and router (RTR) data in the File menu, and make the same settings on another panel.
- If the master panel tally data is loaded into a panel with a different unit ID, then [Tally Master] is disabled.
- [Tally Master] cannot be enabled on the 4th control panel (PNL4).

To clear the switcher and master panel settings
Press [Clear].

4 Press [Execute].

5 Check the message, then press [Yes].

Specifying the DME Used on the Switcher

1 In the Engineering Setup >System >System Config menu (7312), specify the DME to use.

When selecting a DME on SWR1: Select [DME1] in the <SWR1> group.
When selecting a DME on SWR2: Select [DME3] in the <SWR2> group.

2 Press [Execute].

3 Check the message, then press [Yes].

Settings Relating to Signal Formats

About 4K format

In 4K format, a single 4K image is split and transferred as four HD images.
Image processing on the switcher is also performed on each of the four images subdivided using 2-sample interleave division method (2SI) or square division method (SQD).
In 4K format, the maximum number of switcher banks, keys, inputs, and outputs that are available is as follows.

Item	Switcher			
	XVS-9000	XVS-8000	XVS-7000	XVS-6000
Switcher banks	5	5	3	2
Keys	4 per switcher bank (2 keys + 2 sub keys) a)			
Inputs	80 b) c)	40	28	16
Outputs	40 b) c)	12	12	6
MV outputs	8 b) c) d) e)	2	2	2
FC outputs	–	4	4 f)	4

a) When the signal format is 3840×2160PsF SQD, sub keys cannot be used.
b) When the signal format is 3840×2160PsF SQD, up to 40 inputs, 20 outputs, and 4 multi viewer outputs are available.
c) On the XKS-C9111N/XKS-C9121N, input/outputs 7 and 15 on each board cannot be used. Accordingly, when only XKS-C9111N/XKS-C9121N boards are installed, up to 60 inputs, 30 outputs, and 6 multi viewer outputs are available.
d) Output signals can be assigned to the multi viewer output connectors.
e) When the signal format is 3840×2160P SQD, up to 4 multi viewer outputs are available when multi viewer output signals are assigned, or up to 8 outputs when signals other than multi viewer output signals are assigned.
f) Two format converter outputs are designated for output signal conversion. *For details, see "Setting the Internal Format Converters" (page 459) and "Assigning a signal to a format converter output" (page 460).*

For details about restrictions of functions and settings for the 4K format, see "4K Format Restrictions" (page 525).

Restrictions on re-entry by signal format

Restrictions apply to re-entry signal selection, depending on the signal format and M/E configuration.

For details, see "Re-entry signal restrictions" (page 76).

Setting the Signal Format

The combinations of signal formats that can be selected are as follows.

Format	Field frequency/ frame frequency	Number of effective scan lines (pixels)
4K (2SI)	59.94	2160P (3840×2160)
	50	
4K (SQD)	59.94	2160P (3840×2160)
	50	
	29.97	2160PsF (3840×2160)
	25	
	24	
	23.98	
HD	59.94	1080P
	50	
	29.97	1080PsF
	25	
	24	
	23.98	
	59.94	1080i
	50	
	59.94	720P
	50	

Notes

- When using 4K signal formats, software options are required *(see page 400)*.
- SWR1 and DME1 (and SWR2 and DME3) signal format settings are linked.
- Set devices in a switcher system to the same field frequency/frame frequency signal format.

1 In the Engineering Setup >System >Format menu (7313), select the target device to set.

2 Press [Signal Format].

A pop-up window appears.

3 Press the button for the signal format to set.

The status area shows the selected signal format.

To clear the signal format setting
Press [Clear].

4 Press [Execute].

5 Check the message, then press [Yes].

Setting the OETF and Color Gamut

You can set OETF (Opto-Electronic Transfer Function) and color gamut information in the payload ID which is added to the output signal.
The combinations of settings that can be set are as follows.

Signal format	OETF	Color gamut
3840×2160P 3840×2160PsF	SDR	709, 2020
	HLG, PQ, SLOG3	2020
1080P 1080PsF	SDR	709
	HLG, PQ, SLOG3	2020
1080i 720P	SDR (fixed)	709 (fixed)

Notes

- The settings may not be correct if you change the OETF or color gamut at the same time as the signal format. Wait until after the signal format change is completed, and then set the OETF and color gamut.
- SWR1 and DME1 (and SWR2 and DME3) settings are linked.
- The OETF and color gamut cannot be set when a control panel is selected.
- If the switcher signal format is changed to a format that does not support the combination of OETF and color gamut, the default settings ([SDR] OETF and [709] color gamut) are restored.
- [SDR] OETF and [709] color gamut are specified in the payload ID which is added to the following output signals.
  - Output signals down-converted to 1080i [1)]
  - On the XVS-9000, output signals down-converted to 720P [1)]
- When the OETF is set to [SDR] and color gamut is set to [2020], [709] color gamut is specified in the payload ID which is added to the following output signals.
  - Multi viewer output signals configured for 1080P format when the switcher signal format is 3840×2160P 2SI
  - 3840×2160P SQD format and 3840×2160PsF SQD format output signals

1) For outputs down-converted to 1080i or 720P, only the frame size changes, and the OETF and color gamut of the image are maintained.

1 In the Engineering Setup >System >Format menu (7313), select the target device to set.

2 In the <OETF> group, select the OETF.

SDR: Standard Dynamic Range
HLG: Hybrid Log Gamma
PQ: Perceptual Quantization
SLOG3: S-Log3

3 In the <Color> group, select the color gamut.

709: BT.709 color gamut
2020: BT.2020 color gamut

4 Press [Execute].

5 Check the message, then press [Yes].

Enabling Passage of 59.94 (2×) Format Signals on an AUX Bus

When the signal format is 1080i/59.94 or 1080PsF/29.97, passage of 59.94 (2×) format signals can be enabled on the AUX bus. The signal format can be set for each group of four outputs.

Notes

- On the XVS-9000, 59.94 (2×) format is not available.
- You can output in 59.94 (2×) format only when the following signals are assigned.
  AUX1 to 48, Preset, Edit Preview outputs

1 In the Engineering Setup >System >Format menu (7313), press [AUX Signal Format].

The AUX Signal Format menu (7313.5) appears.

2 Select the target output to set.

Select one of the four target outputs to set.

3 In the <AUX Signal Format> group, press [59.94Hz (2×)].

To block passage of 59.94 (2×) signals on the AUX bus, select [59.94Hz] or [29.97Hz].

4 Press [Execute].

5 Check the message, then press [Yes].

Switching the Input Reference Signal

Notes

- SWR1 and DME1 (and SWR2 and DME3) input reference signal settings are linked.
- The input reference signal settings on the MKS-X7700 and MKS-X2700 System Interface Units are the same as the master panel settings.

1 In the Engineering Setup >System >Format menu (7313), select the target device to set.

2 In the <Ref Input Format> group, select one of the following.

Tri Sync: HD tri-level sync
BB: Black burst or sync

3 Press [Execute].

4 Check the message, then press [Yes].

The following table shows the relationship between signal format and the supported input reference signal frequency.

Signal format	Input reference signal		
	Tri Sync	BB	
3840×2160P/ 59.94 2SI 3840×2160P/ 59.94 SQD 3840×2160PsF/ 29.97 SQD 1080P/59.94 1080PsF/29.97 1080i/59.94	59.94	Black Burst 59.94	Sync 59.94
3840×2160P/50 2SI 3840×2160P/50 SQD 3840×2160PsF/ 25 SQD 1080P/50 1080PsF/25 1080i/50	50	Black Burst 50	Sync 50
3840×2160PsF/ 24 SQD 1080PsF/24	48	–	
3840×2160PsF/ 23.98 SQD 1080PsF/23.98	47.952	–	
720P/59.94	59.94	Black Burst 59.94	Sync 59.94
720P/50	–	Black Burst 50	Sync 50

Adding a Payload ID

When the signal format is 3840×2160PsF, 1080PsF, 1080i, or 720P, a payload ID can be added to the output signal.
To add a payload ID, in the Engineering Setup >System >Format menu (7313), press [Payload ID], turning it on.

Setting the Screen Aspect Ratio

The screen aspect ratio can be set to 16:9 or 4:3.

1 In the Engineering Setup >System >Format menu (7313), select the target device to set.

Notes

- The screen aspect ratio cannot be selected when a control panel is selected.
- In 4K format, the screen aspect ratio is fixed to 16:9.

2 In the <Screen Aspect> group, select one of the following.

16:9: Set the screen aspect ratio to 16:9.
4:3: Set the screen aspect ratio to 4:3.

3 Press [Aspect Execute].

4 Check the message, then press [Yes].

Power-On (Startup) State Selection

You can select the settings of each device at startup.
You can also configure the restoration of settings that were previously saved when recalling an initial status file.

There are two modes available for selecting settings at startup (Resume mode and Custom mode).

Resume mode

This resumes operation with the state in force when the power was last turned off. This setting is only available for the switcher and control panel.

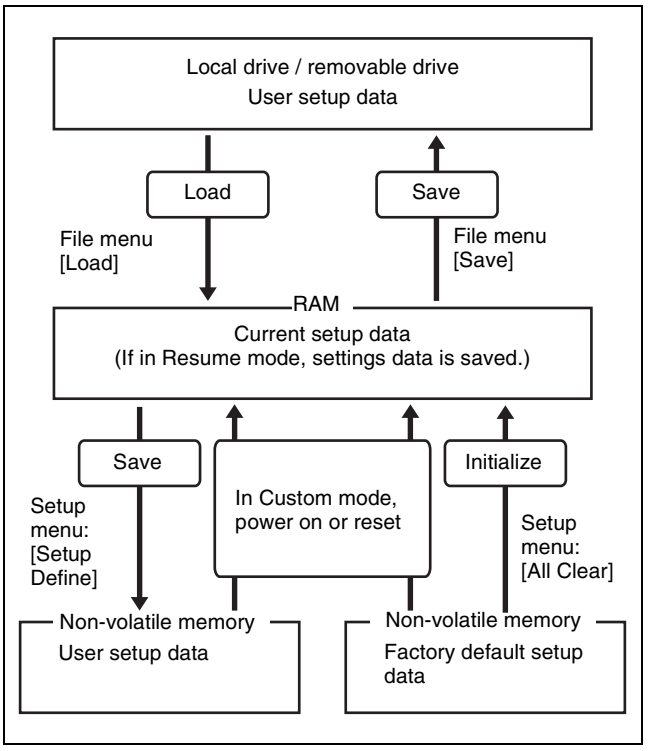
Custom mode

This mode uses settings saved in non-volatile memory within each device.
You can set Setup mode and Initial Status mode settings separately.

- **Setup mode:** Set one of the following setup states to use after powering on.
  User: Start up using the user data previously saved with [Setup Define].
  Factory: Start up with the factory default settings.
- **Initial Status mode:** Set one of the following states of each device after powering on (excludes Setup mode settings).
  User: Start up using the user data previously saved with [Init Status Define].
  Factory: Start up with the factory default settings.

For details, see "Saving and Recalling Setup Data" (page 398).

Saving and Recalling Setup Data



Updating the switcher or control panel setup data saves the updated setup data in RAM in each device.

- In Resume mode *(see page 397)*, even if devices are reset or powered off, the data is preserved in RAM, and recalled when the power is turned back on.
- In Custom mode *(see page 397)*, the user-defined settings (user setup data) saved in non-volatile memory is recalled when a reset occurs or power is turned back on.

The setup data in RAM can also be saved to the local drive or removable drive on the menu panel.

Selecting the Startup State

1 In the Engineering Setup >System >Start Up menu (7314), select the target device to set.

2 In the <Start Up Mode> group, select the mode.

Resume: Resume mode *(see page 397)*
Custom: Custom mode *(see page 397)*

Note

[Resume] is enabled only when a switcher or control panel is selected.

3 When [Custom] is selected, in the <Setup> group or <Initial Status> group, select one of the following.

User: Set user-defined settings for the Setup or Initial Status settings.
Factory: Set factory default settings for the Setup or Initial Status settings.

4 Press [Execute].

5 Check the message, then press [Yes].

Restoring frame memory settings

You can configure restoration of frame memory settings at startup.
The following settings can be restored.

- Memory status (loaded folder/file)
- FM output status (recalled file)
- Frame Memory >Clip/Still menu [Pair] and [Audio] settings
- Frame Memory >Clip/Still >Play menu (2112) loop, playback start point, and playback stop point settings

Notes

- This setting is available only when the target device is the switcher.
- Restoration is not possible if the switcher signal format is different from value in the saved settings data.
- Files that are not saved in frame memory storage cannot be restored.
- If an FM output is locked, the lock is released and then settings are restored.

1 In the Engineering Setup >System >Start Up menu (7314), select the target device (switcher) to set.

2 Enable frame memory settings.

Resume mode
Press [Resume FM Status], turning it on.

Custom mode
Press [Init Status with FM], turning it on.

Note

In Custom mode, this is enabled only when Initial Status is set to [User].

3 Press [Execute].

4 Check the message, then press [Yes].

Saving User-Defined Settings

For details about settings that are saved, see "Data Saved by [Setup Define] and [Init Status Define]" (page 548).

1 Open the Engineering Setup >System >Start Up menu (7314).

2 Select the target device to set, and perform the following operation.

- To save Setup settings, press [Setup Define].
- To save Initial Status settings, press [Init Status Define].

3 Check the message, then press [Yes].

Restoring Initial Status File Settings

You can configure the restoration of switcher settings that were previously saved when recalling an initial status file using the File >Setup, Init, VKMem >Initial Status menu (7112) or File >All, External File >All menu (7161).

Notes

- This setting is available only when the target device is the switcher.
- When [Recall on Load] is enabled and an initial status file is saved using the File >Setup, Init, VKMem >Initial Status menu (7112) or File >All, External File >All menu (7161), the switcher settings at that point in time are saved.
- When [Recall on Load] is enabled, the switcher settings are restored when an initial status file is recalled, regardless of the mode (Resume mode or Custom mode) selected in the <Start Up Mode> group.
  Also, when [Init Status with FM] is enabled, the frame memory settings *(see page 398)* are also restored.

1 In the Engineering Setup >System >Start Up menu (7314), select the target device (switcher) to set.

2 In the <Init Status File> group, press [Recall on Load], turning it on.

3 Press [Execute].

4 Check the message, then press [Yes].

Reset and Initialization

You can reset or initialize memory on each device.

- **Reset:** Reset to power-on state.
- **All Clear:** Clear the memory, and reset to factory default state. The Network Config, System Config, Format, and Start Up settings are set using data stored in non-volatile memory, and the system automatically starts up. It is not necessary to reset the Date/Time settings.

For details, see "Saving and Recalling Setup Data" (page 398).

Resetting devices and initializing memory

Note

SWR1 and DME1 (and SWR2 and DME3) settings are linked.

1 In the Engineering Setup >System >Initialize menu (7315), select the target device to operate.

2 In the <Initialize> group, select one of the following.

Reset: Reset the device.
All Clear: Initialize memory.

3 Press [Execute].

4 Check the message, then press [Yes].

Settings Relating to Installation and Devices

You can install software and firmware for devices connected to the LAN.

Displaying Installation Detail Information

In the Engineering Setup >System >Install/Unit Config menu (7316), press [Detail Information].
The Detail Information menu (7316.1) appears, displaying detailed information about the software and firmware installed in the currently selected device.

Installing Software

1 Connect a removable drive containing software to install to the DEVICE connector of the menu panel.

2 In the Engineering Setup >System >Install/Unit Config menu (7316), press [Install].

The Install menu (7316.10) appears.
The following content is displayed in the status area.
Upper list: For each connected device, this shows the device name, current software version (Current), and the latest version that can be installed (Install, Title).
OK: Installation already completed.
On: Cued for installation, but not completed.
Error: An error occurred during installation.
Lower list: For the device selected in the upper list, this shows an automatically determined list of software that can be installed on the particular device. Also, software that is a candidate for installation in the upper list is marked in the lower list with a ✓ mark.

3 To change the candidates for installation, select the target device in the upper list, and select the software to install in the lower list.

If you are satisfied with the installation candidates in the upper list, skip to step **5**.

To display all related software
Press [Display All Software], turning it on.
All related software for the selected device appears, not just the automatically determined software.

4 Press [Set].

The selection is reflected in the "Install" field and "Title" field in the upper list.

5 Press [Install].

"On" appears in the "Install" field to indicate it is cued for installation. To cancel this installation setting, press [Install] again, making the field blank.

6 Repeat steps **3** to **5** to confirm all software to be installed.

7 Press [Execute].

8 Check the message, then press [Yes].

The installation starts.
When completed successfully, "OK" appears in the "Install" field.

Configuring Settings to Use the Software

An install key must be entered to enable the software in order to use the following software options (entry of the install key is not required if the software is installed at the factory).
For details about entering the install key, contact your Sony representative.
To obtain an install key, you may be required to submit the unique device ID of the device you are using.
You can check the unique device ID in the Engineering Setup >System >Install/Unit Config >License menu (7316.6).

• XVS-9000

Software	Name
XZS-9200	Multi Program 2 Software
XZS-9510	Switcher Upgrade Software [a]
XZS-9520	
XZS-9530	
XZS-9540	
XZS-9550	

a) Required license for XKS-8210 Mix Effect Board (1st to 5th boards) 4K support

• XVS-8000

Software	Name
XZS-8200	Multi Program 2 Software
XZS-8510	Switcher Upgrade Software [b]
XZS-8520	
XZS-8530	
XZS-8540	
XZS-8550	

b) Required license for XKS-8210 Mix Effect Board (1st to 5th boards) 4K support

• XVS-7000

Software	Name
XZS-7200	Multi Program 2 Software
XZS-7510	Switcher Upgrade Software [c]
XZS-7520	
XZS-7530	

c) Required license for XKS-7210 Mix Effect Board (1st to 3rd boards) 4K support

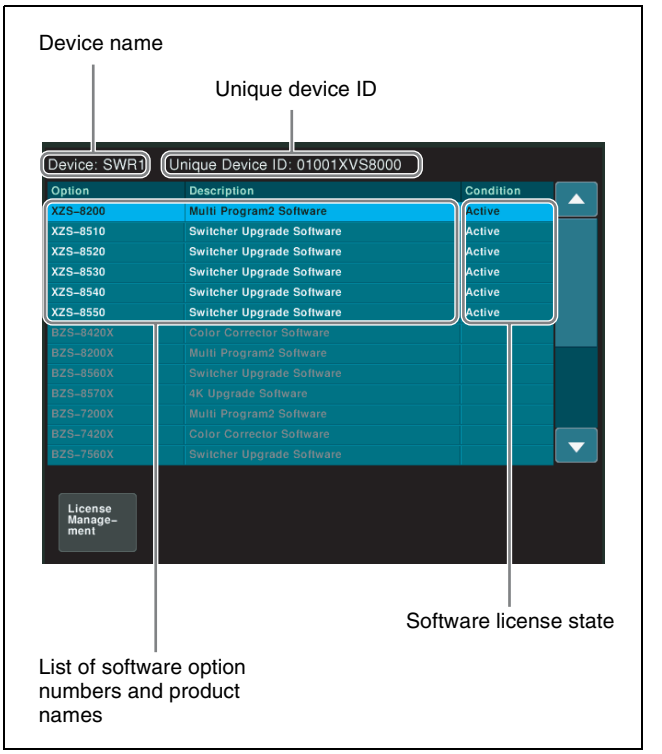
• XVS-6000

Software	Name
XZS-6200	Multi Program 2 Software
XZS-6510	Switcher Upgrade Software [d]
XZS-6520	

d) Required license for XKS-7210 Mix Effect Board (1st to 2nd boards) 4K support

To display the unique device ID

In the Engineering Setup >System >Install/Unit Config menu (7316), select the target device to operate, and press [License] to open the License menu (7316.6).



Entering the install key

1 In the Engineering Setup >System >Install/Unit Config menu (7316), select the target device to operate.

2 Press [License].

The License menu (7316.6) appears.

3 Select the software for which you want to obtain a license (“Condition” field is blank).

4 Press [License Management].

The License Management menu (7316.7) appears.

5 Press [Activate License].

6 Enter the 16-character install key you have been given in the keyboard window, and press [Enter].

7 Press [OK].

“Active” appears in the “Condition” field.

8 Restart the device using one of the following methods.

- In the Engineering Setup >System >Initialize menu (7315), select the device with the registered license, press [Reset] in the <Initialize> group, and then press [Execute].
- Turn the power off and then on again.

After restarting, the licensed software is now available for use.

To cancel the license registration to disable functions

Select the software ("Active" displayed in the "Condition" field) whose license you want to cancel in the License menu (7316.6). Press [Deactivate License] in the License Management menu (7316.7), check the message, then press [Yes].

Settings Relating to Device Management

Setting the Date and Time

1 In the Engineering Setup >System >Maintenance menu (7317), set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment	Setting
1	Hour	Hour	0 to 23
2	Min	Minute	0 to 59
3	Sec	Second	0 to 59

Parameter group [2/2]

No.	Parameter	Adjustment	Setting
1	Month	Month	1 to 12
2	Day	Day	1 to 31
3	Year	Year	2000 to 2037

The specified date and time appear in the "Set" field in the status area.

2 Press [Set Date/Time].

3 Check the message, then press [Yes].

Using a Removable Drive

"Removable Drive" refers to general-purpose external USB-compatible storage devices connected to the system.

Displaying removable drive information

1 Connect a removable drive to the DEVICE connector of the menu panel.

2 In the <USB Storage Device> group of the Engineering Setup >System >Maintenance menu (7317), press [Refresh].

Initializing a removable drive

Note

Format a commercially available removable drive before using it for the first time.

1 Connect a removable drive to the DEVICE connector of the menu panel.

2 In the Engineering Setup >System >Maintenance menu (7317), select the removable drive.

3 In the <USB Storage Device> group, press [Format].

4 Check the message, then press [Yes].

Setting a Removable Drive as the Primary Device

This sets the removable drive as the primary device.

Note

When a removable drive is not specified as the primary device, [Removable Drive] cannot be specified for operation in the File menu. Always configure this item.

1 In the Engineering Setup >System >Maintenance menu (7317), select the removable drive.

2 In the <USB Storage Device> group, press [Set Primary].

To set as the primary device automatically
In the <USB Storage Device> group, press [Auto Detect].

Initializing the Local Drive

"Local Drive" refers to the internal flash memory drive. If the local drive becomes corrupted, format the drive.

1 In the <Local Drive> group of the Engineering Setup >System >Maintenance menu (7317), press [Format].

2 Check the message, then press [Yes].

Locking Setup Menu Settings

To protect data, you can inhibit operations in selected Setup menus. Note that it is not possible to lock the Setup Operation Lock menu.

1 In the Engineering Setup >System >Maintenance menu (7317), press [Setup Operation Lock].

The Setup Operation Lock menu (7317.1) appears.

2 In the <VF Group> group, select the group containing the target menu to set.

3 Select the menu candidates for locking.

To select all menus within a group, press [ALL].

You can also select a menu while it is open.

For details, see "Selecting an opened setup menu to lock" (page 403).

4 Press [Lock Item Select].

The selected menus become candidates for locking, and a "" padlock icon (unlocked) appears in the "Lock" field.

Note

If a menu is already locked, selection of lock candidates is not possible. Unlock the menu and then select a lock candidate.

To deselect a lock candidate
Select a lock candidate menu, and press [Lock Item Select].

5 Repeat steps **2** to **4** to select all lock candidates.

To deselect all lock candidates
Press [Lock Item All Clear], check the message, then press [Yes].

6 Press [Lock].

7 Enter a password of up to 16 characters in the keyboard window, and press [Enter].

The menus in the list of candidates are all locked. The padlock icon changes to "" (locked state).

To release the lock
When locked, press [Lock] and enter the password.

Changing the lock password

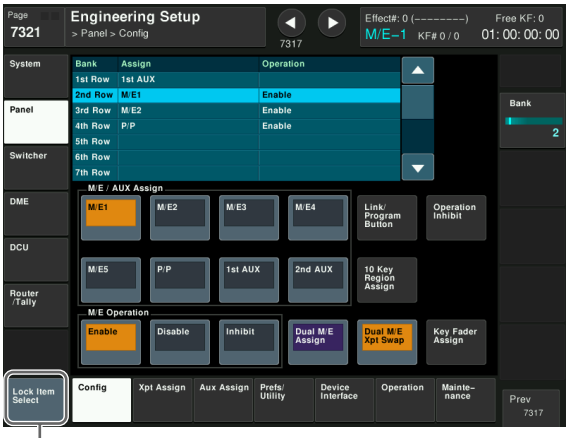
1 In the Engineering Setup >System >Maintenance >Setup Operation Lock menu (7317.1), press [Change Password].

2 Check the message, then press [Yes].

3 Follow the on-screen instructions to enter the old password and new password.

Selecting an opened setup menu to lock

With the menu you want to lock in the open state, press [Lock Item Select] at the lower left.



Lock Item Select button

[Lock Item Select] turns red, and a padlock icon appears.

The lock candidate menu selection is reflected in the Engineering Setup >System >Maintenance >Setup Operation Lock menu (7317.1).

Note

If a menu is already locked, selection of lock candidates is not possible. In this case, [Lock Item Select] is displayed as follows.

When the displayed menu is locked

When a menu other than the displayed menu is locked

In the Setup Operation Lock menu (7317.1), unlock the menu and then select a lock candidate.

Locking File Loading Operations

You can inhibit load operations for a specified file category.

1 In the Engineering Setup >System >Maintenance menu (7317), press [File Load Lock].

The File Load Lock menu (7317.2) appears.

2 Select the category as the candidate for locking.

To select all categories, press [ALL].

3 Press [Lock].

The selected categories become candidates for locking. The category name display color changes to yellow, and the "Lock" indicator is displayed in yellow in the "Lock" field.

To deselect a lock candidate
Select a lock candidate category, and press [Lock].

4 Repeat steps **2** and **3** to select all lock candidates.

To deselect all lock candidates
Press [Clear].

5 Press [Execute].

6 Enter a password of up to 16 characters in the keyboard window, and press [Enter].

The categories in the list of candidates are all locked. The category name and the "Lock" indicator in the "Lock" field change to white.

To release the lock
Select a locked category and press [Lock], then press [Execute] and enter the password.

Changing the lock password

1 In the Engineering Setup >System >Maintenance >File Load Lock menu (7317.2), press [Change Password].

2 Check the message, then press [Yes].

3 Follow the on-screen instructions to enter the old password and new password.

Enabling/Disabling SDI Output Connectors

The signal output from the output connectors of the XKS-S8167/XKS-S9167 12G-SDI Output Boards can be enabled/disabled.
When disabled, no signal is output from the output connector.

Note

To prevent radio wave interference from occurring, disable output connectors that do not have a cable connected.

1 In the Engineering Setup >System >Maintenance menu (7317), press [SDI Output Enable].

The SDI Output Enable menu (7317.3) appears.

2 In the <Device> group, select the target switcher to set.

The status area shows the set status of the output connectors for slots in which an XKS-S8167/ XKS-S9167 is installed.

3 In the status area, select the target output connector to set.

4 In the <Output> group, select whether to enable or disable the output.

Enable: Enable signal output.
Disable: Disable signal output.

To enable all output connectors
Press [All Enable].

To clear the setting
Press [Clear].

5 Press [Execute].

6 Check the message, then press [Yes].

Chapter 18 Control Panel Setup

Settings Relating to Control Panel Configuration

Setting the Configuration for Each Bank

You can change the assignments for each bank.
These settings determine whether the target cross-point module is used as a cross-point control block or as an AUX bus control block.

1 In the Engineering Setup >Panel >Config menu (7321), select the target bank to set.

The bank selection here indicates the physical position on the control panel. For example, if the control panel has a 4M/E configuration, rows are referred to as 1st Row, 2nd Row, 3rd Row, and 4th Row from the back to the front. The bank and module dependency is configured from the switcher control station. For details, consult your Sony service or sales representative.

2 In the <M/E / AUX Assign> group, select the bank to assign.

When [M/E1] to [M/E5], or [P/P] is selected, the cross-point module for the selected bank functions as a cross-point control block (M/E row, PGM/PST row).
When [1st AUX] or [2nd AUX] is selected, the cross-point module for the selected bank functions as an AUX bus control block (AUX row).

Note

It is not possible to assign the same M/E logical bank to more than one physical bank. Be sure to make different M/E assignments.

Inhibiting Operation on a Bank

You can inhibit operation on each of the M/E and PGM/PST rows.

1 In the Engineering Setup >Panel >Config menu (7321), select the target bank to set.

2 In the <M/E Operation> group, select one of the following.

Enable: Enable panel display and operation of the bank.
Disable: Enable panel display only and disable operation of the bank.
Inhibit: Disable both the panel display and operation of the bank.

The M/E row or PGM/PST row assigned to the selected bank is configured.

Note

When [Inhibit] is selected, snapshots on the corresponding bank are not recalled.

Assigning a Single M/E to Two M/E Banks

You can assign the cross-points for the shifted state and unshifted state of a single M/E bank using two consecutive M/E banks (dual M/E).

1 In the Engineering Setup >Panel >Config menu (7321), select the target M/E bank to set.

Note

The following bank numbers cannot be selected.
- Bank numbers of rows that are unassigned.
- Bank numbers of rows that are unassigned or rows before an AUX row.
- Bank numbers assigned for an AUX row.

2 Press [Dual M/E Assign].

The unshifted state is assigned as cross-points on the M/E bank with the selected bank number, and the shifted state is assigned as cross-points on the M/E bank with the next consecutive bank number.
The shift/unshifted assignments can be interchanged using [Dual M/E Xpt Swap].

To return to the original assignment
Set the bank configuration *(see page 406)*.

Interchanging shifted and non-shifted operations for a dual M/E

1 In the Engineering Setup >Panel >Config menu (7321), select the M/E banks configured for dual M/E.

2 Press [Dual M/E Xpt Swap], toggling the setting.

When [Dual M/E Xpt Swap] is lit: The M/E bank toward the front (larger bank number) is the unshifted state, and the M/E bank toward the rear is the shifted state.
When [Dual M/E Xpt Swap] is not lit: The M/E bank toward the rear (smaller bank number) is the unshifted state, and the M/E bank toward the front is the shifted state.

Linking Switcher Bus and Router Destinations

To link the switcher bus and router destination, make the following settings as required.
Matrix selection: Select the target of the link setting from the eight-point matrix (1 to 8).
Matrix position definition: Set the start address and level for the source and destination on the S-Bus/NS-Bus.
Link table setting: Link a switcher cross-point button and matrix source.
Link bus setting: Link a switcher bus address and router destination.

Selecting a matrix number

1 In the Engineering Setup >Panel >Config menu (7321), press [Link/Program Button].

The Link/Program Button menu (7321.8) appears.

2 In the <Link> group, press [External Bus Link].

The External Bus Link menu (7321.3) appears.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Link No	Link number
2	Link Matrix	Matrix number to link

4 Press [Link Matrix Set].

To release the link
Select the link to release, then press [Clear].

Defining the position of a matrix

Define the matrix position and level to set in the S-Bus space (1024×1024) or NS-Bus space (9999×9999). The matrix position is specified by the start address for the source and destination.
Make settings for the matrix selected in the External Bus Link menu (7321.3).

1 In the Engineering Setup >Panel >Config >Link/Program Button >External Bus Link menu (7321.3), press [Link Matrix Adjust].

The Link Matrix Adjust menu (7321.4) appears.
You can also select the matrix in this menu using the [Link Matrix] parameter.

2 Set the following parameters.

No.	Parameter	Adjustment
2	Source	Source start address
3	Destination	Destination start address
4	Level	Level

3 Perform the following operations.

- To apply the source address, press [Source Set].
- To apply the destination address, press [Destination Set].
- To apply the level, press [Level Set].

Setting a link table

Make settings for the link number selected in the External Bus Link menu (7321.3).

1 In the Engineering Setup >Panel >Config >Link/Program Button >External Bus Link >Link Matrix Adjust menu (7321.4), press [Link Table Adjust].

The Link Table Adjust menu (7321.5) appears.

2 Select the switcher cross-point button and the link target matrix source.

No.	Parameter	Adjustment
1	Main No	Switcher cross-point button

No.	Parameter	Adjustment
2	Source No	Matrix source

3 Press [Link Source Set].

4 Repeat steps **2** and **3** as required to select the matrix sources to be linked to other cross-point buttons.

To return the set combinations to the defaults
Press [Init Link Table], check the message, then press [Yes].

Setting the link bus

Make settings for the link number selected in the External Bus Link menu (7321.3).

1 In the Engineering Setup >Panel >Config >Link/ Program Button >External Bus Link menu (7321.3), press [Link Bus Adjust].

The Link Bus Adjust menu (7321.6) appears.
You can also select the link number in this menu using the [Link No] parameter.

2 Select the switcher bus and the link target router destination.

No.	Parameter	Adjustment
2	Internal Bus	Switcher bus
3	Destination	Router destination

3 Perform the following operations.

- To apply the bus, press [Master Bus Set].
- To apply the destination address, press [Linked Dest Set].

Linking Transitions Between Keyers

1 In the Engineering Setup >Panel >Config menu (7321), press [Link/Program Button].

The Link/Program Button menu (7321.8) appears.

2 In the <Link> group, press [Key Trans Link].

The Key Trans Link menu (7321.2) appears.

3 Select the keyer to be the master.

No.	Parameter	Adjustment
1	Master Key	Master keyer

4 In the <Key Select> group, select the keyer to link to the transition of the master.

Linking the next transition selection buttons

You can add links for the next transition selection buttons in the transition control block to the transition link settings between keyers. For example, if two keyers (Key 2 and Key 3) are linked with the master keyer (Key 1), then pressing the [KEY1] next transition selection button also selects the [KEY2] and [KEY3] buttons.

1 In the Engineering Setup >Panel >Config >Link/ Program Button >Key Trans Link menu (7321.2), set the transition link between keyers *(see page 408)*.

2 Press [Next Trans Link], turning it on.

The [KEY1] to [KEY8] next transition selection buttons in the transition control block are coupled (selected) to the transition link setting between the keyers.

Note

The link setting of the next transition selection buttons is common to the keyers on all switcher banks. It is not possible to make separate settings for each master keyer.

Setting the Buttons and Fader Levers on the Key Fader Control Block

You can assign keys (KEY1 to KEY8) of any switcher bank (M/E-1 to M/E-5, PGM/PST) to the key delegation buttons on the key fader control block.
You can also set the key delegation button for operation by the fader lever.

Setting key delegation button assignments

1 In the Engineering Setup >Panel >Config menu (7321), press [Key Fader Assign].

The Key Fader Assign menu (7321.1) appears.
The status area shows the settings of the key delegation buttons 1 to 4 and the fader levers for each module in the key fader control block.

2 Select the target key delegation button to assign in the status area.

3 In the <ME Select> group, select the bank with the key to assign.

4 In the <Key Assign> group, select the key to assign.

If you do not want to assign a key to a key delegation button, select [No Assign].

Inhibiting operation of the key fader control block

You can set to inhibit operations for each module in the key fader control block.

1. In the status area of the Engineering Setup >Panel >Config >Key Fader Assign menu (7321.1), select the module to set.
2. Press [Inhibit].

Setting fader lever operations

1. In the Engineering Setup >Panel >Config >Key Fader Assign menu (7321.1), press [Fader Assign].

   The Fader Assign menu (7321.30) appears.
2. Select the target fader lever to assign in the status area.
3. In the <Fader Assign> group, set the key to be operated by the fader lever.

   All: Operate the keys selected by the key delegation buttons (1 to 4).
   1st Key: Operate the key assigned to key delegation button 1.
   2nd Key: Operate the key assigned to key delegation button 2.
   3rd Key: Operate the key assigned to key delegation button 3.
   4th Key: Operate the key assigned to key delegation button 4.
   Disable: Disable operation of the fader lever.

Assigning a Region to the Region Selection Buttons in the Numeric Keypad Control Block

You can assign regions to the region selection buttons in the numeric keypad control block. You can assign up to four regions to a single button.

1. In the Engineering Setup >Panel >Config menu (7321), press [10 Key Region Assign].

   The 10 Key Region Assign menu (7321.7) appears.

The left side of the status area shows the region selection buttons. The upper part of the right side shows a list of four regions assigned to a region selection button, and the lower part shows a list of assignable regions.

2. Press the target button to make an assignment.
3. Select the target from the four regions.
4. Select the region to assign.
5. Press [Set].

Note

Only regions assigned here can be used for keyframe or snapshot recall.
If a switcher bank region is not assigned to a region selection button in the numeric keypad control block, the Flexi Pad control block cannot be used to recall a snapshot.

To release a region assignment

Press the target button display to release. Select the region to release from the list of regions assigned to the button, then press [Clear].

To return the region assignment to the default

Press [Default].

Setting the region selection buttons selected when the [ALL] button is pressed

1. In the Engineering Setup >Panel >Config >10 Key Region Assign menu (7321.7), press [All Select], turning it on.

   You can also press the [All Select] button in the status area.
   The [All Select] button indicator in the status area changes to orange, and the system switches to a mode for assigning region selection buttons to the [ALL] button.

2 Press the button and set the region.

The regions with the lit button indicators are assigned to the [ALL] button. The default is all buttons lit. For regions you do not want to assign to the [ALL] button, press the corresponding button indication, turning it off.

Note

Assignment to the [ALL] button is region by region. Changing the assignment of a region selection button does not change the regions assigned to the [ALL] button.

Setting Transition Control Block Button Assignments

Assignment of the buttons on the left on the transition control block and the buttons on the transition control block (simple type) is performed in the Transition Module1 menu (7321.9), and assignment of the buttons on the right on the transition control block is performed in the Transition Module2 menu (7321.34).
This section describes the operation in the Transition Module1 menu as an example.

1 In the Engineering Setup >Panel >Config >Link/ Program Button menu (7321.8), press [Transition Module1].

The Transition Module1 menu (7321.9) appears.

2 In the <Bank Select> group, select the target bank to set.

3 Press the target button to make an assignment.

4 In the list on the right, select the function to assign.

5 Press [Set].

To release the assignment
Select the target button to release, then press [Clear].

To return the assignment to the default
Press [Default].

Setting Independent Key Transition Control Block Button Assignments

You can assign keys (KEY1 to KEY8) of any switcher bank (M/E-1 to M/E-5, PGM/PST) to the independent key transition control block.

1 In the Engineering Setup >Panel >Config >Link/ Program Button menu (7321.8), press [Key Transition Module].

The Key Transition Module menu (7321.25) appears.

2 In the <Bank Select> group, select the target bank to set.

3 In the <Module Select> group, select the target module in the independent key transition control block to set.

4 In the <KEY1-4 Button> group or <KEY5-8 Button> group, press the target button to assign.

5 In the list on the right, select the key to assign.

6 Press [Set].

To release the assignment
Select the target button to release, then press [Clear].

To return the assignment to the default
Press [Default].

Setting Flexi Pad Control Block Button Assignments

This sets Flexi Pad control block button assignments.

1 In the Engineering Setup >Panel >Config >Link/ Program Button menu (7321.8), press [Flexi Pad Module].

The Flexi Pad Module menu (7321.10) appears.

2 In the <Bank Select> group, select the target bank to set.

3 Press the target button to make an assignment.

4 In the list on the right, select the function to assign.

5 Press [Set].

To release the assignment
Select the target button to release, then press [Clear].

To return the assignment to the default
Press [Default].

Setting Utility/Shotbox Control Block Button Assignments

You can change the assignments of the mode selection buttons and keyframe operation buttons in the utility/shotbox control block.

For details about memory recall button assignment, see "Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block" (page 423).

1 In the Engineering Setup >Panel >Config >Link/Program Button menu (7321.8), press [Utility/Shotbox Module].

The Utility/Shotbox Module menu (7321.36) appears.

2 In the <Utility/Shotbox Module> group, select the target utility/shotbox control block module to set.

3 Press the target button to make an assignment.

4 In the list on the right, select the function to assign.

5 Press [Set].

To release the assignment
Select the target button to release, then press [Clear].

To return the assignment to the default
Press [Default].

Setting Device Control Block (Trackball) Button Assignments

You can change the assignments of the mode selection buttons, channel selection buttons, and operation buttons in the device control block (trackball).

Note

The assignments of operation buttons in VTR/disk recorder/frame memory operation mode cannot be changed.

1 In the Engineering Setup >Panel >Config >Link/Program Button menu (7321.8), press [Trackball Module].

The Trackball Module menu (7321.17) appears.

2 In the <Area Select> group, select the target button to set.

Mode/Channel: Set assignments for the mode selection buttons and channel selection buttons.
Function: Set assignments for the operation buttons.

3 Press the target button to make an assignment.

4 In the list on the right, select the function to assign.

5 Press [Set].

To release the assignment
Select the target button to release, then press [Clear].

To return the assignment to the default
Press [Default].

Setting Menu Panel Button Assignments

You can change the assignment of the top menu selection button and user preference buttons in the menu panel.

For details about function assignments to user preference buttons, see "Assigning Functions to User Preference Buttons" (page 419).

1 In the Engineering Setup >Panel >Config >Link/Program Button menu (7321.8), press [Menu Panel].

The Menu Panel menu (7321.19) appears.

2 Press the target button to make an assignment.

3 In the list on the right, select the function to assign.

4 Press [Set].

To release the assignment
Select the target button to release, then press [Clear].

To return the assignment to the default
Press [Default].

Inhibiting Utility 2 Bus and Key Operations

You can inhibit operations on the utility 2 bus and keys 1 to 8 of the M/E and PGM/PST banks.
The following control blocks can be inhibited.
- Cross-point control block
- Transition control block
- Independent key transition control block
- Key fader control block

Note

In the AUX bus control block and other control blocks which are not included in M/E and P/P rows, the operations on the utility 2 bus and keys 1 to 8 are not inhibited (excluding the key fader control block).

1 In the Engineering Setup >Panel >Config menu (7321), press [Operation Inhibit].

The Operation Inhibit menu (7321.26) appears.

2 Press [M/E Operation Inhibit].

The M/E Operation Inhibit menu (7321.18) appears.

3 Select the target bank to set.

4 In the <M/E Operation Inhibit> group, select the utility 2 bus (Util2 Bus) or key button (Key1 to Key8) for which operations are to be inhibited.

Inhibiting DME Channel Selection Operations

You can inhibit DME channel selection operations in the device control block (trackball).

1 In the Engineering Setup >Panel >Config menu (7321), press [Operation Inhibit].

The Operation Inhibit menu (7321.26) appears.

2 Press [Trackball Module].

The Trackball Module menu (7321.27) appears.

3 Select the DME channel for which to inhibit operation.

4 Press [Inhibit].

Inhibiting Operation on the Key Control Block

You can set to inhibit operations for each module in the key control block.

1 In the Engineering Setup >Panel >Config menu (7321), press [Operation Inhibit].

The Operation Inhibit menu (7321.26) appears.

2 In the <Key Control Module Inhibit> group, select the target module to set (1st to 4th).

To select a button/indicator/display state when operation is inhibited

In the <Key Control Module Status> group, select one of the following.

Enable: Buttons/indicators turn on and displays appear according to the current setting status.

Disable: Buttons/indicators turn off and displays do not appear.

Note

The button/indicator/display status settings are common to all modules.

Cross-Point Settings

Creating Cross-Point Assign Tables

You can create a "main" table and up to 14 other tables (table 1 to table 14) as cross-point assign tables. However, you can only carry out assignment of video and key combinations in the main table.

Creating the main table

In the main table, a pair consisting of a video signal and a key signal is assigned to each button number. You can also assign the same signal to another button number to duplicate the assignment. You can also delete currently assigned signals.

Note

The video/key pair numbers are fixed for the following button numbers in tables 1 to 14.

Button number	V/K pair number
281 to 286	211, 221, 231, 241, 251, 261
291 to 296	216, 226, 236, 246, 256, 266

The re-entry video/key numbers are set as the pair numbers by default. Use the defaults as-is, since changing the settings will make it impossible to select the correct signals.

1 In the Engineering Setup >Panel >Xpt Assign menu (7322) or the Engineering Setup >Panel >Xpt Assign >Table Button Assign menu (7322.1), press [Main, V/K Pair Assign].

The Main, V/K Pair Assign menu (7322.5) appears.
The left side of the status area shows the video and key signal names currently assigned in the main table, and the source numbers. When the shift button is pressed, the number field is distinguished by color.
The right side of the status area shows a list of source numbers and assignable signals.

2 Select the target button number to set.

No.	Parameter	Adjustment
1	V/K Pair No	Selection of video and key pair number

3 In the <Assign> group, select the target signal to set.

Video: Set video signals.
Key: Set key signals.

[Video] and [Key] can also be selected at the same time.
[Video] and [Key] cannot be deselected at the same time. One or the other is always selected.

4 Select the signal to assign.

No.	Parameter	Adjustment
3	Source No	Selection of signal to assign

5 In the <Xpt Assign> group, select one of the following.

Set: Delete the signal currently assigned to the selected button number and make a new assignment.
Insert: Move the signal currently assigned to the selected button number to the next number, and make a new assignment.

To inhibit operation of buttons

Select the target button number to set, and press [Inhibit].

To delete a signal assigned to a button

Select the button number, and press [Delete] in the <Xpt Assign> group.
The signals assigned to numbers following the selected button number move up in sequence.

To return the table settings to the defaults

Press [Default Recall], check the message, then press [Yes].

Creating tables 1 to 14

You create tables 1 to 14 in the same way as when creating the main table, and you can assign the same signal to more than one button number, or delete currently assigned signals. However, assignment of video and key combinations as a pair is not possible.

1 In the Engineering Setup >Panel >Xpt Assign menu (7322), press [Table Button Assign].

The Table Button Assign menu (7322.1) appears.
The target table number to set appears in the upper left of the status area.
The left side of the status area shows the cross-point button numbers, video and key pair numbers, video signal source names and source numbers, and key signal source names and source numbers. When the shift button is pressed, the number field is distinguished by color.
The right side of the status area shows the video and key pair numbers, and the names of video signals and key signals set in the main table.

2 Select the target table to set.

No.	Parameter	Adjustment
1	Table No	Selection of the table to set

3 Select the target button number to set.

4 Select the pair signal to assign.

5 In the <Button Assign> group, select one of the following.

Set: Delete the signal currently assigned to the selected button number and make a new assignment.
Insert: Move the signal currently assigned to the selected button number to the next number, and make a new assignment.

To inhibit operation of buttons

Select the target button number to set, and press [Inhibit].

To delete a signal assigned to a button

Select the button number, and press [Delete] in the <Button Assign> group.
The signals assigned to numbers following the selected button number move up in sequence.

To return the table settings to the defaults

Press [Default Recall], check the message, then press [Yes].

Setting the [SHIFT] button operation mode

This sets the operation of the [SHIFT] button assigned to the right edge of the cross-point button row. The setting can be configured for each cross-point assign table (main, 1 to 14).

Note

On the cross-point control block, the [SHIFT] button operation mode is set by the settings of the cross-point assign table of the switcher bank (M/E or P/P), regardless of the buses assigned to the cross-point button rows.

1 In the Engineering Setup >Panel >Xpt Assign >Main, V/K Pair Assign menu (7322.5) or the Engineering Setup >Panel >Xpt Assign >Table Button Assign menu (7322.1), press [Shift Mode].

The Shift Mode menu (7322.13) appears.

2 Select the target table to set.

3 In the <Xpt Shift Mode> group, select the operation mode of the [SHIFT] button.

Hold: Functions as a shift button, and the shifted state of the cross-point buttons is enabled while the button is held down.
Lock: Functions as a shift button, and pressing the button toggles between the shifted and unshifted cross-points.
Off: Functions as a cross-point button, namely, button number 20 on a 20-button system, button number 28 on a 28-button system, and button number 36 on a 36-button system.

Setting the [SHIFT ALL] button operation mode

This sets the operation mode of the [SHIFT ALL] button assigned to the cross-point pad. This settings is common to all cross-point assign tables.

1 In the Engineering Setup >Panel >Xpt Assign >Main, V/K Pair Assign menu (7322.5) or the Engineering Setup >Panel >Xpt Assign >Table Button Assign menu (7322.1), press [Shift Mode].

The Shift Mode menu (7322.13) appears.

2 Press [Shift All Hold] and set the [SHIFT ALL] button operation mode.

To enable the shifted-state cross points for all buses while the button is pressed, press [Shift All Hold], turning it on (hold mode).
To switch between shifted-state and unshifted-state cross points for all buses each time the button is pressed, press [Shift All Hold], turning it off (lock mode).

Setting the source signal name

1 In the Engineering Setup >Panel >Xpt Assign menu (7322) or the Engineering Setup >Panel >Xpt Assign >Table Button Assign menu (7322.1), press [Src Name/Src Color].

The Src Name/Src Color menu (7322.6) appears.

2 Select the target signal to set.

No.	Parameter	Adjustment
1	Source No	Source signal selection
2	Num	Number to select

3 Press [Source Name].

4 Enter a name of up to 16 characters in the keyboard window, and press [Enter].

To set sequential names for multiple signals

When multiple signals are selected and you specify a number suffix for a signal name, all of the selected signals are automatically assigned names ending with sequential numbers.

Example: To assign sequential names to the three source signals 2 to 4

(1) Set the [Source No] parameter to 2 and the [Num] parameter to 3 in step **2**.
(2) Set the name of source signal 2 to "CAM2." The name "CAM3" is assigned automatically to source signal 3, and the name "CAM4" is assigned automatically to source signal 4.

Setting the source color of the video signal

This sets the color displayed for 3rd row/4th row buttons and cross-point indicators on the cross-point control block or AUX bus control block.

1 Open the Engineering Setup >Panel >Xpt Assign >Src Name/Src Color menu (7322.6).

2 Select the target signal to set.

3 In the <Source Color> group, select the source color (User Color 1 to User Color 8).

To change the colors of User Color 1 to 8

1 Press [User Color Select].

The User Color Select menu (7322.12) appears.

2 In the <Target> group, select the target color to set (User Color 1 to User Color 8).

3 In the <Color> group, select the color to set.

To change the color, create a color by adjusting the following parameters.

No.	Parameter	Adjustment
1	Red	Red
2	Green	Green
3	Blue	Blue

Note

The color of the buttons may be different to the color adjusted using the menu.
After adjusting the color, check the actual color of the button when it is lit.

To return to the previous source color
Press [Clear].

4 Press [Execute].

Copying Cross-Point Assign Tables

You can copy the contents of a cross-point assign table to another cross-point assign table.

Note

The contents of tables 1 to 14 cannot be copied to the main table.

1 In the Engineering Setup >Panel >Xpt Assign menu (7322), press [Table Copy].

The Table Copy menu (7322.8) appears.

2 Select the copy source and copy destination tables.

3 Press [Copy].

4 Check the message, then press [Yes].

Selecting Cross-Point Assign Tables

You can select the cross-point assign table to use for each of the banks or buses.

Notes

- It is not possible to assign cross-point assign tables 5 to 14 to a bus of a switcher operated by an MKS-8080/8082 AUX Bus Remote Panel.
- On the cross-point control block, you can change the table using the cross-point assign table selection buttons on the cross-point pad. Different tables can be assigned to each cross-point button row.

1 In the Engineering Setup >Panel >Xpt Assign menu (7322), select the target bank or bus to set.

2 Select the table to assign.

3 Press [Table Assign Set].

Copying Cross-Point Settings

To use the same cross-point settings as the switcher on a remote panel for the network AUX remote panel function, copy the cross-point assign table. You can assign the cross-point settings of table 1 to the remote panel.

For details about the network AUX remote panel function, see "Network AUX Remote Panel" (page 535).

Notes

- Only table 1 in the cross-point assign tables can be copied.
- After copying, the remote panel settings data is overwritten.
- After copying, the function button settings on the remote panel change as follows.
  - Top left button: Status function
  - Top right button: Source/Destination/Level function
  - Bottom left button: Assign function
  - Bottom right button: Lock Chop function

1 Open the Engineering Setup >Panel >Xpt Assign menu (7322).

2 Select the destination remote panel to which to copy using the following parameter.

No.	Parameter	Adjustment
5	Aux Remote	Remote panel number

3 In the <Aux Remote> group, press [Table1 Copy].

4 Check the message, then press [Yes].

Exporting Source Names and Destination Names

You can send the source names and destination names to the S-Bus.

Note

Source names and destination names cannot be exported manually for an NS-Bus.

1 In the Engineering Setup >Panel >Xpt Assign menu (7322), press [Name Export].

The Name Export menu (7322.9) appears.

2 Set the destination station ID.

No.	Parameter	Adjustment
1	Station ID	Station ID setting [a]

a) If set to “255”, the names are sent to all stations (“All” is displayed in the status area).

3 Press [Src Name Export].

The source names are exported to the station set in step **2**.

4 Press [Dest Name Export].

The destination names are exported to the station set in step **2**.

Note

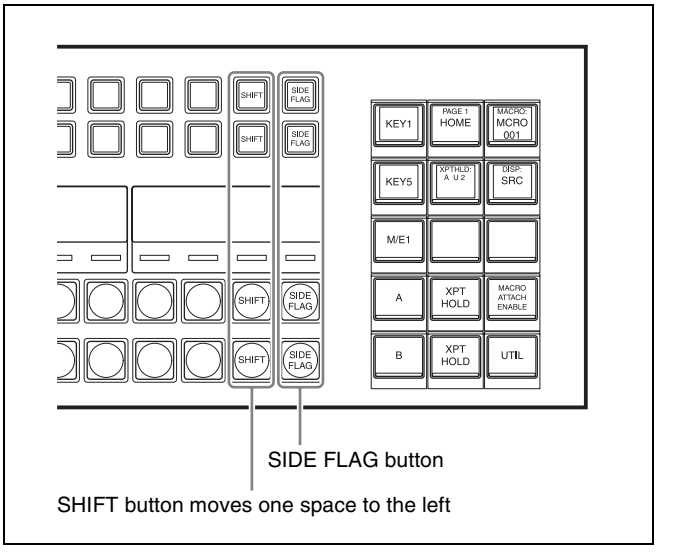
Destination names cannot be specified arbitrarily, so fixed names are used.

Assigning the [SIDE FLAG] Button

You can assign the [SIDE FLAG] button to the right hand edge of the cross-point button row for enabling and disabling side flags. The settings are common to the M/E and PGM/PST banks.
Assigning the [SIDE FLAG] button moves the [SHIFT] button one space to the left.

Note

If a macro attachment is set for the button, assigning the side flag button shifts the number of the button, so pressing the button will no longer execute the macro. The settings, however, are maintained, so that when you cancel the side flag assignment, the macro can be executed once more.



Cross-point control block

For details about side flags, see “Side Flags” (page 196).

1 In the Engineering Setup >Panel >Xpt Assign menu (7322), press [Side Flags Button Assign].

The Side Flags Button Assign menu (7322.10) appears.

2 Press [Side Flags Btn Assign], turning it on.

Setting the Cross-Point Delay

You can set a delay so that cross-point switching occurs after a specified delay has elapsed since selecting the cross-point.
You can use this in combination with the advanced tally function to output a tally prior to the actual switching of the cross-point.

For details about advanced tally, see "Setting Advanced Tally" (page 488).

Notes

- Cross-point delay is enabled only when cross-points are selected manually.
- Cross-point delay is enabled for re-entry signals if the re-entry contains an image with cross-point delay set. When cross-point delay is set for multiple images, the largest delay value is the one applied.

Enabling cross-point delay

1 In the Engineering Setup >Panel >Xpt Assign menu (7322), press [Xpt Delay].

The Xpt Delay menu (7322.14) appears.

2 In the status area, select the pair number of the target signal to set.

To select all of the pair numbers, press [ALL].
To select multiple pair numbers, set the number using the [Num] parameter. The specified number of pair numbers are selected from the currently selected pair number.

3 Press [Xpt Delay], turning it on.

4 Set the following parameter.

No.	Parameter	Adjustment
4	Xpt Delay	Delay (0 to 180) a)

a) The delay setting varies as follows, depending on the signal format.
3840×2160P, 1080P, 720P: Delay is the number of frames.
3840×2160PsF, 1080PsF: Only even-numbered settings are valid, and the delay is half the specified number of frames.
1080i: Delay is the number of fields.

AUX Bus Control Block Settings

Setting the AUX Bus Operation Mode

Assigning a bus to an AUX delegation button

You can assign a bus to the 1st row/2nd row delegation buttons of the AUX bus control block (AUX bus operation mode).

1 Open the Engineering Setup >Panel >Aux Assign menu (7323).

The left side of the status area shows the delegation button numbers and the assigned buses, and the right side shows a list of assignable buses.

2 Select the target button number to set.

3 Selects a bus to assign.

4 Press [Set].

To inhibit operation of buttons

Select the target button number to set, and press [Inhibit].

To set the [SHIFT] button operation

In the <Shift Mode> group, select one of the following.
Hold: The bus on the shifted state of the delegation button is enabled while pressing the [SHIFT] button.
Lock: Pressing the button toggles between the buses on the shifted and unshifted state of the delegation buttons.

Note

The [SHIFT] button operation mode is enabled only when second delegation mode is set.

Setting the Router Operation Mode

This sets the destination selection buttons, source selection buttons, and level selection buttons of the AUX bus control block (router operation mode).

Note

You configure the destination selection buttons, source selection buttons, and level selection buttons in the Router >Router Control >Router Control menu (5111).

Assigning a delegation button to a destination

You can assign destinations to the 1st row/2nd row delegation buttons of the AUX bus control block (router operation mode).

1 In the Engineering Setup >Panel >Aux Assign menu (7323), press [RTR Mode Setting].

The RTR Mode Setting menu (7323.1) appears. The left side of the status area shows the button numbers, destination names, and source table numbers. The right side of the status area shows a list of assignable destinations.

2 Select the target button number to set and the destination to assign.

To inhibit operation of buttons, press [Inhibit].

Note

When a button with number 65 to 128 is selected, the source table selection is automatically disabled, and the [Inhibit] setting is also disabled.

3 Press [Dest Set].

4 When a button with number 1 to 64 is selected in step **2**, select the source table.

No.	Parameter	Adjustment
3	Source Table	Source table number

5 Press [Source Table Set].

6 Repeat steps **2** to **5** as required.

To set the [SHIFT] button operation

In the <Dest Shift Mode> group, select one of the following.

Hold: The destination on the shifted state of the delegation button is enabled while pressing the [SHIFT] button.

Lock: Pressing the button toggles between the destinations on the shifted and unshifted state of the delegation buttons.

Note

The [SHIFT] button operation mode is enabled only when second delegation mode is set.

Setting the source table

You can assign sources to the 3rd row/4th row cross-point buttons of the AUX bus control block (router operation mode).

1 In the Engineering Setup >Panel >Aux Assign >RTR Mode Setting menu (7323.1), press [Source Table Assign].

The Source Table Assign menu (7323.2) appears.

2 In the <Source Table Select> group, select the target source table to set.

3 Press [Table Assign].

The Table Assign menu (7323.3) appears.

4 Select the target button number to set and the source to assign.

To inhibit operation of buttons, press [Inhibit].

5 Press [Source Set].

To set the [SHIFT] button operation

In the <Xpt Shift Mode> group of the Source Table Assign menu (7323.2), select one of the following.

Hold: The source on the shifted state of the cross-point button is enabled while pressing the [SHIFT] button.

Lock: Pressing the button toggles between the sources on the shifted and unshifted state of the cross-point buttons.

Off: Functions as a cross-point button, namely, button number 20 on a 20-button system, button number 28 on a 28-button system, and button number 36 on a 36-button system.

Note

The [SHIFT] button operation mode is enabled only when second delegation mode is set.

Assigning levels to level selection buttons

1 In the Engineering Setup >Panel >Aux Assign >RTR Mode Setting menu (7323.1), press [Level Button Assign].

The Level Button Assign menu (7323.4) appears.

2 In the <Level Button Select> group, select the target button to set.

3 In the <Level Assign> group, select the level to assign to the button.

You can select more than one level. You can also duplicate the selection on another button.

Selecting a destination selection button for a snapshot

You can set whether snapshots are recalled for each destination selection button.

1 In the Engineering Setup >Panel >Aux Assign >RTR Mode Setting menu (7323.1), select the target destination button number to set.

2 Press [SS Enable] to enable/disable the function.

To enable, press [SS Enable], turning it on. When a snapshot of the router is recalled, the destination selection buttons set the destination for the recall.

Note

When a destination selection button is set to Inhibit, the destination snapshot is not recalled.

Settings Relating to Button Assignment

The following functions can be assigned to the user preference buttons on the menu panel, the memory recall buttons on the utility/shotbox control block, and the cross-point buttons on the cross-point control block (utility/shotbox mode).

- Menu shortcut
- Utility command
- Macro register
- Shotbox register

Assigning Functions to User Preference Buttons

1 In the Engineering Setup >Panel >Prefs/Utility menu (7324), select the target button to set.

2 In the <Action> group, select the function to assign.

Menu Shortcut: Assign a frequently used menu to be recalled (menu shortcut).
Utility Command: Assign a function setting (utility command).
Macro Recall: Assign a macro register recall.
Shotbox Recall: Assign a shotbox register recall.

3 Perform the following operations, according to the selection in step **2**.

When [Menu Shortcut] is selected: When the user preference button on the menu panel is blinking, display the shortcut menu. Press the target user preference button to set to assign a menu shortcut. When finished, press [Menu Shortcut] again.
When [Utility Command] is selected: Select a command to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Command	Utility command selection
4 a)	GPI No	GPI number

a) For “DCU GPI Test Fire” only

When [Macro Recall] is selected: Select a macro register to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Macro	Macro register selection

When [Shotbox Recall] is selected: Select a shotbox register to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Shotbox	Shotbox register selection

4 Press [Action Set].

When [Menu Shortcut] is selected in step **2**, it is not necessary to press [Action Set].

To release the assignment

Select the target button to release, then press [Clear].

To display the register name in the status area list

When [Macro Recall] or [Shotbox Recall] is selected, you can change the register number display to the register name.
To display the register name, press [Reg Name Display], turning it on.

Using the [PREFS 9] to [PREFS 16] settings

There are sixteen user preference buttons that can be set ([PREFS 1] to [PREFS 16]), but only eight user preference buttons ([PREFS 1] to [PREFS 8]) can be assigned in the menu panel by default.
To use the settings of [PREFS 9] to [PREFS 16], open the Engineering Setup >Panel >Config >Link/Program Button >Menu Panel menu (7321.19), and assign the [PREFS 9] to [PREFS 16] buttons to the menu panel.

List of utility commands and user preference button states

The following table lists the utility commands that can be assigned to user preference buttons.

Command name	Function	Button state	
		Lit amber	Off
PP PGM1 ST [a)] | PP PGM4 ST [a)]	P/P program output safe title enable/disable	Enabled	Disabled
PP PVW ST [a)]	P/P preview output safe title enable/disable	Enabled	Disabled
PP CLEAN ST [a)]	P/P clean output safe title enable/disable	Enabled	Disabled
PP K-PVW1 ST [a)]	P/P key preview output safe title enable/disable	Enabled	Disabled
MEx PGM1 ST [a)] | MEx PGM4 ST [a)]	M/E-x program output safe title enable/disable x = 1 to 5	Enabled	Disabled
MEx PVW ST [a)]	M/E-x preview output safe title enable/disable x = 1 to 5	Enabled	Disabled
MEx CLEAN ST [a)]	M/E-x clean output safe title enable/disable x = 1 to 5	Enabled	Disabled
MEx K-PVW1 ST [a)]	M/E-x key preview output safe title enable/disable x = 1 to 5	Enabled	Disabled
Edit Preview ST [a)]	Edit preview output safe title enable/disable	Enabled	Disabled
Preset ST [a)]	Preset output safe title enable/disable	Enabled	Disabled
DME Monitor Video ST [a)]	DME Monitor Video output safe title enable/disable	Enabled	Disabled
DME Monitor Key ST [a)]	DME Monitor Key output safe title enable/disable	Enabled	Disabled
Aux1 ST [a)] | Aux48 ST [a)]	AUX1 output safe title enable/disable | AUX48 output safe title enable/disable	Enabled	Disabled
DCU GPI1 Test Fire | DCU GPI50 Test Fire	Output test trigger from port assigned to DCU GPI1 | Output test trigger from port assigned to DCU GPI50	Output (lit only at the instant the button is pressed)	Output assigned
Macro Attachment Enbl	Macro attachment enable/disable	Enabled	Disabled
Macro AT with Rate	Mode enable/disable for storing transition rate when registering an auto transition macro event on the transition control block or transition control block (simple type)	Enabled	Disabled
Macro AT with A/B Bus	Mode enable/disable for storing A/B bus cross-points when registering an auto transition macro event on the transition control block or transition control block (simple type)	Enabled	Disabled
Macro TL with Region	Mode enable/disable for saving target regions when registering a timeline macro event	Enabled	Disabled
Pre Macro	Sets macro attachment in pre macro mode.	Can be set only while pressed (lit)	Function assigned
Post Macro	Sets macro attachment in post macro mode.	Can be set only while pressed (lit)	Function assigned
Macro Take	Resume macro execution	Pause during execution	• Executing • Function assigned
Macro All Take	Resume all paused macros in multi mode	Pause during execution	• Executing • Function assigned

Command name	Function	Button state	
		Lit amber	Off
Macro Auto Ins	Macro auto insert mode enable/disable	Enabled	Disabled
Macro Cancel	Stop macro execution	Stop execution (lit only at the instant the button is pressed)	Function assigned
Macro All Cancel	Stop all simultaneous executing macros in multi mode	Stop execution (lit only at the instant the button is pressed)	Function assigned
DME Override	DME override enable/disable	Enabled	Disabled
DME Graphic	DME graphics enable/disable (applies to graphics for channel selected in device control block)	Enabled	Disabled
1st Key Fader Inhibit [b]	Key fader control block module 1 operation inhibit enable/disable	Enabled	Disabled
2nd Key Fader Inhibit [b]	Key fader control block module 2 operation inhibit enable/disable	Enabled	Disabled
3rd Key Fader Inhibit [b]	Key fader control block module 3 operation inhibit enable/disable	Enabled	Disabled
4th Key Fader Inhibit [b]	Key fader control block module 4 operation inhibit enable/disable	Enabled	Disabled
FTB	Fade-to-black execution	• Executing • Lit red when execution completed (image in black state)	Function assigned
AUTO PVW	Auto preview	Output on the edit preview bus	Function assigned
PRESET PVW	Preset preview	Output on the edit preview bus	Function assigned
P/P PVW	P/P preview output	Output on the edit preview bus	Function assigned
M/Ex PVW	M/E-x preview output x = 1 to 5	Output on the edit preview bus	Function assigned
P/P KPVW1	P/P key preview 1 output	Output on the edit preview bus	Function assigned
M/Ex KPVW1	M/E-x key preview 1 output x = 1 to 5	Output on the edit preview bus	Function assigned
P/P KPVW2	P/P key preview 2 output	Output on the edit preview bus	Function assigned
M/Ex KPVW2	M/E-x key preview 2 output x = 1 to 5	Output on the edit preview bus	Function assigned
1st Key Ctrl Module Inhibit [b]	Key control block module 1 operation inhibit enable/disable	Enabled	Disabled
2nd Key Ctrl Module Inhibit [b]	Key control block module 2 operation inhibit enable/disable	Enabled	Disabled
3rd Key Ctrl Module Inhibit [b]	Key control block module 3 operation inhibit enable/disable	Enabled	Disabled
4th Key Ctrl Module Inhibit [b]	Key control block module 4 operation inhibit enable/disable	Enabled	Disabled
Web UI Enable [b]	Operation from Virtual Shot Box, Virtual Menu, and Virtual Panel enable/disable	Enabled	Disabled
Region Simul Enable [b]	Region Simul mode enable/disable	Enabled	Disabled

a) The safe title enable/disable commands display the name of the signal assigned to the output.

b) Cannot be assigned to the cross-point buttons of the cross-point control block.

Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block

1 In the Engineering Setup >Panel >Prefs/Utility menu (7324), press [Utility Module Assign].

The Utility Module Assign menu (7324.1) appears.

2 Select the target button to set.

No.	Parameter	Adjustment
1	Bank	Bank selection
2	Button No	Memory recall button selection

3 In the <Action> group, select the function to assign.

Menu Shortcut: Assign a frequently used menu to be recalled (menu shortcut).
Utility Command: Assign a function setting (utility command).
Macro Recall: Assign a macro register recall.
Shotbox Recall: Assign a shotbox register recall.

4 Perform the following operations, according to the selection in step **3**.

When [Menu Shortcut] is selected: When the memory recall button on the utility/shotbox control block is blinking, display the shortcut menu. Press the target memory recall button to set to assign a shortcut. When finished, press [Menu Shortcut] again.
When [Utility Command] is selected: Select a command to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Command	Utility command selection
4 a)	GPI No	GPI number

a) For "DCU GPI Test Fire" only

When [Macro Recall] is selected: Select a macro register to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Macro	Macro register selection

When [Shotbox Recall] is selected: Select a shotbox register to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Shotbox	Shotbox register selection

5 Press [Action Set].

When [Menu Shortcut] is selected in step **3**, it is not necessary to press [Action Set].

To release the assignment

Select the target button to release, then press [Clear].

To display the register name in the status area list

When [Macro Recall] or [Shotbox Recall] is selected, you can change the register number display to the register name.
To display the register name, press [Reg Name Display], turning it on.

List of utility commands and memory recall button states

The following table lists the utility commands that can be assigned to memory recall buttons.

Command name	Function	Button state	
		Lit orange	Lit dark blue
PP PGM1 ST [a)] | PP PGM4 ST [a)]	P/P program output safe title enable/disable	Enabled	Disabled
PP PVW ST [a)]	P/P preview output safe title enable/disable	Enabled	Disabled
PP CLEAN ST [a)]	P/P clean output safe title enable/disable	Enabled	Disabled
PP K-PVW1 ST [a)]	P/P key preview output safe title enable/disable	Enabled	Disabled
MEx PGM1 ST [a)] | MEx PGM4 ST [a)]	M/E-x program output safe title enable/disable x = 1 to 5	Enabled	Disabled
MEx PVW ST [a)]	M/E-x preview output safe title enable/disable x = 1 to 5	Enabled	Disabled
MEx CLEAN ST [a)]	M/E-x clean output safe title enable/disable x = 1 to 5	Enabled	Disabled
MEx K-PVW1 ST [a)]	M/E-x key preview output safe title enable/disable x = 1 to 5	Enabled	Disabled
Edit Preview ST [a)]	Edit preview output safe title enable/disable	Enabled	Disabled
Preset ST [a)]	Preset output safe title enable/disable	Enabled	Disabled
DME Monitor Video ST [a)]	DME Monitor Video output safe title enable/disable	Enabled	Disabled
DME Monitor Key ST [a)]	DME Monitor Key output safe title enable/disable	Enabled	Disabled
Aux1 ST [a)] | Aux48 ST [a)]	AUX1 output safe title enable/disable | AUX48 output safe title enable/disable	Enabled	Disabled
DCU GPI1 Test Fire | DCU GPI50 Test Fire	Output test trigger from port assigned to DCU GPI1 | Output test trigger from port assigned to DCU GPI50	Output (lit light purple only at the instant the button is pressed)	Output assigned (lit purple)
Macro Attachment Enbl	Macro attachment enable/disable	Enabled	Disabled
Macro AT with Rate	Mode enable/disable for storing transition rate when registering an auto transition macro event on the transition control block or transition control block (simple type)	Enabled	Disabled
Macro AT with A/B Bus	Mode enable/disable for storing A/B bus cross-points when registering an auto transition macro event on the transition control block or transition control block (simple type)	Enabled	Disabled
Macro TL with Region	Mode enable/disable for saving target regions when registering a timeline macro event	Enabled	Disabled
Pre Macro	Sets macro attachment in pre macro mode.	Can be set only while pressed (lit)	Function assigned
Post Macro	Sets macro attachment in post macro mode.	Can be set only while pressed (lit)	Function assigned
Macro Take	Resume macro execution	Pause during execution (lit purple)	• Executing (lit light purple) • Function assigned (gray characters on black background)

Command name	Function	Button state	
		Lit orange	Lit dark blue
Macro All Take	Resume all paused macros in multi mode	Pause during execution (lit purple)	• Executing (lit light purple) • Function assigned (gray characters on black background)
Macro Auto Ins	Macro auto insert mode enable/disable	Enabled	Disabled
Macro Cancel	Stop macro execution	Stop execution (lit light purple only at the instant the button is pressed)	Function assigned (lit purple)
Macro All Cancel	Stop all simultaneous executing macros in multi mode	Stop execution (lit light purple only at the instant the button is pressed)	Function assigned (lit purple)
DME Override	DME override enable/disable	Enabled	Disabled
DME Graphic	DME graphics enable/disable (applies to graphics for channel selected in device control block)	Enabled	Disabled
FTB	Fade-to-black execution	• Executing (lit light purple) • Lit red when execution completed (image in black state)	Function assigned (lit purple)
AUTO PVW	Auto preview	Output on the edit preview bus	Function assigned
PRESET PVW	Preset preview	Output on the edit preview bus	Function assigned
P/P PVW	P/P preview output	Output on the edit preview bus	Function assigned
M/Ex PVW	M/E-x preview output x = 1 to 5	Output on the edit preview bus	Function assigned
P/P KPVW1	P/P key preview 1 output	Output on the edit preview bus	Function assigned
M/Ex KPVW1	M/E-x key preview 1 output x = 1 to 5	Output on the edit preview bus	Function assigned
P/P KPVW2	P/P key preview 2 output	Output on the edit preview bus	Function assigned
M/Ex KPVW2	M/E-x key preview 2 output x = 1 to 5	Output on the edit preview bus	Function assigned

a) The safe title enable/disable commands display the name of the signal assigned to the output.

Setting names to display in memory recall buttons

You can set the display of names on buttons when menu shortcuts or utility commands are assigned to the memory recall buttons.

Note

When a macro register is assigned, the names specified in the Macro menu are displayed on the memory recall buttons. When a shotbox register is assigned, the names specified in the Shotbox menu are displayed on the memory recall buttons.

1 In the Engineering Setup >Panel >Prefs/Utility >Utility Module Assign menu (7324.1), select the target button to set.

2 Press [Name].

3 Enter a name of up to 8 characters in the keyboard window, and press [Enter].

Setting the transition rate target to display on memory recall buttons

This sets the memory recall button assignments in transition rate display mode.

1 In the Engineering Setup >Panel >Prefs/Utility >Utility Module Assign menu (7324.1), press [Trans Rate Mode Assign].

The Trans Rate Mode Assign menu (7324.3) appears.

2 Select the target button to set.

3 Select the transition rate to assign.

4 Press [Set].

To release the assignment

Select the target button to release, then press [Clear].

Assigning Functions to Cross-Point Buttons of the Cross-Point Control Block

You can assign functions to the cross-point buttons of the cross-point control block (utility/shotbox mode).

1 In the Engineering Setup >Panel >Prefs/Utility menu (7324), press [Xpt Module Assign].

The Xpt Module Assign menu (7324.2) appears.

2 Select the target button to set.

No.	Parameter	Adjustment
1	Bank	Bank selection
2	Button No	Button selection

3 In the <Action> group, select the function to assign.

Menu Shortcut: Assign a frequently used menu to be recalled (menu shortcut).
Utility Command: Assign a function setting (utility command).
Macro Recall: Assign a macro register recall.
Shotbox Recall: Assign a shotbox register recall.

4 Perform the following operations, according to the selection in step **3**.

When [Menu Shortcut] is selected: When a cross-point button on the cross-point control block is blinking, display the shortcut menu. Press the target button to set to assign a shortcut. When finished, press [Menu Shortcut] again.

When [Utility Command] is selected: Select a command to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Command	Utility command selection
4 a)	GPI No	GPI number

a) For "DCU GPI Test Fire" only

When [Macro Recall] is selected: Select a macro register to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Macro	Macro register selection

When [Shotbox Recall] is selected: Select a shotbox register to assign in the list on the right side of the status area.

No.	Parameter	Adjustment
3	Shotbox	Shotbox register selection

5 Press [Action Set].

When [Menu Shortcut] is selected in step **3**, it is not necessary to press [Action Set].

To release the assignment

Select the target button to release, then press [Clear].

To display the register name in the status area list

When [Macro Recall] or [Shotbox Recall] is selected, you can change the register number display to the register name.
To display the register name, press [Reg Name Display], turning it on.

For details about utility commands that can be assigned to cross-point buttons, see *"List of utility commands and user preference button states" (page 421)*.

Settings names to show on the display

You can set the names to display when menu shortcuts or utility commands are assigned to cross-point buttons.

Note

When a macro register is assigned, the names specified in the Macro menu are displayed on the display. When a shotbox register is assigned, the names specified in the Shotbox menu are displayed on the display.

1 In the Engineering Setup >Panel >Prefs/Utility >Xpt Module Assign menu (7324.2), select the target button to set.

2 Press [Name].

3 Enter a name of up to 8 characters in the keyboard window, and press [Enter].

Settings Relating to Device Connections

Setting the Control Mode for P-Bus Devices

In the <P-Bus Control> group of the Engineering Setup >Panel >Device Interface menu (7325), select the protocol mode.

Trigger: When a predetermined button is pressed, the action command assigned to that button is output to control an external device.

Timeline: The external device is controlled as a keyframe effect controlled by the control panel.

Assigning the Target Port to a Channel Selection Button

You can assign an SIU serial port or a network port to the channel selection buttons (CH1 to CH12).
This allows you to operate a device connected to the port using the specified channel selection button.

For details about port settings, see "Configuring the Connection Port of External Devices" (page 478).

1 In the Engineering Setup >Panel >Device Interface menu (7325), press [Device Assign].

The Device Assign menu (7325.4) appears.

2 In the status area, select the target port to set.

3 In the <Assign> group, select the button (DEV CH1 to DEV CH12) to which to assign the port.

[DEV CH1] to [DEV CH12] correspond to the [CH1] to [CH12] channel selection buttons on the device control block.

Notes

- It is not possible to assign the same port to more than one button. The most recently set button is enabled.
- A port configured with a P-Bus compatible device cannot be assigned to a button.

4 Repeat steps **2** and **3** as required to set other ports.

Configuring file list sharing

You can configure sharing of the same file list, for example, when the same device is connected to more than one port.

Note

Only ports to which a disk recorder (video disk communications protocol, Odetics protocol) or Extended VTR has been assigned are enabled.

1 In the Engineering Setup >Panel >Device Interface >Device Assign menu (7325.4), select the target port to set.

2 Select the device (DEV CH1 to DEV CH12) for sharing the file list.

No.	Parameter	Adjustment
2	File List	Device

3 Press [Same File List Set].

4 Repeat steps **1** to **3** as required to select other devices for sharing the file list.

Setting the AUX Bus Override Operation Mode

Set the operation mode when the trigger type is “Rising Edge” or “Falling Edge,” and “Aux ? O’ride Src ??” is selected as the GPI input action.

In the <Aux Bus Override Mode> group of the Engineering Setup >Panel >Device Interface menu (7325), select one of the following.

Momentary: On an input pulse rising (falling) edge, the input of the selected AUX bus is used, and on a falling (rising) edge it returns to the original cross-point.

Latch: On an input pulse rising (falling) edge, the input of the selected AUX bus is used, and it does not return to the original cross-point even on a falling (rising) edge.

This setting is enabled when AUX bus override is selected as the SIU (DCU function) GPI input *(see page 474)*.

Settings Relating to Operation

Setting the On-Air Tally

This sets the high tally state reflected on the control panel.

1 In the Engineering Setup >Panel >Operation menu (7326), press [Button Tally].

The Button Tally menu (7326.9) appears.

2 In the <Tally Type> group, select one of the following.

[R1] to [R8]: Reflect the tally state of the tally groups 1 to 8.
Independ: Reflect the tally state of the switcher only.

3 Press [Execute].

Setting the Transition Rate Display Mode

This sets the transition rate display mode to the number of frames or to a timecode.

In the <Trans Rate Display> group of the Engineering Setup >Panel >Operation menu (7326), select one of the following.
Frame: Display as number of frames.
Timecode: Display as timecode (SS:FF).

Setting the Main Fader Lever

This sets which of the fader levers is the main lever for operation on the background A bus when using split faders.
If the conditions for using split faders are not satisfied, only the main fader lever can be operated.

In the <Main Split Fader> group of the Engineering Setup >Panel >Operation menu (7326), select one of the following.
Left: Set the left fader lever as the main fader lever.
Right: Set the right fader lever as the main fader lever.

Configuring Settings Relating to Effects

Setting functions used in keyframe effect operations

In the Engineering Setup >Panel >Operation menu (7326), press [Effect Mode] to open the Effect Mode menu (7326.2).
Configure each function, as required.

Setting the first keyframe state when recalling an effect

In the <Recall Mode> group, select one of the following.
Recall: The first keyframe is not reproduced.
Recall&Rewind: The first keyframe is reproduced.

Disabling the [EDIT ENBL] button when recalling an effect

Press [Edit Enable Auto Off], turning it on.
If an effect is recalled when the [EDIT ENBL] button is lit, the [EDIT ENBL] button is automatically disabled.

Inserting the first keyframe automatically

Press [1st KF Auto Insert], turning it on.
When an empty register is recalled, the state at that point is automatically inserted as the first keyframe.

Setting the operation mode when the [RUN] button is pressed during keyframe effect execution

In the <Run> group, select one of the following.
Continue: Continue the effect.
Cancel: Cancel the effect, and return to the previous state.

Setting auto save for an effect

Press [Effect Auto Save], turning it on.
When an effect is recalled after effect editing, the edited effect is automatically saved.

Setting the default value of keyframe duration

Press [Default KF Duration], then enter the default value using the numeric keypad window.

Setting the first keyframe when rewind is executed

For P-Bus, GPI, DDR/VTR, and macro timeline operations, you can set to execute the first keyframe when rewind is executed.

Note

When enabled and an effect is executed by pressing the [RUN] button, the first keyframe action is not executed.

In the <Rewind&1st KF> group of the Engineering Setup >Panel >Operation >Effect Mode menu (7326.2), select the target to set.
GPI: GPI timeline
P-Bus: P-Bus timeline
DDR/VTR: VTR/disk recorder timeline
Macro: Macro timeline

Setting Source Names and Destination Names

You set the source and destination names to use in the control panel.

Note

It is necessary to set the group number of the S-Bus description name or NS-Bus alias name beforehand *(see page 485)*.

1 In the <Source/Dest Name> group of the Engineering Setup >Panel >Operation menu (7326), select the name to use.

Sw'er Local: Source name set on the switcher, and fixed bus name
S-Bus Descript: Description name set in the router (S-Bus only)
S-Bus Type+Num: Type+Num name set in the router (S-Bus only)
NS-Bus Alias: Alias name set in the system controller (NS-Bus only)

2 In the <Name Display Mode> group, select the display method.

Auto: Four characters per line, up to four lines
2 Characters: First two characters displayed on one line
4 Characters: First four characters displayed on one line

Notes

- When [S-Bus Type+Num] is selected in step **1**, the first eight characters are displayed on two lines. The display method cannot be set.
- Line breaks in names are valid only when [Auto] is selected.
- Up to two lines are displayed when the display mode *(see page 436)* is set to split display.

Enabling the description name/alias name link function

When the link function is enabled, you can replace a source name set on the switcher with an S-Bus description

name set on the router or an NS-Bus alias name set on the system controller.
The source name is updated each time the description name/alias name is updated. This allows you to always use the same name between the router/system controller and the switcher.
The S-Bus description name/NS-Bus alias name is reflected in the source name setting in the Xpt Assign menu, hence the name set on the router/system controller is also displayed when [Sw'er Local] is selected in the <Source/Dest Name> group.

To enable the link function for S-Bus

In the Engineering Setup >Panel >Operation menu (7326), press [S-Bus Name Link], turning it on.

To enable the link function for NS-Bus

In the Engineering Setup >Panel >Operation menu (7326), press [NS-Bus Name Link], check the message, then press [Yes].

Note

When [NS-Bus Name Link] is enabled, the settings of all source names for the switcher (including wiring traceback), not just in the Xpt Assign menu, are always replaced by the NS-Bus alias name.

Setting Flexi Pad Control Block Button Display and Operation

In the Engineering Setup >Panel >Operation menu (7326), press [Flexi Pad Mode] to open the Flexi Pad Mode menu (7326.3).
Configure each function, as required.

Linking the transition type selection with the Flexi Pad control block operation mode

Press [Wipe/DME Auto Deleg], turning it on.
This switches the operation mode of the Flexi Pad control block in sync with the selection of the [WIPE] button or [DME WIPE] button on the transition control block.

Setting the memory recall button display in wipe snapshot operation mode and DME wipe snapshot operation mode

In the <Wipe/DME Display> group, select one of the following.
Pattern: Pattern image display
Register Name: Register name display

Setting the memory recall button display in snapshot operation mode and effect operation mode

In the <Snapshot/Effect Display> group, select one of the following.
Register No.: Register number display
Register Name: Register name display

Assigning a register to bottom left button of bank 0

In the <Bank 0 Register Assign> group, select one of the following.
Register Assign: Assign a register. Select the register number using the following parameter.

No.	Parameter	Adjustment
1	Register No.	Register number a)

a) 1 to 99 configurable only

Register No Assign: Disable register assignment.

Note

The bottom left button of bank 0 cannot be selected in the Misc >Snapshot menu on each switcher bank.

Setting the Button and Fader Lever Operation Mode

In the Engineering Setup >Panel >Operation menu (7326), press [Custom Button/Fader] to open the Custom Button/Fader menu (7326.4).
Configure each function, as required.

Setting the double-press operation mode of the [BKGD] button in the transition control block

In the <Bkgd Trans Btn Double Clk> group, select one of the following.
Disable: Double-pressing of the [BKGD] button is disabled.
Enable: When the [BKGD] button is pressed twice in quick succession, all currently inserted keys are selected and removed by the next transition.

Setting the operation mode when the [FTB] button is pressed during fade-to-black

In the <FTB> group, select one of the following.
Continue: Continue the fade-to-black.
Cancel: Cancel the fade-to-black, and return to the previous state.

Setting the operation mode when the [AUTO TRANS] button or [TAKE] button is pressed during an auto transition

In the <Auto Trans/Take> group, select one of the following.
Continue: Continue the auto transition.
Cancel: Cancel the auto transition, and return to the previous state.

Setting the transition indicator display in non-sync state

In the <Non Sync Fader Indicator> group, select one of the following.

Normal: The transition indicator is lit when in non-sync state.
Blink: The transition indicator is blinking when in non-sync state.

Setting the button display state when executing an auto transition using the [AUTO TRANS] button

In the <Auto Trans/Take Key On Stats> group, select one of the following.
Disable: Lit amber during transition execution, and goes off at the end of the transition.
Enable: Lit green during transition execution, and at the end of the transition it is lit red if on-air or lit amber if not on-air.

Note

Enable using the [AUTO TRANS] button in the independent key transition execution section on the transition control block, independent key transition control block, or key fader control block.

Setting the [TRANS PVW] button operation mode

In the <Trans Pvw> group, select one of the following.
Hold: Enables transition preview mode only while the [TRANS PVW] button is pressed.
Lock: Pressing the [TRANS PVW] button switches between transition preview mode and normal mode each time the button is pressed.
The one-time mode setting is set in the Engineering Setup >Switcher >Transition menu (7334) *(see page 467)*.

Setting the [KEY] button operation mode when a key source bus is selected

In the <Key Source Bus Select Mode> group, select one of the following.
Key: The [KEY] button is always lit, and only key signals are selected using the cross-point buttons.
Video & Key: Enables key signals or video signals to be selected using cross-point buttons, according to the [KEY] button operation.

For details about the [KEY] button operation, see "To select a video signal assigned to a cross-point button" (page 112).

Setting the [UTIL] button operation mode

In the <Util Button> group, select one of the following.
Hold: Enables utility bus mode only while the [UTIL] button is pressed.
Lock: Pressing the [UTIL] button switches between utility bus mode and normal mode each time the button is pressed.

Exchanging the [AUTO TRANS] button and [CUT] button in the transition control block

Press [Auto Trans/Cut Swap], turning it on.

Setting the Operation Mode of the [ALL] Button in the Transition Control Block

This sets the next transition selected by the [ALL] button in the transition control block.

1. In the Engineering Setup >Panel >Operation >Custom Button/Fader menu (7326.4), press [Next Trans All].

   The Next Trans All menu (7326.11) appears.

2. In the <Next Trans All> group, select the button for the next transition.

   Note

   If all next transition buttons are disabled, the next transition cannot be set even if the [ALL] button is pressed.

Setting Device Control Block Button and Trackball Operation

In the Engineering Setup >Panel >Operation menu (7326), press [Sensitivity] to open the Sensitivity menu (7326.5). Configure each function, as required.

Setting the trackball and Z-ring sensitivity in normal mode

In the <Trackball Normal Mode> group, select one of the following.
×1: Standard (default travel speed)
×2: Move at 2× speed.
×4: Move at 4× speed.

Note

This setting is disabled in the following operation modes.
- Keyframe operation mode
- VTR/disk recorder/frame memory operation mode

Setting the trackball and Z-ring sensitivity in fine mode

In the <Trackball Fine Mode> group, select one of the following.
1/2: Move at 1/2 speed
1/4: Move at 1/4 speed
1/8: Move at 1/8 speed

Note

This setting is disabled in the following operation modes.
- Keyframe operation mode
- VTR/disk recorder/frame memory operation mode

Setting the sensitivity when recalling a menu using button double-press

In the <Double Click> group, select one of the following.
Fast: High speed
Normal: Normal
Slow: Low speed

Setting the Macro Operation Mode

In the Engineering Setup >Panel >Operation menu (7326), press [Macro] to open the Macro menu (7326.6).
Configure each function, as required.

Setting the macro execution mode

In the <Macro Execution Mode> group, select one of the following.
Normal: Set normal execution mode.
Step: Set step execution mode.

Enabling simultaneous multiple macro execution

Press [Macro Multi Mode], turning it on.
Macro multi mode is enabled.

Setting button actions when configuring macro attachments

In the <Attachment Setting Mode> group, select one of the following.
With Btn Function: Simultaneously execute button function.
W/o Btn Function: Do not execute button function.

Setting the action during macro execution or when a macro is paused if the same macro is recalled

In the <Macro 2nd Recall Mode> group, select one of the following.
Continue: If the macro is recalled by operation of the same button that executed a macro attachment, resume execution of a paused macro or continue execution of an executing macro as-is. If the macro is recalled by any method other than a macro attachment, execution starts from the first event.
Cancel: Stop the executing macro or paused macro.

Setting the action during macro execution or when a macro is paused if another macro is recalled

In the <Macro Recall Override> group, select one of the following.
Disable: Ignore the other macro recall.
Enable: Stop the executing macro or paused macro, and execute the other macro.

Note

When multi mode is enabled and macros are recalled using buttons for which simultaneous execution is supported, the settings in the <Macro Recall Override> group are disabled. Other macros are also executed simultaneously.

Setting the enable/disable macro attachment configuration mode

In the <Macro Attach Enable Setting Mode> group, select one of the following.
Manual: Enable/disable using the [MACRO ATTACH ENABLE] button on the cross-point pad of the cross-point control block or the button assigned with the "Macro Attachment Enbl" utility command.
Enable: Always enable macro attachments.
Disable: Always disable macro attachments.

Setting cross-point buttons with a macro attachment to be lit continuously

Press [Attchd Btn Indication], turning it on.
When macro attachments for the cross-point control block are enabled, cross-point buttons with a macro attachment are always lit green.

Setting the Operation Mode of the Cross-Point Control Block Button Rows

1 In the Engineering Setup >Panel >Operation menu (7326), press [Xpt Module Operation].

The Xpt Module Operation menu (7326.12) appears.

2 In the <Bank Select> group, select the target bank to set.

3 In the <Row Mode> group, select one of the following.

Key Bus: Use the 1st row and 2nd row as cross-point button rows for the bus/function selected by a delegation button on the cross-point pad (key bus mode).
Use the 3rd row as a cross-point button row for background A bus, and the 4th row for background B bus.
Free Assign: Use the 1st row to 4th row as cross-point button rows for the bus/function selected by a delegation button on the cross-point pad (free assign mode).
Key Deleg/AUX: Use the 1st row as a delegation button row, and the 2nd row as a cross-point button row for the bus/function selected by a 1st row button (key/AUX bus delegation mode).
Use the 3rd row as a cross-point button row for background A bus, and the 4th row for background B bus.

Assigning a bus/function to a 1st row delegation button

You can set delegation buttons in key/AUX bus delegation mode.

1 In the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Key Deleg/AUX Assign].

The Key Deleg/AUX Assign menu (7326.13) appears. The left side of the status area shows the 1st row button numbers and the assigned buses/function names, and the right side shows a list of assignable buses/function names.

2 In the <Bank Select> group, select the target bank to set.

3 Select the target button number to set.

4 Select a bus/function to assign.

5 Press [Set].

Setting Button and Indicator Status on the Cross-Point Control Block/ AUX Bus Control Block

Setting the color of cross-point buttons

This sets the color of the 3rd row/4th row cross-point buttons.

1 In the Engineering Setup >Panel >Operation menu (7326), press [Xpt Module Operation].

The Xpt Module Operation menu (7326.12) appears.

2 In the <Bank Select> group, select the target bank to set.

3 In the <Xpt Button Color> group, select one of the following.

Source Color: Lit using the color set in the Engineering Setup >Panel >Xpt Assign >Src Name/Src Color menu (7322.6).
White: Lit white.

Setting cross-point indicators

You can disable the cross-point indicators so that they do not turn on.

1 In the Engineering Setup >Panel >Operation menu (7326), press [Xpt Module Operation].

The Xpt Module Operation menu (7326.12) appears.

2 In the <Bank Select> group, select the target bank to set.

3 Press [Xpt Indicator], turning it off.

To enable the cross-point indicators so that they do turn on, press [Xpt Indicator] again, turning it on.

Configuring the Cross-Point Pad

Assigning a function to a cross-point pad button

1 In the <Xpt Pad> group of the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Xpt Pad Btn Assign].

The Xpt Pad Btn Assign menu (7326.14) appears. The left side of the status area shows the cross-point pad buttons. The upper right side shows the currently selected page number and name, and the lower right side shows a list of assignable functions.

2 In the <Bank Select> group, select the target bank to set.

3 Select the target page to set.

No.	Parameter	Adjustment
1	Page	Page selection

4 Press the target button to make an assignment.

5 In the list on the right, select the function to assign.

Set the numerical value of the "?" part of the function name using the following parameters.

No.	Parameter	Adjustment
3	Row	Button row selection

No.	Parameter	Adjustment
4 a)	Key	Key selection
	Aux	AUX bus selection
	DME	DME channel selection
	Util/Sbox	Utility/shotbox bank selection
	Macro	Macro register selection
	Mode	Display mode selection
	Level Button	Level selection button selection
	Table	Cross-point assign table selection

a) The parameters will vary depending on the selected function name.

6 Press [Set].

To release the assignment

Select the target button to release, then press [Clear].

To return button assignments to the defaults

Press [Default Recall], check the message, then press [Yes].
The button assignments on all pages (1 to 14), including the Jump Page Assign menu (7326.17) settings, are returned to the defaults.

To rename a page

1 Select the target page number to set, and press [Page Name].

2 Enter a name of up to 12 characters in the keyboard window, and press [Enter].

Note

Lower case characters may be entered, but the entered characters are displayed as upper case characters on the buttons in the cross-point pad.

About re-entry button assignment

The following re-entry buttons can be assigned to buttons on the cross-point pad.

- ROW-n P/P OUT1, ROW-n M/E-1 OUT1 to ROW-n M/E-5 OUT1 (n = 1 to 4)
- ROW-n P/P OUT6, ROW-n M/E-1 OUT6 to ROW-n M/E-5 OUT6 (n = 1 to 4)

The button numbers and video/key pair numbers of re-entry buttons is fixed to the following.

Button name (n = 1 to 4)	Button number	V/K pair number	V default setting	K default setting
ROW-n P/P OUT1	284	211	P/P OUT1	P/P OUT1
ROW-n M/E-1 OUT1	281	221	M/E-1 OUT1	M/E-1 OUT1
ROW-n M/E-2 OUT1	282	231	M/E-2 OUT1	M/E-2 OUT1
ROW-n M/E-3 OUT1	283	241	M/E-3 OUT1	M/E-3 OUT1
ROW-n M/E-4 OUT1	285	251	M/E-4 OUT1	M/E-4 OUT1
ROW-n M/E-5 OUT1	286	261	M/E-5 OUT1	M/E-5 OUT1
ROW-n P/P OUT6	294	216	P/P OUT6	P/P OUT6
ROW-n M/E-1 OUT6	291	226	M/E-1 OUT6	M/E-1 OUT6
ROW-n M/E-2 OUT6	292	236	M/E-2 OUT6	M/E-2 OUT6
ROW-n M/E-3 OUT6	293	246	M/E-3 OUT6	M/E-3 OUT6
ROW-n M/E-4 OUT6	295	256	M/E-4 OUT6	M/E-4 OUT6
ROW-n M/E-5 OUT6	296	266	M/E-5 OUT6	M/E-5 OUT6

The re-entry video/key numbers are set as the pair numbers by default. Use the defaults as-is, since changing the settings will make it impossible to select the correct signals.

Setting the HOME page of the cross-point pad

This sets the page that is displayed when the [HOME] button on the cross-point pad is pressed.

1 In the <Bank Select> group of the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), select the target bank to set.

2 In the <Xpt Pad> group, press [Home Page Set].

3 Enter the page number to set (1 to 14) using the numeric keypad window, then press [Enter].

Setting the page recall function on the cross-point pad

You can set to display a specific page when a button on the cross-point pad is pressed.
A frame is shown in the button name display for buttons with a page recall function.

1 In the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Jump Page Assign] in the <Xpt Pad> group.

The Jump Page Assign menu (7326.17) appears.

The left side of the status area shows the cross-point pad buttons. The upper right side shows the currently selected page number and name, and the lower right side shows a list of pages.

2 In the <Bank Select> group, select the target bank to set.

3 Select the target page to set.

No.	Parameter	Adjustment
1	Page	Page selection

4 Press the target button display to set.

5 In the list on the right, select the page to display.

6 Press [Set].

The page selected in the list on the right is set, and the page number and name are displayed in orange.

To check the page recall function settings

Press [Button Assign] or [Jump Page Assign] to change the button display.
Pressing [Button Assign] displays the names of functions assigned to the buttons. Buttons set with a page recall function display the function name in orange. Pressing [Jump Page Assign] displays the specified page number and page name.

To release the setting

Select the target button to release, then press [Clear].

To return button assignments to the defaults

Press [Default Recall], check the message, then press [Yes].
The button assignments on all pages (1 to 14), including the Xpt Pad Btn Assign menu (7326.14) settings, are returned to the defaults.

To rename a page

The operation is the same as for the Xpt Pad Btn Assign menu (7326.14) *(see page 434)*.

Copying Cross-Point Pad Settings

You can copy cross-point pad settings on cross-point control blocks/AUX bus control blocks.

Copying by cross-point pad

You can copy the following cross-point pad settings between cross-point control blocks/AUX bus control blocks.
- Assignments of all page buttons
- HOME page settings
- Page recall function settings
- Display mode settings *(see page 436)*
- Utility bus mode settings (cross-point control block only) *(see page 436)*

Copying by page

You can copy the following settings between pages in the cross-point pad.
- Assignments of target page buttons
- Page recall function settings of target page

Note

You cannot copy cross-point pad settings between the cross-point control block and AUX bus control block.

Copying settings by cross-point pad

1 In the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Xpt Pad Copy].

The Xpt Pad Copy menu (7326.18) appears.

2 In the list on the left, select the copy source cross-point control block/AUX bus control block.

3 In the list on the right, select the copy destination cross-point control block/AUX bus control block.

4 Press [Copy].

To copy using buttons

You can copy by cross-point pad using button operation. Press and hold the [XPTPAD COPY] button on the source cross-point pad, then press the [XPTPAD COPY] button on the destination cross-point pad to copy the settings.

Copying settings by page

1 In the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Xpt Pad Page Copy].

The Xpt Pad Page Copy menu (7326.19) appears.

2 In the list on the left, select the copy source cross-point pad page.

3 In the list on the right, select the copy destination cross-point pad page.

4 Press [Copy].

To switch to page name display

Press [Page Name Display], turning it on. The name is displayed instead of the page number.

Setting the Display Mode of the Cross-Point Control Block/AUX Bus Control Block

This sets the information that appears on the display of the cross-point control block/AUX bus control block.
The display content and format can be selected for each of six types of display mode.

1 In the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Display Mode Setting].

The Display Mode Setting menu (7326.15) appears. The left side of the status area shows six display modes, and the right side shows a list of items to display.

2 In the <Bank Select> group, select the target bank to set.

3 Select the target display mode to set.

4 To divide the display into upper/lower to display two pieces of information, press [Split], turning it on.

5 In the list on the right, select the item to display.

6 Perform the following operations.

- When [Split] is not lit, press [Set] in the <Lower Area> group.
- When [Split] is lit, press [Set] in the <Upper Area> group to set the display in the upper area, and in the <Lower Area> group to set the display in the lower area.

To make the display background gray

In the <Upper Area> group or <Lower Area> group, press [Gray Bkgd], turning it on.

To rename a display mode

The specified name is displayed on the display mode buttons in the cross-point pad used for display mode selection.

1 Select the target display mode to set, and press [Name].

2 Enter a name of up to 12 characters in the keyboard window, and press [Enter].

Note

Lower case characters may be entered, but the entered characters are displayed as upper case characters on the buttons in the cross-point pad.

To return the display mode settings to the defaults

Press [Default Recall], check the message, then press [Yes].

Setting Utility Bus Mode

You can set the bus assigned to the 1st row to 4th row on the cross-point control block when the [UTIL] button is pressed on the cross-point pad.

1 In the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Util Button Bus Assign].

The Utility Button Bus Assign menu (7326.16) appears.
The left side of the status area shows the bus currently assigned to the 1st row to 4th row, and the right side shows a list of assignable buses.

2 In the <Bank Select> group, select the target bank to set.

3 In the list on the left, select the target button row to assign.

4 In the list on the right, select the bus to assign.

5 Press [Set].

To release the assignment

Select the target button row to release, then press [Clear].

To return the 1st row to 4th row assignments to the default

Press [Default].

Settings Relating to Control Panel Management

Setting the Screen Saver

This enables the menu display screen saver.

1 In the Engineering Setup >Panel >Maintenance menu (7327), press [Screen Saver], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Sleep Time	Time until screen saver starts operation (minutes)

Setting Panel Sleep Mode

This mode reduces the brightness of the buttons and display on the control panel.

1 In the Engineering Setup >Panel >Maintenance menu (7327), press [Panel Sleep Mode], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Sleep Time	Time until panel sleep mode starts operation (minutes)

Adjusting the Brightness

1 In the Engineering Setup >Panel >Maintenance menu (7327), select the target to set.

LCD Btn Brightness: Adjust the brightness of the LCD buttons in the cross-point pad, Flexi Pad control block, and utility/shotbox control block.
Display Brightness: Adjust the brightness of the control panel organic EL (OLED) display.
Switch Brightness: Adjust the brightness of the control panel buttons.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Brightness	Brightness

Setting the State of Buttons that are Not Lit

In the Engineering Setup >Panel >Maintenance menu (7327), press [Panel Glow].
To make unlit buttons visible in dark lighting conditions (dimly lit state), press [Panel Glow], turning it on. To turn the display of unlit buttons off, press [Panel Glow], turning it off.

Setting Beep Sound for Touch Operation

In the Engineering Setup >Panel >Maintenance menu (7327), press [Touch Beep].
To enable the beep sound, press [Touch Beep], turning it on. To disable the beep sound, press [Touch Beep], turning it off.

Calibrating the Touch Panel

1 In the Engineering Setup >Panel >Maintenance menu (7327), press [Touch Panel Calibration].

The following message appears.
"To Perform calibration, please touch the center of each plus sign."

2 Press [Yes].

3 Press the center of the plus sign displayed on the screen.

The plus sign disappears and then reappears diagonally.

4 Press the center of the plus sign.

Setting the Menu to Display at Startup

1 In the Engineering Setup >Panel >Maintenance menu (7327), press [Initial Menu Set].

2 Enter the page number of the menu to set in the numeric keypad window.

Note

To enable this setting, the initial state of the control panel when powered on must be set to one of the following.
• Set to Resume mode

- Set to Custom mode, with [User] selected in the <Setup> group.

For details, see "Power-On (Startup) State Selection" (page 397).

Inhibiting Operation in the Sub Menu Site

In the Engineering Setup >Panel >Maintenance menu (7327), press [Sub Menu Op Inhibit], turning it on.
To cancel operation inhibit, press [Sub Menu Op Inhibit], turning it off.

Note

When operation is inhibited, a menu can still be selected and displayed in the sub menu site, but function settings and parameter adjustments cannot be made.

Setting the Mouse Wheel Function when Setting Parameters

In the <Mouse Wheel Direction> group of the Engineering Setup >Panel >Maintenance menu (7327), select one of the following.

Scrl Down = Clockwise: Scrolling the mouse wheel down is the same as turning a parameter setting knob clockwise.

Scrl Up = Clockwise: Scrolling the mouse wheel up is the same as turning a parameter setting knob clockwise.

Setting the Mouse Button Function when Setting Parameters

In the <Mouse Slider Control> group of the Engineering Setup >Panel >Maintenance menu (7327), select one of the following.

Left Button: Dragging while holding down the left mouse button adjusts the parameter setting button bar.

Right Button: Dragging while holding down the right mouse button adjusts the parameter setting button bar.

Note

When [Left Button] is selected, the numeric keypad window is not displayed, even when a parameter setting button is pressed.

Settings Relating to Switcher Configuration

Adjusting the Reference Phase

This adjusts the switcher internal reference phase.
In the Engineering Setup >Switcher >Config menu (7331), set the following parameter.

No.	Parameter	Adjustment
3	Phase	Switcher internal reference phase

Specifying the Video Switching Timing

1 In the Engineering Setup >Switcher >Config menu (7331), press [Switching Timing].

The Switching Timing menu (7331.8) appears.

2 Select one of the following.

Any: Not specified
Field 1: Field 1
Field 2: Field 2

Note

Fixed to [Field 1] when the signal format is 3840×2160PsF or 1080PsF, and fixed to [Any] when 720P.

Setting the Operation Mode

This sets the output signal configuration for each bank.

1 Open the Engineering Setup >Switcher >Config menu (7331).

2 In the status area, select the target switcher bank to set.

3 In the <M/E Config> group, select the operation mode.

Standard: Standard mode
Multi Program: Multi-program mode
DSK: DSK mode (PGM/PST only)

About the operation mode

- **Standard mode:** Fix the output signal configuration for the maximum of four outputs (Out1 to 4) of the M/E and PGM/PST banks as follows.
  - Out1: Program output
  - Out2: Preview output
  - Out3: Clean output
  - Out4: Key preview output [1)]
- **Multi-program mode:** Increase the number of M/E or PGM/PST program systems, and assign one of the following to up to six outputs (Out1 to 6) (M/E Output Assign).
  - Program outputs 1 to 4
  - Preview output
  - Key preview outputs [1)] 1 and 2
  - Clean output

  Further, you can change the combination of signals from which the program output is configured (PGM Config).
- **DSK mode:** Treats PGM/PSTs as DSKs by assigning one of the Out1 to Out6 program outputs of M/E-1 to M/E-5 to the background. You can change the signals that make up the program output and key preview output [1)] using PGM Config and K-PVW Config.

1) For the key preview output, you can select either video mode (background and key) or key mode (key only), and select the background and key (K-PVW Config).

Notes

- When Multi-program mode is selected, two or more transition type selection buttons may be lit on the transition control block. Also, more than one <Transition Type> group button may be selected in the Misc >Transition menu of each M/E and PGM/PST bank.
- In 4K format, up to four outputs (Out1 to Out4) are available on each switcher bank in multi-program mode.
- In 4K format, the outputs in DSK mode have the following configuration.
  - Out1: Program output 1

- Out2: Program output 2
- Out3: Key preview output 1
- Out4: Key preview output 2

Assigning the output of each bank in multi-program mode

This configures Out2 to Out6 settings when [Multi Program] is selected as the operation mode (Out1 is fixed to PGM1).

1 In the Engineering Setup >Switcher >Config menu (7331), press [M/E Output Assign].

The M/E Output Assign menu (7331.1) appears.

2 In the status area list, select the target switcher bank output to set.

3 In the <M/E Output Assign> group, select the output signal to assign.

Setting the output configuration for each bank

This configures settings when [Multi Program] or [DSK] is selected as the operation mode.

1 In the Engineering Setup >Switcher >Config menu (7331), press [PGM Config].

The PGM Config menu (7331.2) appears.
The status area shows the background and key configuration assigned to the output of each bank.

2 Select the target output to set.

3 In the <Bkgd> group, select the background.

In multi-program mode: Select [Clean] or [Utility2].
In DSK mode: Select one of [Bkgd1] to [Bkgd4], and set the background signal.

No.	Parameter	Adjustment
2 to 5	Bkgd1 to 4	Background signal selection a)

a) 1 to 6: M/E-1 Out1 to 6
7 to 12: M/E-2 Out1 to 6
13 to 18: M/E-3 Out1 to 6
19 to 24: M/E-4 Out1 to 6
25 to 30: M/E-5 Out1 to 6

Notes

- In 4K format multi-program mode, [Clean] (fixed) is configured.
- In 4K format DSK mode, [Bkgd3] cannot be selected.

4 In the <Key Enable> group, select the key to enable.

Note

In 3840×2160P format multi-program mode and DSK mode, key 3 and key 4 have the same settings.

Setting the key preview configuration

1 In the Engineering Setup >Switcher >Config menu (7331), press [K-PVW Config].

The K-PVW Config menu (7331.3) appears.
The status area shows the key preview configuration for each bank.

2 Select the target key preview to set.

3 In the <Mode> group, select the mode (Video or Key).

If [Key] is selected, skip to step **5**.

4 In the <Bkgd> group, select the background.

In multi-program mode: Select [Clean] or [Utility2].
In DSK mode: Select one of [Bkgd1] to [Bkgd4], and set the background signal.

No.	Parameter	Adjustment
2 to 5	Bkgd1 to 4	Background signal selection a)

a) 1 to 6: M/E-1 Out1 to 6
7 to 12: M/E-2 Out1 to 6
13 to 18: M/E-3 Out1 to 6
19 to 24: M/E-4 Out1 to 6
25 to 30: M/E-5 Out1 to 6

Notes

- In standard mode, [Clean] is selected (fixed).
- In 4K format multi-program mode, [Clean] (fixed) is configured.
- In 4K format DSK mode, [Bkgd3] cannot be selected.

5 To set key 1 to key 4, press [Key1-Key4]. To set key 5 to key 8, press [Key5-Key8].

6 In the <Key1> to <Key4> groups or <Key5> to <Key8> groups, select the key state.

Link: Follows the key on/off state.
On: Key is always on.
Off: Key is always off.

Note

In 3840×2160P format, sub key mode must be set in the Setup menu in order to use key 3 for key preview. Key 4 cannot be used for key preview.

For details, see "Setting the Sub Key Mode" (page 442).

Setting User Regions

You can assign the following user regions to User1 to User8.
- Color background 1 and 2
- AUX1 to 48
- Frame memory 1 to 20

Note

If you change the user region settings, the previously stored snapshot data and keyframe effect data can no longer be used.

1 In the Engineering Setup >Switcher >Config menu (7331), press [User1-8 Config].

The User1-8 Config menu (7331.4) appears.
The status area shows the region names and assigned user region numbers.

2 Select the target region to set.

3 In the <User Region Assign> group, select the user region to assign.

If you do not want to assign a user region, select [No Assign].

4 Repeat steps **2** and **3** as required to set other regions.

5 Press [Execute].

6 Check the message, then press [Yes].

Assigning PGM/PST Logically to an M/E

You can configure PGM/PST hardware to be handled logically as an M/E.

1 In the Engineering Setup >Switcher >Config menu (7331), press [Logical M/E Assign].

The Logical M/E Assign menu (7331.5) appears.
The status area shows the physical M/E and logical M/E organization.

2 In the <Logical M/E to Physical P/P> group, select one of the following.

P/P: Assign the physical PGM/PST as logical PGM/PST.
M/E-1: Assign the physical PGM/PST as logical M/E-1.
M/E-2: Assign the physical PGM/PST as logical M/E-2.
M/E-3: Assign the physical PGM/PST as logical M/E-3.
M/E-4: Assign the physical PGM/PST as logical M/E-4.
M/E-5: Assign the physical PGM/PST as logical M/E-5.

Setting DME Channel Assignments

You can set DME channels to use on the M/E and PGM/PST banks for processed keys or DME wipes.

1 In the Engineering Setup >Switcher >Config menu (7331), press [DME Config].

The DME Config menu (7331.6) appears.

2 Select the target M/E or P/P bank to set.

3 In the <DME Channel> group, select the channel to assign.

4 Repeat steps **2** and **3** as required to make settings for each M/E and PGM/PST bank.

Setting the Side Flag Material and Operation

This sets the video material (4:3 aspect ratio) for applying side flags.

For details about side flags, see "Side Flags" (page 196).

Setting the aspect ratio (4:3 or 16:9)

1 In the Engineering Setup >Switcher >Config menu (7331), press [Side Flags].

The Side Flags menu (7331.7) appears.
The status area lists the video/key pair numbers, video signal source names, and aspect ratio settings.

2 Select the target pair number to set.

To select all of the pair numbers, press [ALL].

3 In the <Aspect> group, press [4:3].

If you select [16:9], no side flags are applied.

To set 4:3 video material to have side flags applied automatically

You can make a setting so that when a signal with aspect ratio set to 4:3 is selected in the cross-point control block, side flags are automatically applied.
In the Side Flags menu (7331.7), press [Auto Side Flags], turning it on.
The settings are common to the M/E and PGM/PST banks.

To set to crop to 4:3 when a DME wipe is executed

When side flags are enabled, you can automatically crop an image to be a 4:3 image when executing a DME wipe.
In the Side Flags menu (7331.7), press [Auto Crop], turning it on.
The settings are common to the M/E and PGM/PST banks.

Adjusting the width of the side flags

1 In the Engineering Setup >Switcher >Config >Side Flags menu (7331.7), press [Width].

2 Set the following parameters.

No.	Parameter	Adjustment
3	Left	Width of left side flag
4	Right	Width of right side flag
5	All	Width of left and right side flags

Enabling and disabling side flags

Press a button in the Engineering Setup >Switcher >Config >Side Flags menu (7331.7) to display the setup menu.

To enable/disable side flags in the menu

Press [Misc >Enable >Side Flags] to open the Misc >Enable >Side Flags menu (3213) and configure the settings *(see page 196)*.

To assign side flag operation buttons to cross-point buttons

Press [Side Flags Button Assign] to open the Engineering Setup >Panel >Xpt Assign >Side Flags Button Assign menu (7322.10) and configure the settings *(see page 416)*.

Setting the Sub Key Mode

You can set the sub key mode used for 3840×2160P format. If only key 3 is set, the key preview function is enabled using the sub key.

1 In the Engineering Setup >Switcher >Config menu (7331), press [Key Config].

The Key Config menu (7331.9) appears.

2 In the status area, select the target switcher bank to set.

3 In the <Sub Key Mode> group, select the sub key mode.

Key3, Key4: Use key 3 and key 4 as sub keys (key preview is disabled).
Key3 + Key PVW: Use only key 3 as a sub key (key preview is enabled).

Setting the Keys and DME Channels used in a CG Border

You can set the keys and DME channels used when changing the position and size of the image embedded in the CG border.

1 In the Engineering Setup >Switcher >Config menu (7331), press [CG Border Int Video Ch Assign].

The CG Border Int Video Channel Assign menu (7331.15) appears.

2 In the status area, select the target switcher bank to set.

3 In the <Key1 CG Border Enable> to <Key8 CG Border Enable> groups, select the DME channels.

Ch1-2: Set DME channels 1 and 2 for the CG border with the target key (Key1 to Key8).
Ch3-4: Set DME channels 3 and 4 for the CG border with the target key (Key1 to Key8).

Note

[Ch1-2] cannot be selected if DME channel 1 or 2 is assigned to the target key. Similarly, [Ch3-4] cannot be selected if DME channel 3 or 4 is assigned to the target key.

Setting Extended Re-Entry

When extended re-entry is enabled, the restrictions relating to re-entry signal selection are removed.
The following two types of extended re-entry can be configured.

- Extended re-entry for switcher banks
  Re-entry signals can be selected within the same switcher bank.
- Extended re-entry for keyers
  Re-entry signals can be selected using key bus/utility 1 bus (regardless of constraints, such as M/E configuration) when the switcher signal format is 3840×2160P or 1080P.

Notes

- The extended re-entry settings are common to all switcher banks.
- Extended re-entry for keyers is available only when the switcher signal format is 3840×2160P or 1080P.
- A delay may occur in the re-entry signal when extended re-entry is enabled.
  If a delay occurs, the ancillary data is disabled, even when through mode is set.
- Recursive re-entry may cause problems in the video.

- The selection order of re-entry signals affects the number of lines by which the output signal is lowered.
- On the XVS-8000, extended re-entry for keyers is not supported on sub keys (key 3 and key 4 in 3840×2160P format).
  However, when using dedicated inputs *(see page 445)* and extended re-entry for keyers is enabled, re-entry signals can always be selected on a sub key bus.

1 Open the Engineering Setup >Switcher >Config menu (7331).

2 To enable extended re-entry for switcher banks, press [M/E] in the <Extended Re-Entry> group, turning it on.

3 To enable extended re-entry for keyers, press [Keyer] in the <Extended Re-Entry> group, turning it on.

Settings Relating to Signal Inputs

Configures settings for primary inputs.
The following input connector boards can be installed in the XVS-9000/8000/7000/6000.

- XVS-9000

Input connector board	Interface
XKS-S9112 12G-SDI Input Board	SDI
XKS-C9111 100G IP Input Board	ST2110
XKS-C9111N NMI Input Board	NMI
XKS-C9121 100G IP Input and Output Board	ST2110
XKS-C9121N NMI Input and Output Board	NMI

- XVS-8000/7000/6000

Input connector board	Interface
XKS-S8110 SDI Input Connector Board	SDI
XKS-S8111 SDI Input and FC Connector Board	SDI
XKS-S8112 12G-SDI Input Board	SDI
XKS-T8110 IP Input Connector Board	NMI
XKS-Q8111 QSFP IP Input Connector Board	NMI/ST2110 a)
XKS-C8111 100G IP Input Board	ST2110

a) Interface configured in the Engineering Setup >System >Network Config >Net I/F Protocol menu (7311.3)

The maximum number of inputs on the XVS-9000 is 160 (80 for 4K format), on the XVS-8000 is 160 (40 for 4K format), on the XVS-7000 is 112 (28 for 4K format), and on the XVS-6000 is 64 (16 for 4K format).

Note

59.94 (2×) format input signals are supported on the XKS-S8110 SDI Input Connector Board only.

Network connector board restrictions

Only the following interface and signal format inputs are supported, depending on the board.

Board	Interface	Signal formats
XKS-T8110	NMI	• 3840×2160P 2SI (Level A) a) • 1080P (Level A) b) • 1080i
XKS-Q8111	NMI	• 3840×2160P 2SI (Level A) a) • 1080P (Level A) b) • 1080i
	ST2110	• 1080i b)

Board	Interface	Signal formats
XKS-C8111	ST2110	• 3840×2160P 2SI (Level A) a) • 1080P (Level A) • 1080i • 720P
XKS-C9111 XKS-C9121	ST2110	• 3840×2160P 2SI (Level A) b) • 1080P (Level A) • 1080i • 720P
XKS-C9111N XKS-C9121N	NMI	• 3840×2160P 2SI (Level A) b) c)

a) Only the first number input in each group of four inputs can be set.
b) Only odd-numbered inputs can be set.
c) Inputs that are multiples of 8 minus 1 (7, 15, 23, and so on) are not available.

For details about 3840×2160P 2SI format input settings, see "4K format input settings" (page 444).

4K format input settings

XVS-9000 settings

When the switcher signal format is 3840×2160P 2SI or 3840×2160P SQD, only odd-numbered inputs can be set.
When the switcher signal format is 3840×2160PsF SQD, only the first number input in each group of four inputs can be set, in the same way as for the XVS-8000/7000/6000.
Also, when the switcher signal format is 3840×2160P 2SI or 3840×2160P SQD and an input format converter is used, a 3840×2160P 2SI 12G input signal is assigned to a 12G×1 input, hence the setting is available for each odd-numbered input. For 3840×2160P 2SI 3G and 3840×2160P SQD input signals, a group of four inputs is assigned as a group to a 4K signal, and the setting is available for the first number input in each group of four inputs.

Note

When an XKS-C9111N NMI Input Board and XKS-C9121N NMI Input and Output Board are installed, inputs that are multiples of 8 minus 1 (7, 15, 23, and so on) are invalid because inputs 7 and 15 on each board cannot be used.

XVS-8000/7000/6000 settings

Four inputs are assigned as a single group to a 4K signal. A single group comprises four inputs in numeric order starting from the first input, and the setting is available for the first number input in each group.

Input number	Setting number
1, 2, 3, 4	1
5, 6, 7, 8	5
9, 10, 11, 12	9
13, 14, 15, 16	13
(and so on)	(and so on)

Note

When an XKS-S8112 12G-SDI Input Board is installed, 3840×2160P 2SI 12G signals are input as a 12G×1 signal, but the input setting is available only for the first number input in each group of four inputs.

Dedicated inputs

On the XVS-8000, dedicated input connectors 1 to 16 can be used by installing an XKS-S8110 SDI Input Connector Board in slot 1.
This allows you to physically connect specific output connectors to dedicated inputs and then select a signal from an output connector as an input.

For details about dedicated input settings, see "Setting Dedicated Inputs" (page 445).

Notes

- Dedicated inputs are not supported on the XVS-9000/7000/6000.
- Only output connectors on an XKS-S8165 SDI Output Connector Board can be used for dedicated inputs.
  The following output connectors can be connected.
  - Format converter output connectors 1 to 16
  - Spare connectors 1 to 4
  - Multi viewer output connectors 1 to 8
  - Output connectors 49 to 52

Input signal format conversion

The following format converters can be used.

Internal format converter: Configurable when an XKS-8460 Format Converter Board is installed *(see page 445)*.

Input format converter: Configurable when an XKS-S8111 SDI Input and FC Connector Board, XKS-S8112/XKS-S9112 12G-SDI Input Board, XKS-C8111/XKS-C9111 100G IP Input Board, or XKS-C9121 100G IP Input and Output Board is installed *(see page 449)*.

Note

On the XVS-9000, internal format converters are not available.

Setting Through Mode

Note

Through mode cannot be set for inputs whose signal format is converted by an input format converter or inputs with frame delay enabled.

1 In the Engineering Setup >Switcher >Input menu (7332), select the target input signal to set.

2 To enable through mode, press [Through Mode], turning it on.

Setting the Illegal Color Limiter

This sets the illegal color limiter for the signal generated by the switcher internal matte generator.
To enable, in the Engineering Setup >Switcher >Input menu (7332), press [Matte Illeg Col Limit], turning it on.

Setting Dedicated Inputs

On the XVS-8000, 16 dedicated inputs are supported (4 dedicated inputs for 4K format).

Note

To use dedicated inputs, an XKS-S8110 SDI Input Connector Board must be installed in slot 1 of the switcher.

Enabling the dedicated input function

The dedicated input function can be enabled/disabled for each of the following groups of four output connectors.
- Format converter output connectors 1 to 4, 5 to 8, 9 to 12, 13 to 16
- Spare connectors 1 to 4
- Multi viewer output connectors 1 to 4, 5 to 8
- Output connectors 49 to 52

1 In the Engineering Setup >Switcher >Input menu (7332), press [Dedicated Input Assign].

The Dedicated Input Assign menu (7332.10) appears. The left side of the status area shows a list of output connectors and configuration status.

2 Select the target output connector to set.

Select a connector, within a group of four, to set.

3 Press [Dedicated Input], turning it on.

The dedicated input function is enabled for the four output connectors, and “On” is displayed in the “Dedicated In” field in the list.
To disable the dedicated input function, press [Dedicated Input], turning it off.

Setting the dedicated input and signal to connect

You can set the dedicated input (1 to 16) to connect and the signal to assign for output connectors which have the dedicated input function enabled.
You can assign the following signals as a dedicated input.
- Out1 to Out6 on each switcher bank [1)]
- Frame memory outputs 1 to 20
- Format converter outputs 1 to 16

1) Signals are configured using the Engineering Setup >Switcher >Config >M/E Output Assign menu (7331.1).

1 In the Engineering Setup >Switcher >Input menu (7332), press [Dedicated Input Assign].

The Dedicated Input Assign menu (7332.10) appears. The left side of the status area shows a list of output connectors and configuration status.

2 Select the target output connector to set.

3 In the <Input/Source Assign> group, select [Slot1 Input].

The right side of the status area shows a list of dedicated inputs.

4 In the list on the right, select a dedicated input to connect.

5 Press [Set].

6 In the <Input/Source Assign> group, select [Source].

The right side of the status area shows a list of selectable signals.

7 In the list on the right, select the signal to assign.

8 Press [Set].

Setting Internal Format Converter Inputs

You can set internal format converter inputs if the XKS-8460 Format Converter Board is installed.
Use FC channels (FC1 to FC16) configured for input use for input signal format conversion.

Notes

- On the XVS-9000, internal format converters are not available.
- An FC channel configured for format converter output use cannot be selected.
  For details, see “Setting the Internal Format Converters” (page 459).

- On the XVS-7000, FC9 to FC16 cannot be used.
- In 4K format, only FC1, FC5, FC9, and FC13 can be configured.

Assigning an input signal to an FC channel

You can assign a signal to be converted by the format converter to an FC channel.

1 In the Engineering Setup >Switcher >Input menu (7332), press [Internal FC].

The Internal FC menu (7332.5) appears.

2 Press [FC Input Select].

The FC Input Select menu (7332.3) appears.
The status area shows the FC channel list on the left and the list of input signals that can be assigned to FC channels on the right.

3 In the list on the left, select the target FC channel to set.

4 In the list on the right, select an input signal.

5 Press [Set].

To set the source name of the converted input signal

1 Select the target FC channel to set, and press [FC Name].

2 Enter a name of up to 16 characters in the keyboard window, and press [Enter].

Setting the conversion format

You can set the signal format of inputs to convert by the format converter.
The conversion format is set in the following groupings, depending on the switcher signal format.
- 3840×2160P, 1080P: 4-channel groups (FC1 to FC4, FC5 to FC8, FC9 to FC12, FC13 to FC16)
- 1080i, 720P: 8-channel groups (FC1 to FC8, FC9 to FC16)

Notes

- When the switcher signal format is 3840×2160PsF or 1080PsF, input signal format conversion is not available.
- When the switcher signal format is 1080P, the signal formats that can be converted vary depending on the 720P converter setting.
  For details about the 720P converter, see "Enabling/disabling the 720P converter" (page 459).
- On an internal format converter, the format of only the XKS-S8110 SDI Input Connector Board input signals can be converted.

Supported formats

The supported conversion formats are given below.

Note

Field frequency and frame frequency conversion is not supported.

Switcher signal format	Input signal format
3840×2160P (Level A, 2SI)	• 3840×2160P (Level A, 2SI) a) • 3840×2160P (Level B, 2SI) • 3840×2160P (Level A, SQD) • 3840×2160P (Level B, SQD) • 1080P (Level A) • 1080P (Level B) • 1080i
3840×2160P (Level A, SQD)	• 3840×2160P (Level A, 2SI) • 3840×2160P (Level B, 2SI) • 3840×2160P (Level A, SQD) a) • 3840×2160P (Level B, SQD) • 1080P (Level A) • 1080P (Level B) • 1080i
1080P (Level A)	• 1080P (Level A) a) • 1080P (Level B) b) • 1080i b) • 720P c)
1080i	• 1080i a) • 720P • 576i d) • 480i d)
720P	• 1080i • 720P a) • 576i d) • 480i d)

a) Input signal without format conversion
b) Selectable when the 720P converter is disabled
c) Selectable when the 720P converter is enabled
d) When the switcher signal format frequency is 59.94, only 480i is selectable. When the frequency is 50, only 576i is selectable.

1 In the Engineering Setup >Switcher >Input menu (7332), press [Internal FC].

The Internal FC menu (7332.5) appears.

2 Press [FC Format].

The FC Format menu (7332.6) appears.
The status area shows the FC channel list on the left and the supported conversion signal format list on the right.

3 In the list on the left, select the target FC channel to set.

Select one of the four target channels or eight target channels to set.

4 In the list on the right, select the signal format.

5 Press [Set].

To clear the signal format setting
Press [Clear].

6 Press [Execute].

Setting the format converter conversion method

You can set the format converter conversion method for each FC channel.
The conversion method items and the target conversion formats are given below.

Item	Conversion format
Enhancer	• 1080P (Level A) ⟶ 3840×2160P (Level A, 2SI) • 1080P (Level B) ⟶ 3840×2160P (Level A, 2SI) • 1080i ⟶ 3840×2160P (Level A, 2SI) • 1080P (Level A) ⟶ 3840×2160P (Level A, SQD) • 1080P (Level B) ⟶ 3840×2160P (Level A, SQD) • 1080i ⟶ 3840×2160P (Level A, SQD)
Up-converter aspect ratio	• 576i ⟶ 1080i • 480i ⟶ 1080i • 576i ⟶ 720P • 480i ⟶ 720P
Down-converter aspect ratio	–
I/P converter conversion mode	• 1080i ⟶ 3840×2160P (Level A, 2SI) • 1080i ⟶ 3840×2160P (Level A, SQD) • 1080i ⟶ 1080P (Level A) • 1080i ⟶ 720P
Up-converter conversion mode	• 576i ⟶ 1080i • 480i ⟶ 1080i • 576i ⟶ 720P • 480i ⟶ 720P

1 In the Engineering Setup >Switcher >Input >Internal FC menu (7332.5), press [FC Adjust].

The FC Adjust menu (7332.2) appears.

2 Display the target FC channels to set in the status area.

Press [FC 1-4], [FC 5-8], [FC 9-11], or [FC 13-16] to switch the display in the status area.

3 In the status area, select an FC channel.

4 Set the conversion method.

To configure the enhancer

1 Press [Enhancer], turning it on.

2 Set the following parameters.

Parameter group [1/2]

No.	Parameter	Adjustment
2	Detail Gain	Adjust the edge enhancement sharpness
3	Limiter	Adjust the maximum signal level to be added to the original signal
4	Crisp	Set the amplitude value for which low-amplitude signals are not enhanced
5	Level Depend	Set the luminance range for edge enhancement

Parameter group [2/2]

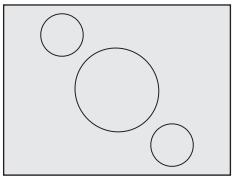
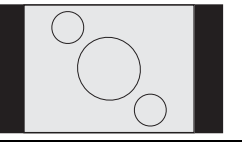
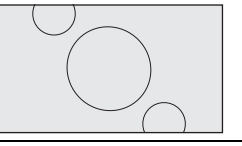
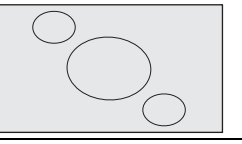
No.	Parameter	Adjustment
2	Frequency	Set the center frequency for edge enhancement a)

a) 0 (high frequency) to 2 (low frequency)

To set the up-converter aspect ratio

1 In the <Aspect> group, select one of the following.

Edge Crop: Add black bars on the left and right sides of a 4:3 aspect ratio image to convert it to a 16:9 image.
Letter Box: Crop the top and bottom of a 4:3 aspect ratio image to convert it to a 16:9 image.
Squeeze: Stretch a 4:3 image horizontally to covert it to a 16:9 image.

Original image (4:3)	Format converted image (16:9)
	Edge Crop  Letter Box  Squeeze 

2 When [Edge Crop] or [Letter Box] is selected in step **1**, set the position of the image.

When [Edge Crop] is selected: Press [Edge Crop Position] and set the following parameter.

No.	Parameter	Adjustment
2	EC Position	Image position

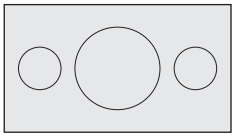
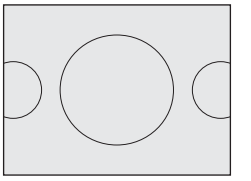
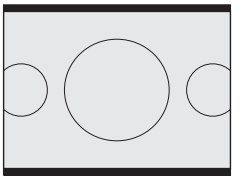
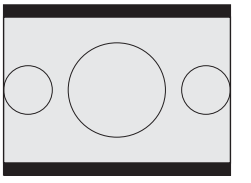
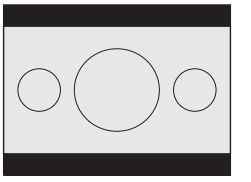
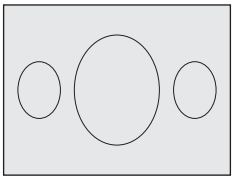
When [Letter Box] is selected: Press [Letter Box Position] and set the following parameter.

No.	Parameter	Adjustment
2	LB Position	Image position

To set the down-converter aspect ratio

1 In the <Aspect> group, select one of the following.

Edge Crop: Crop the left and right sides of a 16:9 image to convert it to a 4:3 image.
Letter Box 13:9: Crop the left and right sides of a 16:9 image to make a 13:9 image and add black bars at the top and bottom of the image to convert it to a 4:3 image.
Letter Box 14:9: Crop the left and right sides of a 16:9 image to make a 14:9 image and add black bars at the top and bottom of the image to convert it to a 4:3 image.
Letter Box 16:9: Add black bars on the top and bottom of a 16:9 image to convert it to a 4:3 image.
Squeeze: Compress a 16:9 image horizontally to convert it to a 4:3 image.

Original image (16:9)	Format converted image (4:3)
	Edge Crop 
	Letter Box 13:9 
	Letter Box 14:9 
	Letter Box 16:9 
	Squeeze 

2 When [Edge Crop] is selected in step **1**, set the position of the image.

Press [Edge Crop Position], and set the following parameter.

No.	Parameter	Adjustment
2	EC Position	Image position

To set the I/P converter conversion mode

In the <Conversion> group, select the conversion mode.
Frame: Conversion in frame units
Field: Conversion in field units
Adaptive Y: Detects motion in the luminance signal, and automatically switches mode between conversion using frame units and field units.
Adaptive Y/C: Detects motion in the luminance and hue signals, and automatically switches mode between conversion using frame units and field units.

When [Adaptive Y] or [Adaptive Y/C] is selected, set the following parameter.

No.	Parameter	Adjustment
2	Motion Select	Motion detection sensitivity [a]

a) 1: Mode with highest proportion converted from frames (still picture priority mode)
2: Mode with higher proportion converted from frames
3: Mode with higher proportion converted from fields
4: Mode with highest proportion converted from fields (motion priority mode)

To set the up-converter conversion mode

In the <Conversion> group, select the conversion mode.
Frame: Conversion in frame units
Field: Conversion in field units
Adaptive: Detects motion in the signal, and automatically switches mode between conversion using frame units and field units.
When [Adaptive] is selected, set the following parameter.

No.	Parameter	Adjustment
2	Motion Select	Motion detection sensitivity [a]

a) 1: Mode with highest proportion converted from frames (still picture priority mode)
2: Mode with higher proportion converted from frames
3: Mode with higher proportion converted from fields
4: Mode with highest proportion converted from fields (motion priority mode)

To return the conversion method settings to the defaults

Press [Default]. The settings for the selected FC channels are reset to the defaults.

Setting the frame delay

You can set the input signal delay level for each FC channel.

1 In the Engineering Setup >Switcher >Input >Internal FC menu (7332.5), select the target FC channel to set.

2 Set the following parameter.

No.	Parameter	Adjustment
3	Frame Delay	Delay level [a]

a) The following delay levels can be configured, depending on the switcher signal format.
3840×2160P, 1080P: 1 to 15 frames
3840×2160PsF, 1080PsF, 1080i: 1 to 8 frames
720P: 1 to 15 frames (set value of 1 to 8 frames when the conversion format is 1080i/576i/480i, with an actual delay that is double the set value)

Setting the frame synchronizer

You can enable/disable the frame synchronizer for each FC channel. When the frame synchronizer is enabled, unsynchronized input signals are synchronized.

Note

The frame synchronizer cannot be enabled in the following cases.
- When the switcher signal format is 3840×2160P or 3840×2160PsF
- When the switcher signal format is 1080P and the 720P converter is enabled

1 In the Engineering Setup >Switcher >Input >Internal FC menu (7332.5), select the target FC channel to set.

2 Press [Frame Sync] to enable/disable the frame synchronizer.

To enable, press [Frame Sync], turning it on. To disable, press [Frame Sync], turning it off.

Setting an Input Format Converter

You can set an input format converter, frame delay, and frame synchronizer for primary inputs of the following input connector boards.
- XKS-S8111 SDI Input and FC Connector Board
- XKS-S8112/XKS-S9112 12G-SDI Input Boards
- XKS-C8111/XKS-C9111 100G IP Input Boards
- XKS-C9121 100G IP Input and Output Board

Note

The XKS-C8111/XKS-C9111/XKS-C9121 have the following restrictions.
- The input format converter setting is available only when the switcher signal format is 3840×2160P 2SI or 1080P.
- On the XKS-C8111, an input format converter can be configured on only the 1st to 4th inputs of each board.
- On the XKS-C9111/XKS-C9121, when the switcher signal format is 3840×2160P 2SI, an input format converter can be configured on only the 1st & 2nd and 9th & 10th inputs of each board.
- On the XKS-C9111/XKS-C9121, when the switcher signal format is 1080P, an input format converter can be configured on only the 1st to 4th and 9th to 12th inputs of each board.
- Frame synchronizer is disabled.

Enabling/disabling an input format converter

When an XKS-S8111 is installed in the XVS-8000/7000/6000, you can enable/disable the format converter function for each input connector board.

Notes

- For the XKS-S8112/XKS-S9112/XKS-C8111/XKS-C9111/XKS-C9121, setup is not required.
- When the switcher signal format is 3840×2160PsF or 1080PsF, the format converter function is not available.
- When the switcher signal format is 1080P, the format converter function is enabled. The signal formats that can be converted vary depending on the 720P converter setting.

1 In the Engineering Setup >Switcher >Input menu (7332), press [Input FC/CCR].

The Input FC/CCR menu (7332.1) appears.

2 Press [FC Format].

The FC Format menu (7332.7) appears.

3 Select the target input connector board to set.

No.	Parameter	Adjustment
1	Group No	Input group number a)

a) Inputs on an input connector board form a group.

4 In the <Format Converter> group, select one of the following.

Enable: Enable the format converter function.
Disable: Disable the format converter function.

To clear the setting
Press [Clear].

5 Press [Execute].

6 Check the message, then press [Yes].

Note

It may take a few minutes until the configuration is completed.

Enabling/disabling the 720P converter

On an XKS-S8111, when the switcher signal format is 1080P, you can enable/disable the 720P converter. The following conversion formats can be selected depending on the 720P converter setting.

- When the 720P converter is disabled: 1080P (Level A), 1080P (Level B), 1080i
- When the 720P converter is enabled: 1080P (Level A), 720P

Note

For the XKS-S8112/XKS-S9112/XKS-C8111/XKS-C9111/XKS-C9121, setup is not required.

1 In the Engineering Setup >Switcher >Input >Input FC/CCR menu (7332.1), press [FC Format].

The FC Format menu (7332.7) appears.

2 Select the target input connector board to set.

No.	Parameter	Adjustment
1	Group No	Input group number a)

a) Inputs on an input connector board form a group.

3 Press [720P Converter] to enable/disable the 720P converter.

To enable, press [720P Converter], turning it on. To disable, press [720P Converter], turning it off.

To clear the setting
Press [Clear].

4 Press [Execute].

5 Check the message, then press [Yes].

Note

It may take a few minutes until the configuration is completed.

Setting the conversion format

You can set the signal format of inputs to convert by the format converter.
The conversion format is set in the following groupings, depending on the switcher signal format.

- XKS-S8111
  - 3840×2160P, 1080P: Groups of 4 inputs
  - 1080i, 720P: Groups of 8 inputs
- XKS-S8112
  - 3840×2160P, 1080P, 1080i, 720P: Groups of 4 inputs
- XKS-S9112
  - 3840×2160P 2SI or 3840×2160P SQD, and the conversion format is 3840×2160P 2SI 12G, 1080P, 1080i: Groups of 2 inputs 1)
  - 3840×2160P 2SI or 3840×2160P SQD, and the conversion format is 3840×2160P 2SI 3G, 3840×2160P SQD: Groups of 4 inputs
  - 1080P, 1080i, 720P: Groups of 4 inputs

- XKS-C8111
  - 3840×2160P 2SI, 1080P: Groups of 4 inputs (1st to 4th inputs only)
- XKS-C9111/XKS-C9121
  - 3840×2160P 2SI: Groups of 2 inputs (1st and 2nd, 9th and 10th inputs only)
  - 1080P: Groups of 4 inputs (1st to 4th, 9th to 12th inputs only)

1) Groups of 4 inputs when the conversion format is initially set to 3840×2160P 2SI 3G or 3840×2160P SQD and then the conversion format is changed

Notes

- When the switcher signal format is 3840×2160PsF or 1080PsF, input signal format conversion is not available.
- The signal formats that can be converted vary depending on the input format converter board and the 720P converter setting.
  For details about the 720P converter, see "Enabling/disabling the 720P converter" (page 450).

Supported formats

The supported conversion formats are given below.

Note

Field frequency and frame frequency conversion is not supported.

Switcher signal format	Input signal format
3840×2160P (Level A, 2SI)	• 3840×2160P (Level A, 2SI) 3G [a) b)] • 3840×2160P (Level A, 2SI) 12G [a) c) d)] • 3840×2160P (Level B, 2SI) 3G [b)] • 3840×2160P (Level A, SQD) [b)] • 3840×2160P (Level B, SQD) [b)] • 1080P (Level A) • 1080P (Level B) [b)] • 1080i
3840×2160P (Level A, SQD)	• 3840×2160P (Level A, 2SI) 3G • 3840×2160P (Level A, 2SI) 12G [d)] • 3840×2160P (Level B, 2SI) 3G • 3840×2160P (Level A, SQD) [a)] • 3840×2160P (Level B, SQD) • 1080P (Level A) • 1080P (Level B) • 1080i
1080P (Level A)	• 1080P (Level A) [a)] • 1080P (Level B) [b) e)] • 1080i [e)] • 720P [b) f)]
1080i	• 1080i [a)] • 720P [b)] • 576i [g) h)] • 480i [g) h)]
720P	• 1080i [b)] • 720P [a)] • 576i [g) h)] • 480i [g) h)]

a) Input signal without format conversion
b) Not selectable on the XKS-C8111/XKS-C9111/XKS-C9121
c) "3840×2160P (Level A, 2SI)" on the XKS-C8111/XKS-C9111/XKS-C9121
d) Not selectable on the XKS-S8111
e) Selectable on the XKS-S8111 when the 720P converter is disabled and on the XKS-S8112/XKS-S9112
f) Selectable on the XKS-S8111 when the 720P converter is enabled and on the XKS-S8112/XKS-S9112
g) Selectable on the XKS-S8111 only
h) When the switcher signal format frequency is 59.94, only 480i is selectable. When the frequency is 50, only 576i is selectable.

1 In the Engineering Setup >Switcher >Input >Input FC/CCR menu (7332.1), press [FC Format].

The FC Format menu (7332.7) appears.
The status area shows the input list on the left and the supported conversion signal format list on the right.

2 Select the target input connector board to set.

No.	Parameter	Adjustment
1	Group No	Input group number [a)]

a) Inputs on an input connector board form a group.

3 In the list on the left, select the target input to set.

Select an input from among the input grouping to set.

Note

When the switcher signal format is 3840×2160P, only the input with the lowest number in the input grouping can be selected.

4 In the list on the right, select the signal format.

5 Press [Set].

To clear the signal format setting
Press [Clear].

6 Press [Execute].

Setting the format converter conversion method

You can set the format converter conversion method for each input.

For details about the conversion method items and the target conversion formats, see "Setting the format converter conversion method" (page 447).

1 In the Engineering Setup >Switcher >Input >Input FC/CCR menu (7332.1), press [FC Adjust].

The FC Adjust menu (7332.8) appears.

2 Display the target input to set in the status area.

Press [Prev] or [Next] to switch the display in the status area.
Pressing [Prev] displays the previous four inputs, and pressing [Next] displays the next four inputs.
Pressing [Prev Group] or [Next Group] displays the four inputs of the input connector board installed in the previous slot or next slot, respectively.

3 In the status area, select an input.

4 Set the conversion method.

The operation is similar to setting an internal format converter.

For details, see "Setting the format converter conversion method" (page 447).

Setting the frame delay

Notes

- On the XKS-C8111/XKS-C9111/XKS-C9121, the frame delay level is set to 1 frame (fixed) when the switcher signal format is 720P.
- On the XKS-C8111/XKS-C9111/XKS-C9121 when the frame delay level is set to 2 to 4 frames, a phase shift between the embedded audio/metadata and the video signal occurs.
- On the XKS-S8111/XKS-S8112/XKS-S9112 when frame delay is enabled, embedded audio/metadata is not output.

To set the frame delay level

You can set the frame delay level for each input.

1 In the Engineering Setup >Switcher >Input >Input FC/CCR menu (7332.1), select the target input to set.

To select more than one input, press [Plural] and then select. To select all inputs, press [ALL].

2 Set the following parameter.

No.	Parameter	Adjustment
3	Frame Delay	Delay level [a)]

a) On the XKS-C8111/XKS-C9111/XKS-C9121, a delay of 1 to 4 frames.
On the XKS-S8111/XKS-S8112/XKS-S9112, the following delay levels can be configured, depending on the switcher signal format.
3840×2160P, 1080P: 1 to 15 frames
3840×2160PsF, 1080PsF, 1080i: 1 to 8 frames
720P: 1 to 15 frames (set value of 1 to 8 frames when the conversion format is 1080i/576i/480i, with an actual delay that is double the set value)

To enable/disable the frame delay

You can enable/disable the frame delay for input signals where the signal format is not converted.

Notes

- On the XKS-C8111/XKS-C9111/XKS-C9121, the frame delay cannot be disabled.
- On the XKS-S8111, when the switcher signal format is 1080P and the 720P converter is enabled, the frame delay cannot be disabled.

1 In the Engineering Setup >Switcher >Input >Input FC/CCR menu (7332.1), select the target input to set.

To select more than one input, press [Plural] and then select. To select all inputs, press [ALL].

2 Press [Frame Delay], and enable/disable the frame delay.

To enable, press [Frame Delay], turning it on. To disable, press [Frame Delay], turning it off.

Setting the frame synchronizer

You can enable/disable the frame synchronizer for each input. When the frame synchronizer is enabled, unsynchronized input signals are synchronized.

Note

The frame synchronizer cannot be enabled in the following cases.

- XKS-S8111
  - When the switcher signal format is 3840×2160PsF
  - When the switcher signal format is 3840×2160P and the format converter is enabled
  - When the switcher signal format is 1080P and the 720P converter is enabled
- XKS-S8112/XKS-S9112
  - When the switcher signal format is 3840×2160PsF
  - When the switcher signal format is 3840×2160P and the conversion format is set to a format other than the switcher signal format
  - When the switcher signal format is 1080P and the conversion format is set to 720P
  - When the switcher signal format is 3840×2160P 2SI, the conversion format is 3840×2160P 2SI 12G, and for inputs numbered other than multiples of 4 minus 1 (3, 7, 11, and so on) (XKS-S9112 only)

1 In the Engineering Setup >Switcher >Input >Input FC/CCR menu (7332.1), select the target input to set.

To select more than one input, press [Plural] and then select. To select all inputs, press [ALL].

2 Press [Frame Sync] to enable/disable the frame synchronizer.

To enable, press [Frame Sync], turning it on. To disable, press [Frame Sync], turning it off.

Setting the Input Signal Color Corrector

You can set the following color corrector functions for input signals on an XKS-S8111 SDI Input and FC Connector Board, XKS-S8112/XKS-S9112 12G-SDI Input Board, XKS-C8111/XKS-C9111 100G IP Input Board, or XKS-C9121 100G IP Input and Output Board.

- Video process
- Primary color correction
- RGB clip

Notes

- On the XKS-C8111/XKS-C9111/XKS-C9121, when the switcher signal format is 3840×2160P 2SI or 1080P, the color corrector can be used on inputs for which an input format converter can be configured *(see page 449)*. Also, when the switcher signal format is 1080i, the color corrector can be used on the same inputs as for 1080P. The color corrector cannot be used when the switcher signal format is 720P.
- On an XKS-S8111, when an input format converter is enabled, the color corrector cannot be used under the following conditions.
  - When the switcher signal format is 3840×2160P and the conversion format is set to 3840×2160P
  - When the switcher signal format is 1080i or 720P

1 In the Engineering Setup >Switcher >Input menu (7332), press [Input FC/CCR].

The Input FC/CCR menu (7332.1) appears.

2 Press [CCR].

The Input CCR menu (7332.9) appears.

3 Select the target input to set.

4 In the <CCR> group, press [CCR], turning it on.

The color corrector function is enabled for the selected input.
Configure each function, as required.

Note

To disable the color corrector for the selected input, press [CCR], turning it off.

To return color corrector settings to their defaults

Press [Unity] in the <CCR> group, check the message, then press [Yes].
The settings of all parameters for each function are restored to their defaults.

Applying the video process effect

In the <Video Process> group of the Engineering Setup >Switcher >Input >Input FC/CCR >Input CCR menu (7332.9), press [Video Process], turning it on.

For details about the video process, see "Applying the video process effect" (page 190).

Applying the primary color correction effect

In the <Primary CCR> group of the Engineering Setup >Switcher >Input >Input FC/CCR >Input CCR menu (7332.9), press [Primary CCR], turning it on.

For details about primary color correction settings, see "Applying the primary color correction effect" (page 191).

Applying the RGB clip effect

In the <RGB Clip> group of the Engineering Setup >Switcher >Input >Input FC/CCR >Input CCR menu (7332.9), press [RGB Clip], turning it on.

For details about RGB clip settings, see "Applying the RGB clip effect" (page 191).

Setting the Active Area

You can set a 3840×2160 or 4096×2160 active area for groups of four inputs when the signal format is 3840×2160P.

Notes

- On the XVS-9000, the active area cannot be set.
- [4096×2160] input signals can be selected only on AUX bus outputs set to [4096×2160].
- [4096×2160] is supported on the XKS-S8110 SDI Input Connector Board only.

1 In the Engineering Setup >Switcher >Input menu (7332), press [Active Area Size].

The Active Area Size menu (7332.4) appears.

2 Select the target input to set.

3 In the <Active Area Size> group, select the active area.

3840×2160: Set to 3840×2160.
4096×2160: Set to 4096×2160.

Settings Relating to Signal Outputs

Configures settings for outputs and format converter outputs.
The following output connector boards can be installed in the XVS-9000/8000/7000/6000.

- XVS-9000

Output connector board	Interface
XKS-S9167 12G-SDI Output Board	SDI
XKS-C9121 100G IP Input and Output Board	ST2110
XKS-C9121N NMI Input and Output Board	NMI

- XVS-8000/7000/6000

Output connector board	Interface
XKS-S8165 SDI Output Connector Board	SDI
XKS-S8167 12G-SDI Output Board	SDI
XKS-T8165 IP Output Connector Board	NMI
XKS-Q8166 QSFP IP Output Connector Board	NMI/ST2110 a)
XKS-C8166 100G IP Output Board	ST2110

a) Interface configured in the Engineering Setup >System >Network Config >Net I/F Protocol menu (7311.3)

The maximum number of outputs on the XVS-9000 is 80 (40 for 4K format), or 96 (48 for 4K format) when the multi viewer output connectors are included.
For the XVS-8000/7000/6000, the maximum number of outputs on the XVS-8000/7000 is 48 (12 for 4K format), and on the XVS-6000 is 24 (6 for 4K format). The maximum number of format converter outputs is 16 (4 for 4K format).

Note

59.94 (2×) format output signals are supported on the XKS-S8165 SDI Output Connector Board only.

Network connector board restrictions

Only the following interface and signal format outputs are supported, depending on the board.

Board	Interface	Signal formats
XKS-T8165	NMI	• 3840×2160P 2SI (Level A) a) • 1080P (Level A) b) • 1080i
XKS-Q8166	NMI	• 3840×2160P 2SI (Level A) a) • 1080P (Level A) b) • 1080i
	ST2110	• 1080i c)
XKS-C8166	ST2110	• 3840×2160P 2SI (Level A) a) • 1080P (Level A) • 1080i • 720P
XKS-C9121	ST2110	• 3840×2160P 2SI (Level A) b) • 1080P (Level A) • 1080i • 720P
XKS-C9121N	NMI	• 3840×2160P 2SI (Level A) b) d)

a) Only the first number output in each group of four outputs can be set.
b) Only odd-numbered outputs can be set.
c) Ancillary data is enabled only on odd-numbered outputs.
d) Outputs that are multiples of 8 minus 1 (7, 15, 23, and so on) are not available.

For details about 3840×2160P 2SI format output settings, see "4K format output settings" (page 454).

4K format output settings

XVS-9000 settings

When the switcher signal format is 3840×2160P 2SI or 3840×2160P SQD, only odd-numbered outputs can be set.
When the switcher signal format is 3840×2160PsF SQD, only the first number output in each group of four outputs can be set, in the same way as for the XVS-8000/7000/6000.
Also, when the switcher signal format is 3840×2160P 2SI or 3840×2160P SQD and an output format converter is used, a 3840×2160P 2SI 12G output signal is assigned to a 12G×1 output, hence the setting is available for each odd-numbered output. For 3840×2160P 2SI 3G and 3840×2160P SQD output signals, a group of four outputs is assigned as a group to a 4K signal, and the setting is available for the first number output in each group of four outputs.

Notes

- When an XKS-C9121N NMI Input and Output Board is installed, outputs that are multiples of 8 minus 1 (7, 15, 23, and so on) are invalid because outputs 7 and 15 on each board cannot be used.
- When the switcher signal format is 3840×2160P SQD and you assign multi viewer outputs to output connectors 81 to 96, groups of four outputs are set as a single unit. Only the first number output (81, 85, 89, 93) in each group of four outputs can be set.

XVS-8000/7000/6000 settings

Four outputs are assigned as a single group to a 4K signal. A single group comprises four outputs in numeric order starting from the first output, and the setting is available for the first number in each group.

Output number	Setting number
1, 2, 3, 4	1
5, 6, 7, 8	5
9, 10, 11, 12	9
13, 14, 15, 16	13
(and so on)	(and so on)

Note

When XKS-S8167 12G-SDI Output Board output connectors are set to 12G mode, 3840×2160P 2SI signals are output as a 12G×1 signal, but the output setting is available only for the first number output in each group of four outputs.

M/E dedicated outputs

On the XVS-8000, M/E dedicated output connectors 1 to 16 can be used by installing an XKS-S8165 SDI Output Connector Board in slot 2.
Two outputs (Ext Out1, Ext Out2) configured on each switcher bank can be assigned to M/E dedicated outputs as output signals. The switcher bank Out1 to Out4 signals can be configured as an Ext Out output signal.

For details about M/E dedicated output settings, see "Setting M/E Dedicated Outputs" (page 458).

Notes

- M/E dedicated outputs are not supported on the XVS-9000/7000/6000.
- M/E dedicated outputs are enabled only when the switcher signal format is 3840×2160P. Four M/E dedicated outputs can be used.
- The following functions are not available on an M/E dedicated output.
  Video clips, vertical blanking, through mode, safe titles, 4:3 crop

Multi viewer output connectors settings

On the XVS-9000, multi viewer output connectors can function as output connectors 81 to 96.
You can assign output signals to output connectors 81 to 96 in the same way as other output connectors. To use the connectors as multi viewer output connectors, multi viewer outputs must be assigned to output connectors 81 to 96.

For details, see "Assigning Output Signals" (page 456).

Output signal format conversion

The following format converters can be used.

Internal format converter: Configurable when an XKS-8460 Format Converter Board is installed *(see page 460)*.
Output format converter: Configurable when an XKS-S9167 12G-SDI Output Board or XKS-C9121 100G IP Input and Output Board is installed *(see page 461)*.
P/I converter: Converts a 1080P format signal to 1080i for output *(see page 463)*.

Notes

- On the XVS-9000, internal format converters and P/I converters are not available.
- On the XVS-8000/7000/6000, output format converters are not available.

Format converter outputs

You can enable the internal format converter function if an XKS-8460 Format Converter Board is installed. Format converter outputs 1 to 16 correspond to format converter channels (FC1 to FC16).
You can assign format converter outputs for output to format converter output connectors 1 to 16 or spare connectors 1 to 4 on an output connector board.
On the XVS-8000, the number of format converter output connectors will vary depending on the number of output connector boards installed. Spare connectors 1 to 4 can be used if an output connector board for the multi viewer is installed.
On the XVS-7000, output connectors 1 to 16 of the output connector boards installed for format converters are used. Spare connectors 1 to 4 can be used if an output connector board for the multi viewer is installed.
On the XVS-6000, output connectors 1 to 16 of the output connector boards installed for format converters are used. Spare connectors cannot be used.

For details about format converter output connectors and spare connectors, see "XVS-9000/8000/7000/6000 Multi Format Switcher" (page 63).

Notes

- When using a network connector board (XKS-T8165/XKS-Q8166/XKS-C8166) for the format converter output, the supported signal formats are restricted.
  For details about restrictions, see "Network connector board restrictions" (page 454).
- When using the format converter output connectors or spare connectors of a network connector board (XKS-T8165/XKS-Q8166/XKS-C8166), the board must be reset after changing the format converter output assignments or output signal conversion format.
  For details about resetting a board, see "Initializing Network Interface Settings" (page 388).
- In 4K format, only FC1, FC5, FC9, and FC13 can be configured.

- The following functions are not supported on format converter outputs.
  Video clips, vertical blanking, through mode, safe titles, 4:3 crop, AUX bus color corrector, AUX mix transitions

Assigning Output Signals

1 In the Engineering Setup >Switcher >Output menu (7333), press [Output Assign].

The Output Assign menu (7333.1) appears.
The status area shows a list of output signal numbers and source names of assigned signals on the left.

2 In the <Output Assign> group, set the signals to display in the list on the right.

Re-Entry Source: Display re-entry signals (multiple assignment is supported)
M/E-1 Out1 to Out6 [1)]
M/E-2 Out1 to Out6 [1)]
M/E-3 Out1 to Out6 [1)]
M/E-4 Out1 to Out6 [1)]
M/E-5 Out1 to Out6 [1)]
P/P Out1 to Out6 [1)]
M/E-1 to M/E-5 Proc Video
P/P Proc Video
M/E-1 to M/E-5 Proc Key
P/P Proc Key
DME Monitor Video
DME Monitor Key
Color Bkgd 2
Frame Memory 1 to 20
Multi Viewer 1 to 4 [2)]
Undefined

Aux Bus: Display AUX, preset, edit preview output (duplicate assignment is not supported)
Preset
Edit Preview
Aux1 to 48

1) Signals are configured using the Engineering Setup >Switcher >Config >M/E Output Assign menu (7331.1).
2) Only XVS-9000 multi viewer output connectors 1 to 16 (output connectors 81 to 96) are configurable.

3 Select the output connector number and signal to assign.

For signals not assigned, select “Undefined” in the signal list or press [Inhibit] to set to “Undefined.”

4 Press [Set].

Assigning a format converter output

You can assign format converter outputs 1 to 16 to format converter output connectors 1 to 16 or spare connectors 1 to 4.
You can also assign frame memory outputs 1 to 20.

Notes

- Frame memory outputs 1 to 20 cannot be assigned when the switcher signal format is 3840×2160P, 3840×2160PsF, or 1080P.
- On the XVS-7000, format converter outputs 9 to 16 are assigned to format converter output connectors 9 to 16. It is not possible to change settings.
- On the XVS-8000, format converter output connectors and spare connectors connected to dedicated inputs cannot be used *(see page 445)*.
- The following functions are not supported on outputs assigned to format converter output connectors and spare connectors.
  Video clips, vertical blanking, through mode, safe titles, 4:3 crop, AUX bus color corrector, AUX mix transitions
- When using a network connector board (XKS-T8165/XKS-Q8166/XKS-C8166), outputs with the same signal format must be assigned to each connector within the following groups of four connectors. The signal format of the output assigned to the first number connector is applied to the four connectors. To output as a 4K format signal, assign sub images 1 to 4 to the four connectors in that order.
  - Format converter output connectors 1 to 4, 5 to 8, 9 to 12, 13 to 16
  - Spare connectors 1 to 4

1 In the Engineering Setup >Switcher >Output menu (7333), press [FC Output Assign].

The FC Output Assign menu (7333.18) appears.
The status area shows a list of output connector numbers and source names of assigned signals on the left. The right side of the status area shows a list of assignable signals.

2 Select the output connector number and signal to assign.

For signals not assigned, select “Undefined” in the signal list.

3 Press [Set].

Adjusting Video Clips

1 In the Engineering Setup >Switcher >Output menu (7333), press [Video Clip].

The Video Clip menu (7333.2) appears.

2 Select the target output to set.

3 Set the following parameters.

No.	Parameter	Adjustment
2	White Clip	Luminance signal white clip value
3	Dark Clip	Luminance signal dark clip value
4	Chroma Clip	Chrominance signal clip value

To return the parameters to their default settings
Press [Default].

Setting the Vertical Blanking Interval and Through Mode

Note

Through mode cannot be set for outputs whose signal format is converted by an output format converter.

1 In the Engineering Setup >Switcher >Output menu (7333), press [V Blank/Through].

The V Blank/Through menu (7333.3) appears.

2 Select the target output to set.

3 Press [V Blank Mask], and set the following parameter.

No.	Parameter	Adjustment
2	Mask End	Final value for vertical blanking interval [a]

a) The adjustment range varies as follows, depending on the signal format.
3840×2160P (also includes output when active area is set to 4096×2160), 1080P: 15 to 41
3840×2160PsF, 1080PsF, 1080i: 7 to 20
720P: 7 to 25

To return the parameters to their default settings
Press [Default].

4 To enable through mode, press [Through Mode], turning it on.

Through mode can be enabled for the following outputs.
- AUX1 to 48, Edit preview output
- Program outputs of each M/E and PGM/PST bank
- Clean outputs of each M/E and PGM/PST bank

Setting the Safe Title Area

Note

Safe titles cannot be used on outputs where the active area is set to [4096×2160].

1 In the Engineering Setup >Switcher >Output menu (7333), press [Safe Title].

The Safe Title menu (7333.4) appears.

2 Select the target output to set.

3 Press [Safe Title], turning it on, to enable the safe title setting in the Misc >Safe Title menu (3221).

4 Perform the following operations.

To display a box: Press [Box1] or [Box2], turning it on.
To display a cross: Press [Cross], turning it on.
To display a grid: Press [Grid], turning it on.

5 Perform the following operations, according to the selection in step **4**.

When [Box1] or [Box2] is selected: Set the following parameters.

No.	Parameter	Adjustment
2	Box Size	Box size
3	Luminance	Display color brightness [a]

a) Adjustable for [Box2].

When [Grid] is selected: In the <Grid Size> group, set the grid size relative to the picture frame (80.00%, 85.00%, 90.00%, 100.00%).

6 Perform the following operations, according to the selection in step **4**.

When [Box1] or [Box2] is selected: In the <Box1 Adjust> or <Box2 Adjust> group, select the screen aspect ratio (16:9, 14:9, 4:3).
When [Grid] is selected: In the <Grid Adjust> group, select the screen aspect ratio (16:9, 4:3).

Cropping a 4:3 Mode Image in HD Format

In HD format, this allows you to crop an image having a screen aspect ratio of 16:9 to an aspect ratio of 4:3 for output (4:3 crop).

Note

When a screen aspect ratio of 16:9 is set in the Engineering Setup >System >Format menu (7313), 4:3 cropping is disabled.

1 In the Engineering Setup >Switcher >Output menu (7333), press [4:3 Crop].

The 4:3 Crop menu (7333.5) appears.

2 Select the target output to set.

3 Press [4:3 Crop], turning it on.

Setting the SDI Output Mode

When an XKS-S8167 12G-SDI Output Board is installed in the XVS-8000/7000/6000, you can set the output mode of 3840×2160P 2SI (Level A) format signals.
Select 12G mode or 3G mode for each group of four output connectors assigned to 4K signals. In 12G mode, 3840×2160P 2SI (Level A) format signals are output as a 12G×1 signal. In 3G mode, they are output as 3G×4 signals.

Notes

- This setting is available only when the switcher signal format is 3840×2160P.
- When the switcher signal format is 3840×2160P SQD, this setting is available only for format converter output connectors and spare connectors.

1 In the Engineering Setup >Switcher >Output menu (7333), press [SDI Mode].

The SDI Mode menu (7333.19) appears.

2 In the status area, select the target output connector group to set.

To select all groups, press [ALL].
To select multiple groups, set the number using the [Num] parameter. The specified number of groups are selected from the currently selected group.

3 In the <SDI Mode> group, select the SDI output mode.

12G: Set to 12G mode.
3G: Set to 3G mode.

To clear the output mode setting
Press [Clear].

4 Press [Execute].

Setting M/E Dedicated Outputs

On the XVS-8000, four M/E dedicated outputs are supported when the switcher signal format is 3840×2160P.

Note

To use M/E dedicated outputs, an XKS-S8165 SDI Output Connector Board must be installed in slot 2 of the switcher.

Setting the Ext Out mode

You can enable either the M/E dedicated output or DME, since they use the same output (Ext Out) on each switcher bank.
By default, Ext Out is configured for DME use. To enable M/E dedicated output, Ext Out must be configured for M/E dedicated output use.

Notes

- The Ext Out mode setting is common to all the M/E and PGM/PST banks.
- If Ext Out is set for M/E dedicated output use, all functions relating to DME effects (DME, DME wipe, image effect) cannot be used in 4K format.

1 In the Engineering Setup >Switcher >Output menu (7333), press [M/E Dedicated Out Assign].

The M/E Dedicated Output Assign menu (7333.8) appears.

2 In the <M/E Ext Output Mode> group, select the Ext Out mode.

DME: Use Ext Out for DME.
Dedicated Output: Use Ext Out for M/E dedicated output.

Setting an Ext Out signal

You can configure two outputs (Ext Out1, Ext Out2) on each switcher bank to use with M/E dedicated outputs. The following signals assigned to Out1 to Out4 using the Engineering Setup >Switcher >Config >M/E Output Assign menu (7331.1) can be set as an Ext Out signal.

- Program outputs
- Preview output
- Clean output
- Key preview outputs

1 In the Engineering Setup >Switcher >Output menu (7333), press [M/E Dedicated Out Assign].

The M/E Dedicated Output Assign menu (7333.8) appears.

2 Press [M/E Ext Out Assign].

The M/E Ext Output Assign menu (7333.11) appears. The status area shows the Ext Out list of each switcher bank on the left and the selectable output signal list on the right.

3 In the list on the left, select the target Ext Out to set.

4 In the list on the right, select an output signal.

5 Press [Set].

Assigning an Ext Out signal to an M/E dedicated output

You can set an Ext Out signal for each group of four M/E dedicated outputs (connectors 1 to 4, 5 to 8, 9 to 12, 13 to 16).
You can select from Ext Out1 and Ext Out2 on each switcher bank, configured using the M/E Ext Output Assign menu (7333.11), as the output to assign to an M/E dedicated output.

1 In the Engineering Setup >Switcher >Output menu (7333), press [M/E Dedicated Out Assign].

The M/E Dedicated Output Assign menu (7333.8) appears.
The status area shows the M/E dedicated output list on the left and the switcher bank Ext Out list on the right.

2 In the list on the left, select the target M/E dedicated output to set.

3 In the list on the right, select an Ext Out signal.

4 Press [Set].

Setting the Internal Format Converters

Up to 16 channels of internal format converter are supported by installing an XKS-8460 Format Converter Board.

Note

On the XVS-9000, internal format converters are not available.

Setting the format converter configuration

You can set FC channels (FC1 to FC16) in 4-channel groups (FC1 to FC4, FC5 to FC8, FC9 to FC12, FC13 to FC16) for input use (input signal conversion) or output use (output signal conversion).

Notes

- On the XVS-7000, FC9 to FC16 are reserved for output use only.
- When the switcher signal format is 1080i or 720P, the FC1 to FC4 setting and FC5 to FC8 setting are linked, likewise the FC9 to FC12 setting and FC13 to FC16 setting.

1 In the Engineering Setup >Switcher >Output menu (7333), press [Internal FC].

The Internal FC menu (7333.15) appears.

2 Press [FC Config].

The FC Config menu (7333.16) appears.

3 In the status area, select the target FC channel to set.

4 In the <FC Config> group, select one of the following.

Input: Set the format converter for input use.
Output: Set the format converter for output use.

To clear the setting
Press [Clear].

5 Press [Execute].

Enabling/disabling the 720P converter

When the switcher signal format is 1080P, you can enable/disable the 720P converter function. The following conversion formats can be selected depending on the 720P converter setting.

720P converter	Input signal format	Output signal format
Disabled	• 1080P (Level A) • 1080P (Level B) • 1080i	• 1080P (Level A)
Enabled	• 1080P (Level A) • 720P	• 1080P (Level A) • 720P

1 In the Engineering Setup >Switcher >Output menu (7333), press [Internal FC].

The Internal FC menu (7333.15) appears.

2 Press [FC Config].

The FC Config menu (7333.16) appears.

3 Press [720P I/O Converter] to enable/disable the 720P converter.

To enable, press [720P I/O Converter], turning it on.
To disable, press [720P I/O Converter], turning it off.

To clear the setting
Press [Clear].

4 Press [Execute].

5 Check the message, then press [Yes].

Setting Internal Format Converter Outputs

You can set internal format converter outputs if the XKS-8460 Format Converter Board is installed.
You can convert signals assigned to format converter outputs 1 to 16 using the format converter.
Format converter outputs 1 to 16 correspond to the same number channel (FC1 to FC16) of the format converter.

Notes

- On the XVS-9000, internal format converters are not available.
- An FC channel configured for format converter input use cannot be selected.
  For details, see "Setting the Internal Format Converters" (page 459).
- In 4K format, only FC1, FC5, FC9, and FC13 can be configured.
- You can assign format converter outputs 1 to 16 to format converter output connectors 1 to 16 or spare connectors 1 to 4 *(see page 456)*.

Assigning a signal to a format converter output

You can assign a signal to convert by the format converter to the format converter output corresponding to the FC channel.

Note

On the XVS-7000, the signals on output connectors 9 to 16 are assigned to FC9 to FC16. The format-converted signals are output on format converter outputs 9 to 16, respectively. It is not possible to change settings.

For details about output connector signal assignment, see "Assigning Output Signals" (page 456).

1 In the Engineering Setup >Switcher >Output menu (7333), press [Internal FC].

The Internal FC menu (7333.15) appears.

2 Press [FC Output Select].

The FC Output Select menu (7333.14) appears.

The status area shows a list of FC channel numbers and source names of the signals assigned to the corresponding format converter output on the left.

3 In the <FC Output Assign> group, set the signals to display in the list on the right.

*For details, refer to step **2** in "Assigning Output Signals" (page 456).*

4 Select the FC channel number and signal to assign.

For signals not assigned, select "Undefined" in the signal list or press [Inhibit] to set to "Undefined."

5 Press [Set].

Setting the conversion format

You can set the signal format of outputs to convert by the format converter.
The conversion format is set in the following groupings, depending on the switcher signal format.
- 3840×2160P, 1080P: 4-channel groups (FC1 to FC4, FC5 to FC8, FC9 to FC12, FC13 to FC16)
- 1080i, 720P: 8-channel groups (FC1 to FC8, FC9 to FC16)

Notes

- When the switcher signal format is 3840×2160PsF or 1080PsF, output signal format conversion is not available.
- When the switcher signal format is 1080P, the signal formats that can be converted vary depending on the 720P converter setting.
  For details about the 720P converter, see "Enabling/disabling the 720P converter" (page 459).

Supported formats

The supported conversion formats are given below.

Notes

- Field frequency and frame frequency conversion is not supported.
- When the conversion format is set to the same signal format as the switcher, signals are output without format conversion, but the signal delay level is the same as for a format-converted signal.

Switcher signal format	Output signal format
3840×2160P (Level A, 2SI)	• 3840×2160P (Level A, 2SI) [a)] • 3840×2160P (Level B, 2SI) • 3840×2160P (Level A, SQD) • 3840×2160P (Level B, SQD) • 1080P (Level A) • 1080P (Level B) • 1080i

Switcher signal format	Output signal format
3840×2160P (Level A, SQD)	• 3840×2160P (Level A, 2SI) • 3840×2160P (Level B, 2SI) • 3840×2160P (Level A, SQD) a) • 3840×2160P (Level B, SQD)
1080P (Level A)	• 1080P (Level A) a) • 720P b)
1080i	• 1080i a) • 720P • 576i c) • 480i c)
720P	• 1080i • 720P a) • 576i c) • 480i c)

a) Output signal without format conversion
b) Selectable when the 720P converter is enabled
c) When the switcher signal format frequency is 59.94, only 480i is selectable. When the frequency is 50, only 576i is selectable.

1 In the Engineering Setup >Switcher >Output menu (7333), press [Internal FC].

The Internal FC menu (7333.15) appears.

2 Press [FC Format].

The FC Format menu (7333.17) appears.
The status area shows the FC channel list on the left and the supported conversion signal format list on the right.

3 In the list on the left, select the target FC channel to set.

Select one of the four target channels or eight target channels to set.

4 In the list on the right, select the signal format.

5 Press [Set].

To clear the signal format setting
Press [Clear].

6 Press [Execute].

Setting the format converter conversion method

You can set the format converter conversion method for each FC channel.
The conversion method items and the target conversion formats are given below.

Item	Conversion format
Enhancer	• 3840×2160P (Level A, 2SI) → 1080P (Level A) • 3840×2160P (Level A, 2SI) → 1080P (Level B) • 3840×2160P (Level A, 2SI) → 1080i
Up-converter aspect ratio	–
Down-converter aspect ratio	• 1080i → 576i • 1080i → 480i • 720P → 576i • 720P → 480i
I/P converter conversion mode	• 1080i → 720P
Up-converter conversion mode	–

In the Engineering Setup >Switcher >Output >Internal FC menu (7333.15), press [FC Adjust] to open the FC Adjust menu (7333.6).
The operation is the similar to setting format converter inputs.

For details, see "Setting the format converter conversion method" (page 447).

Setting an Output Format Converter

You can set an output format converter for outputs of the following output connector boards.
- XKS-S9167 12G-SDI Output Board
- XKS-C9121 100G IP Input and Output Board

Notes

- On the XVS-8000/7000/6000, output format converters are not available.
- The XKS-C9121 has the following restrictions.
  - This setting is available only when the switcher signal format is 3840×2160P 2SI or 1080P.
  - When the switcher signal format is 3840×2160P 2SI, an output format converter can be configured on only the 1st & 2nd and 9th & 10th outputs of each board.
  - When the switcher signal format is 1080P, an output format converter can be configured on only the 1st to 4th and 9th to 12th outputs of each board.
- When an XKS-C9121N NMI Input and Output Board is installed, an output format converter can be configured, but conversion formats other than "3840×2160P (Level A, 2SI)" are not supported.

Setting the conversion format

You can set the signal format of outputs to convert by the format converter.

The conversion format is set in the following groupings, depending on the switcher signal format.

- XKS-S9167
  - 3840×2160P 2SI or 3840×2160P SQD, and the conversion format is 3840×2160P 2SI 12G, 1080P, 1080i: Groups of 2 outputs 1)
  - 3840×2160P 2SI or 3840×2160P SQD, and the conversion format is 3840×2160P 2SI 3G, 3840×2160P SQD: Groups of 4 outputs
  - 1080P, 1080i, 720P: Groups of 4 outputs
- XKS-C9121
  - 3840×2160P 2SI: Groups of 2 outputs (1st and 2nd, 9th and 10th outputs only)
  - 1080P: Groups of 4 outputs (1st to 4th, 9th to 12th outputs only)

1) Groups of 4 outputs when the conversion format is initially set to 3840×2160P 2SI 3G or 3840×2160P SQD and then the conversion format is changed

Notes

- When the switcher signal format is 3840×2160PsF or 1080PsF, output signal format conversion is not available.
- When the switcher signal format is 3840×2160P SQD, the output format converter is disabled for output connectors to which multi viewer outputs are assigned.

Supported formats

The supported conversion formats are given below.

Note

Field frequency and frame frequency conversion is not supported.

Switcher signal format	Output signal format
3840×2160P (Level A, 2SI)	• 3840×2160P (Level A, 2SI) 3G a) b) • 3840×2160P (Level A, 2SI) 12G a) c) • 3840×2160P (Level B, 2SI) 3G b) • 3840×2160P (Level A, SQD) b) • 3840×2160P (Level B, SQD) b) • 1080P (Level A) • 1080P (Level B) b) • 1080i
3840×2160P (Level A, SQD)	• 3840×2160P (Level A, 2SI) 3G • 3840×2160P (Level A, 2SI) 12G • 3840×2160P (Level B, 2SI) 3G • 3840×2160P (Level A, SQD) a) • 3840×2160P (Level B, SQD)
1080P (Level A)	• 1080P (Level A) a) • 1080P (Level B) b) • 1080i • 720P b)
1080i	• 1080i a) • 720P b)
720P	• 1080i b) • 720P a)

a) Output signal without format conversion
b) Not selectable on the XKS-C9121
c) "3840×2160P (Level A, 2SI)" on the XKS-C9121

1 In the Engineering Setup >Switcher >Output menu (7333), press [Output FC].

The Output FC menu (7333.20) appears.

2 Press [FC Format].

The FC Format menu (7333.21) appears.
The status area shows the output list on the left and the supported conversion signal format list on the right.

3 In the list on the left, select the target output to set.

Select an output from among the output grouping to set.

Note

When the switcher signal format is 3840×2160P, only the output with the lowest number in the output grouping can be selected.

4 In the list on the right, select the signal format.

5 Press [Set].

To clear the signal format setting
Press [Clear].

6 Press [Execute].

Setting the format converter conversion method

You can set the format converter conversion method for each output.

For details about the conversion method items and the target conversion formats, see "Setting the format converter conversion method" (page 461).

1 In the Engineering Setup >Switcher >Output >Output FC menu (7333.20), press [FC Adjust].

The FC Adjust menu (7333.22) appears.

2 Display the target output to set in the status area.

Press [Prev] or [Next] to switch the display in the status area.
Pressing [Prev] displays the previous four outputs, and pressing [Next] displays the next four outputs.

3 In the status area, select an output.

4 Set the conversion method.

The operation is similar to setting an internal format converter.

For details, see "Setting the format converter conversion method" (page 447).

Setting the P/I Converter

The P/I converter converts a 1080P format signal to 1080i for output. The P/I converter can be set for each group of four outputs.

Notes

- On the XVS-9000, the P/I converter is not available. The format conversion of output signals by output format converters can be configured *(see page 461)*.
- This setting is available only when the switcher signal format is 1080P.
- Enabling the P/I converter will disable through mode.
- Format converter output connectors, spare connectors, multi viewer output connectors, and M/E dedicated output connectors cannot be set.
- On the XVS-7000, format converter outputs 9 to 12 cannot be used when the P/I converters for output connectors 9 to 12 are enabled. And format converter outputs 13 to 16 cannot be used when the P/I converters for output connectors 13 to 16 are enabled.
- When using a network connector board (XKS-T8165/XKS-Q8166/XKS-C8166), the board must be reset after changing the P/I converter setting.
  For details about resetting a board, see "Initializing Network Interface Settings" (page 388).

1 In the Engineering Setup >Switcher >Output menu (7333), press [Output P/I Converter].

The Output P/I Converter menu (7333.7) appears.

2 Select the target output to set.

Select one of the four target outputs to set.

3 In the <Output P/I Converter> group, press [1080i].

To disable the P/I converter, select [1080P].

4 Press [Execute].

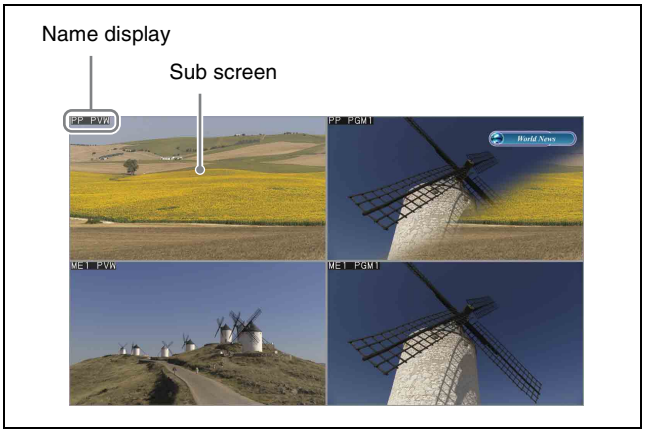
Configuring Multi Viewer

The multi viewer is a function that splits the screen for display of multiple images at the same time.

On the XVS-9000, four multi viewer systems (1 to 4) are available, whereas on the XVS-8000/7000/6000, two multi viewer systems (1 to 2) are available. You can specify the screen layout and signal assignments for each system independently.

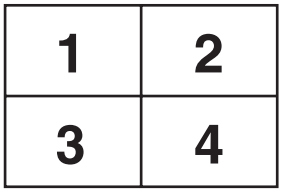
Notes

- Use output connector boards installed for use with the multi viewer for the multi viewer outputs.
  On the XVS-9000, multi viewer outputs must be assigned to output connectors *(see page 456)*.
- In 4K format, the following restrictions apply.
  - In 3840×2160P SQD and 3840×2160PsF SQD, only split-by-4 screen can be selected. The sub images are displayed using 16 small-sized sub screens, which have the same limitations as sub screens of a split-by-16 screen.
  - In 3840×2160P SQD, output is in 1080P signal format. In 3840×2160PsF SQD, output is in 1080PsF signal format.
  - On the XVS-8000/7000/6000 in 3840×2160P 2SI, the output signal format can be set to 3840×2160P or 1080P. The image may be momentarily distorted if the output signal format is changed.
  - On the XVS-9000 in 3840×2160P SQD and 3840×2160PsF SQD, when there is no input signal, a color background may be displayed in part of the screen.
- When the screen is split by 10, 13, or 16, the following restrictions apply to the small-sized sub screens.
  - If there is no input signal on one sub screen in a vertical pair of sub screens, it takes approximately three seconds before the image on the other sub screen in the pair is displayed normally.
    For example, in a split-by-16 screen, the following pairs of sub screens become the target for control: 1 & 5, 2 & 6, 3 & 7, 4 & 8, 9 & 13, 10 & 14, 11 & 15, and 12 & 16
  - The image refresh rate is reduced, so rapid changes in images may not be displayed smoothly.

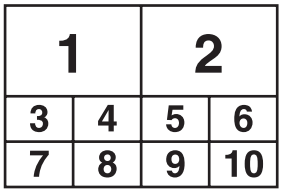


You can select a screen layout from the following eight options.

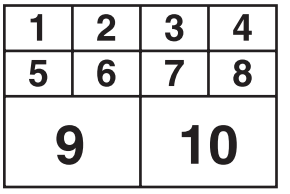
Split-by-4 screen



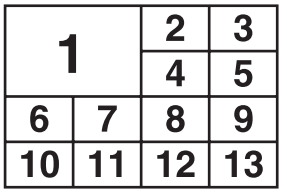
Split-by-10 screen: Pattern 1



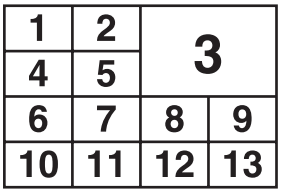
Split-by-10 screen: Pattern 2



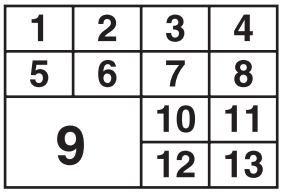
Split-by-13 screen: Pattern 1



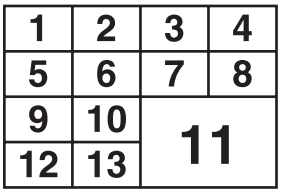
Split-by-13 screen: Pattern 2



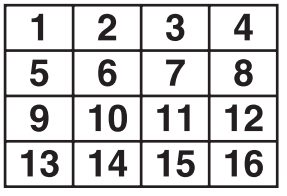
Split-by-13 screen: Pattern 3



Split-by-13 screen: Pattern 4



Split-by-16 screen



1 In the Engineering Setup >Switcher >Output menu (7333), press [Multi Viewer].

The Multi Viewer menu (7333.9) appears.

2 In the <Multi Viewer> group, select the target multi viewer to set.

On the XVS-9000, select from 1 to 4. On the XVS-8000/7000/6000, select 1 or 2.
The status area shows a list of signals that can be assigned to the sub screens.

3 In the <Split Mode> group, set the screen layout.

Split 4: Split the screen into 4 sub screens.
Split 10: Split the screen into 10 sub screens.
Split 13: Split the screen into 13 sub screens.
Split 16: Split the screen into 16 sub screens.
When [Split 10] or [Split 13] is selected, set the layout pattern.

No.	Parameter	Adjustment
4	Pattern	Screen split pattern [a]

a) For [Split 10], patterns 1 and 2 are available. For [Split 13], patterns 1 to 4 are available.

4 To display a border on the sub screens, press [Border Enable], turning it on.

Tally display

Tallies are shown on the multi viewer screen for the signals used in the on-air video.
The tally is represented by sub screen borders using the following two colors.
Red: Video with red tally (on-air tally)
Green: Video with green tally

For details about tally settings, see "Setting the On-Air Tally" (page 428) and "Configuring Tally Generation" (page 487).

Note

When [Independ] is selected in the <Tally Type> group in the Engineering Setup >Panel >Operation >Button Tally menu (7326.9), tallies are not displayed on the multi-viewer screen.

To change the output signal format

When the switcher signal format is 3840×2160P 2SI, the multi viewer output signal format can be set to 1080P or 3840×2160P.

Notes

- On the XVS-9000, the output signal format cannot be selected.
- When using the multi viewer output connectors of a network connector board (XKS-T8165/XKS-Q8166/XKS-C8166), the board must be reset after changing the multi viewer output format.
  For details about resetting a board, see "Initializing Network Interface Settings" (page 388).

1 In the Engineering Setup >Switcher >Output >Multi Viewer menu (7333.9), select the target multi viewer to set.

2 In the <Multi Viewer Format> group, select the signal format.

1080P: Output in 1080P.
3840×2160P: Output in 3840×2160P.

To display the name of a sub screen

You can display the name of the assigned signal on the sub screens.

1 In the Engineering Setup >Switcher >Output >Multi Viewer menu (7333.9), select the target multi viewer to set.

2 Select the target sub screen to set.

To make the setting for all sub screens, press [ALL].

3 Press [Name Enable], turning it on.

4 Set the display position of the name.

No.	Parameter	Adjustment
2	Name Position H	Horizontal position
3	Name Position V	Vertical position

Note

The display position settings are common to all sub screens.

Assigning a signal to a sub screen

Note

The following output signal settings are not reflected on the multi viewer screen.
Video clips, safe titles, 4:3 crop, AUX bus color corrector, AUX mix transitions

1 In the Engineering Setup >Switcher >Output >Multi Viewer menu (7333.9), press [MV Source Assign].

The MV Source Assign menu (7333.10) appears.

2 In the <Multi Viewer> group, select the target multi viewer to set.

3 In the list on the left, select the target sub screen to set.

4 In the <MV Source Assign> group, set the signals to display in the list on the right.

Re-Entry Source: Re-entry signal (excluding color background) *(see page 456)*
Aux Bus: AUX, preset, edit preview output
Source: Primary input

Note

On the XVS-8000, multi viewer output connectors connected to dedicated inputs cannot be used *(see page 445)*.

5 In the list on the right, select the target signal to set.

6 Press [Set].

Enabling AUX Mix Transitions

An AUX mix transition is enabled by assigning the combination of AUX buses used in the AUX mix transition to consecutive odd-numbered and even-numbered output connectors.

For details about AUX mix transitions, see "AUX Mix Transitions" (page 105).

Notes

- In 4K format, the following combination of output connectors can be used in an AUX mix.
  XVS-9000:
  - For 3840×2160P 2SI and 3840×2160P SQD, pairs of odd-numbered output connectors starting from 1 (1 and 3, 5 and 7, 9 and 11, and so on)
  - For 3840×2160PsF SQD, pairs of groups of four output connectors per group starting from 1 (1 to 4 and 5 to 8, 9 to 12 and 13 to 16, 17 to 20 and 21 to 24, and so on)

  XVS-8000/7000/6000:
  - 1 to 4 and 5 to 8
  - 13 to 16 and 17 to 20
  - 25 to 28 and 29 to 32 (XVS-8000/7000 only)
  - 37 to 40 and 41 to 44 (XVS-8000/7000 only)
- When an AUX mix transition is enabled, the color corrector for the two AUX buses operates with the settings for the odd-numbered bus.

1 In the Engineering Setup >Switcher >Output menu (7333), press [Aux Mix].

The Aux Mix menu (7333.12) appears.

2 In the list on the left, select the target odd-numbered and even-numbered output connectors (for example, 1 and 2).

3 In the list on the right, select the AUX bus combination to use.

To disable AUX mix transitions, select [Disable].

4 Press [Set].

5 Repeat steps **2** to **4** as required.

6 Press [Execute].

Setting the Active Area

You can set a 3840×2160 or 4096×2160 active area for groups of four outputs when the signal format is 3840×2160P.

Notes

- On the XVS-9000, the active area cannot be set.
- For AUX bus outputs set to [4096×2160], only an [4096×2160] input signal, black signal, or white signal can be selected.
- For outputs set to [3840×2160], a [4096×2160] input signal cannot be selected.
- [4096×2160] can be set for AUX bus outputs only.
- [4096×2160] is supported on the XKS-S8165 SDI Output Connector Board only.

1 In the Engineering Setup >Switcher >Output menu (7333), press [Active Area Size].

The Active Area Size menu (7333.13) appears.

2 Select the target output to set.

3 In the <Active Area Size> group, select the active area.

3840×2160: Set to 3840×2160.
4096×2160: Set to 4096×2160.

Settings Relating to Video Switching

Enabling/Disabling the Fade-to-Black Function

In the <FTB> group of the Engineering Setup >Switcher >Transition menu (7334), select the program output.
To enable fade to black, press [PGM1] to [PGM4], turning them on.

Note

The PGM2 to PGM4 settings are enabled in multi program mode or DSK mode only.

Setting a Preset Color Mix

1 In the Engineering Setup >Switcher >Transition menu (7334), press [Preset Color Mix].

The Preset Color Mix menu (7334.1) appears.

2 In the <Show Key Enable> group, select the target output to set.

3 In the <Stroke Mode> group, select a stroke mode.

Normal: Carry out a preset color mix with two transition operations.
Single: Carry out a preset color mix with a single transition operation.

Note

In bus fixed mode, the setting is fixed to [Single].

4 In the <Non Drop Key> group, select the key state for a transition including a key.

To execute a transition with the key state maintained, press [Key1] to [Key8], turning them on.

5 To return to the previous transition type setting each time a transition ends, press [One Time Enable], turning it on.

Setting Fader Lever Operations

This sets the relationship between the fader lever position and the progress state of the transition when executing a transition.

1 In the Engineering Setup >Switcher >Transition menu (7334), press [Transition Curve].

The Transition Curve menu (7334.2) appears.

2 In the <Fader Curve> group, select the fader lever operation mode.

Normal: The transition progress is linear, according to the fader lever position (factory default mode).
Adv Tally Mode: When the fader lever is moved from the end of its travel, the tally is output slightly before the transition starts.

Setting the DME Wipe Edge Softness Function

You can display the input image filling the frame when executing a DME wipe by disabling the edge softness function.

In the Engineering Setup >Switcher >Transition menu (7334), press [Full Size Edge Soft] to enable or disable. Disabling will disable the edge softness function in any of the following cases.

- When [Crop] is disabled in the <Crop Mode> group in the DME Wipe >Modify menu of each switcher bank
- When [Crop] is enabled in the <Crop Mode> group in the DME Wipe >Modify menu of each switcher bank and the [Top] and [Right] parameters are set to "100.00" and the [Left] and [Bottom] parameters are set to "–100.00"
- When the DME wipe direction is reverse and before execution of the transition
- When [16:9] is selected in the <Aspect> group in the Engineering Setup >Switcher >Config >Side Flags menu (7331.7)

Selecting the Bank to Configure

In the Engineering Setup >Switcher >Transition menu (7334), select the target bank to set and then configure the bank.

No.	Parameter	Adjustment
1	Bank	Switcher target bank selection

Setting the transition preview mode

In the <Transition Preview> group of the Engineering Setup >Switcher >Transition menu (7334), select one of the following.

One Time: The transition preview ends after a single transition ends.
Normal: Pressing the [TRANS PVW] button switches between transition preview mode and normal mode.

Selecting independent key transition mode

In the <Key Transition> group of the Engineering Setup >Switcher >Transition menu (7334), select one of the following.

Same: The transition settings for key insertion and key removal are common.
Independ: The transition settings for key insertion and key removal are configured separately.

Selecting the background transition flip-flop mode

In the Engineering Setup >Switcher >Transition menu (7334), press [Bus Toggle] to enable (On) or disable (Off) flip-flop mode.
On: Flip-flop mode
Off: Bus fixed mode

For details, see "Flip-flop mode and bus fixed mode" (page 96).

Enabling/disabling split faders

In the Engineering Setup >Switcher >Transition menu (7334), press [Split Fader] to enable or disable.

Settings Relating to Keys, Wipes, and Frame Memory

Setting the Video Process Memory

To enable video process memory, in the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), press [Video Proc Memory], turning it on.

Setting Show Key

1 In the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), press [Show Key].

The Show Key menu (7335.1) appears.

2 In the <Show Key Enable> group, select the target output to set.

3 To set the length of time the key is displayed, press [Hold Time].

4 Set the following parameter.

No.	Parameter	Adjustment
1	Hold Time	Show key hold time (frames)

Setting the Key Auto Drop Function

The "key auto drop" function automatically switches off a particular key when you press a cross-point button in a bus that outputs the background on the particular switcher bank.
When the background output bus is in flip-flop mode, this is always the A bus. In bus fixed mode, it is either the A bus or the B bus, depending on the fader lever position.

For details, see "Flip-flop mode and bus fixed mode" (page 96).

1 In the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), press [Key Auto Drop].

The Key Auto Drop menu (7335.2) appears.

2 Press the button for the key you want to turn off automatically, turning the button on.

Selecting the Bank to Configure

In the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), select the target bank to set and then configure the bank.

No.	Parameter	Adjustment
1	Bank	M/E or P/P target bank selection

Selecting the key memory mode

In the <Key Memory> group of the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), select the mode (Full, Simple, Off).

For details, see "Key Memory" (page 109).

Selecting the process order of masks and borders

In the <Mask/Border Process> group of the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), select one of the following.

Mask>Border: Apply the mask effect, then apply the border effect.

Border>Mask: Apply the border effect, then apply the mask effect.

Selecting the key priority mode

In the <Key Priority> group of the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), select one of the following.

Normal: The key priority sequence can be set arbitrarily.

Fix: Fixed at the currently set priority sequence.

Setting the operation mode of a cross-point hold button on the key bus

In the <Xpt Hold Mode> group of the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), select one of the following.

Key Disable: The cross-point hold button of the key bus functions as a key disable set button. When the cross-point hold button is enabled, the key settings, including the cross-point selection information, are not reflected, even when recalling a snapshot or keyframe effect.

Key Dsbl with Status: Same as [Key Disable], but also disables the reflection of the key on/off status.

Xpt Hold: The cross-point hold button of the key bus functions as a cross-point hold set button. When the cross-point hold button is enabled, the cross-point selection information is not reflected, even when recalling a snapshot or keyframe effect.

Note

This setting is enabled for the attributes of snapshots as well as the operation mode of the cross-point hold button.

Setting the operation mode when the pattern limit is released

In the <Pattern Limit Transition> group of the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), select one of the following.

Auto: When the pattern limit is released, the remainder of the transition is executed automatically at a dedicated transition rate.

Manual: After the pattern limit is released, the transition waits for the next operation, then executes. The transition is not executed until you move the fader lever or press the [AUTO TRANS] button (or [TAKE] button).

Setting the default wipe edge softness

1 In the Engineering Setup >Switcher >Key/Wipe/FM menu (7335), press [Wipe Edge Default], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
3	Soft	Default value of wipe edge softness

Settings Relating to Function Links

Setting a Cross-Point Button Link

This configures the bus link function that links together two buses within the switcher.

Setting a bus link

1 In the Engineering Setup >Switcher >Link menu (7336), press [Internal Bus Link].

The Internal Bus Link menu (7336.1) appears.

2 Select the target link number to set.

3 Press [Link Bus Select].

The Link Bus Select menu (7336.2) appears.
The bottom of the status area shows a list of selectable buses.

4 In the <Bus Select> group, select [Master Bus] (link source).

5 Select the bus for the link source, and press [Bus Set].

M/E-1 to 5 Trans PGM and P/P Trans PGM can be set only when [Master Bus] is selected.

Note

When one of M/E-1 to M/E-5 Trans PGM or P/P Trans PGM is selected for [Master Bus], the link setting becomes effective as soon as you start moving the fader lever.

6 In the <Bus Select> group, select [Linked Bus] (link destination).

7 Select the bus for the link destination, and press [Bus Set].

AUX1 to 48 as Key can be set only when [Linked Bus] is selected.

8 Select the link table number, and press [Link Table Set].

No.	Parameter	Adjustment
3	Link Table No	Link table number

To release the link

In the Engineering Setup >Switcher >Link >Internal Bus Link menu (7336.1), select a link number and press [Clear].

Setting a link table

1 In the Engineering Setup >Switcher >Link >Internal Bus Link menu (7336.1), select the target link number to set.

2 Press [Link Table Select].

The Link Table Select menu (7336.3) appears.
The bottom of the status area shows a list of the selected link table signals.

3 Select the link source and link destination signals.

No.	Parameter	Adjustment
4	Main No	Video/key signal for link source
5	No	Video/key signal for link destination

4 Press [Link Src Set].

To initialize the link table setting

Press [Init Link Table], check the message, then press [Yes].

To select another link table

Select the link table number using the following parameter, and press [Link Table Set].

No.	Parameter	Adjustment
3	Link Table No	Link table number

Setting a Link Between M/E Banks

The operations which can be linked are as follows.
- Transition execution (auto transition, cut, and fader lever operation)
- Next transition selection
- Transition type selection

1 In the Engineering Setup >Switcher >Link menu (7336), press [M/E Link].

The M/E Link menu (7336.6) appears.
The status area shows the link number list on the left and a list of the switcher banks (M/E or P/P) that can be selected on the right.

2 Select the target link number to set.

3 In the <M/E Select> group, select [Master M/E] (link source).

4 Select the M/E or PGM/PST link source, then press [M/E Set].

5 In the <M/E Select> group, select [Linked M/E] (link destination).

6 Select the M/E or PGM/PST link destination, then press [M/E Set].

To also link operations other than transition execution

Press [Transition Only], turning it off.

To release the link

Select the link number and press [Clear].

Setting Key Transition Links

The operations which can be linked are as follows.
- Auto transition
- Key on/off

1 In the Engineering Setup >Switcher >Link menu (7336), press [Key Trans Link].

The Key Transition Link menu (7336.7) appears.
The status area shows the link number list on the left and a list of the keys that can be selected on the right.

2 Select the target link number to set.

3 In the <Key Select> group, select [Master Key] (link source).

4 Select the key for the link source, and press [Key Set].

5 In the <Key Select> group, select [Linked Key] (link destination).

6 Select the key for the link destination, and press [Key Set].

To release the link

Select the link number and press [Clear].

Setting a Color Corrector Link Group

You can configure an AUX bus color corrector link group.

1 In the Engineering Setup >Switcher >Link menu (7336), press [Aux Bus CCR Link].

The Aux Bus CCR Link menu (7336.8) appears.

2 In the status area, select the target AUX bus to set.

To select AUX buses, set the [Num] parameter. The specified number of AUX buses are selected from the currently selected AUX bus.

3 In the <Link Group Select> group, select a group (Link1 to Link12).

AUX buses configured in the same group form a link group.

Settings Relating to Device Connections

Assigning an AUX Bus to Ext In on a DME

You can set the signal (AUX bus output) that is input on Ext In on a DME.

1 In the Engineering Setup >Switcher >Device Interface menu (7337), press [DME Interface].

The DME Interface menu (7337.7) appears.

2 In the list on the left, select Ext In on the target DME channel to set.

3 In the list on the right, select the AUX bus to assign to Ext In.

DME Setup

Chapter 20

Settings Relating to Signal Inputs

Setting Initial Crop

1 In the <Aspect> group of the Engineering Setup >DME >Input menu (7341), select the screen aspect ratio (16:9 or 4:3).

2 In the DME1 <Crop> group, press [Initial Crop] and set the following parameters.

No.	Parameter	Adjustment
1	Top	Position of top side
2	Left	Position of left side
3	Right	Position of right side
4	Bottom	Position of bottom side

To return the settings to the defaults
In the <Crop> group, press [Unity].

Setting the Illegal Color Limiter for Matte Signals

Enable/disable the illegal color limiter for the signal generated by the DME internal matte generator.
To enable, in the Engineering Setup >DME >Input menu (7341), press [Matte Illeg Col Limit] for DME1, turning it on.

DCU Setup

Chapter 21

About DCU setup

The MKS-X7700 and MKS-X2700 System Interface Units can function as device control units (DCU) using the GPI input/output ports, 9-pin serial port, or network port. However, the system interface units (SIU) that can use the DCU function is limited to SIU1 and SIU2 only.

The settings related to the DCU function of the SIU are configured in the Engineering Setup >DCU menu.
To configure menu settings, select [DCU1] for SIU1 or select [DCU2] for SIU2.

Note

The DCU setup must be configured in the same way on control panels (up to three units) that share a common SIU (DCU function). After performing DCU setup on one control panel, configure the other control panels with the same setup.

Parallel Input Settings

The SIU parallel input ports are assigned with the following priority sequence.

(1) When an external box is configured in the Engineering Setup >Router/Tally >Router >External Box Assign menu (7361.1), parallel inputs are assigned to the external box inputs in order.
(2) When tally is configured in the Engineering Setup >Router/Tally >Tally Enable menu (7364), parallel inputs are assigned to tally inputs automatically.

Input ports that are not used after the configuration above can be assigned as GPI input ports in the Engineering Setup >DCU >Input Config menu (7351).
GPI input is also supported via a network. The GPI input port settings are the same as for parallel input ports.

For details, see "GPI input via a network" (page 474).

Assigning a GPI Input Port

1 In the <DCU Select> group of the Engineering Setup >DCU >Input Config menu (7351), select one of the following.

DCU1: Set SIU1 ports.
DCU2: Set SIU2 ports.

2 In the <Parallel Input Assign> group, press [GPI Input].

3 Select the input port and GPI input number.

No.	Parameter	Adjustment
1	Parallel Input	Input port
3	GPI Input	GPI input

Note

For MKS-X2700 parallel input ports, set a port in the range 1 to 34.

4 Press [GPI Input Set].

Releasing a GPI Input Port Assignment

1 In the <DCU Select> group of the Engineering Setup >DCU >Input Config menu (7351), select the target to set (DCU1 or DCU2).

2 If [GPI Input] in the <Parallel Input Assign> group is lit, press [GPI Input], turning it off.

3 Select a port number.

No.	Parameter	Adjustment
1	From No	First port number
2	To No	Last port number

4 In the <Parallel Input Assign> group, press [No Assign].

GPI Input Settings

Configure the trigger type and other settings for each GPI input.

GPI input via a network

On GPI inputs via a network, GPI control is performed using serial tally protocol commands.
GPI inputs can be configured in the same way as parallel input ports.

Notes

- To use GPI via a network, configuration of the SIU utility connector is required. For details, refer to the ICP-X7000 Installation Manual.
- This uses a SIU serial tally port, hence the network port must be configured for a serial tally port.
  For details, see "Serial Tally Settings" (page 490).

Configuring GPI Inputs

1 In the Engineering Setup >DCU >GPI Input Assign menu (7352), select the target GPI input to set.

2 In the <Trigger Type> group, select the trigger polarity.

(Rising Edge): Trigger on the rising edge of the input pulse.
(Falling Edge): Trigger on the falling edge of the input pulse.
(Any Edge): Trigger on an inversion of the input pulse.
(Level): Trigger when the level of the input pulse is low or high.
NOP (No Operation): Not triggered by an input pulse.

3 In the <Target Device> group, select the control panel to handle the GPI input.

PNL1: ID1 control panel
PNL2: ID2 control panel
PNL3: ID3 control panel

The action set in step **4** will be executed for the switcher and DME controlled by the control panel selected in this step.

Note

For GPI input via a network, SIU1 must be configured to use [PNL1], and SIU2 must be configured to use [PNL2]. [PNL3] cannot be used.

4 Select the action to set.

No.	Parameter	Adjustment
2	Action	Action selection
4 a)	Aux Bus No	AUX bus selection
5	Reg No	Register number
5 a)	Src No	Source signal selection
5 b)	No	Button number

a) For "Aux ? O'ride Src ??" action
b) For "Prefs Button ?" action

5 Press [Action Set].

Trigger type and actions list 1)

- **When the trigger type is other than "Level"**
  M/E-x Cut, M/E-x Auto Trans, P/P Cut, P/P Auto Trans, M/E-x Keyx Cut, M/E-x Keyx Auto Trans, P/P Keyx Cut, P/P Keyx Auto Trans, FTB Auto Trans, FTB Cut, Master SS ? Recall, SS ? Recall, M/E-x Keyx SS ? Recall, P/P Keyx SS ? Recall, Master Effect ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, Shotbox ? Recall, Macro Take, Macro ? Recall, Prefs Button ?, No Action
  Aux ? O'ride Src ?? 2)
- **When the trigger type is "Level"**
  System Format, System Aspect, Level Enable, Panel Status, No Action

1) M/E-x: where x is the M/E number (1 to 5)
   Keyx: where x is the key number (1 to 8)
2) When the trigger type is only "Rising Edge" or "Falling Edge"

Notes

- "Level Enable" is a function that determines whether GPI inputs are enabled ("Enable") or disabled ("Disable") for the "System Aspect" and "System Format" actions that can be used when the trigger type is "Level." If the input is disabled ("Disable") when "Level Enable" is selected, "System Aspect" and "System Format" cannot be switched by the GPI input. If a GPI action is triggered just as system power is turned off, such as by switching "System Aspect" or "System Format," the action may be executed immediately before the power goes off and the power may go off before the action is completed. This may corrupt the setup. It is therefore recommended to use "Level Enable" to avoid such a situation.
- "Aux ? O'ride Src ??" switches the AUX bus input. For example, when "Rising Edge" is selected, the configured AUX bus input is used on the rising edge and then returns to the original cross-point on the falling edge. If the GPI trigger is applied repeatedly at short intervals (0.5 seconds or less), the cross-point switching may not be carried out correctly. In this case, apply the GPI trigger again.
- In Dual Simul mode, you can select the target switcher for the panel status display using "Panel Status" (H=SWR1, L=SWR2).

Configuring level settings

Configure the settings for low level and high level when the trigger type is set to "Level."

1 In the Engineering Setup >DCU >GPI Input Assign menu (7352), select an action and press [H/L Set].

The H/L Set menu (7352.1) appears.

2 Select the setting.

No.	Parameter	Adjustment
2	Item No	Selection of setting for action

3 To trigger an action when the input is high level or low level, press [H Set] or [L Set], respectively.

If the action is "System Format," press [H Set] or [L Set] in the <System> group.

Parallel Output Settings

Output ports that are not used configuring tally can be assigned as GPI output ports in the Engineering Setup >Router/Tally >Tally Enable menu (7364).
GPI output is also supported via a network. The GPI output port settings are the same as for parallel output ports.

For details, see "GPI output via a network" (page 477).

Assigning a GPI Output Port

1 In the <DCU Select> group of the Engineering Setup >DCU >Output Config menu (7353), select one of the following.

DCU1: Set SIU1 ports.
DCU2: Set SIU2 ports.

2 In the <Parallel Output Assign> group, press [GPI Output].

3 Select the output port and GPI output number.

No.	Parameter	Adjustment
1	Parallel Output Slot	Output port slot
2	Parallel Output Port	Output port
5	GPI Output	GPI output

Note

For MKS-X2700 parallel output ports, set 2 for the slot and a value in the range 1 to 36 for the port.

4 Press [GPI Output Set].

Releasing a GPI Output Port Assignment

1 In the <DCU Select> group of the Engineering Setup >DCU >Output Config menu (7353), select the target to set (DCU1 or DCU2).

2 If [GPI Output] in the <Parallel Output Assign> group is lit, press [GPI Output], turning it off.

3 Select the slot number and port number.

No.	Parameter	Adjustment
1	From Slot	First port slot
2	From Port	First port number
3	To Slot	Last port slot
4	To Port	Last port number

4 In the <Parallel Output Assign> group, press [No Assign].

GPI Output Settings

Configure the trigger type and other settings for each GPI output.

GPI output via a network

On GPI outputs via a network, GPI control is performed using serial tally protocol commands.
GPI outputs can be configured in the same way as parallel output ports.

Notes

- To use GPI via a network, configuration of the SIU utility connector is required. For details, refer to the ICP-X7000 Installation Manual.
- This uses a SIU serial tally port, hence the network port must be configured for a serial tally port.
  For details, see "Serial Tally Settings" (page 490).

Configuring GPI Outputs

1 In the Engineering Setup >DCU >GPI Output Assign menu (7354), select the target GPI output to set.

2 In the <Trigger Type> group, select the trigger polarity.

(Rising Edge): Trigger causes the relay to open or the output to go high level, and holds this state for the pulse width duration.
(Falling Edge): Trigger causes the relay to close or the output to go low level, and holds this state for the pulse width duration.
(Any Edge): When a trigger occurs, the relay opens/closes or the output goes high/low level, switching state.
Status: The relay opens/closes or the output goes high/low level in response to the status.
NOP (No Operation): The trigger has no effect on the relay state or the output level.

3 Set the pulse width and timing.

No.	Parameter	Adjustment
3	Pulse Width	Pulse width
4	Timing	Output timing [a]

a) 1: Field 1, 2: Field 2, 3: Any

Note

When "Any Edge" is selected as the trigger type, only the [Timing] parameter is available. When "Status" is selected as the trigger type, there are no parameter settings.

4 In the <Source Device> group, select the control panel to handle the GPI output.

PNL1: ID1 control panel
PNL2: ID2 control panel
PNL3: ID3 control panel

When the action set in step **5** is executed on the control panel selected in this step, GPI output occurs. It is also possible to output error information.

Note

For GPI output via a network, SIU1 must be configured to use [PNL1], and SIU2 must be configured to use [PNL2]. [PNL3] cannot be used.

5 Select the action to set.

No.	Parameter	Adjustment
2	Action	Action selection
5	Reg No	Register number

6 Press [Action Set].

Trigger type and actions list [1)]

- **When the trigger type is other than "Status"**
  M/E-x Keyx SS ? Recall, P/P Keyx SS ? Recall, No Action
- **When the trigger type is "Status"**
  M/E-x Keyx SS ? Recall, P/P Keyx SS ? Recall, M/E-x Keyx On, P/P Keyx On, Error Make, Error Break, Keep Make, Keep Break, Device Recording, PREFS 1 to PREFS 16, No Action

1) M/E-x: where x is the M/E number (1 to 5)
Keyx: where x is the key number (1 to 8)

Testing trigger output

In the Engineering Setup >DCU >GPI Output Assign menu (7354), press [Test Fire].
This outputs a trigger from the selected output port.

Note

This is no output when the trigger type is "Status."

Configuring the Connection Port of External Devices

You can set the protocol (device type) of a device connected to the serial port or network port of an SIU, and set the control panel to use for operation.

Notes

- The maximum number of ports that can be used on a single SIU, including serial ports and network ports, is 40.
  Serial port settings are enabled for port numbers in slots in which a serial port board is installed.
- Control of P-Bus compatible devices, AMP compatible devices, and TCP/IP connected devices is supported on network ports.
- Control of AMP compatible devices is not supported on serial ports.
- If using a network port, configuration of the SIU utility connector is required. For details, refer to the ICP-X7000 Installation Manual.

Configuring the Connection Port

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select one of the following.

DCU1: Set SIU1 ports.
DCU2: Set SIU2 ports.

2 In the list on the left of the status area, select the target port to set.

The “Port” field shows the SIU slot number and port number.
To configure a network port, select any slot/port number.

Note

For MKS-X2700 serial ports, select 1 for the slot and a value in the range 1 to 6 for the port.

3 In the list on the right of the status area, select the device type of the connected device.

1. No Assign: No device assignment
2. P-Bus: P-Bus compatible device
3. VTR: VTR (Sony 9-pin VTR protocol)
4. DDR VDCP: Disk recorder (video disk communications protocol)
5. Simple VDCP: Disk recorder with low-performance communications (video disk communications protocol)
6. DDR Odetics: Disk recorder (Odetics protocol)
7. Extended VTR: Extended VTR (Abekas A53 protocol)
8. AMP: AMP compatible device
9. General tcp/ip: TCP/IP connected devices (general-purpose)

4 Press [Device Type Set].

5 To set the port name, press [Set] in the <Name> group.

Enter a name of up to 16 characters in the keyboard window, and press [Enter].
If you do not set a port name, the “DCUd_PORTs_p” default name is displayed.
d: 1 or 2 (DCU1 or DCU2)
s: 1 to 7 (slot number)
p: 1 to 6 (port number)

To return the set name to the default name
In the <Name> group, press [Clear].

6 In the <PNL Select> group, select the control panel (PNL1, PNL2, PNL3) used for operation of the connected device.

Clearing port settings

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 In the list on the left of the status area, select the target port to clear.

3 Press [Clear].

Configuring the Connected Device

Configure the required detailed settings for operation of the external device connected to a serial port/network port.

Configuring detailed settings for a P-Bus device

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the port connected to the target P-Bus device to set.

3 Press [Port Setting].

The P-Bus Setting menu (7355.1) appears.
The slot number/port number, device type, port name, control panel number, and IP address and port number of the network port appear at the top of the status area.
The device name and response speed settings status for each command appear at the bottom of the status area.

4 For network ports, set the IP address and port number.

To set the IP address
Press [IP Address]. Enter the address using the keyboard window, then press [Enter].

To set the port number
Press [Port]. Enter the port number using the numeric keypad window, then press [Enter].

5 Select the target device ID to set.

6 To set the device name, press [Set] in the <Name> group.

Enter the name using the keyboard window, and press [Enter].

To return the device name to the default name
In the <Name> group, press [Clear].

7 Select the target command to set.

8 Set the response speed.

No.	Parameter	Adjustment
3	Delay	Response speed (number of fields)

9 Press [Delay Set].

10 Repeat steps **7** to **9** as required to set other commands.

To set other device IDs, repeat from step **5**.

Configuring detailed settings for a VTR

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the port connected to the target VTR to set.

3 Press [Port Setting].

The VTR Setting menu (7355.2) appears.
The slot number/port number, device type, port name, control panel number, and timecode source appear at the top of the status area. The setting status of each item appears at the bottom of the status area.

4 In the <TC Source> group, select the timecode source (reference signal for determining the tape position).

LTC: Use LTC (Longitudinal Time Code). When interpolation data is returned from a VTR, use that interpolation data.
LTC:VITC: Normally use LTC, except when the tape is moving at speeds at which LTC cannot be read, use VITC (Vertical Interval Time Code). When interpolation data is returned from a VTR, use that interpolation data.
VITC: Use VITC (Vertical Interval Time Code).
CTL: Use CTL (Control) pulse or timer counter pulse. Use this only for a tape on which no timecode is recorded.

The displayed tape position is based on the specified reference signal.

5 Select the target item to set.

Block	Byte	Item
1	1	HI-BYTE (DEVICE TYPE)
	2	LO-BYTE (DEVICE TYPE)
	3	HI-BYTE (FRAME) (PREROLL TIME)
	4	LO-BYTE (FRAME) (PREROLL TIME)
	5	EDIT DELAY (FRAME)
	6	EE DELAY (FRAME)
	7	OVER RUN (FRAME)
	8	TRAJECTORY
2	1	TC READ DELAY (FRAME)
	2	START DELAY (FRAME)
	3	AFTER SYNC DELAY –
	4	AFTER SYNC DELAY +
	5	MODE1
	6	MODE2
	7	MAX PRRL SPEED
	8	QUICK PVW PRRL TIME (FRAME)

6 Press [Set].

A numeric keypad window for hexadecimal input appears.

7 Set the VTR constants using values in the range 00 to FF.

8 Press [Enter].

9 Repeat steps **5** to **8** as required to make the settings for other items.

Configuring detailed settings for a disk recorder (video disk communications protocol)

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the port connected to the target disk recorder to set.

3 Press [Port Setting].

When "DDR VDCP" is selected as the device type, the DDR VDCP Setting menu (7355.4) appears.
When "Simple VDCP" is selected as the device type, the Simple VDCP Setting menu (7355.6) appears.
The slot number/port number, device type, port name, control panel number, and disk recorder type appear at the top of the status area. The setting status of each item appears at the bottom of the status area.

4 In the <DDR Type> group, select the type of disk recorder.

Player: Functioning as a player.
Recorder: Functioning as a recorder.

5 In the <Name Mode> group, select the file name character count mode.

Fixed 8 Character: Handle as 8-character file names.
Variable Length: Handle as variable-length file names (restricted to files with names of up to 23 characters).

6 In the <TC Sense> group, select the type of timecode sense.

Zero based: Mode in which timecode is sensed (detected), taking the first frame of the loaded file as 00:00:00:00.
SOM based: Mode in which sensing occurs using the timecode saved in the loaded file.

Note

The details of the above operation modes depend on the connected device. For more information, refer to the documentation for the connected device.

7 When using a disk recorder that does not support the timecode drop frame bit, select one of the following in the <Frame Control Mode> group.

Drop Frame: Drop frame mode.
Non Drop Frame: Non-drop frame mode.

Note

This setting is only valid for the following system field frequency/frame frequency values.
29.97, 30, 59.94, 60

8 Select the target item to set.

1. Video Port: Number of the video port associated with the serial port to which the setting applies.
   For a player, the output port setting.
   For a recorder, the input port setting.
2. Maximum Open Delay: Maximum time required to open a file
3. Maximum Cueup Delay: Maximum time required to cue up a file
4. Play After Cueup Delay: Delay time from the cued-up state to begin playback
5. Stop Delay: Delay time from issuing the Stop command until actually stopping
6. Still Delay: Delay time from issuing the Still command until actually stopping
7. Continue Delay: Delay time from issuing the Continue command until actually stopping
8. Idle Delay: Delay time from unloading a file until entering the idle state
   The idle state is a state wherein a previous file has been unloaded before a new file is loaded (that is, a state wherein no file has been loaded).
9. Status Sense Interval: Time until the next Status Sense command is issued (Simple VDCP Setting menu only)

9 Set the video port number or response speed.

No.	Parameter	Adjustment
2	Setting	Video port number or response speed

10 Press [Set].

11 Repeat steps **8** to **10** as required to make the settings for other items.

To enable or disable the loop and recue functions

Loop: Replay the loaded file in a continuous loop. Press [Loop] to enable/disable the function.
Recue: After playing the loaded file, recue to the beginning and then stop. Press [Recue] to enable/disable the function.

Configuring detailed settings for a disk recorder (Odetics protocol)

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the port connected to the target disk recorder to set.

3 Press [Port Setting].

The DDR Odetics Setting menu (7355.7) appears. The slot number/port number, device type, port name, and control panel number appear at the top of the status area. The setting status of each item appears at the bottom of the status area.

4 In the <TC Sense> group, select the type of timecode sense.

Zero based: Mode in which timecode is sensed (detected), taking the first frame of the loaded file as 00:00:00:00.
SOM based: Mode in which sensing occurs using the timecode saved in the loaded file.

Note

The details of the above operation modes depend on the connected device. For more information, refer to the documentation for the connected device.

5 Select the target item to set.

1. Maximum Open Delay: Maximum time required to open a file
2. Maximum Cueup Delay: Maximum time required to cue up a file
3. Play After Cueup Delay: Delay time from the cued-up state to begin playback
4. Stop Delay: Delay time from issuing the Stop command until actually stopping
5. Still Delay: Delay time from issuing the Still command until actually stopping
6. Command Delay (Auto Mode): Delay time from issuing the Auto Mode On/Off command until the command takes effect
7. Command Delay (Out Preset): Delay time from issuing the Out Preset command until the command takes effect
8. Command Delay (Preview In Preset): Delay time from issuing the Preview In Preset command until the command takes effect
9. Internal Parameter (1): Reserved for future use (set to 255)
10. Internal Parameter (2): Reserved for future use (set to 255)
11. Internal Parameter (3): Reserved for future use (set to 255)
12. Internal Parameter (4): Reserved for future use (set to 255)

6 Set the response speed or value.

No.	Parameter	Adjustment
2	Setting	Response speed or value

7 Press [Set].

8 Repeat steps **5** to **7** as required to make the settings for other items.

Configuring detailed settings for an Extended VTR

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the port connected to the target Extended VTR to set.

3 Press [Port Setting].

The Extended VTR Setting menu (7355.5) appears. The slot number/port number, device type, port name, and control panel number appear at the top of the status area. The setting status of each item appears at the bottom of the status area.

4 Select the target item to set.

1. Maximum Open Delay: Maximum time required to open a file
2. Maximum Cueup Delay: Maximum time required to cue up a file
3. Play After Cueup Delay: Delay time from the cued-up state to begin playback
4. Stop Delay: Delay time from issuing the Stop command until actually stopping

5 Set the response speed.

No.	Parameter	Adjustment
2	Setting	Response speed

6 Press [Set].

7 Repeat steps **4** to **6** as required to make the settings for other items.

Configuring detailed settings for an AMP compatible device

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the port connected to the target AMP compatible device to set.

3 Press [Port Setting].

The AMP Setting menu (7355.8) appears.
The slot number/port number, device type, port name, and control panel number appear at the top of the status area. The setting status of each item appears at the bottom of the status area.

4 In the <TC Sense> group, select the type of timecode sense.

Zero based: Mode in which timecode is sensed (detected), taking the first frame of the loaded file as 00:00:00:00.
SOM based: Mode in which sensing occurs using the timecode saved in the loaded file.

Note

The details of the above operation modes depend on the connected device. For more information, refer to the documentation for the connected device.

5 Select the target item to set.

1. Maximum Open Delay: Maximum time required to open a file
2. Maximum Cueup Delay: Maximum time required to cue up a file
3. Play After Cueup Delay: Delay time from the cued-up state to begin playback
4. Stop Delay: Delay time from issuing the Stop command until actually stopping
5. Still Delay: Delay time from issuing the Still command until actually stopping
6. Command Delay (Auto Mode): Delay time from issuing the Auto Mode On/Off command until the command takes effect
7. Command Delay (Out Preset): Delay time from issuing the Out Preset command until the command takes effect
8. Command Delay (Preview In Preset): Delay time from issuing the Preview In Preset command until the command takes effect
9. IP Address: IP address setting
10. TCP/IP Port: TCP/IP port number setting
11. Video Port: Video port number (1 to 4) setting
12. Internal Parameter (1): Reserved for future use (set to 255)
13. Internal Parameter (2): Reserved for future use (set to 255)
14. Internal Parameter (3): Reserved for future use (set to 255)

6 Set the response speed or value.

No.	Parameter	Adjustment
2	Setting	Response speed or value

When "IP Address" is selected
Press [IP Address]. Enter the address using the keyboard window, press [Enter], then skip to step **8**.

When "TCP/IP Port" is selected
Press [TCP/IP Port]. Enter the port number using the numeric keypad window, press [Enter], then skip to step **8**.

7 Press [Set].

8 Repeat steps **5** to **7** as required to make the settings for other items.

Configuring detailed settings for a TCP/IP connected device

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial/Net Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the port connected to the target device to set.

3 Press [Port Setting].

The General tcp/ip Setting menu (7355.9) appears.
The slot number/port number, device type, port name, and control panel number appear at the top of the status area. The setting status of each item appears at the bottom of the status area.

4 Select the target item to set.

1. IP Address: IP address setting
2. Port: Port number setting
3. Internal Parameter (1): Reserved for future use (set to 255)
4. Internal Parameter (2): Reserved for future use (set to 255)
5. Internal Parameter (3): Reserved for future use (set to 255)
6. Internal Parameter (4): Reserved for future use (set to 255)
7. Internal Parameter (5): Reserved for future use (set to 255)
8. Internal Parameter (6): Reserved for future use (set to 255)
9. Internal Parameter (7): Reserved for future use (set to 255)
10. Internal Parameter (8): Reserved for future use (set to 255)
11. Internal Parameter (9): Reserved for future use (set to 255)

12. Internal Parameter (10): Reserved for future use (set to 255)

5 Set the value.

No.	Parameter	Adjustment
2	Setting	Setting

When “IP Address” is selected
Press [IP Address]. Enter the address using the keyboard window, press [Enter], then skip to step **7**.

When [Port] is selected
Press [Port]. Enter the port number using the numeric keypad window, press [Enter], then skip to step **7**.

6 Press [Set].

7 Repeat steps **4** to **6** as required to make the settings for other items.

Router Interface and Tally Setup

Chapter 22

About router/tally setup

A router (routing switcher) and its interface use the S-Bus protocol or NS-Bus protocol. Configure the required settings for router and tally operation to match the protocol (S-Bus/NS-Bus) selected in the switcher system.
For details about S-Bus/NS-Bus settings, consult your Sony representative.

Router Interface Settings

Switcher and external box matrixes can be assigned to S-Bus space/NS-Bus space.
The settings used are common to both parallel and serial tallies.

Note

The range of NS-Bus levels that can be configured on the switcher is 1 to 8 only.

Assigning Switcher Inputs/Outputs to S-Bus/NS-Bus Space

You can assign the switcher input/output matrix to S-Bus/NS-Bus space.

1 In the <Device> group of the Engineering Setup >Router/Tally >Router menu (7361), select the target switcher to set.

SWR1: Switcher 1
SWR2: Switcher 2

2 In the <Matrix Size> group, select the matrix size to assign to S-Bus/NS-Bus space.

320×348 (Standard): Assign the switcher input/outputs at 320×348 size.
274×254: Assign the switcher input/outputs at 274×254 size.
272×274: Assign the switcher input/outputs at 272×274 size.
182×256: Assign the switcher input/outputs at 182×256 size.
136×138: Assign the switcher input/outputs at 136×138 size.
128×128: Assign the switcher input/outputs at 128×128 size.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Source	Source start address
2	Destination	Destination start address
3	Level	S-Bus/NS-Bus level

Setting External Boxes 1 to 12

To obtain the signal selection status of external devices with a parallel input, assign a matrix as an external selector to S-Bus/NS-Bus space.

1 In the Engineering Setup >Router/Tally >Router menu (7361), press [External Box Assign].

The External Box Assign menu (7361.1) appears.

2 In the <Device> group, select the target to set (External Box 1 to 12).

3 In the <Matrix Size> group, select the number of inputs for the external box.

No Assign: Do not use.
4×1: 4 inputs and 1 output
8×1: 8 inputs and 1 output
16×1: 16 inputs and 1 output
32×1: 32 inputs and 1 output

Note

The maximum total number of inputs for all 12 external boxes is 68.

4 Set the following parameters.

No.	Parameter	Adjustment
1	Source	Source start address
2	Destination	Destination start address
3	Level	S-Bus/NS-Bus level

Coupling external boxes

By coupling a number of external boxes, the number of inputs can be increased.
This section describes the coupling of external boxes 1 and 2 as an example.

1 In the <Device> group of the Engineering Setup >Router/Tally >Router >External Box Assign menu (7361.1), select [External Box1].

2 In the <Matrix Size> group, select [8×1].

3 Set the following parameters.

No.	Parameter	Adjustment
1	Source	Source start address
2	Destination	Destination start address
3	Level	S-Bus/NS-Bus level

4 In the <Device> group, select [External Box2].

5 In the <Matrix Size> group, select [32×1].

6 Set the parameters.

Set the [Destination] and [Level] parameters to the same values set in step **3**.
This automatically couples external boxes 1 and 2, which can be used an external box with 40 (8+32) inputs.

Setting the Group Number of a Description Name/Alias Name

Set the group number of an S-Bus description name or NS-Bus alias name.

1 In the <Alias Name Gp> group of the Engineering Setup >Router/Tally >Router menu (7361), press [Gp No].

2 Set the following parameter.

No.	Parameter	Adjustment
1	Gp No	Group number of S-Bus description name/NS-Bus alias name [a)]

a) Select 0 to 7 for S-Bus, or select 1 to 8 for NS-Bus.

Note

For S-Bus, the description name of group 0 is used if description names for groups 1 to 7 are not specified. Type+Num name is used if a description name for group 0 is not specified.

3 In the <Alias Name Gp> group, press [Set].

Note

Send the configured S-Bus description name/NS-Bus alias name from the router/system controller.

Tally Group Settings

You can select a tally group (1 to 8) to control using S-Bus/NS-Bus and enable the tally.

Setting the Tally Group

1 Open the Engineering Setup >Router/Tally >Group Tally menu (7362).

2 In the <Tally Group> group, select the tally group.

Select a group from groups 1 to 4 or groups 5 to 8. To select more than one group, select groups with consecutive numbers from among groups 1 to 4 or groups 5 to 8.

To use both groups 1 to 4 and groups 5 to 8
Press [All Group Enable], turning it on. You can select groups in both groups 1 to 4 and groups 5 to 8.

3 Enable S-Bus/NS-Bus tally.

Press [SBus Tally Enable] (for S-Bus) or [NSBus Tly Enable] (for NS-Bus), turning it on.

Wiring Settings

When configuring a system in which the switcher inputs and outputs connect to a router, configure the connection information (referred to as "wiring") in the S-Bus/NS-Bus space.
The settings used are common to both parallel and serial tallies.

Configuring Wiring

1 In the Engineering Setup >Router/Tally >Wiring menu (7363), press [New].

The New menu (7363.1) appears.

2 Set the destination.

When configuring more than one wiring setting, you can specify the destination start and end addresses.

No.	Parameter	Adjustment
1	Destination (From)	Destination start address
2	Destination (To)	Destination end address
3	Destination (Level)	Destination level

3 Set the source.

No.	Parameter	Adjustment
4	Source (From)	Source start address
5	Source (Level)	Source level

4 Press [Execute].

Modifying Wiring Settings

1 In the Engineering Setup >Router/Tally >Wiring menu (7363), press [Modify].

The Modify menu (7363.2) appears.

2 Set the destination and source.

It is not possible to modify the settings for multiple destinations at the same time.

No.	Parameter	Adjustment
1	Destination (Address)	Destination address
2	Destination (Level)	Destination level
3	Source (Address)	Source address
4	Source (Level)	Source level

3 Press [Execute].

Deleting Wiring Settings

1 In the Engineering Setup >Router/Tally >Wiring menu (7363), select the wiring.

2 Press [Delete].

Sorting Wiring Settings

In the Engineering Setup >Router/Tally >Wiring menu (7363), press [Sort].
The sorting of wiring settings is executed in the following sequence.
Destination level order (ascending) ⟶ Destination address order (ascending) ⟶ Source level order (ascending)

Tally Generation Settings

Specify the destination to be the reference for tally generation, and configure the settings.
The settings used are common to both parallel and serial tallies.

Configuring Tally Generation

1 In the Engineering Setup >Router/Tally >Tally Enable menu (7364), press [New].

The New menu (7364.1) appears.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Destination Address	Destination address
2	Destination Level	Destination level
3	Tally Type	Tally type [a]

a) 1: R1, 2: G1, 3: R2, 4: G2, 5: R3, 6: G3, 7: R4, 8: G4, 9: R5, 10: G5, 11: R6, 12: G6, 13: R7, 14: G7, 15: R8, 16: G8 (R stands for Red Tally, and G for Green Tally)

3 In the <Tally Enable> group, specify the tally generation mode.

Enable: Always generate a tally.
Disable: Never generate a tally.
Tally Input: Generate a tally from the tally input state.

4 When [Tally Input] is selected in step **3**, select one of the following in the <Tally Input> group.

DCU1: Generate tally with reference to signal that is input on the SIU1 (DCU function) port.
DCU2: Generate tally with reference to signal that is input on the SIU2 (DCU function) port.
Select the tally input port number using the following parameter.

No.	Parameter	Adjustment
5	Input Port	Tally input port number

5 Press [Execute].

Modifying Tally Generation

1 In the Engineering Setup >Router/Tally >Tally Enable menu (7364), press [Modify].

The Modify menu (7364.2) appears.

2 Refer to steps **2** to **4** in *"Configuring Tally Generation" (page 487)* and modify the parameters.

3 Press [Execute].

Deleting Tally Generation

1 In the Engineering Setup >Router/Tally >Tally Enable menu (7364), select the tally generation.

2 Press [Delete].

Setting Advanced Tally

You can use cross-point delay in combination with the advanced tally function to output a tally prior to the actual switching of the cross-point.
When the cross-point delay is configured and advanced tally is enabled, a tally is output when a cross-point is selected and then the cross-point switches after the delay has expired. When advanced tally is disabled, the tally is output in conjunction with cross-point switching.
Advanced tally can be set for each tally type (R1 to R8, G1 to G8).

Notes

- When cross-points are the target of multiple tally types and the advanced tally setting (enable/disable) varies depending on the tally type, cross-point tallies are output with advanced tally enabled.
- When a cross-point with cross-point delay and advanced tally enabled is selected, both the target cross-point tallies from before and after cross-point selection are output during the delay period before the cross-point switches.

1 In the Engineering Setup >Router/Tally >Tally Enable menu (7364), press [Advanced Tally Mode].

The Advanced Tally Mode menu (7364.3) appears.

2 In the <Advanced Tally Mode> group, select the tally types.

To enable advanced tally, press [R1] to [R8] and [G1] to [G8], turning them on.

Tally Copy Settings

You can copy the tally information for a particular source to a different source.
The settings used are common to both parallel and serial tallies.

Configuring Tally Copy

1 In the Engineering Setup >Router/Tally >Tally Copy menu (7365), press [New].

The New menu (7365.1) appears.

2 Set the source to copy.

When setting more than one tally copy, you can specify the copy-from source start and end addresses.

No.	Parameter	Adjustment
1	Copy From (From)	Copy-from source start address
2	Copy From (To)	Copy-from source end address

3 Set the source on the copy destination.

No.	Parameter	Adjustment
3	Copy To (From)	Copy-to source start address
4	Copy To (To)	Copy-to source end address

4 Press [Execute].

Modifying Tally Copy

1 In the Engineering Setup >Router/Tally >Tally Copy menu (7365), press [Modify].

The Modify menu (7365.2) appears.

2 Select the copy-from and copy-to sources.

No.	Parameter	Adjustment
1	Copy From	Copy-from source
2	Copy To	Copy-to source

3 Press [Execute].

Deleting Tally Copy

1 In the Engineering Setup >Router/Tally >Tally Copy menu (7365), select the tally copy.

2 Press [Delete].

Parallel Tally Settings

You can configure the parallel port on which to output tally information for each source and destination. For each tally output port, specify the source address or destination level and address, and the tally type.

Configuring/Modifying Parallel Tally

1 In the <Device> group of the Engineering Setup >Router/Tally >Parallel Tally menu (7366), select one of the following.

DCU1: Set the SIU1 (DCU function) parallel tally.
DCU2: Set the SIU2 (DCU function) parallel tally.

2 Select the slot number and port number.

No.	Parameter	Adjustment
1	Slot No	Parallel tally slot number
2	Port No	Parallel tally port number

Note

On the MKS-X2700, select 2 for the slot and a value in the range 1 to 36 for the port.

3 Press [Set].

The Set menu (7366.1) appears.

4 In the <Source/Destination> group, select the tally type.

Src: Return a tally to all sources that are output to the destination.
Dest: Return a tally to destinations outputting sources that return a tally using source tally.

5 Set the address and level.

The level setting is only required when [Dest] is selected in step **4**.

No.	Parameter	Adjustment
1	Address	Source/destination address
2	Level	Destination level

6 Set the tally type.

No.	Parameter	Adjustment
3	Type	Tally type [a]

a) 1: R1, 2: G1, 3: R2, 4: G2, 5: R3, 6: G3, 7: R4, 8: G4, 9: R5, 10: G5, 11: R6, 12: G6, 13: R7, 14: G7, 15: R8, 16: G8 (R stands for Red Tally, and G for Green Tally)

7 Press [Execute].

Deleting Parallel Tally

1 In the Engineering Setup >Router/Tally >Parallel Tally menu (7366), select the parallel tally.

2 Press [Clear].

Serial Tally Settings

You can configure the tally type, data size, and source address for two serial tally ports on a system interface unit (SIU). You can also specify a port number for a network connection to control tally information via a network.

Note

If using a network port, configuration of the SIU utility connector is required. For details, refer to the ICP-X7000 Installation Manual.

Configuring/Modifying Serial Tally

1 In the <Serial Tally Port> of the Engineering Setup >Router/Tally >Serial Tally menu (7367), select the target port to set.

2 In the <Tally Group> group, select the tally group.

3 In the <Tally Type> group, select the tally types.

Up to four tally types can be selected.

Note

The selectable tally types depend on the setting selected in step **2**.

4 In the <Tally Data Size> group, select the data size.

128 Bit: 128 bits
256 Bit: 256 bits

5 To configure a network port, select [Port].

Enter the network port number using the numeric keypad window, then press [Enter].

Note

Correct operation may not occur, depending on the port.
For the serial tally network port, port number “2020” is recommended for [Port1], and “2021” is recommended for [Port2]. For details, consult your Sony service or sales representative.

Configuring the Serial Tally Source Address

1 In the Engineering Setup >Router/Tally >Serial Tally menu (7367), press [Source Assign].

The Source Assign menu (7367.1) appears.

2 In the <Serial Tally Port> group, select the target port to set.

3 In the status area, select the bit number of the port.

4 Select the source address.

No.	Parameter	Adjustment
2	Source Addr	Source address

5 Press [Source Address Set].

Clearing Source Address Settings

To clear a source address setting for each bit

In the Engineering Setup >Router/Tally >Serial Tally >Source Assign menu (7367.1), select the serial tally port and bit number, then press [Clear].
The source address setting for the selected bit is cleared.

To clear all source address settings

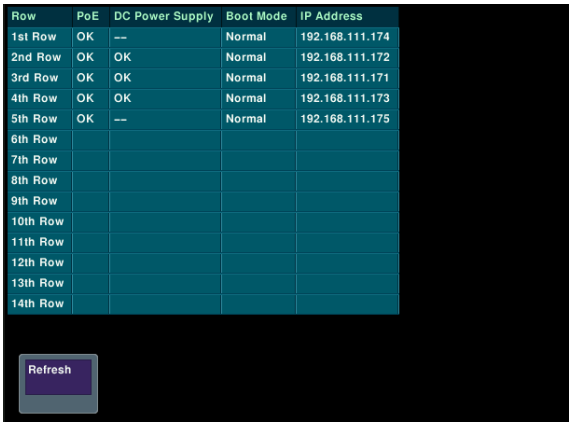
In the Engineering Setup >Router/Tally >Serial Tally >Source Assign menu (7367.1), select the serial tally port and press [All Clear]. Check the message, then press [Yes].
All source address settings for the selected serial tally port are cleared.

To return all source address settings to the default

In the Engineering Setup >Router/Tally >Serial Tally >Source Assign menu (7367.1), select the serial tally port and press [Default Recall]. Check the message, then press [Yes].
All source address settings for the selected serial tally port are returned to the defaults.

Control Panel Connection Status

You can monitor the status of the power supply, IP address, and other settings of the control panel in the Diag >System Info >Row Status menu (7421).



The following information is displayed.

Note

The status fields for all items other than “Row” are blank if a control panel row is not installed or is not connected to the network.

Row: Control panel row
PoE: PoE (Power over Ethernet) connection status
--: PoE-compatible Ethernet switch is not in use.
OK: PoE-compatible Ethernet switch is in use, and power is supplied.
Error: PoE-compatible Ethernet switch is in use, but a power supply problem occurred.
DC Power Supply: Power supply connection status
--: DC IN connector is not in use.
OK: DC IN connector is in use, and required voltage is supplied.
Error: DC IN connector is in use, but a drop in voltage occurred.
Boot Mode: Startup mode
Normal: Boot in normal operating mode.
Recovery: Boot in recovery mode.
IP Address: IP address

To display the latest status

Press [Refresh].

Remote Panel Connection Status

When using the network AUX remote panel function, you can check the following information in the Diag >System Info >Network Aux Remote Status menu (7422).
Name: Name of remote panel (up to 20 characters)
IP Address: IP address of remote panel
Status: Status of remote panel
OK: Operating normally.
Error: An error occurred.

To display the latest status

Press [Refresh].

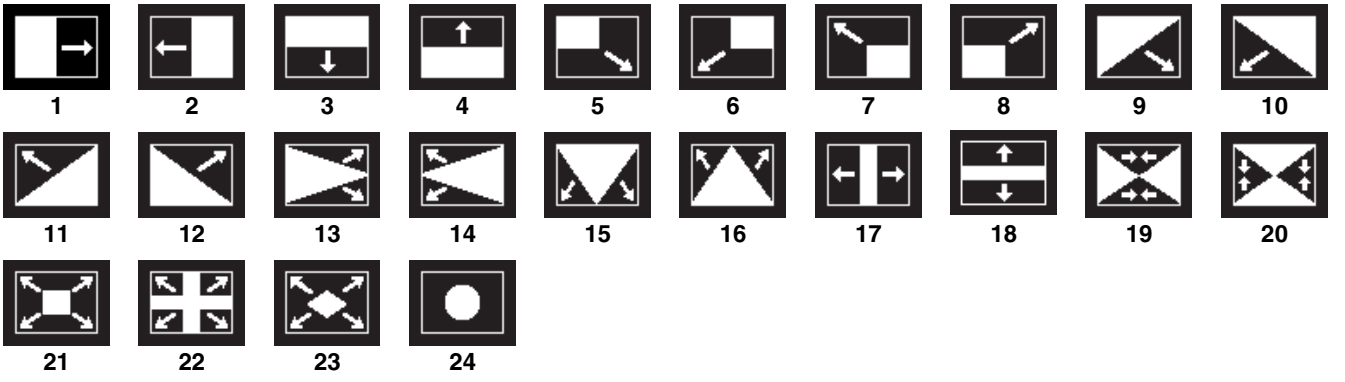
Appendix

Wipe Pattern List

Interpreting the illustrations for patterns
The black part of the pattern represents the old video, and the white part the new video, with the wipe taking place in the direction of the arrow.

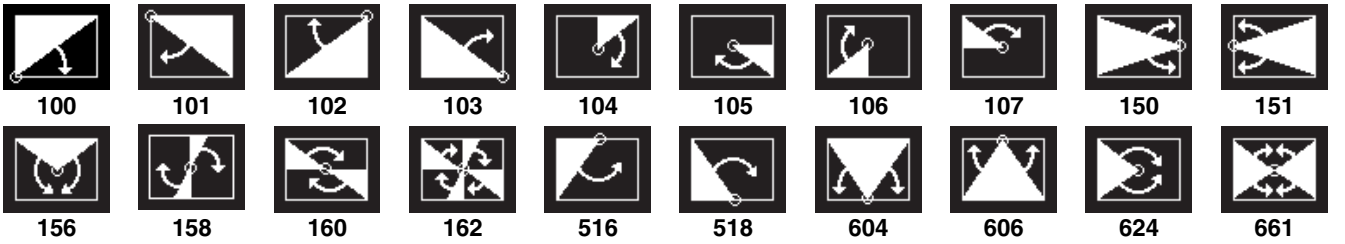
Wipe Pattern List

Standard wipes

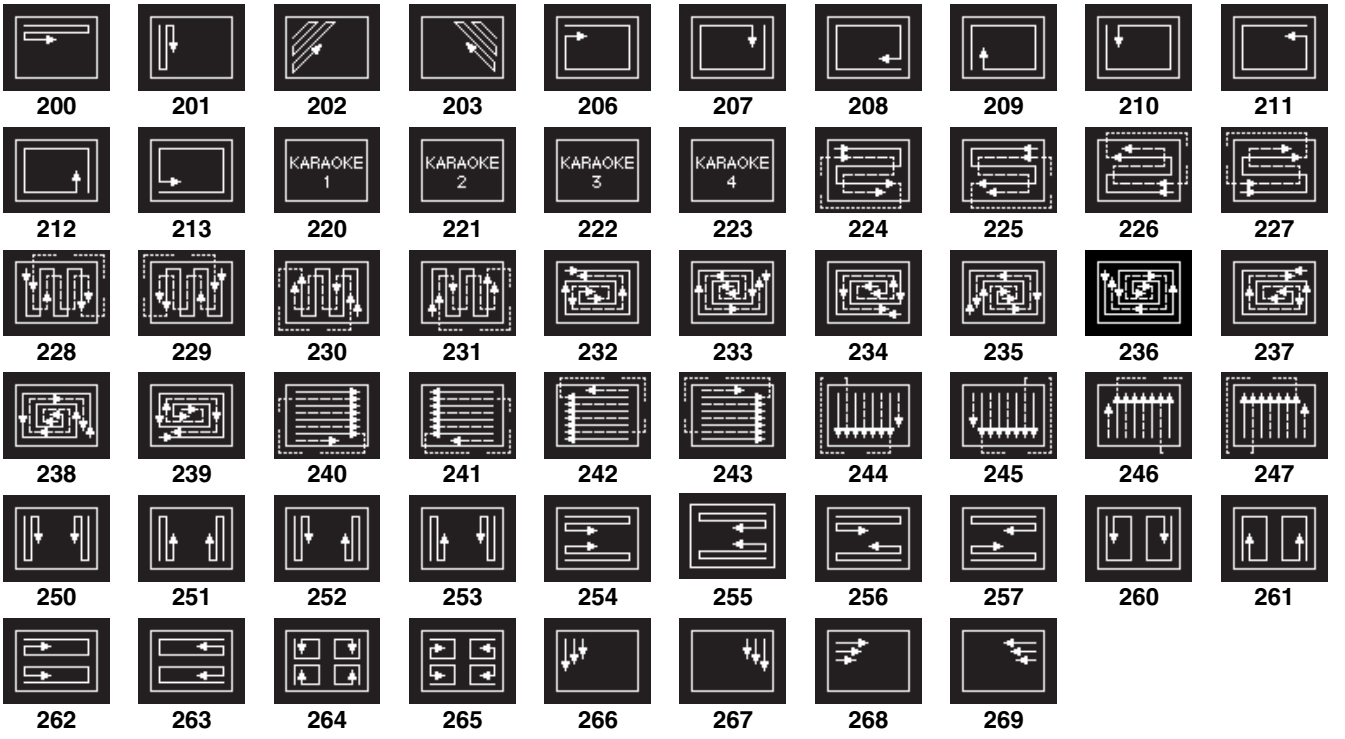


Enhanced wipes

Rotary wipes



Mosaic wipes



200 201 202 203 206 207 208 209 210 211
212 213 220 221 222 223 224 225 226 227
228 229 230 231 232 233 234 235 236 237
238 239 240 241 242 243 244 245 246 247
250 251 252 253 254 255 256 257 260 261
262 263 264 265 266 267 268 269

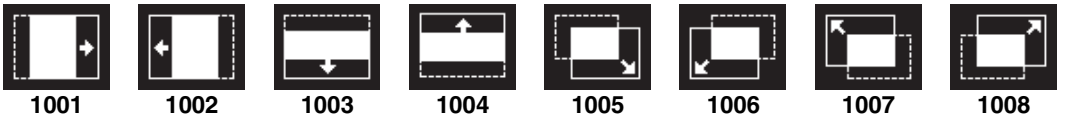
Random/diamond dust wipes

270 271 272 273 274

DME Wipe Pattern List

DME wipe patterns available in 1-channel mode

Slide

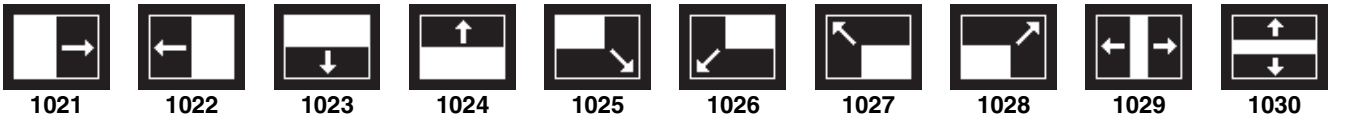


1001 1002 1003 1004 1005 1006 1007 1008

Split

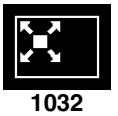
1011 1012 1013

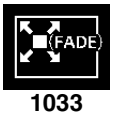
Squeeze



1021 1022 1023 1024 1025 1026 1027 1028 1029 1030


1031


1032



1033

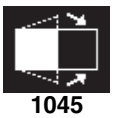
Door

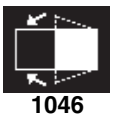

1041


1042


1043


1044


1045


1046


1047


1048

2D trans


1051


1052


1053


1054


1055


1056

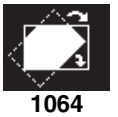

1057


1058


1061


1062


1063


1064


1068

3D trans


1071


1072

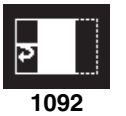

1074


1076


1077


1088

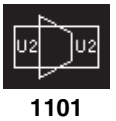

1091


1092

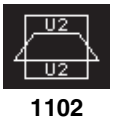

1093


1094

Flip tumble

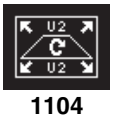


1101



1102

1103

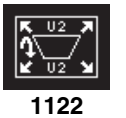


1104

1109

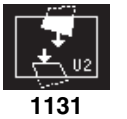
1110

1121

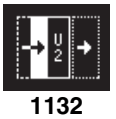


1122

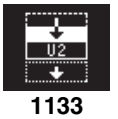
1124



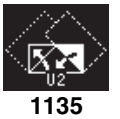
1131



1132



1133



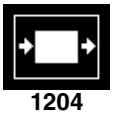
1135

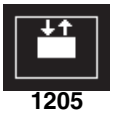
Frame in-out

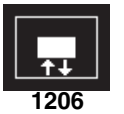

1201


1202


1203


1204

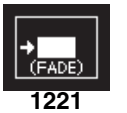

1205


1206


1207


1208


1209



1221

1222

1223

1224

1225

Picture-in-picture

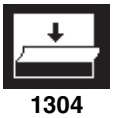

1251

Page turn


1301


1302

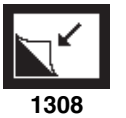

1303


1304

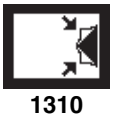

1305


1306


1307


1308


1309


1310


1311


1312


1313


1315


1316


1317


1318


1341


1342


1343


1344


1345

Roll


1321


1322


1323


1324


1325


1326


1327


1328


1329


1330


1331


1332


1333


1335


1336


1337


1338


1346


1347

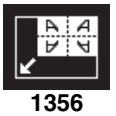

1348


1349


1350

Mirror


1355


1356


1357


1358

Sphere


1365

Character trail


1371


1372

Wave

1378

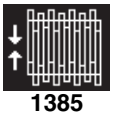
1379

Ripple


1381

Split slide


1384


1385


1386


1387


1388


1389

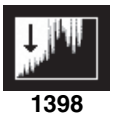
Sparkle

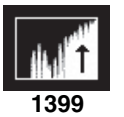

1391


1393


1394


1396


1398


1399

Mosaic

1701

Defocus

1702

User programmable DME

The illustrations for patterns 1901 to 1999 show an effect register number or register name.

1901 1999

DME wipe patterns available in 2-channel mode

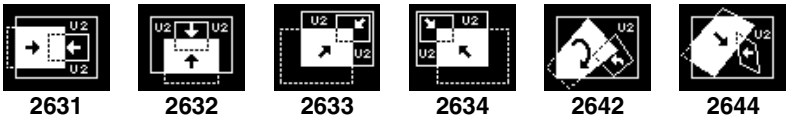
Slide

2601 2602 2603 2604 2605 2606 2607 2608

Squeeze

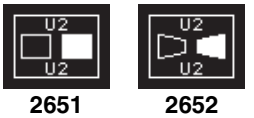
2621 2622 2623 2624 2625 2626 2627 2628

3D trans



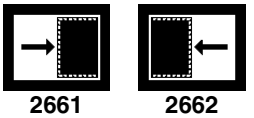
2631 2632 2633 2634 2642 2644

Picture-in-picture

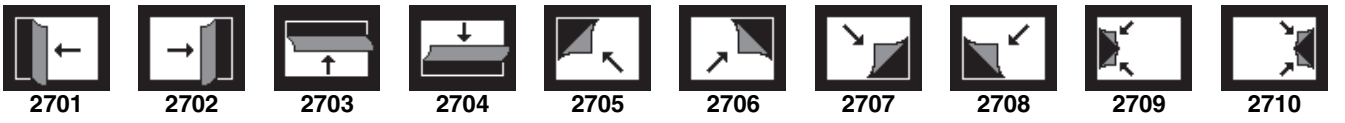


2651 2652

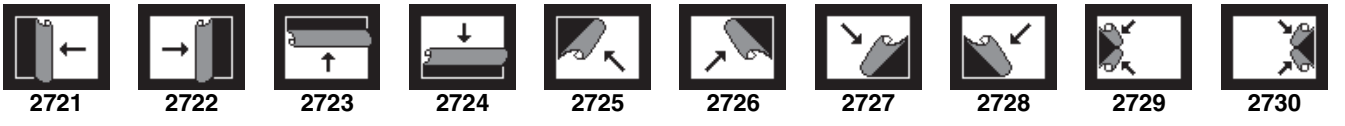
Crop slide


2661 2662

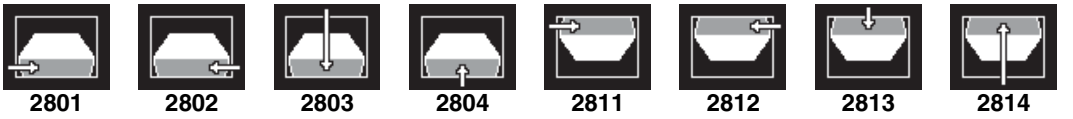
Page turn



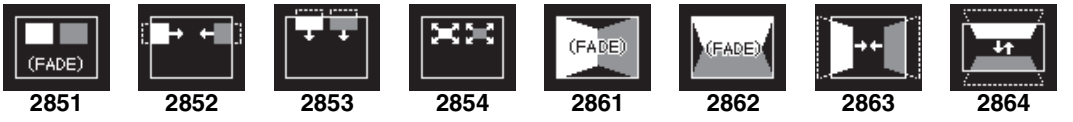
Roll



Brick



Frame in-out



User programmable DME

The illustrations for patterns 2901 to 2999 show an effect register number or register name.

DME wipe patterns available in 3-channel mode

Brick

User programmable DME

The illustrations for patterns 3901 to 3999 show an effect register number or register name.

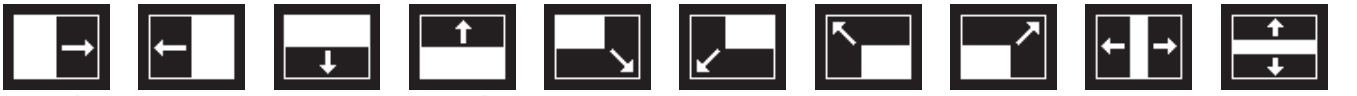
3901 3999

Resizer DME Wipe Pattern List

Slide

7001 7002 7003 7004 7005 7006 7007 7008

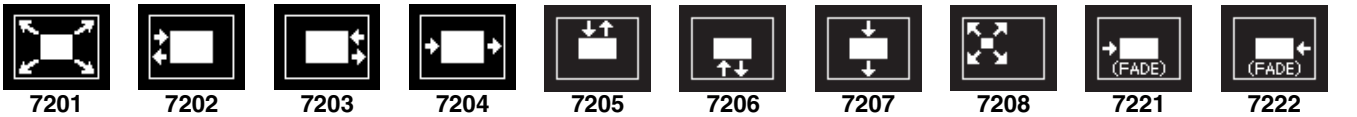
Squeeze



7021 7022 7023 7024 7025 7026 7027 7028 7029 7030

7031

Frame in-out



7201 7202 7203 7204 7205 7206 7207 7208 7221 7222

7223 7224

Menu Tree

This shows the configuration of each menu.

Note

Some menus and unsupported functions may not appear, depending on the system configuration.

Menus that support default recall

The following menus support restoring parameter values and enable/disable settings to the default state using the [Default Recall] button.

- Functional units (VF button units)
  - M/E-1 to M/E-5 menus
  - PGM/PST menu
  - Color Bkgd menu
- Parameter units
  - Menus that display “Yes” in the “Default Recall” column in the menu tree.

M/E-1 to M/E-5 Menus, PGM/PST Menu

The functions and structure of the M/E-1, M/E-2, M/E-3, M/E-4, M/E-5, and PGM/PST menus are the same.
But the menu page numbers vary as follows.

- M/E-1 menu: 11XX, 15XX
- M/E-2 menu: 12XX, 16XX
- M/E-3 menu: 13XX, 17XX
- M/E-4 menu: 81XX, 85XX
- M/E-5 menu: 82XX, 86XX
- PGM/PST menu: 14XX, 18XX

This section describes the M/E-1 pages as an example.

Menu (Page No.)				Default Recall
VF1: Key1 [a]	HF1: Type (1111)			Yes [g]
VF2: Key2 [a]		Chroma Adjust (1111.1)		Yes [g]
VF3: Key3 [a]		Matte Adjust (1111.2) [b]		Yes
VF4: Key4 [a]			Mix Ptn Select (1112.2) [c]	Yes
VF1: Key5 [a]			Pattern Select (1117.2) [c]	–
VF2: Key6 [a]			Matte Adjust (1112.1)	Yes [g]
VF3: Key7 [a]			Wipe Adjust (1117.1)	Yes [g]
VF4: Key8 [a]		Pattern Select (1117.2) [d]		–
		Main Pattern (1151) [d] [e]		Yes
		Signal Select (1111.3) [b] [d]		–
		Key Priority (1173)		–

Menu (Page No.)				Default Recall
VF1: Key1 [a] VF2: Key2 [a] VF3: Key3 [a] VF4: Key4 [a] VF1: Key5 [a] VF2: Key6 [a] VF3: Key7 [a] VF4: Key8 [a]	HF2: Edge (1112)			Yes
		Matte Adjust (1112.1)		Yes [g]
			Mix Ptn Select (1112.2)	Yes
		Zabton Adjust (1112.3)		Yes
			Mix Ptn Select (1112.2) [f]	Yes
			Pattern Select (1117.2) [f]	–
			Main Mask (1113) [f]	Yes [g]
			Matte Adjust (1112.1)	Yes [g]
			Wipe Adjust (1117.1)	Yes [g]
		Key Delay Mode (1112.4)		–
	HF3: Main Mask (1113)			Yes [g]
		Mask Ptn Select (1113.1)		Yes
	HF4: Sub Mask (1114)			Yes
		Main Pattern (1151) [e]		Yes
	HF5: Resizer (1115)			Yes
		Border/Crop (1115.1)		Yes
		Enhanced Effect (1115.2)		Yes
			Mask (1115.4)	Yes
		Resizer Process (1115.3)		Yes
		Rotation (1115.5)		Yes
	HF6: Processed Key (1116)			–
		Monitor (1116.1)		–
	HF7: Transition/Video Process (1117)			Yes [g]
		Wipe Adjust (1117.1)		Yes [g]
			Pattern Select (1117.2)	–
		DME Wipe Adjust (1117.3)		Yes
			1ch Pattern Select (1117.4)	–
			2ch Pattern Select (1117.5)	–
			Remove From Begin (1117.7)	–
VF5: Wipe	HF1: Main Pattern (1151) [e]			Yes
	HF2: Pattern Mix (1152)			Yes
	HF3: Sub Pattern (1153)			Yes
	HF4: Edge/Direction (1154) [e]			Yes [g]
		Matte Adjust (1154.1)		Yes [g]
			Mix Ptn Select (1154.2)	Yes
	HF5: Main Modify (1155) [e]			Yes [g]
		Multi Adjust (1155.1)		Yes
	HF6: Sub Modify (1156)			Yes [g]
		Multi Adjust (1156.1)		Yes
	HF7: Wipe Snapshot (1157) [e]			–
		DME Wipe Snapshot (1167) [e]		–

Menu (Page No.)			Default Recall
VF6: DME Wipe	HF1: 1ch (1161) e)		–
	HF2: 2ch (1162) e)		Yes
	HF3: 3ch (1163) e)		Yes
	HF4: Edge/Direction (1164) e)		Yes g)
		Matte Adjust (1154.1)	Yes g)
	HF5: Modify (1165) e)		Yes
		Remove From Begin (1165.1) e)	–
	HF7: DME Wipe Snapshot (1167) e)		–
		Wipe Snapshot (1157) e)	–
VF7: Misc	HF1: Transition (1171) e)		Yes g)
		Video Process (1171.1)	Yes
		Clip Transition (1176) e)	Yes g)
	HF2: Image Effect (1172) e)		–
	HF3: Key Priority (1173)		–
	HF4: Next Key Priority (1174)		–
	HF5: Key Assign (1175)		–
	HF6: Clip Transition (1176) e)		Yes g)
		Recall (2111)	–
		Transition (1171) e)	Yes g)
		Snapshot (1177) e)	–
	HF7: Snapshot (1177) e)		–

a) The VF1 to VF4 buttons switch display between Key1 to Key4 and Key5 to Key8.
For Key2 to Key8, the menu page number changes as follows.
Key2: 112X, Key3: 113X, Key4: 114X, Key5: 151X, Key6: 152X, Key7: 153X, Key8: 154X
b) When [Matte] is selected in the <Key Fill> group, the Matte Adjust menu (1111.2) is displayed, and when [Key Bus] is selected, the Signal Select menu (1111.3) is displayed.
c) When [Key Edge Pattern] is selected in the <Mix Pattern> group, the Mix Ptn Select menu (1112.2) is displayed, and when [Key Wipe] is selected, the Pattern Select menu (1117.2) is displayed.
d) When [Key Wipe Pattern] is selected in the <Key Type> group, the Pattern Select menu (1117.2) is displayed, when [Wipe Pattern] is selected, the Main Pattern menu (1151) is displayed, and when another option is selected, the Signal Select menu (1111.3) is displayed.
e) In Multi Program 2 mode, the menus for sub are given by the page number for main + 400.
f) When [Key Edge Pattern] is selected in the <Zabton Pattern> group, the Mix Ptn Select menu (1112.2) is displayed, when [Key Wipe] is selected, the Pattern Select menu (1117.2) is displayed, and when [Mask Pattern] is selected, the Main Mask menu (1113) is displayed.
g) Some parameters cannot be reset to default values using Default Recall.

Frame Memory Menu

Menu (Page No.)			Default Recall
VF1: Clip/Still	HF1: Recall (2111)		–
	HF2: Play (2112)		–
	HF3: Record (2113)		–
	HF4: FM Out Lock (2114)		–
VF2: File	HF1: Load (2121)		–
	HF2: Copy/Move/New Folder (2122)		–
	HF3: Delete/Rename/Store (2123)		–
	HF4: Pair Recombination (2124)		–
		Recall (2111)	–
	HF5: Folder Lock (2125)		–

Color Bkgd Menu

Menu (Page No.)			Default Recall
VF1: Color Bkgd1 (2210)			Yes [a]
		Mix Ptn Select (2210.1)	Yes [a]
VF2: Color Bkgd2 (2220)			Yes [a]
		Mix Ptn Select (2220.1)	Yes [a]

a) Some parameters cannot be reset to default values using Default Recall.

Aux Menu

Menu (Page No.)		Default Recall
VF1: Aux Bus	HF1: CCR (2311)	Yes

Copy/Swap Menu

Menu (Page No.)		Default Recall
VF1: Copy/Swap	HF1: M/E (3111)	–
	HF2: Key (3112)	–
	HF3: Wipe (3113)	–
	HF4: DME Wipe (3114)	–
	HF5: Matte (3115)	–
	HF6: Color (3116)	–
	HF7: DME (3117)	–
VF2: Register Group (3121)	–	–
VF3: Panel Data Copy (3131)	–	–

Misc Menu

Menu (Page No.)			Default Recall
VF1: Enable	HF1: Port Enable (3211)		–
	HF3: Side Flags (3213)		–
		Side Flags (7331.7)	–
		Side Flags Button Assign (7322.10)	–
VF2: Safe Title (3221)	–		–
VF3: Transition	HF1: Key/ME/FTB (3231)		–
	HF2: Aux Mix (3232)		–

Status Menu

Menu (Page No.)		Default Recall
VF1: DME Status (3311)	–	–

DME Menu

Menu (Page No.)		Default Recall
Status (4100)	–	–
VF1: Edge	HF1: Border/Crop (4111)	Yes
	HF2: Beveled Edge (4112)	Yes
	HF3: Key Border (4113)	Yes
	HF4: Art Edge (4114)	Yes
	HF5: Flex Shadow (4115)	Yes
	HF6: Wipe Crop (4116)	Yes [a)]
	Pattern Select (4116.1)	Yes
	HF7: Color Mix (4117)	Yes [a)]
	Mix Pattern Select (4117.1)	Yes
VF2: Video Modify	HF1: Defocus/Blur (4121)	Yes
	Mask (4127)	Yes [a)]
	HF2: Multi Move (4122)	Yes
	HF3: Color Modify (4123)	Yes
	Mask (4127)	Yes [a)]
	HF4: Mosaic (4124)	Yes
	Mask (4127)	Yes [a)]
	HF7: Mask (4127)	Yes [a)]
VF3: Freeze	HF1: Freeze (4131)	Yes

Menu (Page No.)				Default Recall
VF4: Non Linear/Corner Pin	HF1: Non Linear (4141)			Yes
		Wave (4141.1)		Yes
		Mosaic Glass (4141.2)		Yes
		Flag (4141.3)		Yes
		Twist (4141.4)		Yes
		Ripple (4141.5)		Yes
		Rings (4141.7)		Yes
		Broken Glass (4141.8)		Yes
		Flying Bars (4141.9)		Yes
		Blind (4141.10)		Yes
		Split (4141.11)		Yes
		Split Slide (4141.12)		Yes
		Mirror (4141.13)		Yes
		Multi Mirror (4141.14)		Yes
		Kaleidoscope (4141.15)		Yes
		Lens (4141.16)		Yes
		Circle (4141.17)		Yes
		Panorama (4141.18)		Yes
		Page Turn (4141.19)		Yes
		Roll (4141.20)		Yes
		Cylinder (4141.21)		Yes
		Sphere (4141.22)		Yes
		Explosion (4141.25)		Yes
		Swirl (4141.26)		Yes
		Melt (4141.27)		Yes
		Character Trail (4141.28)		Yes
	HF2: Corner Pinning (4142)			Yes
		Border/Crop (4111)		Yes
		Combiner Priority (4211)		Yes
VF5: Light/Trail	HF1: Lighting (4151)			Yes
	HF2: Trail (4152)			Yes
		Color Mix (4117)		Yes [a)]
	HF3: Motion Decay (4153)			Yes
	HF4: KF Strobe (4154)			Yes
	HF5: Wind (4155)			Yes
		Color Mix (4117)		Yes [a)]
	HF6: Spot Lighting (4156)			Yes
		Copy/Swap (4156.2)		–
		Light 1 (4156.3)		Yes
			Light Color Adjust (4156.4)	Yes
		Light 2 (4156.5)		Yes
			Light Color Adjust (4156.6)	Yes
		Light 3 (4156.7)		Yes
			Light Color Adjust (4156.8)	Yes

Menu (Page No.)			Default Recall
VF6: Input/Output	HF1: Bkgd (4161)		Yes
		Color Mix (4117)	Yes [a]
	HF2: Video/Key (4162)		Yes
	HF3: Process (4163)		Yes [a]
	HF4: Graphic (4164)		Yes
VF7: Enhanced Video Modify	HF1: Sketch (4171)		Yes
		Mask (4127)	Yes [a]
	HF2: Metal (4172)		Yes
		Mask (4127)	Yes [a]
	HF3: Dim & Fade (4173)		Yes
	HF4: Glow (4174)		Yes
		Mask (4127)	Yes [a]

a) Some parameters cannot be reset to default values using Default Recall.

Global Effect Menu

Menu (Page No.)		Default Recall
Status (4200)	–	–
VF1: Ch1-Ch4	HF1: Combiner Priority (4211)	Yes
	HF2: Brick (4212)	Yes
	HF3: Shadow (4213)	Yes

Router Menu

Menu (Page No.)			Default Recall
VF1: Router Control	HF1: Router Control (5111)		–
		Change Xpt (5111.1)	–

Device Menu

Menu (Page No.)			Default Recall
VF1: GPI Timeline	HF1: GPI Timeline (5311)		–
		Rewind Action (5311.1)	–
VF2: P-Bus Timeline	HF1: P-Bus Timeline (5321)		–
		Rewind Action (5321.1)	–
VF3: DDR/VTR	HF1: Cueup & Play (5331)		–
	HF2: Timeline (5332)		–
		Rewind Action (5332.1)	–
	HF3: File List (5333)		–
		Folder List (5334)	–
	HF4: Folder List (5334)		–
		File List (5333)	–

Macro Menu

Menu (Page No.)			Default Recall
VF1: Register	HF1: Attach (5411)		–
		On Line Edit (7142.2)	–
		Off Line Edit (7142.3)	–
	HF2: Lock (5412)		–
		On Line Edit (7142.2)	–
		Off Line Edit (7142.3)	–
	HF3: Copy (5413)		–
	HF6: Delete (5416)		–
		On Line Edit (7142.2)	–
		Off Line Edit (7142.3)	–
	HF7: Rename (5417)		–
		On Line Edit (7142.2)	–
		Off Line Edit (7142.3)	–
VF2: Attachment	HF1: Attachment (5421)		–
VF3: Menu Macro Register	HF1: Recall & Run (5431)		–
		Menu Macro Edit (7144.2)	–
	HF2: Lock (5432)		–
		Menu Macro Edit (7144.2)	–
	HF3: Copy (5433)		–
	HF6: Delete (5436)		–
		Menu Macro Edit (7144.2)	–
	HF7: Rename (5437)		–
		Menu Macro Edit (7144.2)	–
VF4: Timeline	HF1: Timeline (5441)		–
		Rewind Action (5441.1)	–

Key Frame Menu

Menu (Page No.)			Default Recall
–	HF1: Time Line (6111)		–
	HF3: Path (6113)		Yes
		M/E-1 (6113.1)	Yes
		M/E-2 (6113.2)	Yes
		M/E-3 (6113.3)	Yes
		M/E-4 (6113.21)	Yes
		M/E-5 (6113.23)	Yes
		P/P (6113.4)	Yes
		M/E-1 Sub (6113.17)	Yes
		M/E-2 Sub (6113.18)	Yes
		M/E-3 Sub (6113.19)	Yes
		M/E-4 Sub (6113.22)	Yes
		M/E-5 Sub (6113.24)	Yes
		P/P Sub (6113.20)	Yes
		User1 (6113.5)	Yes
		User2 (6113.6)	Yes
		User3 (6113.7)	Yes
		User4 (6113.8)	Yes
		User5 (6113.9)	Yes
		User6 (6113.10)	Yes
		User7 (6113.11)	Yes
		User8 (6113.12)	Yes
		DME 3D Trans Local (6113.13)	Yes
		DME 3D Trans Global (6113.14)	Yes
		DME Effect (6113.15)	Yes
		DME Global Effect (6113.16)	Yes
	HF4: DME User PGM (6114)		–
	HF5: Timeline Assign (6115)		–
	HF7: Region Select (6117)		–
		10 Key Region Assign (7321.7)	–

Effect Menu

Menu (Page No.)		Default Recall
Status (6200)	–	–

Menu (Page No.)			Default Recall
VF1: Master Timeline	HF1: Store (6211)		–
		Edit (6211.1)	–
	HF2: Lock (6212)		–
	HF3: Copy (6213)		–
	HF4: Move (6214)		–
	HF5: Swap (6215)		–
	HF6: Delete (6216)		–
	HF7: Rename (6217)		–
VF2: Effect 1-99	HF1: Attribute (6221)		–
	HF2: Lock (6222)		–
	HF3: Copy/Merge (6223)		–
	HF4: Move (6224)		–
	HF5: Swap (6225)		–
	HF6: Delete (6226)		–
	HF7: Rename (6227)		–
VF3: User DME Wipe Effect 101-199	HF1: Attribute (6231)		–
	HF2: Lock (6232)		–
	HF3: Copy/Merge (6233)		–
	HF4: Move (6234)		–
	HF5: Swap (6235)		–
	HF6: Delete (6236)		–
	HF7: Rename (6237)		–
VF4: User DME Wipe Effect 201-299	HF1: Attribute (6241)		–
	HF2: Lock (6242)		–
	HF3: Copy/Merge (6243)		–
	HF4: Move (6244)		–
	HF5: Swap (6245)		–
	HF6: Delete (6246)		–
	HF7: Rename (6247)		–
VF5: User DME Wipe Effect 301-399	HF1: Attribute (6251)		–
	HF2: Lock (6252)		–
	HF3: Copy/Merge (6253)		–
	HF4: Move (6254)		–
	HF5: Swap (6255)		–
	HF6: Delete (6256)		–
	HF7: Rename (6257)		–
VF6: DEV/PBUS Effect 1-250	HF2: Lock (6262)		–
	HF3: Copy/Merge (6263)		–
	HF4: Move (6264)		–
	HF5: Swap (6265)		–
	HF6: Delete (6266)		–
	HF7: Rename (6267)		–

Snapshot Menu

Menu (Page No.)				Default Recall
Status (6300)	–			–
VF1: Master Snapshot	HF1: Store (6311)			–
		Edit (6311.1)		–
	HF2: Lock (6312)			–
	HF3: Copy (6313)			–
	HF4: Move (6314)			–
	HF5: Swap (6315)			–
	HF6: Delete (6316)			–
	HF7: Rename (6317)			–
VF2: Snapshot	HF1: Attribute (6321)			–
		Xpt Hold (6321.1)		–
		Clip Auto Play (6321.2)		–
			Play (2112)	–
	HF2: Lock (6322)			–
	HF3: Copy (6323)			–
	HF4: Move (6324)			–
	HF5: Swap (6325)			–
	HF6: Delete (6326)			–
	HF7: Rename (6327)			–
VF3: Wipe Snapshot	HF2: Lock (6332)			–
	HF3: Copy (6333)			–
	HF4: Move (6334)			–
	HF5: Swap (6335)			–
	HF6: Delete (6336)			–
	HF7: Rename (6337)			–
VF4: DME Snapshot	HF2: Lock (6342)			–
	HF3: Copy (6343)			–
	HF4: Move (6344)			–
	HF5: Swap (6345)			–
	HF6: Delete (6346)			–
	HF7: Rename (6347)			–
VF5: Key Snapshot	HF1: Attribute (6351)			–
	HF2: Lock (6352)			–
	HF3: Copy (6353)			–
	HF4: Move (6354)			–
	HF5: Swap (6355)			–
	HF6: Delete (6356)			–
	HF7: Rename (6357)			–

Shotbox Menu

Menu (Page No.)				Default Recall
VF1: Register	HF1: Store/Recall (6411)			–
		Edit (6411.1)		–
			Key Snapshot Edit (6411.2)	–
		Key Snapshot Edit (6411.2)		–
			Edit (6411.1)	–
	HF2: Lock (6412)			–
	HF3: Copy (6413)			–
	HF4: Move (6414)			–
	HF5: Swap (6415)			–
	HF6: Delete (6416)			–
	HF7: Rename (6417)			–

File Menu

Menu (Page No.)			Default Recall
VF1: Setup, Init, VKMem	HF1: Setup (7111)		–
		File Edit (7111.1)	–
	HF2: Initial Status (7112)		–
		File Edit (7112.1)	–
	HF3: Key Memory (7113)		–
		File Edit (7113.1)	–
	HF4: Video Proc Memory (7114)		–
		File Edit (7114.1)	–
VF2: Effect	HF1: Effect 1-99 (7121)		–
		File Edit (7121.1)	–
	HF2: User DME Wipe Effect 101-199 (7122)		–
		File Edit (7122.1)	–
	HF3: User DME Wipe Effect 201-299 (7123)		–
		File Edit (7123.1)	–
	HF4: User DME Wipe Effect 301-399 (7124)		–
		File Edit (7124.1)	–
	HF5: DEV/PBUS Effect 1-250 (7125)		–
		File Edit (7125.1)	–
VF3: Snapshot	HF1: Snapshot (7131)		–
		File Edit (7131.1)	–
	HF2: Wipe Snapshot (7132)		–
		File Edit (7132.1)	–
	HF3: DME Snapshot (7133)		–
		File Edit (7133.1)	–
	HF4: Key Snapshot (7134)		–
		File Edit (7134.1)	–

Menu (Page No.)				Default Recall
VF4: Shotbox, Macro	HF1: Shotbox (7141)			–
		File Edit (7141.1)		–
	HF2: Macro (7142)			–
		File Edit (7142.1)		–
			On Line Edit (7142.2)	–
			Off Line Edit (7142.3)	–
	HF3: Macro Attachment (7143)			–
		File Edit (7143.1)		–
	HF4: Menu Macro (7144)			–
		File Edit (7144.1)		–
			Menu Macro Edit (7144.2)	–
VF5: Frame Mem	HF1: Frame Memory (7151)			–
		File Edit (7151.1)		–
VF6: All, External File	HF1: All (7161)			–
	HF2: Import/Export (7162)			–
VF7: Configure	HF1: Directory (7171)			–
		All (7161)		–
	HF2: Unit ID Copy (7172)			–

Engineering Setup Menu

Menu (Page No.)				Default Recall
VF1: System	HF1: Network Config (7311)			–
		Net I/F Initialize (7311.1)		–
		IP Address (7311.2)		–
		Net I/F Protocol (7311.3)		–
		FEC (7311.4)		–
		Input/Output (7311.5)		–
		Genlock (7311.6)		–
		NMOS (7311.7)		–
	HF2: System Config (7312)			–
		Resource Share (7312.1)		–
			Detail (7312.2)	–
		Region Simul Config (7312.3)		–
	HF3: Format (7313)			–
		AUX Signal Format (7313.5)		–
	HF4: Start Up (7314)			–
	HF5: Initialize (7315)			–
	HF6: Install/Unit Config (7316)			–
		Detail Information (7316.1)		–
		License (7316.6)		–
			License Management (7316.7)	–
		Unit Config (7316.8)		–
			M/E Split (7316.11)	–
				Logical M/E Assign (7331.5) –
		Install (7316.10)		–
	HF7: Maintenance (7317)			–
		Setup Operation Lock (7317.1)		–
		File Load Lock (7317.2)		–
		SDI Output Enable (7317.3)		–

Menu (Page No.)						Default Recall
VF2: Panel	HF1: Config (7321)					–
		Key Fader Assign (7321.1)				–
			Fader Assign (7321.30)			–
		10 Key Region Assign (7321.7)				–
		Link/Program Button (7321.8)				–
			Key Trans Link (7321.2)			–
			External Bus Link (7321.3)			–
				Link Matrix Adjust (7321.4)		–
					Link Table Adjust (7321.5)	–
				Link Bus Adjust (7321.6)		–
			Transition Module1 (7321.9)			–
			Flexi Pad Module (7321.10)			–
			Trackball Module (7321.17)			–
			Menu Panel (7321.19)			–
			Key Transition Module (7321.25)			–
			Transition Module2 (7321.34)			–
			Utility/Shotbox Module (7321.36)			–
		MP2 Main/Sub Assign (7321.11)				–
		Operation Inhibit (7321.26)				–
			M/E Operation Inhibit (7321.18)			–
			Trackball Module (7321.27)			–
	HF2: Xpt Assign (7322)					–
		Table Button Assign (7322.1)				–
			Main, V/K Pair Assign (7322.5)			–
			Src Name/Src Color (7322.6)			–
			Shift Mode (7322.13)			–
		Main, V/K Pair Assign (7322.5)				–
			Shift Mode (7322.13)			–
		Src Name/Src Color (7322.6)				–
			User Color Select (7322.12)			–
		Table Copy (7322.8)				–
		Name Export (7322.9)				–
		Side Flags Button Assign (7322.10)				–
		Xpt Delay (7322.14)				–
			Advanced Tally Mode (7364.3)			–
	HF3: Aux Assign (7323)					–
		RTR Mode Setting (7323.1)				–
			Source Table Assign (7323.2)			–
				Table Assign (7323.3)		–
			Level Button Assign (7323.4)			–
	HF4: Prefs/Utility (7324)					–
		Utility Module Assign (7324.1)				–
			Trans Rate Mode Assign (7324.3)			–
			Utility/Shotbox Module (7321.36)			–
		Xpt Module Assign (7324.2)				–

Menu (Page No.)						Default Recall
VF2: Panel	HF5: Device Interface (7325)					–
		Device Assign (7325.4)				–
	HF6: Operation (7326)					–
		Effect Mode (7326.2)				–
		Flexi Pad Mode (7326.3)				–
		Custom Button/Fader (7326.4)				–
			Next Trans All (7326.11)			–
		Sensitivity (7326.5)				–
		Macro (7326.6)				–
		Button Tally (7326.9)				–
		Xpt Module Operation (7326.12)				–
			Src Name/Src Color (7322.6)			–
			Key Deleg/AUX Assign (7326.13)			–
			Xpt Pad Button Assign (7326.14)			–
				Jump Page Assign (7326.17)		–
			Display Mode Setting (7326.15)			–
			Utility Button Bus Assign (7326.16)			–
			Jump Page Assign (7326.17)			–
				Xpt Pad Button Assign (7326.14)		–
			Xpt Pad Copy (7326.18)			–
			Xpt Pad Page Copy (7326.19)			–
	HF7: Maintenance (7327)					–
VF3: Switcher	HF1: Config (7331)					–
		M/E Output Assign (7331.1)				–
		PGM Config (7331.2)				–
		K-PVW Config (7331.3)				–
		User1-8 Config (7331.4)				–
		Logical M/E Assign (7331.5)				–
		DME Config (7331.6)				–
		Side Flags (7331.7)				–
			Side Flags (3213)			–
			Side Flags Button Assign (7322.10)			–
		Switching Timing (7331.8)				–
		Key Config (7331.9)				–
		CG Border Int Video Channel Assign (7331.15)				–

Menu (Page No.)					Default Recall
VF3: Switcher	HF2: Input (7332)				–
		Input FC/CCR (7332.1)			–
			FC Format (7332.7)		–
			FC Adjust (7332.8)		–
			Input CCR (7332.9)		–
		Active Area Size (7332.4)			–
		Internal FC (7332.5)			–
			FC Adjust (7332.2)		–
			FC Input Select (7332.3)		–
				Xpt Assign (7322)	–
			FC Format (7332.6)		–
			FC Config (7333.16)		–
		Dedicated Input Assign (7332.10)			–
		Internal FC Re-Entry Select (7332.11)			–
	HF3: Output (7333)				–
		Output Assign (7333.1)			–
		Video Clip (7333.2)			–
		V Blank/Through (7333.3)			–
		Safe Title (7333.4)			–
		4:3 Crop (7333.5)			–
		Output P/I Converter (7333.7)			–
		M/E Dedicated Output Assign (7333.8)			–
			M/E Ext Output Assign (7333.11)		–
		Multi Viewer (7333.9)			–
			MV Source Assign (7333.10)		–
			Dedicated Input Assign (7332.10)		–
		Aux Mix (7333.12)			–
		Active Area Size (7333.13)			–
		Internal FC (7333.15)			–
			FC Adjust (7333.6)		–
			FC Output Select (7333.14)		–
			FC Config (7333.16)		–
			FC Format (7333.17)		–
		FC Output Assign (7333.18)			–
			Dedicated Input Assign (7332.10)		–
		SDI Mode (7333.19)			–
		Output FC (7333.20)			–
			FC Format (7333.21)		–
			FC Adjust (7333.22)		–
	HF4: Transition (7334)				–
		Preset Color Mix (7334.1)			–
		Transition Curve (7334.2)			–
	HF5: Key/Wipe/FM (7335)				–
		Show Key (7335.1)			–
		Key Auto Drop (7335.2)			–

Menu (Page No.)				Default Recall
VF3: Switcher	HF6: Link (7336)			–
		Internal Bus Link (7336.1)		–
			Link Bus Select (7336.2)	–
			Link Table Select (7336.3)	–
		M/E Link (7336.6)		–
		Key Transition Link (7336.7)		–
		Aux Bus CCR Link (7336.8)		–
	HF7: Device Interface (7337)			–
		DME Interface (7337.7)		–
VF4: DME	HF1: Input (7341)			–
VF5: DCU	HF1: Input Config (7351)			–
	HF2: GPI Input Assign (7352)			–
		H/L Set (7352.1)		–
		Device Interface (7325)		–
	HF3: Output Config (7353)			–
	HF4: GPI Output Assign (7354)			–
	HF5: Serial/Net Port Assign (7355)			–
		P-Bus Setting (7355.1) a) VTR Setting (7355.2) a) DDR VDCP Setting (7355.4) a) Extended VTR Setting (7355.5) a) Simple VDCP Setting (7355.6) a) DDR Odetics Setting (7355.7) a) AMP Setting (7355.8) a) General tcp/ip Setting (7355.9) a)		–
		Device Assign (7325.4)		–
VF6: Router/Tally	HF1: Router (7361)			–
		External Box Assign (7361.1)		–
	HF2: Group Tally (7362)			–
	HF3: Wiring (7363)			–
		New (7363.1)		–
		Modify (7363.2)		–
	HF4: Tally Enable (7364)			–
		New (7364.1)		–
		Modify (7364.2)		–
		Advanced Tally Mode (7364.3)		–
	HF5: Tally Copy (7365)			–
		New (7365.1)		–
		Modify (7365.2)		–
	HF6: Parallel Tally (7366)			–
		Set (7366.1)		–
	HF7: Serial Tally (7367)			–
		Source Assign (7367.1)		–

a) Selecting [Port Setting] displays menus for the device type configured for the port.

Diag Menu

Menu (Page No.)		Default Recall
VF1: Error Info	HF1: Error Status (7411)	–
	HF2: Error Log (7412)	–
VF2: System Info	HF1: Row Status (7421)	–
	HF2: Network Aux Remote Status (7422)	–

Menus Recalled by Pressing a Button Twice

For relevant buttons other than the top menu selection buttons, pressing twice in rapid succession directly recalls a related menu page. The following table lists these buttons of each control block, together with the menus they recall.

"XX" represents the last recalled page in each menu.

Note

Some menus and unsupported functions may not appear, depending on the system configuration.

Cross-point control block/AUX bus control block

Button	Menu recalled by double-press	See page
FM1 to FM20 signals assigned buttons	Frame Memory >Clip/Still >Recall	*page 176*, *page 177*
Color Bkgd1 signal assigned button	Color Bkgd >Color Bkgd1	*page 183*
Color Bkgd2 signal assigned button	Color Bkgd >Color Bkgd2	
FMS 1	Frame Memory >Clip/Still >Record	*page 175*, *page 176*
FMS 2	Frame Memory >Clip/Still >Record	
KEY1 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key1 >XX	*page 110*, *page 114*, *page 129*, *page 150*, *page 164*
KEY2 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key2 >XX	
KEY3 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key3 >XX	
KEY4 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key4 >XX	
KEY5 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key5 >XX	
KEY6 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key6 >XX	
KEY7 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key7 >XX	
KEY8 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key8 >XX	

a) The following cross-point control block buttons only:
- Key bus delegation buttons on the cross-point pad
- 1st row delegation buttons in key/AUX bus delegation mode

Transition control block

Button	Menu recalled by double-press	See page
KEY1	M/E-1, 2, 3, 4, 5, PGM/PST >Key1 >XX	*page 110*, *page 114*, *page 129*, *page 150*, *page 164*
KEY2	M/E-1, 2, 3, 4, 5, PGM/PST >Key2 >XX	
KEY3	M/E-1, 2, 3, 4, 5, PGM/PST >Key3 >XX	
KEY4	M/E-1, 2, 3, 4, 5, PGM/PST >Key4 >XX	
KEY5	M/E-1, 2, 3, 4, 5, PGM/PST >Key5 >XX	
KEY6	M/E-1, 2, 3, 4, 5, PGM/PST >Key6 >XX	
KEY7	M/E-1, 2, 3, 4, 5, PGM/PST >Key7 >XX	
KEY8	M/E-1, 2, 3, 4, 5, PGM/PST >Key8 >XX	
WIPE	M/E-1, 2, 3, 4, 5, PGM/PST >Wipe >Main Pattern	*page 140*
DME WIPE	M/E-1, 2, 3, 4, 5, PGM/PST >DME Wipe >XX	*page 159*
SUPER MIX	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Transition	*page 89*
PST COLOR MIX	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Transition	*page 89*
FM1&2 CLIP, FM3&4 CLIP, FM5&6 CLIP, FM7&8 CLIP	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Clip Transition	*page 179*
PRIOR SET	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Key Priority	*page 87*
KEY PRIOR	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Next Key Priority	*page 87*

Flexi Pad control block

Button	Menu recalled by double-press	See page
WIPE	M/E-1, 2, 3, 4, 5, PGM/PST >Wipe >Main Pattern	*page 140*
DME WIPE	M/E-1, 2, 3, 4, 5, PGM/PST >DME Wipe >XX	*page 159*
SNAPSHOT	Snapshot >Snapshot >XX	*page 333*
MASTR EFF	Effect >Master Timeline >Store	*page 322*
SHOTBOX	Shotbox >Register >Store/Recall	*page 341*
MCRO	Macro >Register >XX	*page 357*
KEY1 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key1 >XX	*page 110*, *page 114*, *page 129*, *page 150*, *page 164*
KEY2 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key2 >XX	
KEY3 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key3 >XX	
KEY4 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key4 >XX	
KEY5 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key5 >XX	
KEY6 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key6 >XX	
KEY7 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key7 >XX	
KEY8 a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key8 >XX	
WIPE a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition/ Video Process >Wipe Adjust >Pattern Select	*page 150*
DME WIPE a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition/ Video Process >DME Wipe Adjust >1ch Pattern Select	*page 164*

a) Buttons in the memory recall section in key operation mode

Key control block a)

Button	Menu recalled by double-press	See page
KEY1	M/E-1, 2, 3, 4, 5, PGM/PST >Key1 >XX	*page 110*, *page 114*, *page 129*, *page 150*, *page 164*
KEY2	M/E-1, 2, 3, 4, 5, PGM/PST >Key2 >XX	
KEY3	M/E-1, 2, 3, 4, 5, PGM/PST >Key3 >XX	
KEY4	M/E-1, 2, 3, 4, 5, PGM/PST >Key4 >XX	
KEY5	M/E-1, 2, 3, 4, 5, PGM/PST >Key5 >XX	
KEY6	M/E-1, 2, 3, 4, 5, PGM/PST >Key6 >XX	
KEY7	M/E-1, 2, 3, 4, 5, PGM/PST >Key7 >XX	
KEY8	M/E-1, 2, 3, 4, 5, PGM/PST >Key8 >XX	
LUM	M/E-1, 2, 3, 4, 5, PGM/PST >Key1, 2, 3, 4, 5, 6, 7, 8 >Type	*page 110*
LIN		
PTN		
CRK	M/E-1, 2, 3, 4, 5, PGM/PST >Key1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust	*page 113*

a) The menu recalled depends on which of the M/E delegation buttons are selected.

Key fader control block

Button	Menu recalled by double-press	See page
Key delegation buttons a)	M/E-1, 2, 3, 4, 5, PGM/PST >Key1, 2, 3, 4, 5, 6, 7, 8 >XX	*page 110*, *page 114*, *page 129*, *page 150*, *page 164*
WIPE b)	M/E-1, 2, 3, 4, 5, PGM/PST >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition/ Video Process >Wipe Adjust >Pattern Select	*page 150*

Key fader control block

Button	Menu recalled by double-press	See page
DME WIPE [b]	M/E-1, 2, 3, 4, 5, PGM/PST >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition/ Video Process >DME Wipe Adjust >1ch Pattern Select	*page 164*
K-SS STORE [c]	Snapshot >Key Snapshot >XX	*page 333*

a) The menu recalled depends on keys assigned to the delegation buttons.
b) The menu recalled depends on which of the delegation buttons is selected.
c) When the [K-SS] button is lit amber.

Numeric keypad control block

Button	Menu recalled by double-press	See page
EFF	• Effect >Effect 1-99 >XX [a] • Effect >Master Timeline >Store [b]	*page 324* *page 322*
SNAPSHOT	• Snapshot >Snapshot >XX [a] • Snapshot >Master Snapshot >Store [b]	*page 333* *page 334*
SHOTBOX	Shotbox >Register >Store/Recall	*page 341*
MCRO	Macro >Register >XX	*page 357*
STORE [c]	Key Frame >Region Select	*page 307*
RCALL [c]	Key Frame >Region Select	*page 307*

a) When other than [MASTR] is selected with the region selection buttons.
b) When [MASTR] is selected with the region selection buttons.
c) When the [EFF] button and [SNAPSHOT] button is lit amber or green.

Utility/shotbox control block

Button	Menu recalled by double-press	See page
TRANS RATE1 to TRANS RATE3	Misc >Transition >Key/ME/FTB	*page 189*

Device control block (trackball)

Button	Menu recalled by double-press	See page
CH1 to CH4 [a]	DME >XX	*page 229*
CH1 to CH12 [b]	Device >DDR/VTR >Cueup & Play	*page 290*
FM1 CLIP to FM20 CLIP	Frame Memory >Clip/Still >Recall	*page 176*, *page 177*
K1RSZ to K8RSZ [c]	M/E-1, 2, 3, 4, 5, PGM/PST >Key1, 2, 3, 4, 5, 6, 7, 8 >Resizer	*page 129*

a) When three-dimensional transform operation mode is enabled.
b) When the VTR/disk recorder/frame memory operation mode is enabled.
c) When the resizer operation mode is enabled.

XVS-9000/8000/7000/6000 System Configuration Comparison

The following differences occur in system configuration, depending on the switcher.

Item	Switcher			
	XVS-9000	**XVS-8000**	**XVS-7000**	**XVS-6000**
M/E configuration	Max. 6M/E configuration (Max. 5M/E configuration for 4K format) • In M/E split 2M/E mode, Out5, Out6, PROC V, and PROC K are not available	Max. 6M/E configuration (Max. 5M/E configuration for 4K format)	Max. 6M/E configuration (Max. 3M/E configuration for 4K format)	Max. 4M/E configuration (Max. 2M/E configuration for 4K format)
Signal formats	AUX bus 59.94 (2×) format not available	AUX bus 59.94 (2×) format available • Supported for XKS-S8110 and XKS-S8165 combination only	AUX bus 59.94 (2×) format available • Supported for XKS-S8110 and XKS-S8165 combination only	AUX bus 59.94 (2×) format available • Supported for XKS-S8110 and XKS-S8165 combination only
	4096×2160 active area not available	4096×2160 active area available • Supported for XKS-S8110 and XKS-S8165 combination only	4096×2160 active area available • Supported for XKS-S8110 and XKS-S8165 combination only	4096×2160 active area available • Supported for XKS-S8110 and XKS-S8165 combination only
DMEs	Max. 4 channels	Max. 4 channels (Max. 2 channels for 4K format)	Max. 4 channels (Max. 2 channels for 4K format)	XKS-8475: Max. 4 channels XKS-8470: Max. 2 channels (Max. 1 channel for 4K format)
	No restrictions on signals selectable on Ext In	Only primary input (excluding XKS-T8110 input signals) and color background signals can be selected on Ext In.[a)]	No restrictions on signals selectable on Ext In	No restrictions on signals selectable on Ext In
Inputs	Max. 160 (Max. 80 for 4K format)	Max. 160 (Max. 40 for 4K format)	Max. 112 (Max. 28 for 4K format)	Max. 64 (Max. 16 for 4K format)
Dedicated inputs	–	Max. 16 (Max. 4 for 4K format)	–	–
Outputs	Max. 80 (Max. 40 for 4K format)	Max. 48 (Max. 12 for 4K format)	Max. 48 (Max. 12 for 4K format)	Max. 24 (Max. 6 for 4K format)
Multi viewer outputs	Max. 16 (Max. 8 for 4K format) • Output signals assignable	Max. 8 (Max. 2 for 4K format) • Fixed multi viewer outputs	Max. 8 (Max. 2 for 4K format) • Fixed multi viewer outputs	Max. 8 (Max. 2 for 4K format) • Fixed multi viewer outputs
	Max. 4-system multi viewer available	Max. 2-system multi viewer available	Max. 2-system multi viewer available	Max. 2-system multi viewer available
M/E dedicated outputs	–	Max. 4 (3840×2160P format only)	–	–

Item	Switcher			
	XVS-9000	**XVS-8000**	**XVS-7000**	**XVS-6000**
Internal format converters	Configurable only when resource sharing enabled	Max. 16 channels (Max. 4 channels for 4K format) • FC1 to FC16 configurable for input use or output use	Max. 16 channels (Max. 4 channels for 4K format) • FC1 to FC8 configurable for input use or output use, FC9 to FC16 reserved for output use	Max. 16 channels (Max. 4 channels for 4K format) • FC1 to FC16 configurable for input use or output use
Input/output format converter	• Input format converter • Output format converter	• Input format converter • P/I converter	• Input format converter • P/I converter	• Input format converter • P/I converter
GPI outputs	Alarm output	–	–	–
Sub keys	No restrictions on selectable signals	Only primary input (excluding XKS-T8110 input signals), black, white, and color background signals can be selected. a)	No restrictions on selectable signals	No restrictions on selectable signals

a) When a dedicated input is used, signals configured using the Engineering Setup >Switcher >Input >Dedicated Input Assign menu (7332.10) can also be selected.

4K Format Restrictions

In 4K format, the following function and settings restrictions apply.

Item	Restrictions
Functions that cannot be used in the switcher	• M/E-5 bank (XVS-9000/8000), M/E-3 to M/E-5 banks (XVS-7000), M/E-2 to M/E-5 banks (XVS-6000) [a)] • Key 5 to key 8 (3840×2160P), key 3 to key 8 (3840×2160PsF) • M/E Config multi-program 2 mode • Utility 1 and 2 buses • Side flags • M/E split
DMEs	• In SQD, DMEs not supported • On the XVS-8000/7000, channels 3 and 4 not supported (DME utility 1 bus and 2 bus not supported) • On the XVS-6000, channels 2 to 4 not supported (DME external video bus, DME utility 1 bus and 2 bus not supported) • On the XVS-8000, DME MON K output not supported • Ext In input signals not supported
Screen aspect	Fixed to 16:9
Transitions	• [FM5&6 Clip] and [FM7&8 Clip] clip transitions not supported • Preset color mix using Utility 2 bus not supported • When key 1 (key 2) is selected for the next transition and DME wipe is selected as the transition type, key 1 (key 2) independent key transition wipes not supported
Keys	• Key 3 and key 4 function as sub keys • Wipe pattern keys not supported • [Filter] parameter settings for luminance keys, linear keys, and chroma keys not supported • [Y Filter] and [C Filter] parameters for color vector keys not supported • [Key Position] settings for luminance keys, linear keys, color vector keys, and chroma keys not supported • [Filter] parameter settings for color cancel key of chroma keys not supported • [Key Position] settings for color cancel key of chroma keys not supported • [Shadow] settings for chroma keys not supported • In SQD, auto chroma key sample mark for a region spanning two or more sub images (image subdivided by 4) not supported • In SQD, [Multi] settings for key wipe pattern key not supported • [Edge Blink] blinking not supported • Submask settings not supported • In SQD, edge settings not supported • In 2SI, [Utility 1 Bus] in <Edge Fill> group not supported • In SQD, [Multi] settings for main masks not supported • PROC V and PROC K signals not supported
Resizer	• In 3840×2160PsF, resizer not supported • Dual resizer effects not supported
Wipes	• In SQD, standard and enhanced group patterns only supported • In SQD, pattern mix not supported • In SQD, [Multi] and [Pairing] not supported • In SQD, only single color edge border and soft border supported
DME wipes	• In 3840×2160PsF, DME wipes not supported • In 3840×2160P SQD, only resizer DME wipes supported • Background images use flat color or mix color signals
Frame memory	• FM5 to FM20 not supported • Frame memory feed not supported
Safe titles	• Outputs with active area of 4096×2160 not supported • In SQD, [Grid] not supported
Color backgrounds	• Color background 2 not supported • In SQD, [Multi], [Pairing], and <Modulation> group settings not supported

Item	Restrictions
Multi viewers	In SQD, screen split by 10, 13, and 16 not supported

a) You can change the M/E banks that are to be disabled in the Engineering Setup >Switcher >Config >Logical M/E Assign menu (7331.5).

Sub key restrictions

In 3840×2160P format, key 3 and key 4 are called “sub keys,” and the following function and settings restrictions apply.

Notes

- When the signal format is 3840×2160PsF, sub keys cannot be used.
- You can set the sub key mode in the Setup menu *(see page 442)*.

Item	Restrictions
Transitions	Independent key transitions only supported However, the following settings are not supported. • Wipe transition type • DME wipe transition type
Key settings	Luminance key and linear key only supported However, the following settings are not supported. • [Filter] parameter • [Key Position] • [Mix Color] in the <Fill Matte> group • Edge • Mask • Blink
Key material	On the XVS-8000, primary input, black, white, and color background signals only supported [a)] However, XKS-T8110 IP Input Connector Board input signals not supported (No restrictions on the XVS-9000/7000/6000)
Key priority	Priority settings not supported (Key 4 and key 3 are fixed at the top, in that order, and key 1 and key 2 priority can be configured below key 3.)
Resizer	Resizer not supported
Key preview/Show key	Key 3 only supported when the sub key is set to [Key3 + Key PVW].
DMEs	Functions relating to DMEs not supported

a) When a dedicated input is used, signals configured using the Engineering Setup >Switcher >Input >Dedicated Input Assign menu (7332.10) can also be selected.

Resource Sharing Configuration Operations

Resource sharing is configured using a computer connected to the same network as the switcher control station.

Note

You can save and recall resource sharing configuration data between the switcher system and a computer using the file manager.

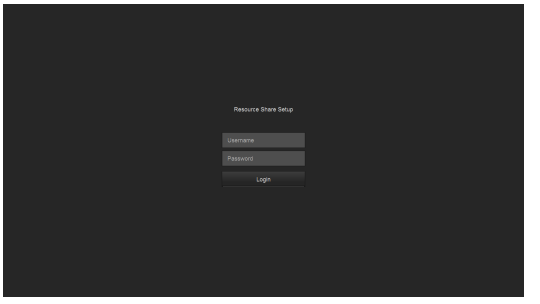
For details, see “File Manager” (page 530).

Preparations

Launch a browser on the computer, and access the menu (Resource Share Setup) for configuring sharing resources. For details about computer connection and accessing the menu, refer to the ICP-X7000 Installation Manual.

1 Access Resource Share Setup.

The Resource Share Setup login screen appears.



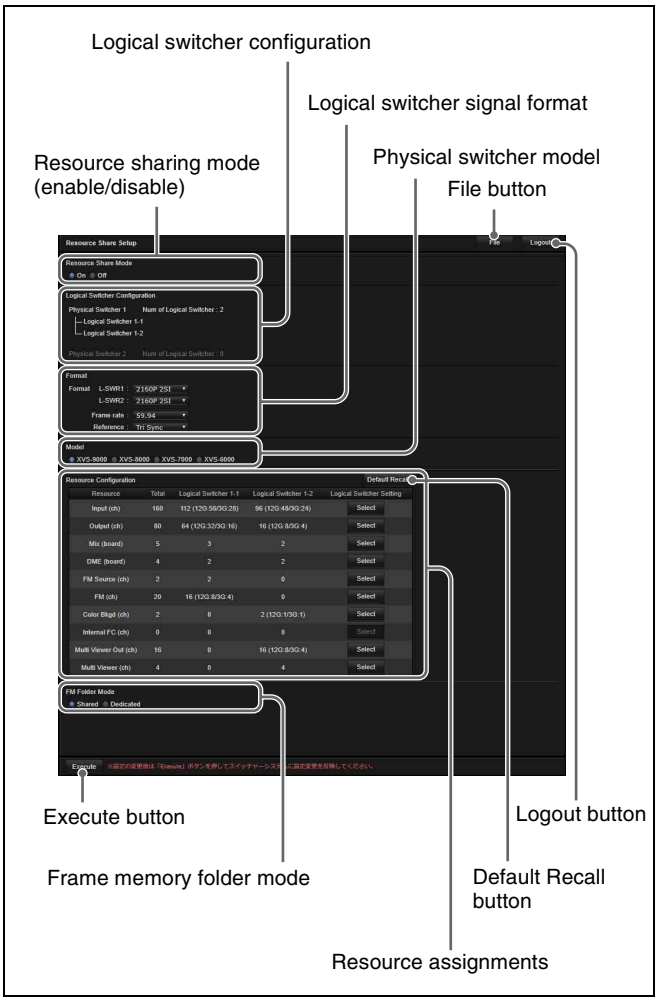
2 Enter the administrator user name and password, and click/tap [Login].

The Resource Share Setup page appears.

Note

For the administrator user name and password, refer to the ICP-X7000 Installation Manual.

Resource Share Setup page



Note

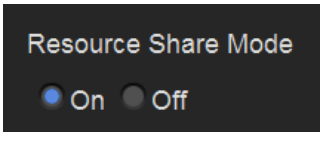
If resource sharing is disabled, the logical switcher signal format, physical switcher model, resource assignments, and frame memory folder mode are not displayed.

Procedure

The resource sharing mode and system structure are configured on the Resource Share Setup page.

1 Enable/disable resource sharing mode in [Resource Share Mode].

To enable resource sharing
Select [On].



To disable resource sharing
Select [Off], and skip to step **6**.

2 Configure the logical switcher signal format in [Format].

Signal format settings
In [Format], select the signal format for logical switcher 1 in [L-SWR1] and for logical switcher 2 in [L-SWR2].

Field frequency/frame frequency settings
Select the frequency in [Frame rate].

Input reference signal settings
Select the input reference signal in [Reference].

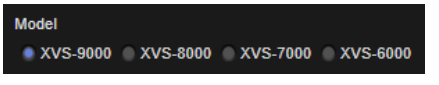
The combinations of settings that can be selected are as follows.

Format		Frame rate	Reference
L-SWR1	L-SWR2		
2160P 2SI 2160P SQD 1080P	2160P 2SI 2160P SQD 1080P	59.94 50	Tri Sync BB
1080i	1080i		
2160PsF SQD 1080PsF	2160PsF SQD 1080PsF	29.97 25	Tri Sync BB
		24 23.98	Tri Sync
720P	720P	59.94	Tri Sync BB
		50	BB

Notes

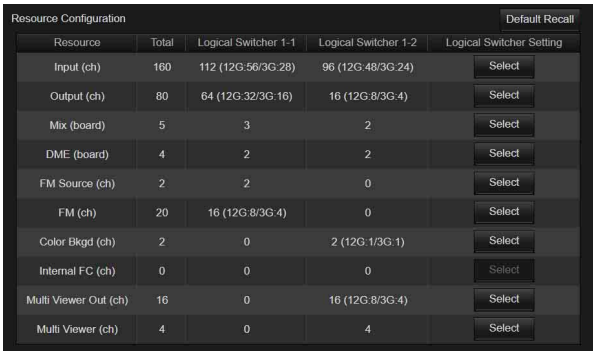
- Set devices in a switcher system to the same frequency.
- The [Frame rate] and [Reference] settings are common to logical switchers 1 and 2.
- If the signal formats form an unsupported combination, the format is automatically changed to a setting that can be selected.

3 Set the physical switcher model in [Model].



Select [XVS-9000], [XVS-8000], [XVS-7000], or [XVS-6000].

4 Configure resource assignments in [Resource Configuration].

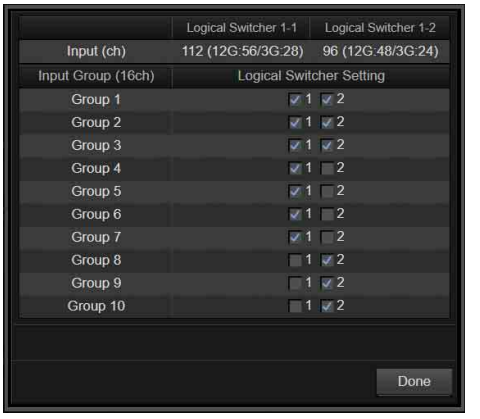


The status of the current resource assignments are displayed in [Resource Configuration] (total number of resources, number assigned to logical switcher 1, number assigned to logical switcher 2).
Click/tap [Select] in [Logical Switcher Setting] for a resource to display the resource configuration pop-up window. To assign the resource to logical switcher 1, select [1]. To assign the resource to logical switcher 2, select [2]. When finished, click/tap [Done] to close the pop-up window.

Notes

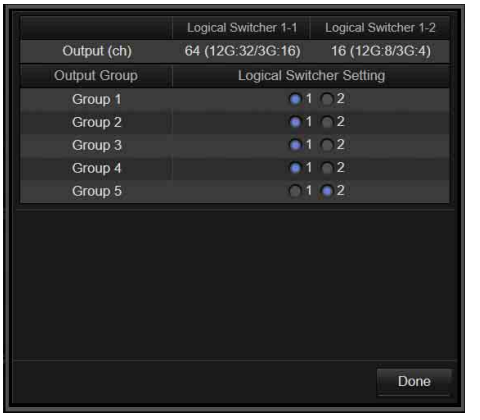
- On the XVS-9000, internal format converters are not available.
- Multi viewer output assignment is supported only on the XVS-9000.
- The following resources can be configured for sharing on logical switchers 1 and 2.
  - Inputs
  - Frame memory outputs (only when the signal formats of logical switchers 1 and 2 are the same)
  - Color backgrounds (only when the signal formats of logical switchers 1 and 2 are the same)
  - Internal format converters (only when the signal formats of logical switchers 1 and 2 are the same)
- If a logical switcher is set to 4K format, the number of the following resources that are available for 4K format use is shown in parentheses.
  On the XVS-9000, the numbers in parentheses are displayed in “12G:xx/3G:xx” format (xx represents the number of resources), so you can check the number of inputs/outputs available for 12G-SDI and 3G-SDI.
  - Inputs
  - Outputs
  - Frame memory outputs
  - Color backgrounds
  - Multi viewer outputs
  - Internal format converters

Input settings
Click/tap [Select] for [Input (ch)] to display the pop-up window.



Select [1] or [2] for each group. Select both [1] and [2] to share on logical switchers 1 and 2.

Output settings
Click/tap [Select] for [Output (ch)] to display the pop-up window.



Select [1] or [2] for each group.

Switcher bank (M/E) settings
Click/tap [Select] for [Mix (board)] to display the pop-up window.
Select [1] or [2] for each board.

DME settings
Click/tap [Select] for [DME (board)] to display the pop-up window.
Select [1] or [2] for each board.

Notes

- When the logical switcher signal format is 3840×2160P SQD or 3840×2160PsF SQD, DMEs cannot be used.
- DME functionality on up to four channels can be used on a single logical switcher.

Frame memory source settings
Click/tap [Select] for [FM Source (ch)] to display the pop-up window.
Select [1] or [2] for the two systems.

Frame memory output settings
Click/tap [Select] for [FM (ch)] to display the pop-up window.
Select [1] or [2] for each group of four channels. Select both [1] and [2] to share on logical switchers 1 and 2.

Note

In 4K format, the resources for the four channels are used as frame memory outputs for one channel. On a 4K format logical switcher, set an even number of frame memory output channels (2 or 4 channels).

Color background settings
Click/tap [Select] for [Color Bkgd (ch)] to display the pop-up window.
Select [1] or [2] for each system. Select both [1] and [2] to share on logical switchers 1 and 2.

Note

If logical switcher 1 or 2 is set to 4K format, a color background can be assigned to only one of the logical switchers. In addition, the color backgrounds that can be used on a 4K format logical switcher is restricted to one system only.

Internal format converter settings (XVS-8000/7000/6000 only)
Click/tap [Select] for [Internal FC (ch)] to display the pop-up window.
Select [1] or [2] for the 16 channels. Select both [1] and [2] to share on logical switchers 1 and 2.

Note

When sharing is configured, you can use the FC channels for input use on logical switchers 1 and 2. FC channels for output use can be used on logical switcher 1 only.

Multi viewer output settings (XVS-9000 only)
Click/tap [Select] for [Multi Viewer Out (ch)] to display the pop-up window.
Select [1] or [2] for each group of 8 outputs.

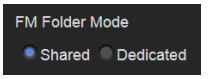
Notes

- The resource settings setup pop-up window is common to both multi viewer outputs and multi viewers.
- If the logical switchers are set to a combination of 4K format and HD format, assign all multi viewer outputs to the same logical switcher.

Multi viewer settings
Click/tap [Select] for [Multi Viewer (ch)] to display the pop-up window.
Select [1] or [2] for each system.

To restore resource assignments to defaults
Click/tap [Default Recall], check the message, then click/tap [Yes].

5 Set the frame memory folder mode in [FM Folder Mode].



To set shared mode
Select [Shared].

To set dedicated mode
Select [Dedicated].

6 Click/tap [Execute].

7 Check the message, then click/tap [Yes].

Notes

- The switcher system reboots when any of the following settings is changed.
  Resource sharing mode, logical switcher signal format, M/E assignment settings, DME assignment settings, frame memory folder mode
- The XKS-8460 Format Converter Board reboots if an internal format converter assignment is changed.
- The XKS-S8111 SDI Input and FC Connector Board and XKS-S8112/XKS-S9112 12G-SDI Input Boards reboot if an input assignment setting is changed.
- The XKS-S9167 12G-SDI Output Board reboots if an output assignment setting is changed.
- Reset the switcher after changing the input/output assignment settings of network connector boards.

To display File Manager
Click/tap [File]. File Manager is displayed in a separate window.

To log out from Resource Share Setup
Click/tap [Logout], check the message, then click/tap [Yes].

File Manager

The file manager is a function that can save and load system configuration data between the switcher system and a computer (PC or tablet).
You can operate on data files located on a computer connected to the switcher control station via network connection using the “File Manager” application.

Preparations

Launch a browser on the computer, and access File Manager.
For details about computer connection and accessing File Manager, refer to the ICP-X7000 Installation Manual.

Logging in to File Manager

1 Access File Manager.

The File Manager login screen appears.

2 Enter the user name and password, and click/tap [Login].

The File Manager screen appears.

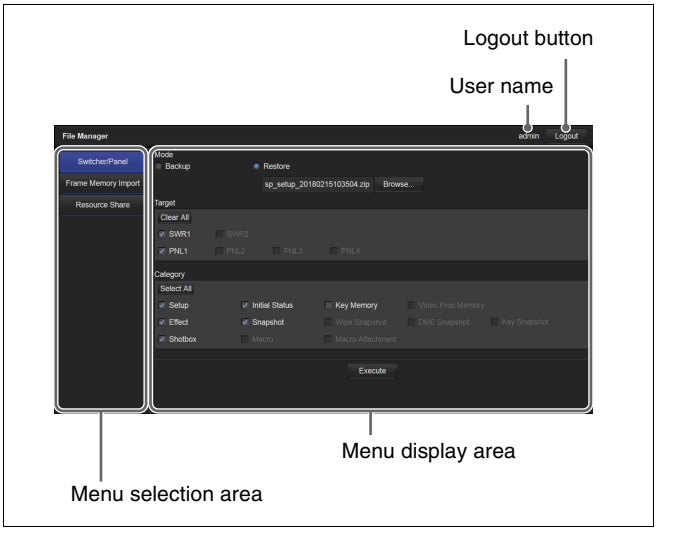
Note

Administrator privileges are required to operate the Resource Share menu of File Manager.
For the administrator user name and password, refer to the ICP-X7000 Installation Manual.

To log out of File Manager

Click/tap [Logout] at the top right of the screen, check the message, then click/tap [Yes].

File Manager screen



File Manager contains the following three menus.
Switcher/Panel menu: Backs up/restores system configuration data (register data).
Frame Memory Import menu: Imports frame memory data (image data).
Resource Share menu: Backs up/restores resource sharing configuration data.
Click/tap the target menu button in the menu selection area to display the selected menu in the menu display area.

Notes

- The Resource Share menu is displayed only when logged in with the administrator user name.
- You cannot execute more than one backup/restore/import operation at the same time in each menu of File Manager.

Switcher/Panel Menu Operations

This menu is used to save (back up) and load (restore) system configuration data between the switcher system and a computer.
The following configuration data can be backed up/restored.

- Setup
- Initial status
- Key memory
- Video process memory
- Keyframe effects
- Snapshots
- Wipe snapshots
- DME wipe snapshots
- Key snapshots
- Shotboxes
- Macros
- Macro attachments

Configuration data is saved on the computer as a ZIP file.

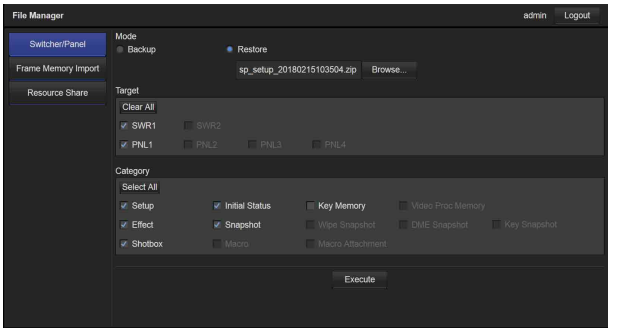
Notes

- Only configuration data backed up using File Manager can be restored.
- For details about backup/restore functions that use the public key of the Maintenance Menu, contact your Sony service representative.

Displaying the Switcher/Panel menu

In the menu selection area, click/tap [Switcher/Panel]. The Switcher/Panel menu appears in the menu display area.

Switcher/Panel menu



Backing up a file

1 In [Mode], select [Backup].

2 In [Target], select the target switcher/control panel.

To select all switchers/control panels, click/tap [Select All].
To clear the selection of all switchers/control panels, click/tap [Clear All].

3 In [Category], select a data category.

To select all categories, click/tap [Select All].
To clear the selection of all categories, click/tap [Clear All].

Note

The categories that can be selected vary depending on the setting in step **2**.

4 Click/tap [Execute].

Data for the selected categories is saved on the computer as a ZIP file.

Notes

- By default, the file name has the following format. “sp_setup_YYYYMMDDhhmmss.zip” (where “YYYYMMDDhhmmss” is the creation date)
- The file save destination depends on the OS and browser settings.

Restoring a file

1 In [Mode], select [Restore].

Click/tap [Browse …], and select a file in the file selection window.
The name of the selected file appears.

2 In [Target], select the target switcher/control panel.

The switchers/control panels included in the file are displayed in the selected state.
To remove a switcher/control panel from the restore targets, click/tap it to clear the check mark.

3 In [Category], select a data category you want to restore.

The categories included in the file are displayed in the selected state.
To remove a category from the restore targets, click/tap it to clear the check mark.

4 Click/tap [Execute].

5 Check the message, then click/tap [Yes].

The selected file is loaded, and the configuration data is applied.

Frame Memory Import Menu Operations

This menu is used to import image data files stored on a computer into frame memory storage.
The format of files that can be imported are given below.

- TIF (TIFF files, “.tif” file name extension)
- BMP (Bitmap files, “.bmp” file name extension)
- TGA (Targa files, “.tga” file name extension)
- PNG (PNG files, “.png” file name extension)
- SFH (frame memory dedicated file format)

Files in formats other than SFH format are converted to SFH format when they are imported.

When multiple files are selected having a “character_string + number (or character_string + # + number)” name format, files with the same “character_string” portion are imported as clips. Other files are imported as still images.

Note

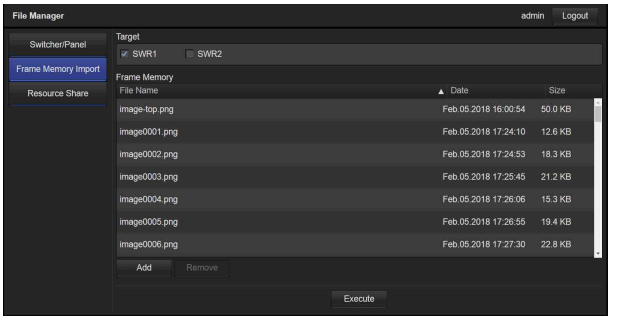
The following files cannot be imported using File Manager.

- Files exceeding 100 MB
- Files with invalid file names
  For details, see "Files and folders" (page 170).
- For still images, files with a file name that exceeds 32 characters
- For clips, files where the "character_string" portion of the file name exceeds 32 characters

Displaying the Frame Memory Import menu

In the menu selection area, click/tap [Frame Memory Import].
The Frame Memory Import menu appears in the menu display area.

Frame Memory Import menu



Importing a file

1 In [Target], select the target switcher.

2 Select a file to import.

Click/tap [Add], and select a file in the file selection window.
The selected file is displayed in the import list.
You can select up to 5,540 files (up to a total of 10 GB).

To remove a file from the list
Select the target file to remove, and click/tap [Remove].

To sort the files in the list
Click/tap [▼] or [▲] for items in the list.
Name: Sort by name in ascending order (▼) or descending order (▲).
Date: Sort by update date and time in ascending order (▼) or descending order (▲).
Size: Sort by size in ascending order (▼) or descending order (▲).

3 Click/tap [Execute].

Files in the import list are imported into frame memory storage.

A progress message (number of imported files/number of all files) is displayed while importing.

To cancel while importing
Click/tap [Cancel] in the progress message dialog, check the message, then click/tap [Yes].

Notes

- Files that have the same name as an existing file in frame memory storage cannot be imported.
- Files for which importing has been completed are removed from the import list.

Resource Share Menu Operations

This menu is used to save (back up) and load (restore) resource sharing configuration data between the switcher system and a computer.
Configuration data is saved on the computer as a ZIP file.

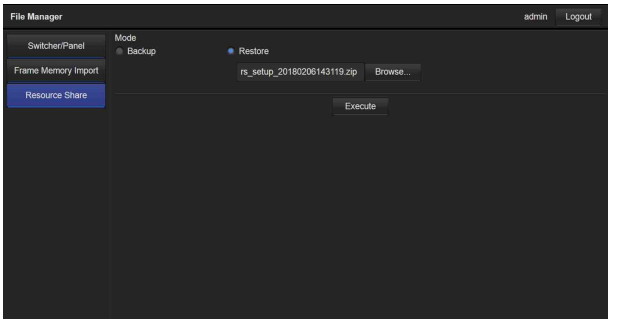
Note

Only configuration data backed up using File Manager can be restored.

Displaying the Resource Share menu

In the menu selection area, click/tap [Resource Share].
The Resource Share menu appears in the menu display area.

Resource Share menu



Backing up a file

1 In [Mode], select [Backup].

2 Click/tap [Execute].

Resource sharing configuration data is saved on the computer as a ZIP file.

Notes

- By default, the file name has the following format. “rs_setup_YYYYMMDDhhmmss.zip” (where “YYYYMMDDhhmmss” is the creation date)
- The file save destination depends on the OS and browser settings.

Restoring a file

1 In [Mode], select [Restore].

Click/tap [Browse …], and select a file in the file selection window.
The name of the selected file appears.

2 Click/tap [Execute].

3 Check the message, then click/tap [Yes].

The selected file is loaded, and the resource sharing configuration data is applied.

Simple Connection of the MKS-8080/8082 AUX Bus Remote Panel

Notes

- For NS-Bus, the MKS-8080/8082 AUX Bus Remote Panels are not supported.
- The network AUX remote panel function *(see page 535)* cannot be used at the same time as the MKS-8080/8082 AUX Bus Remote Panel.

Procedure for Simple Connection

To connect the MKS-8080/8082 AUX Bus Remote Panel to a system interface unit (SIU) using an S-Bus data link requires an HKSP-R80 Routing Switcher Controller Board or similar primary station and various settings for connection.
However, when using a simple connection, the need for an S-Bus data link primary station is avoided, and direct connection to the MKS-8080/8082 is possible.
A simple connection is possible if the following conditions are met:

- There are no devices other than the SIU and MKS-8080/8082 connected on the S-Bus data link.
- There are no more than 16 MKS-8080/8082 units connected on the S-Bus data link.

To carry out simple connection of the MKS-8080/8082 AUX Bus Remote Panel, use the following procedure.
For settings on the MKS-8080/8082, refer to the “Making the Setting with Buttons (Setup Function)” section and “Setting the station number” in “Preparations for the MKS-8080/8082” section in the Operation Manual for the MKS-8080/8082.

1 Carry out initialization of the MKS-8080/8082 settings.

This can be executed on the MKS-8080/8082 separately.

2 Set the MKS-8080/8082 station number in the range 2 to 17.

This can be set on the MKS-8080/8082 separately.

3 Set the S-Bus data link primary station to the SIU by setting the STATION ID switches on the front of the board in SLOT 1 of the SIU to 001 (switch 1 only to the ON position).

System Interface Unit	Board	STATION ID switches
MKS-X2700/X7700	CA-90	S3801

When finished, reboot the SIU (power off and then on again).

4 In the Engineering Setup >Router/Tally >Router menu (7361), set the position in the XVS-9000/8000/7000/6000 system S-Bus space.

Select the setting from SWR1 and SWR2, and set each of Source, Destination, and Level to 1.

Setting Status of the MKS-8080/8082 in Simple Connection

As a result of making the simple connection, the MKS-8080/8082 operates in AUX bus mode, and the settings are the following factory defaults.
With regard to the meaning of the following settings, refer to the "Menu Operations" section in the Operation Manual for the MKS-8080/8082.

C: SET SWITCHER ID (for AUX mode)
This is set to 001, which is the station number of the SIU.

D: SET AUX DESTINATION/SOURCE (for AUX mode)
The source is set to IN001 and following, and destination is set to OUT001 and following.

H: SET PHANTOM TABLE (for Router mode)
This is not set, since the unit does not operate in router mode.

N: SET PANEL TABLE (for Router mode)
The source is set to IN001 and following, and destination is set to OUT001 and following. However, since the unit does not operate in router mode, these settings are not used.

O: SET AVAILABLE SOURCE/DESTINATION
Set the source and destination ranges so that the XVS-9000/8000/7000/6000 inputs and outputs can be selected.

R: SET ROUTE
Since when using the simple connection the switcher and router cannot be connected in cascade, no route setting is required, and this is not set.

Y: SET DISPLAY MODES
The DISPLAY MODES/PANEL FUNCTION setting is set to NORMAL.
The TALLY GROUP settings match the settings in the Engineering Setup >Router/Tally >Group Tally menu (7362).

Z: SET PANEL STATUS
The various settings are the same as the factory default settings.

Network AUX Remote Panel

A network AUX remote panel is a function that provides a simple connection of an MKS-R3210/R1620 Remote Control Panel with a switcher, and uses the MKS-R3210/R1620 Remote Control Panel as a switcher remote panel. You can control the switching of cross-points on a switcher from a remote panel on the network.
In a simple connection, the MKS-R3210/R1620 Remote Control Panel and switcher are connected via the switcher control station, without using LSM (Live System Manager).

Network AUX remote panel restrictions

- Up to 16 remote panels can be configured for a single control panel.
- Simultaneous use with an MKS-8080/8082 AUX Bus Remote Panel is not supported.
- The network AUX remote panel function is not available if the MKS-R3210/R1620 Remote Control Panel is connected to an LSM.
- The network AUX remote panel function is not available if NS-Bus protocol control is enabled on the switcher control station.
- The following function and settings restrictions apply to a remote panel.

Item	Restrictions
Functions	The following functions are not available. • Global salvo • Protect • Monitor • Retrace • Linkage
Levels	Only 1 to 8 are available.
Operation button colors	Set to “Local” (Color Settings on the Display Settings page)
Source/ destination names	Select from the following two types of alias names. (Alias Name Lists page) • Source name set on the switcher, and fixed bus name • Type+Num name

Network AUX remote panel settings

The following settings are required in order to use the network AUX remote panel function.

MKS-R3210/R1620 Remote Control Panel settings

On the Network Settings page of the web menu, configure the network (LAN1).

For details about setup, refer to the ICP-X7000 Installation Manual and the MKS-R3210/R1620 Operating Instructions.

Switcher control station settings

Configure the following in Maintenance Menu.

- AUX Remote Panel Config screen
  Set the remote panel connection to use with the target control panel.
- Network Setting screen
  Allow access if the switcher control station functions as an NTP server.

For details about setup, refer to the ICP-X7000 Installation Manual.

Switcher settings

To use the same cross-point settings as the switcher on a remote panel, copy the cross-point assign table in the Engineering Setup >Panel >Xpt Assign menu (7322).

For details, see “Copying Cross-Point Settings” (page 415).

Remote panel connection status

You can check the remote panel status in the Diag >System Info >Network Aux Remote Status menu (7422).

For details, see “Remote Panel Connection Status” (page 493).

Macro File Editing Rules

When editing a macro file, observe the following rules.

Macro File Syntax

The macro file syntax is as follows.

File format
The file is in CSV (comma-separated value) format.

Newline code
CR (ASCII code 0D), LF (ASCII code 0A), or CRLF may be used.

Statement syntax
There are four types of statement, each terminated by a newline code.

File header: This must always appear as the first line of the file. It comprises 28 characters, as follows.
Example: PNL (space) 0001PNL_rrrr.PMRnnnnnnnn
rrrr: Macro register number (0001 to 0250)
nnnnnnnn: In a file created on the switcher, this is a register name automatically set by the switcher.
When creating a new file, it is recommended to set this to be the same as the file name *(see page 536)*.
The name is limited to eight characters.
The following characters may not be used.
space, \, /, :, ;, , (comma), . (period), <, >, *, ?, ", |

Comment: Begins with "#". The content of the line following the "#" up to the next newline has no effect on macro execution, and can be used as a comment.

Note

Comments can be used on the local drive or a removable drive only. When you load a macro file into a register, the comments are discarded.

Event statement: Begins with "Event?", and defines the macro event content *(see page 536)*.

Continue statement: Begins with "Continue?", and defines the macro event content *(see page 536)*.
Some events cannot be used *(see page 537)*.

Syntax of Event and Continue Statements

An event can be written with an Event statement only, or with an Event statement followed by any number of Continue statements. Event statements and Continue statements have the following syntax.

Word separator character
Use "," (comma).

Ignored
Spaces and tabs are ignored. There is no distinction between lowercase and uppercase. If two or more separator characters appear consecutively, later ones are ignored. Separator characters at the beginning of a line are also ignored.

Content of line
Must begin with "Event?" or "Continue?", followed by symbols and parameters.
Event?,[symbol],[parameter],[parameter],…
Continue?,[symbol],[parameter],[parameter],…

symbol: Type of event (ASCII character string) *(see page 537)*.

parameter: Shows details of an event. Consists of parameter names and arguments, and these must appear in pairs. The number and type of parameters depends on the event *(see page 539)*.
If the same parameter appears two or more times, the rightmost occurrence is valid.

How to use Continue statements

When a single parameter has more than one argument, use a Continue statement.
This section describes a snapshot event as an example.
An event to recall a snapshot in region M/E-1 is written as:
Event?,Snapshot,Region?,ME1,Register?,1,
Attribute?,Off,Time?,Current
In the Event statement, only one region can be specified.
To specify both regions M/E-1 and DME1, use a Continue statement, thus:
Event?,Snapshot,Region?,ME1,Register?,1,
Attribute?,Off,Time?,Current
Continue?,Snapshot,Region?,DME1,Register?,1,
Attribute?,Off,Time?,Current
To specify more than one argument for a region parameter, follow the Event statement by a Continue statement on the next line.

File Name

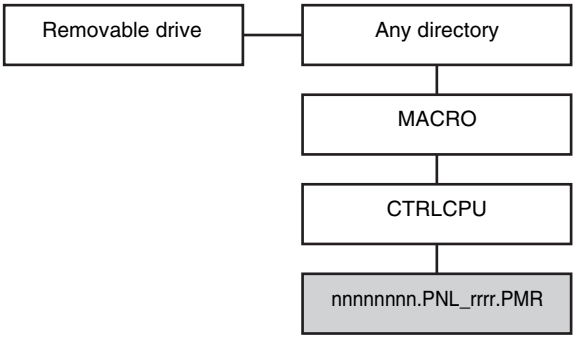
Set the file name as follows.
Example: nnnnnnnn.PNL_rrrr.PMR
nnnnnnnn: In a file created on the switcher, this is a register name automatically set by the switcher.
The name for a new file is limited to eight characters.
The following characters may not be used.
space, \, /, :, ;, , (comma), . (period), <, >, *, ?, ", |
rrrr: macro register number (0001 to 0250)

Saving and Loading a File

For a newly created file, if you create a directory on a removable drive and move the file to the prescribed location, you can then load the file using File >All, External File >All menu (7161).

Note

When modifying a file saved on the switcher, be sure to save it in the original directory.



Example path:
Removable Drive\Sample\MACRO\CTRLCPU\
nnnnnnnn.PNL_rrrr.PMR

Errors

If any of the following problems occur, it is not possible to load the file. Attempting to load the file will produce an error message.

- If there is a syntax error.
- If a required parameter is not present.

For details, see "Error Messages" (page 552).

Correspondence Between Events and Symbols

For details about events, see "Events" (page 345).

Event	Symbol	Using Continue
Cross-point selection in the AUX bus control block (AUX bus operation mode)	AuxXpt	No
Cross-point selection in the AUX bus control block (router operation mode)	RouterXpt	Yes
Cross-point selection in the cross-point control block	MEXpt	Yes
Auto transition and take in the transition control block	MEAutoTransition	Yes
Cut in the transition control block	MECut	No
Transition type selection	TransitionType	No
Next transition setting	NextTransition	No
Pattern limit enable/disable	PatternLimit	No
Execution of fade to black	FadeToBlack	No
Auto transition in an independent key transition	KeyAutoTransition	Yes
Key insertion and removal in an independent key transition	KeyCut	Yes
Independent key transition type selection	KeyTransitionType	No
VTR/disk recorder/frame memory clip start point setting	StartTc	Yes
VTR/disk recorder/frame memory clip playback	Play	Yes
VTR/disk recorder/frame memory clip stop	Stop	Yes
VTR/disk recorder/frame memory clip cue-up	Cue	Yes
VTR/disk recorder/frame memory clip fast forward	FF	Yes
VTR/disk recorder/frame memory clip rewind	Rewind	Yes

Event	Symbol	Using Continue
Load disk recorder file	DiskFileLoad	No
Select disk recorder folder	DiskFolderSet	No
Recall snapshot	Snapshot	Yes
Recall key snapshot	KeySnapshot	Yes
Recall wipe snapshot	WipeSnapshot	Yes
Recall DME wipe snapshot	DMEWipeSnapshot	Yes
Recall shotbox	ShotBox	No
Recall master snapshot	MasterSnapshot	No
Recall master timeline	MasterTimelineRecall	No
Recall effect	TimelineRecall	Yes
Effect execution	TimelineRun	Yes
Rewind effect	TimelineRewind	Yes
Fast forward effect	TimelineFF	Yes
Effect execution direction selection (normal)	TimelineDirectionNormal	Yes
Effect execution direction selection (reverse)	TimelineDirectionReverse	Yes
Effect execution direction selection (normal/reverse enable)	TimelineNormalReverseOn	Yes
Effect execution direction selection (normal/reverse disable)	TimelineNormalReverseOff	Yes
Pause [a)]	Pause	No
Recall function assigned to memory recall button/user preference button	UtilityButton	No
Recall function assigned to cross-point button	KeyBusUtilityButton	No
Frame memory clip loop enable/disable	FMLoop	Yes
Menu macro recall and execution	MenuMacroRun	No
Recall frame memory clip	ClipRecall	No
Frame memory clip audio data enable/disable	Audio	No
Record device	DeviceRecord	Yes
AUX mix transition enable/disable	AuxMix	No
Page recall on cross-point pad	XptPadPage	No
Delegation selection in cross-point button rows	XptRowAssign	No
Trigger test output from GPI port	GPITestFire	No
Send command to TCP/IP connected external device	NetworkMessaging	Yes
Cross-point assign table selection	XptTableForRow	Yes
Resume all paused macros in multi mode	MacroTake	No
Stop all simultaneous executing macros in multi mode	MacroCancel	No
Move to previous keyframe	PrevKF	No
Move to next keyframe	NextKF	No
Set transition rate	TransitionRate	No

a) For details about pause events, see *"Macro Execution" (page 347)*.

Symbols and Parameters

Symbol	Parameter name	Arguments	Description
MEXpt	ME?	ME1 to ME5, PP	Target control block
	MEBus?	A, B, Key1 to Key8, Key1Source to Key8Source, Utility1, Utility2, DMEExternalVideo	Target bus
	Xpt?	1 to 300	Cross-point button number in the main table set in the Xpt Assign menu
	VideoKey?	Video, Key	Type of signal (video signal or key signal) to select on the target bus
AuxXpt	AuxBus?	EditPreview, Aux1 to Aux48, FrameMemory1, FrameMemory2, DME1Video to DME4Video, DME1Key to DME4Key, DME1Video2nd to DME4Video2nd (a), DME1Key2nd to DME4Key2nd (b), DMEUtility1, DMEUtility2	Target bus (a): DMEnVideo2nd= Bus for selecting background video signal of DMEn channel (n=1 to 4), (b): DMEnKey2nd= Bus for selecting background key signal of DMEn channel (n=1 to 4)
	Xpt?	1 to 300	Cross-point button number in the main table set in the Xpt Assign menu
	VideoKey?	Video, Key	Type of signal (video signal or key signal) to select on the target bus
MEAutoTransition	ME?	ME1 to ME5, PP	Target control block
	Time?	Current (a), 0 to 999	Transition rate (number of frames) (a): Mode in which the value set on the current transition control block is used
	ABusXpt?	Current (a), 1 to 300	A bus or B bus cross-point button number Use the button number of the main table set in the Xpt Assign menu. (a): Mode in which the cross-point number set for the current A bus or B bus is used
	BBusXpt?	Current (a), 1 to 300	
MECut	ME?	ME1 to ME5, PP	Target control block
KeyAutoTransition	ME?	ME1 to ME5, PP	Target control block
	Key?	Key1 to Key8	Key of the target independent key transition
	Time?	Current (a), 0 to 999	Transition rate (number of frames) (a): Mode in which the current value set for an independent key transition is used
	Direction?	ToOn (a), ToOff (b), Any (c)	Transition execution mode (a): Key is inserted (b): Key is removed (c): Transition is always executed
KeyCut	ME?	ME1 to ME5, PP	Target control block
	Key?	Key1 to Key8	Key of the target independent key transition
	Direction?	ToOn (a), ToOff (b), Any (c)	Transition execution mode (a): Key is inserted (b): Key is removed (c): Transition is always executed

Symbol	Parameter name	Arguments	Description
Play	Device?	1 to 12, FrameMemory1Clip to FrameMemory20Clip	Target device
	Mode?	Normal (a), Recue (b), Loop (c)	Playback mode (a): Normal mode For FrameMemory1Clip to FrameMemory20Clip, settings are ignored and operation mode is fixed to “Normal.” (b): Recue mode (c): Loop mode
Cue	Device?	1 to 12, FrameMemory1Clip to FrameMemory20Clip	Target device
	Timecode?	Current (a), hh:mm:ss:ff	Start point timecode hh=hours (00 to 23) For FrameMemory1Clip to FrameMemory20Clip, “hh” is fixed to “01.” mm=minutes (00 to 59) ss=seconds (00 to 59) ff=frames (00 to 29) (a): Mode in which the currently set timecode is used
Stop	Device?	1 to 12, FrameMemory1Clip to FrameMemory20Clip	Target device
FF	Device?	1 to 12, FrameMemory1Clip to FrameMemory20Clip	Target device
Rewind	Device?	1 to 12, FrameMemory1Clip to FrameMemory20Clip	Target device
DiskFileLoad	Device?	1 to 12	Target device
	FileName?	Filename	Name of file (max. 23 characters)
DiskFolderSet	Device?	1 to 12	Target device
	FolderName?	Foldername	Name of folder (max. 23 characters)
Snapshot	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, Router	Target region
	Register?	1 to 99	Target register number
	Attribute?	Off, Dissolve, AutoTransition, Dissolve&AutoTransition	Target snapshot attribute
	Time?	Current (a)	Duration of effect dissolve (a): Mode in which the currently set value is used The target to set is “Current” only, and cannot be changed.
KeySnapshot	ME?	ME1 to ME5, PP	Target control block
	Key?	Key1 to Key8	Target key
	Register?	1 to 4	Target register number
WipeSnapshot	ME?	ME1 to ME5, PP	Target control block
	Register?	1 to 10	Target register number
DMEWipeSnapshot	ME?	ME1 to ME5, PP	Target control block
	Register?	1 to 10	Target register number
TimelineRecall	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, PBus, Device1 to Device12, GPI	Target region
	Register?	1 to 399	Target register number

Symbol	Parameter name	Arguments	Description
TimelineRun	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, PBus, Device1 to Device12, GPI, Current (a)	Target region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineRewind	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, PBus, Device1 to Device12, GPI, Current (a)	Target region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineFF	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, PBus, Device1 to Device12, GPI, Current (a)	Target region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
ShotBox	Register?	1 to 99	Target register number
Pause	Time?	0 to 999	Time for which macro is paused (number of frames)
StartTc	Device?	1 to 12, FrameMemory1Clip to FrameMemory20Clip	Target device
MasterSnapshot	Register?	1 to 99	Target register number
MasterTimelineRecall	Register?	1 to 99	Target register number
RouterXpt	DestinationButton?	1 to 128	Router cross-point button
	Source?	1 to 9999	Router source number
	Level?	1 to 8	Router level selection
PatternLimit	ME?	ME1 to ME5, PP	Target control block
	Status?	ToOn (a), ToOff (b), Any (c)	Pattern limit status (a): Pattern limit applies (b): Pattern limit does not apply (c): The pattern limit status always changes
TransitionType	ME?	ME1 to ME5, PP	Target control block
	TransitionType?	Mix, NAM, SuperMix, PresetColorMix, Wipe, DMEWipe, FM1&2Clip, FM3&4Clip, FM5&6Clip, FM7&8Clip	Transition type
KeyTransitionType	ME?	ME1 to ME5, PP	Target control block
	Key?	Key1 to Key8	Key of the target independent key transition
	Direction?	On (a), Off (b), Any (c)	Independent key transition execution mode (a): Key is inserted (b): Key is removed (c): Transition is always executed
	KeyTransitionType?	Mix, Wipe, DMEWipe, Cut	Transition type of the independent key transition
NextTransition	ME?	ME1 to ME5, PP	Target control block
	All?	On, Off	Target next transition
	KeyPriority?	On, Off	Target next transition
	BKGD?	On, Off	Target next transition
	Key1? to Key8?	On, Off	Target next transition
FadeToBlack	Time?	Current (a), 0 to 999	Transition rate (number of frames) (a): Mode in which the current value set for fade to black is used
TimelineDirectionNormal	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, PBus, Device1 to Device12, GPI, Current (a)	Target region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block

Symbol	Parameter name	Arguments	Description
TimelineDirectionReverse	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, PBus, Device1 to Device12, GPI, Current (a)	Target region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineNormalReverseOn	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, PBus, Device1 to Device12, GPI, Current (a)	Target region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineNormalReverseOff	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME4, PBus, Device1 to Device12, GPI, Current (a)	Target region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
UtilityButton	UtilityModule?	UserPrefs, UtilityBox	Target control block
	Button?	1 to 480	Target button
	UtilityStatus?	On, Off, Current (a)	Status of function assigned to button (a): Operates according to currently assigned function
FMLoop	Device?	FrameMemory1Clip to FrameMemory20Clip	Target clip
	FMLoopMode?	On (a), Off (b)	Frame memory clip loop enable/disable (a): Loop is enabled (b): Loop is disabled
MenuMacroRun	Register?	1 to 99	Target register number
KeyBusUtilityButton	ME?	ME1 to ME5, PP	Target control block
	Bank?	Bank1 to Bank10	Target bank
	KeyBusButton?	1 to 36	Target button
	UtilityStatus?	On, Off, Current (a)	Status of function assigned to button (a): Operates according to currently assigned function
ClipRecall	Device?	FM1 to FM20	Target frame memory output
	ClipType?	Pair, Single	Clip type (pair/single)
	ClipFilePath?	Clip File Path	Clip folder and file name (max. 80 characters + 4 slash characters) Folder and file delimited by slash (/) characters.
Audio	Device?	FM1 to FM20	Target frame memory output
	AudioMode?	On, Off	Audio data enable/disable
DeviceRecord	Device?	1 to 12	Target device
AuxMix	AuxMixBus?	Aux1, Aux3, Aux5, to Aux47	Target AUX bus (odd-numbered bus)
	AuxMixStatus?	On, Off	AUX mix transition enable/disable
XptPadPage	MEAuxBank?	ME1 to ME5, PP, 1stAux, 2ndAux	Target control block
	Page?	1 to 14	Target page

Symbol	Parameter name	Arguments	Description
XptRowAssign	MEBank?	ME1 to ME5, PP	Target control block
	Row?	1st to 4th	Target button row
	BusFunction?	A, B, Key1 to Key8, Utility1, Utility2, DMEExternalVideo, DMEUtility1, DMEUtility2, EditPreview, Aux1 to Aux48, FrameMemory1, FrameMemory2, DME1Video to DME4Video, DME1Key to DME4Key, UtilShotbox1 to UtilShotbox10	Target bus/function
GPITestFire	Box?	DCU	Target GPI The target to set is “DCU” only, and cannot be changed.
	Port?	1 to 50	Target GPI output port
NetworkMessaging	Device?	1 to 12	Target device
	Command?	Command	Command (up to 23 characters)
XptTableForRow	MEBank?	ME1 to ME5, PP	Target control block
	Row?	1st to 4th, 3rd&4th, All	Target button row
	Table?	Main, Table1 to Table14, BankTable (a)	Cross-point assign table (a): Table configured on a switcher bank.
MacroTake	Register?	All (a)	Target macro register (a): All paused macros
MacroCancel	Register?	All (a)	Target macro register (a): All simultaneously executing macros
PrevKF	Region?	Current (a)	Target region (a): Currently selected region
NextKF	Region?	Current (a)	Target region (a): Currently selected region
TransitonRate	ME?	ME1 to ME5, PP	Target control block
	Transition?	Background, Key1 to Key8	Target transition
	Time?	0 to 999	Transition rate (number of frames)

Example of File Contents

Line	Content	Description
1	PNL 0001PNL_0000.PMRMACROREG	File header
2	#,Sample,	Comment
3	Event?,Snapshot,Region?,ME1,Register?,1,Attribute?,Off,Time?, Current	Simultaneously recall snapshots from register number 1 in the M/E-1 and DME1 regions.
4	Continue?,Snapshot,Region?,DME1,Register?,1,Attribute?,Off, Time?,Current	
5	Event?,MEXpt,ME?,ME2,MEBus?,A,Xpt?,121,VideoKey?,Video	Select button number 121 on the M/E-2 A bus.

Content Displayed in Macro Attachment List

The “Button” column in the macro attachment list displayed in the status area of the Macro >Attachment >Attachment menu (5421) shows the names of buttons that you apply a macro attachment using symbol abbreviations. The “Button” column in the list displays a combination of Button (1), Button (2), and Button (3) from the following tables.
Example:
Block: P/P XPT
Button (1): UTIL1 Bus
Button (2): V 1st Row
Button (3): XPT2
In this case, the display in the “Button” column is:
UTIL1 Bus V 1st Row XPT2
This indicates “P/P cross-point control block, utility1 bus, 1st row video signal, cross-point button 2.”

M/E and PGM/PST Banks

The following table shows the macro attachment assignable buttons for the PGM/PST bank.
For the M/E-1 (M/E-2 to M/E-5) bank, “P/P” in the Block Select and Block columns changes to “M/E-1” to “M/E-5”.

Block Select: P/P, Block: P/P XPT

Button (1)	Button (2)	Button (3)
A Bus B Bus KEY1 Bus : KEY8 Bus Sub A Bus Sub B Bus Sub KEY1 Bus : Sub KEY8 Bus Main&Sub A Bus Main&Sub B Bus Main&Sub KEY1 Bus : Main&Sub KEY8 Bus	1st Row 1st Row Shift 2nd Row 2nd Row Shift 3rd Row 3rd Row Shift 4th Row 4th Row Shift	XPT 1 : XPT 128
KEY1 Src Bus : KEY8 Src Bus Sub KEY1 Src Bus : Sub KEY8 Src Bus Main&Sub KEY1 Src Bus : Main&Sub KEY8 Src Bus	V 1st Row K 1st Row V 1st Row Shift K 1st Row Shift V 2nd Row K 2nd Row V 2nd Row Shift K 2nd Row Shift V 3rd Row K 3rd Row V 3rd Row Shift K 3rd Row Shift V 4th Row K 4th Row V 4th Row Shift K 4th Row Shift	
UTIL1 Bus UTIL2 Bus DME EXT Bus DMEUtility1 DMEUtility2 Sub UTIL1 Bus Sub UTIL2 Bus Sub DME EXT Bus Main&Sub UTIL1 Bus Main&Sub UTIL2 Bus Main&Sub DME EXT Bus	V 1st Row K 1st Row V 1st Row Shift K 1st Row Shift V 2nd Row K 2nd Row V 2nd Row Shift K 2nd Row Shift V 3rd Row K 3rd Row V 3rd Row Shift K 3rd Row Shift V 4th Row K 4th Row V 4th Row Shift K 4th Row Shift	

Button (1)	Button (2)	Button (3)
EDIT PVW AUX1 : AUX48 FM1 FM2	V 1st Row K 1st Row V 1st Row Shift K 1st Row Shift V 2nd Row K 2nd Row V 2nd Row Shift K 2nd Row Shift V 3rd Row K 3rd Row V 3rd Row Shift K 3rd Row Shift V 4th Row K 4th Row V 4th Row Shift K 4th Row Shift	XPT 1 : XPT 128
DME1V : DME4V	V 1st Row V 1st Row Shift V 2nd Row V 2nd Row Shift V 3rd Row V 3rd Row Shift V 4th Row V 4th Row Shift	
DME1K : DME4K	K 1st Row K 1st Row Shift K 2nd Row K 2nd Row Shift K 3rd Row K 3rd Row Shift K 4th Row K 4th Row Shift	

Block Select: P/P, Block: P/P Trans

- Transition control block

Button (1)	Button (2)	Button (3)
(blank) KEY1 : KEY8 Sub Sub KEY1 : Sub KEY8 Main&Sub Main&Sub KEY1 : Main&Sub KEY8	MIX a) NAM a) SUPER MIX a) PST COLOR MIX a) WIPE a) DME WIPE a) FM1&2 CLIP a) (nothing) a) KEY ON AUTO TRANS CUT ALL a) KEY PRIOR a) BKGD a) KEY1 a) : KEY8 a) NORM a) NORM/REV a) REV a) Fader PRIOR SET a)	(nothing)

a) These buttons can be assigned functions in the Setup menu. They can be assigned with any of the following functions: transition types (MIX, NAM, SUPER MIX, PST COLOR MIX, WIPE, DME WIPE, FM1&2 CLIP, FM3&4 CLIP, FM5&6 CLIP, FM7&8 CLIP), next transitions (BKGD, KEY1 to KEY8, KEY PRIOR, ALL), PLAY, CUE, STOP, or PTN LIMIT.

- Transition control block (simple type)

Button (1)	Button (2)	Button (3)
(blank) Sub Main&Sub	MIX a) NAM a) WIPE a) DME WIPE a) TAKE a) PTN LIMIT b) LIMIT SET b) NORM/REV b) REV b) Fader	(nothing)

a) These buttons can be assigned functions in the Setup menu. They can be assigned with any of the following functions: transition types (MIX, NAM, SUPER MIX, PST COLOR MIX, WIPE, DME WIPE, FM1&2 CLIP, FM3&4 CLIP, FM5&6 CLIP, FM7&8 CLIP), TAKE, or CUT.

b) These buttons can be assigned functions in the Setup menu. They can be assigned with any of the following functions: transition types (MIX, NAM, SUPER MIX, PST COLOR MIX, WIPE, DME WIPE, FM1&2 CLIP, FM3&4 CLIP, FM5&6 CLIP, FM7&8 CLIP), PLAY, CUE, STOP, or PTN LIMIT.

Block Select: P/P, Block: P/P Key Trans

Button (1) a)	Button (2)	Button (3)
KEYx P/P KEYx M/E-x KEYx Sub KEYx Sub P/P KEYx Sub M/E-x KEYx Main&Sub KEYx Main&Sub P/P KEYx Main&Sub M/E-x KEYx	KEY ON AUTO TRANS	(nothing)

a) M/E-x: where x is the M/E number (1 to 5)
Keyx: where x is the key number (1 to 8)

AUX Bus Control Block

Block Select: Aux, Block: AUX-1, AUX-2

Button (1)	Button (2)	Button (3)
EDIT PVW AUX1 : AUX48 FM1 FM2	V K V Shift K Shift V 4th Row K 4th Row V 4th Row Shift K 4th Row Shift	XPT 1 : XPT 128
DME1V : DME4V	V V Shift V 4th Row V 4th Row Shift	
DME1K : DME4K	K K Shift K 4th Row K 4th Row Shift	

Button (1)	Button (2)	Button (3)
DMEUtility1 DMEUtility2	V K V Shift K Shift V 4th Row K 4th Row V 4th Row Shift K 4th Row Shift	XPT 1 : XPT 128
P/P UTIL1 P/P UTIL2 M/E-1 UTIL1 M/E-1 UTIL2 M/E-2 UTIL1 M/E-2 UTIL2 M/E-3 UTIL1 M/E-3 UTIL2 M/E-4 UTIL1 M/E-4 UTIL2 M/E-5 UTIL1 M/E-5 UTIL2	V K V Shift K Shift V 4th Row K 4th Row V 4th Row Shift K 4th Row Shift	
P/P KEY1 : P/P KEY8 M/E-1 KEY1 : M/E-1 KEY8 M/E-2 KEY1 : M/E-2 KEY8 M/E-3 KEY1 : M/E-3 KEY8 M/E-4 KEY1 : M/E-4 KEY8 M/E-5 KEY1 : M/E-5 KEY8	V V Shift V 4th Row V 4th Row Shift	

Button (1)	Button (2)	Button (3)
P/P KEY1 Src : P/P KEY8 Src M/E-1 KEY1 Src : M/E-1 KEY8 Src M/E-2 KEY1 Src : M/E-2 KEY8 Src M/E-3 KEY1 Src : M/E-3 KEY8 Src M/E-4 KEY1 Src : M/E-4 KEY8 Src M/E-5 KEY1 Src : M/E-5 KEY8 Src P/P DME EXT M/E-1 DME EXT M/E-2 DME EXT M/E-3 DME EXT M/E-4 DME EXT M/E-5 DME EXT	V K V Shift K Shift V 4th Row K 4th Row V 4th Row Shift K 4th Row Shift	XPT 1 : XPT 128

Other Blocks

Block Select: Others, Block: Trackball

Button (1)	Button (2)	Button (3)
DEV	CUE PLAY STOP START TC	(nothing)

Block Select: Others, Block: Key Fader 1 to Key Fader 4

Button (1)	Button (2)	Button (3)
P/P M/E-1 M/E-2 M/E-3 M/E-4 M/E-5	KEY1 KEY2 KEY3 KEY4 KEY5 KEY6 KEY7 KEY8	MIX WIPE DME WIPE CUT AUTO TRANS KEY ON

Menu Operations Not Registered in a Menu Macro

The menu operations not registered in a menu macro comprise some operations common to all menus and some operations inhibited in individual menus.

Operations not registered in menu macros (common to all menus)

- Recalling menus
- Delegation operations: region selection, channel delegation, operations assigning a parameter to a knob, and so forth
- Parameter setting operations using adjustment knobs or trackball (numeric value entered on the numeric keypad are registered)

Operations not registered in menu macros (individual menus)

Menu number	Menu path
0011 to 0023	All menus under Home
5333	Device >DDR/VTR >File List
5334	Device >DDR/VTR >Folder List
5411 to 5441	All menus under Macro
7111 to 7172	All menus under File
7311 to 7317	All menus under Engineering Setup >System
7327	Engineering Setup >Panel >Maintenance

Data Saved by [Setup Define] and [Init Status Define]

This section lists the data saved in the Engineering Setup >System >Start Up menu (7314) by [Setup Define] and [Init Status Define].

Data Saved by [Setup Define]

Included in Panel Setup

Menu number	Menu path	Saved data
0022	Home >Favorites >Group Edit	All data relating to Group Edit menu
0023	Home >Favorites >Button Edit	All data relating to Button Edit menu
6115	Key Frame >Timeline Assign	All data relating to Timeline Assign menu
7161	File >All, External File >All	[CLR Before Load] settings
7317	Engineering Setup >System >Maintenance	[Auto Detect] settings
7321	Engineering Setup >Panel >Config	All data relating to Config menu
7322	Engineering Setup >Panel >Xpt Assign	Data relating to Table assignments for each bus
7322.1	Engineering Setup >Panel >Xpt Assign >Table Button Assign	All data relating to Table Button Assign menu
7322.10	Engineering Setup >Panel >Side Flags Button Assign	All data relating to Side Flags Button Assign menu
7322.12	Engineering Setup >Panel >Xpt Assign >Src Name/ Src Color >User Color Select	All data relating to User Color Select menu
7322.13	Engineering Setup >Panel >Xpt Assign >Shift Mode	All data relating to Shift Mode menu
7323	Engineering Setup >Panel >Aux Assign	All data relating to Aux Assign menu
7324	Engineering Setup >Panel >Prefs/Utility	All data relating to Prefs/Utility menu
7325	Engineering Setup >Panel >Device Interface	All data relating to Device Interface menu
7326	Engineering Setup >Panel >Operation	All data relating to Operation menu (excluding [Default KF Duration] settings in the Operation >Effect Mode menu (7326.2))
7327	Engineering Setup >Panel >Maintenance	All data relating to Maintenance menu (excluding [Touch Panel Calibration] adjustment values)
7351 to 7355	Engineering Setup >DCU	All data relating to DCU menu
7361 to 7367	Engineering Setup >Router/Tally	All data relating to Router/Tally menu
7411	Diag >Error Info >Error Status	[Error Popup] settings
7412	Diag >Error Info >Error Log	[Error Popup] settings
–	–	Color palette window data

Included in Switcher Setup

Menu number	Menu path	Saved data
3221	Misc >Safe Title	All data relating to Safe Title menu
7322.5	Engineering Setup >Panel >Xpt Assign >Main, V/K Pair Assign	All data relating to Main, V/K Pair Assign menu

Menu number	Menu path	Saved data
7322.6	Engineering Setup >Panel >Xpt Assign >Src Name/ Src Color	All data relating to Src Name/Src Color menu
7322.14	Engineering Setup >Panel >Xpt Assign >Xpt Delay	All data relating to Xpt Delay menu
7331	Engineering Setup >Switcher >Config	All data relating to Config menu
7332	Engineering Setup >Switcher >Input	All data relating to Input menu
7333	Engineering Setup >Switcher >Output	All data relating to Output menu
7334	Engineering Setup >Switcher >Transition	All data relating to Transition menu
7335	Engineering Setup >Switcher >Key/Wipe/FM	All data relating to Key/Wipe/FM menu
7336	Engineering Setup >Switcher >Link	All data relating to Link menu
7337	Engineering Setup >Switcher >Device Interface	All data relating to Device Interface menu

Included in DME Setup

Menu number	Menu path	Saved data
7341	Engineering Setup >DME	All data relating to DME menu

Data Saved by [Init Status Define]

Included in Panel

Menu number	Menu path	Saved data
–	–	• Key control block delegation buttons and [AUTO DELEG] button settings • Numeric keypad control block mode selection button settings • Utility/shotbox control block mode selection button settings • Delegation button settings assigned to 1st row on cross-point control block, cross-point pad button settings ([MACRO ATTACH ENABLE], display mode button, 1st row to 4th row delegation buttons, 1st row to 4th row cross-point assign table selection buttons, [DUAL BKGD BUS], [ROW-1 PROT] to [ROW-4 PROT]), cross-point pad display page numbers • AUX bus control block bus delegation button settings, cross-point pad button settings (display mode button, [RTR MODE], [2ND DELG], [DEST DISP MODE], level selection buttons), cross-point pad display page numbers • Transition control block [KF] button settings • Flexi Pad control block mode selection button settings, key delegation button settings in key operation mode
6351	Snapshot >Key Snapshot >Attribute	<Recall Mode> group settings

Included in Switcher (same as data saved in Snapshot)

Note

In Multi Program 2 mode, M/E Config settings are saved in Snapshot when [Recall M/E Config] is enabled, but are not saved by [Init Status Define].

Menu number	Menu path	Saved data
–	–	• The following settings data for each M/E Cross-points, transitions, independent key transitions, key 1 to key 8 (excluding key freeze setting), wipes, DME wipes, video process • Color background 1 and 2 • AUX bus (including AUX mix transition settings) • The following frame memory data Memory status (loaded folder/file), FM output status (recalled file)
2111 to 2113	Frame Memory >Clip/Still >Recall Frame Memory >Clip/Still >Play Frame Memory >Clip/Still >Record	[Pair] and [Audio] settings
2112	Frame Memory >Clip/Still >Play	Loop, playback start point, and playback stop point settings
3213	Misc >Enable >Side Flags	All data relating to Side Flags menu

Included in DME

Menu number	Menu path	Saved data
4100	DME >Status	Three-dimensional transform data
4111	DME >Edge >Border/Crop	All data relating to Border/Crop menu
4112	DME >Edge >Beveled Edge	All data relating to Beveled Edge menu
4113	DME >Edge >Key Border	All data relating to Key Border menu
4114	DME >Edge >Art Edge	All data relating to Art Edge menu
4115	DME >Edge >Flex Shadow	All data relating to Flex Shadow menu
4116	DME >Edge >Wipe Crop	All data relating to Wipe Crop menu
4117	DME >Edge >Color Mix	All data relating to Color Mix menu
4121	DME >Video Modify >Defocus/Blur	All data relating to Defocus/Blur menu
4122	DME >Video Modify >Multi Move	All data relating to Multi Move menu
4123	DME >Video Modify >Color Modify	All data relating to Color Modify menu
4124	DME >Video Modify >Mosaic	All data relating to Mosaic menu
4127	DME >Video Modify >Mask	All data relating to Mask menu
4131	DME >Freeze >Freeze	All data relating to Freeze menu
4141 (4141.1 to 4141.28)	DME >Non Linear/Corner Pin >Non Linear	All data relating to Non Linear menu
4151	DME >Light/Trail >Lighting	All data relating to Lighting menu
4152	DME >Light/Trail >Trail	All data relating to Trail menu
4153	DME >Light/Trail >Motion Decay	All data relating to Motion Decay menu
4154	DME >Light/Trail >KF Strobe	All data relating to KF Strobe menu
4155	DME >Light/Trail >Wind	All data relating to Wind menu
4156	DME >Light/Trail >Spot Lighting	All data relating to Spot Lighting menu
4161	DME >Input/Output >Bkgd	All data relating to Bkgd menu
4162	DME >Input/Output >Video/Key	All data relating to Video/Key menu
4163	DME >Input/Output >Process	All data relating to Process menu
4164	DME >Input/Output >Graphic	All data relating to Graphic menu
4171	DME >Enhanced Video Modify >Sketch	All data relating to Sketch menu
4172	DME >Enhanced Video Modify >Metal	All data relating to Metal menu
4173	DME >Enhanced Video Modify >Dim & Fade	All data relating to Dim & Fade menu

Menu number	Menu path	Saved data
4174	DME >Enhanced Video Modify >Glow	All data relating to Glow menu
4211	Global Effect >Ch1-Ch4 >Combine Priority	All data relating to Combine Priority menu
4212	Global Effect >Ch1-Ch4 >Brick	All data relating to Brick menu (excluding [Brick] settings data)
4213	Global Effect >Ch1-Ch4 >Shadow	All data relating to Shadow menu (excluding [Ch1 Shadow], [Ch2 Shadow], and [Ch3 Shadow] settings data)

Error Messages

Error messages appear in the following three formats.
- Listed by the Error Status menu (7411) or Error Log menu (7412)
- Message box
- Listed by the Error Information menu (9900)

Error Messages Displayed in the Error Status/Error Log Menu

When an error occurs, the word “ERROR” appears in red on the menu title button.
When “ERROR” is displayed, pressing the menu title button displays the Error Status menu or Error Log menu.
When an error is still in effect: The Error Status menu appears *(see page 552)*.
When an error has already been cleared: The Error Log menu appears *(see page 552)*.

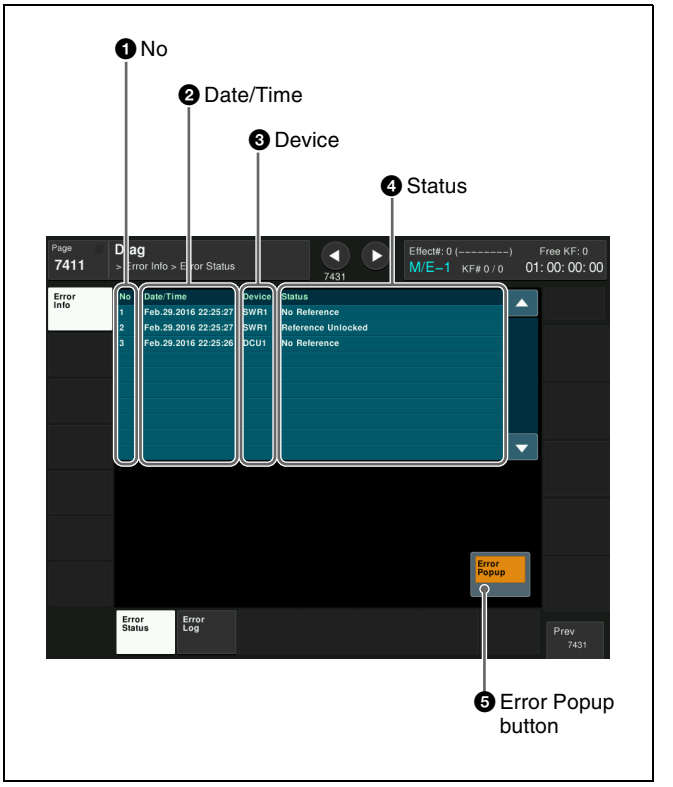
You can select whether or not to indicate the occurrence of an error by the word “ERROR” shown on the menu title button, by setting [Error Popup] in the Error Status menu or Error Log menu.

To display the error status or error log regardless of whether there is currently an error

To display the error status, open the Diag >Error Info >Error Status menu (7411).
To display the error log, open the Diag >Error Info >Error Log menu (7412).

Error Status menu

The Error Status menu lists currently occurring error information, listed with the most recent information at the top.
When an error has been cleared, the error disappears from the list.



❶ No
This is a sequential number assigned to the error status.

❷ Date/Time
This shows the date and time the error occurred.

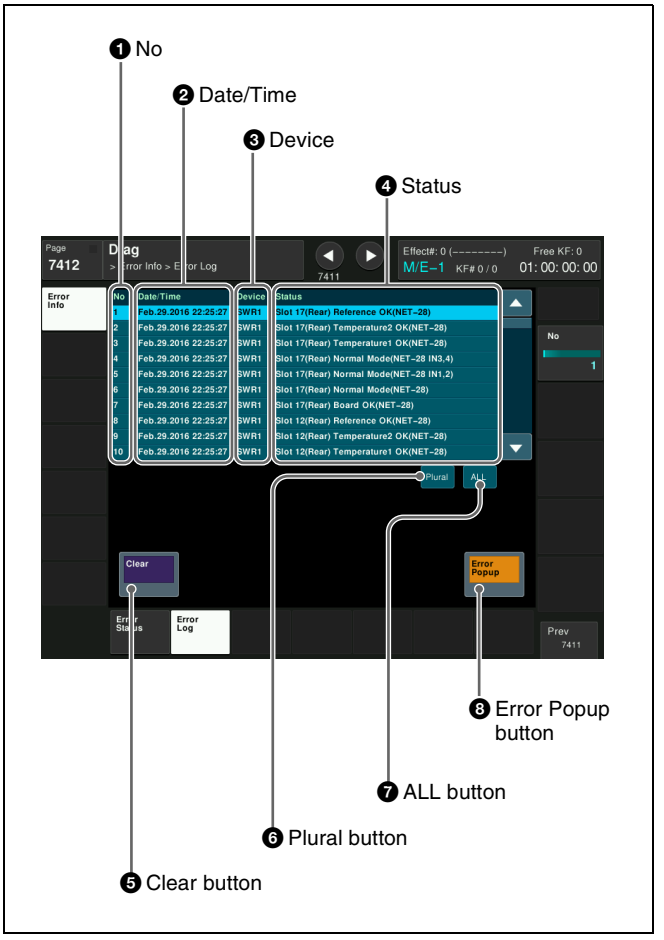
❸ Device
This shows the device on which the error occurred.

❹ Status
This shows the details of the error.

❺ Error Popup button
This selects whether or not to display “ERROR” on the menu title button when an error occurs. This button is linked to [Error Popup] in the error log menu.
To enable display of the word “ERROR,” press [Error Popup], turning it on.

Error Log menu

The Error Log menu lists changes in the error status from the time that the menu display in the menu panel is started up, listed with the most recent information at the top.
A maximum of 1,024 error status changes appear, and when the number exceeds 1,024, the oldest items disappear from the list.



1 No
This is a sequential number assigned to the items in the error log.

2 Date/Time
This shows the date and time the status change occurred.

3 Device
This shows the device on which the status change occurred.

4 Status
This shows the details of the status change.
If you press on the list, this switches the display to reverse video, and selects the item. You can also select items in the error log using parameters.

5 Clear button
This deletes the selected error log item from the list.

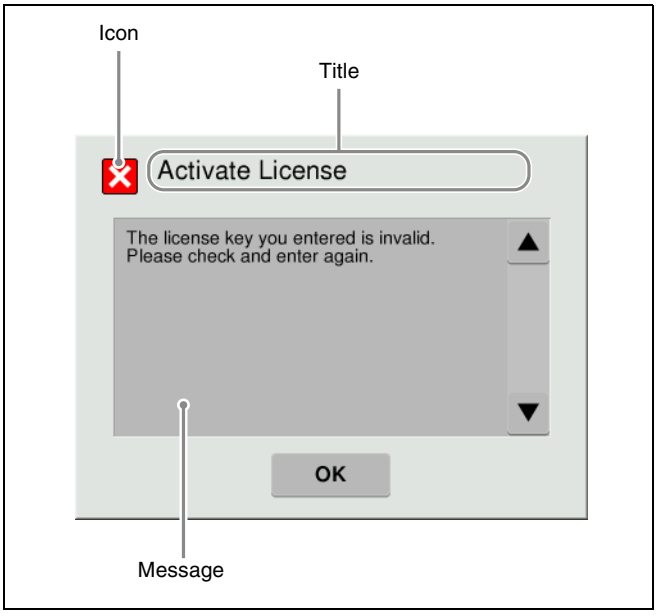
6 Plural button
Press [Plural] to enable selection of more than one log. To cancel the selection, press once again to return to the normal display.

7 ALL button
Press [ALL] to select all logs. To cancel the selection, press once again to return to the normal display.

8 Error Popup button
This selects whether or not to display "ERROR" on the menu title button when an error occurs. This button is linked to [Error Popup] in the error status menu.
To enable display of the word "ERROR," press [Error Popup], turning it on.

Error Messages Appearing in a Message Box

An icon is displayed, corresponding to the content of the message.



Icon	Message	Description
Activate License		
	The license key you entered is invalid. Please check and enter again.	7316.7: Engineering Setup >System >Install/Unit Config >License >License Management The Activate License procedure failed because the entered information was incorrect. Check the license key, and enter again.

Icon	Message	Description
Change Password		
	Failed. The password was not changed.	7317.1: Engineering Setup >System >Maintenance >Setup Operation Lock 7317.2: Engineering Setup >System >Maintenance >File Load Lock The password could not be changed.
Couple		
	Cannot couple while playing back or locking is in progress.	2124: Frame Memory >File >Pair Recombination Pair file cannot be created because the target file is being played back or is locked *(see page 180)*.
	Coupling has been canceled. Duration of two files are different.	2124: Frame Memory >File >Pair Recombination Pair file cannot be created because the durations of the two target files are different.
Error		
	This operation is canceled, because the register is locked. Please change the register status to be unlocked first.	6211.1: Effect >Master Timeline >Store >Edit 6311.1: Snapshot >Master Snapshot >Store >Edit 6411.1: Shotbox >Register >Store/Recall >Edit 6411.2: Shotbox >Register >Store/Recall >Key Snapshot Edit When [Store] was pressed, the target register was locked. Unlock the register before executing [Store].
	The file was not able to be read.	7142.1: File >Shotbox, Macro >Macro >File Edit When [Off Line Edit] was pressed, the selected file could not be read. Select the file again, and press [Off Line Edit] once more.
	It was not possible to make a file.	7142.3: File >Shotbox, Macro >Macro >File Edit >Off Line Edit The file could not be written when saving. Try to save once more.
	“Source” and “Target” are the same directory. Please change the “Source” or the “Target” directory.	7161: File >All, External File >All The same directory was selected for source and target. Select different directories.
	The Source and the target are the same directory. Please change the source or the target directory.	7172: File >Configure >Unit ID Copy The same directory and ID were selected for source and target. Select different directories and IDs.
	It failed. Please confirm the server address.	7311: Engineering Setup >System >Network Config An incorrect server address was entered. Enter the correct server address.
	Invalid IP address.	7311.2: Engineering Setup >System >Network Config >IP Address 7311.7: Engineering Setup >System >Network Config >NMOS 7355.1: Engineering Setup >DCU >Serial/Net Port Assign >P-Bus Setting 7355.8: Engineering Setup >DCU >Serial/Net Port Assign >AMP Setting 7355.9: Engineering Setup >DCU >Serial/Net Port Assign >General tcp/ip Setting An incorrect IP address was entered. Enter the correct IP address.
File Frame Memory		
	Some requests are skipped. Following operation is not permitted. – Loading that will cause duplicate register name.	7151: File >Frame Memory >Frame Memory A file with the same name already exists in storage when loading a file.
File Open Status		
	ERROR (01)	533X: Device >DDR/VTR An error was returned from the DDR/VTR, and one of the messages on the left appears, depending on the error number. Check the device settings in menu 7355 (Engineering Setup >DCU >Serial/Net Port Assign) or menu 7325.4 (Engineering Setup >Panel >Device Interface >Device Assign).
	ERROR (02)	
	ERROR (FF): No target device has been assigned	

Icon	Message	Description
Folder Open Status		
	ERROR (FB): Folder Not Found	533X: Device >DDR/VTR An error was returned from the DDR/VTR, and one of the messages on the left appears, depending on the error number. Check the device settings in menu 7355 (Engineering Setup >DCU >Serial/Net Port Assign) or menu 7325.4 (Engineering Setup >Panel >Device Interface >Device Assign).
	ERROR (FC): Device Busy	
	ERROR (FD): Communication Error	
	ERROR (FE): Device Not Supported	
	ERROR (FF): No target device has been assigned	
Format		
	Failure. Local drive device is busy. In order to complete local drive format, System needs to be restarted and formatted again. System will be restarted, then please execute local drive format again.	7317: Engineering Setup >System >Maintenance Formatting of the local drive terminated abnormally. If the local drive is functioning correctly, or in some cases when there is damage to the local drive, it may not be possible to format the local drive correctly in a single attempt. In this case, it is necessary to restart the system, and then carry out formatting again. Press [OK] to restart the system.
	Failure. Make sure of the removable drive.	7317: Engineering Setup >System >Maintenance Formatting of the removable drive terminated abnormally. Check that the removable drive is connected correctly.
Frame Memory Copy		
	Cannot copy while playing back or locking is in progress.	2122: Frame Memory >File >Copy/Move/New Folder A file or folder cannot be copied because the target contains a folder/file that is being played back or is locked *(see page 180)*.
	The number of folder hierarchy has exceeded the upper limit.	2122: Frame Memory >File >Copy/Move/New Folder The folder hierarchy level in the copy destination exceeds the upper limit.
Frame Memory Delete		
	Cannot delete while playing back or locking is in progress.	2123: Frame Memory >File >Delete/Rename/Store A file or folder cannot be deleted because the target contains a folder/file that is being played back or is locked *(see page 180)*.
Frame Memory Load		
	Some of the files could not be loaded, because the memory capacity is insufficient. XX file(s)	2121: Frame Memory >File >Load The remaining memory capacity was insufficient while loading the folder/file (“XX” indicates the number of files that could not be loaded).
Frame Memory Move		
	Cannot move while playing back or locking is in progress.	2122: Frame Memory >File >Copy/Move/New Folder A file or folder cannot be moved because the target contains a folder/file that is being played back or is locked *(see page 180)*.
	The number of folder hierarchy has exceeded the upper limit.	2122: Frame Memory >File >Copy/Move/New Folder The folder hierarchy level in the move destination exceeds the upper limit.
Frame Memory Rename		
	Cannot rename while playing back or locking is in progress.	2123: Frame Memory >File >Delete/Rename/Store A file or folder cannot be renamed because the target contains a folder/file that is being played back or is locked *(see page 180)*.
Frame Memory Store		
	Some of the files could not be stored, because the storage capacity is insufficient. XX file(s)	2113: Frame Memory >Clip/Still >Record 2123: Frame Memory >File >Delete/Rename/Store The remaining storage capacity was insufficient while storing the file (“XX” indicates the number of files that could not be stored).
Frame Memory Unload		
	Cannot unload while playing back or locking is in progress.	2121: Frame Memory >File >Load A file or a folder containing a file cannot be deleted from memory because the target file is being played back or is recalled on a locked FM output.

Icon	Message	Description
GPI Input		
	Please set Target.	7352: Engineering Setup >DCU >GPI Input Assign An incorrect parameter setting value was specified. Check the settings, and try again.
	Please set Trigger Type.	
	Please set Reg No.	
	Please set Aux Bus No.	
	Please set Src No.	
GPI Output		
	Please set Source.	7354: Engineering Setup >DCU >GPI Output Assign An incorrect parameter setting value was specified. Check the settings, and try again.
	Please set Trigger Type.	
	Please set Reg No.	
	Please set Pulse Width.	
	Please set Pulse Timing.	
Import		
	Following operation is not permitted. – Loading to WORK AREA. – Loading that will cause duplicate register name.	7162: File >All, External File >Import/Export A file with the same name already exists in storage when importing a file.
Install		
	An error occurred during the install process. For more details, see Page 9900.	7316.10: Engineering Setup >System >Install/Unit Config >Install An error occurred during the installation.
	Not Found. The software package does not exist on the removable drive.	7316.10: Engineering Setup >System >Install/Unit Config >Install The software package to be installed could not be found. Check that the removable drive is connected correctly, and try the installation once more.
	No Task. Select a package on the list.	7316.10: Engineering Setup >System >Install/Unit Config >Install The package for installation was not selected. Select a package to be installed.
Internal Error: Local Drive (System Data)		
	The system data partition of local drive is damaged. The local drive needs to be reformatted. Please execute local drive format on Page 7317. Please make sure to save all data in the user data partition of local drive to any other device or media, before reformatted.	When starting up the menu system, an error was found on the local drive. Format the local drive using menu 7317 (Engineering Setup >System >Maintenance).
Internal Error: Local Drive (User Data)		
	The user data partition of local drive is damaged, and all data is lost. The local drive needs to be reformatted. Please execute local drive format on Page 7317.	When starting up the menu system, an error was found on the local drive. Format the local drive using menu 7317 (Engineering Setup >System >Maintenance).
Internal Error: Local Drive is unknown		
	The user data partition of local drive is damaged, and all data is lost. The local drive needs to be reformatted. Please execute local drive format on Page 7317.	When starting up the menu system, an error was found on the local drive. Format the local drive using menu 7317 (Engineering Setup >System >Maintenance).

Icon	Message	Description
Invalid Name		
	This name is already existing. Please enter other name.	2122: Frame Memory >File >Copy/Move/New Folder A folder with the same name as the duplicate source folder was specified when [Duplicate] was executed. Specify a different name.
		2123: Frame Memory >File >Delete/Rename/Store A folder/file with the same name that already exists was specified when [Rename] was executed. Specify a different folder/file name.
	The name “XXX” cannot be used.	7171: File >Configure >Directory A name that cannot be used as a directory name was entered (“XXX” indicates the entered name).
	The directory exists already...	7171: File >Configure >Directory A directory with the same name that already exists on the device was entered.
Load		
	The categories set on the “File Load Lock (Menu 7317.2)” cannot be loaded. The categories set as “Lock” will not be selected. Please confirm the categories again and load.	7161: File >All, External File >All An attempt was made to load a file for a locked category.
Macro		
	[Store] cannot be executed. Macro register is locked.	7142.3: File >Shotbox, Macro >Macro >File Edit >Off Line Edit When [Store] was pressed, the target register was locked. Unlock the register before executing [Store].
Menu Macro		
	[Store] cannot be executed. Menu macro register is locked.	7144.2: File >Shotbox, Macro >Menu Macro >File Edit >Menu Macro Edit When [Store] was pressed, the target register was locked. Unlock the register before executing [Store].
Password		
	Password Incorrect.	7317.1: Engineering Setup >System >Maintenance >Setup Operation Lock 7317.2: Engineering Setup >System >Maintenance >File Load Lock The wrong password was entered. Enter the correct password.
SCS Communication Error		
	Menu was launched from the built-in SSD because SCS was not found. Shutdown and restart the system is recommended to exit from emergency mode.	Communication with the switcher control station could not be established at startup.
Separate		
	Cannot separate while playing back or locking is in progress.	2124: Frame Memory >File >Pair Recombination Pair file cannot be separated because the target file is being played back or is locked *(see page 180)*.
	Separating has been canceled. Please change the last character to another one.	2124: Frame Memory >File >Pair Recombination Pair file cannot be separated because the name of the target file is 32 characters and the last character is a tilde (~). Change the file name.
Set Time/Date		
	Error: Wrong Format.	7317: Engineering Setup >System >Maintenance A correct date and time was not specified. Specify the correct date and time.

Icon	Message	Description
Trim		
	The Start TC or Stop TC is not properly set.	2112: Frame Memory >Clip/Still >Play When [Trim] was executed, neither the Start TC nor the Stop TC was set.
	This file is using for playback.	2112: Frame Memory >Clip/Still >Play Trimming cannot be executed because the target file is being played back.
Warning		
	This operation will be canceled, because the register is locked. Please change the register status to be unlocked first.	6211.1: Effect >Master Timeline >Store >Edit 6311.1: Snapshot >Master Snapshot >Store >Edit 6411.1: Shotbox >Register >Store/Recall >Edit 6411.2: Shotbox >Register >Store/Recall >Key Snapshot Edit An attempt was made to assign to a locked register. Unlock the register before carrying out the assignment.

Error Messages Shown in the Error Information Menu

If a file transfer related error occurs, the Error Information menu (9900) displays the following error messages.

Error message	Error description/measures
[Error] Server Not Respond	There is absolutely no response on the LAN from the switcher. Check the LAN connections and the power source of the switcher.
[Error] No Space	There is insufficient space on the local drive or removable drive.

Maintenance

Replacing Keytop Labels

When changing a button assignment, you can change the display label using the keytop replacement tool supplied with the control panel. For details, refer to the ICP-X7000 Installation Manual.

Cleaning the Control Panel

Wipe gently using a soft, dry cloth to remove dirt from the control panel body, switches, fader lever, and other components.
Wipe using a cloth moistened with water or lukewarm water to remove stubborn dirt and stains.

Note

Squeeze the cloth thoroughly before use to ensure that no water droplets can enter the panel. The unit may become damaged if water droplets enter the unit.
Do not use cleaning agents, solvents, or detergents. Vigorous rubbing may scratch the unit.

Cleaning the cross-point pad, Flexi Pad control block, and utility/shotbox control block

If you have any concerns about dust or other matter on the LCD buttons, contact your Sony service representative.

Index

Numerics

A

B

C

D

E

F

G

H

I

K

L

M

N

O

P

R

S

T

U

V

W

X

Z

Trademarks

- Windows is either a registered trademark or a trademark of Microsoft Corporation in the United States and/or other countries.

The products or system names appearing in this document are trademarks or registered trademarks of their respective owners.
Further, the ® or ™ symbols are not used in the text.

XVS-9000
XVS-8000
XVS-7000
XVS-6000
(SY)
5-013-502-**12** (1)

Sony Corporation

http://www.sony.net/