SONY

Multi Format Switcher System

MVS-8000X System
MVS-7000X System

(With ICP-X7000 Integrated Control Panel Version 1.0)

MVS-8000X	MVS-7000X		
ICP-X7000	MKS-X7075	MKS-X7011	MKS-X7017
MKS-X7018	MKS-X7019	MKS-X7020	MKS-X7024
MKS-X7026	MKS-X7031TB	MKS-X7033	MKS-X7035
MKS-X7040	MKS-X7041		
MKS-X2700	MKS-X7700	MKS-X7701	MKS-X7702

User's Guide English

Software Version 12.50 and Later

1st Edition

NOTICE TO USERS

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Overview

Chapter 1

Introduction

This manual is the User's Guide for the MVS-8000X/7000X Multi Format Switcher system.
This manual describes the operation of the system using the ICP-X7000 Integrated Control Panel.

Devices and system nomenclature

Principal components and naming

The formal product names of the principal components of the MVS-8000X/7000X system and the terms used in this manual are as follows.

Formal product name	Terms used in this manual
MVS-8000X Multi Format Switcher Processor	• MVS-8000X • Switcher • Switcher processor
MVS-7000X Multi Format Switcher Processor	• MVS-7000X • Switcher • Switcher processor
ICP-X7000 Integrated Control Panel	• ICP-X7000 • Control panel • Integrated control panel
MKS-7470X DME Board Set	• MKS-7470X/7471X • DME • DME board set
MKS-7471X Additional DME Board	
MVE-8000A Multi Format DME Processor	• MVE-8000A • DME • DME processor
MVE-9000 Multi Format DME Processor	• MVE-9000 • DME • DME processor
MKS-X7700 System Interface Unit	• MKS-X7700 • SIU
MKS-X2700 System Interface Unit	• MKS-X2700 • SIU

Terms for system

The following terms are used for systems, depending on the combination of installed options and the signal format.

System configuration and features	Terms for system
System with installed option boards and settings to support 4K format	4K system
System with installed option boards and settings to support HDTV format	HD system
System with installed option boards and settings to support SDTV format	SD system
A system in which the control panel has six M/E banks	6M/E system
A system in which the control panel has five M/E banks	5M/E system
A system in which the control panel has four M/E banks	4M/E system
A system in which the control panel has three M/E banks	3M/E system
A system in which the control panel has two M/E banks	2M/E system

About screenshots and illustrations

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

Features

The MVS-8000X/7000X Multi Format Switcher system boasts extensible high performance and multi-functionality. The following are some of the principal features of this system.

System configuration flexibility

Multiformat support

This system supports both HDTV and SDTV signal formats.
The format selection can be switched by a simple control panel operation.

Extensible system configuration

By suitable combination of options, the switcher can be configured with various inputs and outputs, and different numbers of M/E banks. The system offers the flexibility to change and expand as required.
You can connect up to two MVE-8000A or MVE-9000 DME processors, to provide up to eight channels of DME functionality. When the signal format is 1080P, you can connect up to four MVE-8000A units.
For the MVS-7000X, by installing the optional MKS-7470X/7471X DME board set, up to four channels of DME functionality are available.
You can use a maximum of eight channels of DME functionality in the whole switcher system.

Powerful external device interfaces

By connecting to a Sony routing switcher or similar, a large system can be built. From the control panel, it is also possible to operate other equipment, including VTRs and disk recorders.

Powerful tally system

The complete system, including a routing switcher, can be used to construct a tally system. The system can be adapted to different applications and settings using multiple tally outputs, including both on-air and recording tallies.

Comprehensive video manipulation

M/E banks

Each mix/effects bank (M/E bank) is equipped with eight keyers, each of which is capable not only of chroma keying, but also independent key transitions separate from background transitions. The eight keys can be freely combined, to carry out four different program outputs.

Powerful frame memory functions

The frame memory can hold approximately 1000 frames in an HD system (approximately 2000 frames in 720P/59.94 format), or approximately 5000 frames in an SD system in 480i/59.94 format, or approximately 4000 frames in 576i/50 format, and allows eight frames (four frames in 1080P format) to be recalled simultaneously.

Link operation with DME

You can use a wide range of DME functions, including DME wipes and processed key functions, as though they were part of the standard switcher function set.

Designed for use in a live broadcasting environment

Flexible control panel layout

Because of its modular design, the various sections of the control panel can be laid out as required. This allows a flexible layout appropriate to the system operation.

High-performance user interface

The menu panel provides a large color LCD panel, with rapid touch-panel menu selection.
The buttons in the cross-point Flexi Pad, Flexi Pad control block, and utility/shotbox control block have LCD displays. The functions names, status, wipe patterns, etc. have graphical representations that provide intuitive feedback, and aid immediate decision making required in a live operating environment.

Basic Video Processing

This section introduces basic functions used for video processing on the switcher.

Transition

In the M/E banks and PGM/PST bank, the switch from the current video stream (appearing on the corresponding program monitor) to a new video stream is referred to as a transition.
In the M/E banks and PGM/PST bank, you can change one image on the background or on keys 1 to 8 (downstream keys 1 to 8 in the PGM/PST bank), and also vary the combination of these simultaneously.

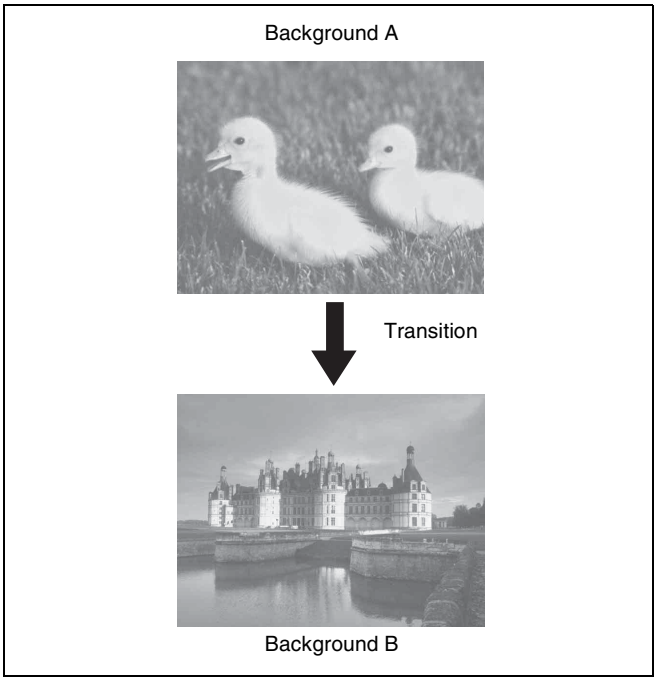
Note

When the signal format is 1080P, only keys 1 to 4 can be used.

The following are examples of basic transitions.

Changing the background

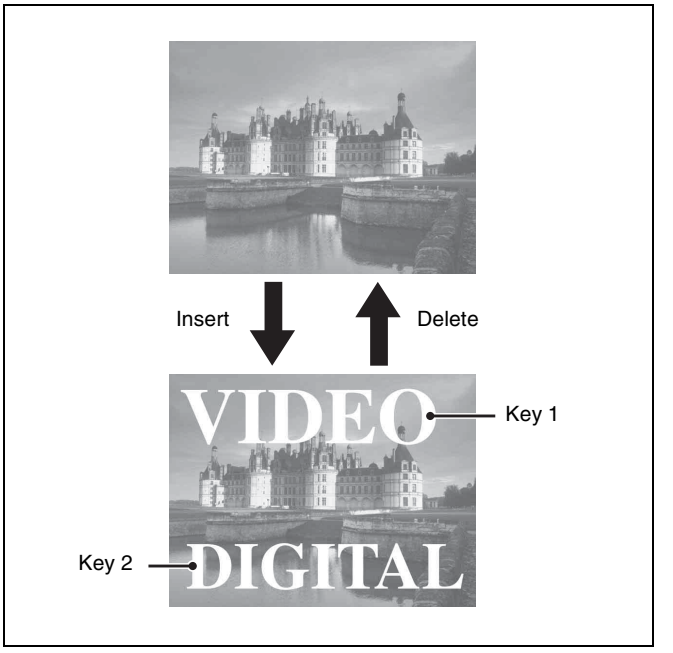
A background transition switches from the video currently selected on the background A bus (the current video) to the video selected on the background B bus (the new video).



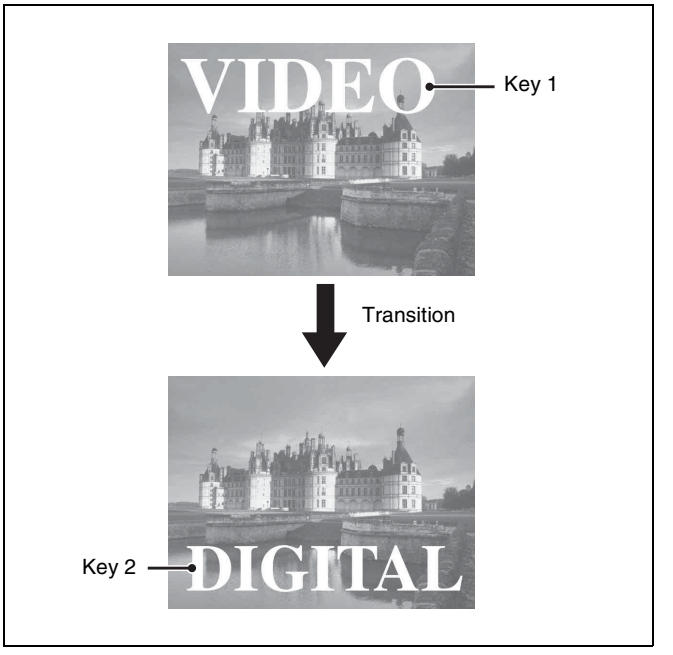
In the default selection of flip-flop mode *(see page 87)*, the background always switches in the direction A bus → B bus. When the transition completes, the cross-point selections on the A and B buses are interchanged.

Inserting and deleting a key

You can insert one or more of the eight keys (or downstream keys 1 to 8 on the PGM/PST bank) into the image.
If you select a key which is already inserted, the transition will delete the key.
A simultaneous combination of deleting and inserting keys is also possible.



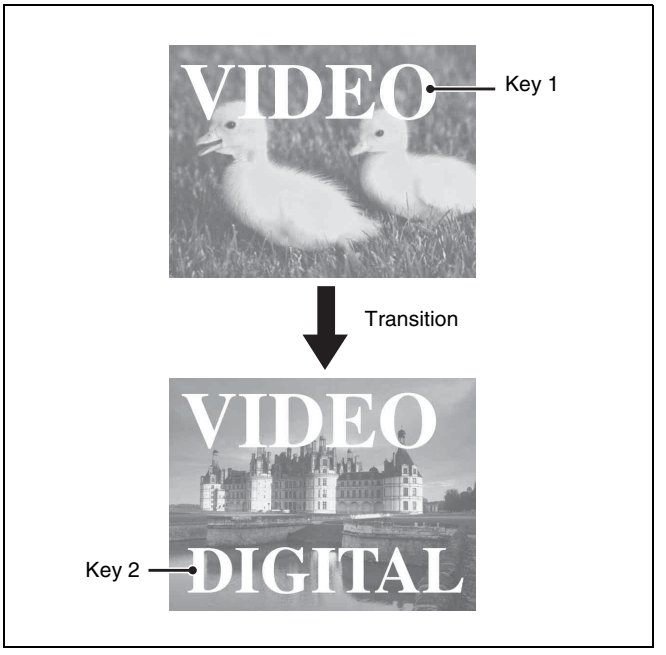
Inserting or deleting key 1 and key 2



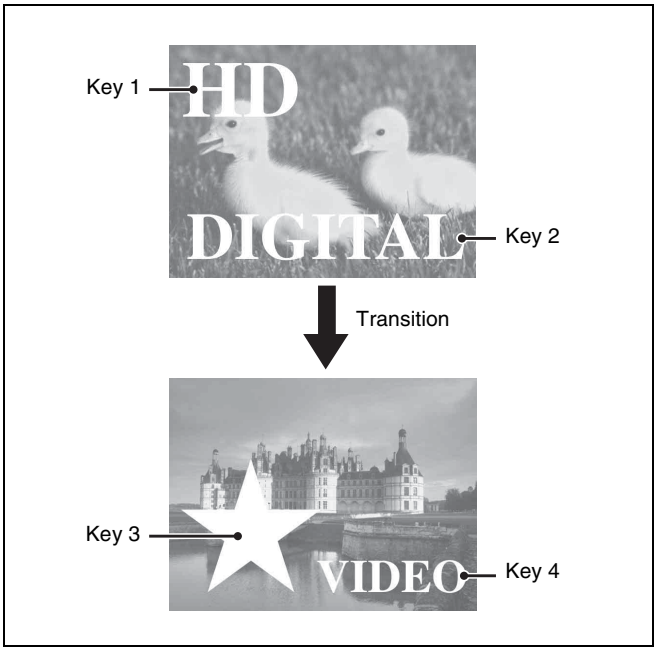
Deleting key 1 and inserting key 2

Simultaneously changing the background and keys

You can change one or more of the eight keys (downstream keys 1 to 8 on the PGM/PST bank) and the background at the same time.



Changing the background and keys 1 to 2 simultaneously



Changing the background and keys 1 to 4 simultaneously

Selecting the transition type determines the way in which the transition occurs.
The following transition types are available.

- Mix
- NAM (non-additive mix)
- Super mix
- Preset color mix (color matte)
- Wipe
- DME Wipe
- Clip transition
- Cut

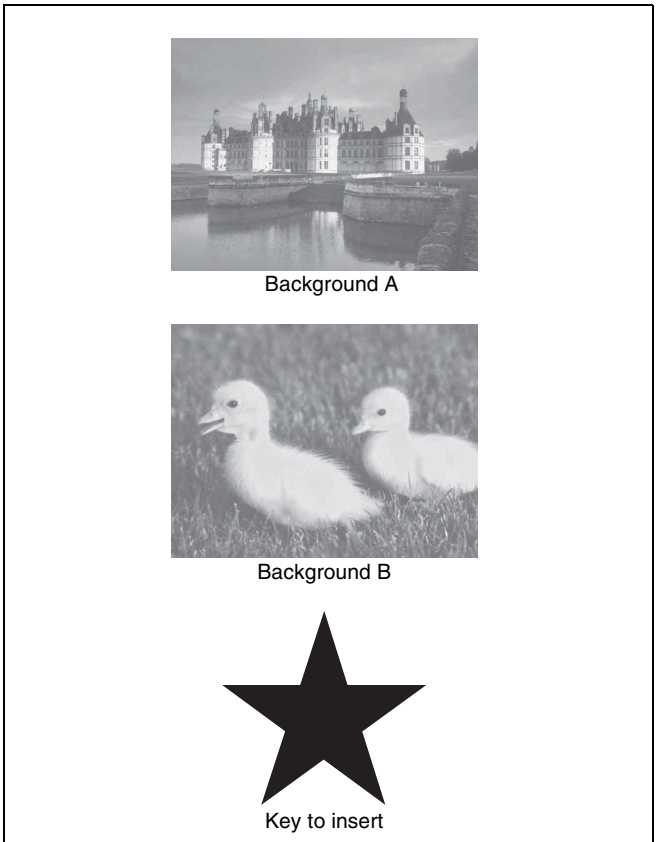
There are two modes for carrying out a transition: auto transitions are carried out by a button operation, and manual transitions are carried out using the fader lever. It is also possible to combine these two modes.

Independent key transition

In addition to common transitions, it is possible to carry out independent transitions on the keyers of the M/E banks and PGM/PST bank.
By carrying out an independent key transition in combination with a common transition, different transition types can be used for the background and keys.

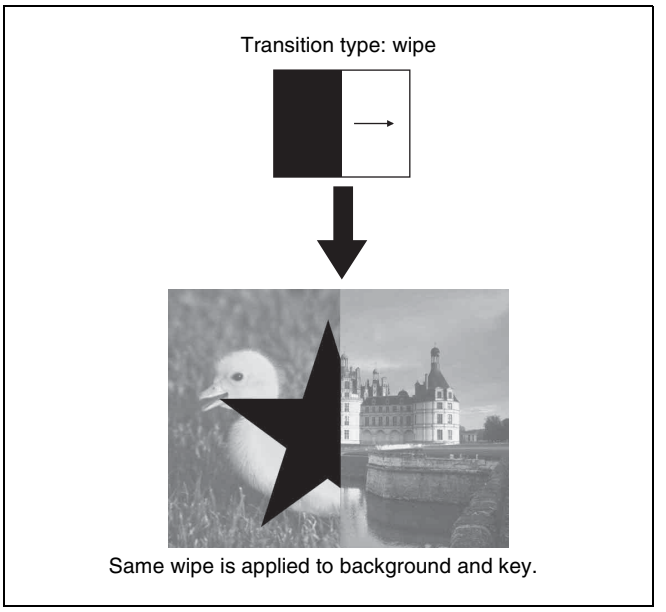
The following compares the independent key transition with a common transition, taking a simultaneous change of the background and key as an example.

Video used in the transition



Effect of a common transition

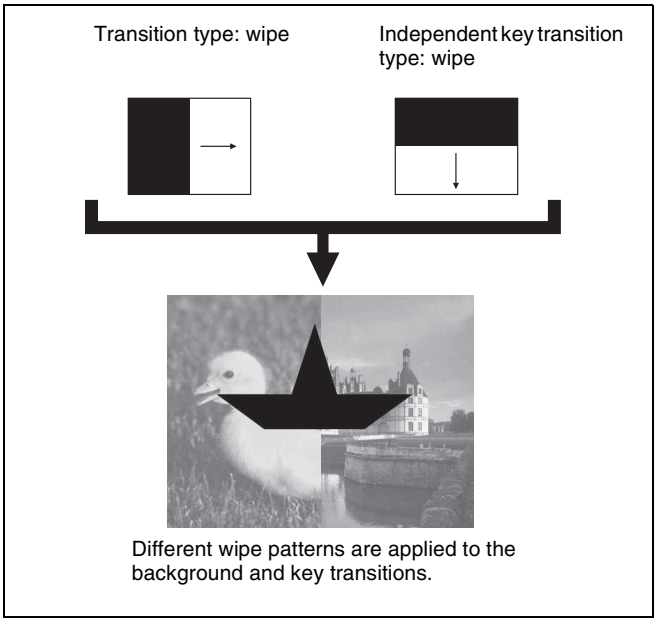
In the case shown in the previous illustration, carrying out a common transition produces the following change in the image.



Same wipe is applied to background and key.

Effect of use with an independent key transition

The key is inserted with an independent key transition as the background changes with a common transition, providing the following result.



Different wipe patterns are applied to the background and key transitions.

For details, see "Signal Selection and Transitions" (page 67).

Keys

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, and all of these keyers provide the same functions.
You can use the following key types (methods of processing the key source).

- Luminance key
- Linear key
- Color vector key
- Chroma key
- Wipe pattern key
- Key wipe pattern key

Key modifiers

You can apply borders and other modifiers to the edge of the key image.

Masks

A mask allows a part of the image to be replaced by the background or a key. 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.

Resizer

This function allows you to apply effects, such as zoom, movement, or aspect ratio change to a part of a created key.
The following functions are available.

- Two-dimensional transform of keys
- Rotation of keys
- Resizer interpolation settings
- Resizer crop/border settings
- Resizer effect settings (wide key border, drop shadow, edge enhancement, mosaic, defocus, mask)

For details, see "Keys" (page 95).

Wipes

A wipe is a transition from the current video stream to a new video stream, using a wipe pattern.
Changing the background by means of a wipe is referred to as a "background wipe," and inserting or deleting 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.
The patterns that can be used for a wipe are as follows.

- Standard wipes
- Enhanced wipes
- Rotary wipes
- Mosaic wipes
- Random/diamond dust wipes

You can combine two selected patterns (referred to as "main" and "sub") to create a new pattern (pattern mix).

You can also specify the wipe direction, or set the pattern position, applying various changes and modifiers to the selected wipe pattern.

For details, see "Wipes" (page 125).

DME Wipes

A DME wipe is a wipe transition that uses a DME effect to change from one video image to the next.
There are two types of DME wipe: those which can be selected for a normal transition, and those which can be selected for an independent key transition.
The patterns that can be used for a DME wipe are as follows.
Slide, Squeeze, Split, Door, Flip tumble, Mirror, Sphere, Character trail, Wave, Ripple, Page turn, Roll, Frame in-out, Picture-in-picture, 2D trans, 3D trans, Sparkle, Split slide, Mosaic, Defocus, Brick, and User programmable DME

You can also specify the wipe direction, or set the pattern position, applying various changes and modifiers to the selected DME wipe pattern.

Resizer DME wipes

Using the resizer, you can carry out key DME wipes.

For details, see "DME Wipes" (page 138).

Frame Memory

Frame memory is a function for using a still image or video (frame memory clip) as material for editing.
You can create a still image by capturing a frame of input video or a clip by specifying a range of input video. The created images and clips can be written to memory for playback, editing, and output.

For details, see "Frame Memory" (page 153).

Color Backgrounds

This function can be used to obtain color background video.
Two color signals generated from the dedicated generators can be switched or mixed, and then output.

For details, see "Color Backgrounds" (page 176).

Copy and Swap

This function can be used to copy and swap the settings between M/E banks and PGM/PST bank, and between keyers.
The following settings can be copied or swapped.
- Settings for the M/E banks and PGM/PST bank
- Keyer settings
- Wipe settings in a transition control block
- Independent key wipe settings in a transition control block
- DME wipe settings in a transition control block
- Independent key DME wipe settings in a transition control block
- Matte color settings (color 1, color 2, and how to compose them)
- Color settings
- DME channel settings
- Format converter input settings (copy only)
- Format converter output settings (copy only)

For details, see "Copy and Swap" (page 177).

Video Process

The term "video process" is applied to adjustments to the gain, hue, and black level of the input video signal. There are two types of adjustment: adjustment for each input signal and adjustment for each bus.

For details, see "Video Process" (page 184).

Color Corrector

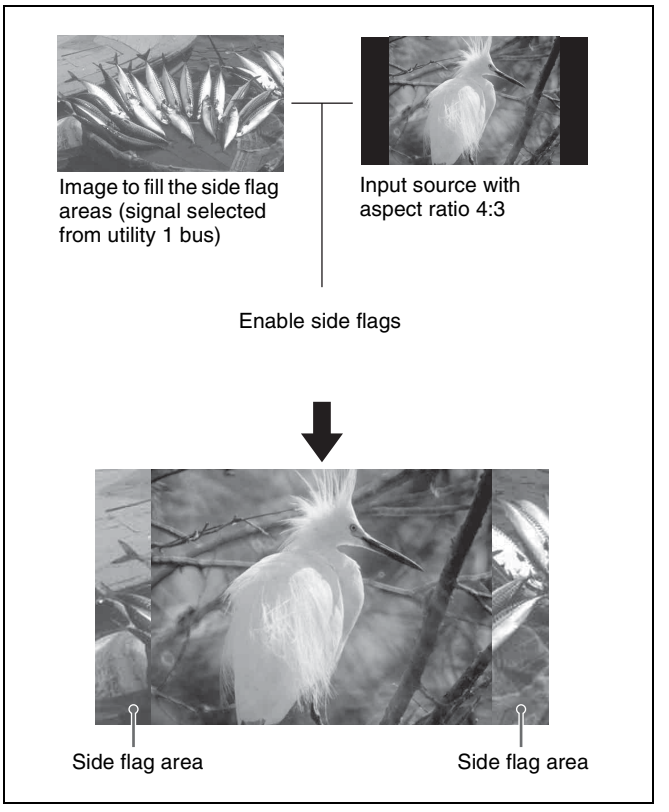
The color corrector enables video signal color correction (black balance/white balance adjustment, gamma correction, knee correction, etc.).
The color corrector includes the following adjustments.
- Input video processing
- Primary color correction
- Secondary color correction
- Luminance processing
- Spot colors
- Output video processing
- YUV/RGB clips

For details, see "Color Corrector" (page 186).

Side Flags

The term "side flags" refers to the areas to the left and right of an image with aspect ratio 4:3 embedded within a 16:9

frame, with these areas filled with a separate image selected from the utility 1 bus.

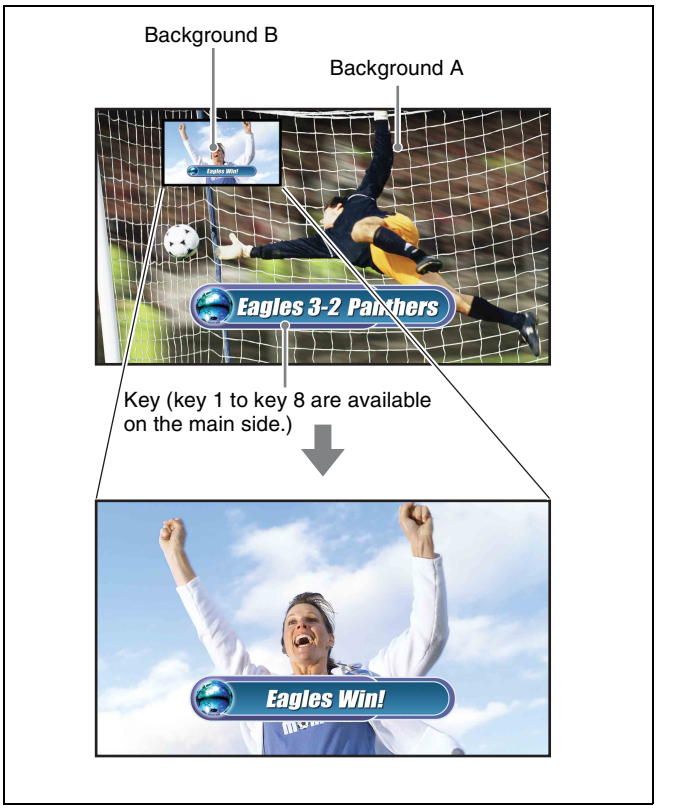


For details, see "Side Flags" (page 194).

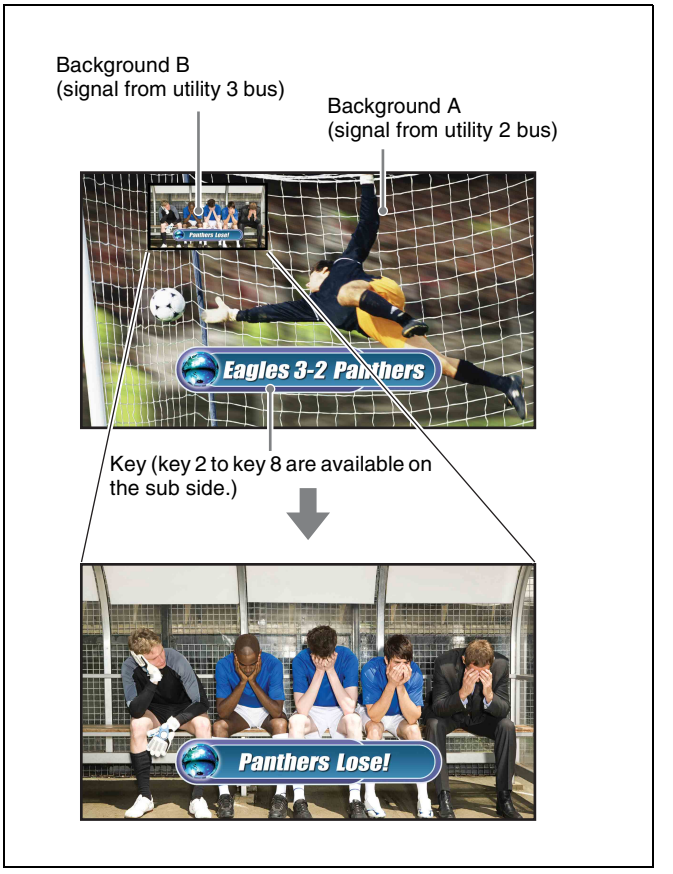
Multi Program 2

This function divides a single M/E switcher bank into two ("main" and "sub"). You can this function to create images separately on each. For example, during broadcast of sports events, two versions of the scene can be provided as shown below, and switched simultaneously.

Program output for "Main"



Program output for "Sub"



For details, see "Multi Program 2" (page 197).

4K Support

4K image processing is supported by installing 4K upgrade software and switcher upgrade software.

For details about the switcher configuration required for 4K support, contact your Sony service or sales representative.

For details, see "4K System" (page 204).

Creation of Special Effects and Management of Data and Operations

This section introduces functions used for creation of special effects, control of external devices or switcher operations, and data management.

Digital Multi Effects (DME)

When used with the switcher, DME allows you to add three-dimensional effects such as image movement, rotation, magnification and shrinking, as well as a wide variety of special effects.
Each channel can be used on its own or in combination with other channels, which allows you to create advanced effects with more complexity.
The following types of DME special effects are available.

- **Edge effects:** Border, CG Border, Crop, Beveled Edge, Key Border, Art Edge, Flex Shadow, Wipe Crop
- **Effects for entire image:** Defocus, Blur, Multi Move
- **Video image effects:** Sepia, Mono, Posterization, Solarization, Nega, Contrast, Mosaic, Mask, Sketch, Metal, Dim and Fade, Glow
- **Freeze effects**
- **Nonlinear effects:** Wave, Mosaic Glass, Flag, Twist, Ripple, Rings, Broken Glass, Flying Bar, Blind, Split, Split Slide, Mirror, Multi Mirror, Kaleidoscope, Lens, Circle, Panorama, Page Turn, Roll, Cylinder, Sphere, Explosion, Swirl, Melt, Character Trail
- **Corner pinning effect**
- **Lighting effects:** Lighting, Spotlighting
- **Recursive effects:** Trail, Motion Decay, Keyframe Strobe, Wind
- **Background color settings**
- **Separate Sides** (effects for front and back sides)
- **Signal inversion** (Invert effect)
- **Key density adjustment**
- **Key source selection**
- **Color mix settings**

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

For details, see "DMEs" (page 209).

External Device Control

You can operate this system while controlling the following types of external device.

- P-Bus (Peripheral II protocol) devices
- GPI devices
- VTRs
- Disk recorders (video disk communications protocol, Odetics protocol)
- Extended VTRs (Abekas A53 protocol)

For details about the devices that can be connected, consult your Sony representative.

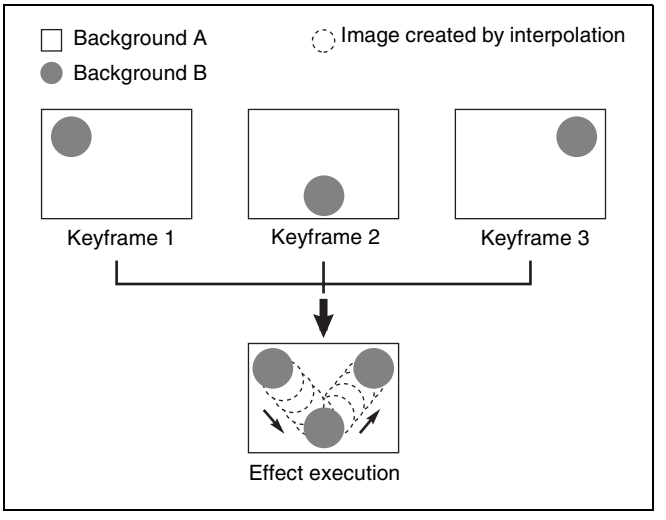
You can also control an external device by registering timeline keyframes beforehand.

For details, see "External Devices" (page 283).

Keyframes

A keyframe represents an instantaneous state of an image, which can be saved in a register and recalled for reuse. By arranging a number of keyframes on the time axis, and interpolating between successive keyframes, you can create a "keyframe effect" in which there is a continuous change from each keyframe to the next.

The following figure shows three keyframes created with a wipe pattern (the circle) in different positions, interpolated to create the effect shown.



Example of keyframes and effect execution

You can save the sequence of keyframes representing a single effect in a register. Then by recalling this register, you can replay the same effect.

For details, see "Keyframes" (page 297).

Snapshots

The term "snapshot" refers to a function whereby the various settings required to apply a particular effect to an image are saved in a register as a set of data, for recall as required, to recover the original state.
Snapshots are classified as follows.

- Snapshots applying to a particular region (functional block of the switcher or DME)
- Master snapshots
- Key snapshots
- Wipe snapshots
- DME wipe snapshots

For details, see "Snapshots" (page 330).

Utility

The utility function allows you to assign an arbitrary action or a shortcut for frequently used menu to a particular button, to instantly recall the action or menu by pressing the button.

For details, see "Utility Overview" (page 340).

Shotbox

The shotbox function allows you to recall any snapshot or keyframe effect for specified regions *(see page 297)* simultaneously.

For details, see "Shotbox Overview" (page 342).

Macros

The macro function allows you to store a sequence of signal selections and other operations on the control panel as data in memory (macro register), and then recall the data, when required, to automatically execute the same sequence of operations.
The individual control panel operations constituting a macro are termed "events."
Macros also provide the following functions.

Menu macros

The menu macro function allows you to register menu operations as events, which can be recalled, when required, to automatically execute the same menu operations.

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.

Macro attachment

The macro attachment function allows you to assign a control panel button or a particular position of a fader lever to a macro register, linking the execution of the button function or a fader lever operation with a macro execution.

For details, see "Macros" (page 348).

File Operations

You can save register data, including setup information and snapshot information, as a file on a local drive or removable drive, and recall it as required.
Images in frame memory can be imported from an external device, converted to a different format, and then saved.

For details, see "Files" (page 375).

Setup

Various settings are required, in order to operate the switcher, control panel, DME, external devices, and so on, connected together in a single system.
This is referred to as "setup." You perform the setup operations from the Engineering Setup menu (hereinafter called the Setup menu).

The settings in the Setup menu are grouped under the following headings.

System setup (System)

For details, see "System Setup" (page 389).

Panel setup (Panel)

For details, see "Control Panel Setup" (page 408).

Switcher setup (Switcher)

For details, see "Switcher Setup" (page 434).

DME setup (DME)

For details, see "DME Setup" (page 457).

DCU setup (DCU)

For details, see "DCU Setup" (page 461).

Router/tally setup (Router/Tally)

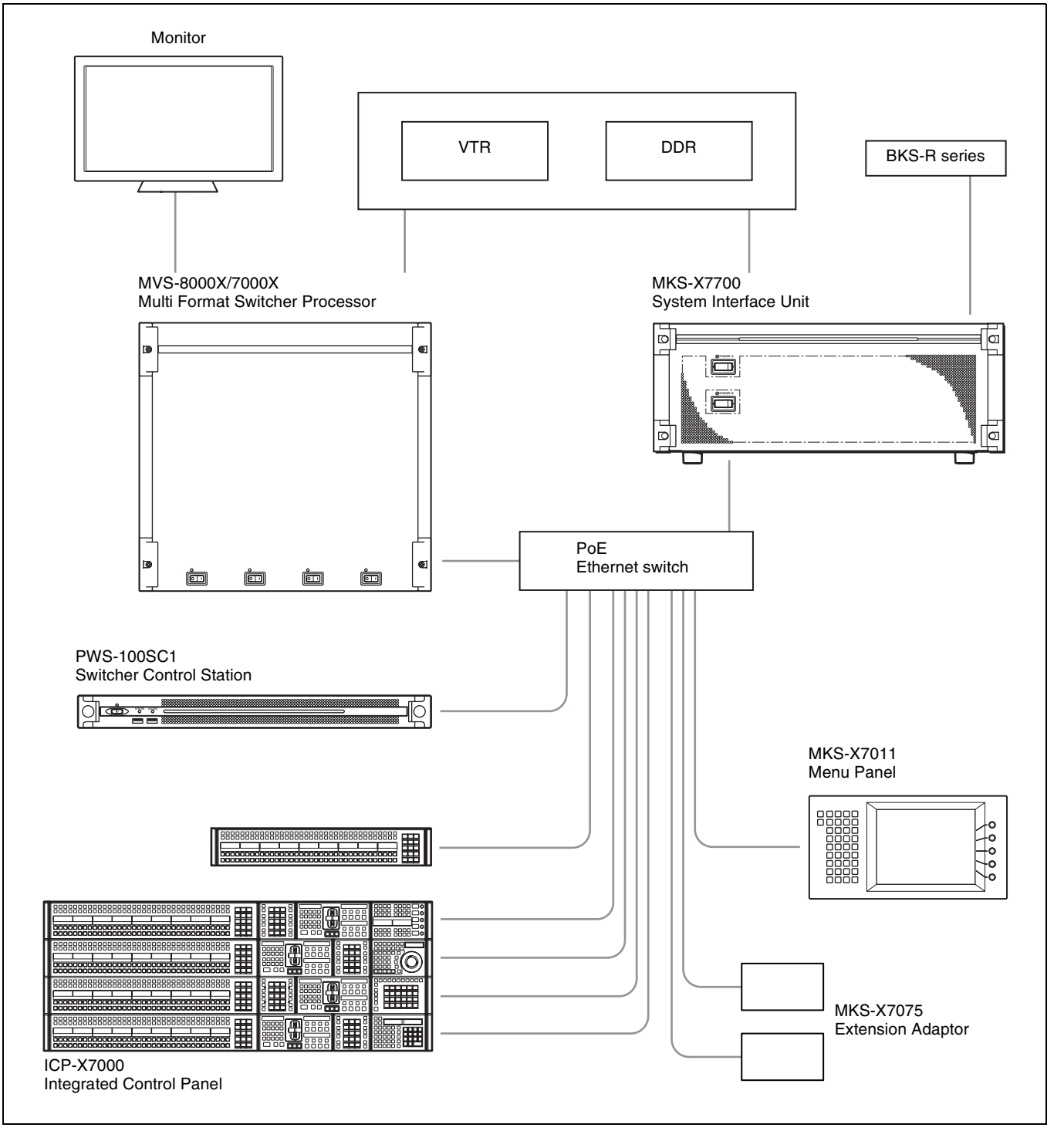
For details, see "Router Interface and Tally Setup" (page 470).

User setup (User Setup)

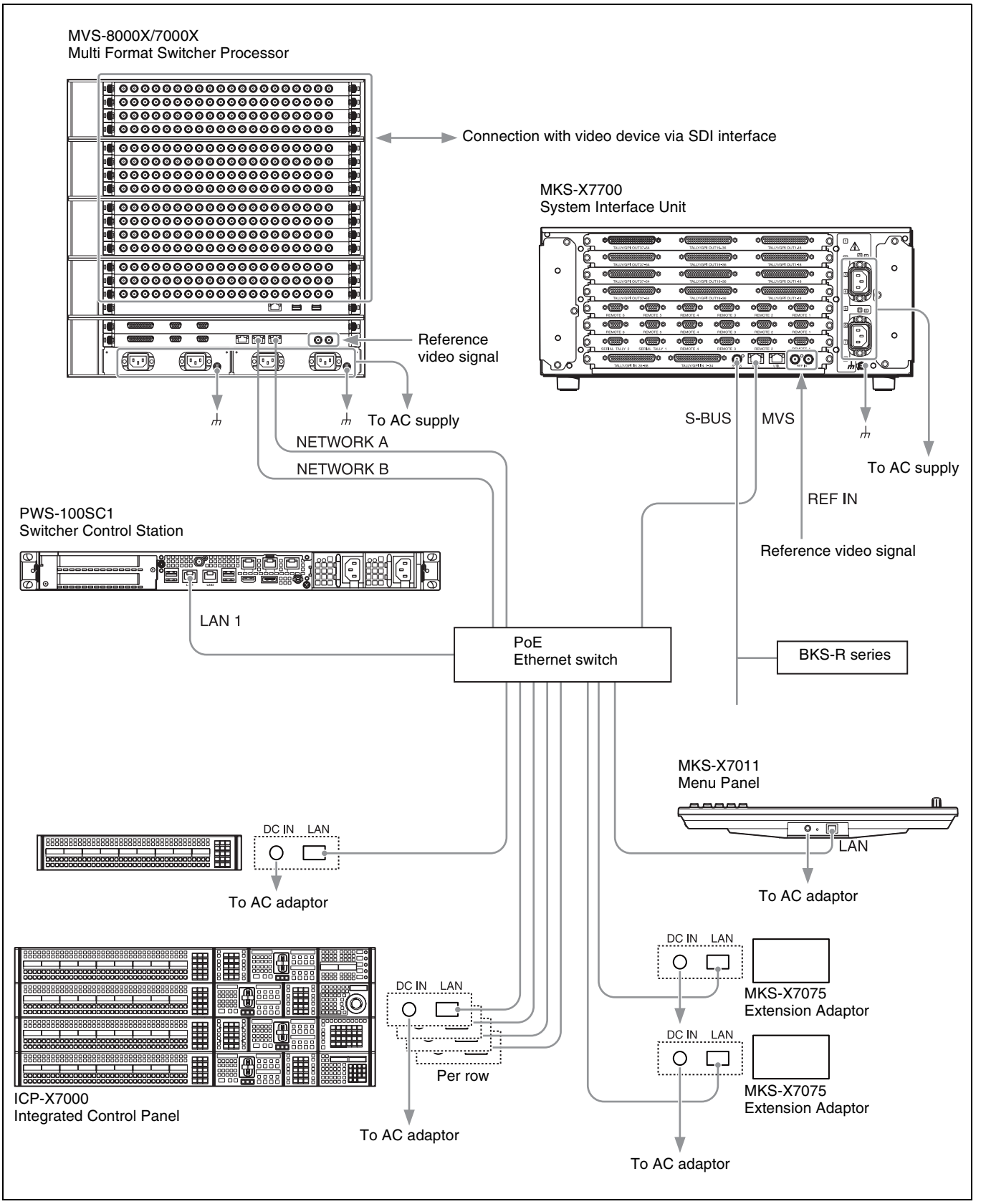
For details, see "User Setup" (page 477).

System Configuration

System Configuration Example



Control Panel Connection Example



Menus and Control Panel

Chapter 2

Names and Functions of Parts of the Control Panel

The maximum number of M/E banks supported by the MVS-8000X/7000X system is given below.

MVS-8000X
Five M/E banks maximum (PGM/PST, M/E-1 to M/E-4)

MVS-7000X
Six M/E banks maximum (PGM/PST, M/E-1 to M/E-5)

Note

On the MVS-8000X, M/E-5 cannot be used. M/E-5 operation and settings are disabled, even if they appear in the menu.

For details, see "Disabled Menus on the MVS-8000X" (page 510).

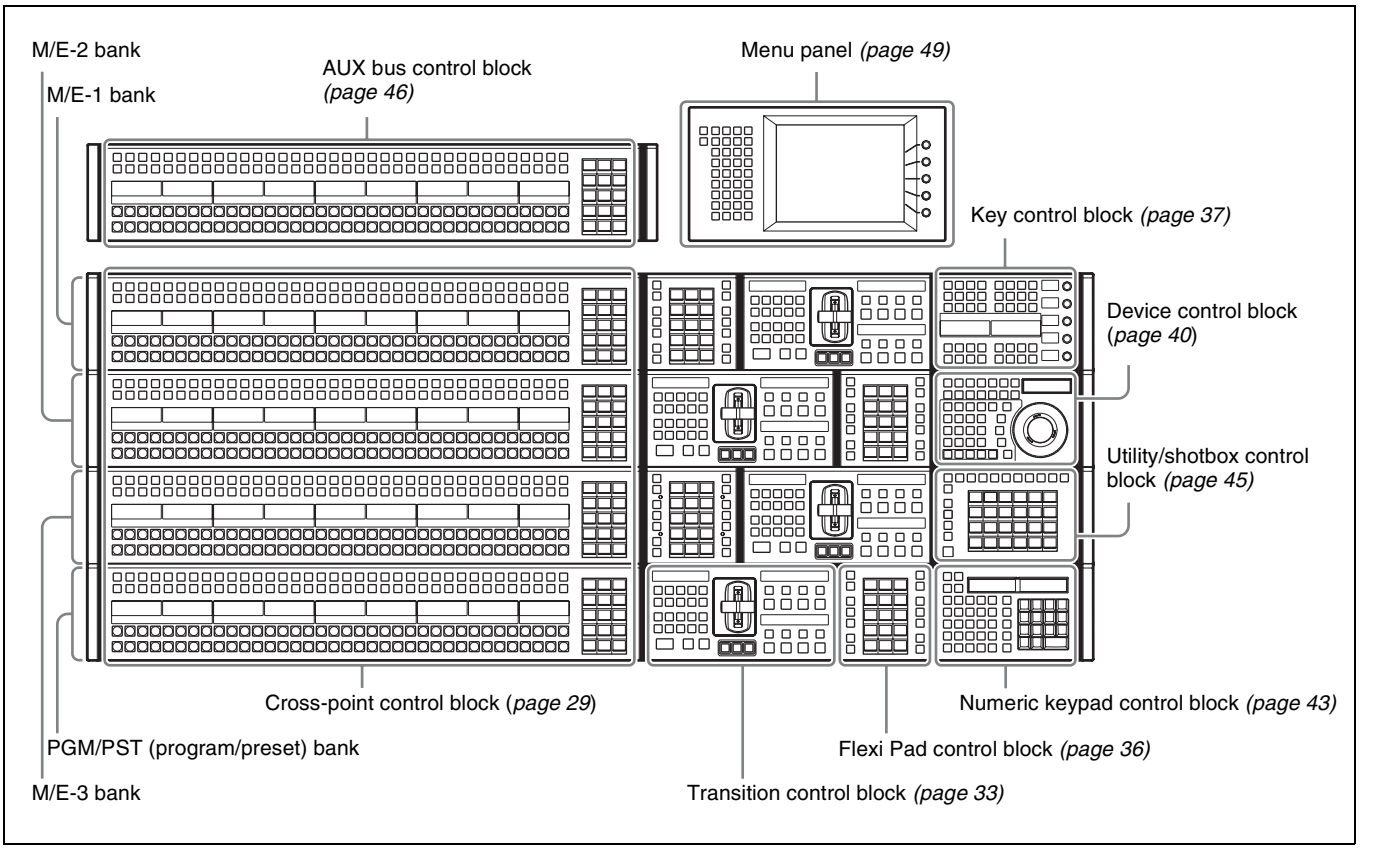
Control Panel Configuration

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
Flexi Pad control block	MKS-X7024
Key control block	MKS-X7035
Numeric keypad control block	MKS-X7026
Device control block (trackball)	MKS-X7031TB
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. If installed in the same row as the transition control block, it becomes the cross-point control block. If not installed in the same row as the transition control block, it becomes the AUX bus control block.
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

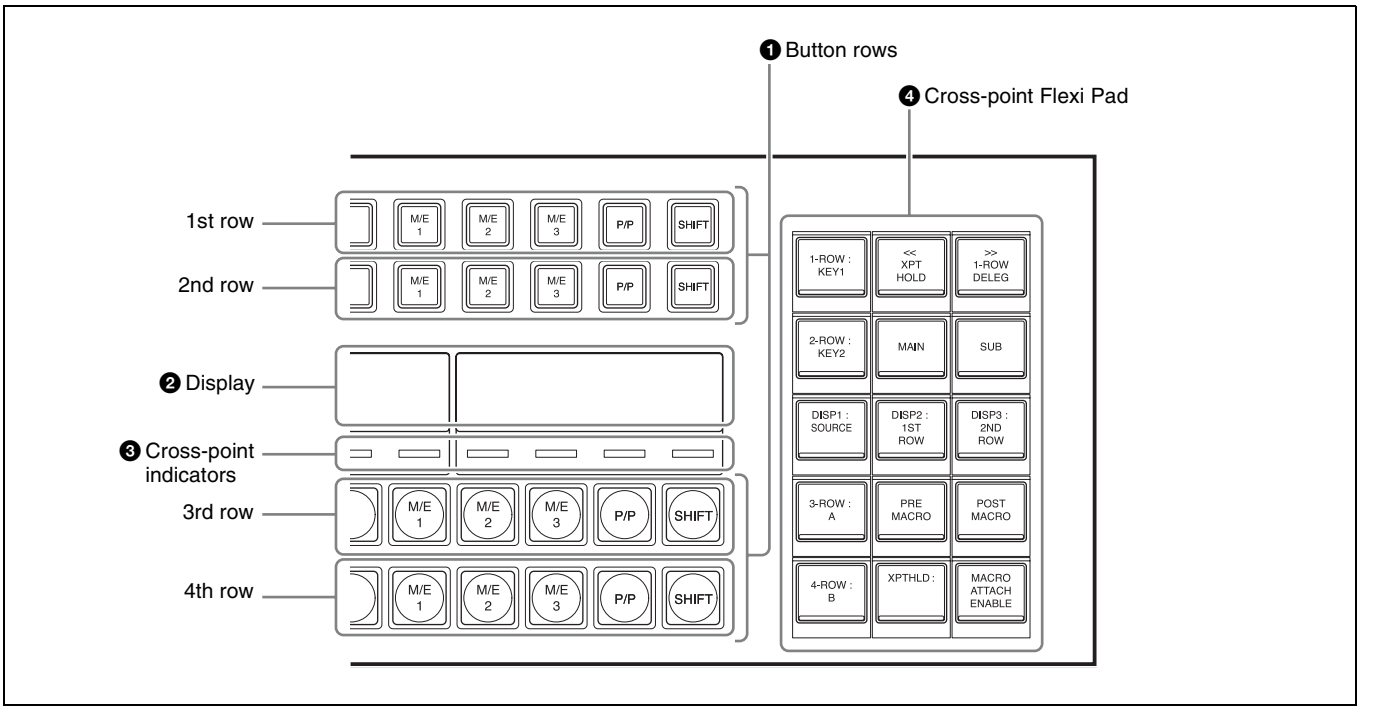


Cross-Point Control Block

The cross-point control block is used to select the signals to be used in the M/E banks and PGM/PST bank.

Note

In the case of the MVS-8000X, only the premium inputs (inputs to the switcher premium input connectors 1 to 20) can be selected as key signals on M/E-4.



❶ Button rows

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

Name	Description
1st row	• Selects the following bus signals selected using the cross-point Flexi 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 Flexi 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 Flexi Pad is lit (dual background bus mode).
2nd row	• Selects the following bus signals selected using the cross-point Flexi 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 Flexi 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 Flexi Pad is lit (dual background bus mode).
3rd row	Selects background A bus signal.
4th row	Selects background B bus signal.

a) When a cross-point button is pressed, a key fill signal is selected. When a cross-point button is pressed while pressing a delegation button, a key source signal is selected.

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 1st Row/2nd Row Buttons of the Cross-Point Control Block" (page 425).

Cross-point button numbers

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

For details, see "Cross-point control block button numbers" (page 72).

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 74).

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 Flexi Pad.

For details about re-entry buttons, see "Re-entry buttons" (page 69).

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 415).

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, press the [XPTHLD XXX] (where XXX is the bus name) button on the cross-point Flexi Pad, turning it 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 Flexi 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 [1-ROW PROT] to [4-ROW PROT] buttons on the cross-point Flexi Pad, turning them on.

Inhibiting operation 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 Flexi 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 Flexi 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 Flexi Pad, and press the [XPT INHBT ALLCLR] button.

For details about the inhibit function, see "Inhibiting Operation of Cross-point Buttons" (page 73).

❷ Display

Six types of display mode can be selected, according to the information to display. The display mode is switched using the [DISP 1: XXX] to [DISP 6: XXX] (where XXX is the mode name) display mode buttons on the cross-point Flexi Pad.

The following information can be shown on the display.

- Settings of buttons on the 1st row to 4th row (signal 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" (or "SIDE") 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" (page 431).

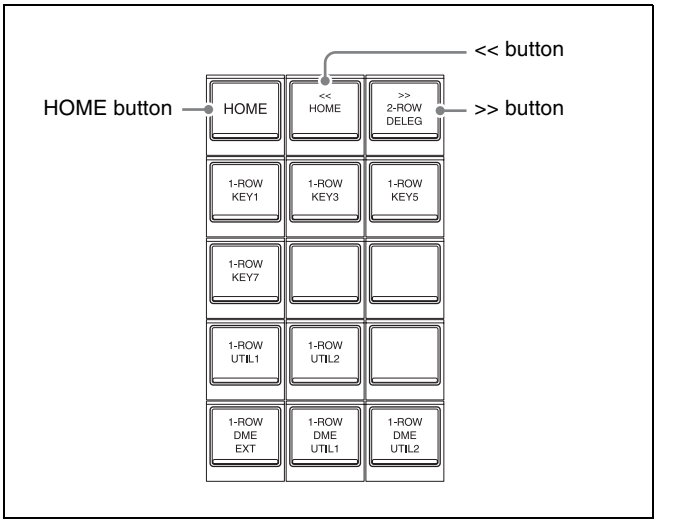
❸ Cross-point indicators

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 430).

❹ Cross-point Flexi Pad

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



You can assign functions to the 13 buttons, excluding the [<<] button and [>>] 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 Flexi Pad" (page 430).

Use the following buttons to navigate the cross-point Flexi 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 >>).

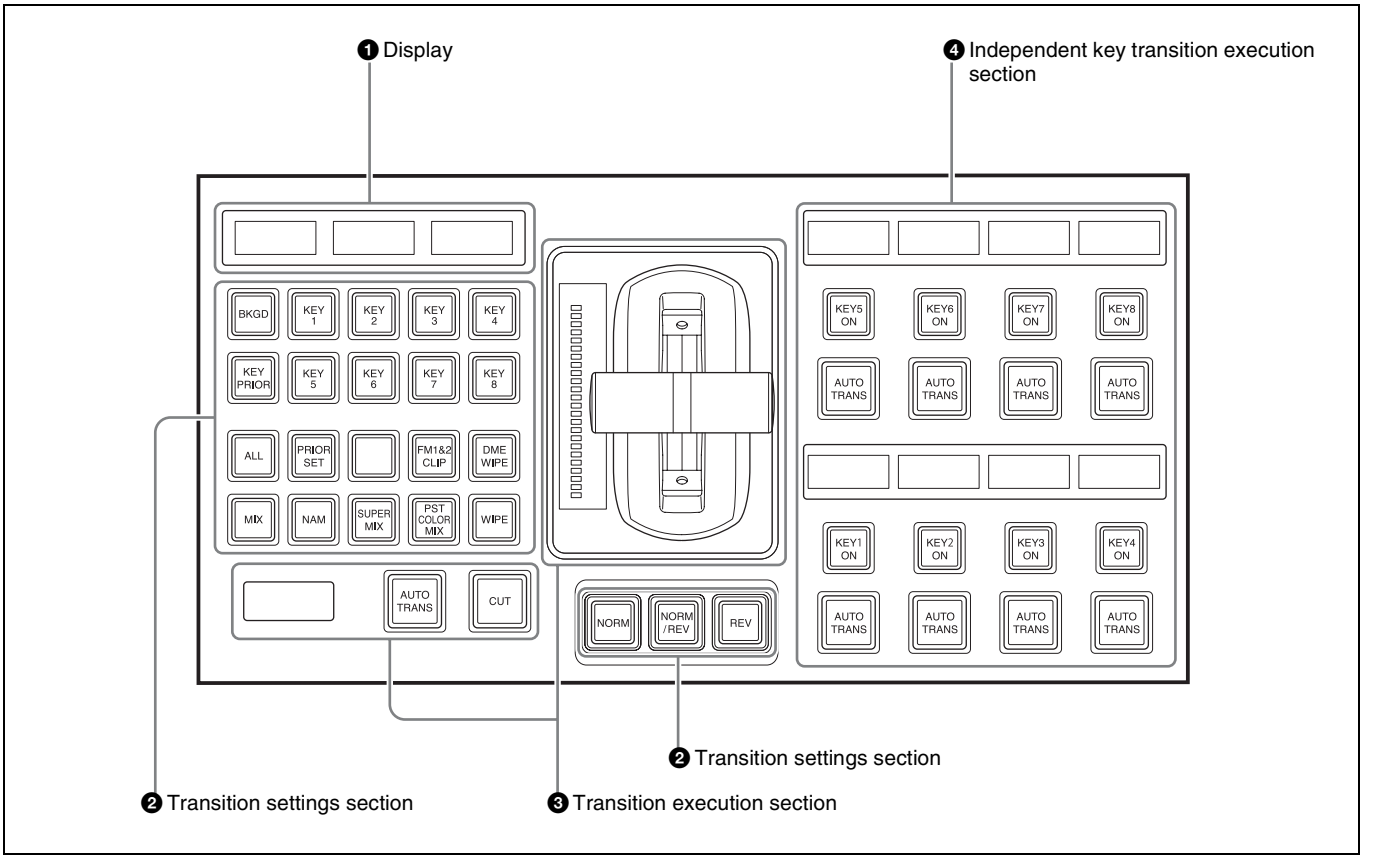
If the [<<] button and [>>] button are pressed simultaneously, the cross-point Flexi Pad changes to page selection display mode, and you can press a button, turning it on, to select the page to display. To exit page selection display, press the [EXIT] button.

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

Button	Description
HOME	Displays the HOME page of the cross-point Flexi Pad.
n-ROW: XXX	Displays the bus/function names assigned to the 1st row to 4th row. n = 1 to 4, XXX = bus/function name
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 1: XXX to DISP 6: XXX	Selects the display mode (1 to 6) (display mode button). XXX = display mode name (up to 12 characters)
n-ROW KEY1 to n-ROW KEY8	Assigns key 1 to 8 buses to the 1st row or 2nd row. n = 1 or 2
n-ROW UTIL1 n-ROW UTIL2	Assigns utility 1 and 2 buses to the 1st row or 2nd row. n = 1 or 2
n-ROW DME EXT	Assigns DME external video bus to the 1st row or 2nd row. n = 1 or 2
n-ROW DME UTIL1 n-ROW DME UTIL2	Assigns DME utility 1 and 2 buses to the 1st row or 2nd row. n = 1 or 2
n-ROW UTIL SBOX1 to n-ROW UTIL SBOX10	Assigns utility/shotbox bank 1 to 10 to the 1st row or 2nd row. n = 1 or 2
XPTHLD: AB U12 K1234 K5678	Displays buses for which cross-point hold is set.
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	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	Sets cross-point hold for the DME utility 1 and 2 buses.
n-ROW P/P PGM1 n-ROW M/E-1 PGM1 to n-ROW M/E-5 PGM1	Loads images (PGM1) from the PGM/PST and M/E1 to 5 banks into the 1st row to 4th row (re-entry). n = 1 to 4
n-ROW P/P PGM2 n-ROW M/E-1 PGM2 to n-ROW M/E-5 PGM2	Loads images (PGM2) from the PGM/PST and M/E1 to 5 banks into the 1st row to 4th row (re-entry). n = 1 to 4
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	Toggles dual background bus mode.
n-ROW PROT	Inhibits button operation on the 1st row to 4th row. n = 1 to 4
TAKE	Executes a macro take operation.
EVENT NO.: XX/XX	Displays the macro status. XX/XX = Executed event number / Total number of events
XXXXXXXX	Recalls a macro register (1 to 250). XXXXXXXX = Macro register name (up to 8 characters)

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 78).

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 411).

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 77).*
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 429).*
PRIOR SET (priority set)	Sets the key priority. *For details, see "Setting the Key Priority (Transition Control Block)" (page 77).*

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 74).

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

For details about multi-program mode, see "Setting the Operation Mode" (page 434).

Wipe direction selection buttons

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

Button	Description
NORM (normal)	The wipe proceeds in the direction from black to white of the pattern images, shown in *"Wipe Pattern List" (page 480)*, 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 Operation Mode" (page 428) and "Setting the transition preview mode" (page 446).

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 321).

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 83).

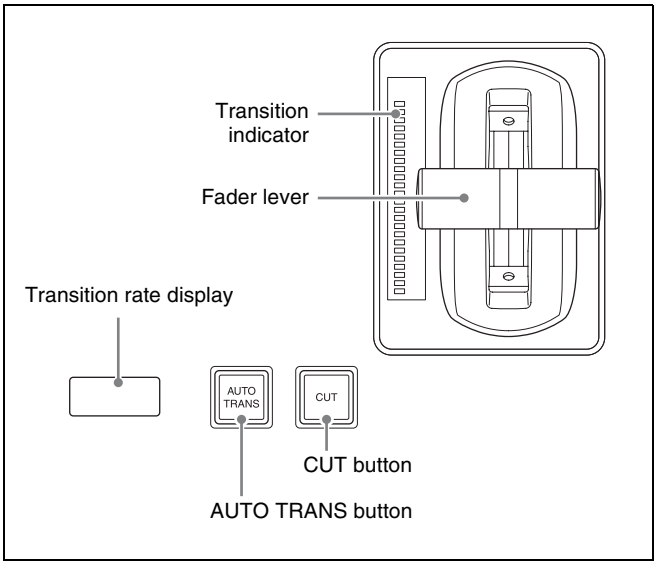
External device operation buttons

(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

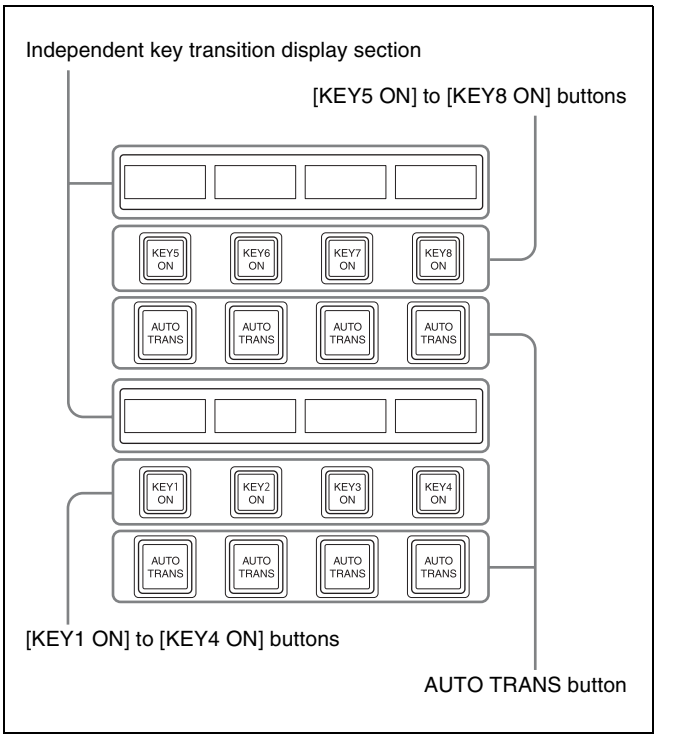
For details about operation of external devices, see "Control of VTRs, Disk Recorders, and Extended VTRs" (page 288).

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.



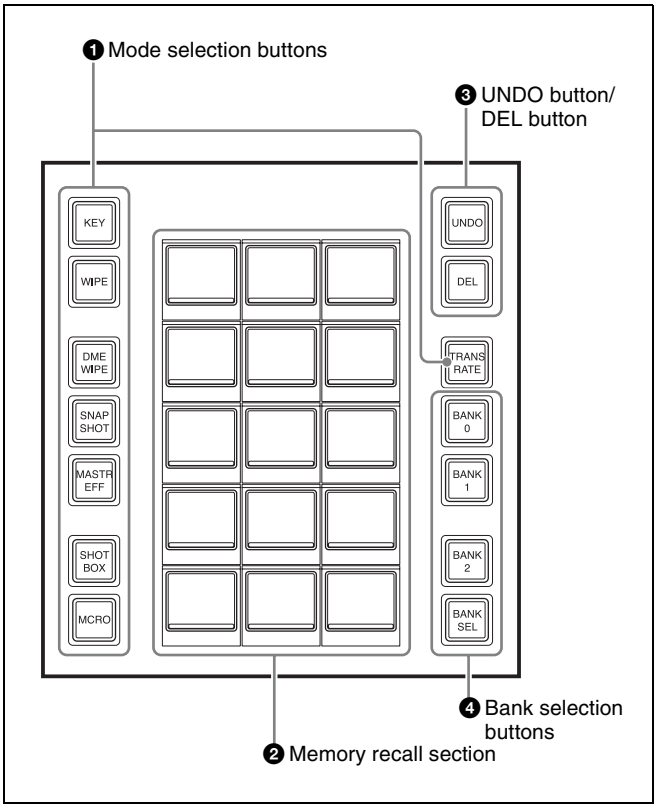
Name	Description
Independent key transition display section	Displays the following information for key 1 to key 8. Key material name (key source name when a key source is selected on the key bus of the cross-point control block), DME channel or resizer being used, transition rate
KEY1 ON to KEY8 ON buttons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

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

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 411).

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
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.
MASTER 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 411).

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.

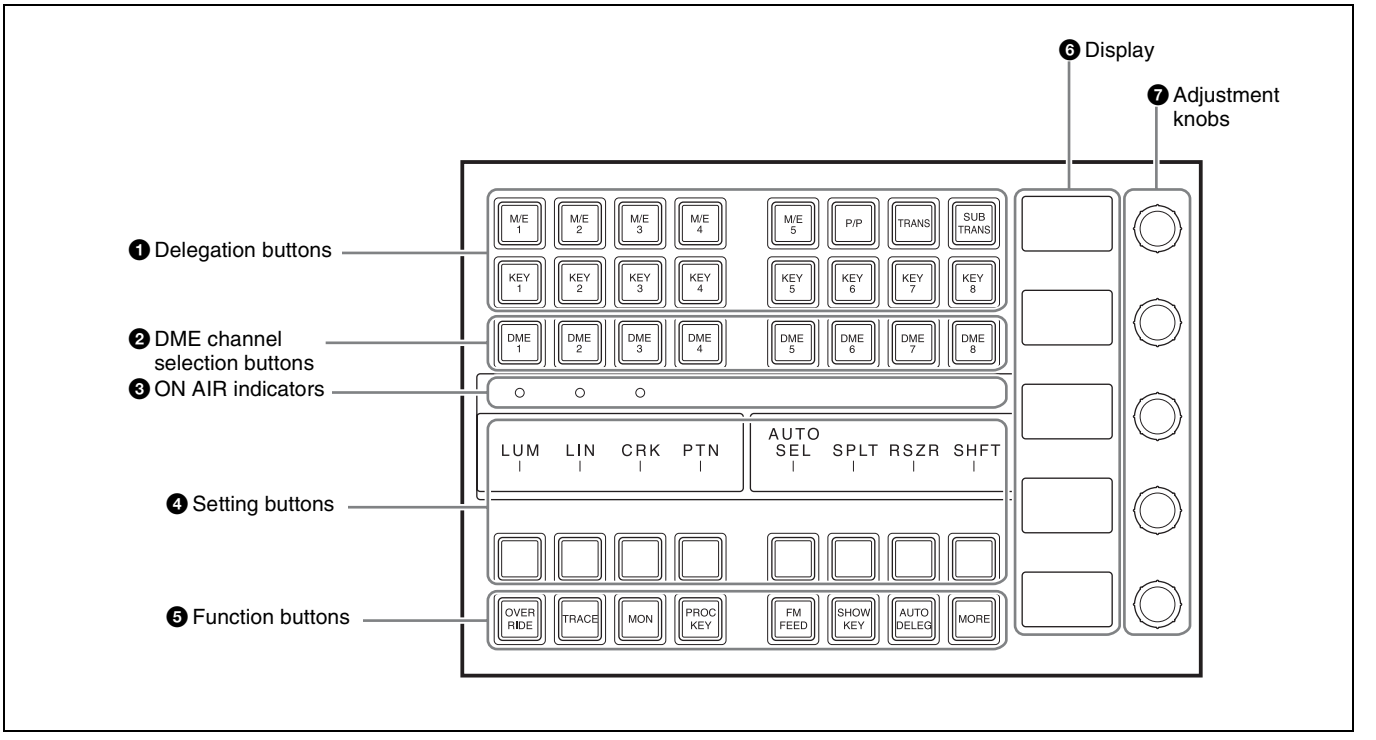
You can change the assignment of bank selection buttons in the Setup menu.

For details, see "Setting Flexi Pad Control Block Button Assignments" (page 411).

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.
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.

Button name	Description
KEY1 to KEY8	• Assigns key 1 to key 8. • Press and hold a [KEY1] to [KEY8] button and press a [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 197).*

❷ DME channel selection buttons

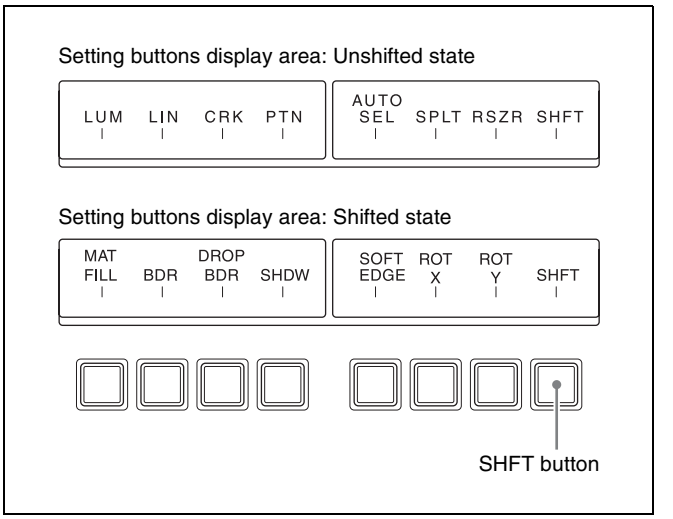
These selects the DME channel to assign to a keyer. When the [TRANS] or [SUB TRANS] delegation button is selected, the DME channel used by the DME wipe is displayed. You can select the DME channel to be used beforehand when a DME wipe is selected as the transition type.

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 are different in the shifted and unshifted states, and you can switch between them using the [SHIFT] 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 112).

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 112).

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 114).

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 117).

SHFT (shift) button

This button switches the setting buttons between the shifted and unshifted states.

❺ Function buttons

These buttons select the functions used for key operations.

Button name	Description
OVERRIDE	Selects a DME channel assigned to another keyer from the currently selected keyer (override function). Press and hold the [OVERRIDE] button and press the target DME channel button to select it.
TRACE	When a DME channel is assigned to another keyer, this switches to the keyer assigned with the DME channel (trace function). Press and hold the [TRACE] button and press the target DME channel button to switch keyers.
MON (monitor)	• Assigns a DME channel to the monitor output. Press and hold the [MON] button and press the target DME channel selection button to set it. • You can check the monitor output assignment status by pressing the [MON] button by itself. Lit amber: DME channel that is assignable to the monitor output. Lit green: DME channel currently assigned to the monitor output.
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/E1 to M/E5, 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 448).*
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 Flexi Pad of the cross-point control block: [1-ROW KEY1] to [1-ROW KEY8] buttons, [2-ROW KEY1] to [2-ROW KEY8] buttons • Memory recall section on the Flexi Pad control block (key operation mode): [KEY1] to [KEY8] 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

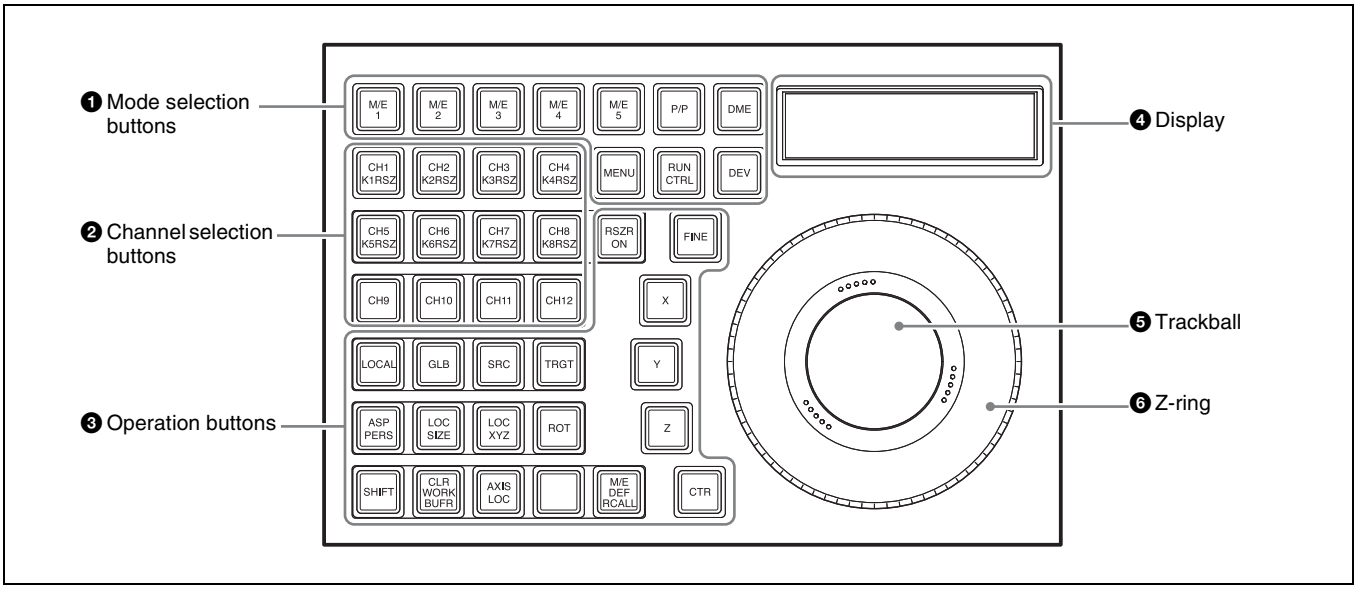
Displays the name of parameter items and the setting value.

❼ Adjustment knobs

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

Device Control Block (Trackball)

The device control block (trackball) is used for three-dimensional transformations using a DME, two-dimensional transformations 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 412).

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 transformation 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 transformation 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 412).

Button name	Description
K1RSZ to K8RSZ	Selects the target resizer in resizer operation mode.

Button name	Description
CH1 to CH8	• Selects the target DME channel in three-dimensional transformation 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 FM8 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 transformation 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.
SHIFT	Used in combination with the [CTR] and [CTR WORK BUFR] buttons.
[CLR WORK BUFR] (clear work buffer)	• When the [CLR WORK BUFR] button is pressed once: Returns the resizer two-dimensional transformation 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.
CTR (center)	• When the [CTR] is pressed once: Adjusts the two-dimensional transformation 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 transformation setting values to the defaults.
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. • 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 transformation mode

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

For details, see "Three-Dimensional Transform Operations" (page 222).

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.

Button name	Description
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, Disk Recorders, and Extended VTRs" (page 288).

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
- X-, Y-, and Z-axes setting values

Three-dimensional transformation mode
- Reference channel name: DME1 to DME8
- 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 and Y directions, changes the aspect ratio, and rotates the keys around the X-axis and Y-axis.

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

Menu parameter operation mode
Adjusts menu parameters 1 and 2.

For details, see "Setting Parameters" (page 57).

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, and perspective of the key to which the resizer is applied.

Three-dimensional transformation mode
Adjusts the Z-axis of the three-dimensional transformation.

Menu parameter operation mode
Adjusts menu parameter 3.

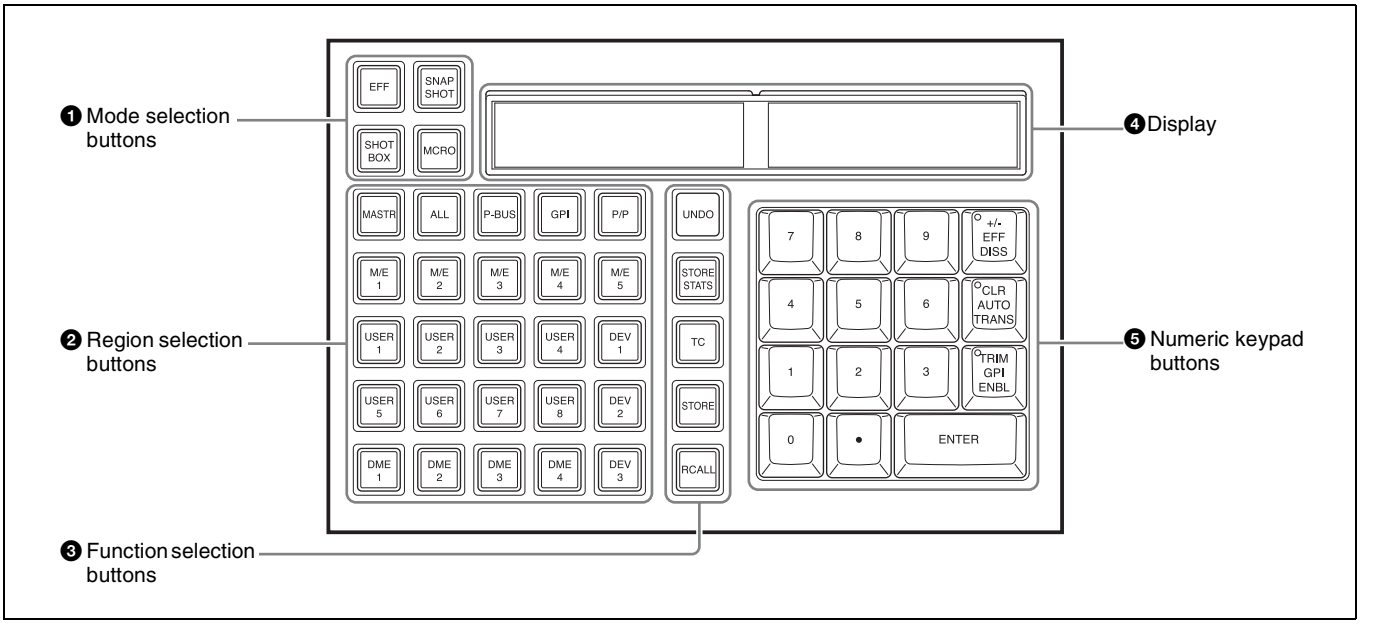
For details, see "Setting Parameters" (page 57).

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.
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 [MASTER] 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 assigned with more than one region is selected, the region specified first in the Setup menu becomes the reference region. 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 410) and "Recalling regions to edit (menu)" (page 309).

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 DME8	(Assignment of the [DME5] to [DME8] buttons in the Setup menu is required.) Selects the DME1 to DME8 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.

Button name	Description
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

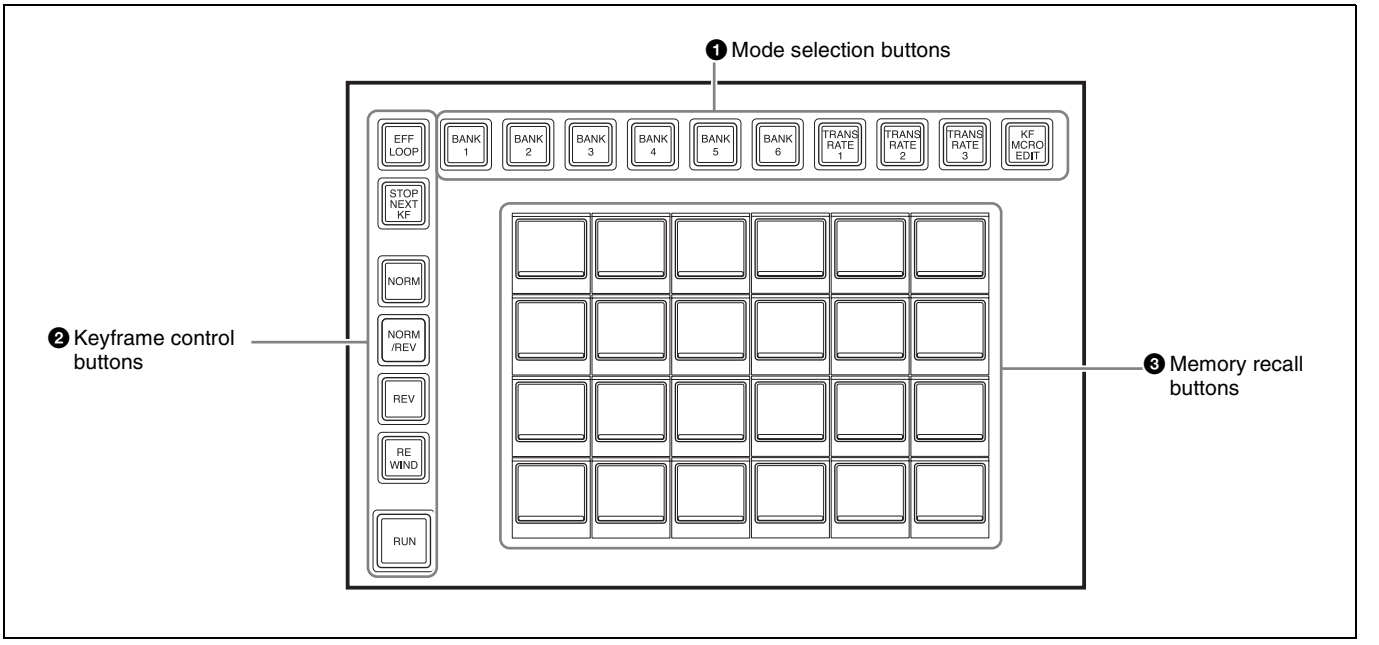
These buttons are used for entering numeric values and adding snapshot attributes.

Button name	Description
0 to 9	Enters numeric values.
. (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. • Used when adding a GPI output attribute in snapshot operation mode.
ENTER	Confirms an entered value or selected attribute.

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 421).

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 424).

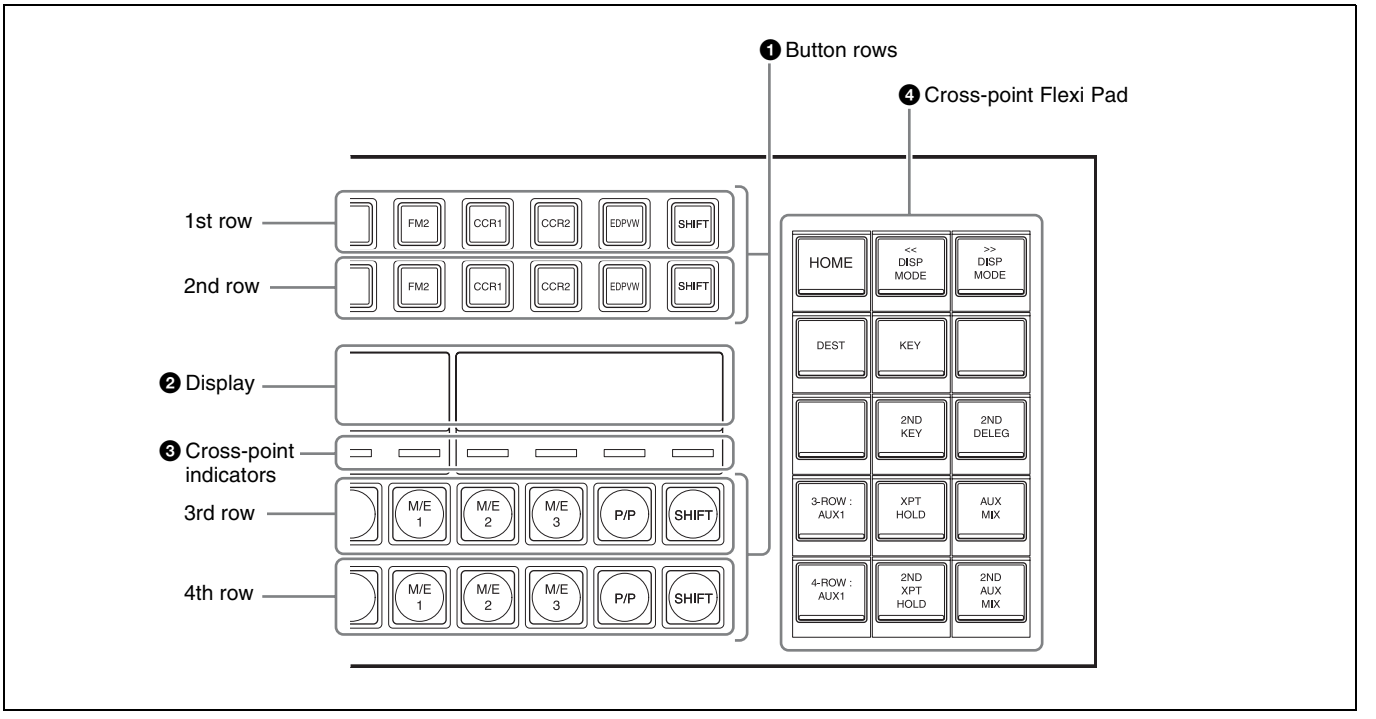
Keyframe/macro editing mode

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.

For details about assignable buses, see "Bus Selection" (page 69).



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 DELEG] button in the cross-point Flexi Pad, turning it on.

Name	Description
1st row	When the [2ND DELEG] button is lit: Selects a bus to assign in the 3rd row. When the [2ND DELEG] button is not lit: • Selects a bus to assign in the 3rd row and 4th row. • You can select a bus on the shifted state of a delegation button while pressing the [SHIFT] button.
2nd row	When the [2ND DELEG] button is lit: Selects a bus to assign in the 4th row. When the [2ND DELEG] button is not lit: • Selects a bus to assign in the 3rd row and 4th row. • You can select only a bus on the shifted state of a delegation button in the 2nd row.
3rd row	When the [2ND DELEG] button is lit: Selects a signal on the bus selected in the 1st row. a) When the [2ND DELEG] button is not lit: • Selects a signal on the bus selected in the 1st row or 2nd row. a) • You can select a bus on the shifted state of a button while pressing the [SHIFT] button.
4th row	When the [2ND DELEG] button is lit: Selects a signal on the bus selected in the 2nd row. a) When the [2ND DELEG] 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 DME8 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" (page 72).

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).

For details, see "Setting the AUX Bus Block" (page 417).

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 or [2ND XPT HOLD] button on the cross-point Flexi Pad, turning it on.

KEY button and 2ND KEY button

When an operation mode that allows you to select both a key signal and video signal is set in the Setup menu, the [KEY] button and [2ND KEY] button on the cross-point Flexi Pad are enabled.

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 second delegation mode is set, use the [KEY] button to select the signal on the 3rd row, and the [2ND KEY] button 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 Operation Mode" (page 428).

❷ Display

Six types of display mode can be selected, according to the information to display. The display mode is switched using the [DISP 1: XXX] to [DISP 6: XXX] (where XXX is the mode name) display mode buttons on the cross-point Flexi 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

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] button is pressed on the cross-point Flexi 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" (page 431).

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 430).

❹ Cross-point Flexi Pad

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

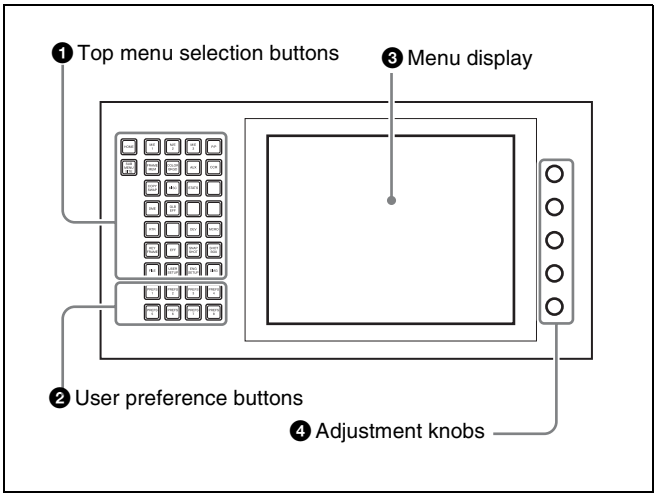
For details about operation, see "Cross-point Flexi Pad" (page 31) of the cross-point control block.

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

Button	Description
HOME	Displays the HOME page of the cross-point Flexi Pad.
n-ROW: XXX	Displays the bus/function names assigned to the 1st row to 4th row. n = 1 to 4, XXX = bus/function name
DISP 1: XXX to DISP 6: XXX	Selects the display mode (1 to 6) (display mode button). XXX = display mode name (up to 12 characters)
2ND DELEG	Sets second delegation mode.
DEST	Switches the 1st row and 2nd row information shown on the display to the selected signal names.
AUX MIX	• Executes an AUX mix transition on the 3rd row when the [2ND DELEG] button is lit. • Executes an AUX mix transition on the 3rd row or 4th row when the [2ND DELEG] button is not lit.
2ND AUX MIX	Executes an AUX mix transition on the 4th row when the [2ND DELEG] button is lit.
XPT HOLD	• Sets cross-point hold on the 3rd row when the [2ND DELEG] button is lit. • Sets cross-point hold on the 3rd row and 4th row when the [2ND DELEG] button is not lit.
2ND XPT HOLD	Sets cross-point hold on the 4th row when the [2ND DELEG] button is lit.
KEY	You can select a signal on the key side of the 3rd row while pressing the [KEY] button when the [2ND DELEG] 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 DELEG] button is not lit.
2ND KEY	You can select a signal on the key side of the 4th row while pressing the [KEY] button when the [2ND DELEG] button is lit.
n-ROW P/P PGM1 n-ROW M/E-1 PGM1 to n-ROW M/E-5 PGM1	Loads images from the PGM/PST and M/E1 to 5 banks into the 3rd row or 4th row (re-entry). n = 3 or 4
TAKE	Executes a macro take operation.
EVENT NO.: XX/XX	Displays the macro status. XX/XX = Executed event number / Total number of events
XXXXXXXX	Recalls a macro register (1 to 250). XXXXXXXX = Macro register name (up to 8 characters)

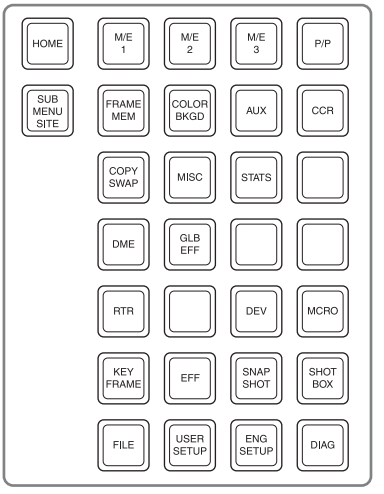
Menu Panel

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 412).



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 418).

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

For details, see "Setting Menu Panel Button Assignments" (page 412).

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

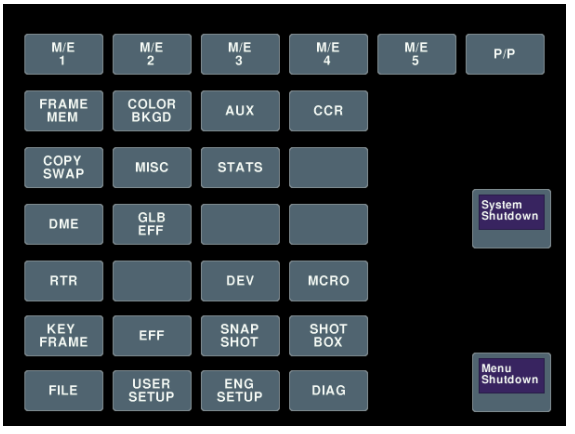
Overview

In the MVS system, 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.

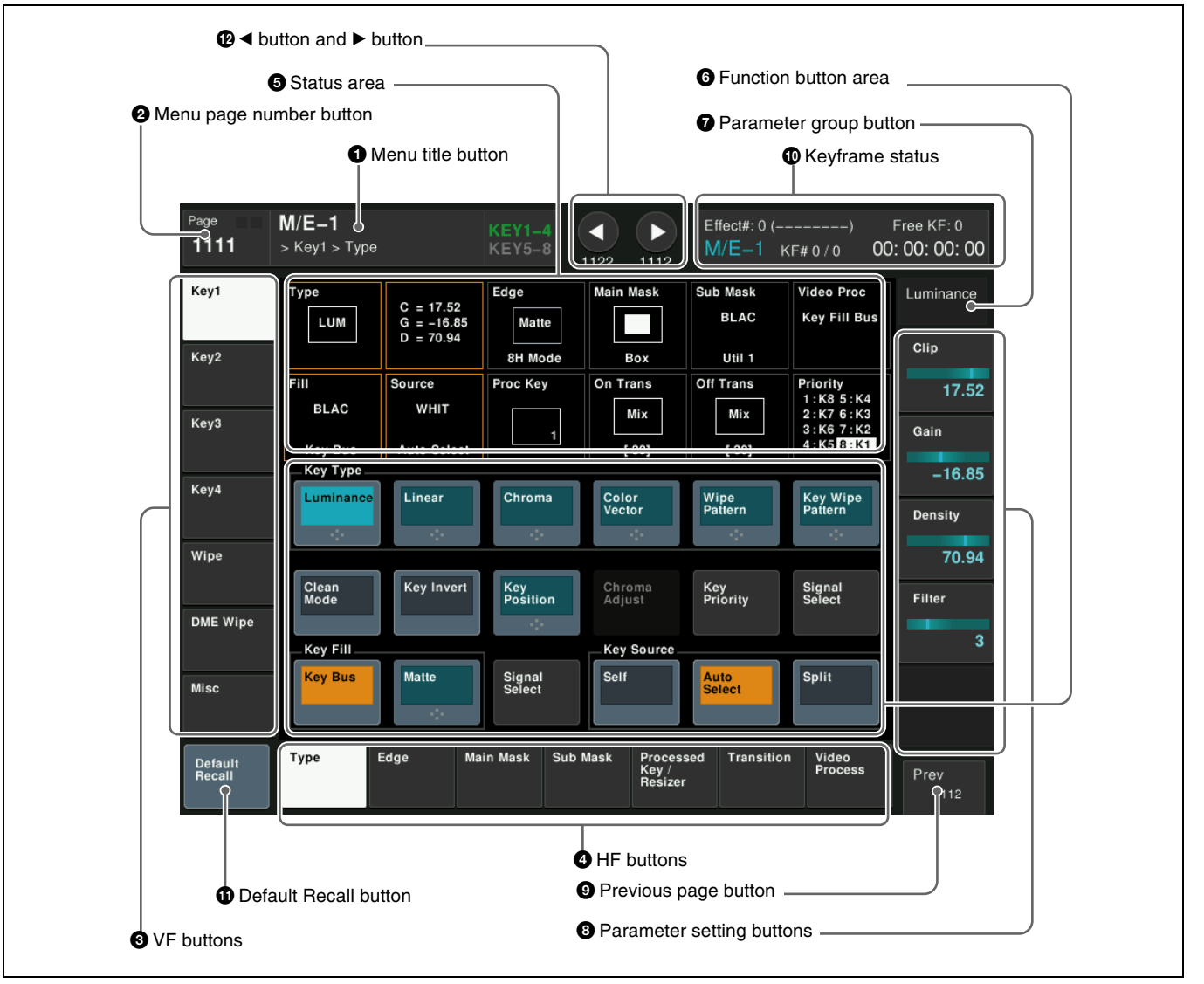
For details about shutting down, see "Shutting Down the Switcher System" (page 60) and "Shutting Down the Menu" (page 59).

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.
You can set different colors for the main menu site and sub menu site *(see page 59)*.

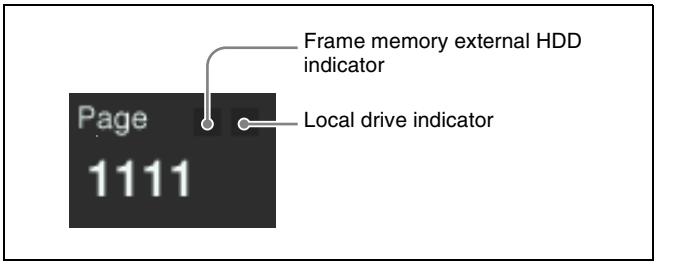
Switching the VF buttons between the Key1 to Key4 and Key5 to Key8 button displays

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 53)* 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 or an external HDD, the indicator is lit red.



Note

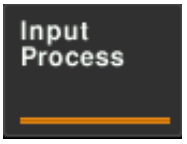
When an indicator is lit, do not power off the switcher or disconnect the USB cable.[1)]

1) When an external HDD is connected.

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.

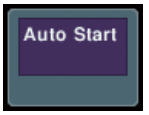
❹ HF buttons
These indicate the smaller subdivisions (3rd level) of the menu.
Depending on the selected item, the menu indications change.

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 54)*, 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.

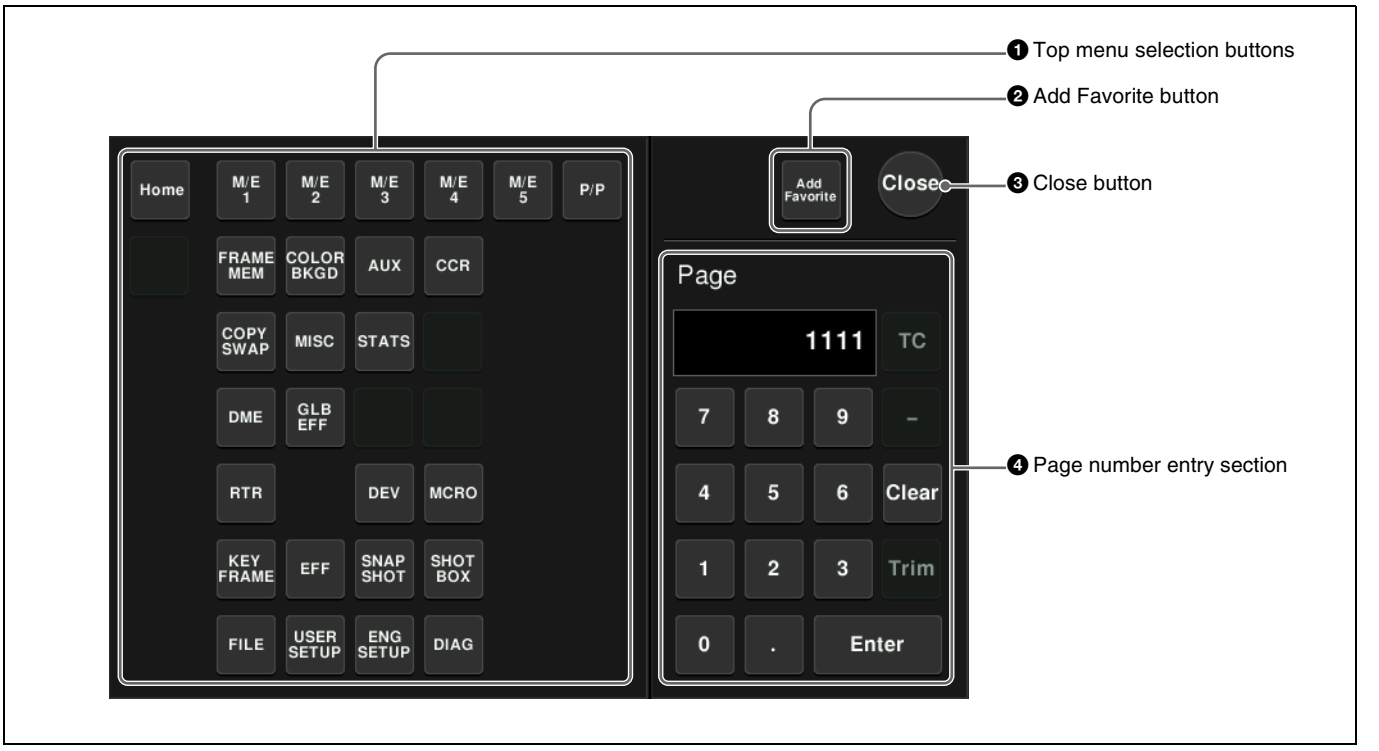
⓫ Default Recall button
Press this button, and then press a VF button or parameter setting button to return the settings to their default values, in the following groupings.
- Function grouping (functions of the HF buttons under the VF button)
- Parameter grouping (settings of parameter setting buttons)

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 487).

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



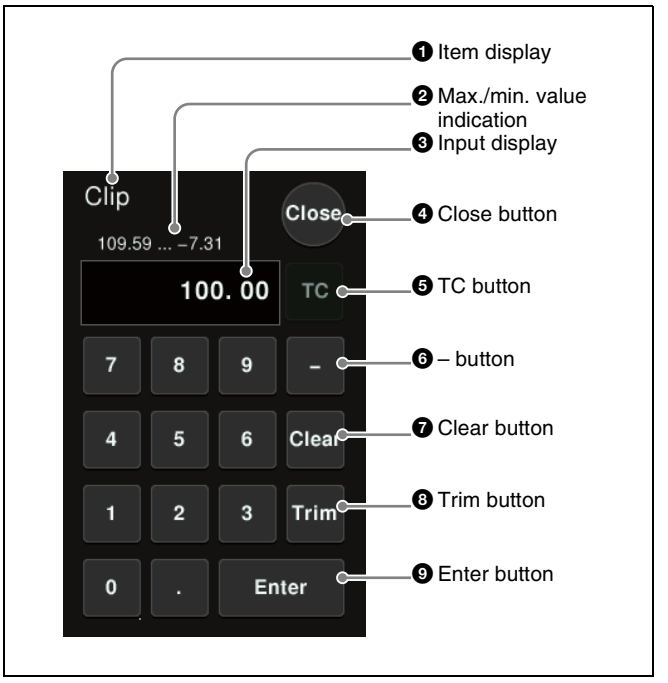
❶ Top menu selection buttons
Displays the selected menu.

❷ Add Favorite button
This button registers the currently displayed menu in the shortcut menu *(see page 58)*.

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.

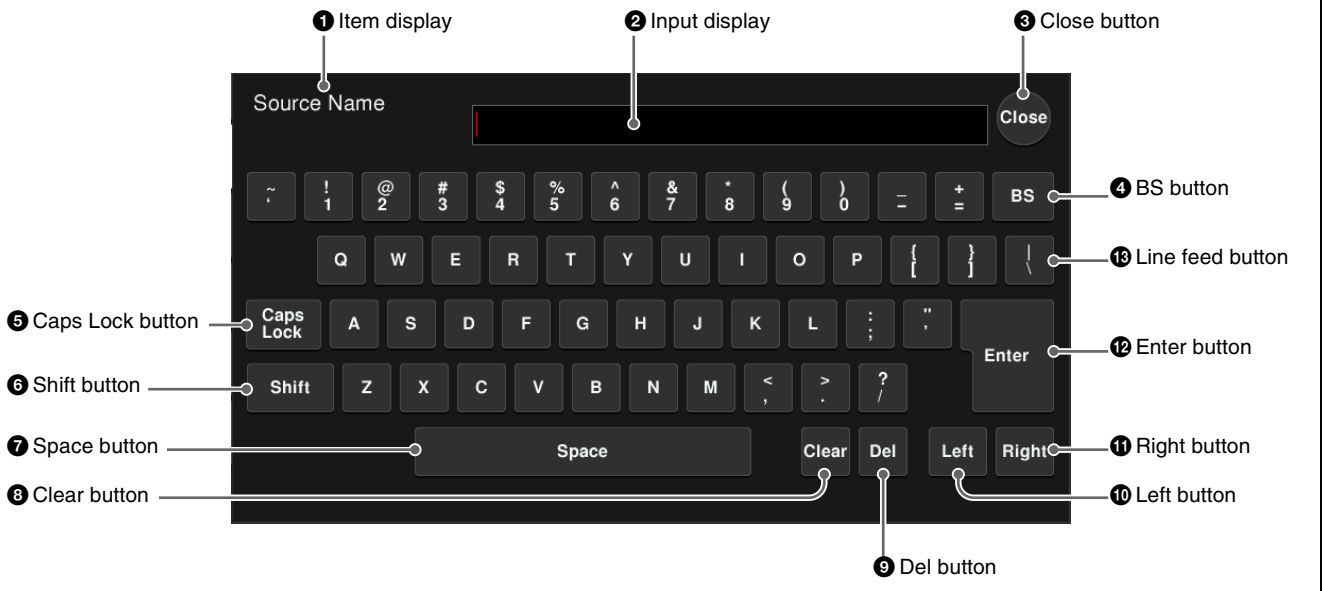
❾ Enter button
This button confirms the entered value.
If the value is set correctly, the numeric keypad window closes.
If it is not set correctly, the input display changes color.

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

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

Note

You can enter items to be displayed on the control panel LCD using lowercase letters, but these will be converted to uppercase for display.
MS-DOS does not distinguish case in filenames, and therefore you are recommended to enter filenames in uppercase letters.

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

❼ Space button
This button enters a space character.

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

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

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

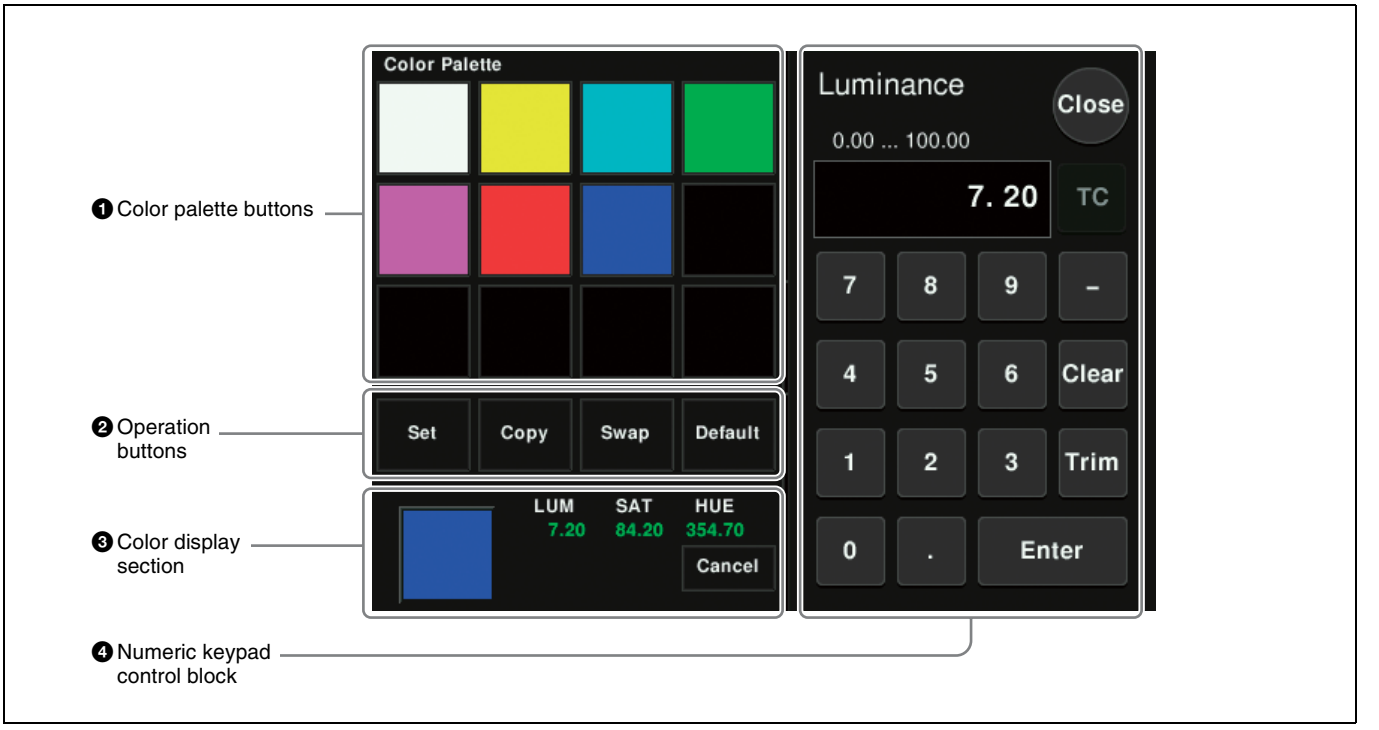
⓫ Right button
This button moves the cursor one character to the right.

⓬ 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.

⓭ Line feed button
After pressing [Shift], press this button to advance by one line. The input display represents a line feed as “l”.

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 54)*.

Basic Menu Operations

Notes

- On the MVS-8000X, M/E-5 cannot be used. M/E-5 operation and settings are disabled, even if they appear in the menu.
  For details, see "Disabled Menus on the MVS-8000X" (page 510).
- 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 412)*.

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 53).

Pressing specific buttons twice

Open the menu that corresponds to the button.

For details, see "Menus Recalled by Pressing a Button Twice" (page 524).

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 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.

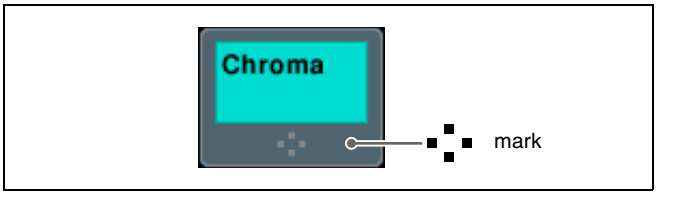
- Press the item directly in the list.
- Use the arrow keys to scroll the reverse video cursor to the item.
- Turn the knob corresponding to the parameter of the item selection.
- Press the parameter setting button for the item selection and enter a value for the item using the numeric keypad window.

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 frame memory folder

No.	Parameter	Adjustment
1	No	Folder selection
2	Num	Number to select

Setting the [No] parameter to "2" and the [Num] parameter to "5" will select five folders starting from folder 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 58)*.

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
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 487).

Notes

- The default state depends on the initial status mode specified in the Setup menu, as follows.
  User: The state when [Initial Status Define] is executed.
  Factory: Factory default settings
- 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 433) and "Setting the Mouse Button Function when Setting Parameters" (page 433).

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 369).

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 412).

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 control station and menu using the following procedure.

Note

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

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

   The 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

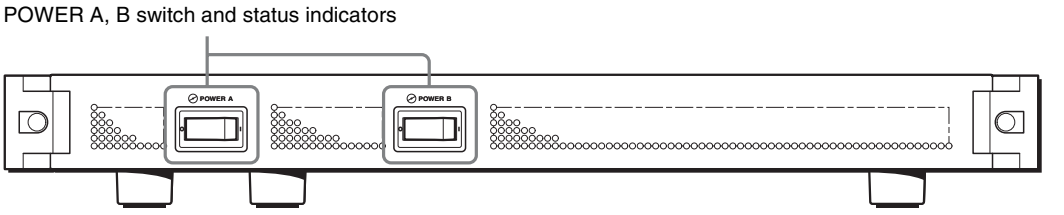
This manual describes the power supply and connectors of the control panel and system interface unit.

For details about the power supply and connectors of the MVS-8000X/7000X Multi Format Switcher Processor, refer to the operation manual of the MVS-8000X/7000X.

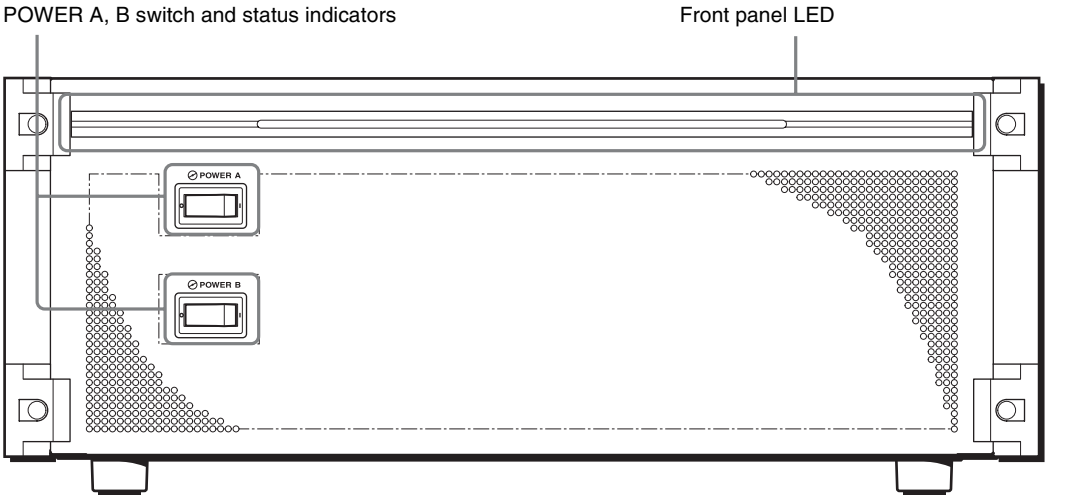
MKS-X2700/X7700 System Interface Unit

Front view

MKS-X2700



MKS-X7700



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 "**|**" 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 when only one power supply is operating normally.

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

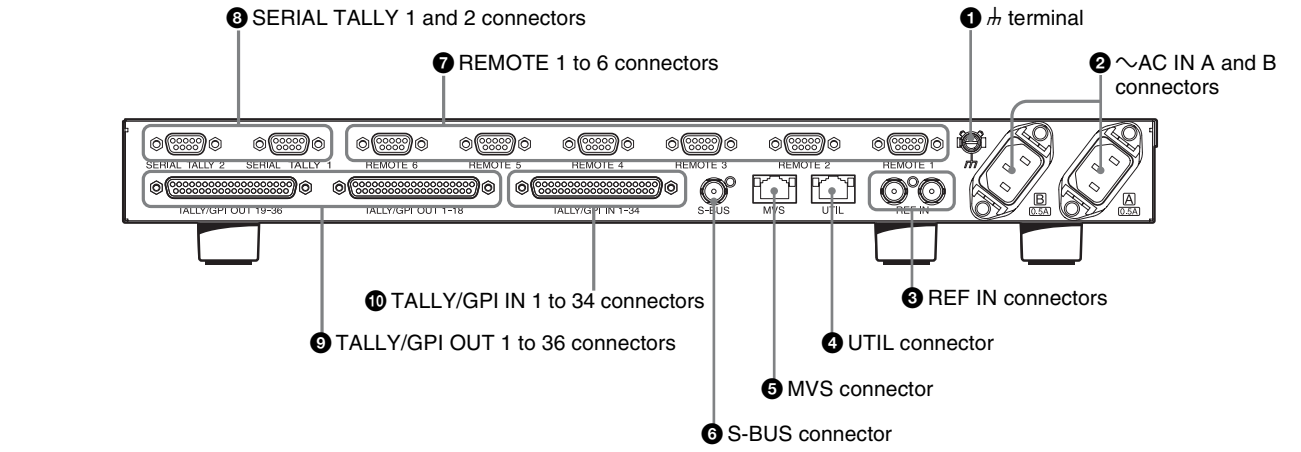
- If a status indicator is not lit when the POWER switch is turned on, there may be a problem with the power supply wiring. Turn the POWER switch off and contact your Sony service representative.
- If a status indicator momentarily is lit red when the power supply is turned on, a tone may be emitted,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

Front panel LED (MKS-X7700 only)

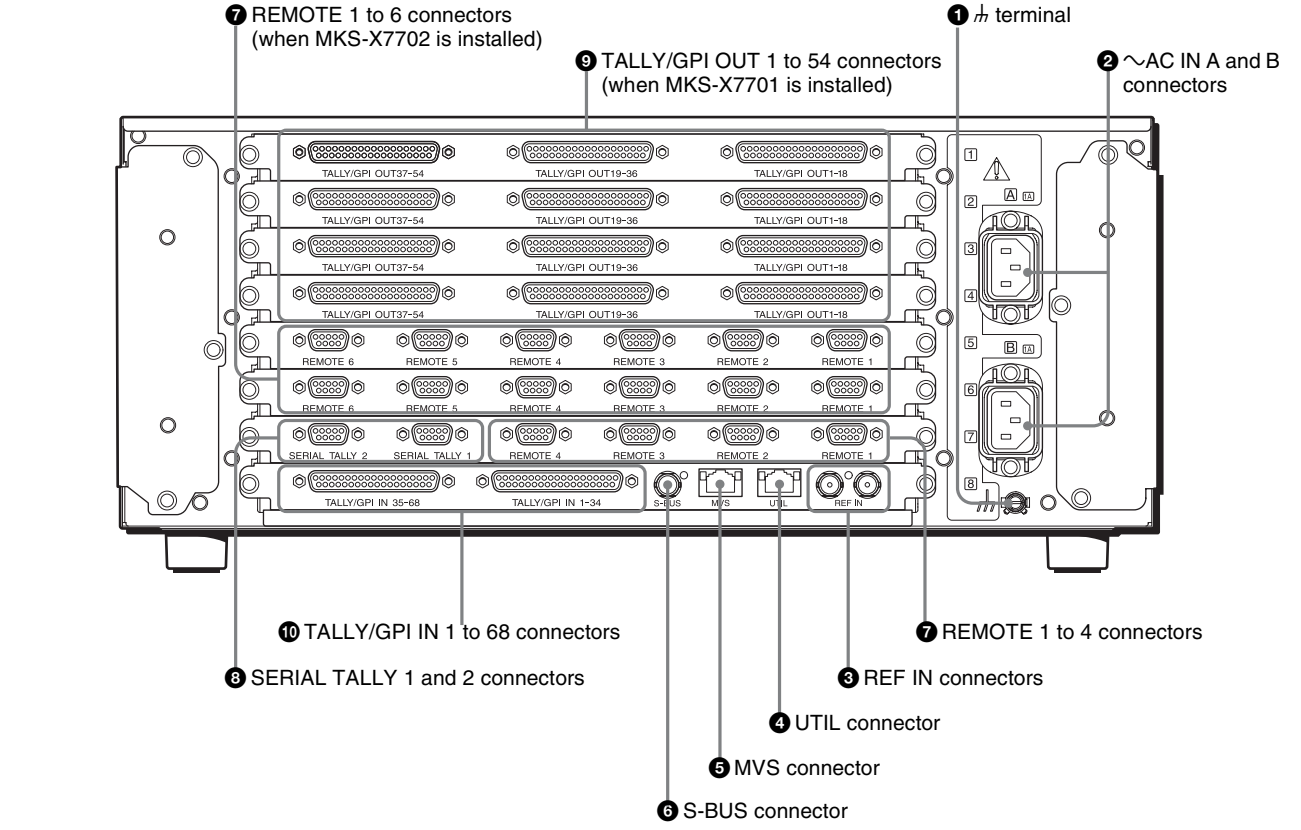
Lit blue when the POWER switch is turned on and the unit is booting.

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 external signal source when syncing the unit to an external sync signal. For HDTV, connect a HD tri-level sync signal, black burst signal, or analog sync signal.

For SDTV, connect a black burst signal or analog 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)

Reserved for future use.

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

Connect to a MVS-8000X/7000X multi format switcher processor and ICP-X7000 integrated control panel 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 1 to 6 connectors or 1 to 4 connectors (D-sub 9-pin, RS-422A)

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 control panel of the MVS system.

❾ TALLY/GPI OUT 1 to 54 connectors or 1 to 36 connectors (D-sub 25-pin)

Outputs tally information generated by the control panel of the MVS 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 MVS system.

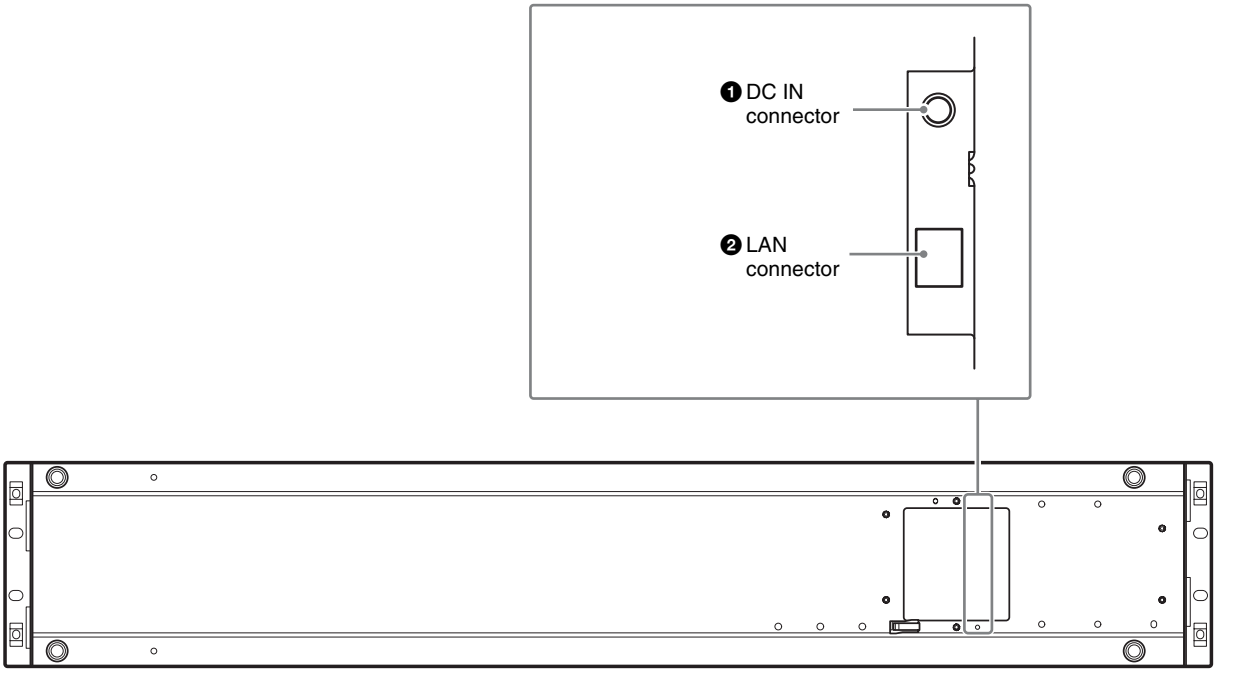
❿ TALLY/GPI IN 1 to 68 connectors or 1 to 34 connectors (D-sub 25-pin)

Input a trigger signal as a GPI input.
The input setting is controlled from the control panel of the MVS system.

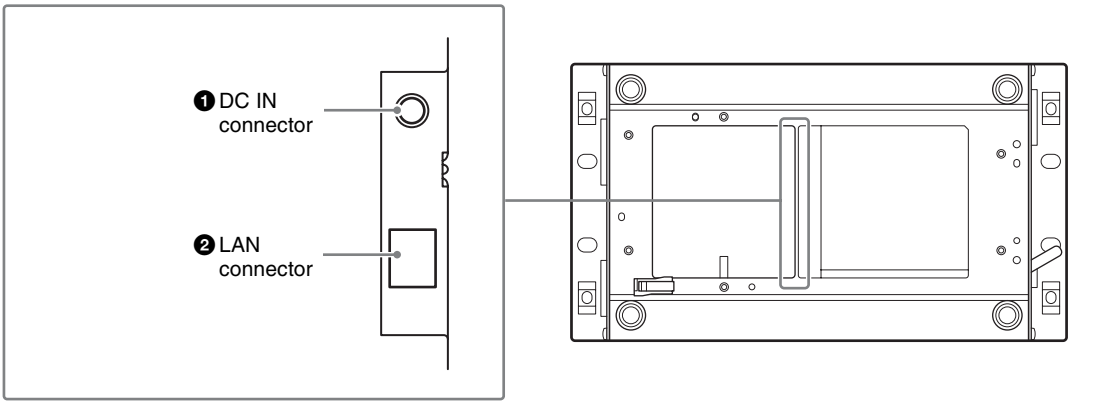
Control Panel

Bottom view

ICP-X7000 Integrated Control Panel



MKS-X7075 Extension Adaptor



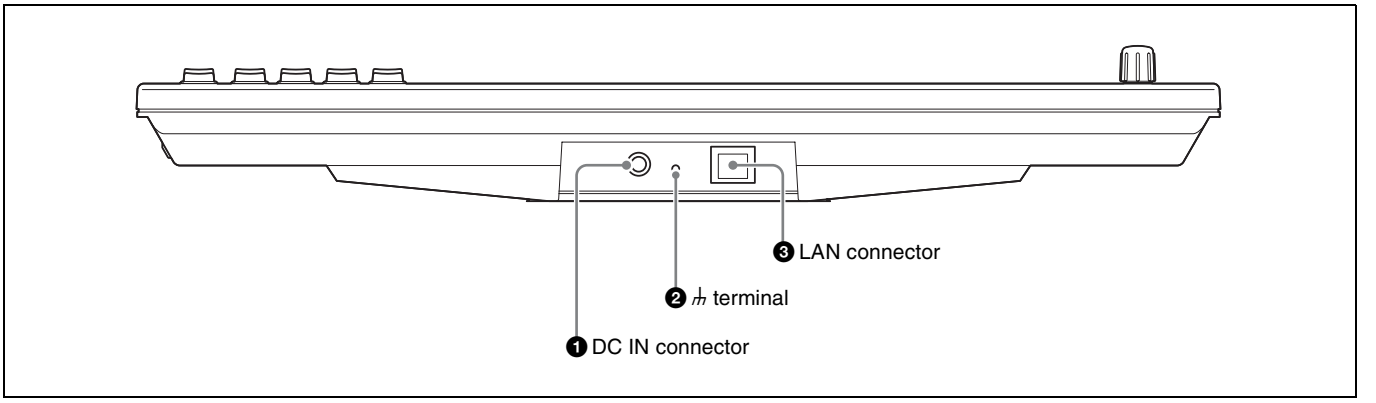
❶ DC IN connector
Connect to the 12 V DC output of the supplied AC adaptor.

❷ LAN connector (RJ-45, PoE+, 1000BASE-T compliant)
Connect to a MVS-8000X/7000X multi format switcher processor and ICP-X7000 integrated control panel via an Ethernet switch. The unit can operate without using an AC adapter if connected to a PoE+ (Power over Ethernet Plus) compatible Ethernet switch.[1)]

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

MKS-X7011 Menu Panel

Bottom view



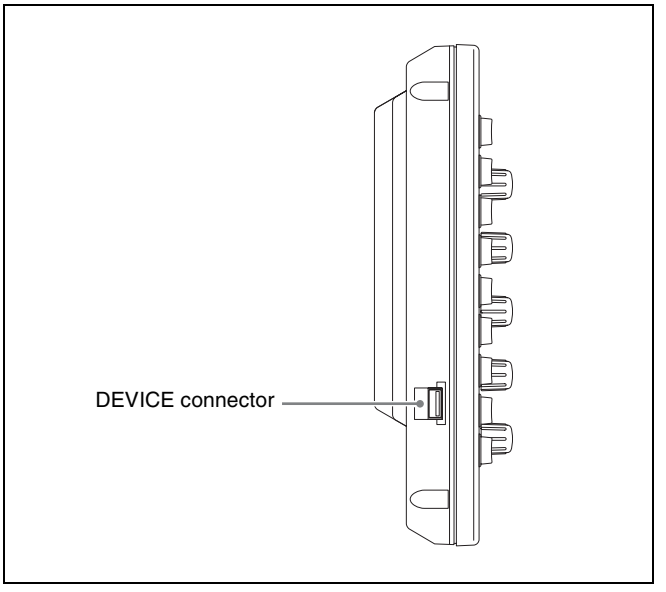
❶ DC IN connector
Connect to the 12 V DC output of the supplied AC adaptor.

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

❸ LAN connector (RJ-45, PoE+, 1000BASE-T compliant)
Connect to a MVS-8000X/7000X multi format switcher processor and ICP-X7000 integrated control panel via an Ethernet switch. The unit can operate without using an AC adapter if connected to a PoE+ (Power over Ethernet Plus) compatible Ethernet switch.[1)]

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

Side view



DEVICE connector (USB 2.0 compliant, USB Type A)
Connect to a USB flash drive for transferring files.

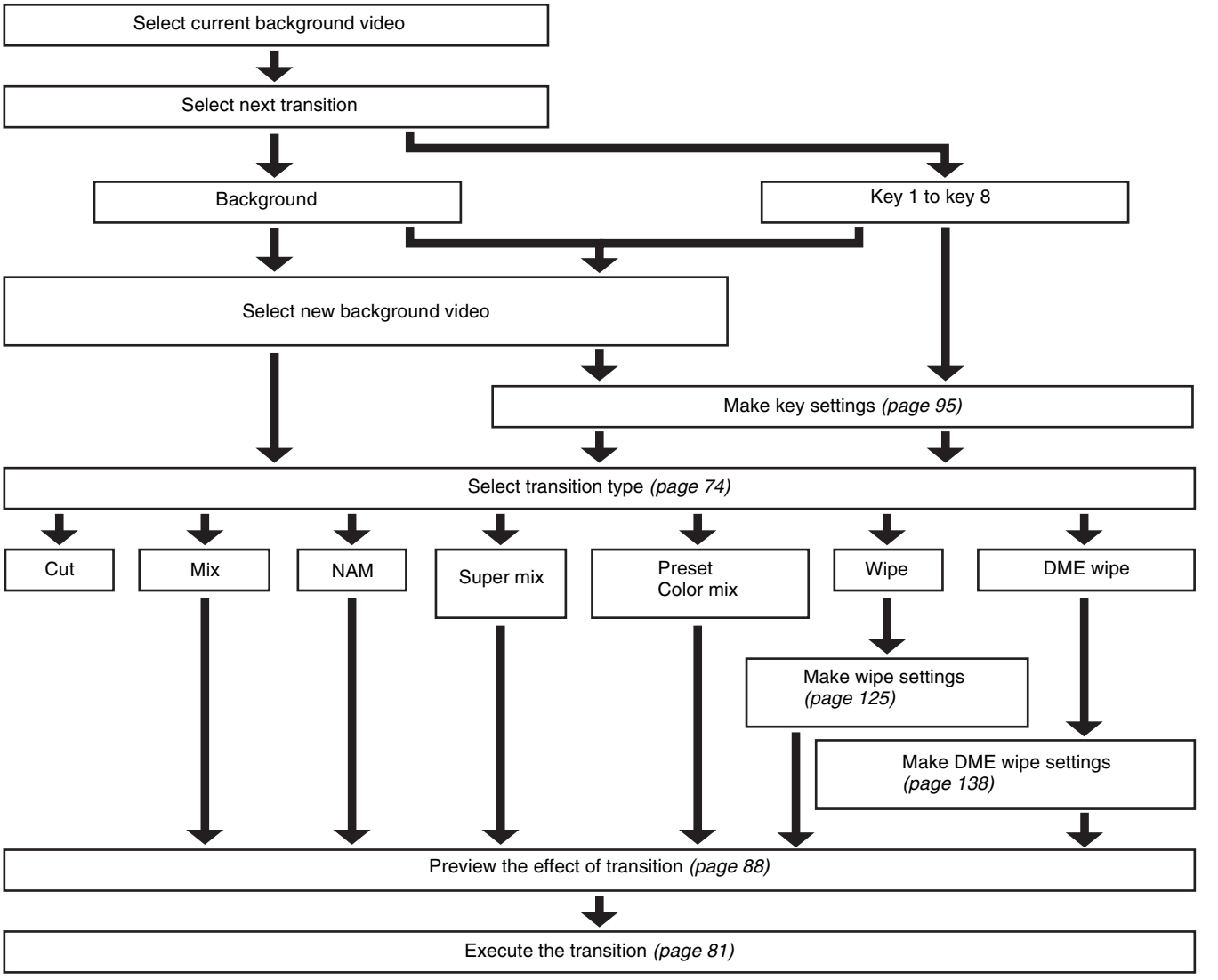
Signal Selection and Transitions

Chapter 3

Image Creation Operation Flow

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

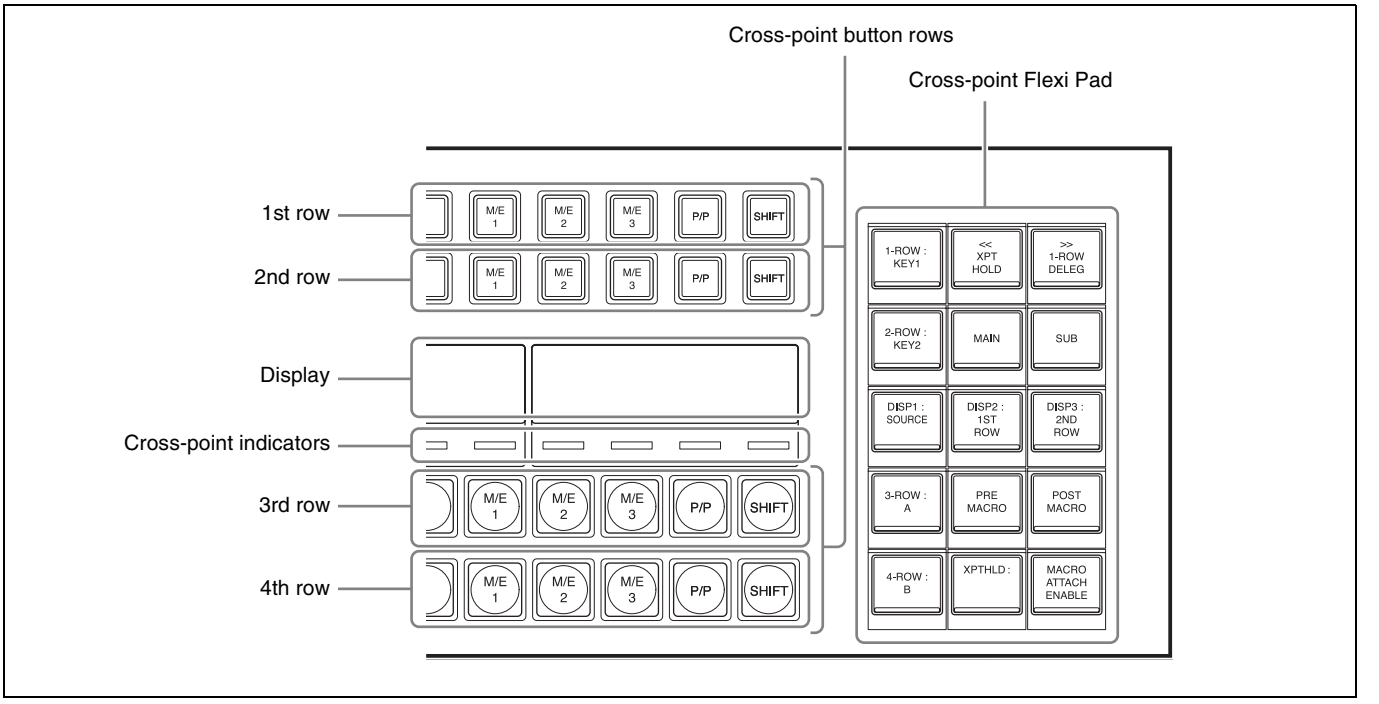
The following illustration shows the flow of operations for carrying out a transition on an M/E bank or the PGM/PST bank.



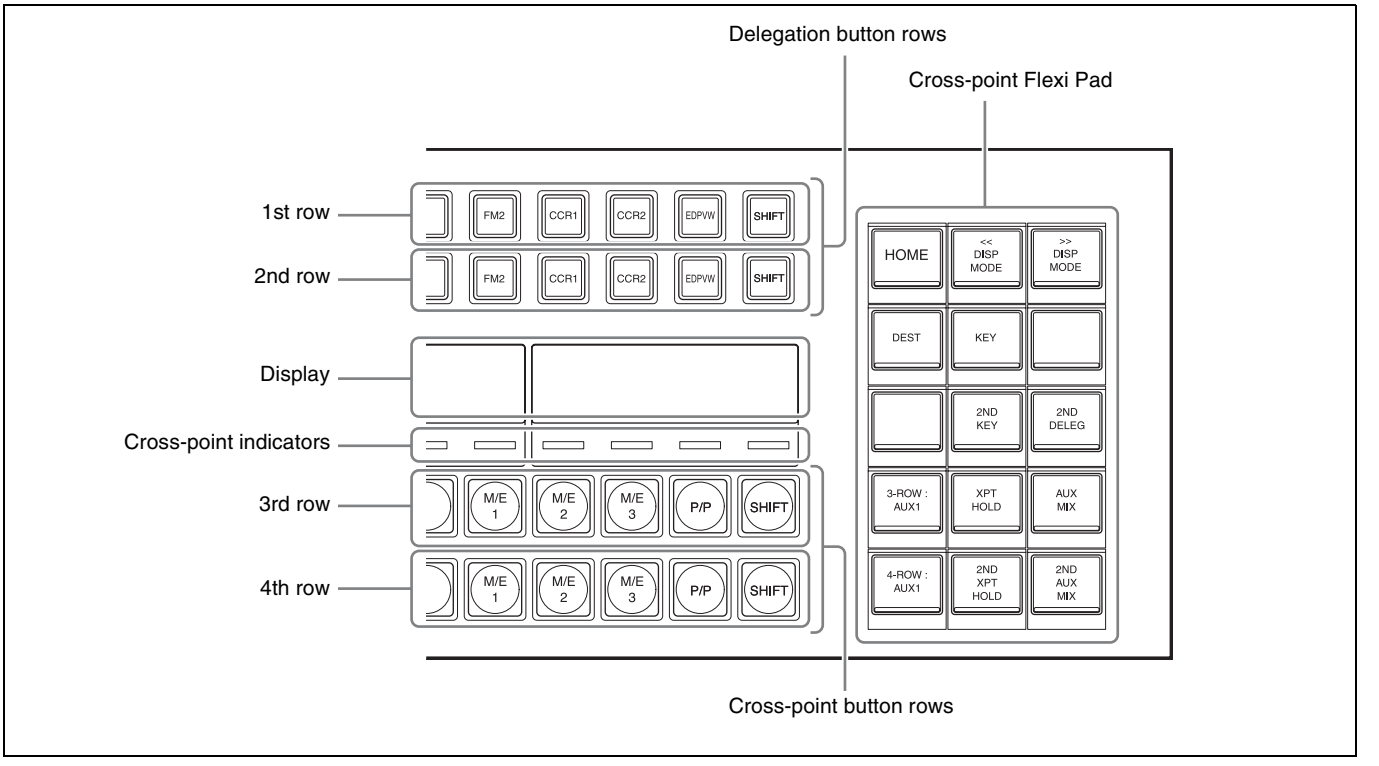
Signal Selection

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.

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

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

Reentry buttons are assigned to the cross-point button rows in the cross-point control block and AUX bus control block.
Reentry 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 reentry button in the 4th row 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 reentry buttons are assigned to buttons numbered 32 to 35.
  The M/E-4 and M/E-5 reentry buttons must be assigned in the Setup menu *(see page 413)*.
- Re-entry buttons can also be assigned to the cross-point Flexi Pad *(see page 430)*.
- For a 5M/E or 6M/E system, a maximum of four reentry stages are possible. For details about other restrictions, see *"Restrictions on color corrector and M/E combinations" (page 186)*.

Bus Selection

Each cross-point button row is shared by multiple buses.
To assign a bus to the 1st row/2nd row cross-point buttons in the cross-point control block, press one of the bus delegation buttons in the cross-point Flexi Pad, turning it on.

To assign a bus to the 3rd row/4th row cross-point buttons in the AUX bus control block, press one of the bus delegation buttons in the 1st row or 2nd row, turning it on.
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)]	3rd row	–
	Background B bus [b)]	4th row	–
	Key 1 bus to key 8 bus	1st row, 2nd row	• To assign to the 1st row, press the [1-ROW KEY1] to [1-ROW KEY8] buttons on the cross-point Flexi Pad, turning them on. • To assign to the 2nd row, press the [2-ROW KEY1] to [2-ROW KEY8] buttons on the cross-point Flexi Pad, turning them on.
	Utility 1 bus Utility 2 bus	1st row, 2nd row	• To assign to the 1st row, press the [1-ROW UTIL1] and [1-ROW UTIL2] buttons on the cross-point Flexi Pad, turning them on. • To assign to the 2nd row, press the [2-ROW UTIL1] and [2-ROW UTIL2] buttons on the cross-point Flexi Pad, turning them on.
	DME external video bus	1st row, 2nd row	• To assign to the 1st row, press the [1-ROW DME EXT] button on the cross-point Flexi Pad, turning it on. • To assign to the 2nd row, press the [2-ROW DME EXT] button on the cross-point Flexi Pad, turning it on.
	DME utility 1 bus DME utility 2 bus	1st row, 2nd row	• To assign to the 1st row, press the [1-ROW DME UTIL1] and [1-ROW DME UTIL2] buttons on the cross-point Flexi Pad, turning them on. • To assign to the 2nd row, press the [2-ROW DME UTIL1] and [2-ROW DME UTIL2] buttons on the cross-point Flexi Pad, turning them on.

Control block	Bus name	Cross-point button rows	Delegation operation [a)]
AUX bus control block	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.
	Color corrector 1 path Color corrector 2 path	3rd row, 4th row	Press the [CCR 1] button and [CCR 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 DME8 video bus	3rd row, 4th row	Press the [DME1 V] and [DME8 V] buttons in the 1st row/2nd row, turning them on.
	DME1 key bus to DME8 key bus	3rd row, 4th row	Press the [DME1 K] and [DME8 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 fill to key 8 fill buses M/E-2 key 1 fill to key 8 fill buses M/E-3 key 1 fill to key 8 fill buses M/E-4 key 1 fill to key 8 fill buses M/E-5 key 1 fill to key 8 fill buses DSK1 to DSK8 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 [DSK1 V] to [DSK8 V] buttons
	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 DSK1 to DSK8 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 [DSK1 K] to [DSK8 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.

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 Flexi Pad, turning it on.

Notes

- The [DUAL BKGD BUS] button requires an assignment to have been made in the Setup menu *(see page 430)*.
- 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

Signal Assignment and Selection

Assigning signals to buttons

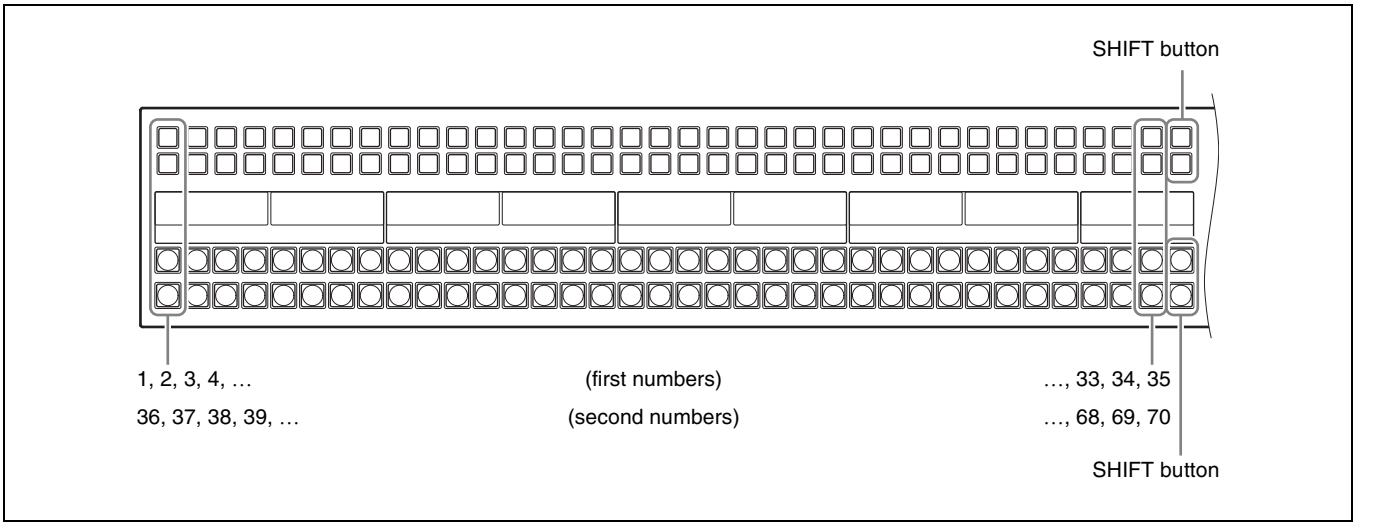
Each cross-point button has a button number, which you use to assign a signal.
In addition to the signals input to the following connectors, you can also select signals generated within the switcher.

- The input connectors on the rear panel of the switcher (1 to 144 on the MVS-8000X, 1 to 80 on the MVS-7000X)
- The premium input 1 to 20 connectors (MVS-8000X only)
- The FC input 1 to 16 connectors (MVS-8000X only)

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 415).
- 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

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 DELEG] button (lit/unlit) in the cross-point Flexi Pad.

When the [2ND DELEG] 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.

For details, see "Setting the AUX Bus Block" (page 417).

When the [2ND DELEG] 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 Flexi Pad is required in the Setup menu.

For details, see "Assigning a function to a cross-point Flexi Pad button" (page 430).

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.

Protecting 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 [1-ROW PROT] to [4-ROW PROT] buttons used for protecting rows are assigned to the cross-point Flexi Pad in the Setup menu *(see page 430)*.
Press the [1-ROW PROT] to [4-ROW PROT] buttons, turning them on, to inhibit button operation in the target 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.
There are six display modes, depending on the information to display and format, switched using the display mode buttons on the cross-point Flexi Pad.

For details about the display, see "Cross-Point Control Block" (page 29) and "AUX Bus Control Block" (page 46).

Note

When the [SHIFT] button is pressed to select the signal on the shifted state of a button, 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, the 4th row buttons are lit green.

Cross-point indicators

This indicator is lit the same color (video signal source color) as the buttons in the 3rd row of the cross-point control block/AUX bus control block.
However, the color of the cross-point indicator does not change even if a 3rd row button is lit red or amber.

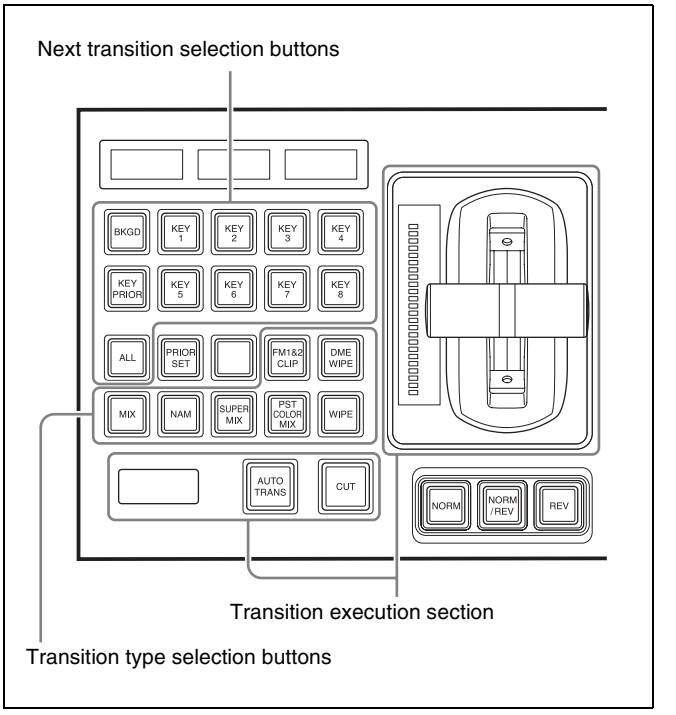
Transitions

Transition Type

Type	Description	Independent key transitions	See page
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	*page 79*
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	*page 79*
Wipes	A wipe switches from the current video to the new video using a predetermined pattern.	Selectable	*page 125*
DME wipe	The current video switches to the new video, similar to a wipe, using a DME effect.	Selectable	*page 138*

Type	Description	Independent key transitions	See page
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 control block

1 In the 3rd row (background A bus) of the cross-point control block, select the background video.

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 double-press settings of the [BKGD] button, see "Setting the Button Operation Mode" (page 428).

For details about settings of the [ALL] button, see "Setting the Operation Mode of the [ALL] Button in the Transition Control Block" (page 429).

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 77).

4 Select the video for after the transition executes.

Select the background video using the 4th row (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 95).

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], [FM1&2 CLIP], or [FM3&4 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 79)*.

Note

You can change the assignment of the transition selection buttons in the transition control block in the Setup menu *(see page 411)*.

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

- Super mix settings *(see page 79)*
- Preset color mix settings *(see page 79)*
- Wipe settings *(see page 125)*
- DME wipe settings *(see page 143)*
- Clip transition settings *(see page 168)*
- Transition rate (the time from the beginning of a transition to its completion) settings *(see page 81)*

Using transition preview mode *(see page 88)*, 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 83)*.

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.

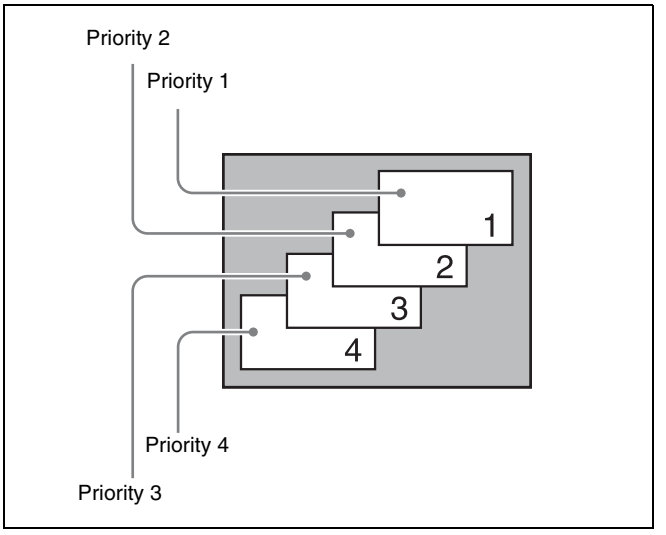
To switch video instantaneously: Press the [CUT] button.

For details, see "Executing a Transition" (page 81).

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.

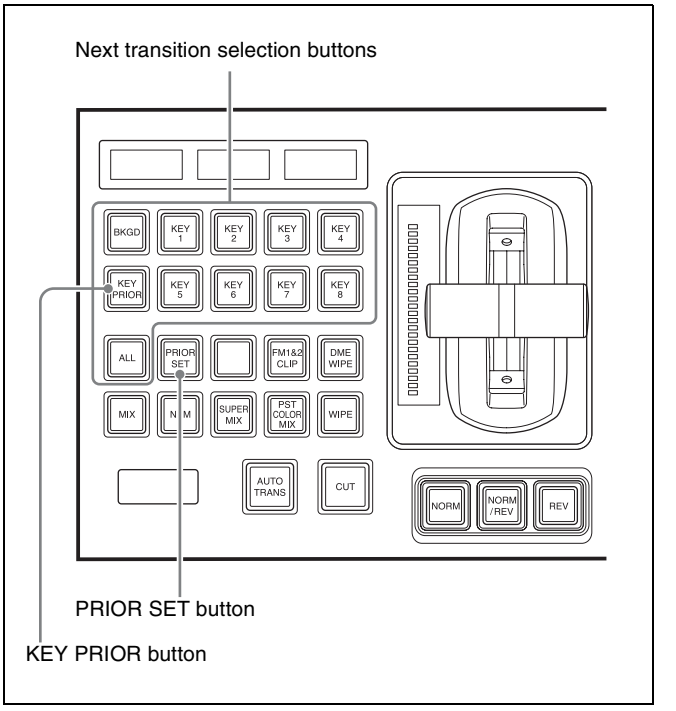


You can set the key priority for keys inserted in the current video and for keys after the transition.
The key priority setting can be set using either the [PRIOR SET] button in the transition control block, or using the Misc >Key Priority menu for the M/E or PGM/PST bank.

Notes

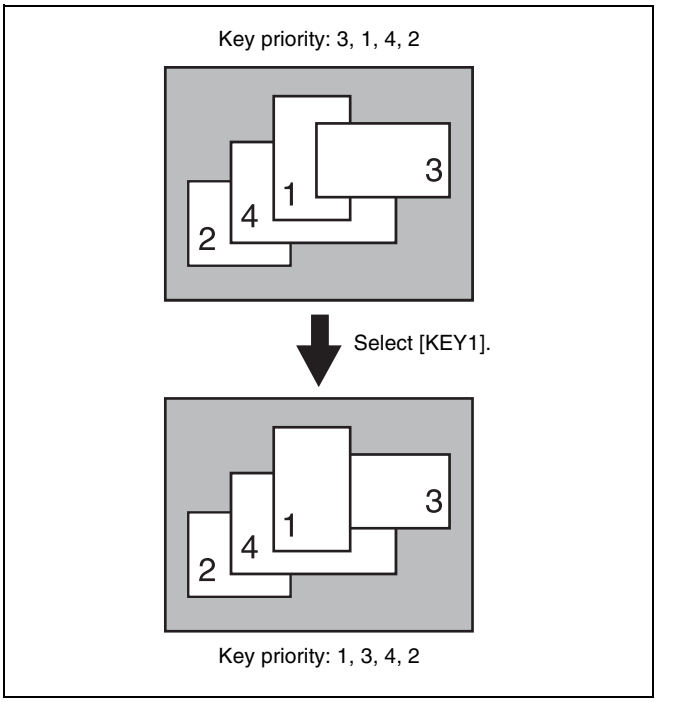
- When the operating mode is set to multi program, the key priority setting cannot be made.
- When the signal format is set to 1080P, key 5 to key 8 cannot be used.

Setting the Key Priority (Transition Control Block)



Transition control block

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.

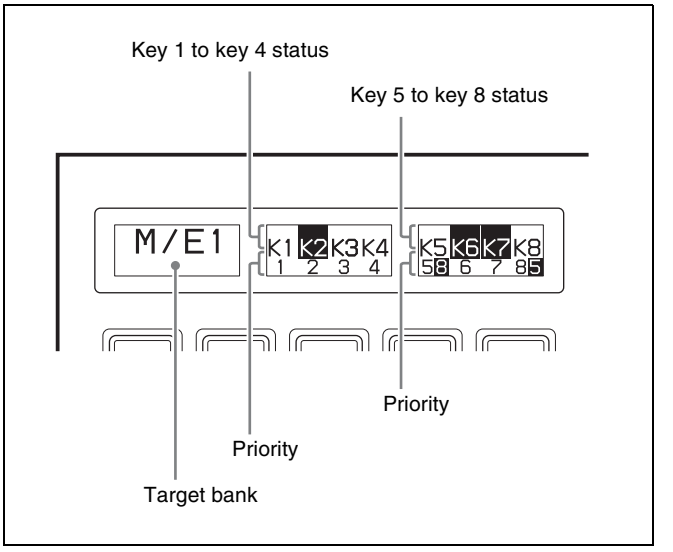
4 In the <Lower Group> group, select the other group, then select the key for each priority level in the <Priority5>, <Priority6>, <Priority7>, and <Priority8> groups.

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.

Selecting 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 79)*
- Preset color mix settings *(see page 79)*

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.

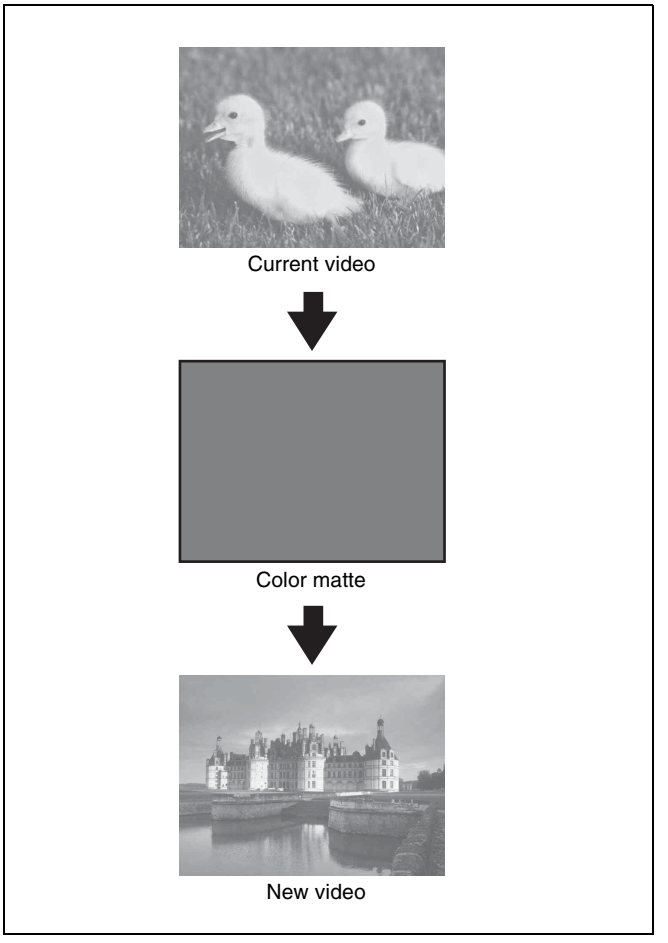
One-stroke mode

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.

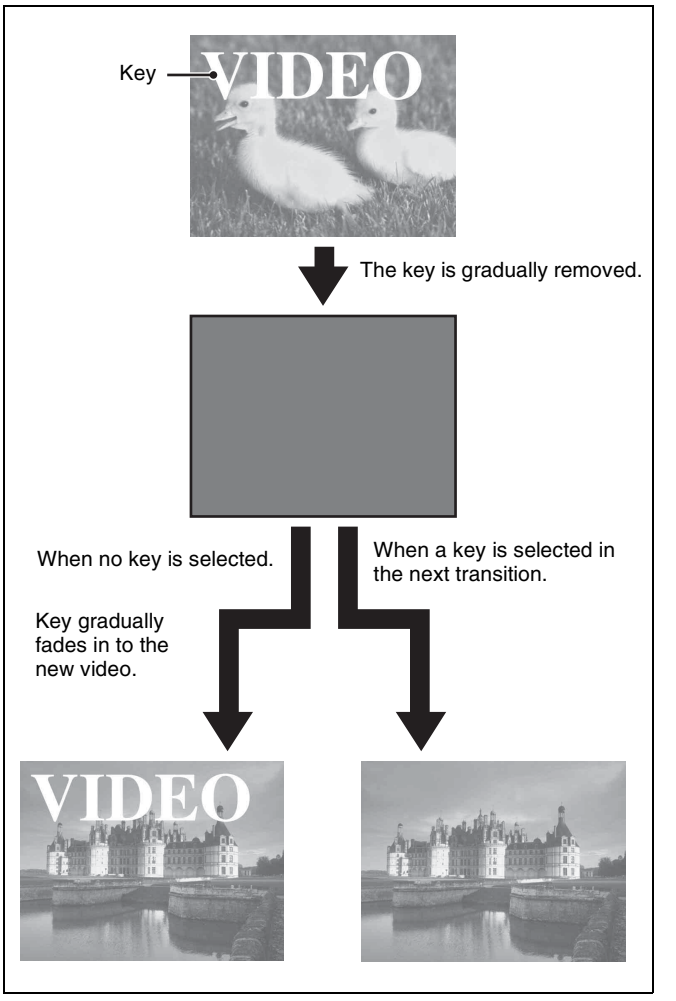
One-time mode

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

When only the background is changed

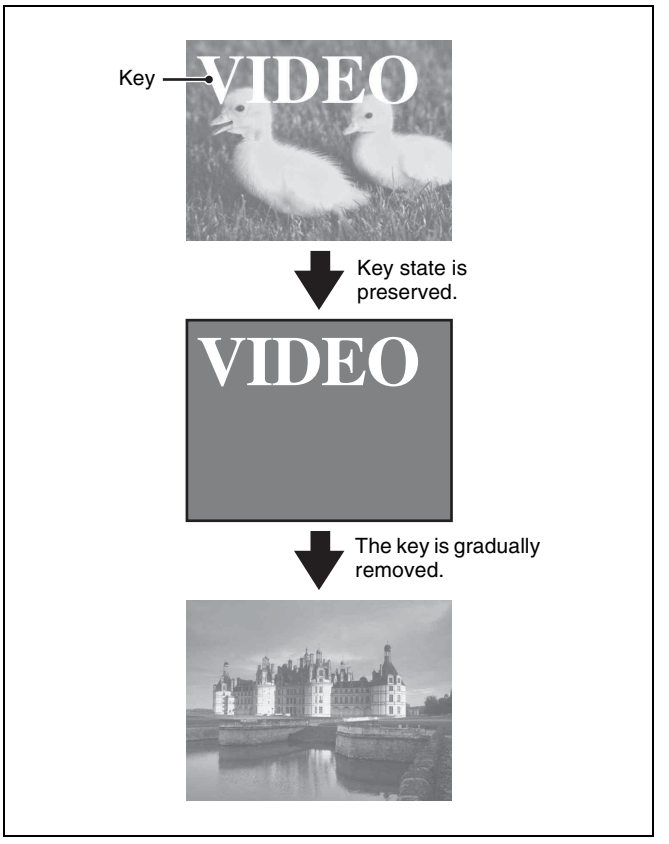


When a key is inserted



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.

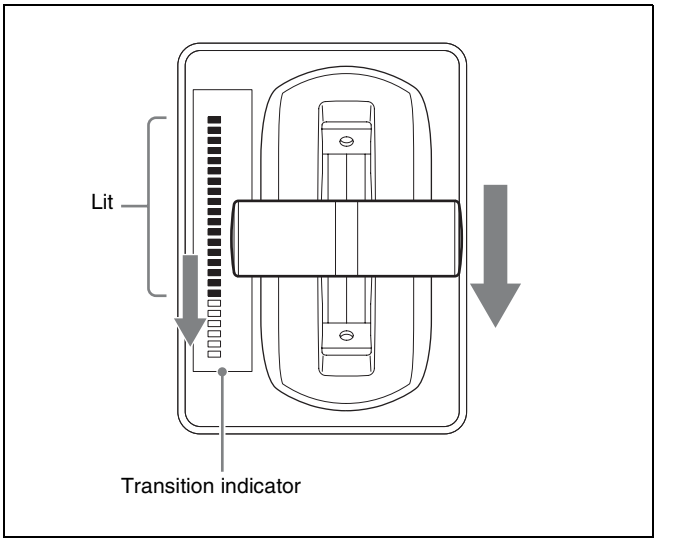
No.	Parameter	Adjustment
2	Luminance	Luminance
3	Saturation	Saturation
4	Hue	Hue

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 180)*.

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 the transition rate display in the transition control block, 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 427).

Note

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

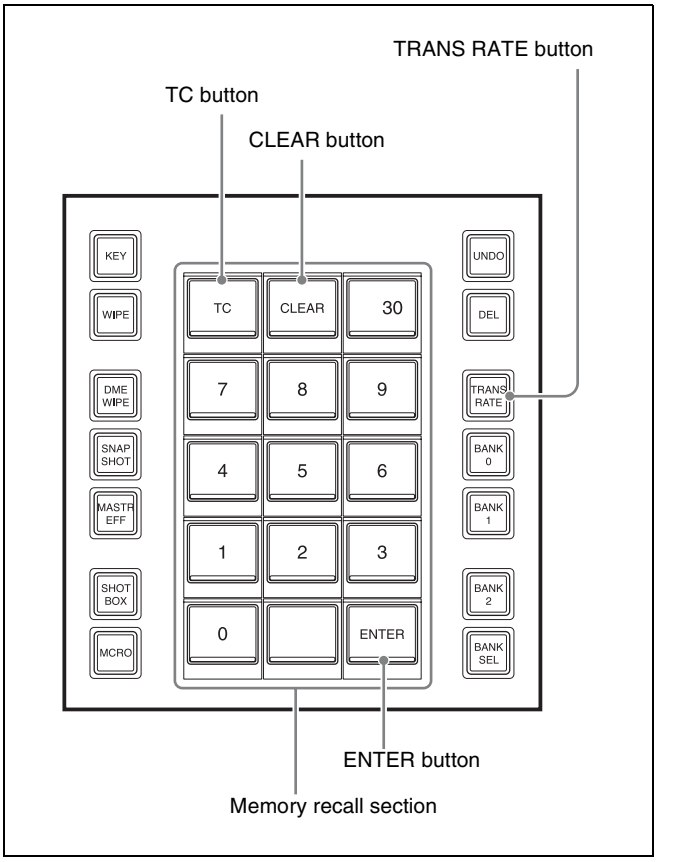
Frame display mode

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.

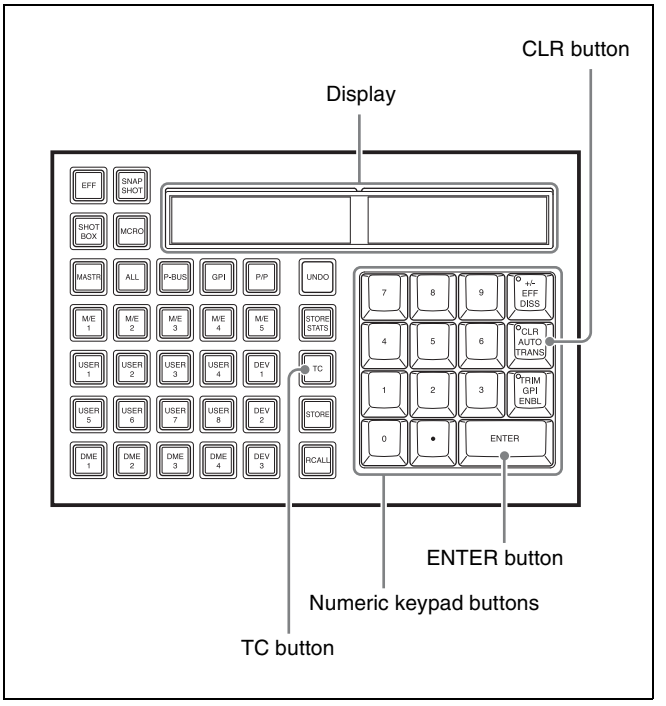
You can switch the input mode using the [TC] button. In frame input mode, enter three digits. In timecode input mode, enter four digits.
The entered value appears in the top right of the memory recall section.
To clear the entered value, press the [CLEAR] button.

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 424)*.



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 180)*.

Pattern Limit

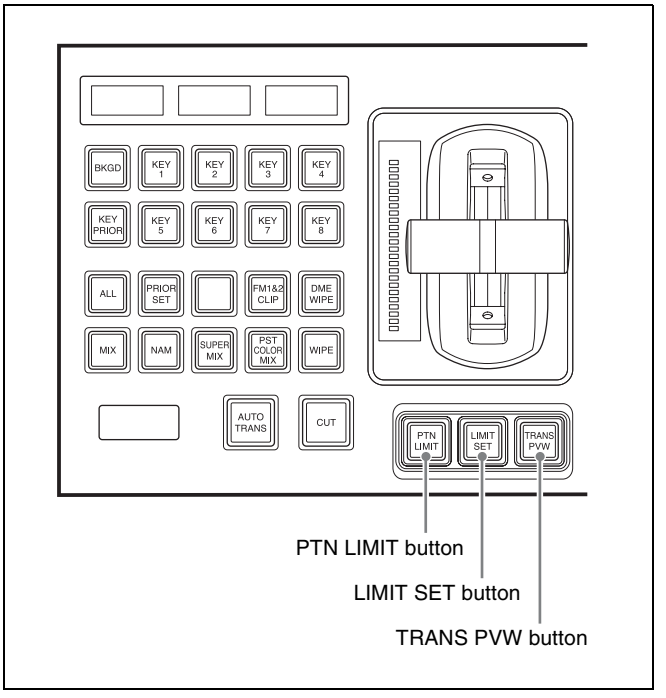
When a wipe or DME wipe is selected as the transition pattern, you can specify the transition execution limits for each bank independently.
When the pattern limit function is enabled, the following effects occur, depending on the execution limit settings.

- 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 411)*.

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 88)*.

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, 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

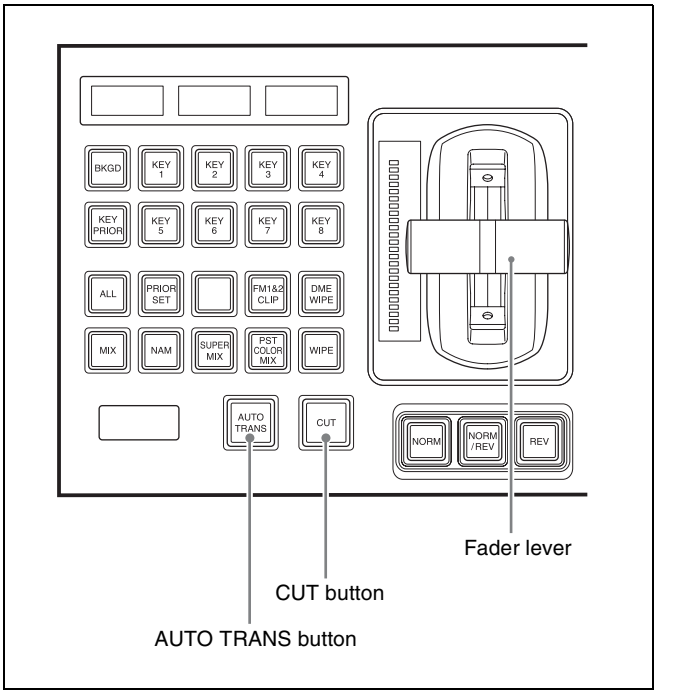
The following two modes can be used for auto transition.

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 81)*.



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.

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.

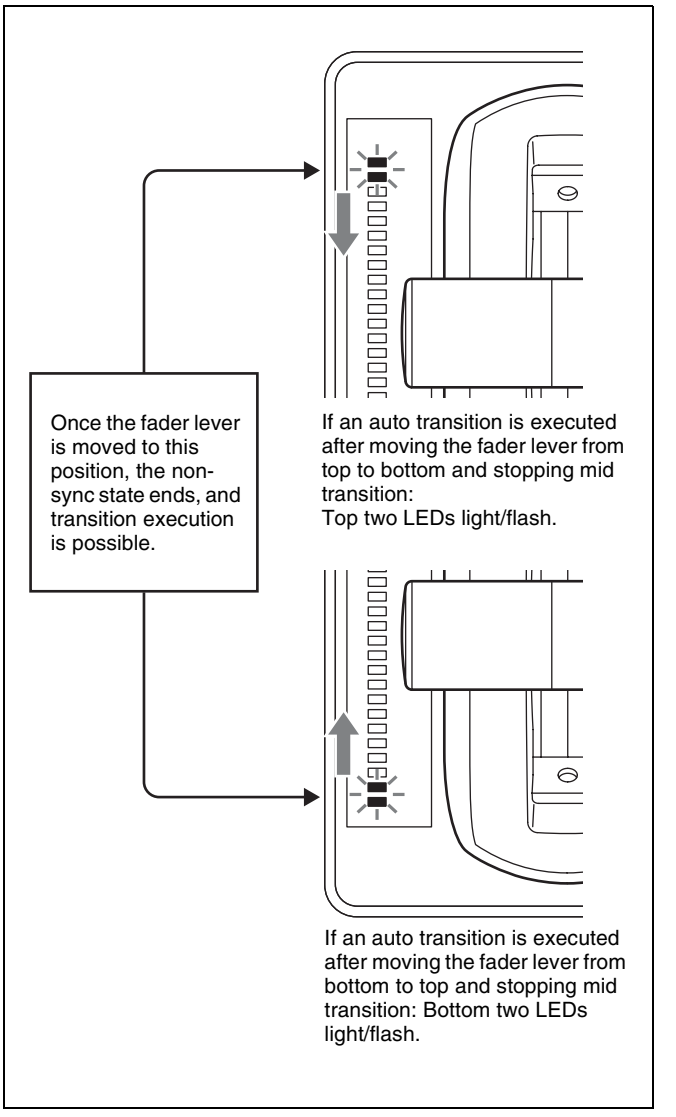
Executing an auto transition after stopping the fader lever mid execution

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, the transition indicator shows the transition progress in the usual way, but when the transition completes, they once again indicate the non-sync state.

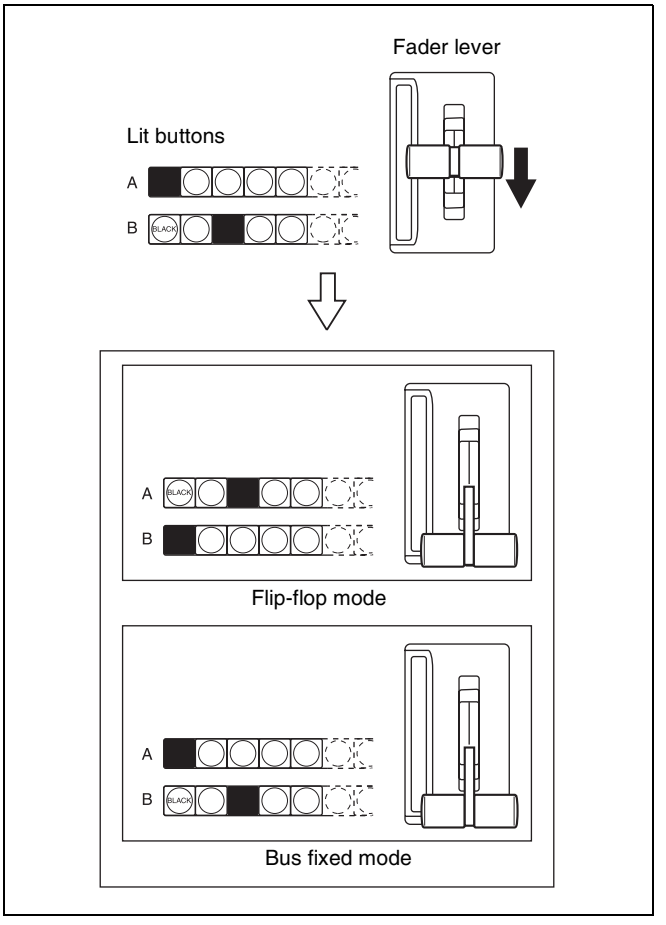
Note

The transition indicator display state (lit or flashing) is set in the Setup menu *(see page 427)*.

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 3rd row (background A bus) and 4th row (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 86)* results and LEDs light/flash at both end positions of the fader lever travel.

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 411)*.

Note

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

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 menu (7326.4)
Lock	Normal	Lock
Hold	Normal	Hold
One-time	One Time	–

For details, see "Setting the Button Operation Mode" (page 428) and "Setting the transition preview mode" (page 446).

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.
If key insertion/removal is set to another mode in the Setup menu, it is possible to use a different transition type and transition rate when the key is inserted or removed.

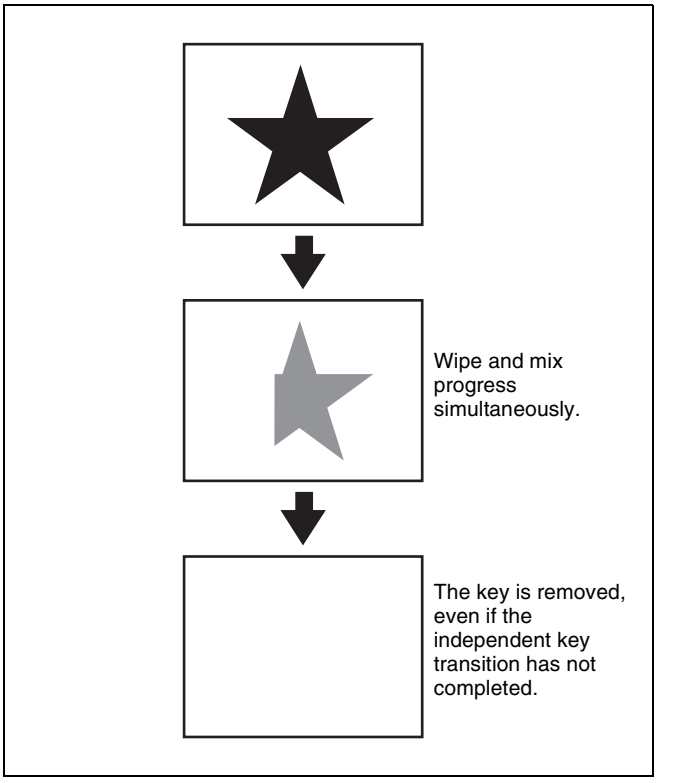
Combining transitions with independent key transitions

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.

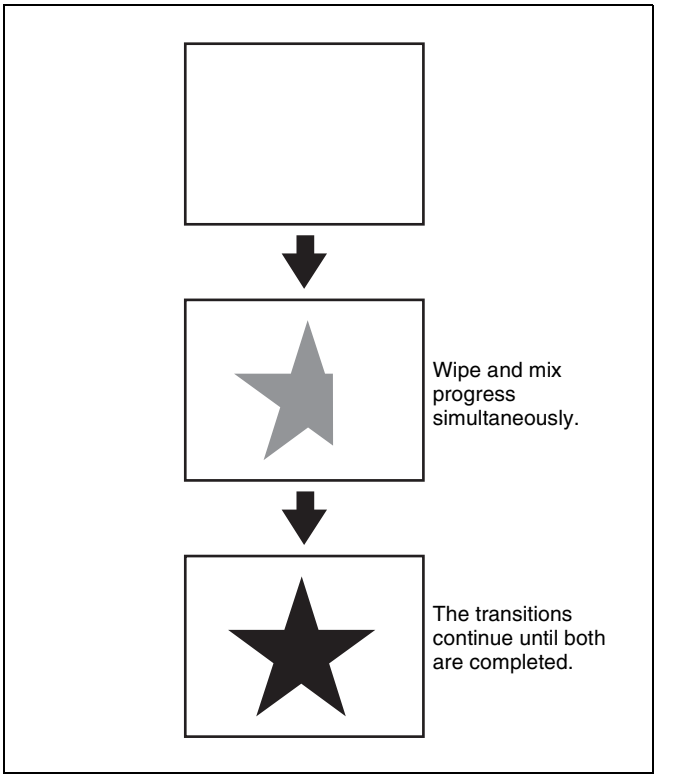
Simultaneous execution

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

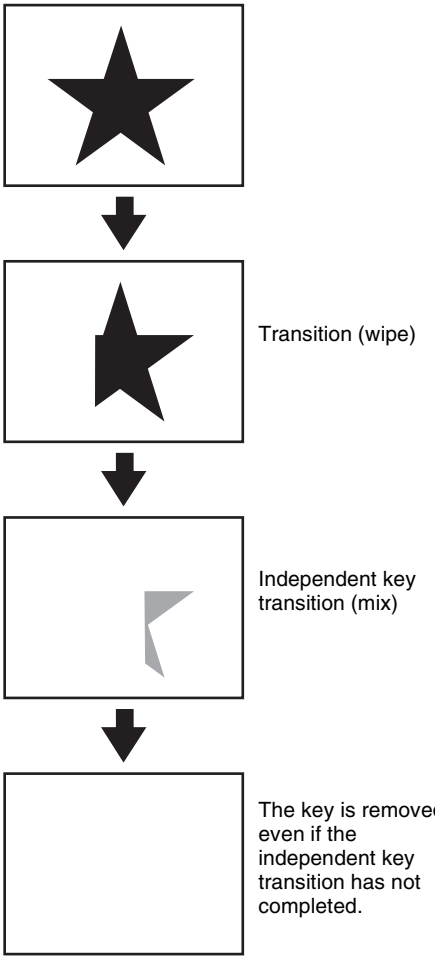
If the [AUTO TRANS] buttons for the transition and independent key transition are pressed with a time offset, the following result occurs.

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.

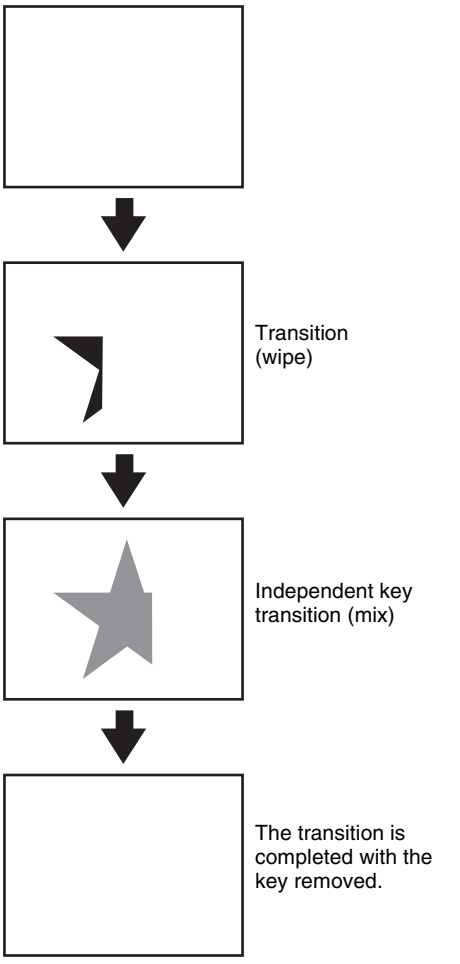
Example: When the independent key transition [AUTO TRANS] button is pressed later



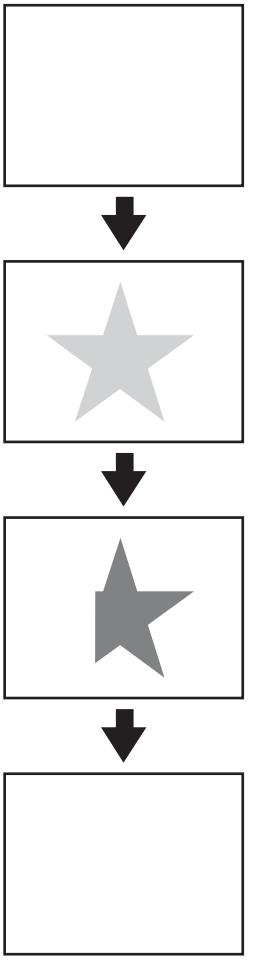
Time offset execution with the key not inserted: With the key not inserted (off), the key is inserted (on) using the transition type whose [AUTO TRANS] button is pressed first.

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.

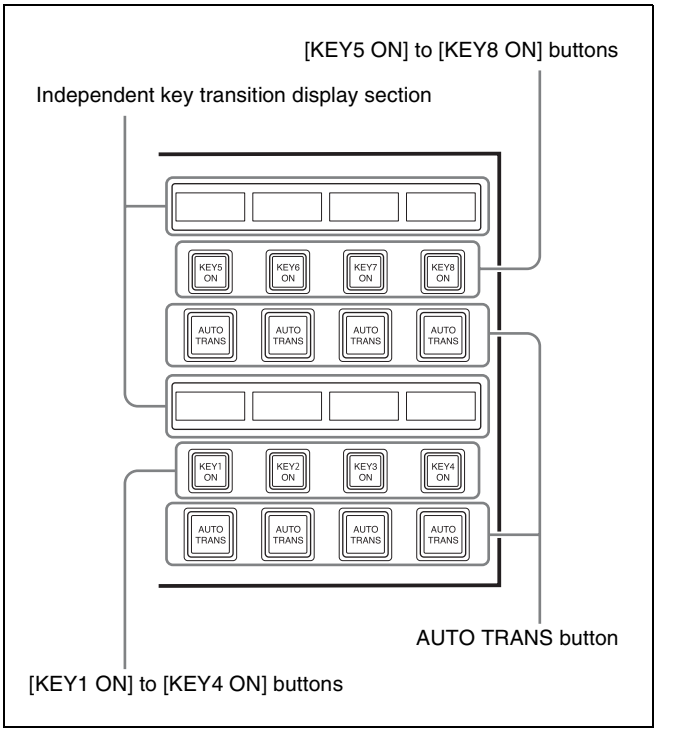
Example 1: When the independent key transition [AUTO TRANS] button is pressed later



Example 2: When the common transition [AUTO TRANS] button is pressed later



Basic Independent Key Transition Operations



Transition control block

1 Set the independent key transition type.

The independent key transition type is set using the menu *(see page 92)* or Flexi Pad control block *(see page 92)*.

2 Set the independent key transition rate.

The independent key transition rate is set using the menu *(see page 93)*, or utility/shotbox control block and numeric keypad control block *(see page 92)*.

3 Execute the independent key transition.

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 cut the key in or out instantaneously, press the [KEY1 ON] to [KEY8 ON] buttons.

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.

Selecting Independent Key Transition Type

There are two ways of setting the transition rate: using the Flexi Pad control block or using the Transition menu for the target key on the M/E or PGM/PST bank.

If key insertion/removal is set to another mode in the Setup menu, it is possible to set a different transition type when the key is inserted or removed.

Setting the independent key transition type (Flexi Pad control block)

If key insertion/removal is set to another mode in the Setup menu, make a setting while a key is not inserted to set the transition type for insertion, and make a setting while a key is inserted to set the transition type for 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.

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 menu (1116).

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

If key insertion/removal is set to another mode in the Setup menu, select the transition type for insertion in the <On Transition Type> group and the transition type for 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 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 180)*.

If key insertion/removal is set to another mode in the Setup menu, it is possible to set a different transition rate when the key is inserted or removed.

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

If key insertion/removal is set to another mode in the Setup menu, make a setting while a key is not inserted to set the transition rate for insertion, and make a setting while a key is inserted to set the transition rate for 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 82).

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.
The specified value is also displayed in the independent key transition 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 (–).

To display the independent key transition rate

The specified independent key transition rate is displayed in the independent key transition display section for each key in the transition control block.
You can also switch the utility/shotbox control block to transition display mode to check the transition rate set for each key.

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 menu (1116).

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

If key insertion/removal is set to another mode in the Setup menu, select the transition type for insertion in the <On Transition Type> group and the transition type for 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 180)*.

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 446).

To execute fade-to-black, the "Fade To Black" utility command must be assigned to the following buttons beforehand in the Setup menu.

- 1st row and 2nd row 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 180)*.

AUX Mix Transitions

In addition to M/E and PGM/PST, you can make transitions between two AUX buses.

Preparing an AUX mix transition

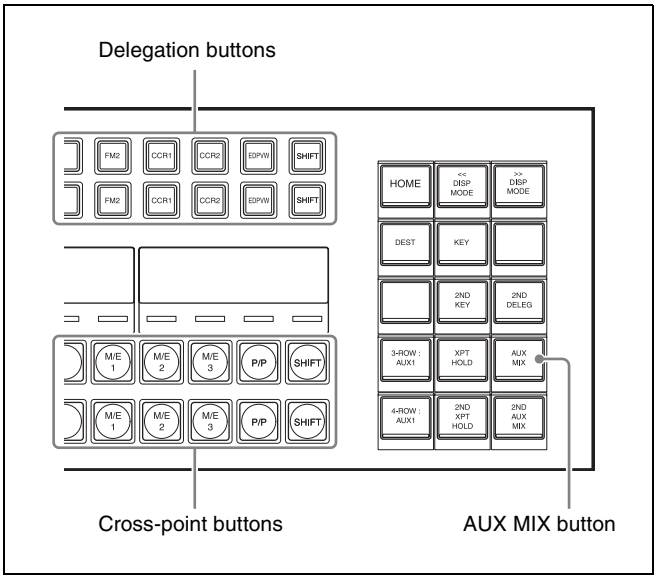
The following preparations are required.

Preparations	See page
Assign the two AUX buses used for the AUX mix to consecutive odd-numbered and even-numbered output connectors (for example, Output 1 and Output 2).	*page 446*
Set the AUX mix transition rate.	*page 181*

Executing an AUX mix transition

Use the [AUX MIX] button on the cross-point Flexi Pad of the AUX bus control block to execute the transition.

This section describes the use of the AUX1 and AUX2 buses as an example.



AUX bus control block

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 secondary delegation mode is set, use the [2ND AUX MIX] button, not the [AUX MIX] button.

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.

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, and all of these keyers provide the same functions.

Notes

- When the signal format is 1080P, four keyers can be used (keys 1 to 4).
- On the MVS-7000X, the number of available keys depends on the M/E bank.
  For details, see "M/E Configuration Switching (M/E Split)" (page 207).

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 98).

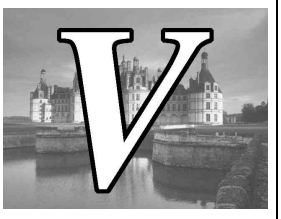
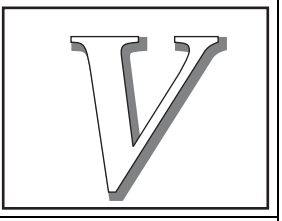
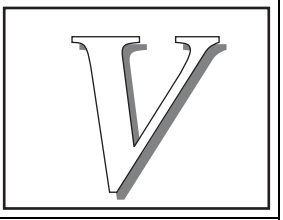
In the following situations, clean mode cannot be enabled.

- When the key type is a pattern key
- 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. In this mode, the key video has a one-frame delay.

Note

This function uses the resizer, and therefore the normal effect of the setting is not obtained while using DME wipe or other effect that uses the resizer.

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

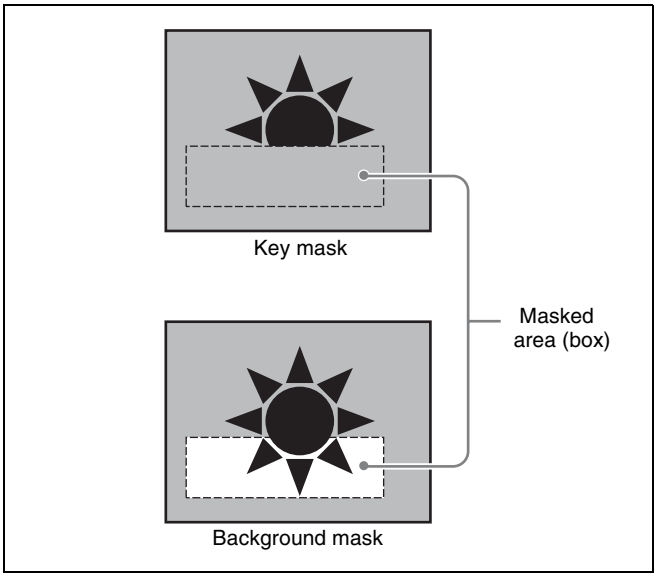
A mask uses the background or a key to hide a part of the image. You can correct the image, such as unwanted holes that appear in the background or when a key is not the desired shape, using masks.

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 448).

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 116).

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	Downstream keys 1 to 8	PGM/PST >DSK1 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 102)*.

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 125)*.

When a key wipe pattern key is selected: Press [Pattern Select] to open the M/E-1 >Key1 >Transition >Wipe Adjust >Pattern Select menu (1116.2), and select a pattern and set modifiers *(see page 134)*.

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, 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 78)*.

Selecting Key Fill and Key Source

Note

On the MVS-8000X, only the premium inputs (inputs to the switcher premium input connectors 1 to 20) can be selected as key signals on the M/E-4 bank.

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.

On the cross-point control block, press the [1-ROW KEY1] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

Note

You can assign a key fill bus delegation button to the 1st row or 2nd row of the AUX bus control block 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 100)*.
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 the [1-ROW KEY1] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.
- Press and hold the [SPLT] button in the key control block, then select a signal using the cross-point buttons in the cross-point control block.

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 99)*.

Note

You can assign a key source bus delegation button to the 1st row or 2nd row of the AUX bus control block 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 428)*.
This allows you to select a video signal and key signal using the following methods.

- To select a video signal, press the key source delegation button on the 1st row/2nd row of the AUX bus control block, then select a signal using the cross-point buttons in the 3rd row/4th row ([KEY] button on the cross-point Flexi Pad is not lit).
- To select a key signal, press the key source delegation button in the 1st row/2nd row of the AUX bus control

block, press and hold the [KEY] button on the cross-point Flexi Pad, and select a signal using the cross-point buttons in the 3rd row/4th row.

Notes

- A key source bus delegation button must be assigned to the 1st row or 2nd row of the AUX bus control block beforehand in the Setup menu *(see page 417)*.
- When second delegation mode is set, use the [2ND KEY] button when selecting the key signal using the cross-point buttons in the 4th row.

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 99).*

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) status area, press [Fill].

The Signal Select menu (1111.3) appears.

2 In the <Target> group, press [Fill].

3 Select the fill signal from the list on the right.

4 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 >Wipe Adjust >Pattern Select menu (1116.2), allowing you select a pattern. Pressing [Pattern Adjust] opens the M/E-1 >Key1 >Transition >Wipe Adjust menu (1116.1), 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 106).

6 When adjusting color 1 and 2, select [Color 1] and [Color 2], respectively, then adjust the following parameters.

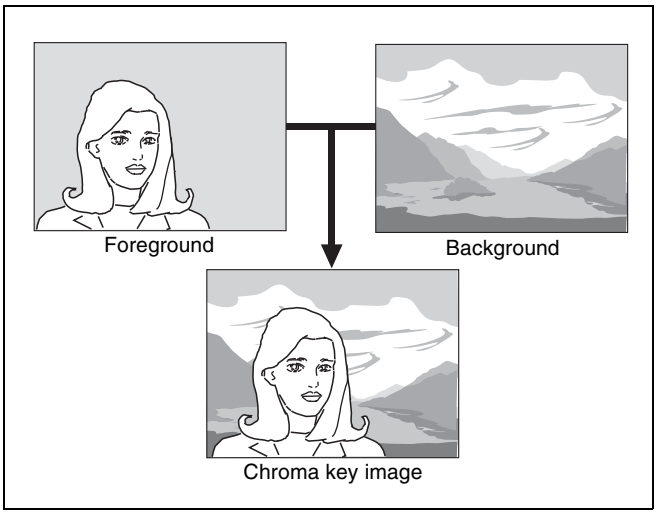
No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue

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 103)*.

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 98)*.

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 102)*.

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 102)*
- Key edge modifications *(see page 104)*
- Masks *(see page 107)*
- DME effects for keys *(see page 109)*
- Specifying the key output destination *(see page 111)*
- Blink *(see page 111)*
- Video process *(see page 111)*
- Key modify clear *(see page 112)*

This section describes adjustment of key 1 on the M/E-1 bank as an example.

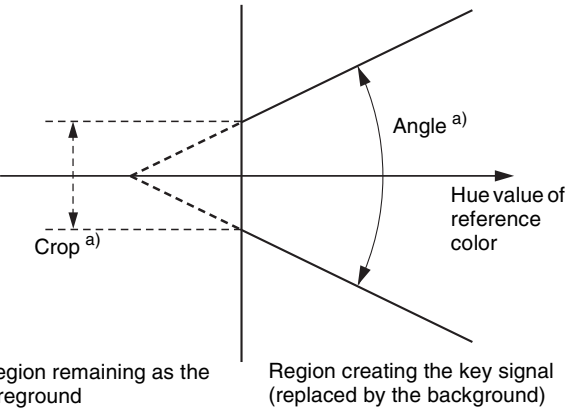
Chroma Key Adjustments

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	Luminance
2	Saturation	Saturation
3	Hue	Hue
5	Filter	Filter coefficient

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 102*.

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 102)* 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 102)* 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	Overall gain of video signal
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 96)*.

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 the [1-ROW UTIL1] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

Note

You can assign a utility 1 bus delegation button to the 1st row or 2nd row of the AUX bus control block in the Setup menu *(see page 417)*.

If [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 106)*.
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

Parameter group [1/2]

No.	Parameter	Adjustment
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, the [Key Drop] button is lit.
When key drop off mode is set, the [Key Drop] button 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, the [8H Mode] button is lit.
When 4H mode is set, the [8H Mode] button is not lit.

To fix key fill/key source to key drop off mode

In the <Key Delay Mode> group, press [Frame Delay], turning it on.

Note

This function uses the resizer, and therefore the expected result of the setting may not be obtained if conditions do not allow the resizer to be used.

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 130*.

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 132*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 131*.

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) See *page 131*.

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 131*.

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 >Wipe Adjust >Pattern Select menu (1116.2), allowing you select a pattern. Pressing [Pattern Adjust] opens the M/E-1 >Key1 >Transition >Wipe Adjust menu (1116.1), 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

No.	Parameter	Adjustment
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 130*.

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 132*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 131*.

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) See *page 131*.

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 131*.

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 125)*.

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 the [1-ROW UTIL1] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

Note

You can assign a utility 1 bus delegation button to the 1st row or 2nd row of the AUX bus control block 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 SDI interface is used to connect the DME, DME effects (including DME wipes) can be used in only one place for one M/E bank.
- When the dedicated interface is used to connect the DME, 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.
  - On the MVS-8000X

Bank	Key to which DME effects are applied	DME wipe pattern for background	Number of keys to which DME effects can be applied simultaneously
All (excluding M/E-4)	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 a)
M/E-4	Keys 1 to 4	DME wipes not used	2 b)
		1-channel mode	1 c)
		2-channel or 3-channel mode	0
	Keys 5 to 8	–	0

  - On the MVS-7000X

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 a)

a) "0" when the system signal format is 1080P.
b) "1" when the system signal format is 1080P and the DME input/output signal format is set to dual link mode.
c) "0" when the system signal format is 1080P and the DME input/output signal format is set to dual link mode.

- When combining DMEs connected via the dedicated interface and the SDI interface, you can increase the number of keys to which DME effects are applied simultaneously in the Setup menu.

For details, see "Setting the Interface Between the DME and the Switcher" (page 455).

Assigning a DME to a key

1 Open the M/E-1 >Key1 >Processed Key/Resizer menu (1115).

2 In the <DME Select> group, select the DME channel (DME1 to DME8) to be used.

The lit colors of [DME1] to [DME8] indicate the DME assignment.
Lit green: Indicates the DME assigned to the currently selected key.
Lit amber: Indicates the DME assigned to a key other than the currently selected key.
Not lit: DME is not assigned.

To select a DME being used by another keyer
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

When using the dedicated interface, proceed as follows.

For details about SDI interface operations, see "To select multiple DME channels using an SDI interface" (page 110).

Note

On the MVS-8000X, when the signal format is 1080P, the combination of two consecutively numbered DME channels that can be selected is DME1 and DME2, DME3 and DME4, DME5 and DME6, or DME7 and DME8. It is not possible to combine three or more DME channels.
On the MVS-7000X, when the signal format is 1080P, the same restriction also applies if using the MVE-8000A. There is no such restriction if using the MKS-7470X/7471X.

1 In the <DME Select> group of the M/E-1 >Key1 >Processed Key/Resizer menu (1115), 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.

On the cross-point control block, press the [1-ROW DME EXT] button in the cross-point Flexi Pad, then

select a signal using the cross-point buttons in the 1st row.

Note

You can assign a DME external video bus delegation button to the 1st row or 2nd row of the AUX bus control block in the Setup menu.

3 Select the third channel video signal.

When [DME3] or [DM4] is selected
On the cross-point control block, press the [1-ROW DME UTIL1] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

When [DME7] or [DM8] is selected
On the cross-point control block, press the [1-ROW DME UTIL2] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

Note

You can assign a DME utility 1 bus and 2 bus delegation buttons to the 1st row or 2nd row of the AUX bus control block in the Setup menu.

Using four DME channels on one keyer

When using the dedicated interface, proceed as follows.

For details about SDI interface operations, see "To select multiple DME channels using an SDI interface" (page 110).

Note

On the MVS-8000X, when the signal format is 1080P, this operation is not possible.
On the MVS-7000X, when the signal format is 1080P, the same restriction also applies if using the MVE-8000A. There is no such restriction if using the MKS-7470X/7471X.

1 In the <DME Select> group of the M/E-1 >Key1 >Processed Key/Resizer menu (1115), select consecutive DME channels.

Select [DME1] (or [DME5]) for the first channel, [DME2] (or [DME6]) for the second channel, [DME3] (or [DME7]) for the third channel, and [DME4] (or [DME8]) for the fourth channel.

2 Select the second channel video signal.

On the cross-point control block, press the [1-ROW DME EXT] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

Note

You can assign a DME external video bus delegation button to the 1st row or 2nd row of the AUX bus control block in the Setup menu.

3 Select the third channel video signal.

When [DME3] is selected
On the cross-point control block, press the [1-ROW DME UTIL1] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

When [DME7] is selected
On the cross-point control block, press the [1-ROW DME UTIL2] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

Note

You can assign a DME utility 1 bus and 2 bus delegation buttons to the 1st row or 2nd row of the AUX bus control block in the Setup menu.

4 Select the third channel video signal.

When [DME4] is selected
On the cross-point control block, press the [1-ROW DME UTIL2] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

When [DME8] is selected
On the cross-point control block, press the [1-ROW DME UTIL1] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

To select multiple DME channels using an SDI interface

Selection of the video signal of the third and fourth channels only differs from the dedicated interface.
Select the video signals on the AUX bus assigned in the Engineering Setup >Switcher >Device Interface >DME Type Setting >DME SDI I/F menu (7337.7).

Note

If [Dual DME units] is selected in the <DME Assignment for Proc Key> group of the Engineering Setup >Switcher >Device Interface >DME Type Setting menu (7337.6), the second channel video signal is also selected on the AUX bus.

For details, see "Setting the Interface Between the DME and the Switcher" (page 455).

To check DME usage status

You can check the DME operating status in the Status >DME Status menu (3311) *(see page 183)*.

Assigning a DME output signal as a monitor signal

1 In the M/E-1 >Key1 >Processed Key/Resizer menu (1115), press [Monitor].

The Monitor menu (1115.1) appears.

2 Press [Monitor Set], turning it on.

3 In the <DME Select> group, select the DME channel (DME1 to DME8) to be used.

This assigns the selected DME output to DME MON V and DME MON K.
The lit colors of [DME1] to [DME8] indicate the DME assignment.
Lit green: Indicates a DME currently being monitored.
Lit amber: Indicates a DME which can be monitored.
Not lit: DME is not assigned.

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/Resizer menu (1115), 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

You cannot select the PROC V and PROC K signals using the cross-point buttons of the M/E or PGM/PST 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/Resizer menu (1115).
[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 buses 1 and 2.
When DME is selected on the keyer, the key fill and key source signals with DME effect applied are assigned.

Blink

With the blink function, you can obtain the following effects.
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 menu (1116).

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 original state continues

When [Edge Blink] is selected

No.	Parameter	Adjustment
1	Blink Rate	Length of blink cycle
2	Duty	Proportion of cycle for which key is on

Video Process

You can adjust the luminance and hue of the selected key fill signal.

Note

If the input signal and AUX bus color corrector is enabled in the Setup menu, the video process of the key fill bus cannot be used.

For details, see "Enabling the Input Signal and AUX Bus Color Corrector" (page 447).

1 Open the M/E-1 >Key1 >Video Process menu (1117).

2 Press [Video Process], turning it on.

3 Set the following parameters.

No.	Parameter	Adjustment
1	Video Gain	Overall gain of video signal
2	Y Gain	Luminance signal gain
3	C Gain	Chrominance gain
4	Hue Delay	Hue delay
5	Black Level	Luminance black level

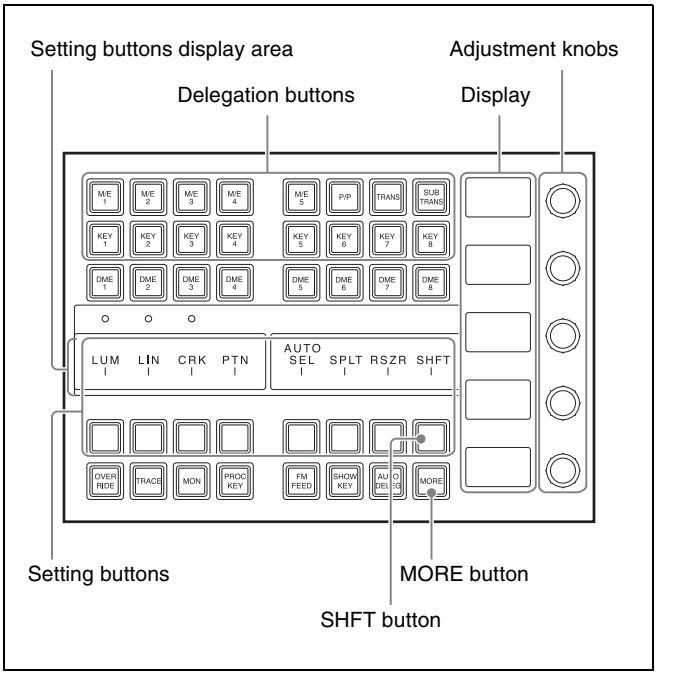
To return the parameters to their default settings
Press [Unity].

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, and modifier buttons are assigned to the setting buttons. The functions set in each button can be viewed in the setting buttons display section.
Different functions are assigned to the shifted state and unshifted state of the setting buttons. To select the shifted-state function, press the [SHFT] button, turning it on.

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.

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 95)*.

[LUM] button: Luminance key
[LIN] button: Linear key
[CRK] button: Chroma key
PTN: 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 98)*.

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 [SHFT] button to display the shifted state 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 [SHFT] button to display the shifted state setting buttons, then press the [MAT FILL] button, turning it off.
On the cross-point control block, press a key bus delegation button in the cross-point Flexi Pad, then select a key fill signal using the cross-point buttons in the 1st row/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 in the Setup menu *(see page 417)*.

Key Source Selection

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 in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row/2nd row.
- Press and hold the [SPLT] button in the key control block, then select a signal using the cross-point buttons in the cross-point control block.

Notes

- You can assign a key source bus delegation button to the 1st row or 2nd row of the AUX bus control block 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 99)*.

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.

- Key edge modifications *(see page 114)*
- DME effects for keys *(see page 115)*
- Other key adjustments *(see page 116)*

For details about buttons and parameters on the key control block, see "Key Operations (Key Control Block)" (page 112).

Key Edge Modification

Press a key modifier button to select an edge type *(see page 96)*.

[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 104)*.

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 109).

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 DME8), select the DME channel to use.

The lit colors of the [DME1] to [DME8] buttons indicate the DME assignment.
Lit green: Indicates the DME assigned to the currently selected key.
Lit amber: Indicates the DME assigned to a key other than the currently selected key.
Not lit: DME is not assigned.

To select a DME being used by another keyer

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 DME8), 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 109).

For details about SDI interface use, see "To select multiple DME channels using an SDI interface" (page 110).

Using four DME channels on one keyer

Using the DME channel selection buttons (DME1 to DME8), 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 110).

For details about SDI interface use, see "To select multiple DME channels using an SDI interface" (page 110).

To check DME usage status

You can check the DME operating status in the Status >DME Status menu (3311) *(see page 183)*.

Assigning a DME output signal as a monitor signal

Press and hold the [MON] button and press the DME channel selection button (DME1 to DME8) 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 [DME8] buttons shows the key assignment status.
Lit green: Indicates a DME currently being monitored.
Lit amber: Indicates a DME which can be monitored.
Not lit: DME is not assigned.

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

You cannot select the PROC V and PROC K signals using the cross-point buttons of the M/E or PGM/PST 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 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 448).

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 Flexi Pad of the cross-point control block: [1-ROW KEY1] to [1-ROW KEY8] buttons, [2-ROW KEY1] to [2-ROW KEY8] buttons
- Memory recall section on the Flexi Pad control block (key operation mode): [KEY1] to [KEY8] 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 97)*.

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 allows you to apply DME-like effects such as image reduction/enlargement, movement, rotation, and changes in aspect ratio, to the generated key portion.
The following functions are available.

- Two-dimensional transforms of keys *(see page 117)*
- Key rotation on the x- or y-axis *(see page 123)*
- Resizer interpolation settings *(see page 119)*
- Resizer crop/border settings *(see page 119)*
- Resizer effect settings *(see page 121)*
  (wide key border, drop shadow, edge enhance, mosaic, defocus, mask)

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. For details, see *(see page 121)*.
- You cannot apply DME effects to 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 >Processed Key/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

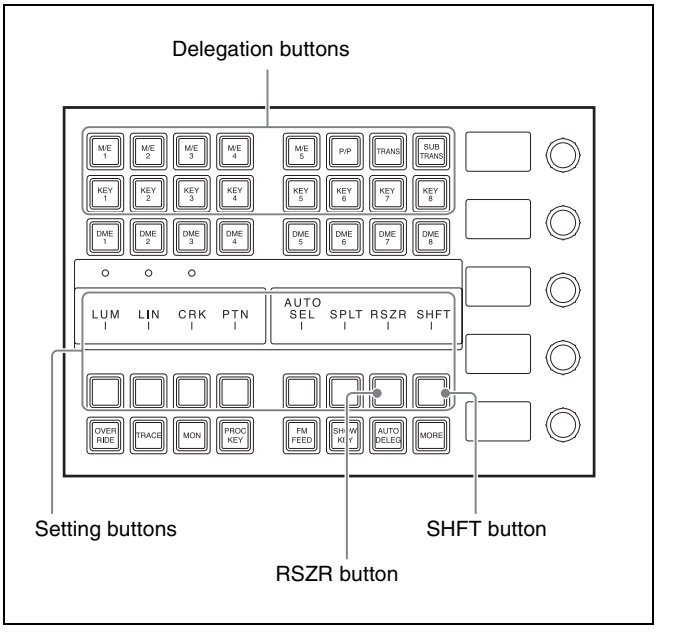
a) When [X] is selected in the <Rotation> group of the Rotation menu.
b) When [Y] is selected in the <Rotation> group of the Rotation menu.

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 112).



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 [SHFT] button to display the shifted state setting buttons, then press the [ROT X] button or [ROT Y] button, turning it on.

5 Set the following parameters.

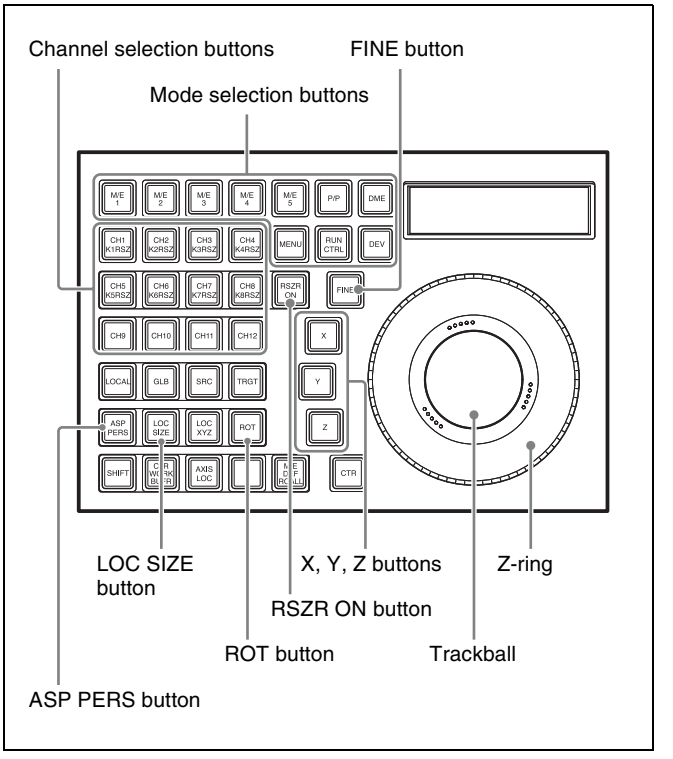
When the [ROT X] button is selected

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 correspondence between the operation buttons and parameters is shown in the following table.

Operation button	Parameter	Trackball (horizontal rotation)	Trackball (vertical rotation)	Z-ring
		[X] button	[Y] button	[Z] button
ASP PERS	Aspect	Change aspect ratio on X-axis	Change aspect ratio on Y-axis	Change aspect ratio on X- and Y-axes simultaneously
LOC SIZE	Location	Move image on X-axis	Move image on Y-axis	Magnify and shrink image
ROT	Rotation/ Perspective	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 225).

To reset parameters
Operates identically to DME three-dimensional parameter reset.

For details, see "Resetting three-dimensional parameters" (page 225).

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.

Interpolation Settings

1 In the M/E-1 >Key1 >Processed Key/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. However, the following points are different.
- The <Interpolation Mode> mode group settings can be set for any type of signal format.
- The anti-moiré filter cannot be set.

For details, see "Interpolation Settings" (page 274).

Crop/Border Settings

Cropping a key with resizer applied

1 In the M/E-1 >Key1 >Processed Key/Resizer menu (1115), press [Resizer], turning it on.

2 In the <Resizer Effect/Rotation> group, press [Border/ Crop].

The Border/Crop menu (1115.2) 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 228).

Note

Enabling mosaic or defocus in the M/E-1 >Key1 >Processed Key/Resizer >Enhanced Effect menu (1115.4) and selecting [Video/Key] in the <Mosaic/Defocus Mode> group disables cropping.

Adding a border to a key with resizer applied

1 In the M/E-1 >Key1 >Processed Key/Resizer menu (1115), press [Resizer], turning it on.

2 In the <Resizer Effect/Rotation> group, press [Border/Crop].

The Border/Crop menu (1115.2) 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

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.

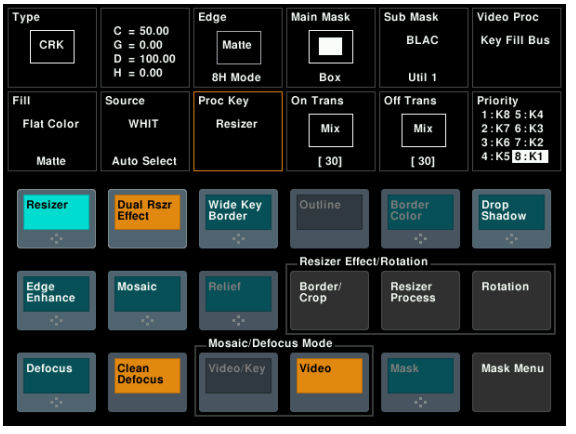
- Mosaic and edge enhance
- Defocus and wide key border
- Mask and drop shadow
- Mask and wide key border

Resizer effects setting menu

1 In the M/E-1 >Key1 >Processed Key/Resizer menu (1115), press [Resizer], turning it on.

2 In the <Resizer Effect/Rotation> group, press [Enhanced Effect].

The Enhanced Effect menu (1115.4) appears.



Setting a wide key border

1 In the M/E-1 >Key1 >Processed Key/Resizer >Enhanced Effect menu (1115.4), 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
2	Saturation	Saturation
3	Hue	Hue

Setting a drop shadow

1 In the M/E-1 >Key1 >Processed Key/Resizer >Enhanced Effect menu (1115.4), 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 >Processed Key/Resizer >Enhanced Effect menu (1115.4), 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 >Processed Key/Resizer >Enhanced Effect menu (1115.4), 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 >Processed Key/Resizer >Enhanced Effect menu (1115.4), 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.

If using a dedicated DME interface, set in the same way as the DME defocus.

For details, see "Defocus Settings" (page 239).

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 >Processed Key/Resizer >Enhanced Effect menu (1115.4), press [Dual Rszr Effect], turning it on.

2 Press [Mask], turning it on.

3 Press [Mask Menu].

The Mask menu (1115.5) appears.

4 In the <Mask Source> group, select [Box] or [Circle].

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 mask.

Setting Rotation

Note

Select either X or Y direction for rotation. You cannot make rotation by combining both directions.

1 In the M/E-1 >Key1 >Processed Key/Resizer menu (1115), press [Resizer], turning it on.

2 In the <Resizer Effect/Rotation> group, press [Rotation].

The Rotation menu (1115.6) 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

Canceling virtual images

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.
To hide the virtual image portion, in the M/E-1 >Key1 >Processed Key/Resizer >Rotation menu (1115.6), press [Wrap Around], turning it on.

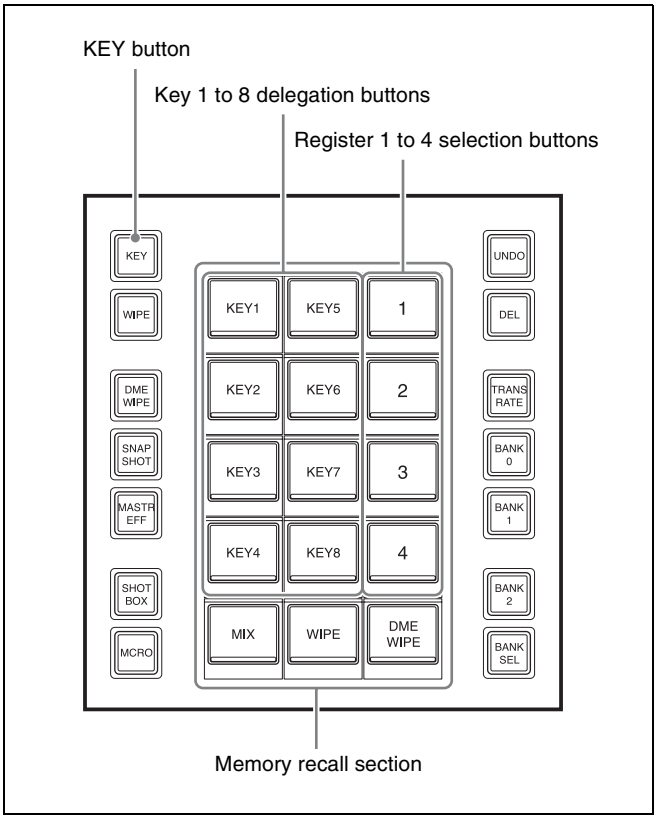
Key Snapshots

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.

Key Snapshot Operations

You perform key snapshot operations in the 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.
Dark blue and gray characters: Register not containing a saved snapshot
Dark blue and white characters: 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 338)*.

Wipes

Chapter 5

Overview

A wipe is a transition from the current video stream to a new video stream, 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 480).

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 134).

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

Note

When Flash Rate is set to 0.00, you cannot change the pattern. In this state, adjusting H Size or V Size has no effect on the pattern.

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.

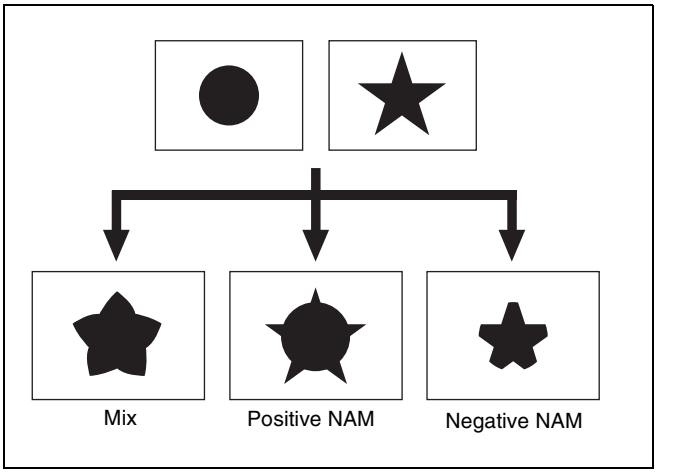
Types of pattern mix

The following four types of pattern mix can be selected.

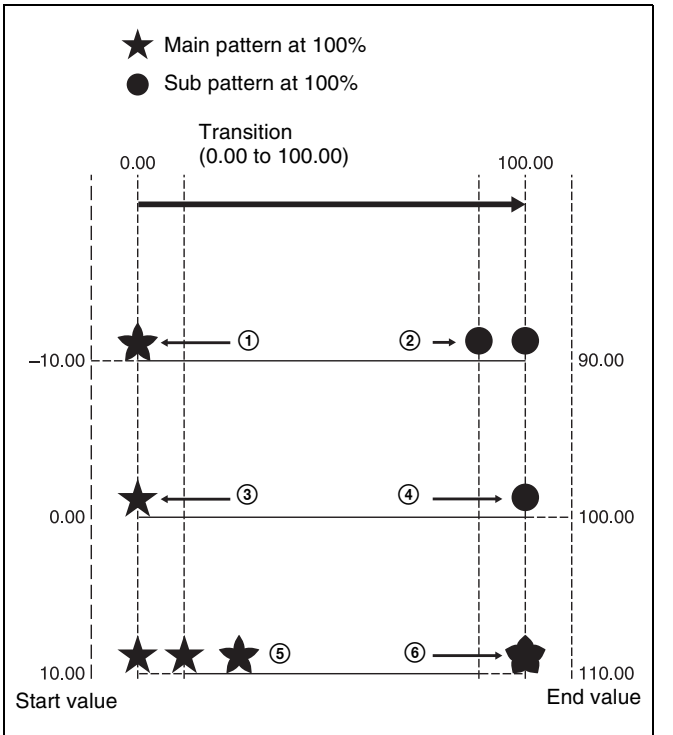
Mix: The effect of the sub pattern is applied to the main pattern, modifying the outline or nature of the main pattern.

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.



① Start of main pattern and sub pattern mix
② Mix ends during transition, and sub pattern becomes 100%
③ Transition starts with main pattern at 100%
④ Ends with sub pattern at 100%
⑤ Mix begins during transition
⑥ Transition ends with main and sub patterns still in mix combination

- 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 128)*. 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 134)*.

Main pattern and sub pattern modifiers

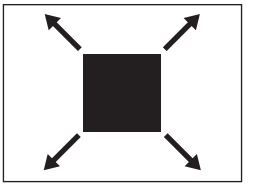
You can set the following modifiers independently for the main pattern and sub pattern.
- Positioner
- Rotation
- Aspect
- Multi
- Pairing
- Modulation
- Spring
- Spiral

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)

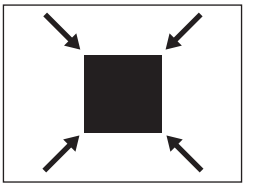
Specify the direction of the wipe effect.

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).

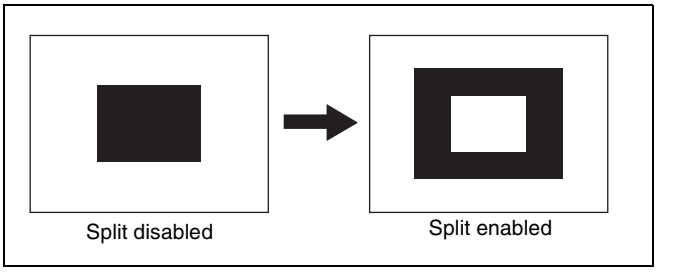
2 In the <Direction> group, specify the wipe direction.

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
NORM/REV: Normal/reverse
REV: Reverse

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 the [1-ROW UTIL2] button in the cross-point Flexi Pad, then select a signal using the cross-point buttons in the 1st row.

Note

You can assign a utility 2 bus delegation button to the 1st row or 2nd row of the AUX bus control block in the Setup menu *(see page 417)*.

If [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 129)*.
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 130*.

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 132*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 131*.

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) See *page 131*.

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 131*.

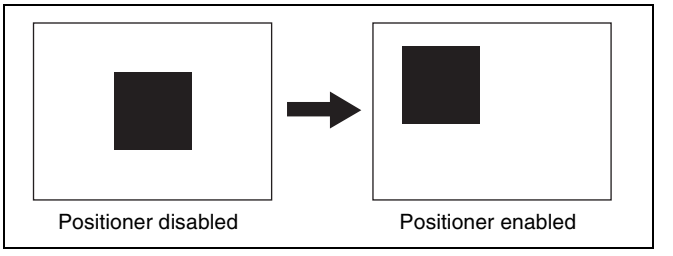
6 Select [Color 1] and [Color 2], respectively, and set the colors.

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 to the left. • Positive values move to the right.
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

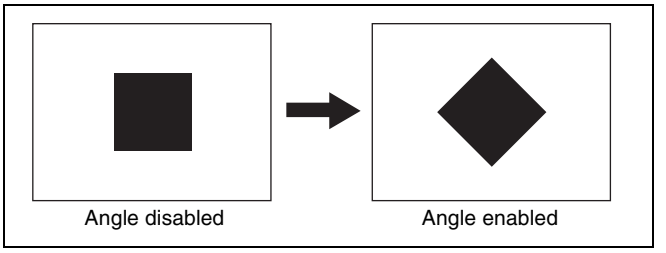
In the <Position> group, press [Auto Center], turning it on.

Rotating the wipe pattern (Rotation)

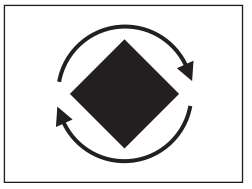
You can rotate a pattern.

Angle

This executes a wipe with the pattern at a fixed angle.

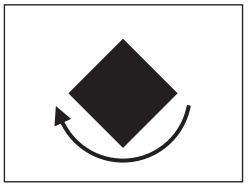


Speed



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

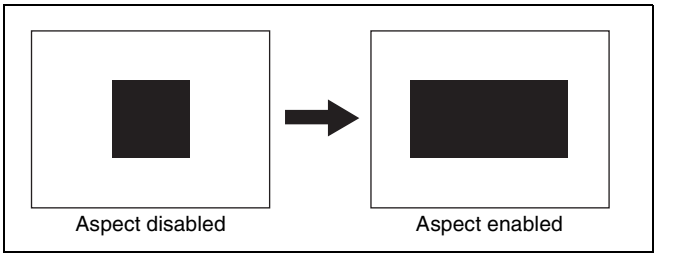
No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern • A value of –100.00 corresponds to 1 rpm counterclockwise rotation. • A value of +100.00 corresponds to 1 rpm clockwise rotation. • A value of 0.00 corresponds to pause.

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).

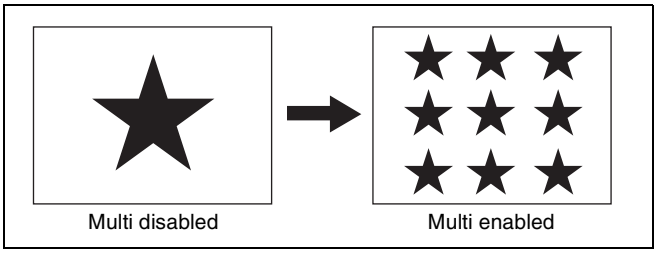
2 Press [Aspect], turning it on.

3 Set the following parameter.

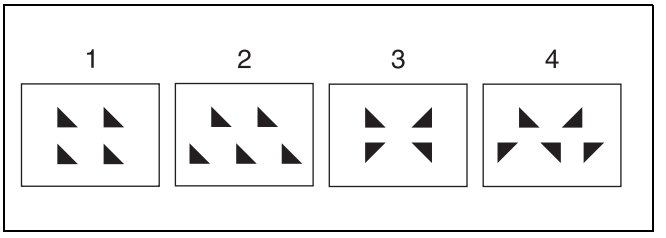
No.	Parameter	Adjustment
1	Aspect	Aspect ratio • Negative values expand vertically. • Positive values expand horizontally.

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 staggered
3: Even-numbered columns and rows inverted
4: Even-numbered columns and rows inverted, and even-numbered rows staggered

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

4 Press [Multi Adjust].

The Multi Adjust menu (1155.1) appears.

5 Make the following settings as required.

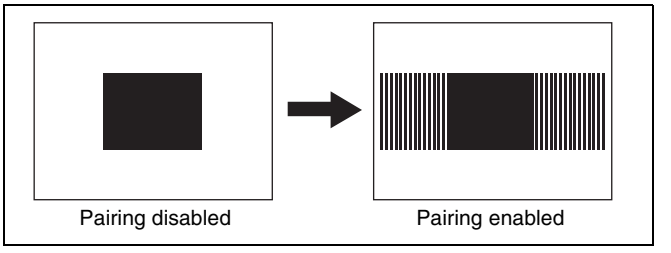
H Invert: Inverts the horizontal orientation of patterns alternately.
V Invert: Inverts the vertical orientation of patterns alternately.
Non-Mask: Ensure the pattern is always visible on the screen, even when the positioner function is used to move the pattern position.
Position: Moves the pattern position within the regions set in step **3** by adjusting the following parameters.

No.	Parameter	Adjustment
1	Position H	Horizontal position of pattern [a)]
2	Position V	Vertical position of pattern [a)]

a) See *page 130*.

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.

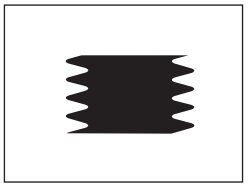
Applying modulation to a wipe pattern (Modulation)

The pattern waveform signal can be modulated, creating ripples in the horizontal, vertical, or radial direction along the edges.

Note

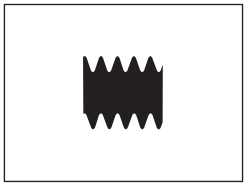
When the signal format is 1080PsF, modulation cannot be used.

H (horizontal modulation)



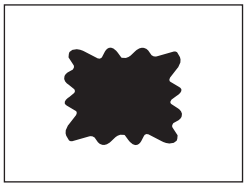
This modulates the pattern in the horizontal direction.

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.

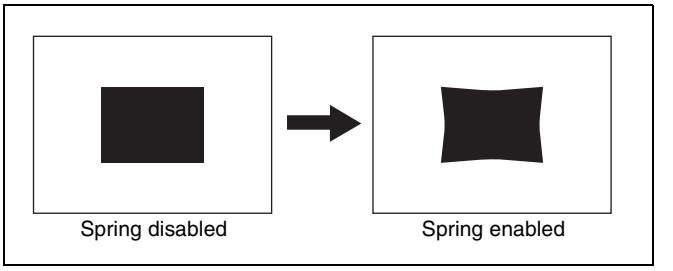
3 Set the following parameters.

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).

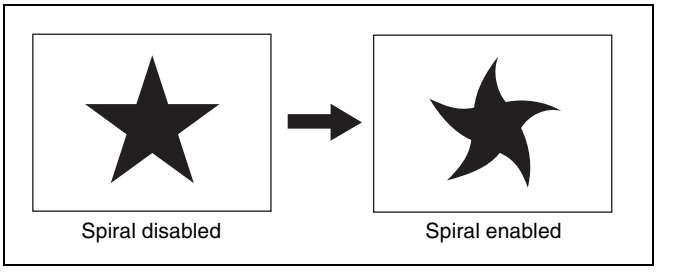
2 Press [Spring], turning it on.

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.

No.	Parameter	Adjustment
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	No
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 89).

This section describes operations of key 1 on the M/E-1 bank (M/E-1 >Key1 >Transition >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 menu (1116), press [Wipe Adjust].

   The Wipe Adjust menu (1116.1) appears.

2. Press [Pattern Select].

   The Pattern Select menu (1116.2) 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 >Wipe Adjust menu (1116.1), 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 >Wipe Adjust menu (1116.1), 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 >Wipe Adjust menu (1116.1), 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 130*.

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 >Wipe Adjust menu (1116.1), 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 131*.

When [Speed] is selected

No.	Parameter	Adjustment
1	Speed	Rotation speed of pattern a)

a) See *page 131*.

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 131*.

Setting the aspect ratio of a wipe pattern (Aspect)

1 In the M/E-1 >Key1 >Transition >Wipe Adjust menu (1116.1), press [Aspect], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 131*.

Replicating a wipe pattern (Multi)

1 In the M/E-1 >Key1 >Transition >Wipe Adjust menu (1116.1), 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)

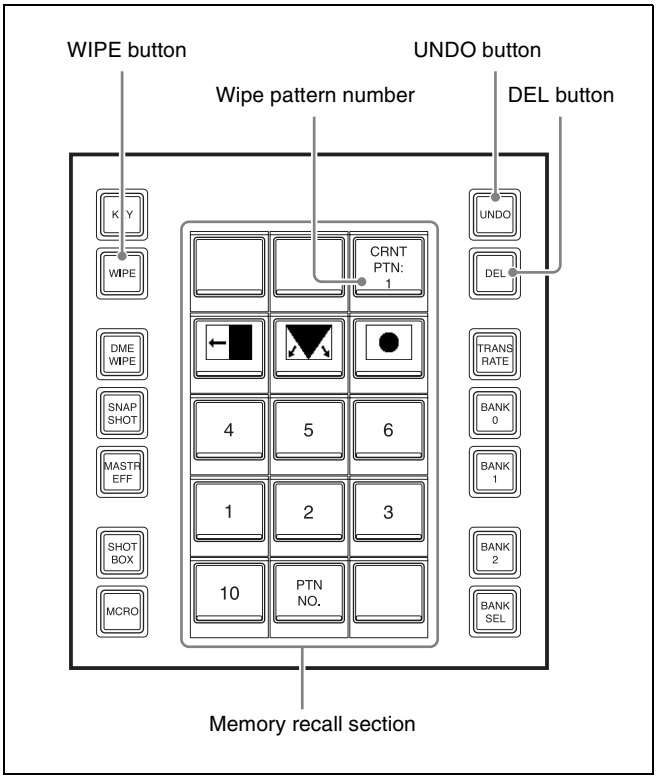
a) See *page 132*.

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 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 428)*.
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.
Dark blue and gray characters: Register not containing a saved snapshot
Dark blue and white icon/characters: 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 recalling of a wipe snapshot
Press the [UNDO] button.

Deleting a wipe snapshot

1 In the Flexi Pad control block, press the [WIPE] button.

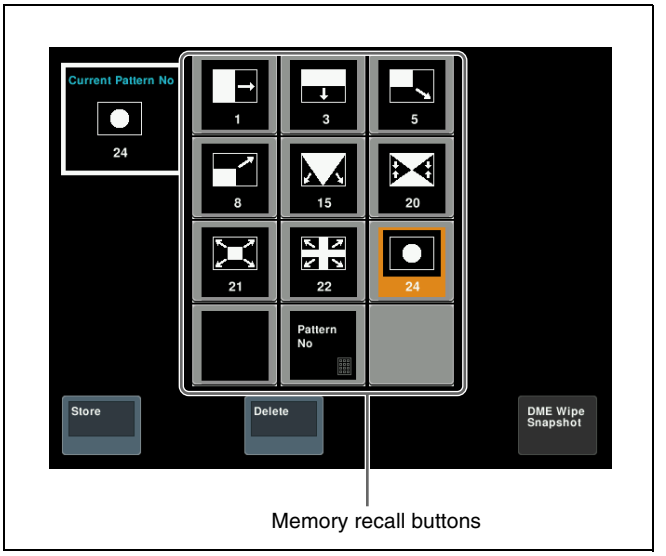
This switches the memory recall section to wipe snapshot operation mode.

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 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 428)*.

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 a wipe transition that uses a DME effect to change from one video image to the next.
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 in transitions and independent key transitions where a key is selected (inserted/removed) as the result of the transition (next transition event).

DME wipe pattern groups

DME wipe patterns are classified into the following groups.

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	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.

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 150)*

Pattern group	Effect
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 bus of the M/E bank appears as the background.
2D trans (2D transforms)	The new video appears over the old video, while undergoing expansion, two-dimensional rotation and translation.
3D trans (3D transforms)	• 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%.
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.
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 150).*
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).

Note

On the MVS-8000X, when the signal format is 1080P, 3-channel mode patterns are not available.
On the MVS-7000X, when the signal format is 1080P, 3-channel mode patterns are not available when using the MVE-8000A. 3-channel mode patterns are available when using the MKS-7470X/7471X.

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 481) and "Resizer DME Wipe Pattern List" (page 486).

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 1031	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 1208, 1221 to 1224	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
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
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 144) and "Setting Independent Key Transition DME Wipe Modifiers" (page 147).

Direction: You can set the DME wipe direction to normal, reverse, or alternating normal/reverse *(see page 144)*. 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, 1251, 1701, and 1702 are selected, Direction cannot be used.

Edge: You can apply a border or soft border *(see page 144)*.
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 144)*. Using the position select function, you can also instantaneously move the pattern *(see page 145)*. 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].
- 1201 to 1208, 1221 to 1224, 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 145)*.
- 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 83).

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 1208, 1221 to 1224, 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 and 1702 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 436).
- It is not possible to use a resizer DME wipe for a key with processed key enabled.

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 simultaneously on a single M/E bank

DME wipes can be used in nine places, including the eight independent key transitions.

Notes

- When the signal format is 1080P, DME wipes can be used in five places, including the four independent key transitions.
- When the SDI interface is used to connect the DME, DME effects (including DME wipes) can be used in only one place for one M/E bank.
- When the dedicated interface is used to connect the DME, 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.
  - On the MVS-8000X

Bank	Key to which DME effects are applied	DME wipe pattern for background	Number of keys to which DME effects can be applied simultaneously
All (excluding M/E-4)	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 a)
M/E-4	Keys 1 to 4	DME wipes not used	2 b)
		1-channel mode	1 c)
		2-channel or 3-channel mode	0
	Keys 5 to 8	–	0

  - On the MVS-7000X

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 a)

a) "0" when the system signal format is 1080P.
b) "1" when the system signal format is 1080P and the DME input/output signal format is set to dual link mode.
c) "0" when the system signal format is 1080P and the DME input/output signal format is set to dual link mode.

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 147).

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.

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 in-out (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

- **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 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 141).

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
NORM/REV: Normal/reverse
REV: Reverse

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.

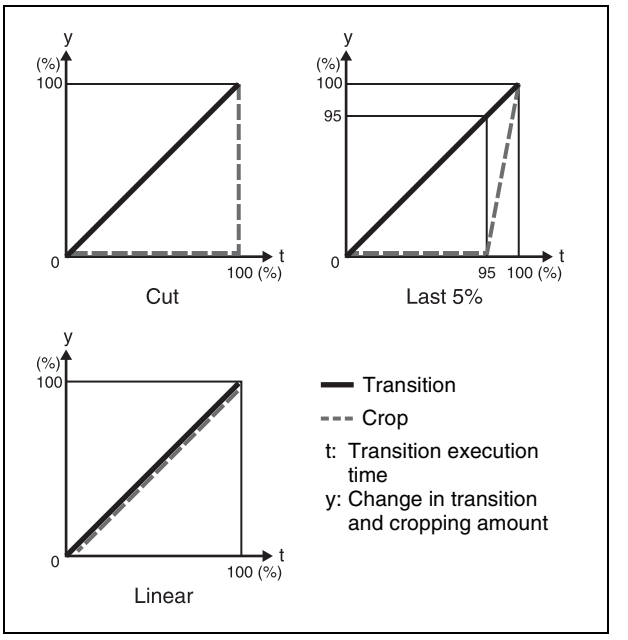
3 In the <Crop Mode> group, press [Crop], turning it on.

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]).

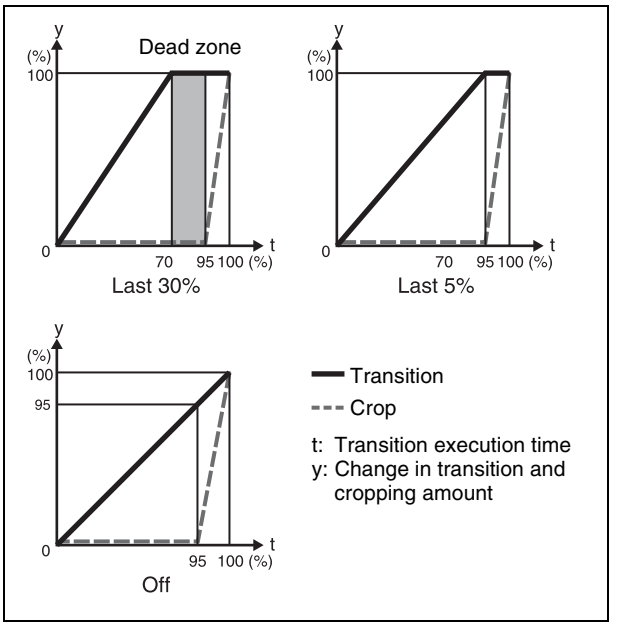
1 Open the M/E-1 >DME Wipe >Modify menu (1165).

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 zone 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 89).

This section describes operations of key 1 on the M/E-1 bank (M/E-1 >Key1 >Transition >DME Wipe Adjust menu) as an example.

Selecting an Independent Key Transition Wipe Pattern

1 In the M/E-1 >Key1 >Transition menu (1116), press [DME Wipe Adjust].

The DME Wipe Adjust menu (1116.3) appears.

2 In the <Pattern Select> group, press [1ch] for 1-channel mode or [2ch] for 2-channel mode.

The 1ch Pattern Select menu (1116.4) or 2ch Pattern Select menu (1116.5) 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 141).

Specifying the DME wipe direction (Direction)

In the <Direction> group of the M/E-1 >Key1 >Transition >DME Wipe Adjust menu (1116.3), 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 >DME Wipe Adjust menu (1116.3), 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
2	Luminance	Luminance of border color
3	Saturation	Saturation
4	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 >DME Wipe Adjust menu (1116.3), 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 >DME Wipe Adjust menu (1116.3), 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 >DME Wipe Adjust menu (1116.3), 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 >DME Wipe Adjust menu (1116.3), press [Crop], turning it on.

2 In the <Crop Mode> group, press [Remove From Begin].

The Remove From Begin menu (1116.7) appears.

For subsequent operations, go to step **5** in *"To set the action when a DME wipe crop transition is executed" (page 146)*.

To set the timing of transition completion

1 In the <Crop Mode> group of the M/E-1 >Key1 >Transition >DME Wipe Adjust menu (1116.3), press [Crop], turning it on.

2 In the <Crop Mode> group, press [Remove From Begin].

The Remove From Begin menu (1116.7) appears.
For subsequent operations, go to step **3** in *"To set the timing of transition completion" (page 146)*.

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 136).

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 137).

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 298).

Note

When the signal format is 1080P, 3-channel mode cannot be used.

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 315).

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 in-out
	Frame in-out H [a)]	Frame in-out
	Frame in-out V	Frame in-out
	Picture-in-picture [b)]	Picture-in-picture
	Compress [c)]	Picture-in-picture
2-channel mode	Dual transition mode	Slide, Squeeze, 3D Trans
	2-channel frame in-out	Frame in-out
	2-channel picture-in-picture	Picture-in-picture

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 138).

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)

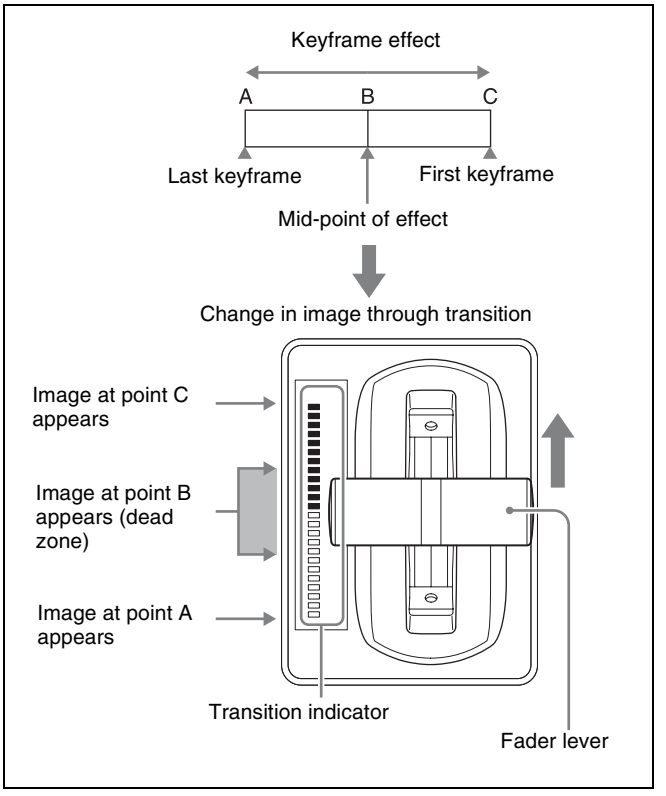
Create a minimum of three keyframe points.

• 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-Ch2 >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-Ch2 >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 zone 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 zone corresponds to the center one-third of the range 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

Frame memory is a function whereby a frame of input video can be frozen and written to memory, for further use as material for editing.
You can also play recorded frame memory clips (movies).

Image storage capacity

The frame memory board has two blocks of memory, and the following table shows the maximum number of images that can be written to each block.
One of the two memory blocks is used as the destination for storing frame memory clips.

HD system

Video format	Storage capacity	
	Without ancillary data	With ancillary data
1080i/50	Approx. 1000 frames	Approx. 700 frames
1080i/59.94		Approx. 800 frames
1080PsF/23.98		Approx. 600 frames
1080PsF/24		
1080PsF/25		Approx. 700 frames
1080PsF/29.97		Approx. 800 frames
1080P/50	Approx. 2000 frames	–
1080P/59.94		–
720P/50	Approx. 2300 frames	Approx. 1400 frames
720P/59.94		Approx. 1700 frames

SD system

Video format	Storage capacity	
	Without ancillary data	With ancillary data
480i/59.94	Approx. 5600 frames	Approx. 4700 frames
576i/50	Approx. 4800 frames	Approx. 3900 frames

Types of Image Data

The following types of image are handled in frame memory.

Freeze image: An input image that has been frozen (before saving to memory).

Still image: A freeze frame that has been saved to memory as a file. Each file (still file) holds just one still image.

Frame memory clip: A clip consists of a sequence of still images. The images appear as a movie on playback. This sequence is also referred to simply as a "clip." The files (still files) constituting clips are referred to as a "clip file."

When the above distinctions are not being made, an image is referred to as just an "image."

About extended clips

Of the two memory blocks for saving a clip, a clip saved in the memory block not used for storing still images is called an "extended clip."
However, when the signal format is 1080P, since both still images and clips are saved in both memory blocks, there are no extended clips.

Frame memory output

There are eight frame memory channels, FM1 to FM8, and each channel independently allows a freeze image to be saved or recalled.
By allocating FM1 to FM8 to cross-point buttons you can use the still image output or clip output from each channel as input material.

Note

When the signal format is 1080P, only the four options of FM1 to FM4 can be used.

Correspondence between input and output

There are two buses for capturing frame memory material: frame memory source bus 1 and frame memory source bus 2.
These input buses are used by assigning them to one of the FM1&2, FM3&4, FM5&6, or FM7&8 output pairs. You can freeze a frame on each separately, or freeze in both simultaneously.
The source buses assigned to FM1 to FM8 are as follows.

Input bus	Frame memory source 1 bus	Frame memory source 2 bus
Outputs	FM1	FM2
	FM3	FM4
	FM5	FM6
	FM7	FM8

Pair mode

By enabling the pair mode, you can link FM1 with FM2, FM3 with FM4, FM5 with FM6, and FM7 with FM8. For example, when a freeze or image processing is carried out on FM1, the same operation is carried out on FM2.
When a pair of images are captured in pair mode, the image frozen in FM1 (3, 5, or 7) is referred to as the main file and the other frozen in FM2 (4, 6, or 8) is referred to as the sub file.

Pair files and single files

A file that can be recalled in pair mode is termed a “pair file.” A pair file can be created by setting pair mode and capturing an image, or by using the coupling function *(see page 170)* to combine two single files.
A file other than a pair file is termed a “single file.” A single file can be created by switching off pair mode and capturing an image, or by using the separation function *(see page 170)* to split a pair file.

Operation modes

The frame memory has the following operation mode.

V/K mode: When pair mode is active, the key signal is automatically selected on the frame memory source 2 bus. This is convenient for handling the video and key signals together in frame memory. For example, when you select a video signal on the frame memory source 1 bus, the key signal assigned to it is automatically selected on the frame memory source 2 bus. You can also use the signal automatically selected on the frame memory source 2 bus as a key signal when processing keyframe memory 1.

Frame memory folder

Still images and clips can be managed by division into a maximum of twelve groups.
Such a group is called a “frame memory folder.” Folders can be added or deleted. Folders can be given a name of up to 8 characters.

Notes

- When the system is powered off, the folder names are deleted. You should save the folder names on media.
- The following names cannot be used for folders.
  Flash1, Flash2
  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
  A folder named “Default” is provided, and this folder cannot be renamed or deleted.
- Still images and clips in different frame memory folders cannot have the same name.

Still Image File Operations

To create and save a still image file, the following functions are available.

- Capturing and saving an input image (Store) *(see page 158)*
- Recalling still images (Recall) *(see page 159)*
- Image output *(see page 160)*
- Continuously capturing still images (Record) *(see page 161)*
- Recalling a continuous sequence of still images (Animation) *(see page 161)*

Note

When a pair is assigned to the target selection buttons during playback of a frame memory clip *(see page 165)*, frame memory operations may not be executed correctly. Carry out frame memory operations after stopping clip playback.

Preparations

Assigning the frame memory outputs (FM1 to FM8) to cross-point buttons

To output a frame memory image to a monitor, for example, the output signal from the frame memory (FM1 to FM8) must be assigned to a cross-point button. The assignment is configured in the Setup menu.

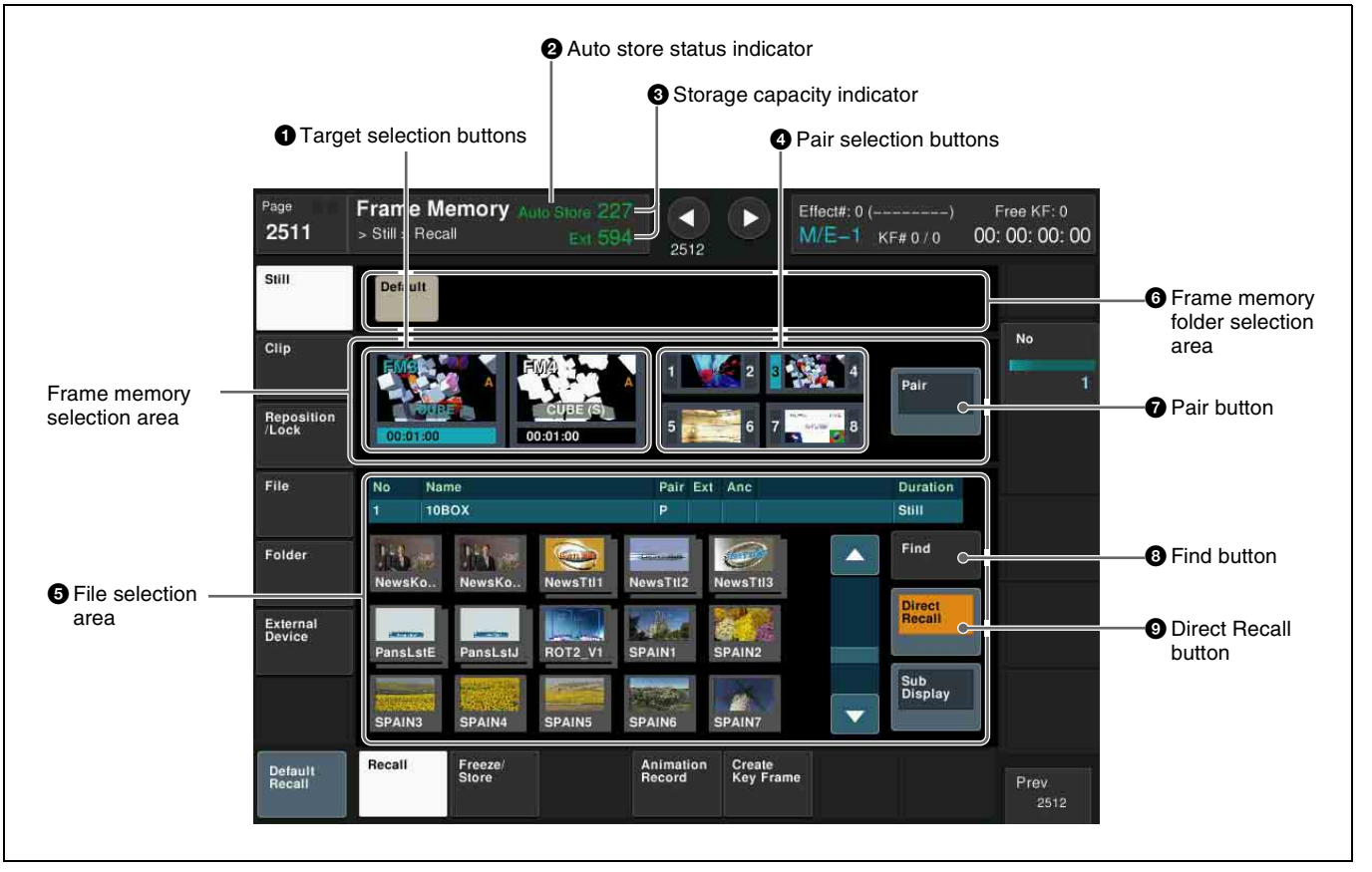
Note

When the signal format is 1080P, only the four options of FM1 to FM4 can be used.

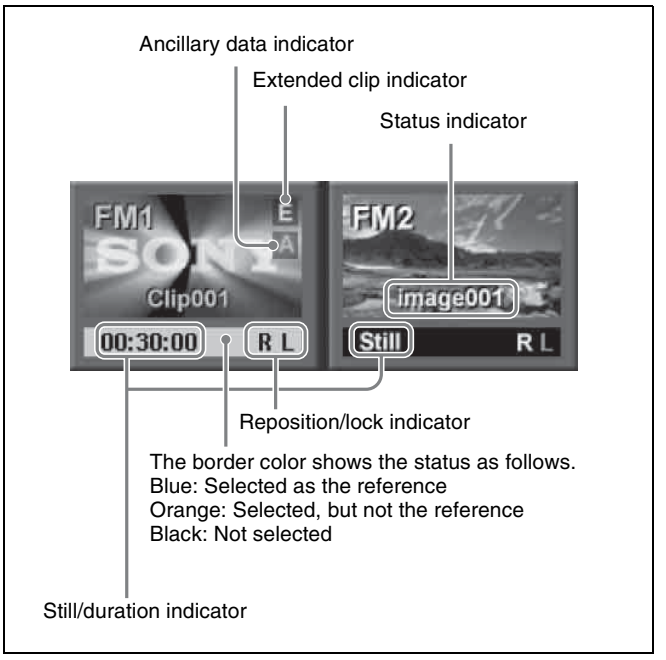
Frame Memory Menu Layout

The following are the main parts of the menu screen.

The frame memory selection area display is the same for all menus, excluding the File (excluding Pair Recombination), Folder, and External Device menus.



❶ Target selection buttons



Press one of these to select which of the selected outputs (FM1 and FM2 in the above figure) the operation applies to.
The following information appears on the button.

Status indicator

File name (e.g. image001) and thumbnail: When a file is output
Black: When a black signal is output
Through: When the input image is output
Freeze: When a freeze is output
Record: When continuously capturing images (recording)

Still/duration indicator

When a still image is selected, "Still" is shown. When a clip is selected, a duration indication (such as "00:00:10") is shown.

Reposition/lock indicator

This shows "R" when the reposition function *(see page 160)* is enabled, and shows "L" when the lock function *(see page 161)* is enabled.

Extended clip indicator

For an extended clip, "E" appears.

Clip with ancillary data indicator

For a clip with ancillary data, "A" appears.

❷ Auto store status indicator

This appears when the auto store function is enabled in the Setup menu.

❸ Storage capacity indicator

This shows the remaining number of frames. When no more frames can be stored, in pair mode "1" or "0" appears in red, and in single mode "0" appears in red.

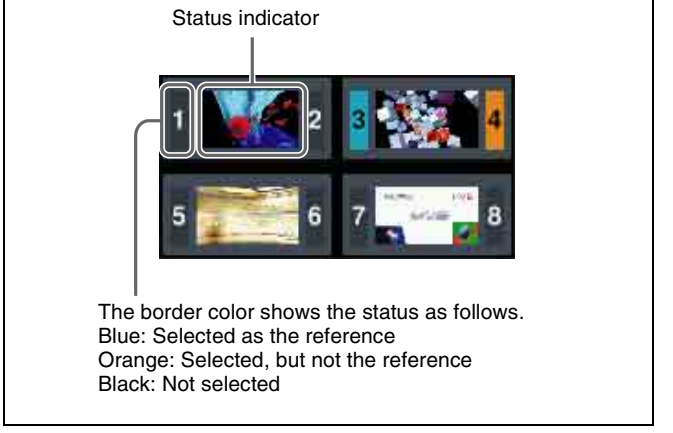
The lower figure shows the remaining number of frames that can be used as an extended clip.

Note

When the signal format is 1080P, each time a still image is saved the remaining space is reduced by two frames.

❹ Pair selection buttons

Select the pair to be displayed in the target selection buttons.
In the following figure, the FM1 and FM2 pair is selected.



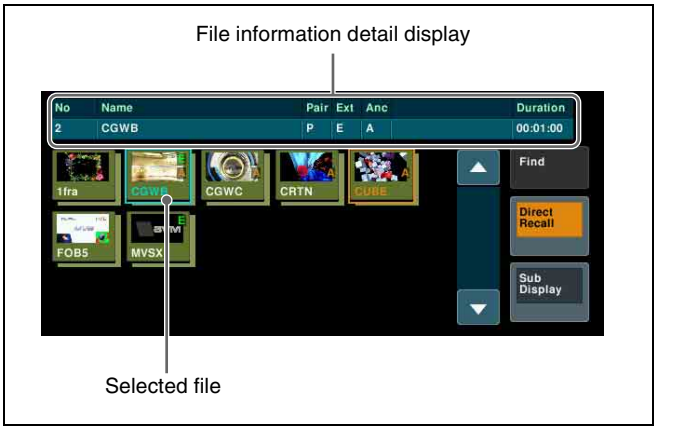
The following information appears on the button.

Status indicator

For a pair, the status is displayed on the reference side.
Thumbnail: When a file is output
Black: When a black signal is output
Through: When the input image is output
Freeze: When a freeze is output
Record: When continuously capturing images (recording)

❺ File selection area

You can select from the displayed still image files or clip files.



Thumbnail indications

Still image files and clip files: Still image file buttons are gray, and clip file buttons are yellow.

Single files and pair files: Pair file buttons are displayed with no shadow. Single file buttons are displayed with a shadow.

Selected file: Pale blue border. When more than one file is selected, only the first is pale blue, and the remainders are orange. If a pair file is selected, each press switches between the front and the rear (front thumbnail and rear thumbnail).

File information detail display

For the selected file, this shows the file name, "P" for a pair file, "E" for an extended clip, "A" for a clip with ancillary data, and the duration.

❻ Frame memory folder selection area

Select the frame memory folder to be displayed.

❼ Pair button

Press this button, turning it on, to enable pair mode.

❽ Find button

Pressing this button displays a popup window, in which you can enter a file name to carry out a search.

❾ Direct Recall button

Press this button, turning it on, to enable direct recall mode (pressing the thumbnail immediately recalls the file).

Selecting an Input Image

For the input image to frame memory, you can use either the signal selected on one of the two frame memory source buses or a dedicated color matte signal.
When using the signal on frame memory source 1 bus or 2 bus for the input image, 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, press the [FMS1] button on the 1st row (or 2nd row) to assign the frame memory 1 bus to the cross-point button row.

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

Press the [FM FEED] button in the key control block or press [FM Feed] in the Processed Key/Resizer menu *(see page 111)*.
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.

Selecting Outputs and Target Frame Memory

Selecting outputs (FM) and target frame memory

This section describes operation when selecting FM1&2 as an example.

1 In the Frame Memory menu, press one of the VF1 to VF4 buttons, and select the required menu using the HF buttons.

The current status of frame memory appears.

2 From the pair selection buttons, press the buttons corresponding to FM1 and FM2.

This assigns the signals to FM1 and FM2.
The FM1 and FM2 output status appears on the target selection buttons *(see page 156)*.

3 To set pair mode, press [Pair], turning it on.

When [Pair] is lit: Operate on FM1 and FM2 as a pair (pair mode).
When [Pair] is not lit: Operate on FM1 and FM2 individually.

For details, see "Pair mode" (page 154).

Note

[Pair] cannot be operated in the Frame Memory >File >Pair Recombination menu (2541).

4 Press the [FM1] or [FM2] target selection button to select the target FM.

When [Pair] is lit: Whenever FM1 or FM2 is pressed, the pair are selected.
When [Pair] is not lit: Select either FM1 or FM2 as the target.

Note

When [Pair] is not lit, you can select both FM1 and FM2 in the Frame Memory >Clip >Play menu (2522).

Selecting a frame memory folder

Press a button for the target folder in the frame memory folder selection area *(see page 157)*.
By pressing [More] to switch the display, you can select from a maximum of 12 folders.

Thumbnails of the files within the selected folder appear.

Capturing and Saving an Input Image (Store)

You can use the signal selected on the frame memory source bus as the input material for the frame memory. You can use video processing (video levels or hue value adjustment), masking, etc., on this signal.
Assigning a frame memory source bus signal to one of FM1 to FM8, then executing a freeze captures a still image as the corresponding frame memory output image, and saves it in temporary memory.
For a freeze, an image can be captured either as a video frame (a “frame freeze”) or a video field (“field freeze”).

Note

All freeze images written to temporary memory are lost when the system is powered off.

Freezing an image and writing it to memory

To freeze the signal selected as input material and write it to memory, use the following procedure.

1 Open the Frame Memory >Still >Freeze/Store menu (2512).

2 Select the desired frame memory *(see page 157)*.

3 To enable V/K mode, press [V/K Mode], turning it on.

4 Select the folder to hold the freeze image in the frame memory folder selection area.

Note

The selected folder becomes the destination folder for writing the freeze image. It is not possible to change the selection of the folder after step **5**.
An orange bar appears on the selection button for the save destination folder.

5 Press [Freeze Enable], turning it on.

The signals on the frame memory source 1 bus and 2 bus are assigned to the pair of FMs selected in step **2**, then freeze becomes executable.

6 If necessary, make the video process settings *(see page 159)* and mask settings *(see page 159)* for the selected signal.

7 Select one of the following in the <Freeze> group to write the freeze image to temporary memory.

Frame: Execute a frame freeze.
Field: Execute a field freeze.
Off: Release the freeze, and delete the recorded freeze image.

To return to the prior freeze image state after executing a freeze

In the <Freeze> group, press [Undo].

Notes

- All freeze images written to temporary memory are lost when the system is powered off.
- If you change the frame memory to use as in step **2** before saving the freeze images written to temporary memory, all the freeze images in temporary memory are lost. However, if the auto store function is enabled in the Setup menu, the freeze images written to temporary memory are saved automatically when the frame memory selection is changed.
- For the following signal formats, a field freeze is not possible.
  1080P/50, 1080P/59.94, 1080PsF/23.98, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Saving a frozen image

You can save an image stored in temporary memory using the freeze function as a file in memory. You can save a single image in a single file.
You can apply a name of up to eight characters to the file.

Notes

- When the system is powered off, all the files saved in memory are lost.
- When the signal format is 1080P, the file name is limited to seven characters. Each time a still image is saved, the remaining space is reduced by two frames.

1 In the Frame Memory >Still >Freeze/Store menu (2512), press [Store].

2 In the keyboard window, enter the file name.

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

3 Press [Enter].

The still image file is saved in memory.

The save destination folder is the folder selected in step **4** in *"Freezing an image and writing it to memory" (page 158)*.
If the entered folder name already exists, a message to confirm overwriting appears.
When the system is powered off, files saved in memory are lost.

To carry out a freeze and store simultaneously (Freeze and Store)
Press [Freeze & Store], turning it on, and press [Frame] or [Field].
A still image file is saved at the same time as the freeze.

Setting the video process

You can set the video process for the signal selected on a frame memory source bus.

Note

When the input signal and AUX bus color corrector settings are enabled, the video process cannot be set.

For details, see "Enabling the Input Signal and AUX Bus Color Corrector" (page 447).

1 In the <Video Process> group of the Frame Memory >Still >Freeze/Store menu (2512), press [Video Process], turning it on.

2 Set the following parameters.

No.	Parameter	Adjustment
1	Video Gain	Overall gain of video signal
2	Y Gain	Luminance signal gain
3	C Gain	Chrominance signal gain
4	Hue Delay	Hue delay
5	Black Level	Luminance signal black level

Note

When a pair setting is enabled, it is coupled to the video process enable/disable setting, but the parameter settings are only valid for the frame memory source 1 bus. The pair setting cannot be used to set the frame memory source 2 bus. When you want to set the video process for the frame memory source 1 bus only, return the frame memory source 2 bus settings to their default values if the previous adjustment values are unchanged. When setting the video process for the frame memory source 2 bus, disable pair mode.

To return the parameters to their default settings
In the <Video Process> group, press [Unity].

Setting a mask

You can apply a mask to the signal selected on a frame memory source bus.

1 In the Frame Memory >Still >Freeze/Store menu (2512), press [Box Mask], turning it on.

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

3 To link the masks on frame memory source 1 bus and 2 bus, press [Mask Link], turning it on.

Recalling Still Images (Recall)

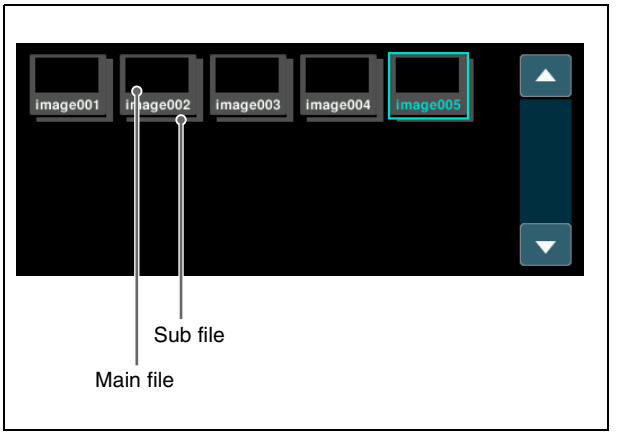
You can recall an image file saved in memory, and assign it to any of the FM1 to FM8 outputs.

Recalling a still image

To recall a still image file saved in memory using the thumbnails and assign it to an FM output, use the following procedure.

1 Open the Frame Memory >Still >Recall menu (2511).

When [Pair] is lit, only pair files (sets of main file and sub file) are shown.
When [Pair] is not lit, both single files and pair files are shown.



2 In the frame memory selection area, select the frame memory to be assigned *(see page 157)*.

3 If [Direct Recall] is lit, press [Direct Recall], turning it off.

4 In the frame memory folder selection area, select the desired folder.

By pressing [More] to switch the display, you can select from a maximum of 12 folders.
Thumbnails of the files within the selected folder appear.

5 Press the thumbnail of the still image you want to recall to select it.

6 Press [Recall].

This recalls the still image file, and assigns it to the FM you selected in step **2**.

To recall in direct recall mode

Direct recall is a mode in which pressing a thumbnail immediately recalls the file.
In direct recall mode, only the front thumbnail file is recalled.

1 In step **6** in *"Recalling a still image" (page 159)*, press [Direct Recall] instead of [Recall].

2 Press the thumbnail for the file you want to recall.

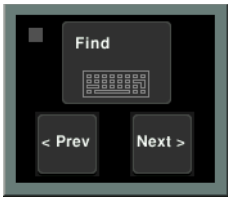
To display the sub file in front

With direct recall mode enabled, press [Sub Display], turning it on.

To search by file name

1 Press [Find].

The Find window appears.



2 Press [Find].

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 files are selected.

4 To scroll through the selected files, press [< Prev] or [Next >].

5 To close the Find window, press outside the Find window on the menu screen.

Image Output

There are two functions related to image output: the reposition function for moving the output image, and the lock function for fixing the output image.

Moving the output image (reposition function)

You can move the output image, with respect to the screen, for up to two FM1 to FM8 frame memories (one from FM1, FM3, FM5 and FM7 and the other from FM2, FM4, FM6 and FM8). The area of the screen around the image that has been moved is filled with black.
There are two ways to move an image using the reposition function.

Normal mode: Movement in the horizontal direction in two-pixel increments.

Black and white mode: Movement in the horizontal direction in one-pixel increments, and for each pixel moved the color is inverted.

Note

It is not possible to save an image moved with the reposition function directly to frame memory.

1 Open the Frame Memory >Reposition/Lock >Reposition menu (2531).

In this menu, you can also enable V/K mode *(see page 154)*.

2 In the frame memory selection area, select the FM output *(see page 157)*.

3 In the <Reposition> group, select the movement mode.

Normal: Move in normal mode.
Black & White: Move in black & white mode.

4 Set the following parameters.

No.	Parameter	Adjustment
1	Position H	Movement in horizontal direction [a]
2	Position V	Movement in vertical direction [a]

a) See *page 130*.

The surroundings of the moved image on the screen are filled with black.

To return the image to the center position

In the <Reposition> group, press [Center].

Fixing the output image selection (lock function)

This mode fixes the currently output images as the outputs of FM1 to FM8 When the lock is enabled, even if the output is recalled in a snapshot or keyframe, the images output to FM1 to FM8 are preserved.

Note

When the signal format is 1080P, the lock function cannot be used.

1 Open the Frame Memory >Reposition/Lock >Lock menu (2532).

2 In the frame memory selection area, select the FM output *(see page 157)*.

3 Press [Lock], turning it on.

This fixes the currently selected frame memory output images.
To release the lock, press [Lock] again, turning it off.

Continuously Capturing Still Images (Record)

You can continuously capture (freeze) a sequence of input video frames and store the sequence of the still images over a specified time interval.
The file name of each recorded image consists of the following two character strings.

First character string: An assigned character string of up to four characters that is common to all the still images captured in one record operation. The character string can also be specified in the menu before capturing images.
The first character string becomes the clip name when consecutively captured images are treated as a frame memory clip.

Second character string: A four-digit number (0000 or greater). The number is incremented each time a still image is captured.

Note

When using the record function to continuously capture frames, the mask function cannot be used.

Continuously freezing images and writing to memory

1 Open the Frame Memory >Still >Animation Record menu (2514).

2 Select the desired frame memory *(see page 157)*.

3 To enable V/K mode, press [V/K Mode], turning it on.

4 Select the folder to hold the freeze image in the frame memory folder selection area.

Note

The selected folder becomes the destination folder for writing the freeze image. It is not possible to change the selection of the folder after step **5**.
An orange bar appears on the selection button for the save destination folder.

5 Press [Record Enable], turning it on.

The signals on the frame memory source 1 bus and 2 bus are assigned to the pair of FMs selected in step **2**, then recording becomes executable.

6 Enter the file name as required.

Press [File Name] to display the keyboard window and you can enter the first character string (up to four characters) of the file name.

7 Set the recording time as required.

Press [Duration] and enter the recording time (duration) timecode in the keypad window.
If you set the recording time to zero, all available frame memories are used for recording.

8 Set the video process for the selected signal as required *(see page 159)*.

9 Press [Record] to start recording.

When the recording time is set, recording stops once the time has elapsed.

10 Press [Stop] to stop recording.

Even if the recording time is set, you can still stop recording before the set time has elapsed.

Recalling a Continuous Sequence of Still Images (Animation)

You can use a continuous sequence of images captured with the record function to create an effect as keyframes, and executing this effect recalls the continuous sequence (animation).

Note

The frame memory used for creating an effect must be assigned to a user region beforehand *(see page 435)*.

Effect creation

In the Frame Memory menu, effect creation follows the image file names. Files with matching file names (excluding the last three characters) are treated as an image file group, and effects are created using the last three (numeric) characters in sequence.

Note

When creating an effect in pair mode *(see page 154)*, only main files and sub files with the same last three (numeric) characters in the file name are used.

Effect execution

To recall a continuous sequence of still images, create an effect in the user region with the still image files as a keyframe, and run the created effect.

Note

When the signal format is 720P or 1080P format, recalling frame memory continuously is executed in 2-frame units only.

Creating an effect with still image files as a keyframe

1 Open the Frame Memory >Still >Create Key Frame menu (2515).

A thumbnail appears for each group of files having matching file names, excluding the last three characters.
When [Pair] is lit, only pair files (sets of main file and sub file) are shown.
When [Pair] is not lit, all single files and pair files are shown.

2 In the frame memory selection area, select the frame memory to be assigned *(see page 157)*.

The effect is created in the user region assigned to the selected frame memory.

3 In the frame memory folder selection area, select the desired folder.

By pressing [More] to switch the display, you can select from a maximum of 12 folders.
Thumbnails of the files within the selected folder appear.

4 Select the register number in the user region.

No.	Parameter	Adjustment
5	Register	Effect register number

Note

To search for an empty register in the user region, use the numeric keypad control block.

For details, see "Register selection in the numeric keypad control block" (page 307).

5 Select the thumbnail of the file group used for the keyframe.

6 Check the effect operation in the thumbnail display as required.

No.	Parameter	Adjustment
3	Viewer	Current frame position

7 Using the region selection buttons in the numeric keypad control block, select one of the regions (USER1 to USER8) to which the frame memory outputs have been assigned.

8 Carry out one of the following operations.

- To clear the effect register selected in step **4**, and create a new effect, press [Create Key Frame].
- To add the effect to the end of the effect register selected in step **4**, press [Append Key Frame].

9 Check the message, then press [OK].

The effect is created in the selected user region register.
If there is an inappropriate condition when creating the effect, an error message appears.

For details about error messages, see "Error Messages" (page 545).

Notes

- The effect is built in increasing order of the last three characters of the name of the files in the selected file group. If you do not want to include some of these files in the effect, first delete or rename them.
- A maximum of 99 keyframes can be included in a single effect.

Recalling a sequence of still images

After creating an effect using the procedure in *"Creating an effect with still image files as a keyframe" (page 162)*, you can execute other effects in the same way.

For details about the method of operation, see "Effect Execution" (page 321).

Frame Memory Clip Function

Frame memory clips

Movies can be read into frame memory, and recalled and played back. A movie held in frame memory is called a "frame memory clip."
A frame memory clip can be named using up to four characters *(see page 161).*

Ancillary data

In a frame memory clip, in addition to the video image, you can also record and play back ancillary data which can be used as embedded audio.
To record ancillary data, the frame memory saving mode must be set to "save with ancillary data" in the Setup menu.

For details, see "Registering a Frame Memory Clip with Ancillary Data" (page 404).

Notes

- When saving with ancillary data is enabled, the saving mode for still images also changes to "save with ancillary data," but when playing back a still image the ancillary data is never played.
- When you change the saving mode, the frame memory is initialized, and all existing recorded frame memory data is lost.
- When the signal format is 1080P, ancillary data is not supported.

Note on transferring ancillary data

Ancillary data is recorded when the frame memory saving mode is set to "save with ancillary data." It can be saved to a local drive or an external storage device, such as a removable drive, and then recalled. However, the ancillary data can only be saved or recalled in the following circumstances.

- When the frame memory saving mode is set to "save with ancillary data."
- When ancillary data is present in the saved or recalled frame memory file.
- When the system signal format is the same as the signal format in the file.

When the frame memory saving mode is set to "save with ancillary data," the following ancillary data status information is added to a frame memory clip.

- Disable:
  In this state, the ancillary data is not played. This is the status when [Ancillary Enable] is not lit in the Frame Memory >Clip >Ancillary Enable menu (2525).
- Enable:
  In this state, ancillary data is present, and can be played back. This is the status when [Ancillary Enable] is lit in the Frame Memory >Clip >Ancillary Enable menu (2525). This is the status after a clip recording operation.

The status information is saved in a file, and the recalled file is reproduced based on this information.

Frame memory clip settings

For frame memory clips, you can make the following settings in the menu or device control block (trackball).

- Start point
- Stop point
- Loop

The above settings can be saved in a snapshot register as snapshot attributes, and then recalled.

Frame Memory Clip Operations

Note

When a pair is assigned to the target selection buttons during playback of a frame memory clip *(see page 165)*, frame memory operations may not be executed correctly. Carry out frame memory operations after stopping clip playback.

Preparations

The preparations for using a frame memory clip (hereinafter, a "clip") are the same as for a still image operation.

For details, see "Preparations" (page 155) and "Selecting Outputs and Target Frame Memory" (page 157).

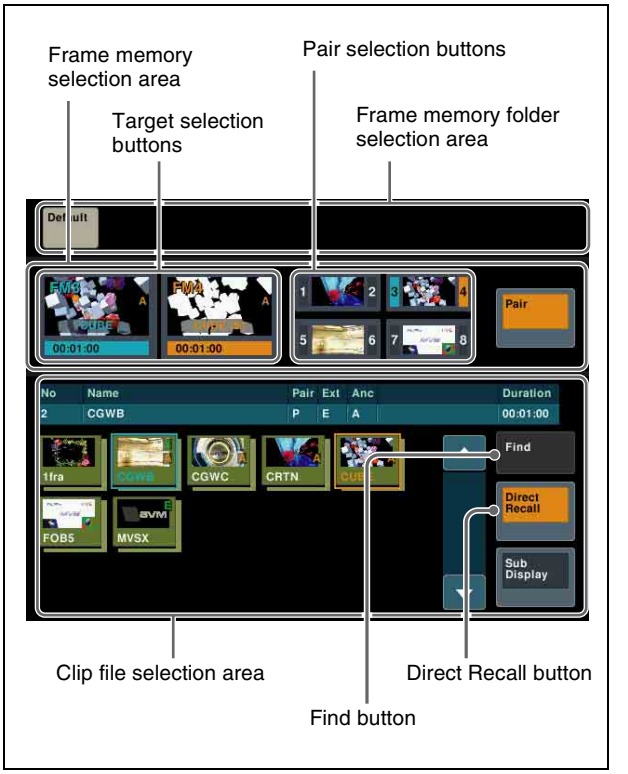
Recalling Clips (Recall)

Recalling a clip

You can recall a clip from frame memories 1 to 8.

1 Open the Frame Memory >Clip >Recall menu (2521).

When [Pair] is lit, only pair files (sets of main file and sub file) are shown.
When [Pair] is not lit, both single files and pair files are shown.



2 In the frame memory selection area, select the frame memory to be assigned *(see page 157)*.

3 If [Direct Recall] is lit, press [Direct Recall], turning it off.

4 In the frame memory folder selection area, select the desired folder.

By pressing [More] to switch the display, you can select from a maximum of 12 folders.

5 Press the thumbnail of the clip you want to recall.

6 Press [Recall].

The clip file is recalled the clip file, and is assigned to the frame memory selected in step **2**.
If a clip is selected when [Pair] is lit, the main file is output to FM1, and the sub file to FM2. If either FM1 or FM2 is selected when [Pair] is not lit, the front thumbnail file is output.

To recall in direct recall mode

Direct recall is a mode in which pressing a thumbnail immediately recalls the file.
In direct recall mode, only the front thumbnail file is recalled.

1 In step **6** in *"Recalling a clip" (page 164)*, press [Direct Recall] instead of [Recall].

2 Press the thumbnail for the file you want to recall.

To display the sub file in front

With direct recall mode enabled, press [Sub Display], turning it on.

To search by file name

Press [Find]. This searches in the same way as for still picture files *(see page 160)*.

Clip Playback

You can play a recalled clip from the menu or by using the device control block (trackball).

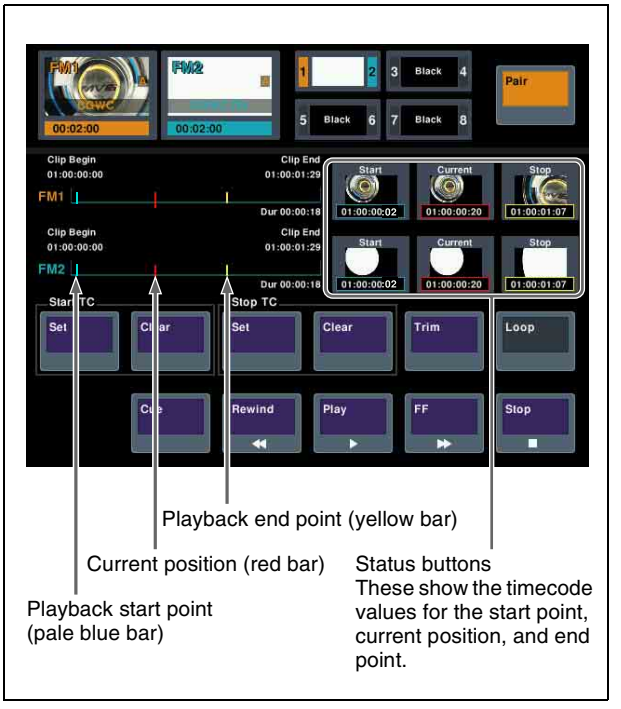
Note

With a pair file recalled, it is possible to disable pair mode and carry out a single file operation, but if you then re-enable pair mode, the output of frame memory may be black. In such cases it is necessary to recall the pair file once more.

Playing a clip (menu)

1 Open the Frame Memory >Clip >Play menu (2522).

The status of the clip is displayed in the current target selection button.



2 With [Pair] not lit, press a target selection button to select the target.

3 To set loop playback, press [Loop], turning it on.

4 Press [Play].

To stop during playback, press [Stop].

To cue up

Press [Cue].

To play the image at the beginning of the clip (Clip Begin)

Press [Rewind].

To play the image at the end of the clip (Clip End)

Press [FF].

To specify 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] status button, and enter a timecode value in the numeric keypad window.

To specify the playback stop point

Start playback, and at the desired position press [Stop] to stop playback, then press [Set] in the <Stop TC> group. To set a different position, press the [Stop] status button, and enter a timecode value in the numeric keypad window.

To change the current position

Press the [Current] status button, and enter a timecode value in the numeric keypad window.

To delete the parts of a clip file other than the playback part (trimming)

1 Set the playback start point and stop point.

2 Press [Trim].

3 Check the message, then press [Yes].

Playing a clip (device control block)

To play a clip using the device control block (trackball), the [FM1 CLIP] to [FM8 CLIP] buttons must be assigned to the channel selection buttons beforehand in the Setup menu *(see page 412)*.

Note

A frame memory clip must first be recalled with a menu operation.

1 Press the [DEV] button.

2 Select the target frame memory clip (FM1 CLIP to FM8 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.

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 288).

To specify the playback start point

To make the current position the playback start point, press the [START TC] button.

To specify the playback stop point

Start playback, and at the desired position press the [STOP] button to stop playback, then press the [STOP TC] button.

To apply a loop to a frame memory clip

Press the [FM LOOP] button.

To control variable speed playback

Press any of the [SHTL], [JOG], and [VAR] buttons, 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 Creation

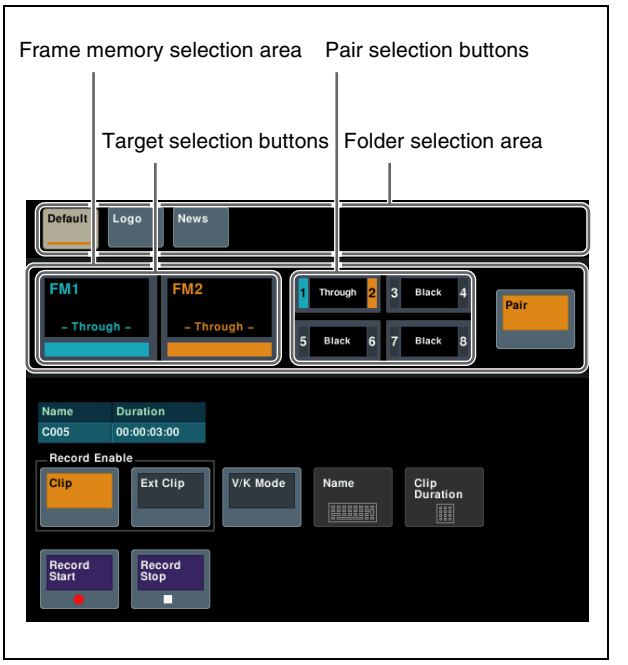
You record a movie as a clip.

Note

If the number of frame memory clips exceeds 100 single files (50 pair files), an error appears.

Recording a clip

1 Open the Frame Memory >Clip >Record menu (2523).



2 With [Pair] not lit, press a target selection button to select the target.

3 In the folder selection area, select the folder to save the clip you want to record.

4 In the <Record Enable> group, select the clip type.

Clip: Normal clip
Ext Clip: Extended clip

5 To set the clip name, press [Name].

Enter the clip name using the keyboard window, and press [Enter].

6 To start recording, press [Record Start].

7 To stop recording, press [Record Stop].

To set the clip duration

1 Press [Clip Duration].

2 Enter a timecode value or number of frames using the keyboard window, and press [Enter].

Creating and Managing Frame Memory Folders

You can create, rename, and delete frame memory folders.

Creating a folder

1 Open the Frame Memory >Folder menu (2551).

2 Press [New].

3 Enter the folder name using the keyboard window, and press [Enter].

Renaming a folder

1 In the Frame Memory >Folder menu (2551), select a folder.

2 Press [Rename].

3 Enter a new folder name using the keyboard window, and press [Enter].

Note

The following names cannot be used.
Default, Flash1, Flash2
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 a folder

1 In the Frame Memory >Folder menu (2551), select a folder.

To select all folders, press [All].

2 Press [Delete].

3 Check the message, then press [Yes].

Note

The folder named "Default" cannot be deleted.

Clip Output

You can use the reposition and lock functions in the same way as for still image operations.

For details about the method of operation, see "Image Output" (page 160).

Recording and Playback of Ancillary Data

Preparations

To record ancillary data, the frame memory saving mode must be set to "save with ancillary data" in the Setup menu.

For details, see "Registering a Frame Memory Clip with Ancillary Data" (page 404).

Recording ancillary data

To record ancillary data in a frame memory clip, use the Frame Memory >Clip >Record menu (2523).

For details about the method of operation, see "Clip Creation" (page 166).

To check ancillary data during recording

If the ancillary data to be recorded is embedded audio, you can listen while recording by setting the signal output to through mode beforehand.

For details about setting through mode, see "Setting Vertical Blanking Interval Adjustment and Through Mode" (page 443).

Note

Pressing [Freeze Enable], [Record Enable], or [Clip] and [Ext Clip] in the <Record Enable> group may cause some output noise. Also, selecting a frame memory bus signal with these settings enabled may cause some output noise.

Playing ancillary data

You can play ancillary data recorded in a frame memory clip using normal playback or by an auto transition of the clip transition.
To play ancillary data, you must enable playback of ancillary data beforehand.

For details about playback operations, see "Clip Playback" (page 165).

Notes

- After recording a frame memory clip, the ancillary data state is enabled for playback.
- To play back the clip, set the signal output to through mode.
- When the reposition function is enabled, ancillary data cannot be played back.
- Switching the reposition function from enable to disable may cause some output noise.
- Only the AUX bus and edit preview bus can output ancillary data.
- Carrying out file operations on a frame memory clip may result in the ancillary data becoming discontinuous, which may cause some output noise. However, if the first or last frame of the clip is deleted, no noise is output.
- The audio sampling frequency is always 48 kHz.
- When you play back the recorded embedded audio, depending on the device to be used, some output noise may occur at the playback start point and end point. For

details about the devices that can be connected, consult your Sony service or sales representative.

To enable ancillary data playback

1 Open the Frame Memory >Clip >Ancillary Enable menu (2525).

2 Select the frame memory folder and file to be played back.

3 Press [Ancillary Enable], turning it on.

Clip Transition Operations

This plays back a frame memory clip (movie) linked to a mix or wipe transition.
The following restrictions apply to the use of a clip transition.

- Key frame capture is not possible.
- It is not possible to apply a pattern limit.
- 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.
- It is not possible to vary the transition rate of a clip transition.
- Transition preview cannot be used.
- No instantaneous state of a clip transition can 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.

Note

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 frame memory output 1 and frame memory output 2.

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].

The Clip menu (1176.1) appears.
The status area displays a list of clips.

4 Select the clip to use in the clip transition.

5 Return to the Clip Transition menu (1176), and select the background transition type in the <BKGD Transition Type> group.

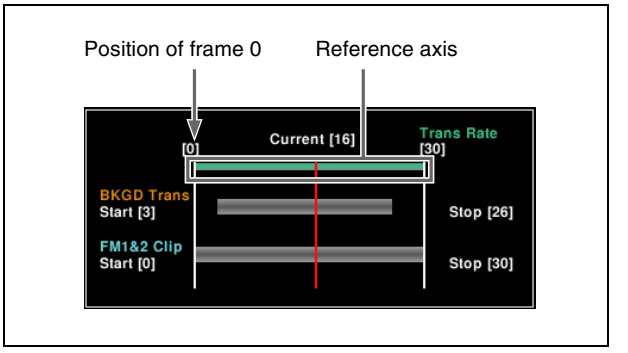
Note

To make detailed settings for the selected background transition, make adjustments in the M/E-1 >Misc >Transition menu (1171).

6 In the <Select> group, press [BKGD Transition].

7 Use either of the following methods to set the background transition start point independently of the clip playback timing.

- Move the fader lever to the desired position, 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 either of the following methods, set the end point of the background transition.

- Move the fader lever to the desired position, 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 background transition direction in the <BKGD Transition Direction> group.

10 In the <Select> group, press [FM1&2 Clip].

11 Using either of the following methods, set the start point of the clip.

- Move the fader lever to the desired start point, and press [Start] in the <Clip Transition Set Timing> group.
- Set the number of frames using the [Clip Start] parameter (left edge of the reference axis is frame 0).

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.

Image Data Management

You can carry out the following operations on the files in which images are saved.
- Pair file processing *(see page 170)*
- Moving files *(see page 170)*
- Deleting files *(see page 170)*
- Renaming files *(see page 171)*

Note

When a pair is assigned to the target selection buttons during playback of a frame memory clip *(see page 165)*, frame memory operations may not be executed correctly. Carry out frame memory operations after stopping clip playback.

Pair File Processing

You can create a pair file from two single files. And you can split a pair file into two single files.
Couple: Creates a pair file from two single files
Separate: Separates 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

Note

Carrying out the following operation automatically enables pair mode.

1 In the Frame Memory >Still >Recall menu (2511) or Frame Memory >Clip >Recall menu (2521), recall the two single files you want to convert to a pair file into FM1 and FM2.

2 Open the Frame Memory >File >Pair Recombination menu (2541).

3 Press [Couple].

Splitting a pair file into two single files

Note

Carrying out the following operation automatically disables pair mode.

1 In the Frame Memory >Still >Recall menu (2511) or Frame Memory >Clip >Recall menu (2521), recall the pair file.

2 Select the folder which contains the file to be moved.

3 Open the Frame Memory >File >Pair Recombination menu (2541).

4 Press [Separate].

Moving Files

1 Open the Frame Memory >File >Move menu (2544).

The status area shows files to be moved in the upper area, and destination files in the lower area.

2 Select the source folder and file.

3 Select the destination folder.

4 Press [Move].

Deleting Files

1 Open the Frame Memory >File >Delete menu (2545).

In the status area, whether pair mode is enabled or disabled, all of the saved files appear in thumbnail view.

2 Select the folder which contains the file to be deleted.

3 Select the file to be deleted.

To select all files, press [All Select], turning it on. When a clip thumbnail is selected, the still image files making up the clip are also selected for deletion.

4 Check the contents of the frame memory clip in the thumbnail display as necessary

No.	Parameter	Adjustment
3	Viewer	• For a movie, the current frame position • For a still image, no effect

5 Press [Delete].

6 Check the message, then press [Yes].

Renaming Files

1 Open the Frame Memory >File >Rename menu (2546).

In the status area, whether pair mode is enabled or disabled, all of the saved files appear in thumbnail view.

2 Select the file to be renamed.

3 Check the contents of the frame memory clip in the thumbnail display as necessary

No.	Parameter	Adjustment
3	Viewer	• For a movie, the current frame position • For a still image, no effect

4 Press [Rename].

5 Enter a new name using 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

Using an External HDD

You can connect a HDD to the USB port of the switcher processor to carry out the following operations.
Format: Format the HDD
Backup: Batch save files from frame memory to the HDD.
Restore: Restore frame memory from files saved on the HDD.
Since image data saved in memory is lost when the system is powered off, using an external HDD allows important data to be saved.

Notes

- Only one HDD can be connected to a single switcher processor.
- While the HDD is being accessed, frame memory operations are not possible. This applies to all operations for frame memory, including frame memory recall by a snapshot operation.
- When a pair is assigned to the target selection buttons during playback of a frame memory clip *(see page 165)*, frame memory operations may not be executed correctly.
  Carry out frame memory operations after stopping clip playback.
- When the signal format is 1080P, this function cannot be used.

For details about the HDDs that can be connected, consult your Sony service or sales representative.

Selecting the switcher

When the system is operating in Dual Simul mode, select the target switcher from which to carry out formatting, file saving, and file recall operations.

For details about Dual Simul mode, see "Selecting the Operation Mode" (page 391).

1 Open the Frame Memory >External Device >Ext HDD Format menu (2561) or Frame Memory >External Device >Ext HDD Backup/Restore menu (2562).

2 In the region selection area *(see page 52)*, press [SWR].

3 In the popup window, select the target switcher ([SWR1] or [SWR2]).

[SWR1] and [SWR2] can also be selected at the same time. In this case, the first selected button turns on green, and becomes the reference region. The menu

shows the information for the reference region switcher.

4 Press [OK].

Formatting a HDD

When you connect a HDD for the first time, it is necessary to format the HDD. Formatting partitions the disk, creating 15 partitions (FMHDD1 to FMHDD15).

1 Open the Frame Memory >External Device >Ext HDD Format menu (2561).

If in Dual Simul mode, select the target switcher *(see page 171)*.

To get the HDD information
Press [Refresh Status].
The contents of the connected HDDs appear in the "Device" field.

2 Press [Format].

Note

Formatting erases any existing data saved on the HDD.

3 Check the message, then press [Yes].

Formatting of the HDD starts.

4 Check the message, then press [OK].

Saving Files

You can save all of the files from frame memory to the external HDD.

Note

Before carrying out this operation for the first time, it is necessary to format the HDD *(see page 172)*.

1 Open the Frame Memory >External Device >Ext HDD Backup/Restore menu (2562).

For each partition, a list of the directory names and number of files appears.
If in Dual Simul mode, select the target switcher *(see page 171)*.

To get the HDD information
Press [Refresh Status].
The contents of the connected HDDs and partition information appear in the "Device" field.

2 Select the HDD partition (FMHDD1 to FMHDD15).

3 In the <Backup> group, select one of the following.

Replace: Replace the existing data with the new data.
Append: Append the new data to the existing data.

Note

When you select and execute [Replace], all of the saved files are erased immediately before saving new data.

4 Check the message, then press [Yes].

The file saving operation starts. If there is no directory, a directory is automatically created, and the files are saved within it.

5 Check the message, then press [OK].

To rename a directory
Select a directory in the list and press [Rename].
Enter a new directory name using the keyboard window, and press [Enter]. The name of a directory is limited to eight characters.

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

Loading Files

You can restore all files saved on a HDD in one operation.

1 Carry out steps **1** and **2** of the procedure in *"Saving Files" (page 172)*.

Note

It is not possible to select a HDD partition (FMHDD1 to FMHDD15) in which no file is saved.

2 In the <Restore> group, select one of the following.

Replace: Replace the existing data with the recalled data.
Append: Append the recalled data to the existing data.

Note

When you execute [Replace], any existing data in frame memory is erased immediately before the recalling operation.

3 Check the message, then press [Yes].

The file recall operation starts.

4 Check the message, then press [OK].

Managing Images using a DDR/VTR

High-speed Backup and Restoring

You can save all files currently held in frame memory as a backup data set, by high-speed recording on video tape or other medium.
To restore the file and folder structure, it is necessary to save the automatically generated file list (of file name, length of clip, and so on) in memory.

Notes

- At the beginning of the backup data, a red or blue image is automatically inserted when the data is created. Do not delete this image, as it is required for restoring the data.
- When set to Dual Simul mode, this function cannot be used.

High-speed recording of backup data to DDR or VTR

Note

Before starting the backup, it is necessary to select the target FM output to record on an AUX bus, for example, and input the AUX output to the DDR/VTR.

1 Open the Frame Memory >External Device >Backup to DDR/VTR menu (2564).

2 To record with ancillary data, output the frame memory output signal on the AUX bus.

3 In the <Backup Enable> group, select one of the following.

Clip/Still: Data from the first board (still images and clips)
Ext Clip: Data from the second board (extended clips)

4 Press [Backup Start].

When the backup preparation is completed, a confirmation message appears.

5 Start recording on the external device, and then immediately press [Yes].

The backup starts, and a message appears when the backup is completed.

6 Stop recording on the external device, then press [OK].

7 To save the file list in memory, press [File >File Name Data].

The File >Frame Memory >File Name Data menu (7153) appears.
The name of the file that is saved is fixed (FM_Bkup).

For details, see "Saving a Frame Memory File List" (page 383).

Restoring backup data from DDR or VTR

Note

Before starting the restore operation, it is necessary to select the DDR/VTR output on the FM input bus.

1 Open the Frame Memory >External Device >Restore from DDR/VTR menu (2565).

2 Press [File >File Name Data] and read the file list in the File >Frame Memory >File Name Data menu (7153).

For details, see "Saving a Frame Memory File List" (page 383).

3 To restore with ancillary data, select FM1, FM3, or FM5.

4 In the <Restore Enable> group, select one of the following.

Clip/Still: Data from the first board (still images and clips)
Ext Clip: Data from the second board (extended clips)

5 In the <Restore Type> group, select one of the following.

Replace: Replace the existing frame memory data with the restored data.
Append: Append the restored data to the existing frame memory data.

Note

If you selected [Ext Clip] in step **4**, [Append] is selected automatically.

6 Press [Restore Start].

A confirmation message appears.

7 Start playback on the external device manually, then immediately press [Yes].

Note

Make sure to include the red or blue image inserted at the beginning when the data was backed up. If this image is not found, the clip or still image will not be played back correctly.

The restore operation starts, and a message appears when the restore is completed.

8 Stop the playback on the external device, then press [OK].

Extracting Images from Video Tape

By recording a clip or a still image stored on video tape as a single clip (single file) under certain rules, you can automatically extract an image from the clip, and save it as a separate frame memory file.

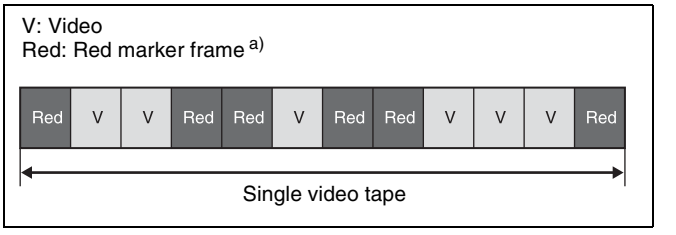
Note

When the signal format is 1080P or the mode is set to Dual Simul mode, this function cannot be used.

Relationship between the state of files recorded on video tape and files after extraction

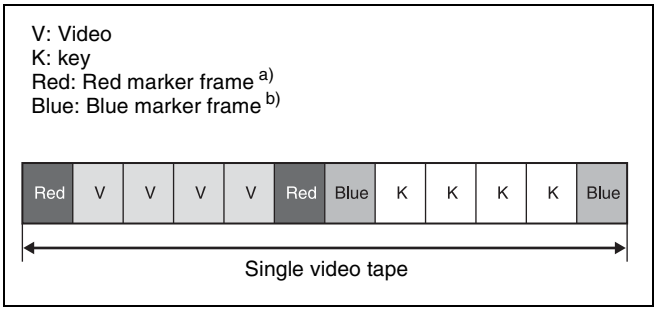
The extraction is carried out according to the following rules.

Example 1: When only video signal clips and still images are recorded (single files)



Result of extraction:
Each section surrounded by red marker frames is extracted as a clip (main file). If the red markers surround a single frame, then it is extracted as a still image.
In the example above, two clip files (main files) and one still image file are extracted.

Example 2: When a video signal clip is followed by a key signal clip with the same number of frames (pair file)



Result of extraction:
The section surrounded by red marker frames is extracted as the main file, and the section surrounded by blue marker frames is extracted as the sub file.
In the example above, one clip file (pair file) is extracted.

a) A red marker frame is a single color frame with the RGB signal levels set to 100%, 0%, 0%, respectively.
b) A blue marker frame is a single color frame with the RGB signal levels set to 0%, 0%, 100%, respectively.

Notes

- For extraction as a pair file, the main file and sub file must have the same number of frames.
- For image extraction as an extended clip, [Ext Clip] must be selected in the <Record Enable> group of the Frame Memory >Clip >Record menu (2523) when the VTR video is recorded to a clip.
- For image extraction as still images, [Clip] must be selected in the <Record Enable> group of the Frame Memory >Clip >Record menu (2523) when the VTR video is recorded to a clip.

Extracting an image from video tape

1 In the Frame Memory >Clip >Record menu (2523), record the image from the tape image as a clip *(see page 166)*.

2 Open the Frame Memory >File >Auto Extraction menu (2542).

3 Select a clip (single file) recorded from the tape.

4 Press [Extraction Start].

5 Check the message, then press [Yes].

Image extraction starts. The currently selected single clip is analyzed, and a movie (Clip) or still image (Still) is automatically extracted. When there is key data, a pair file is created.

To view details of images

Set the following parameters to check details.

No.	Parameter	Adjustment
1	No	File number
3	Viewer	Timecode of selected image

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

Color Backgrounds

The dedicated generators generate color signals, and these can be used as color backgrounds in video effects.

Color background selection

There are two color backgrounds, color background 1 and color background 2, which you use by assigning to cross-point buttons.

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)
2	Position V	Vertical position a)

a) See *page 130*.

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 132*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio [a]

a) See *page 131*.

When selecting [Pairing] and making a wipe 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 131*.

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 131*.

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 133*.

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 in a transition control block
- Independent key wipe settings in a transition control block
- DME wipe settings in a transition control block
- Independent key DME wipe settings in a transition control block
- Matte color settings (color 1, color 2, and how to compose them)
- Color settings
- DME channel settings
- Format converter input settings (copy only)
- Format converter output settings (copy only)

You can also copy settings using simple button operations *(see page 179)*.

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 • Flexi Pad settings • 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	Key 1 to key 8	Key settings, excluding the following data items. • Setup data • Key snapshots • Key memory
PGM/PST	Downstream keys 1 to 8	

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	Key 1 to key 8	Wipe settings for independent key transitions.
PGM/PST	Downstream keys 1 to 8	

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	Key 1 to key 8 [a)]	DME wipe settings for independent key transitions.
PGM/PST	Downstream keys 1 to 8	

a) Excluding keys 5 to 8 on M/E-4 on the MVS-8000X.

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 Downstream keys 1 to 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 Downstream keys 1 to 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	
Frame memory	• FM1 color • FM2 color	
DME ch1 to ch8	• Background • Border • Sepia • Light • Shade • Drop shadow [a)] • Trail	

a) Excluding DME ch4 and DME ch8.

DME channel copy and swap

You can copy and swap the channel data between DME channels 1 to 4 and between DME channels 5 to 8.
It is not possible to copy or swap channel data between DME channels 1 to 4 and DME channels 5 to 8.

Note

On the MVS-8000X, when the signal format is 1080P, the combinations for a copy or swap are restricted as follows.
- Channels 1 and 2
- Channels 3 and 4
- Channels 5 and 6
- Channels 7 and 8

On the MVS-7000X, when the signal format is 1080P, the same restriction also applies if using the MVE-8000A. There is no such restriction if using the MKS-7470X/7471X.

Copying format converter data

You can copy data between format converter inputs. You can also copy format converter data between outputs.

Note

The copy source and destination data must be in the same signal format.

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. However, the format converter is selected in the Copy/Swap >Copy 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
- Format Converter: Copying format converter data

For details about color corrector copy and swap, see "Copy and Swap" (page 187).

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 wipes in the transition control block.
Key Wipe: The operation applies to independent key wipes in the transition control block.

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 179)*.

Example: Copying 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.

Misc Menu

In the Misc menu, you can carry out the following operations.
- Enable or disable control from an external device.
- Enable or disable side flags on the background bus of each bank.
  For details about side flags, see "Side Flags" (page 194).
- Enable or disable the safe title function 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.

Control Port Settings from an External Device

Enabling or disabling control from an external device

1 Open the Misc >Enable >Port Enable menu (3211).

The settings of the following ports are displayed in the status area.
- Switcher REMOTE1 to REMOTE4 ports (RS-422A, D-sub 9-pin)
- Switcher GPI port (parallel, 25-pin)
- DME1/DME2 Editor ports (RS-422A, D-sub 9-pin)
- DME1/DME2 GPI ports (parallel, 25-pin)

Note

The DME3/DME4 settings are available only when the signal format is 1080P.

2 In the <Switcher> or <DME> group, press the button for the port you want to disable, turning it off.

To enable, press the button again, turning it on.

Note

For AUX bus operation from the REMOTE1 to REMOTE4 ports of the switcher, the setting (Enable, Disable, Manual) in the Setup menu takes precedence. The settings made in the Port Enable menu apply only when [Manual] is selected.

For details, see "Setting AUX Bus Control" (page 454).

Setting DME override (DME forced select mode)

1 Open the Misc >Enable >Port Enable menu (3211).

2 In the <DME Override> group, select the DME override mode.

DME Override: When a switcher snapshot or effect using a DME is recalled, forcibly select the DME that was used when saving.

On Air Protect: The operation is the same as the DME override function, except that a DME being used by an M/E bank or P/P bank that is on air will not be forcibly selected.

Note

If effects using the same DME channel are recalled simultaneously in two or more regions, the DME is selected with the order of precedence PGM/PST >M/E-1 >M/E-2 >M/E-3 >M/E-4 >M/E-5.

Setting the Safe Title Area

Enabling or disabling the safe title function

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 444).
- The safe title area cannot be attached to output signals for which through mode is enabled in the Setup menu.

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 (or DSK) 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] (On direction and Off direction settings the same) is selected in the <Key Transition> group: Only "Key" appears.

When [Independ] (On direction and Off direction settings independent) is selected in the <Key Transition> group: "Key(On)" and "Key(Off)" appear.

For details, see "Selecting the independent key transition mode of the transition control block" (page 446).

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].

To insert (on) or remove (off) keys individually, 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
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 94).

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 video process and color corrector for an AUX bus in the AUX menu.

Setting the Video Process for an AUX Bus

Note

If the input signal and AUX bus color corrector is enabled in the Setup menu, the video process of the AUX bus cannot be used.

For details, see "Enabling the Input Signal and AUX Bus Color Corrector" (page 447).

1 In the Aux >Aux Bus >Video Process menu (2311), select the target AUX bus.

Parameter group [2/2]

No.	Parameter	Adjustment
1	AUX Bus	AUX bus selection [a]

a) When AUX mix transitions are enabled, even-numbered buses cannot be selected as the target.

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].

Setting the Color Corrector for an AUX Bus

You can set the following color corrector functions for an AUX bus with color corrector enabled in the Engineering Setup >Switcher >Key/Wipe/FM/CCR >Bus CCR/Input CCR/Video Proc menu (7335.3).
- Video process
- Primary color correction
- RGB clip

Note

If the video process is enabled in the Setup menu, the color corrector of the AUX bus cannot be used.

For details, see "Enabling the Input Signal and AUX Bus Color Corrector" (page 447).

1 In the Aux >Aux Bus >CCR menu (2312), select the target AUX bus.

Parameter group [2/2]

No.	Parameter	Adjustment
1	AUX Bus	AUX bus selection

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

In the <Video Process> group of the Aux >Aux Bus >CCR menu (2312), press [Video Process], turning it on.

For details about the video process, see "Output Video Process" (page 192).

Applying primary color correction effects

In the <Primary CCR> group of the Aux >Aux Bus >CCR menu (2312), press [Primary CCR], turning it on.

For details about primary color correction settings, see "Primary Color Correction" (page 188).

Applying RGB clip effects

In the <RGB Clip> group of the Aux >Aux Bus >CCR menu (2312), press [RGB Clip], turning it on.

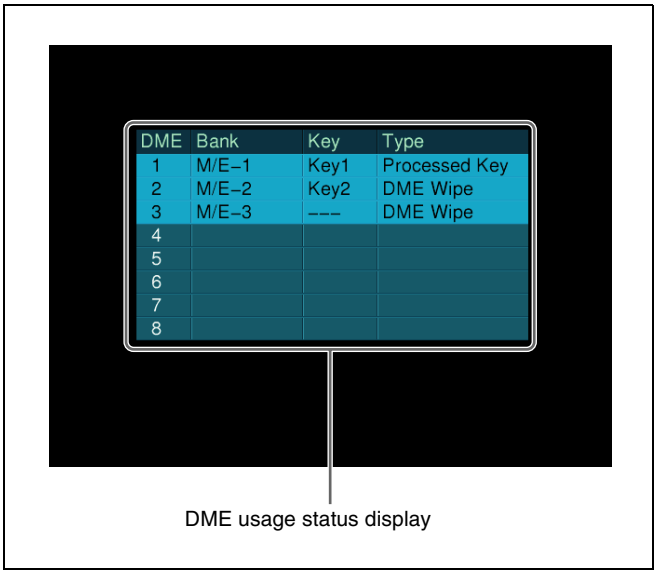
For details about RGB clips, see "RGB Clips" (page 193).

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.

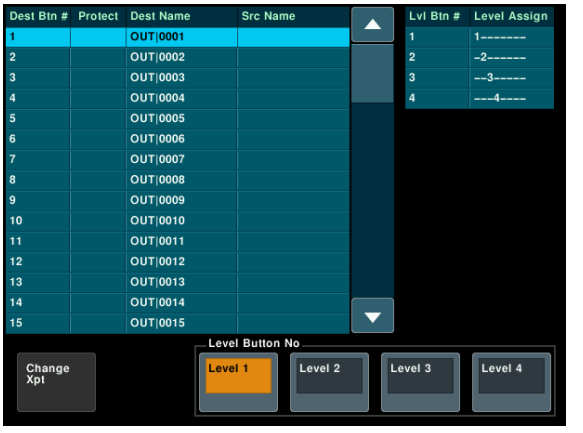
Router Menu

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 "Configuring Router Control" (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.
There are two types of adjustment, depending on the application:
- Adjustment of an individual input signal
- Image effects on a particular bus

Notes

- The two types of adjustment may be carried out independently. However, since they are implemented by the same hardware, if the same signal is adjusted twice, there may be limitations on the range of effects obtained.
- If the input signal and AUX bus color corrector is enabled in the Setup menu, the video process cannot be used.
  For details, see "Enabling the Input Signal and AUX Bus Color Corrector" (page 447).

Video process settings for input signals

For each signal input to the switcher, you can enable/disable the video process and set the parameters (Video Gain, Y Gain, C Gain, Hue Delay, and Black Level) in the Setup menu.

For details about the method of operation, see "Setting the Video Process" (page 437).

Video process settings for buses

Target bus

For each of the following buses, you can enable/disable the video process and set the parameters (Video Gain, Y Gain, C Gain, Hue Delay, and Black Level).
- Buses in the M/E-1 to M/E-5 and PGM/PST banks
  - Key 1 fill bus to key 8 fill bus
  - Background A bus and background B bus
  - Utility 1 bus and utility 2 bus
- Frame memory source 1 bus and frame memory source 2 bus
- AUX1 bus to AUX48 bus

These settings also apply to keyframes and snapshots.

Video process settings menus

Target bus		Menu used for operation	See page
M/E-1 to M/E-5 banks	Key 1 to key 8 key fill buses	M/E-1 to M/E-5 >Key1 to Key8 >Video Process menus	*page 111*
	Background A and B buses	M/E-1 to M/E-5 >Misc >Video Process menus	*page 185*
	Utility 1 and 2 buses		
PGM/PST bank	DSK1 to DSK8 key fill buses	PGM/PST >DSK1 to DSK8 >Video Process menus	*page 111*
	Background A and B buses	PGM/PST >Misc >Video Process menu	*page 185*
	Utility 1 and 2 buses		
Frame memory source 1 and 2 buses		Frame Memory >Still >Freeze/ Store menu	*page 159*
AUX1 to 48 buses		Aux >Aux Bus >Video Process menu	*page 182*

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 448).

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 >Video Process menu on each bank.

For details about the video process settings menus for other buses, see "Video process settings menus" (page 185).

This section describes setting the video process on the background A bus as an example.

Setting the video process for a bus

1 Open the M/E-1 >Misc >Video Process menu (1172).

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].

Color Corrector

Chapter 9

Overview

The color corrector enables video signal color correction (black balance/white balance adjustment, gamma correction, knee correction, etc.).

Notes

- To use the color corrector, BZS-8420X (for MVS-8000X) or BZS-7420X (for MVS-7000X) Color Corrector Software is required. An install key must be entered to use the software.
  For details about the install key, see "Configuring Settings to Use the Software" (page 400).
- You can also enable the color corrector for each input signal or AUX bus to set the video process, primary color correction, and RGB clip functions.
  For details, see "Setting the Input Signal Color Corrector" (page 438) and "Setting the Color Corrector for an AUX Bus" (page 182).

Restrictions on color corrector and M/E combinations

Signal format	When color corrector output is selected		When color corrector output is not selected
	3M/E system	4M/E to 6M/E systems	4M/E to 6M/E systems
Other than 720P	–	Re-entry signals that cascade over two or more banks cannot be selected on a key bus or the utility 1 bus. (Restriction 2)	–
720P	Re-entry signals that cascade over two or more banks cannot be selected on a key bus or the utility 1 bus. (Restriction 2)	Re-entry signals cannot be selected on a key bus or the utility 1 bus. (Restriction 1)	Re-entry signals that cascade over two or more banks cannot be selected on a key bus or the utility 1 bus. (Restriction 2)

Example of restriction 2: 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 key bus or the utility 1 bus on M/E-3.

Color corrector input bus

There are two inputs for the bus for capturing material for the color corrector: the color corrector 1 bus (CCR1) and color corrector 2 bus (CCR2).

The CCR1 and CCR2 delegation buttons are assigned to the delegation button in the AUX bus control block.

Selecting the color corrector input

1. In the AUX bus control block, press the CCR1 or CCR2 delegation button.
2. In the cross-point button row, select the signal to which to apply an effect.

Note

The signals that can be selected on the CCR1 and CCR2 buses are limited to primary inputs, premium inputs, format converter inputs, and frame memory outputs (FM1 to FM8).
You can also enable selection of all signals on the switcher in the Setup menu.

For details, see "Enabling selection of all signals for color corrector input" (page 449).

Selecting the color corrector output

By assigning the signal output from the color corrector to a cross-point button, you can select that signal by pressing the button.

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

Basic Color Corrector Operations

Setting a Color Corrector

Enabling a color corrector

This enables all color corrector functions.
You can set each function for CCR1 or CCR2 in the menu. This section describes operations using the CCR1 input video process menu as an example.

1 Open the CCR >CCR1 >Input Process menu (2411).

2 In the <CCR> group, press [CCR], turning it on.

To return color corrector settings to their defaults

1 In the <CCR> group of the CCR >CCR1 >Input Process menu (2411), press [Unity].

2 Check the message, then press [Yes].

All color corrector settings are returned to their defaults.

Copy and Swap

Copying color corrector data

1 Open the CCR >CCR1 >Copy/Swap menu (2451).

The status area shows a copy source list on the left and a copy destination list on the right.

2 Select the copy source data and copy destination data.

3 Press [Copy].

Swapping color corrector data

Press [Swap] instead of [Copy] in step **3** in *"Copying color corrector data" (page 187)*.

To undo copy or swap

Press [Undo] to return to the state before the copy or swap was carried out.

Setting Color Corrector Functions

This describes setting each color corrector function.
You can copy or swap settings data between two color correctors (CCR1 and CCR2).
This section describes the operation for setting each function of CCR1 as an example.

Input Video Process

Carry out the following corrections to a YUV signal before conversion to an RGB signal.
- Video signal overall gain adjustment
- Luminance signal gain adjustment
- Chrominance signal gain adjustment
- Hue delay
- Black level adjustment

Applying an input video process effect

1 Open the CCR >CCR1 >Input Process menu (2411).

2 In the <Input Process> group, press [Input Process], turning it on.

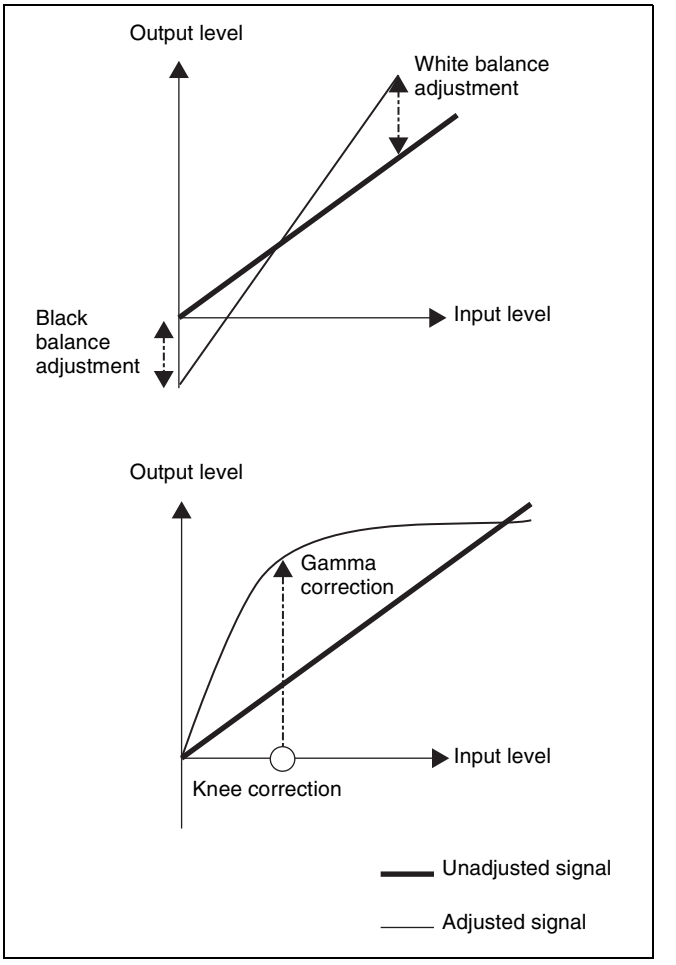
3 Set the following parameters.

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
In the <Input Process> group, press [Unity].

Primary Color Correction

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.



You can also mask a part of the region to be corrected.

Applying primary color correction effects

1 Open the CCR >CCR1 >Primary CCR menu (2412).

2 In the <Primary CCR> group, press [Primary CCR], turning it on.

3 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

4 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].

Masking a part of the primary color correction

This section describes mask 1 as an example. The operation for mask 2 is identical.

Note

The mask function is common to the primary color correction, secondary color correction, and spot color adjustment functions.

1 In the CCR >CCR1 >Primary CCR menu (2412), press [Mask], turning it on.

2 In the <Primary/Secondary Mask> group, press [Mask1], turning it on.

Note

If [Mask 2] was selected in the CCR >CCR1 >Secondary CCR menu (2413), [Mask 2] changes to [Mask 1] in combination with this setting.

3 Press [Mask1 Adjust].

The Mask1 Adjust menu (2412.1) appears.

4 In the <Mask Source> group, select the mask source.

Box: Signal from dedicated box generator
Pattern: Signal from dedicated pattern generator

5 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 Mask1 Adjust menu to display the Mix Ptn Select menu (2412.2).
Press the desired pattern (1 to 24) to select it, and set the [Size] and [Soft] parameters.

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 130*.

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 132*.

When selecting [Aspect] and adjusting the pattern aspect ratio

No.	Parameter	Adjustment
1	Aspect	Aspect ratio a)

a) See *page 131*.

When selecting [Angle] in the <Rotation> group and slanting the pattern

No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

a) See *page 131*.

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 131*.

7 To invert the mask source, press [Pri/Sec Mask Invrt] in the Primary CCR menu (2412), turning it on.

Secondary Color Correction

For the six colors R (red), G (green), B (blue), Y (yellow), C (cyan), and M (magenta), adjust the luminance and

saturation, and also the hue within a range of ±30 degrees of the center value for each color.
You can also mask a part of the region to be corrected.

Applying secondary color correction effects

1 Open the CCR >CCR1 >Secondary CCR menu (2413).

2 In the <Secondary CCR> group, press [Secondary CCR], turning it on.

3 In the <Secondary CCR Adjust> group, select the target color to set.

4 Set the following parameters.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue Delay	Hue delay

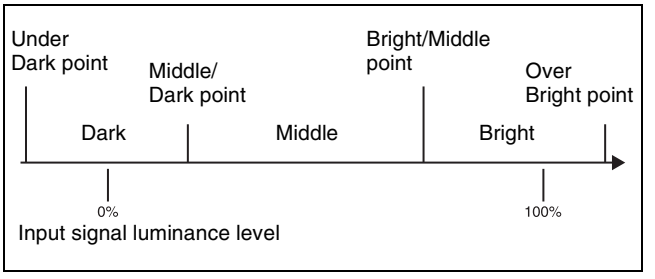
To return the parameters to their default settings
In the <Secondary CCR> group, press [Unity].

Masking a part of the secondary color correction

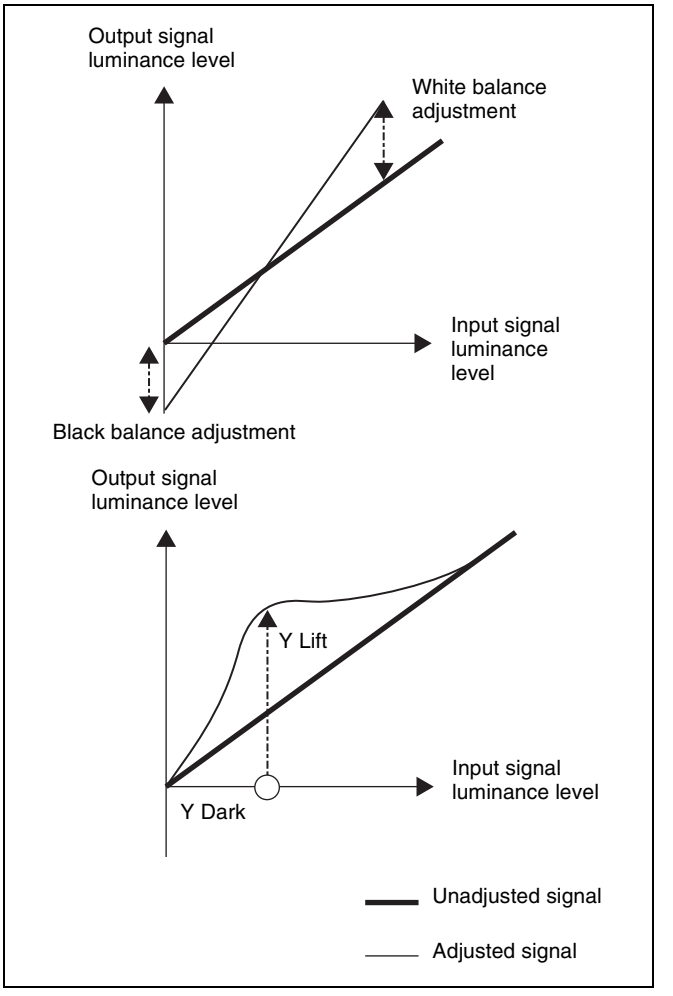
In the CCR >CCR1 >Secondary CCR menu (2413), press [Mask], turning it on. The operation is identical to primary color correction. See *"Masking a part of the primary color correction" (page 189)*.

Luminance Process

After converting a signal with RGB color correction applied to a YUV signal, the luminance level is divided into three regions, referred to as Dark, Middle, and Bright, and the video signal is adjusted for these regions.



There are three modes for luminance processing, as follows.
Tint mode: Adds a specified color to the source video signal.
Color Modify mode: Adjusts the source video signal.
Y Modify mode: Adjusts the output levels of the input luminance signal.
- White balance adjustment: Sets the output level for a 100% level input luminance signal.
- Black balance adjustment: Sets the output level for a 0% level input luminance signal.
- Y lift correction: Adjusts the curvature of the curve.
- Y dark correction: Adjusts the position of the peak of the curve.



You can also mask a part of the region to be corrected.

Applying luminance process effects

1 Open the CCR >CCR1 >Luminance Process menu (2415).

2 In the <Luminance Process> group, press [Luminance Process], turning it on.

3 In the <Mode> group, specify the adjustment mode.

Tint: Adds a specified color to the source video signal (tint mode).
Color Modify: Adjusts the source video signal (color modify mode).

Y Modify: Adjusts the output levels of the input luminance signal (Y modify mode).

If [Tint] or [Color Modify] is selected, set the three regions (Dark, Mid, Bright) in steps **4** to **7**.
If [Y Modify] is selected, set the following parameters.

No.	Parameter	Adjustment
1	White	White balance adjustment
2	Black	Black balance adjustment
3	Y Lift	Curvature of curve
4	Y Dark	Position of peak of curve

4 In the <Bound> group, select [Level] and set the boundary of the regions.

No.	Parameter	Adjustment
1	Over B Level	Luminance level of the Over Bright point
2	Mid B Level	Luminance level of the Bright/ Middle point
3	Dark Mid Level	Luminance level of the Middle/ Dark point
4	Under D Level	Luminance level of the Under Dark point

5 In the <Bound> group, select [Soft] and set the softness of the boundary of the regions.

No.	Parameter	Adjustment
1	Over B Soft	Degree of softness at Over Bright point
2	Mid B Soft	Degree of softness at Bright/ Middle point
3	Dark Mid Soft	Degree of softness at Middle/Dark point
4	Under D Soft	Degree of softness at Under Dark point

6 In the <Luminance Process Adjust> group, select the target region (Dark, Mid, Bright) to adjust.

7 Set the following parameters.

In tint mode

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

In color modify mode

No.	Parameter	Adjustment
1	Luminance	Luminance
2	C Gain	Chrominance signal gain
3	Hue Delay	Hue delay

To return the parameters to their default settings

In the <Luminance Process> group, press [Unity].

Spot Color Adjustment

You can change the color of a specified color region to a different color, without affecting other regions. You can also mask part of such a region.
Then, you can also make the following corrections for areas outside the region whose color you have changed.

- Video signal overall gain adjustment
- Luminance signal gain adjustment
- Luminance signal offset adjustment
- Chrominance signal gain adjustment
- Chrominance signal hue adjustment

Adjusting the color of the specified region (key)

1 Open the CCR >CCR1 >Spot CCR/Output menu (2416).

2 In the <Spot CCR> group, press [Spot CCR], turning it on.

3 In the <Auto> group, press [Sample Mark], turning it on.

Note

When [Sample Mark] is selected, adjustments outside the region of spot color adjustment *(see page 192)* and output video process effects *(see page 192)* are temporarily disabled.
Pressing [Sample Mark], turning it off, restores the former state.

4 Set the following parameters.

Adjust so that the color you want to change is included within the sample mark range.

No.	Parameter	Adjustment
1	Position H	Horizontal position
2	Position V	Vertical position
3	Size	Size

5 In the <Auto> group, press [Auto Start] to adjust the key automatically.

Note

This automatic adjustment does not carry out key gain adjustment. Adjust the key gain as shown in step **6**, as required.

6 Select [Key Adjust] and adjust the key.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue	Hue
4	Gain	Key gain

7 Select [Window] and adjust the key detection range for spot color adjustment.

No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation

8 In the <Spot CCR> group, select [Spot CCR] and adjust the replacement color.

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

To return the parameters to their default settings
In the <Spot CCR> group, press [Unity].

Masking a part of the spot color adjustment

In the CCR >CCR1 >Spot CCR/Output menu (2416), press [Mask], turning it on. The operation is identical to primary color correction. See *"Masking a part of the primary color correction" (page 189).*

Adjusting the color outside the spot color adjustment region

1 In the <Outer Out Proc> group of the CCR >CCR1 >Spot CCR/Output menu (2416), press [Outer Out Proc], 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
5	Black Level	Black level

To return the parameters to their default settings
In the <Outer Out Proc> group, press [Unity].

Output Video Process

The following corrections are available for the YUV signal.
- Video signal overall gain adjustment
- Luminance signal gain adjustment
- Luminance signal offset adjustment
- Chrominance signal gain adjustment
- Chrominance signal hue adjustment

Applying output video process effects

1 Open the CCR >CCR1 >Spot CCR/Output menu (2416).

2 In the <Output Process> group, press [Output 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
In the <Output Process> group, press [Unity].

YUV Clips

For each of the luminance and color difference signals, the following processing is available.
- White clip: Sets the maximum level of the luminance signal.
- Dark clip: Sets the minimum level of the luminance signal.
- Positive clip: Sets the maximum amplitude in the positive direction of the color difference signal.
- Negative clip: Sets the maximum amplitude in the negative direction of the color difference signal.

Applying YUV clip effects

1 Open the CCR >CCR1 >YUV Clip/RGB Clip menu (2417).

2 In the <YUV Clip> group, press [YUV Clip], turning it on.

3 In the <YUV Clip Adjust> group, select the target item to set.

Luminance: Luminance signal
Chroma: Chrominance signal

4 Depending on the selection in step **3**, set the following parameters.

When [Luminance] is selected

No.	Parameter	Adjustment
1	White Clip	White clip adjustment
2	Dark Clip	Dark clip adjustment

When [Chroma] is selected

No.	Parameter	Adjustment
1	U Posi Clip	Positive clip adjustment for U signal
2	U Nega Clip	Negative clip adjustment for U signal
3	V Posi Clip	Positive clip adjustment for V signal
4	V Nega Clip	Negative clip adjustment for V signal

To return the parameters to their default settings

In the <YUV Clip> group, press [Unity].

RGB Clips

For each of the R, G, and B signals, you can make dark clip and white clip adjustments.

Applying RGB clip effects

1 Open the CCR >CCR1 >YUV Clip/RGB Clip menu (2417).

2 In the <RGB Clip> group, press [RGB Clip], turning it on.

3 In the <RGB Clip Adjust> group, select the target item to set.

Dark: Dark clip adjustment
White: White clip adjustment

4 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].

Special Functions

Chapter 10

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 436).

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 436)*.

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 on the right hand edge of the 3rd row (background A) or 4th row (background B) of the cross-point control block is pressed, turning it on, 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 [1-ROW UTIL1] button in the cross-point Flexi Pad and select the signal (utility bus 1 signal) to insert in the side flag areas.

2 In the 4th row, press the cross-point 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.

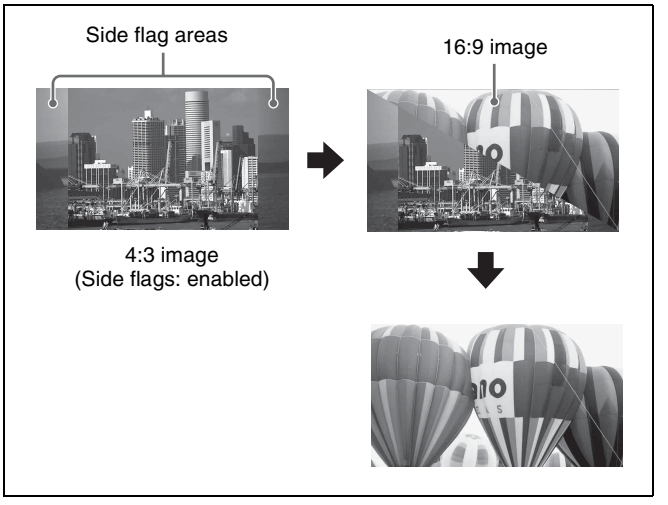
3 Enable side flags in the menu *(see page 194)* or using the [SIDE FLAG] button *(see page 194)*.

Side flags are added to the 4:3 video material.

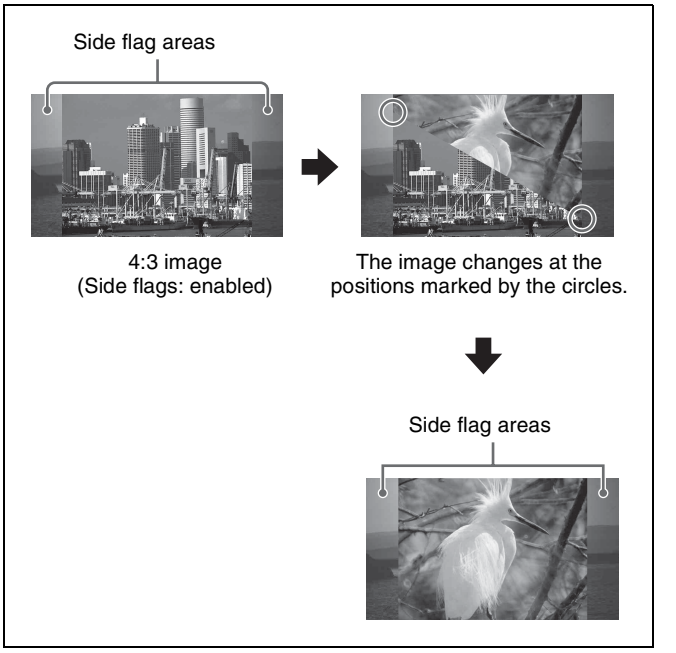
Wipe Action on Images with Side Flags

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.

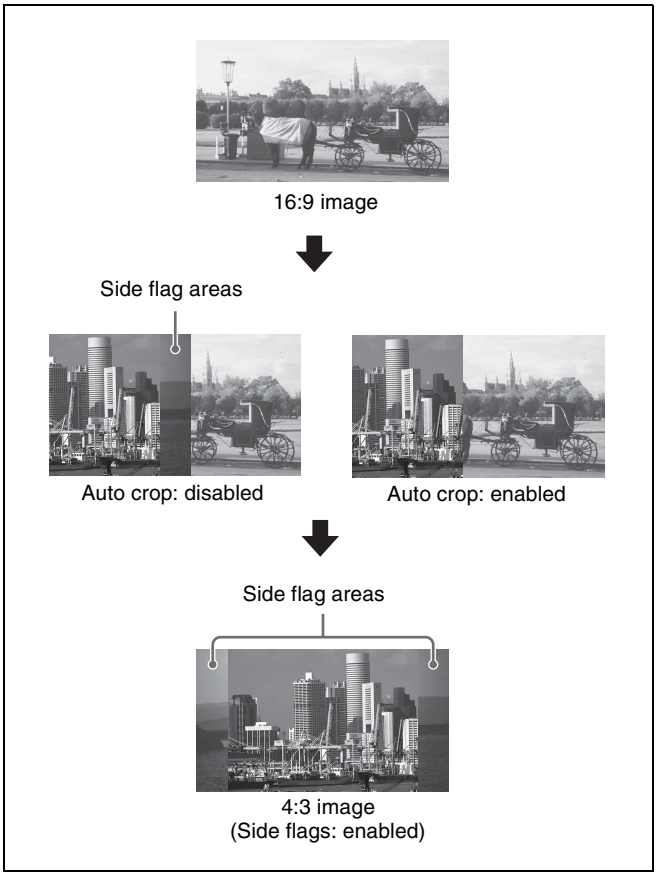
Notes

- When using the DME SDI interface with [Auto Crop] disabled, side flags are not added to the new image during a DME wipe.
- 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.

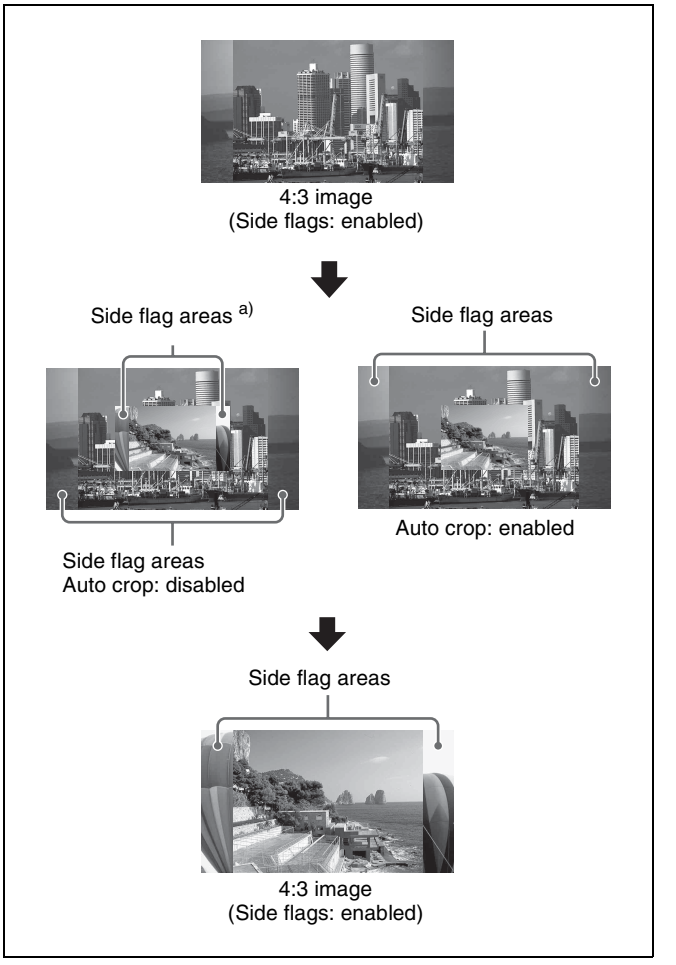
DME wipe from a 4:3 image to a 16:9 image

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)



a) When using the DME SDI interface, side flags are not added during a DME wipe.

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.

Note

To enable this function requires BZS-8200X (for the MVS-8000X) or BZS-7200X (for the MVS-7000X) Multi Program 2 Software.

Using the software

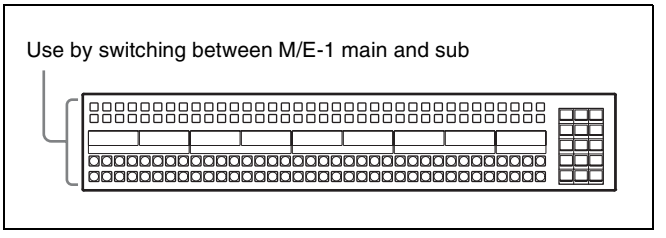
An install key must be entered to enable the Multi Program 2 software for use (entry of the install key is not required if the software is installed at the factory).
For details about entering the install key, contact your Sony representative.
To obtain a key, you may be required to submit the unique device ID of the switcher you are using.
You can check the unique device ID in the Engineering Setup >System >Install/Unit Config menu (7316) of the switcher.

For details, see "Configuring Settings to Use the Software" (page 400).

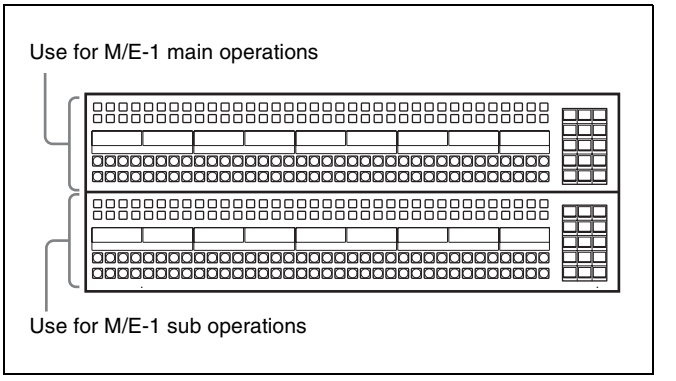
About main and sub assignments

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 202).

Sequence of operations in Multi Program 2 mode

Basic operation

Enter the BZS-8200X or BZS-7200X 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
- Enabling re-entry between main and sub

Multi Program 2 Mode Settings (Basic Operation)

Entering the software install key (first time only)

After installing the BZS-8200X or the BZS-7200X 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 the switcher (SWRx) 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, OUT1 is fixed to PGM1 (main program), OUT6 is fixed to PGM2 (sub program), and the OUT2 to OUT5 signals can be assigned signals selected from among the following.
PGM1, PGM2, PGM3, PGM4, PVW1, PVW2, K-PVW1, K-PVW2, CLEAN, SUB CLEAN

Note

Either the main and sub use a maximum of four of the six outputs (OUT1 to OUT6). The outputs can be used within the following limits.

- OUT1, OUT2: main only
- OUT3, OUT4: can be used for either main or sub
- OUT5, OUT6: sub only

For details, see "Assigning the output of each bank in multi-program mode" (page 434).

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 435).

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 435).

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 443).

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 the "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 Flexi Pad of the cross-point control block.

1 On the cross-point control block, press the [MAIN] button in the cross-point Flexi 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 202) and "Multi Program 2 Mode Restrictions" (page 203).

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.
To assign buttons on the right side (independent key transition execution section buttons, use the same procedure in the Engineering Setup >Panel >Config >Link/Program Button >Transition Module2 menu (7321.34).

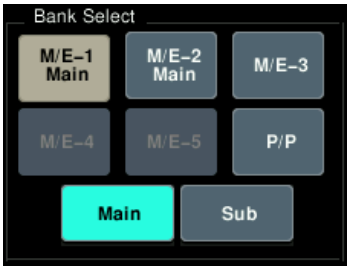
1 In the Engineering Setup >Panel >Config menu (7321), press [Link/Program Button].

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 411).

6 In the <Bank Select> group, press [Sub] and set the assignment for the sub bank.

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 Flexi 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 416).

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 and AUX bus 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 412).

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 198) and "Assigning output signals for Multi Program 2 mode" (page 198).

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.

- 1st row and 2nd row 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 418).

Changing the matrix size to standard

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. 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 Space" (page 470).

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 410).

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 309).

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 306).

Enabling re-entry between main and sub

In the Engineering Setup >Switcher >Config menu (7331), press [MP2 Free Re-Entry], turning it on.
Re-entry between main and sub on the same switcher bank is enabled.

Notes

- Re-entry adds a 1H delay to the video. Looped re-entry may cause problems in the video.
- On the MVS-8000X, a maximum of ten re-entry stages are supported, with the final output having a delay of 5H. On the MVS-7000X, a maximum of twelve re-entry stages are supported, with the final output having a delay of 6H.
- The selection order of re-entry signals affects the number of lines by which the output signal is lowered.
- If a delay occurs in the image, even when through mode is set, the ancillary data does not pass through.
- For example, it is possible to select re-entry of M/E-1 main on M/E-1 main.

Restrictions on re-entry when using Multi Program 2

Snapshots are affected by the re-entry function.
When [MP2 Free Re-Entry] is enabled, the following restrictions apply when a switcher bank is in Multi Program 2 mode.
If you save and recall snapshots simultaneously with more than one region specified, the recorded state is reproduced in the order of precedence of regions (M/E-1 >M/E-2 >M/E-3 >M/E-4 >M/E-5 >PGM/PST). Therefore, if you save and recall a snapshot with more than one region specified, the cross-point settings may not be recalled correctly.
To recall a snapshot correctly, press the cross-point button before recalling the snapshot, to select a signal other than the re-entry signal, then recall the snapshot.

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 and switcher GPI link settings.
- The utility 3 bus is added to the buses on which a switcher GPI link can be configured.
- "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.

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 patterns can be used • Pattern mix is not possible
	Modifiers	Same as standard mode	• Pairing, modulation, spring, spiral, and split cannot be used • Edge fill mattes are single color only • Multi can be selected from four patterns
Wipes (key)		Same as wipes (background) for sub	
DME Wipes	Use	Supported	Cannot be used (Can be used, with a setting change)
	Patterns for 1 channel	• With a dedicated interface, each of main and sub can be used. • With an SDI interface, only one of main and sub can be used.	
	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
Snapshots	Cross-point hold	Utility 2 cannot be set	• Utility 3 is added. • BKGD A/B and Key1 cannot be set.
Control from an editor		Same as standard mode	Not supported
Operation setting for switcher GPI inputs and outputs		Same as standard mode	Not supported

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)
- Re-entry is limited to four levels. Re-entry is not possible between main and sub on the same M/E. However, this restriction can be removed.
  For details, see "Enabling re-entry between main and sub" (page 201).
- 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, GPI link, or External bus link, the "Utility 2" bus cannot be selected.
- Screen aspect, 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).
- Snapshots, wipe snapshots, and effects created using a wipe on the sub bank when the signal format is 1080P do not function correctly with signal formats other than 1080P. Similarly, those created when the signal format is other than 1080P do not function correctly when the signal format is 1080P.

4K System

Overview

Installing the following software enables processing of 4K images.
- BZS-8570X (for MVS-8000X) or BZS-7570X (for MVS-7000X) 4K upgrade software
- BZS-8560X (for MVS-8000X) or BZS-7560X (for MVS-7000X) switcher upgrade software

For details about the switcher configuration required for 4K support, contact your Sony service or sales representative.

Using the software

An install key must be entered for software activation to enable use of the 4K upgrade software and switcher upgrade software (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 Install/Unit Config menu of the switcher, using the following procedure.

For details, see "Configuring Settings to Use the Software" (page 400).

4K-compatible systems

In a 4K system, a single 4K image is subdivided into four HD (1080P) images, which are transmitted as four SDI signals (supports SMPTE 425-1/5 Level B format).
The number of M/E blocks, keyers, and inputs/outputs that can be used on the switcher for image processing of the four images is given below.

Item	Switcher processor	
	MVS-8000X	MVS-7000X
M/E banks	1 or 2 a)	1
Number of keyers	2 for each M/E bank that supports 4K	
Maximum number of inputs	41	20
Maximum number of outputs	16	12

a) Set automatically by the switcher configuration.

For details about restrictions of functions and settings in a 4K system, see "4K System Restrictions" (page 205).

4K System Settings

Setting the signal format to 1080P

The switcher signal format must be set to 1080P to support 4K. Change the signal format if the current signal format setting is not 1080P.

1. In the Engineering Setup >System >Format menu (7313), press [Signal Format].
2. Select a signal from the pop-up window.

   Set to [1080P/50] or [1080P/59.94].

   Note

   SWR1 is the only switcher on which the signal format can be set to 1080P.
3. Press [Execute].

For details, see "Setting the Signal Format" (page 392).

Setting the 4K signal division method

This sets the method used to divide images for 4K image signal processing.
Square division method and 2-sample interleave division method are supported.

Note

Resizer operation is supported with the 2-sample interleave division method only; it is not supported with the square division method.

1. Open the Engineering Setup >System >Format menu (7313).
2. In the <4K/QFHD Mode> group, select the division method.

   Square: Square division method
   2-sample interleave: 2-sample interleave division method
   Off: 4K system not used
3. Check the message, then press [Yes].

   The system restarts with the configuration applied.

Setting the 4K signal inputs/outputs

Four input connectors and four output connectors are assigned as a single group to a 4K signal. The input and output settings are specified using the first number in each group.

For inputs, four inputs are grouped in sequence starting from input 1.

Input connector 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)

For outputs, four odd-numbered outputs and four even-numbered outputs are grouped in sequence.

Output connector number	Setting number
1, 3, 5, 7	1
2, 4, 6, 8	2
9, 11, 13, 15	9
10, 12, 14, 16	10
(and so on)	(and so on)

For details about input/output signal settings, see "Settings Relating to Signal Inputs" (page 437) and "Settings Relating to Signal Outputs" (page 443).

Setting the active area of 4K inputs/outputs

For 4K signal inputs in groups of four and 4K signal outputs in groups of eight, an active area can be set to 3840×2160 or 4096×2160 for each group.

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

4 In the Engineering Setup >Switcher >Output menu (7333), press [Active Area Size].

The Active Area Size menu (7333.13) appears.
Set the output active area in the same way as for inputs.

Notes

- 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.
- For outputs, only odd-numbered outputs can become the target for setting, with consecutive odd-numbered and even-numbered outputs (for example, output 1 and output 2) having the same setting. Only even-numbered outputs cannot be set.
- If both the consecutive odd-numbered and even-numbered outputs are AUX bus outputs, [4096×2160] can be set.
- [4096×2160] cannot be set on the edit preview bus.

4K System Restrictions

4K systems are subject to the following function and settings restrictions.

For details about disabled menus due to 4K restrictions, see "Disabled Menus in 4K Systems" (page 512).

Item	Restrictions
Functions that cannot be used in the switcher	• M/E-2 to M/E-4 banks (MVS-8000X), M/E-1 to M/E-5 banks (MVS-7000X) a) • Key 3 to key 8 • M/E Config other than [Standard] • Utility 1 and 2 buses • AUX11 to AUX48 buses • Multi viewer • Color corrector • Side flags • Format converter
DMEs	All functions relating to DME are not supported
Screen aspect	Fixed to 16:9
Transitions	• Clip transitions not supported • Preset color mix using Utility 2 bus not supported • In 2-sample interleave division, a key 1 (key 2) independent key transition wipe cannot be used when key 1 (key 2) is selected for the next transition and DME wipe is selected as the transition type.

Item	Restrictions
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, 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 square division mode, auto chroma key sample mark cannot be set to a region spanning two or more divided sub-images. • [Edge Blink] blinking not supported • Edge and submask settings not supported • [Speed] settings for main mask rotation not supported • [Multi] settings for main masks not supported • PROC V and PROC K signals not supported
Resizer	• In square division mode, resizer not supported • In 2-sample interleave division mode, border, crop, and effects settings not supported
Wipes	• Supports standard and enhanced group patterns only • Pattern mix not supported • Multi and pairing settings not supported • Speed parameter for modulation settings not supported • Edge border and soft border support single color only • [Speed] settings for rotation not supported
DME Wipes	• In square division mode, DME wipes not supported • In 2-sample interleave division mode, only resizer DME wipe patterns are supported, and edge and crop settings not supported
Frame memory	• Operations on 4K-format images not supported (supports operations on divided sub-images only) • Pair mode settings not supported • Supports still image recall, key frame creation, clip recall, and clip playback only
Safe titles	• Outputs with active size of [4096×2160] not supported • In square division mode, [Grid] settings not supported
Color backgrounds	Supports single color only

a) You can change the banks that are not used to P/P, M/E-3, and M/E-4 on the MVS-8000X, and to P/P and M/E-2 to M/E-5 on the MVS-7000X. This operation is configured in the Engineering Setup >Switcher >Config >Logical M/E Assign menu (7331.5).

M/E Configuration Switching (M/E Split)

On the MVS-7000X, a single MKS-7210X mix/effect board can be subdivided into multiple M/Es for use (M/E split).

2M/E mode, 3M/E mode, or 4M/E mode can be assigned on up to three boards. It is also possible to set no assignment.

Using M/E split, you can select the following M/E configurations.

Number of assigned M/Es	Number of keys available on a single M/E	
1	8	
2	4	
3	M/E-1, M/E-2	2
	PGM/PST	4
4	2	

The mode is referred to as 1M/E mode to 4M/E mode, depending on the maximum number of M/Es used on a single MKS-7210X.

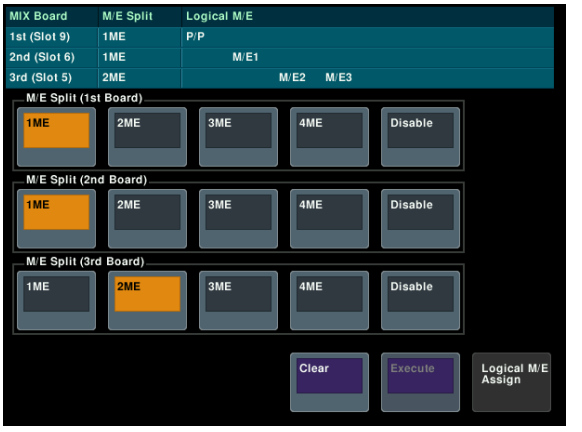
Notes

- When three or four M/Es are assigned to a board, the other two boards are automatically set to [Disable] and assignment is no longer possible.
- If the signal format is 1080P, each board is used in 1M/E mode. However, the number of available keys is four.
- In 2M/E mode, DME selection on a single M/E is as follows.
  - Two places using a dedicated interface.
  - One place using an SDI interface.

M/E Split Mode Settings

This sets the number of M/Es for each board.

1 Open the Engineering Setup >System >Install/Unit Config >Unit Config >M/E Split menu (7316.11).



2 In each of the <M/E Split (1st Board)>, <M/E Split (2nd Board)>, and <M/E Split (3rd Board)> groups, select one of [1ME] to [4ME].

To assign no M/Es, select [Disable].

3 Press [Execute].

M/E Split Mode Restrictions

3M/E mode and 4M/E mode have the following restrictions.

Classification	3M/E mode		4M/E mode	
Operation mode	All M/Es and P/P	DSK mode and multi-program 2 mode cannot be set.	All M/Es and P/P	• DSK mode and multi-program 2 mode cannot be set. • [Utility 2] cannot be selected for the background in multi-program mode.
	M/E-1, M/E-2	[Utility 2] cannot be selected for the background in multi-program mode.		
M/E assignment	All M/Es and P/P	[Logical M/E Assign] cannot be used.	All M/Es and P/P	[Logical M/E Assign] cannot be used.

Classification	3M/E mode		4M/E mode	
Wipes	All M/Es and P/P	• Pattern mix cannot be used. • Pattern number 162 wipes cannot be used.	All M/Es and P/P	• Pattern mix cannot be used. • Pattern number 162 wipes cannot be used.
	M/E-2	• Random/diamond dust wipes cannot be used. • Dust mix cannot be used. • Independent key transition wipes cannot be used. [a)]	M/E-2, M/E-3	• Random/diamond dust wipes cannot be used. • Dust mix cannot be used. • Independent key transition wipes cannot be used. [a)]
Wipe border	M/E-2	Wipe borders are single color only.	M/E-2, M/E-3	Wipe borders are single color only.
M/E outputs	M/E-1, M/E-2	OUT5 and OUT6 cannot be used.	All M/Es	OUT5 and OUT6 cannot be used.
Signal selection	M/E-1, M/E-2	PROC V and PROC K signals cannot be selected using cross-point buttons.	All M/Es	PROC V and PROC K signals cannot be selected using cross-point buttons.
Utility bus	M/E-1	Since only one utility bus is available, utility 1 bus is used instead of utility 2 bus for the following functions. [b)] • Wipe border • Preset color mix • Backgrounds of DME wipes	M/E-1, P/P	Since only one utility bus is available, utility 1 bus is used instead of utility 2 bus for the following functions. • Wipe border • Preset color mix • Backgrounds of DME wipes
	M/E-2	Since a utility bus is unavailable, a utility bus cannot be selected for the following functions. • Key border • Sub mask • Preset color mix • Wipe border	M/E-2, M/E-3	Since a utility bus is unavailable, a utility bus cannot be selected for the following functions. • Key border • Sub mask • Preset color mix • Wipe border
	M/E-2	If a DME wipe which uses a utility bus for a background image is selected, a color matte signal is used instead of a utility bus signal.	M/E-2, M/E-3	If a DME wipe which uses a utility bus for a background image is selected, a color matte signal is used instead of a utility bus signal.
Side flags	M/E-2	Side flags cannot be used.	M/E-2, M/E-3	Side flags cannot be used.
DMEs	M/E-1, M/E-2	The same restrictions as those for 4M/E apply.	All M/Es and P/P	• For a dedicated interface, DME can be used in only one place for each M/E. • For an SDI interface, DME wipes and processed keys cannot be used. • Only one-channel mode patterns can be selected for DME wipes.
	P/P	DMEs can be used in two places for a dedicated interface, or one place for an SDI interface.		

a) When key 1 (key 2) is selected for the next transition and DME wipe is selected as the transition type, a key 1 (key 2) independent key transition wipe is subject to restrictions.
b) No restriction is applied to P/P, so both utility buses 1 and 2 can be used.

DMEs

Chapter 11

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.
You can use up to eight channels as dedicated DME channels.
Each channel can be used on its own or in combination with other channels, which allows you to create advanced effects with more complexity.

Devices Supporting DMEs

The following boards and processors provide DME support.
Functions that can be used differ with the device used.

For details, see "Functional Differences Between DME Models" (page 529).

MKS-7470X/7471X DME board set (MVS-7000X only)

Installing this in the MVS-7000X allows DME to be operated as though part of the switcher.
Each board supports two channels, and a maximum of two boards (four channels) can be used.
There are two types of interfaces available for connecting DMEs to the switcher: a dedicated interface and an SDI interface.

For details, see "Setting the Interface Between the DME and the Switcher" (page 455).

Note

The use of an SDI interface requires an MKS-8110X 20-input board and an MKS-7171X DME output connector board. Also, the following operations are different from using a dedicated interface.

- Setting the input signals from the switcher to the MKS-7470X/7471X (AUX bus outputs), and signals returned to the switcher (re-entry inputs).
  For details, see "Setting AUX Bus Outputs and Re-entry Inputs" (page 455).
- Combiner channels are selected not on the control panel, but in the Global Effect menu.
  For details, see "Combine operation when using an SDI interface" (page 279).

MVE-8000A Multi Format DME Processor

The MVE-8000A is a "Digital Multi Effects" unit with multi-format support.
For the MVE-8000A, an optional MKE-8021A Input/Output Board is available as a dedicated interface for integrated use with the switcher.
There are two types of interfaces available for connecting DMEs to the switcher: a dedicated interface and an SDI interface.

For details, see "Setting the Interface Between the DME and the Switcher" (page 455).

Note

When using an SDI interface, the following operations are different from using a dedicated interface.

- Setting the input signals from the switcher to the MVE-8000A (AUX bus outputs), and signals returned to the switcher (re-entry inputs). However, "Ext In" cannot be set for the DME channel.
  For details, see "Setting AUX Bus Outputs and Re-entry Inputs" (page 455).
- Combiner channels are selected not on the control panel, but in the Global Effect menu.
  For details, see "Combine operation when using an SDI interface" (page 279).

MVE-9000 Multi Format DME Processor

The MVE-9000 is a "Digital Multi Effects" unit with multi-format support.
For the MVE-9000, an optional MKE-9021M Input/Output Board is available as a dedicated interface for integrated use with the switcher.

There are two types of interfaces available for connecting DMEs to the switcher: a dedicated interface and an SDI interface.

For details, see "Setting the Interface Between the DME and the Switcher" (page 455).

Note

When using an SDI interface, the following operations are different from using a dedicated interface.

- Setting the input signals from the switcher to the MVE-9000 (AUX bus outputs), and signals returned to the switcher (re-entry inputs).
  For details, see "Setting AUX Bus Outputs and Re-entry Inputs" (page 455).
- Combiner channels are selected not on the control panel, but in the Global Effect menu.
  For details, see "Combine operation when using an SDI interface" (page 279).

Transforms in Three-Dimensional Space (Transforms)

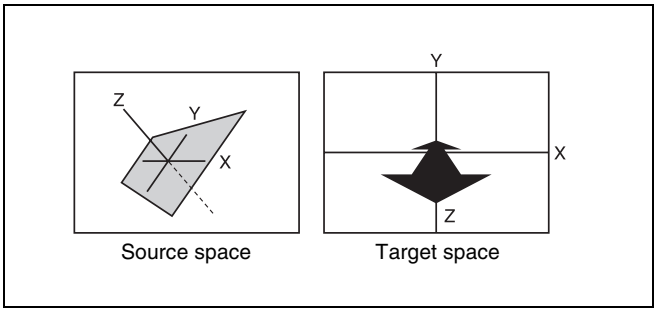
A transform is the process of a DME placing a video image in a three-dimensional space and subjecting it to manipulation, such as movement, rotation, magnification, or shrinking.

Three-dimensional space

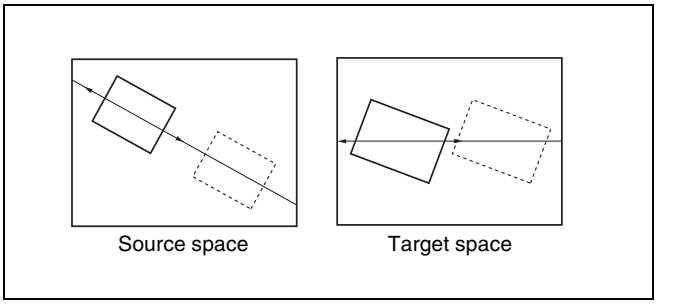
Source space and target space

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.



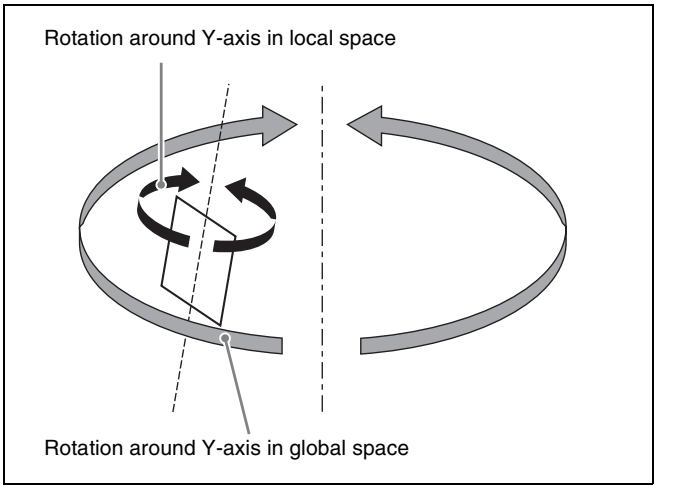
For example, as shown in the following figure, the image moves in a different direction when you move it along the X-axis of source space and along the X-axis of target space.



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 277)*.



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.

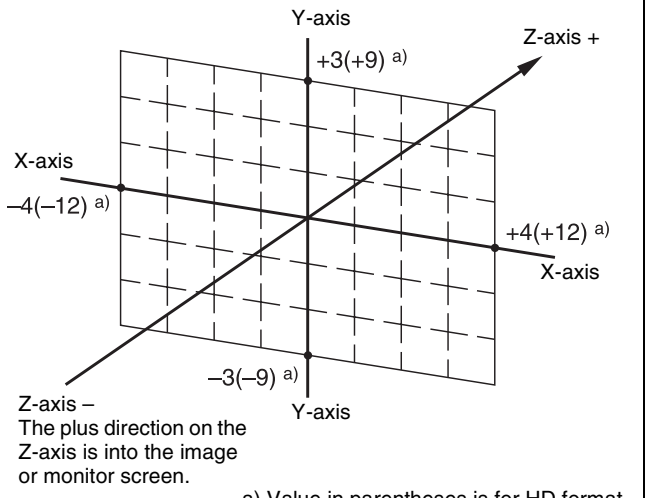
The standard values of parameters are as follows, depending on the aspect ratio of the monitor (4:3 or 16:9).

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
  When using SD format signals: X = 4.00, Y = 3.00, Z = 0.00
  When using HD format signals: X = 12.00, Y = 9.00, Z = 0.00

- Lower left corner of image or monitor
  When using SD format signals: X = –4.00, Y = –3.00, Z = 0.00

  When using HD format signals: X = –12.00, Y = –9.00, Z = 0.00

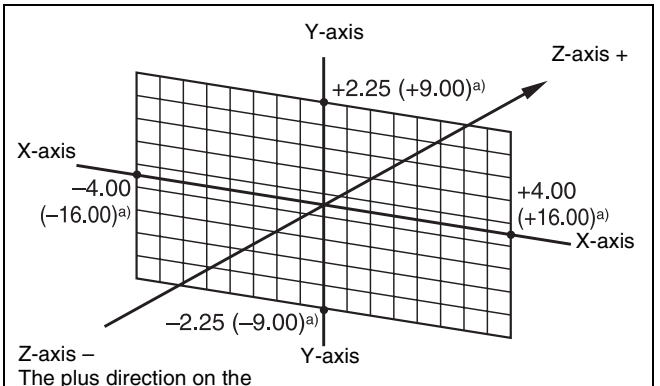


a) Value in parentheses is for HD format.

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
  When using SD format signals: X = 4.00, Y = 2.25, Z = 0.00
  When using HD format signals: X = 16.00, Y = 9.00, Z = 0.00
- Lower left corner of image or monitor
  When using SD format signals: X = –4.00, Y = –2.25, Z = 0.00

  When using HD format signals: X = –16.00, Y = –9.00, Z = 0.00



a) Value in parentheses is for HD format.

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)	HD format		–999.9999 to +999.9999
	SD format	4:3	–333.3333 to +333.3333
		16:9	–250.0000 to +250.0000
Rotate image (Rotation, Spin)	–999.9999 to +999.9999		
Move rotation axis (Axis Location)	HD format		–999.9999 to +999.9999
	SD format	4:3	–333.3333 to +333.3333
		16:9	–250.0000 to +250.0000
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>)	HD format		–999.9999 to +999.9999
	SD format	4:3	–333.3333 to +333.3333
		16:9	–250.0000 to +250.0000
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 212)*.

Operation mode	Detent interval
Move image (Location XYZ)	1.0000
Rotate image (Rotation, Spin)	0.2500
Move rotation axis (Axis Location)	1.0000
Scale image (Location Size)	0.2500
Change image aspect ratio (Aspect)	1.0000 a)

Operation mode	Detent interval
Change image perspective (Perspective <X, Y>)	1.0000
Change image perspective (Perspective <Z>)	1.0000 a)
Change image slope (Skew)	0.1000

a) When a value is smaller than 1, 1/Aspect or 1/Perspective (Z) is adjusted to an integer value.

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 222)*.

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

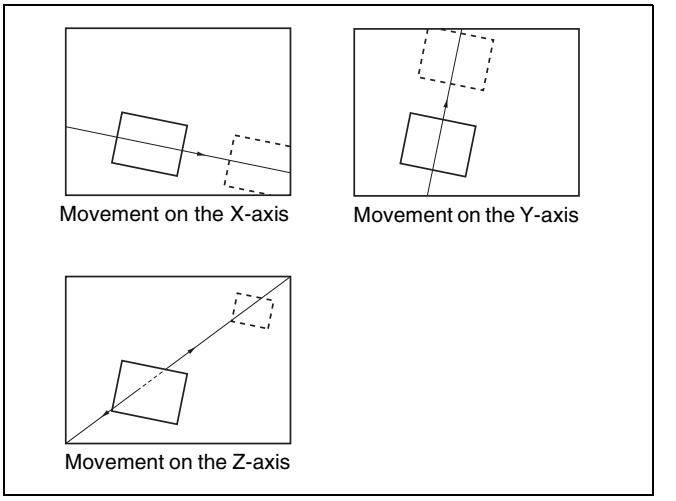
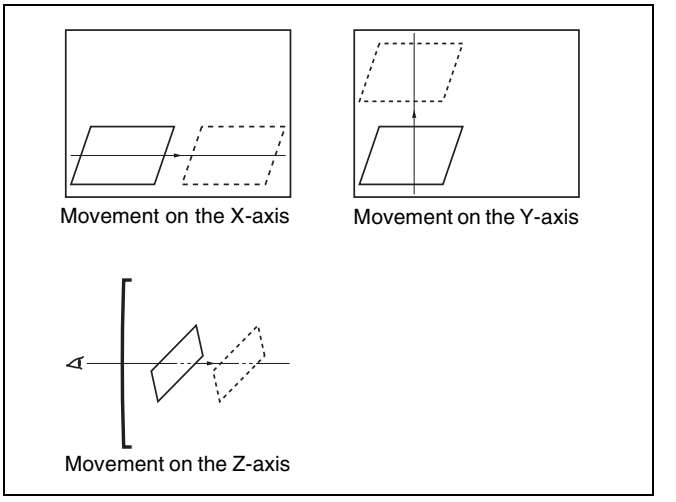


Image movement in target space



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

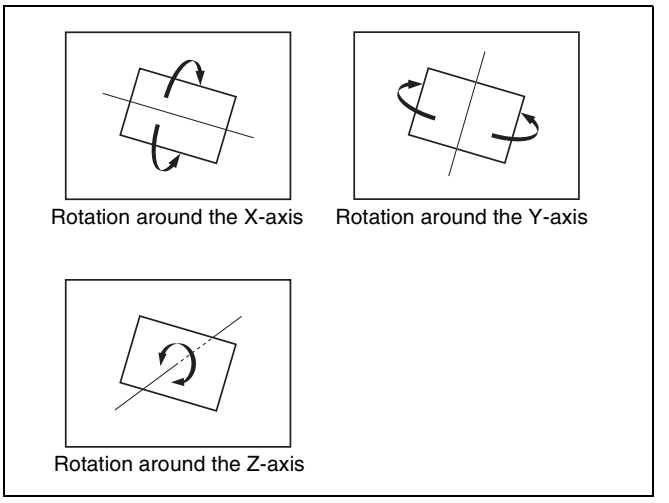
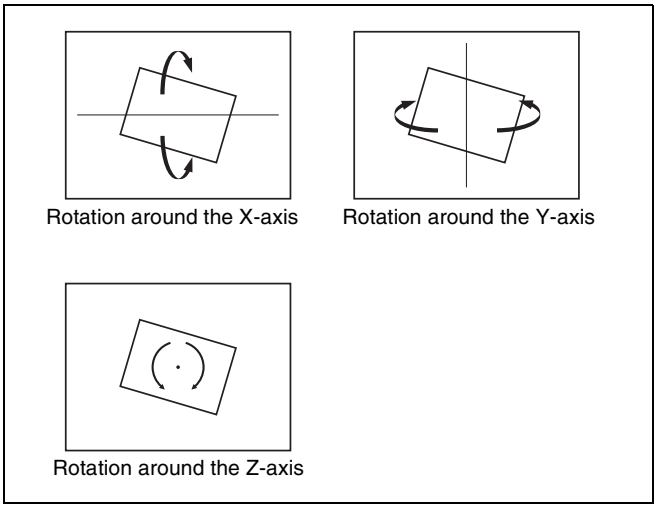


Image rotation in target space



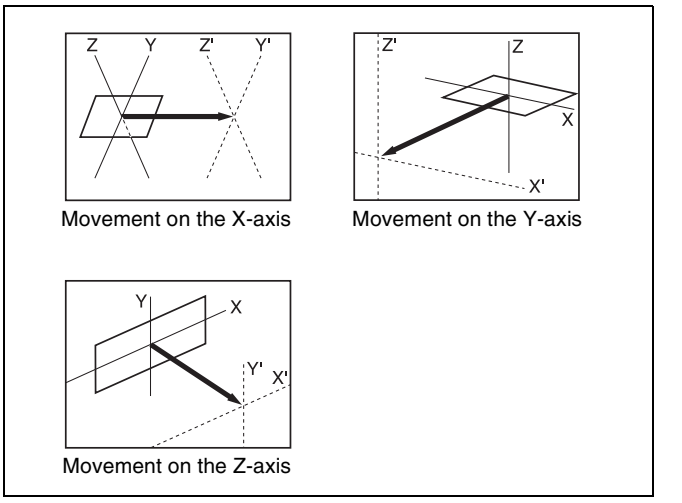
Rotate image (Spin)

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.

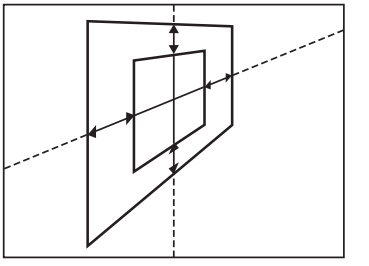
Image axis movement



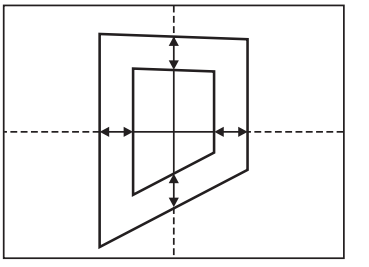
Scale image (Location Size)

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

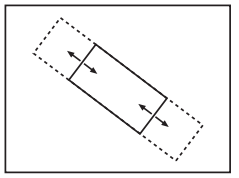


Scaling in target space

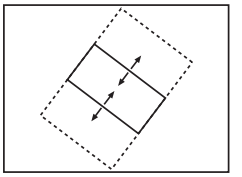


Change image aspect ratio (Aspect)

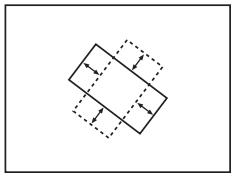
In source space, changes the aspect ratio in the X-axis direction and Y-axis direction, either independently or simultaneously.



Change of aspect ratio in X-axis direction



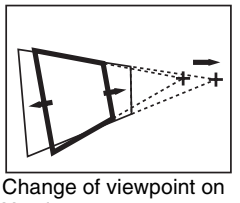
Change of aspect ratio in Y-axis direction



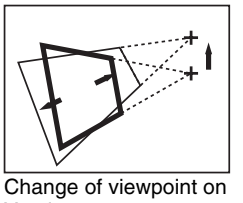
Simultaneous change aspect ratio in X-axis direction and Y-axis direction

Change image perspective (Perspective)

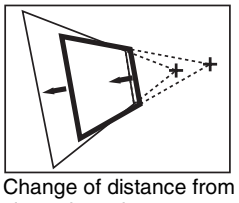
In target space, changes the perspective of the image by changing the virtual viewpoint, without changing the position of the image.
The X-axis and Y-axis values define the position of the view point, and the Z-axis value defines its distance from the image.



Change of viewpoint on X-axis



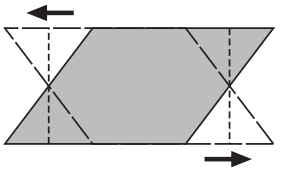
Change of viewpoint on Y-axis



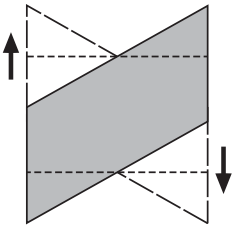
Change of distance from viewpoint to image

Change image slope (Skew)

In source space, changes the slope of the image on the X-axis or Y-axis.



Change of slope on X-axis



Change of slope on 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.
Graphics displayed by this function can also be output to the monitor output connector.
To make graphics display settings, use the DME menu *(see page 225)*.
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 281)*, a frame is shown for the shadow as well.

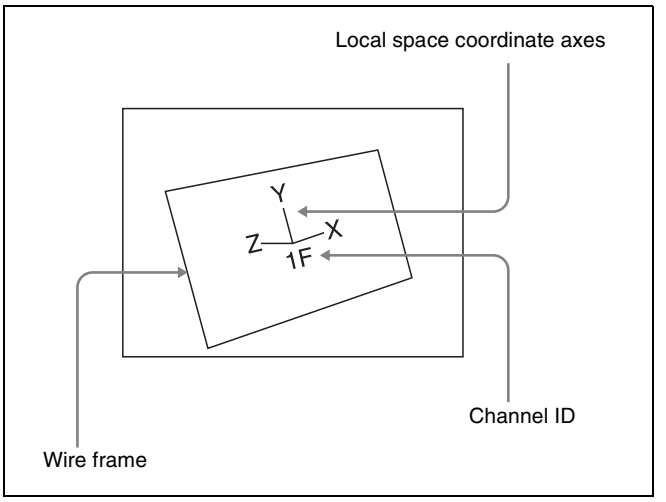
Coordinate axes

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

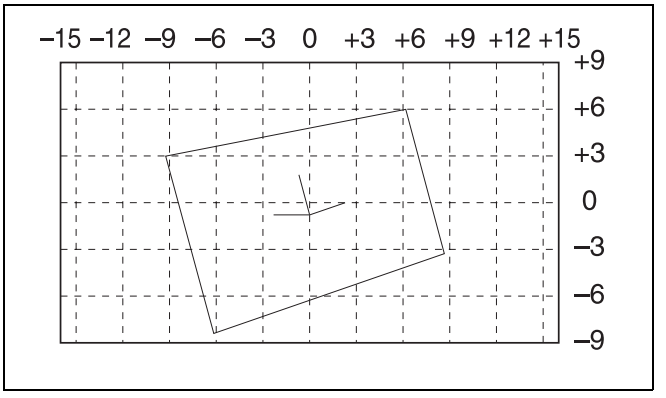
This displays the channel number so that you can check which channel is being used. This is a useful feature when you are working with multiple channels.
Channel IDs are displayed differently in local and global space.

- 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.



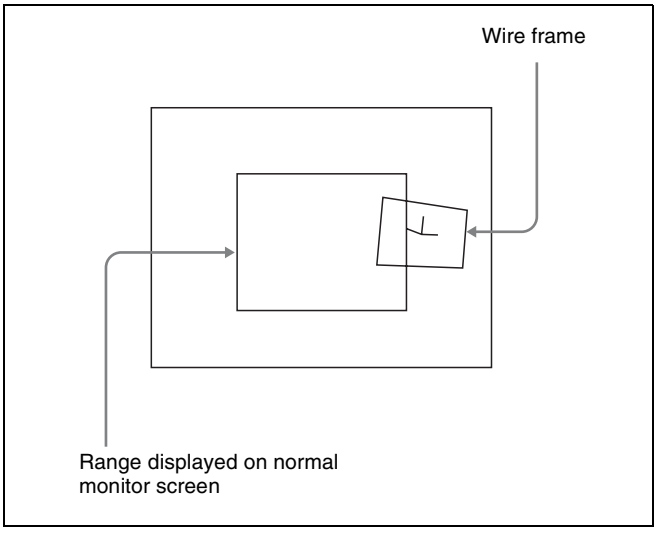
Grid

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 233)*, enabling [Flex Shadow Axis] displays the center axis of the flex shadow shape. This is an effective aid when configuring a flex shadow.

Note

The flex shadow center axis function is not supported on the MVE-8000A.

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.

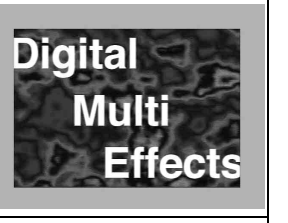
For details about the parameter display, see "Three-Dimensional Parameter Display" (page 224).

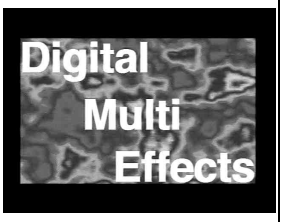
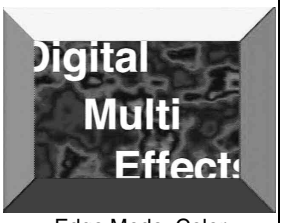
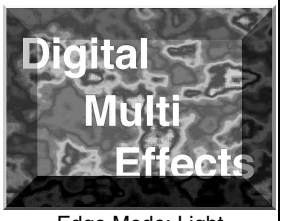
Special Effects

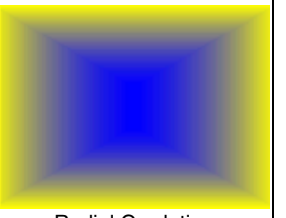
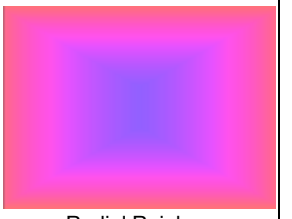
You can use DME to add a variety of special effects.
The special effects shown below can be applied.
Functions that can be used differ with the DME model.

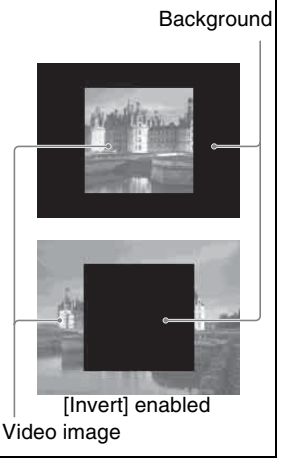
For details, see "Functional Differences Between DME Models" (page 529).

Edge effects

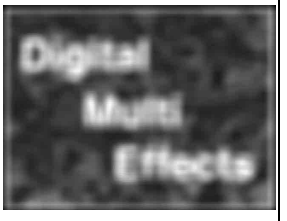
Effect	Description/Image
Border *(see page 227)*	Adds a border to an image frame. You can adjust the width (or thickness) of the border, its color, and the softness of the border edges. 
CG border *(see page 228)*	Adds a border to an image created using CG.

Effect	Description/Image
Crop *(see page 228)*	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 229)*	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 230)*	Adds a border to a key or produces a key consisting of an outline only. 

Effect	Description/Image
Art Edge *(see page 230)*	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** 

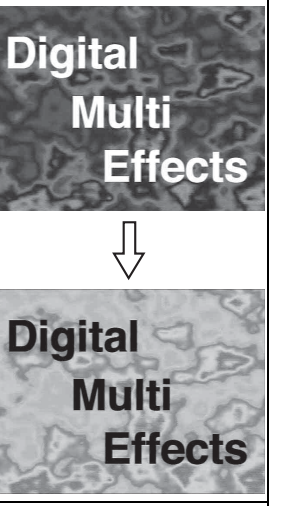
Effect	Description/Image
Flex Shadow *(see page 233)*	Adds a shadow to the image using only one DME channel. An input key signal or full-size key signal generated internally is used to create the shadow. The scale, position, hue and saturation, center axis of shape, skew, and perspective can be adjusted.  Flex Shadow source: External  Flex Shadow source: Internal
Wipe Crop *(see page 236)*	Crops the video image to be visible inside or outside a wipe pattern. 

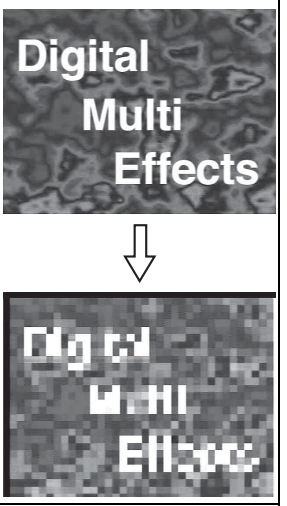
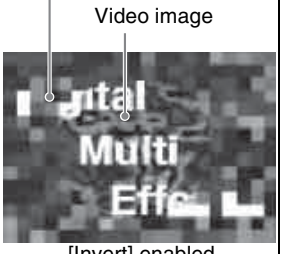
Whole image effects

Effect	Description/Image
Defocus *(see page 239)*	Blurs the whole image. The degree of defocusing can be set simultaneously or separately for the video signal and key signal (video signal only when a dedicated interface is used). 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 239)*	Blurs the whole image, like Defocus, but applies a rounded blurring to the whole image.

Effect	Description/Image
Multi Move *(see page 240)*	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 240)*	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 241)*	Converts the image into a monochrome image.
Posterization *(see page 241)*	Coarsens the luminance gradations of the image, for a painting-like effect.
Solarization *(see page 241)*	Coarsens the chroma gradations of the image, for a painting-like effect.
Nega *(see page 241)*	Reverses the luminance or chroma of the image. 
Contrast *(see page 241)*	Changes the contrast of the luminance and chroma of the image.

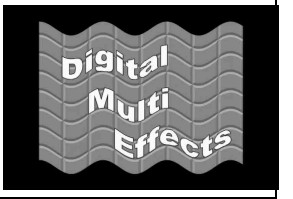
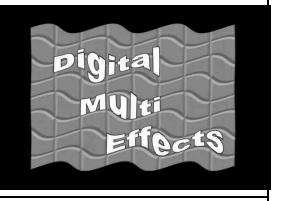
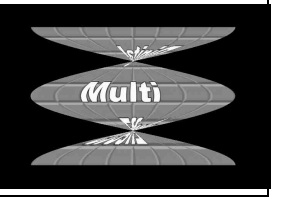
Effect	Description/Image
Mosaic *(see page 242)*	Divides the image into small tiles so that it looks like a mosaic. You can specify the size and aspect ratio of the tiles. 
Mask *(see page 244)*	Masks part of the picture, so that special effects are applied only inside a selected pattern.   [Invert] enabled
Sketch *(see page 242)*	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 243)*	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. 

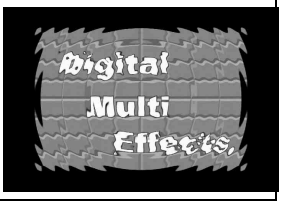
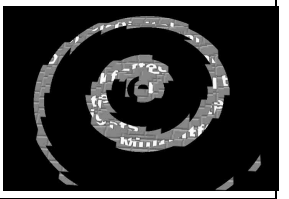
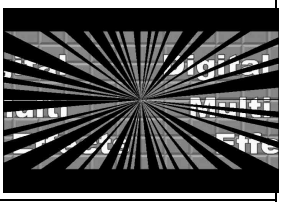
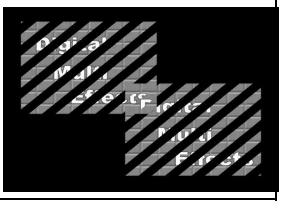
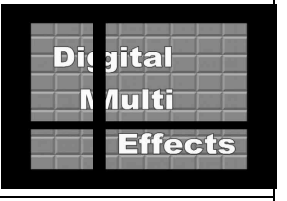
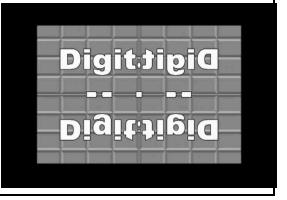
Effect	Description/Image
Dim and Fade *(see page 243)*	Dim makes the image darker as it recedes into the distance. Fade makes the image fade into the background as it recedes into the distance.  Fade
Glow *(see page 244)*	Softens the edges of highlights, giving an effect like being struck by a soft light. 

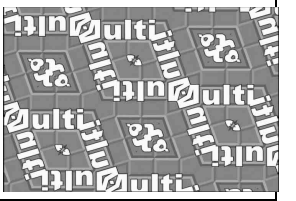
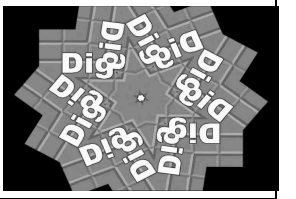
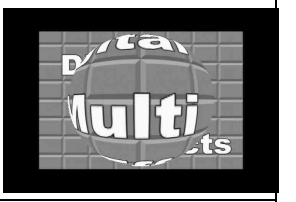
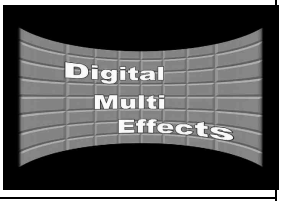
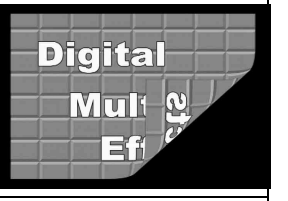
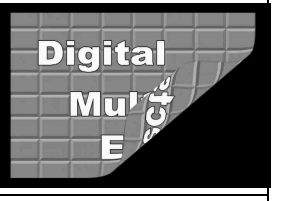
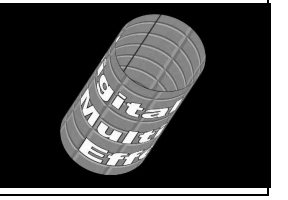
Freeze effects

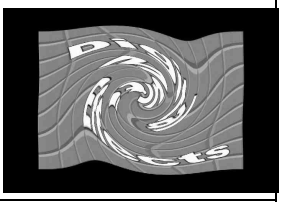
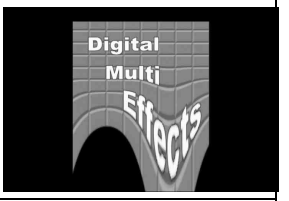
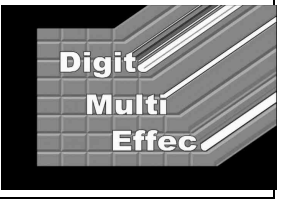
Freezes the input video. The video can also be frozen for a specified interval *(see page 245)*.

Nonlinear effects

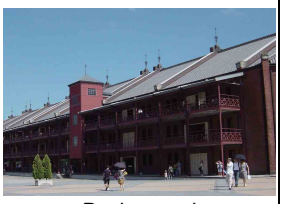
Effect	Description/Image
Wave *(see page 246)*	Produces a wave-like effect in the image. 
Mosaic Glass *(see page 248)*	Compresses and stretches the image at a specified interval. 
Flag *(see page 248)*	Applies an effect like a flag waving in the wind. 
Twist *(see page 248)*	Twists the image. 

Effect	Description/Image	
Ripple *(see page 249)*	Applies an effect like ripples spreading out across the image.	
Rings *(see page 251)*	Partitions the image into a ring shape that moves in one direction while turning.	
Broken Glass *(see page 251)*	Partitions the image like broken glass, with shards flying outward.	
Flying Bar *(see page 251)*	Divides the image into bars which peel off in two blocks as they move.	
Blind *(see page 252)*	Divides the image into bars or wedges, with blocks rotating like the slats of venetian blinds.	
Split *(see page 252)*	Splits the image into upper, lower, left, and right.	
Split Slide *(see page 253)*	Divides the image into bars which slide alternately in opposite directions.	
Mirror *(see page 253)*	Partitions the image vertically and horizontally, creating an image like a reflection in a mirror.	

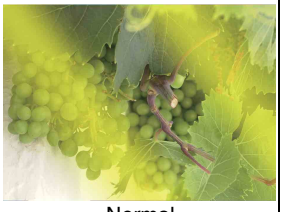
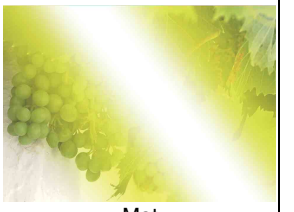
Effect	Description/Image	
Multi Mirror *(see page 253)*	Divides parts of the image into repetitions of originals and reflections, lining them up vertically and horizontally.	
Kaleidoscope *(see page 254)*	Creates an image like a view in a kaleidoscope.	
Lens *(see page 254)*	Creates an image like a view through a lens.	
Circle *(see page 255)*	Makes the image circular.	
Panorama *(see page 255)*	Curves the upper and lower edges of the image to enhance the perspective.	
Page Turn *(see page 255)*	Turns the image like a turning page.	
Roll *(see page 256)*	Rolls the image up.	
Cylinder *(see page 256)*	Winds the whole image onto a cylinder.	

Effect	Description/Image
Sphere *(see page 256)*	Wraps the whole image around a sphere. 
Explosion *(see page 256)*	Divides the image into fragments which spread out as they fly out. 
Swirl *(see page 257)*	Swirls the image into a spiral. 
Melt *(see page 257)*	Melts the image away from a specified part. 
Character Trail *(see page 258)*	Extends the edge of the image like a trail. 

Corner pinning effect

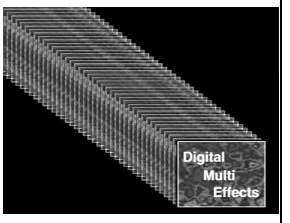
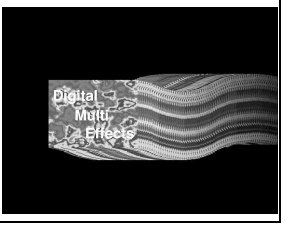
Effect	Description/Image
Corner Pinning *(see page 275)*	Pins the four corners of the foreground to arbitrary positions on the background and inserts the foreground image, modifying the foreground shape to fit the quadrilateral shape defined by the corners.  Background  Foreground (cropped state)  Corner pinning [Crop Link] enabled

Lighting effects

Effect	Description/Image
Lighting *(see page 259)*	Produces the effect of light striking the image.  Normal  Specular  Mat

Effect	Description/Image
Spotlighting *(see page 265)*	Produces the effect of a spotlight striking the surface of the image.

Recursive effects

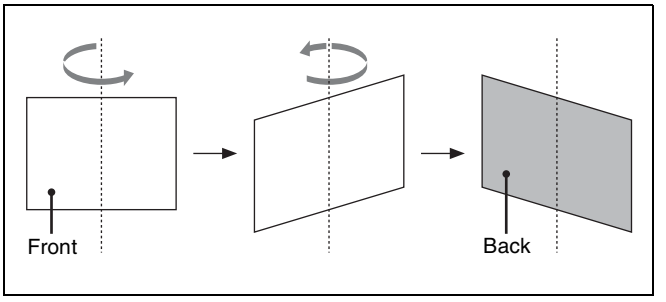
Effect	Description/Image
Trail *(see page 261)*	Recursively freezes the input video at regular intervals so that a trail of afterimages is created. You can also turn the afterimages into stardust trails. 
Motion Decay *(see page 262)*	Blurs the motion of a moving video by creating blurred afterimages of the moving video. You can also turn the afterimages into stardust trails. 
Keyframe Strobe *(see page 263)*	Freezes the video each time the effect passes through a keyframe. You can also turn the afterimages into stardust trails.
Wind *(see page 264)*	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)*.

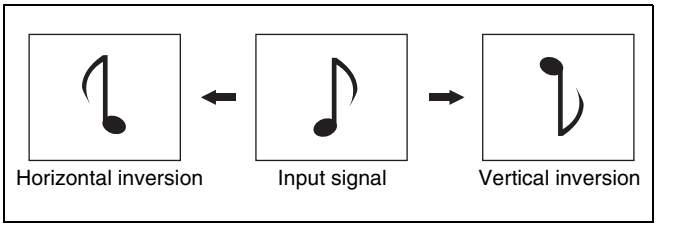
Separate sides (inserts separate images for front and back)

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 273)*.



Key density adjustment

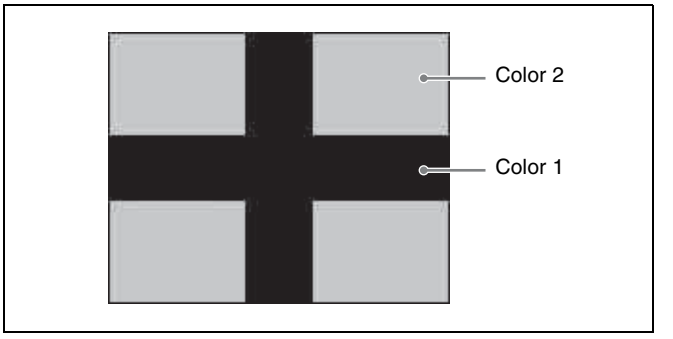
You can adjusts the key density for the key signal input to the DME *(see page 274)*.

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 221)* of the image *(see page 274)*.

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 238)*.



Global Effects

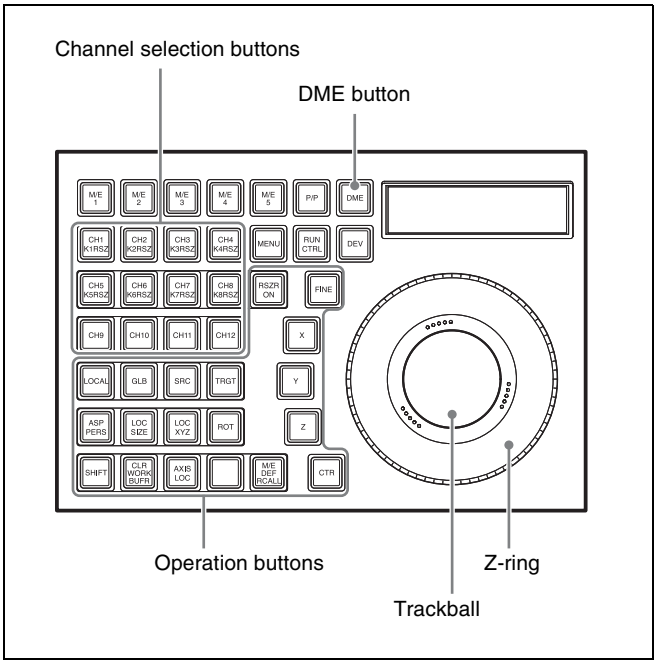
Global effects are special effects created by combining the images of successive channels. The following types of global effects are available.

- 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 CH8) 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 212)*.

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.

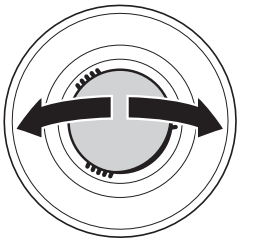
To change the aspect ratio of the image: With the [SRC] button selected in step **3**, press the [ASP PERS] button, turning it on.
You can change the aspect ratio independently on the X- and Y-axes using the trackball, and change it simultaneously on both the X- and Y-axes using the Z-ring.

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.

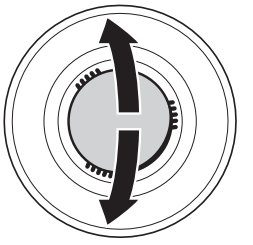
To change the skew of the image: With the [SRC] button selected in step **3**, press and hold the [SHIFT] button and press the [ASP PERS] button, turning it on.
You can change the skew of the image along the X- and Y-axes using the trackball.

5 Depending on the axis of the change, operate the trackball and Z-ring as follows.

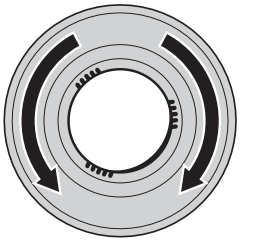
- To change on the X-axis, rotate the trackball horizontally.
  Parameter values increase as you rotate to the right, and decrease as you rotate to the left.



- 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

Button	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

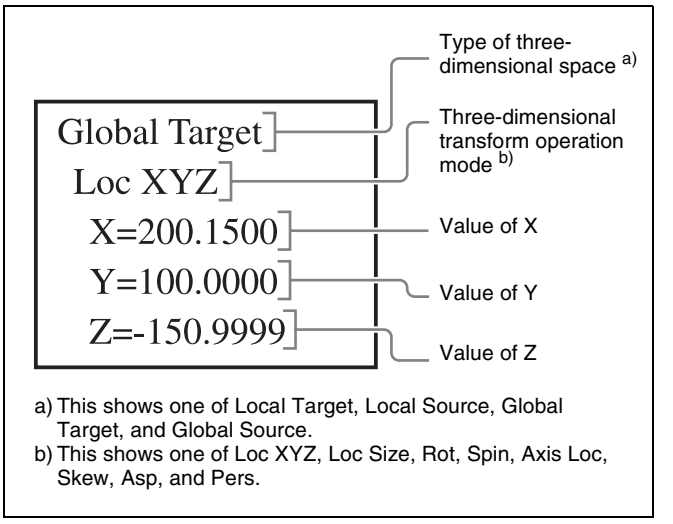
Three-Dimensional Parameter Display

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.

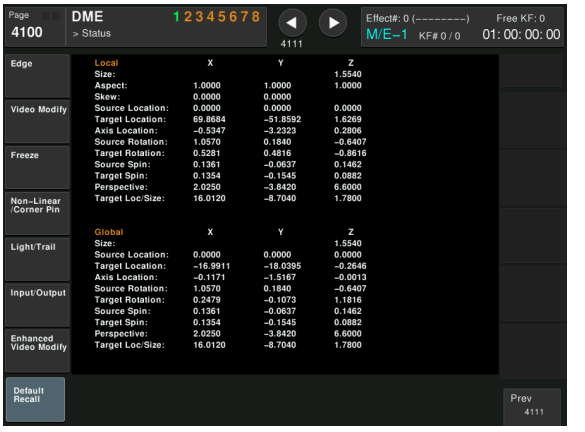
- When multiple DME channels are selected, this shows the parameters for the reference channel.
- When both Global and Local are selected, the three-dimensional parameters are shown for the channel (the reference channel) for which the button is lit green.



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

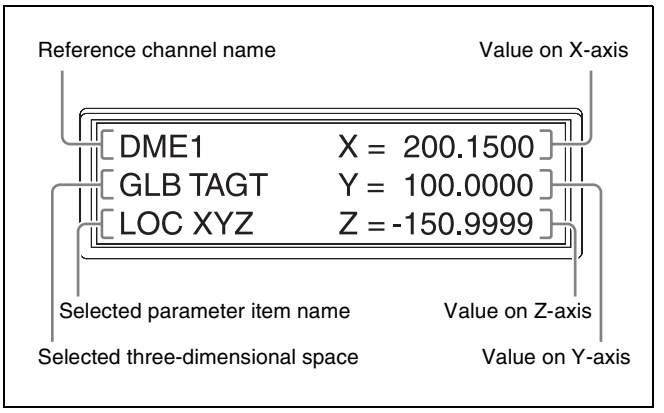
In the DME menu, press the menu title button (the [DME] in the upper left part of the screen).
The DME >Status menu (4100) appears. This menu shows the three-dimensional parameters for the DME reference channel currently selected in the device control block.



Display on the device control block

The following information appears on the display of the device control block (trackball).

- Reference channel name: DME1 to DME8
- 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 211)*, press the [CTR] button once in the device control block.
To reset three-dimensional parameter values to the default values *(see page 212)* 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 214).

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.

Note

The flex shadow center axis function is not supported on the MVE-8000A.

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.

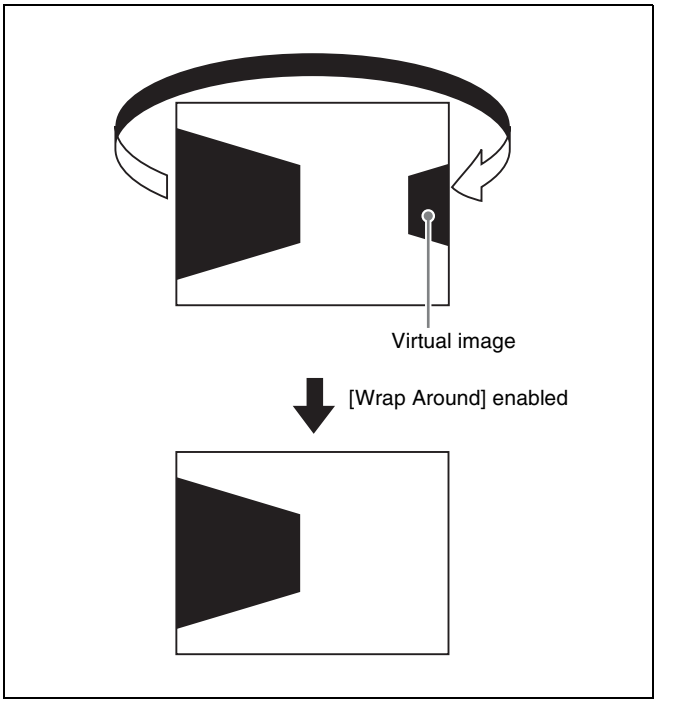
No.	Parameter	Adjustment
1	Recover Time	Time until graphics display appears again after keyframe execution

Outputting graphics to the monitor output connector

In the DME >Input/Output >Graphic menu (4164), press [Monitor Out], turning it on.
Graphics are displayed on the device connected to the monitor output connector.

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.

1 Press the [DME] button on the device control block.

2 Using the channel selection buttons, select the target channel (CH1 to CH8) 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

Set the border color in the Border/Crop menu (4111).
The operation differs depending on the DME used (MVE-8000A, MVE-9000 or MKS-7470X/7471X).

When the MVE-8000A is used
Press [Border Color] and set the following parameters.

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

When the MVE-9000 or MKS-7470X/7471X is used
In the <Border Fill> group, select the signal to insert in the border.
Flat Color: Single color

Mix Color: Mix color signal set in the DME >Edge >Color Mix menu (4117) *(see page 238)*
Ext Video: External video signal input to the Ext IN connector
If [Flat Color] is selected, set the following parameters.

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

If [Mix Color] or [Ext Video] is selected, the border color changes according to the mix color signal or external video signal.

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.

Notes

- On the MKS-7470X/7471X, this setting is available only when the signal format is 1080i/59.94.
- A CG image video signal must be input on the Ext IN connector of channel 1 (or channel 3) and a CG image key signal must be input on the Ext IN connector of channel 2 (or channel 4) beforehand.
- A CG border can be set for each DME channel, however, channels 1 and 2 and channels 3 and 4 will have the same effect.
- The following four signals are required for a CG border.

①Border image

Set the background of the border image to black.

②Border image key signal

③Image to be embedded within the border

④Key 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

1 Open the DME >Edge >Border/Crop menu (4111).

2 Press [CG Border], turning it on.

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 the video image

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

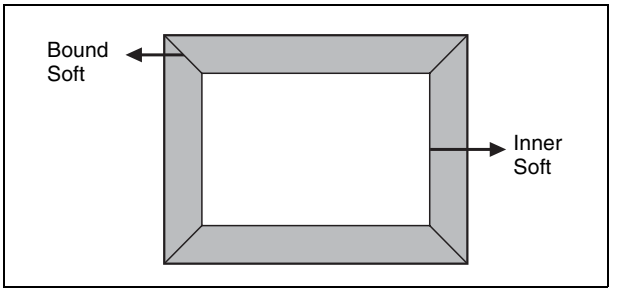
No.	Parameter	Adjustment
1	Density	Adjust the color density

- 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

Note

The Key Border function is not supported on the MVE-8000A.

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 *(see page 244)* 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

Note

The Art Edge function is not supported on the MVE-8000A.

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]

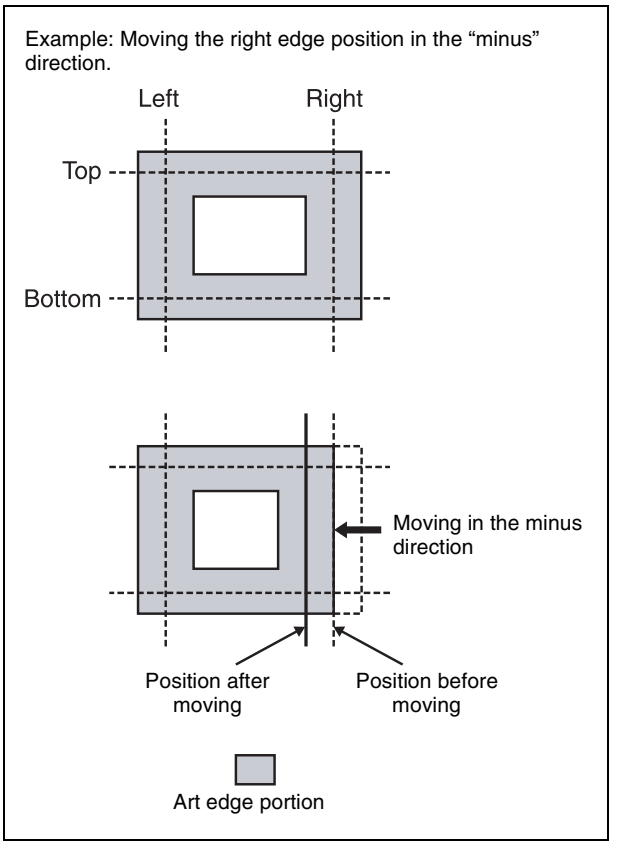
No.	Parameter	Adjustment
1	Top	Width of top edge
2	Left	Width of left edge
3	Right	Width of right edge
4	Bottom	Width of bottom edge
5	Density	Density of edges

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



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 232)* as a flat color.

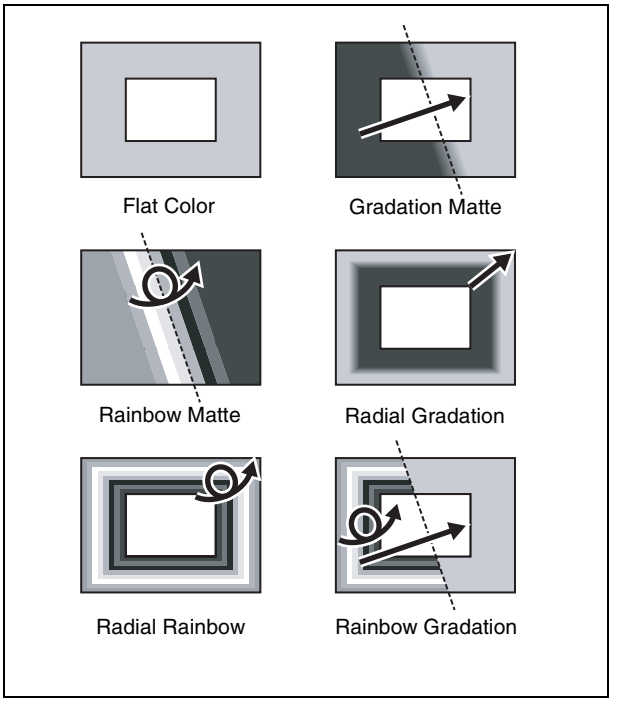
Gradation Matte: If using boundary lines as borders (see step **2**), this transitions from color 1 to color 2) *(see page 232)*.

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 232)* 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

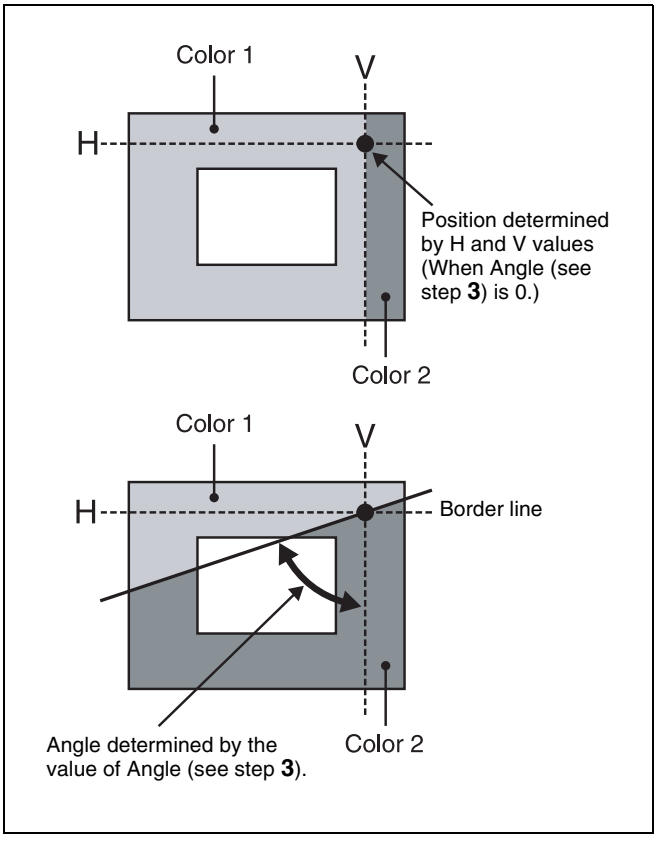
No.	Parameter	Adjustment
1	Angle	Rotation angle of pattern a)

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

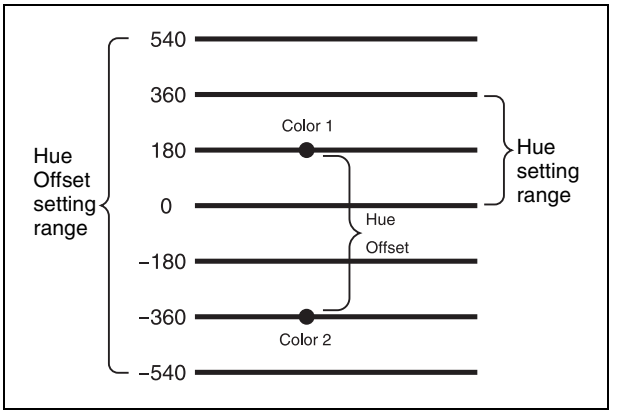
No.	Parameter	Adjustment
1	Luminance	Luminance
2	Saturation	Saturation
3	Hue Offset	Hue range

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

Note

- The Flex Shadow function is not supported on the MVE-8000A.
  On the MKS-7470X/7471X, when the signal format is 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 261)*, and wind *(see page 264)* 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 238)*
Ext Video: External video signal input to the Ext IN connector

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

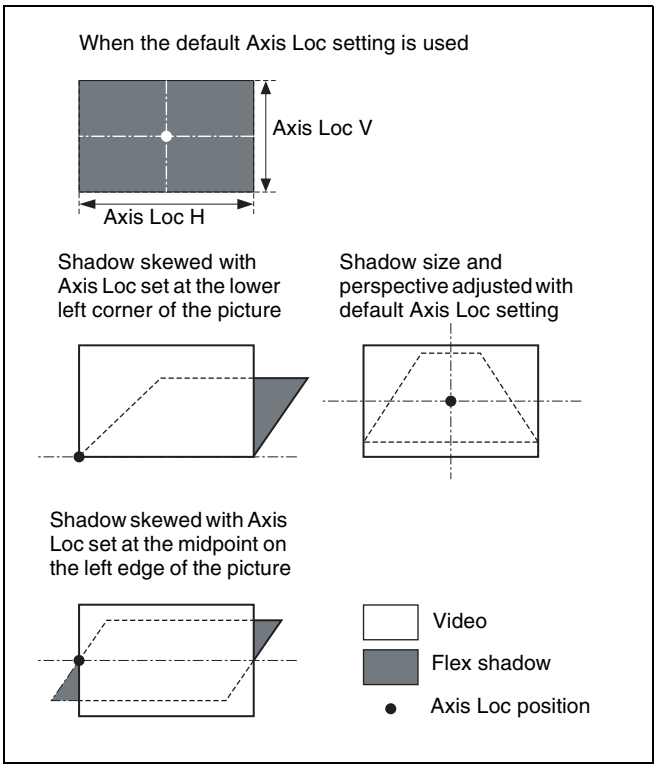
a) The Soft parameter is valid only when [Internal] is selected in the <Flex Shadow Source> group.

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 225).

Skewing the flex shadow

1 In the Flex Shadow menu (4115), press [Skew].

2 Set the following parameters.

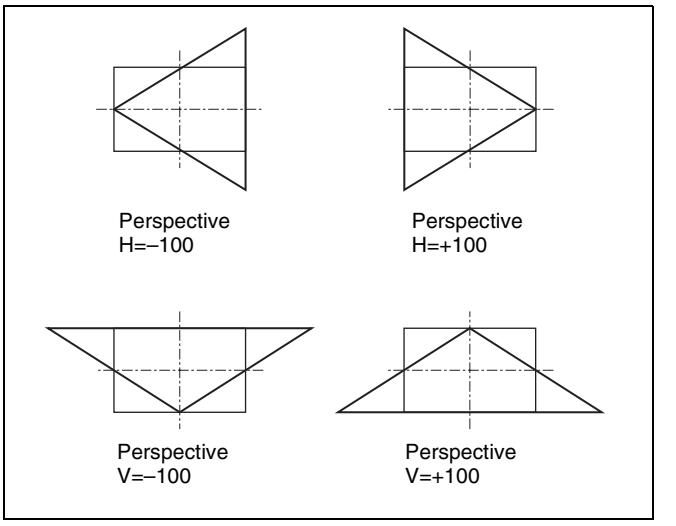
No.	Parameter	Adjustment
1	Skew H	Skew horizontally
2	Skew V	Skew vertically

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

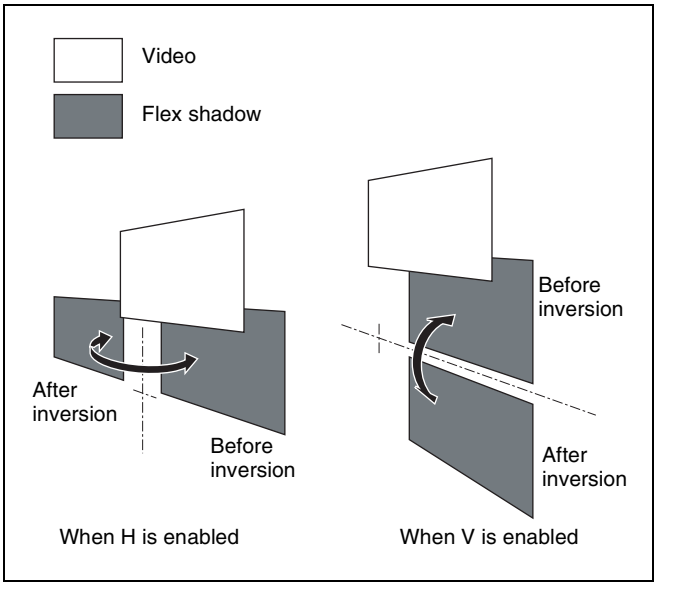


Inverting the flex shadow

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].

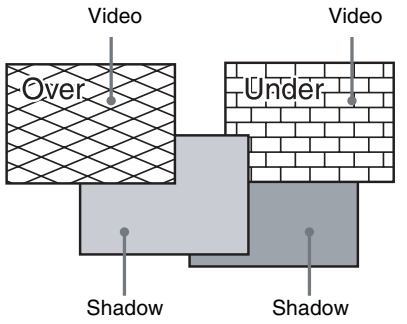
V: Invert the shadow in the vertical direction. The inversion is applied around the [Axis Loc H] parameter axis set using [Axis Loc].



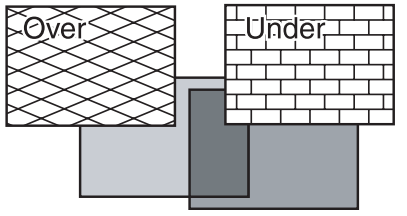
Setting a combine shadow

When there are several images, a flex shadow can be added to the rear of the image or overlay multiple flex shadows.

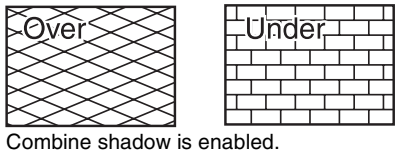
Example 1: When Flex Shadow is enabled on both of two channels.



No combine shadow is set.

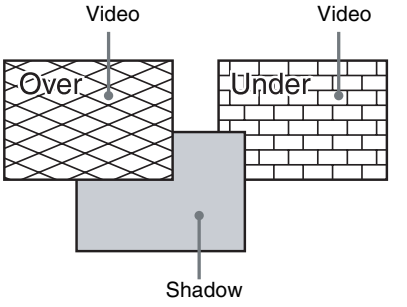


Combine shadow is enabled.
Density is set to 100.00.

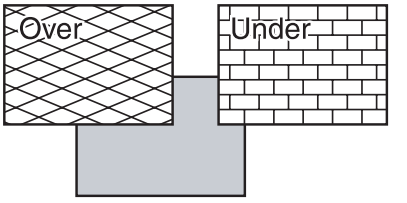


Combine shadow is enabled.
Density is set to 0.00.

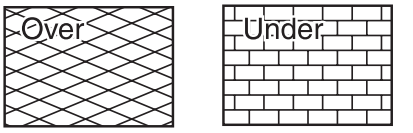
Example 2: Flex Shadow is enabled on one channel only.



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.

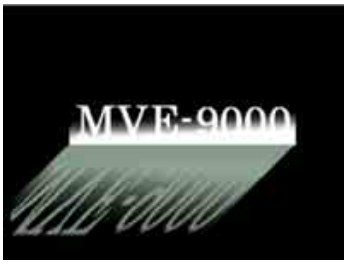
No.	Parameter	Adjustment
1	Density	Density of combine shadow

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 HD format 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 HD format 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 HD format 16:9 mode: Skew H = –50.00)

Wipe Crop Settings

Notes

- The wipe crop function is not supported on the MVE-8000A.
- Enabling wipe crop disables any mask that is set.
- When brick is set, wipe crop cannot be enabled. Brick must be disabled in order to enable wipe crop.
- When [Output] is disabled in the <Shaped Video> group of the DME >Input/Output >Video/Key menu (4162), the wipe crop effect cannot be obtained if [Bkgd] is not enabled in the DME >Input/Output >Bkgd menu (4161).

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.

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
2	V Multi	Number of repetitions of pattern vertically
3	Invert Type	Replication layout [a]

a) See *page 132*.

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 238)*
Ext Video: External video signal input to the Ext IN connector

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

Note

The color mix function is not supported on the MVE-8000A.

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 236)*
- *"Replicating the wipe crop pattern (Multi)" (page 237)*
- *"Rotating the wipe crop pattern (Rotation)" (page 236)*
- *"Applying modulation to the wipe crop pattern (Modulation)" (page 237)*

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.

Note

On the MVE-8000A, the Defocus and Glow effects cannot be enabled at the same time. The most recently set effect is enabled.

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
Key: Key signal only

Note

[Key] can be selected only when the DME is using an SDI interface.

4 Set the following parameters.

When [Video/Key] is selected (with DME dedicated interface)

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/Key] is selected (using DME on an SDI interface)

Parameter group [1/2]

No.	Parameter	Adjustment
1	V/K H	Simultaneous horizontal defocusing of video and key signals
2	V/K V	Simultaneous vertical defocusing of video and key signals
3	V/K All	Simultaneous horizontal and vertical defocusing of video and key signals
4	Video All	Simultaneous horizontal and vertical defocusing of video signal
5	Key All	Simultaneous horizontal and vertical defocusing of key signal

Parameter group [2/2]

No.	Parameter	Adjustment
1	Video H	Horizontal defocusing of video signal
2	Video V	Vertical defocusing of video signal
3	Key H	Horizontal defocusing of key signal
4	Key V	Vertical defocusing of key signal

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

When [Key] is selected (using DME on an SDI interface)

No.	Parameter	Adjustment
1	H	Horizontal defocusing of key signal
2	V	Vertical defocusing of key signal
3	All	Simultaneous horizontal and vertical defocusing of key 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 244)*.

Blur Settings

Applying the Blur effect

1 Open the DME >Video Modify >Defocus/Blur menu (4121).

2 Press [Blur], turning it on.

Note

On the MVE-8000A, the Glow and Blur effects cannot be enabled at the same time. The most recently set effect is enabled.

3 When using the DME on an SDI interface, in the <Blur Mode> group, select the signal to which you want apply the Blur effect.

Video/Key: Video signal and key signal
Video: Video signal only
Key: Key signal only

4 Set the following parameters.

When the DME dedicated interface is used

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

When [Video/Key] is selected (using DME on an SDI interface)

Parameter group [1/2]

No.	Parameter	Adjustment
1	V/K H	Simultaneous horizontal blurring of video and key signals
2	V/K V	Simultaneous vertical blurring of video and key signals
3	V/K All	Simultaneous horizontal and vertical blurring of video and key signals
4	Video All	Simultaneous horizontal and vertical blurring of video signal
5	Key All	Simultaneous horizontal and vertical blurring of key signal

Parameter group [2/2]

No.	Parameter	Adjustment
1	Video H	Horizontal blurring of video signal
2	Video V	Vertical blurring of video signal
3	Key H	Horizontal blurring of key signal
4	Key V	Vertical blurring of key signal

When [Video] is selected (using DME on an SDI interface)

No.	Parameter	Adjustment
1	H	Horizontal blurring of video signal
2	V	Vertical blurring of video signal
3	All	Simultaneous horizontal and vertical blurring of video signal

When [Key] is selected (using DME on an SDI interface)

No.	Parameter	Adjustment
1	H	Horizontal blurring of key signal
2	V	Vertical blurring of key signal
3	All	Simultaneous horizontal and vertical blurring of key signal

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 244)*.

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

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

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 244)*.

Mono Settings

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 244)*.

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 244)*.

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 244)*.

Contrast Settings

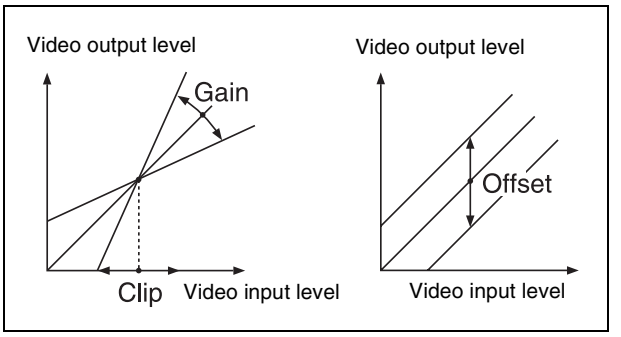
Applying the Contrast effect

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 244)*.

Mosaic Settings

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 244)*.

Sketch Settings

Applying the Sketch effect

1 Open the DME >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 Sketch 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.

6 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 244)*.

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 244)*.

Dim and Fade Settings

Note

The Dim and Fade functions are not supported on the MVE-8000A.

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.

Notes

- On the MVE-9000 and MKS-7470X/7471X, the key border function and Glow function cannot be turned on at the same time. The most recently set function is enabled.
- On the MVE-8000A, the Defocus and Glow effects or the Blur and Glow effects cannot be turned on 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 244)*.

Note

When the signal format is 1080P on the MKS-7470X/7471X, 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

Note

On the MVE-8000A, [Effect Gp1] and [Effect Gp2] cannot be enabled at the same time.

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 (304 cannot be selected on the MVE-8000A).

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)

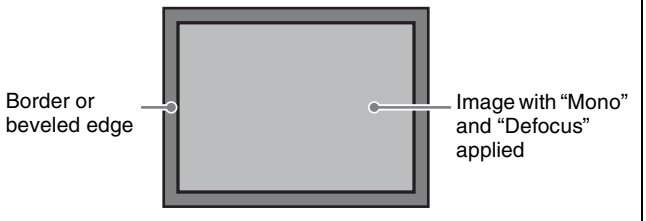
a) –100.00 is four rotations per second in counterclockwise direction. +100.00 is four rotations per second in clockwise direction. 0.00 is in stationary state.

Notes on applying a mask effect with a DME (only when using the MKS-7470X/7471X or MVE-9000)

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.

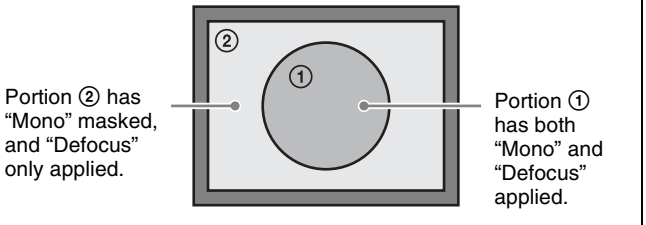
The following describes masking using a round pattern as an example.

Image 1: Image before applying mask



⬇

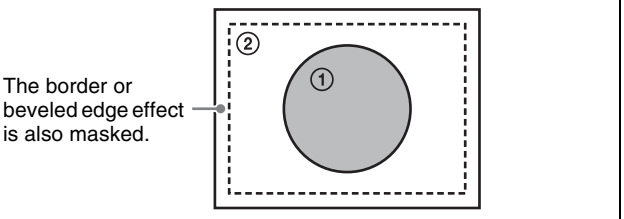
Image 2: State with [Effect Gp1] only enabled



⬇

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.

In Hard Freeze and Time Strobe, you can select the first field or the frame as the freeze timing.

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

The freeze timing setting is not required when the following signal formats are being used.
1080P/50, 1080P/59.94, 1080PsF/23.98, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

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

The freeze timing setting is not required when the following signal formats are being used.
1080P/50, 1080P/59.94, 1080PsF/23.98, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

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 720P or 1080P, Film mode 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.

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.

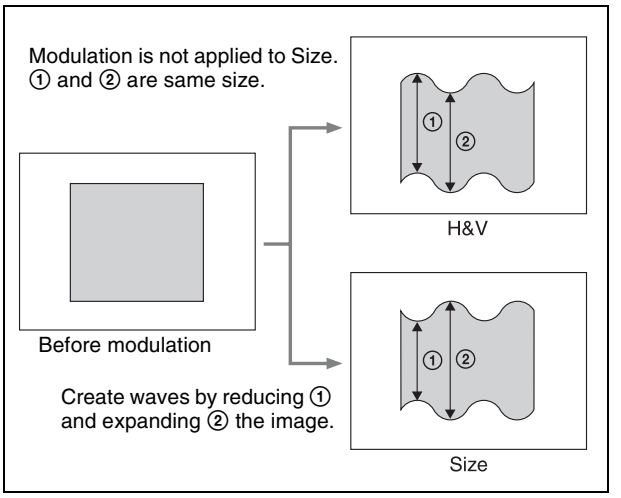
Wave Settings

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

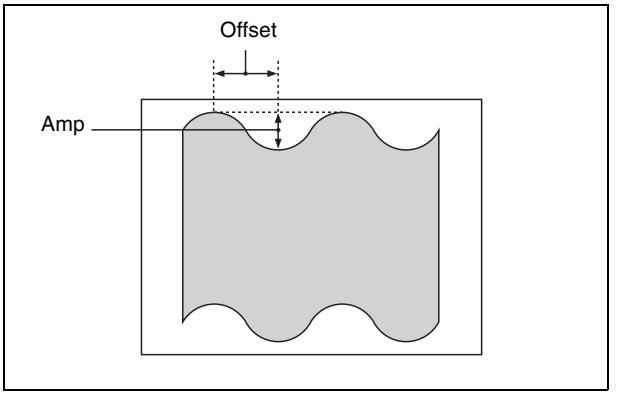
Parameter group [2/2]

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.

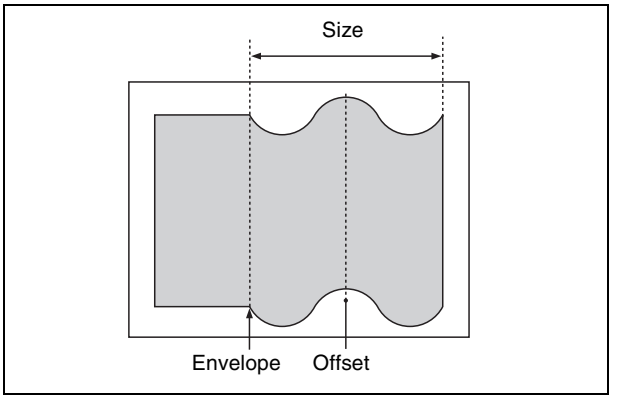
2 Set the following parameters.

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 246)*.

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 246)*.

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 [a]	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

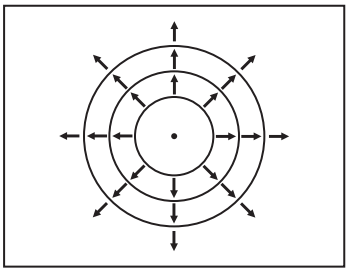
Ripple Settings

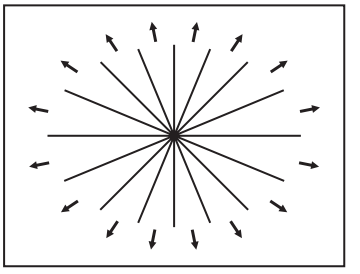
There are four modes: Radial, Angular, Both, and Shape. The direction of modulation differs depending on the mode. You can set the size and frequency of the ripples, their direction and speed, their center point, and other parameters. In Shape mode, you can select ripple shapes other than circles (stars, 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

No.	Parameter	Adjustment
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, depending on the selected modulation mode.

When [Shape] is selected in the <Mode> group

No.	Parameter	Adjustment
1	H	Ripple center point in horizontal direction
2	V	Ripple center point in vertical direction

When [Shape] is not selected in the <Mode> group

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

No.	Parameter	Adjustment
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 246).

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
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 251)*.

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

No.	Parameter	Adjustment
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 partition 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

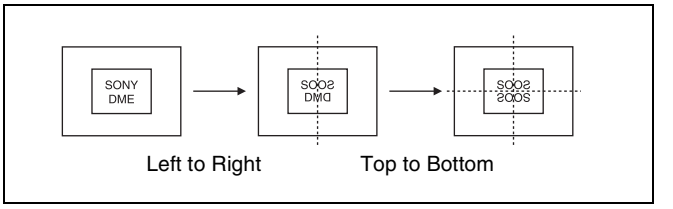
Mirror Settings

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

No.	Parameter	Adjustment
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	Lens center position in vertical direction

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 109), "DME Effects for Keys" (page 115), and "Combine operation when using an SDI interface" (page 279).

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

When using a page turn effect with one channel, the following restrictions apply.
- In an MVE-8000A HD system, when the input is a title, for example, parts of the back page other than the title appear as black.

- For the MKS-7470X/7471X, the same restriction as above applies when the signal format is 1080P only.

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 255)*.

Note

When using a roll effect with one channel, the following restrictions apply.
- In an MVE-8000A HD system, when the input is for example a title, parts of the back page other than the title appear as black.
- For the MKS-7470X/7471X, the same restriction as above applies when the signal format is 1080P only.

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 255)*.

Note

When using a cylinder effect with one channel, the following restrictions apply.
- In an MVE-8000A HD system, when the input is for example a title, parts of the inner surface other than the title appear as black.
- For the MKS-7470X/7471X, the same restriction as above applies when the signal format is 1080P only.

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 256)*.

Note

When using a sphere effect with one channel, the following restrictions apply.
- In an MVE-8000A HD system, when the input is for example a title, parts of the inner surface other than the title appear as black.
- For the MKS-7470X/7471X, the same restriction as above applies when the signal format is 1080P only.

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

No.	Parameter	Adjustment
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 and 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

The function for setting the bar mode of the lighting area is not supported on the MVE-8000A.

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.

Note

[Total Ambient] is not supported on the MVE-8000A.

When [Plane] is selected

No.	Parameter	Adjustment
1	Light	Intensity of light in highlight area
5	Total Ambient	Brightness of whole image

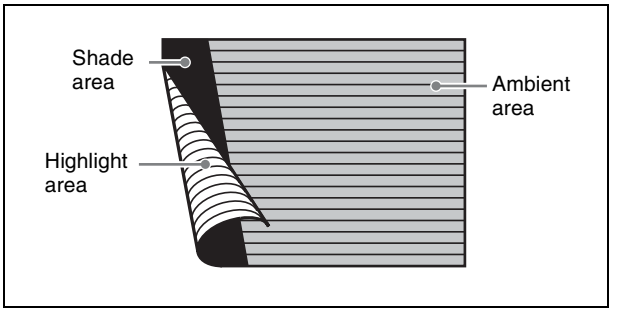
When [Bar] is selected

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 when Page Turn, Roll, Cylinder, or Sphere nonlinear effect is selected.



Setting the bar shape of the highlight area

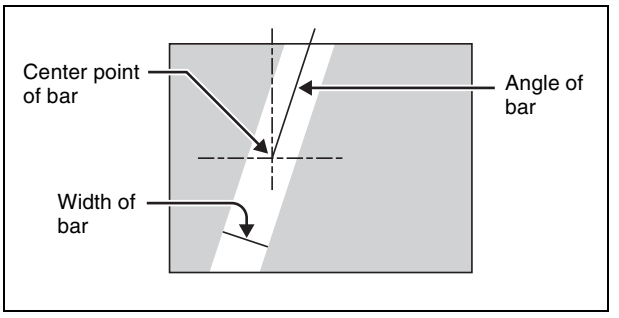
When [Bar] or [Preset] is selected in step **3** of *"Applying the Lighting effect" (page 259)*, set the bar shape.

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	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 259)*, 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 259)*, set the bar mode of the highlight area.

Note

The bar mode of the highlight area is not supported on the MVE-8000A.

1 In the <Bar Light Mode> of the DME >Light/Trail >Lighting menu (4151), select the bar mode.

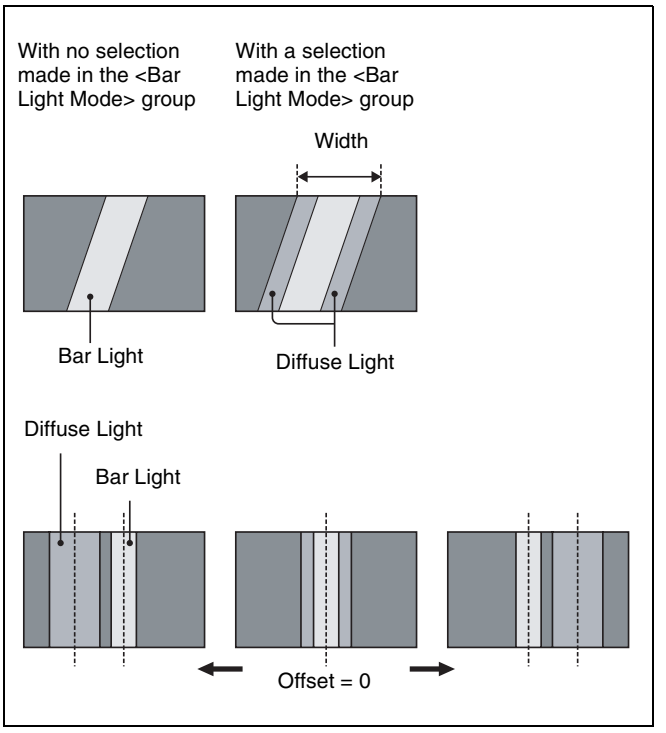
Normal: Emphasizes the bar highlight area.
Specular: Creates an effect like light striking a surface with metallic reflections.
Mat: Creates an effect like light striking paper, cloth, or another diffusively reflective surface.

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 afterimage trail signal

In the <Trail Source> group of the DME >Light/Trail >Trail menu (4152), select the image to insert in the afterimage trail.

Notes

- [Rainbow], [Mix Color], and [Ext Video] cannot be selected on the MVE-8000A.
- Only [Mix Color] or [Ext Video] can be used between the Background *(see page 272)*, Flex Shadow *(see page 233)*, Trail, and Wind *(see page 264)* 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 238)* in the afterimage portion.

Ext Video: Insert an external video signal input to the Ext IN connector 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

The freeze timing setting is not required when the following signal formats are being used.
1080P/50, 1080P/59.94, 1080PsF/23.98, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Defocusing the afterimage portion (Defocus)

Note

The function to defocus the trail afterimage portion is not supported on the MVE-8000A.

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 Decay and Trail Dust parameter adjustments.

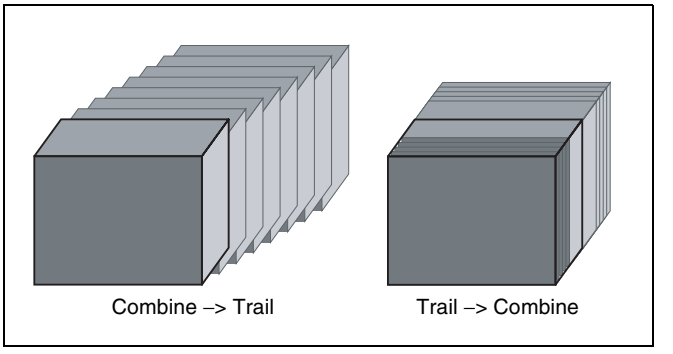
Setting a combine process

Select whether to add the Trail effect before or after the combine.

Notes

- The combine process function is not supported on the MVE-8000A.
- 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 trail 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. Trails 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.

Blurring image motion

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

The freeze timing setting is not required when the following signal formats are being used.
1080P/50, 1080P/59.94, 1080PsF/23.98, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

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.

Leaving a trail of afterimages

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

The freeze timing setting is not required when the following signal formats are being used.
1080P/50, 1080P/59.94, 1080PsF/23.98, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

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
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 keyframe strobe afterimage

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

- The combine process function is not supported on the MVE-8000A.
- 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

- The wind function is not supported on the MVE-8000A.
- Enabling Wind automatically disables Trail, Motion Decay, or Keyframe Strobe if it is set.

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 233)*, Trail *(see page 261)*, 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 238)* in the afterimage portion.

Ext Video: Insert an external video signal input to the Ext IN connector 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

You can also 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 261).

Spotlighting Settings

You can set up to three light sources (lights 1 to 3).

Notes

- The Spotlighting effect is not supported on the MVE-8000A.
- The BZDM-9050 Texture Lighting Software (for MVE-9000) is required to set lights 2 and 3.
- When the global effect combiner function is enabled, the settings of the lowest-numbered channel selected for the combiner are enabled.

Adjustments to the image surface

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
- Texture deformations

Selecting the image surface effect

Flat: The image surface is unchanged, causing the selected light source to appear as the effect.

Texture: A texture appears on the surface of the image. Textures can be selected from among 30 patterns *(see page 528)*.

Non Linear: Spotlighting effect is applied to an area to which a DME nonlinear effect is applied.

Note

The BZDM-9050 is required to enable [Texture] and [Non Linear] settings on the MVE-9000.

Test sphere function

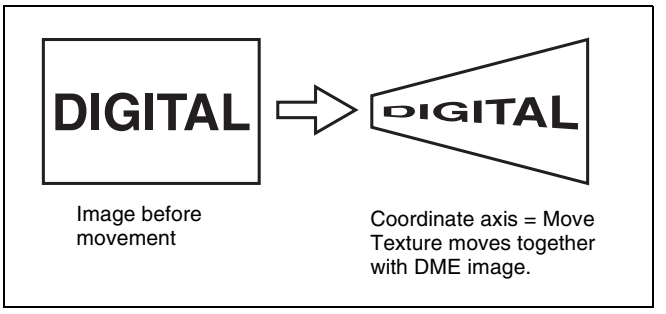
A test sphere is a translucent sphere virtually embedded in the center of the input picture to provide an intuitive way for you to check the position and direction of the spotlight. When you change the position or direction of a light source, the side of the sphere closest to the light source grows brighter.

For details, see "Relation between test spheres and parallel light rays" (page 267).

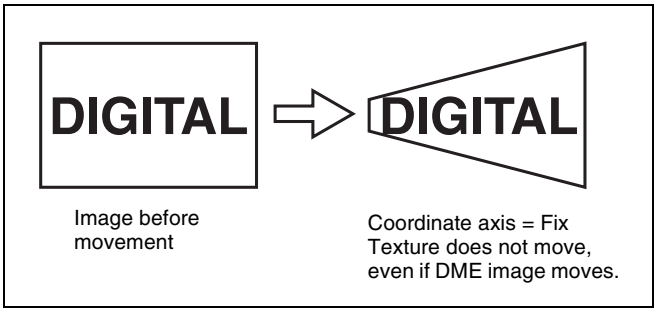
Coordinate axis on surface of image

Specify where to apply the texture or test sphere on the image surface.

Move: The texture moves together with the DME image.



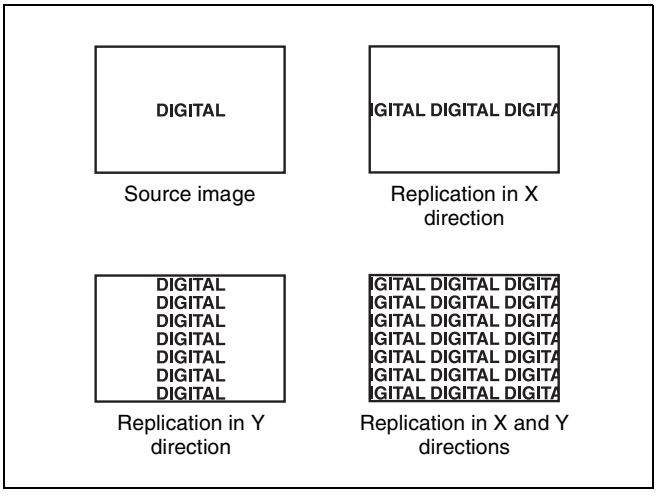
Fix: The texture does not move, even if the DME image moves.



Texture deformations

You can change the texture pattern, position, and size, and use the replication function.

The following figure shows examples of a texture pattern replicated in the X and Y directions.



Setting the light source

Light source types

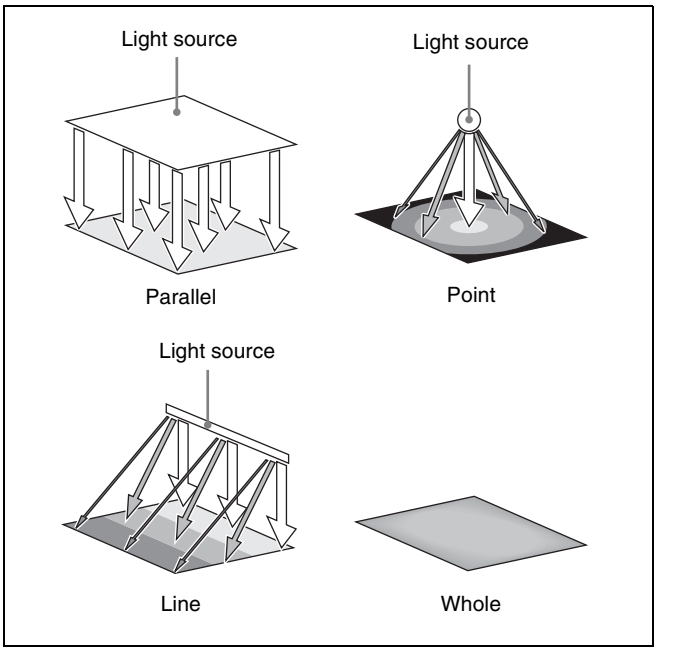
The following type of spotlight light sources are available.

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

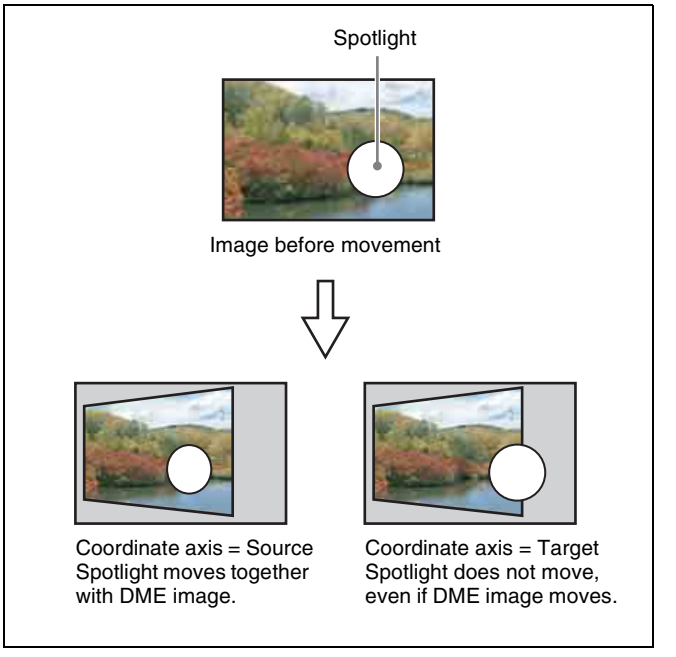


Linking and unlinking image and spotlight

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.



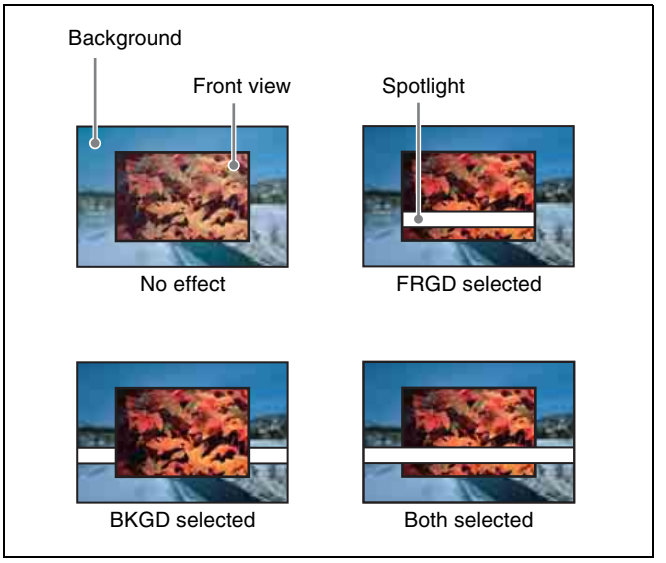
Selecting the illuminated area

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

For the currently selected light source only, you can forcibly make the image surface effect flat.
This is effective when you have selected texture as the image surface effect and want a flat effect for one light source only.

Light shape

Creates the spotlight shape.

- Select the shape pattern *(see page 528)*.
- Set the size, degree of deformation, softness, and rotation angle.

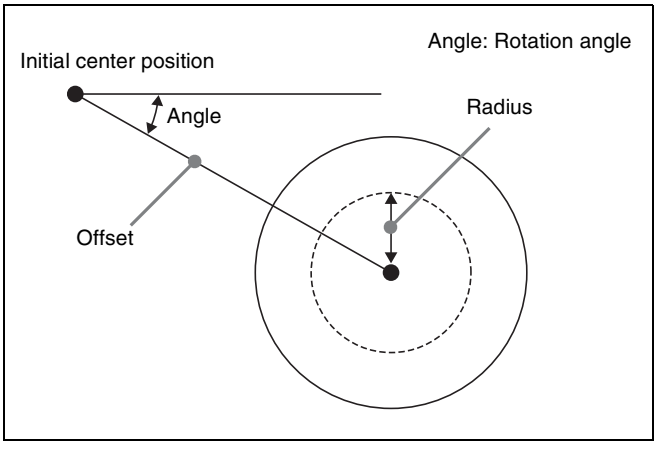
Ring settings

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

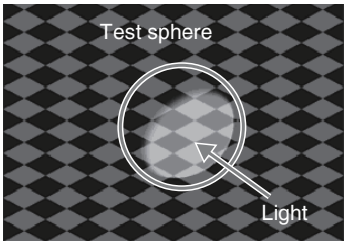
Specifies the way in which the light is blended with the image.

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

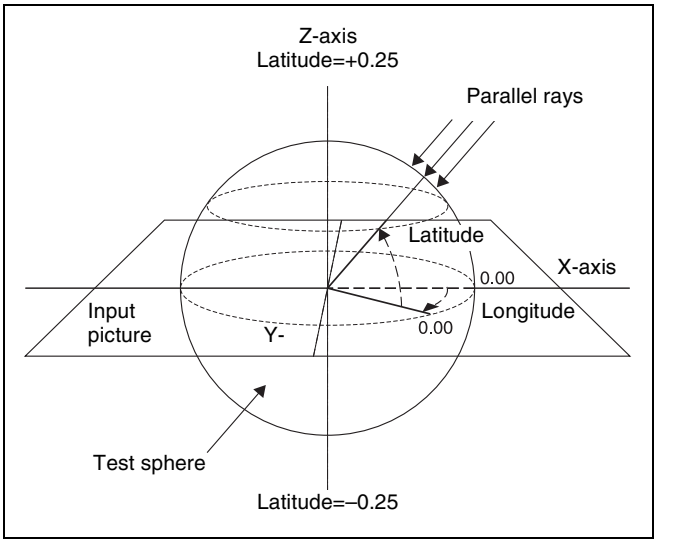
The following figure shows an example of the effect of parallel rays on a test sphere.



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.

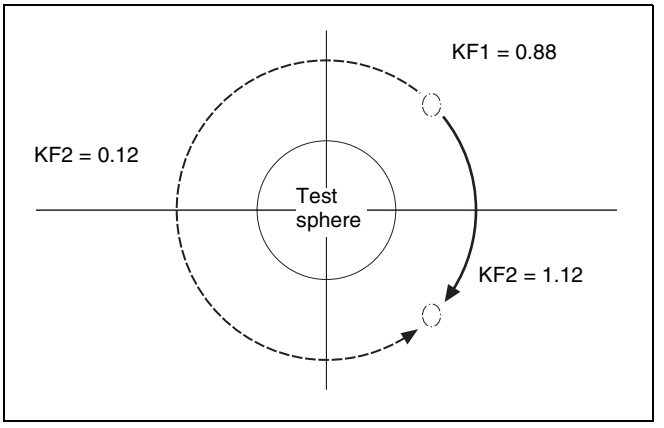


The unit of these direction parameters is the number of rotations, with 360° (1 rotation) expressed as 1.00, in the same way as 3D rotation parameters.
The following relationships apply in the example shown in the figure.

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 surface where light strikes the image

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.
Texture: A texture appears on the surface.
Non Linear: Spotlighting effect is applied to an area to which a DME nonlinear effect is applied.

Notes

- The BZDM-9050 Texture Lighting Software (for MVE-9000) is required to enable [Texture] or [Non Linear]. An install key must be entered to use the software.
  For details, see "Configuring Settings to Use the Software" (page 400).
- 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 [Texture] or [Non Linear] is selected in step **4**, set the following parameters.

When [Texture] is selected

No.	Parameter	Adjustment
1	X	Movement in X-axis direction [a]
2	Y	Movement in Y-axis direction [b]
3	Size X	Image size in X-axis direction
4	Size Y	Image size in Y-axis direction
5	Amp	Emphasize bumps and depressions [c]

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Plus emphasizes bumps in texture, minus emphasizes depressions. 0.00 is a flat surface.

When [Non Linear] is selected

No.	Parameter	Adjustment
5	Amp	Light separation distance [a]

a) Light appears from Z direction. At –100.00 the light is directed toward the rear, at +100.00 the whole image is lit like a flat effect.

6 When [Texture] is selected in step **4**, select a pattern *(see page 268)*.

7 When [Texture] is selected in step **4**, select the way it is applied in the <Surface Axis> group.

Move: The texture moves together with the DME image.
Fix: The texture does not move, even if the DME image moves.

For details about how it is applied, see "Coordinate axis on surface of image" (page 265).

Note

When [Non Linear] is selected in step **4**, [Fix] is disabled, if selected, and the behavior is the same as [Move].

To select a texture pattern

1 In the Spot Lighting menu (4156), press [Texture Ptn Select].

The Texture Ptn Select menu (4156.1) appears.
In the status area, two lists appear. The list on the left displays the number and name of the currently selected texture. The list on the right is used for selecting the texture.

2 In the <Texture Pattern> group, select the texture pattern list.

User: User-created texture patterns *(see page 401)*
Factory: Texture patterns provided by default.

3 Select a texture pattern.

4 Press [Set].

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. At –100.00 the light is directed toward the rear, at +100.00 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).

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
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.

Note

The BZDM-9050 Texture Lighting Software (for MVE-9000) is required to enable Light 2 and Light 3. An install key must be entered to use the software.

For details, see "Configuring Settings to Use the Software" (page 400).

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 266).

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. At –100.00 the light is directed toward the rear, at +100.00 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 266).

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 other than [Flat] is selected in the <Surface Select> group of the Spot Lighting menu (4156), only the part of the surface being struck by the currently set light from the light source is shown in 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 528*.
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

No.	Parameter	Adjustment
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.

Note

A background signal cannot be selected on the MVE-8000A.

Setting the background

1 Open the DME >Input/Output >Bkgd menu (4161).

2 Press [Bkgd], turning it on.

On the MVE-8000A, adjust the color using the parameters.
On the MVE-9000 or MKS-7470X/7471X, you can adjust the color using the parameters when [Flat Color] is selected in the <Bkgd Fill> group.

3 Set the following parameters.

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

Selecting the signal for the background area

When using the MVE-9000 or MKS-7470X/7471X, you can select the signal for the background area.
Operate with [Bkgd] enabled.

1 In the <Bkgd Fill> group of the DME >Input/Output >Bkgd menu (4161), 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 238)*
Ext Video: External video signal input to the Ext IN connector

Notes

- Only [Mix Color] or [Ext Video] can be used between the Background, Flex Shadow *(see page 233)*, Trail *(see page 261)*, and Wind *(see page 264)* 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.

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

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.

Shaped Video Settings

For each of the front and back sides of the image, this specifies whether to handle input video from the switcher as shaped video (processed key signals).
You can also make these settings for the output video.

Notes

- When using an SDI interface with the [PROC KEY] not selected in the output destination buttons, the shaped video function is enabled.
- When using a dedicated interface or SDI interface with [PROC KEY] selected in the output destination buttons, the shaped video setting is always enabled since the input video signal to the first channel is always set to the processed key signal on the switcher. The second and third channel signals are disabled. The output video is always enabled.

Enabling/disabling shaped video

1 Open the DME >Input/Output >Video/Key menu (4162).

2 In the <Shaped Video> group, select the target video signal to set.

Front Input: The Front image of the input video signal is treated as shaped video.
Back Input: The Back image of the input video signal is treated as shaped video.
Output: The output video signal is treated as shaped video.

About enabling/disabling shaped video input (Front Input/Back Input)

Enable/disable shaped video to match the input video signals.
For example, enable shaped video input when the input video signal is a processed key signal like a CG image. Disable shaped video input when the input video signal is not a processed key, for example, when a video signal taken with a camera is removed using a key signal, such as a title.

About shaped video output settings (Output)

Enable/disable shaped video output of the output video signal to match enable/disable state of the switcher clean mode.
When shaped video output is enabled, it is recommended that the switcher key type be set to linear key.

About the relationship between shaped video output and effects

When shaped video output is disabled, the video signal before key processing is output. The following state occurs, according to the selected effect.
(a) The output video signal is affected by the key signal.
(b) A different image appears in the parts removed by key processing.
(c) There is no change in the output video signal for effects which are applied to key signals only.
When multiple effects are applied, the order of priority is (a) > (b) > (c).
The following explains the relationship between effects and states (a), (b), and (c).

(a) The output video signal is affected by the key signal

The output video signal is affected by the key signal when the following effects are selected. To prevent the signal from being affected, set the DME key source to [Int Key], or choose an appropriate input key signal.
Page Turn, Roll, Cylinder, Sphere, Spotlighting, global effects (Combiner, Brick, Shadow)

(b) A different image appears in the parts removed by key processing

The following states result, depending on the selected effect.
Removal with the key can be checked by enabling the background.
Border, Beveled Edge: Added also to the outer side of the cropped video signal.
Trail, Keyframe Strobe: The key signal level of the afterimage portion varies with adjustments of the [Decay] parameter, but the afterimage portion of the video signal does not disappear until [Trail Eraser] ([KF Strobe Eraser]) is enabled or the effect is disabled.
Lighting: The Lighting effect is applied to the whole picture.
Spotlighting: When [BKGD] or [Both] is selected in the <Area Select> group, light strikes the entire background.

(c) No change in the output video signal for effects which are applied to key signals only

The following states result, depending on the selected effect.
Removal with the key can be checked by enabling the background.
Crop: The Crop effect is applied to the key signal only. The video signal does not change.
Edge Soft: The Edge Soft effect is applied to the key signal only. The video signal does not change.
Shadow, Flex Shadow, Combine Shadow: The key signal density changes. The video signal does not change.
Fade: The key signal density changes according to depth information. The video signal does not change.
Key Density: The key signal density changes. The video signal does not change.

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 shaped video *(see page 272)* is enabled, the key source cannot be selected. 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.
- The [Ext Key] parameter setting is only enabled when the shaped video setting is disabled.

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.
Further, you can apply an anti-moiré filter to reduce the moiré patterns created by interpolation.

Notes

- Interpolation processing is supported for the following signal formats and DME systems.
  - MVE-8000A: 480i/59.94, 576i/50
  - MVE-9000: 480i/59.94, 576i/50, 1080i/59.94, 1080i/50
  - MKS-7470X/7471X: 480i/59.94, 576i/50, 1080i/59.94, 1080i/50, 1080PsF/23.98, 1080PsF/24, 1080PsF/25, 1080PsF/29.97

  On the MKS-7470X/7471X, when the signal format is 1080PsF, only the [Field] or [Frame] setting in the <Video Field/Frame Mode> group and <Key Field/Frame Mode> group can be set. When the DME is rebooted, the setting changes to [Frame].

• The anti-moiré filter is effective when using the MVE-8000A.

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).

Applying the anti-moiré filter

You can reduce the moiré patterns created by interpolation when an image is reduced, enlarged, or rotated.

Note

The anti-moiré filter is effective when using the MVE-8000A.

1 Open the DME >Input/Output >Process menu (4163).

2 Press [Anti Moire Filter], turning it on.

3 Set the following parameter.

No.	Parameter	Adjustment
1	Anti Moire Filter	Amount of moiré reduction

Corner Pinning Settings

Note

When the Brick function is enabled, Corner Pinning cannot be used.

Setting the foreground corner pinning positions

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**.

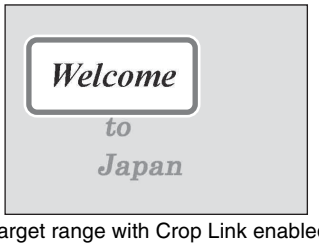
No.	Parameter	Adjustment
1	Pos X	Movement in X-axis direction
2	Pos Y	Movement in Y-axis direction

Resetting the corner positions

Press [Reset Corner].

Selecting 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.



Target range with Crop Link enabled

Target range with Crop Link disabled

(indicates the target range)

Adjusting 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 key frame or snapshot.

1 In the DME >Non Linear/Corner Pin >Corner Pinning menu (4142), press [Video Through], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
4	Density	Image density

Adjusting 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 key frame 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 DME >Non Linear/Corner Pin >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

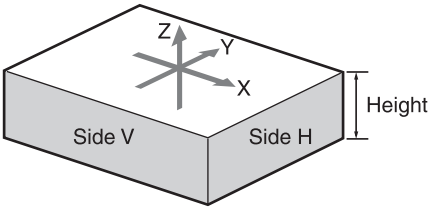
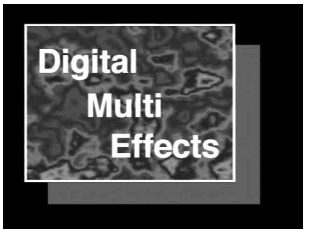
Global Effects

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.

Note

On the MVE-8000A, when the signal format is 1080P, the combiner and brick effects cannot be used on three or more channels.

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. 

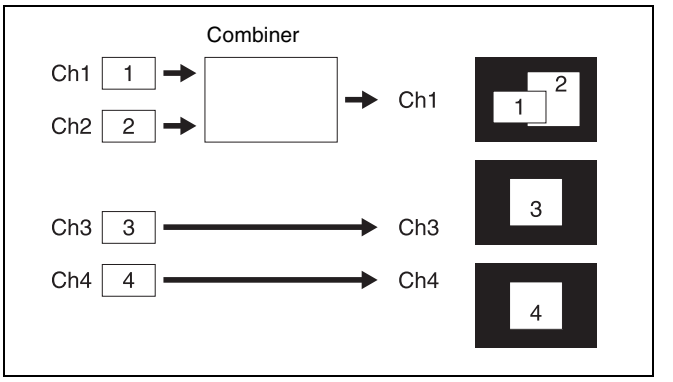
Combiner Settings

When multiple channels 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.

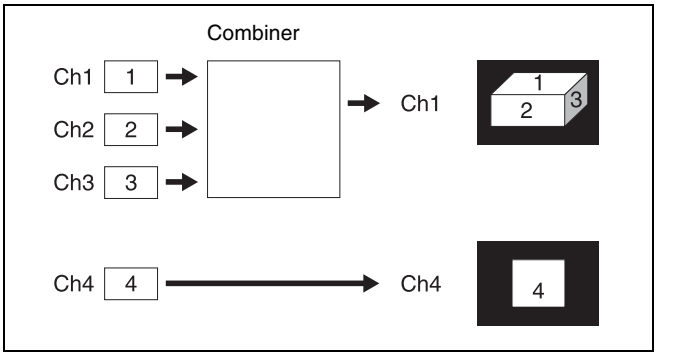
Note

The three-dimensional cross function is not supported on the MVE-8000A.

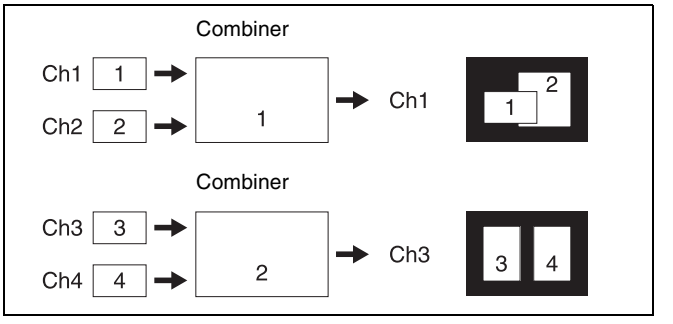
Combination of channel 1 (Ch1) and channel 2 (Ch2)



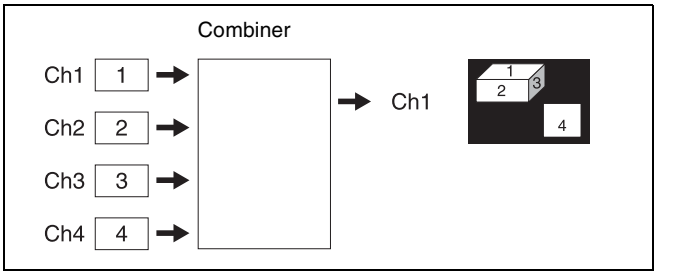
Combination of Ch1, Ch2, and Ch3



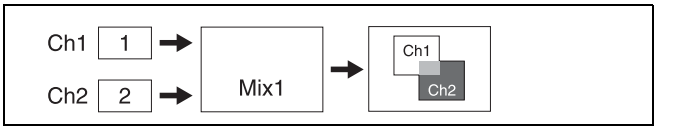
Combination of Ch1 and Ch2 / combination of Ch3 and Ch4



Combination of Ch1, Ch2, Ch3, and Ch4



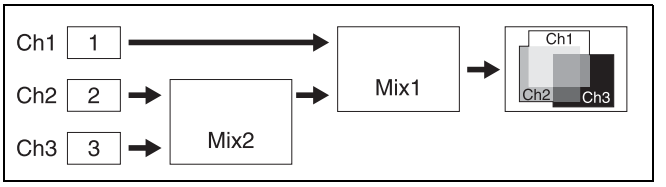
Mix of Ch1 and Ch2



If the Mix1 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%

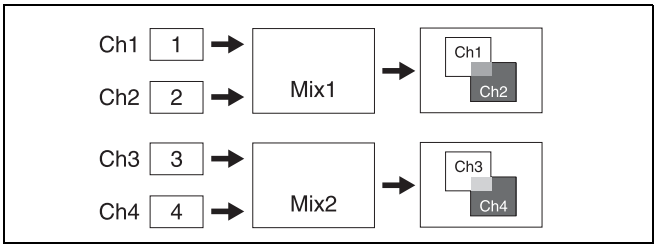
Mix of Ch1, Ch2, and Ch3



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%

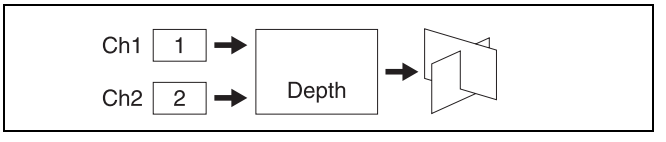
Mix of Ch1 and Ch2 / mix of Ch3 and Ch4



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



Setting the combiner

The setup menu varies depending on the combiner usage status.
This section describes “Ch1+Ch2+Ch3” and “Ch1+Ch2, Ch3+Ch4” as examples.

For details about operating procedures when using an SDI interface, see “Combine operation when using an SDI interface” (page 279).

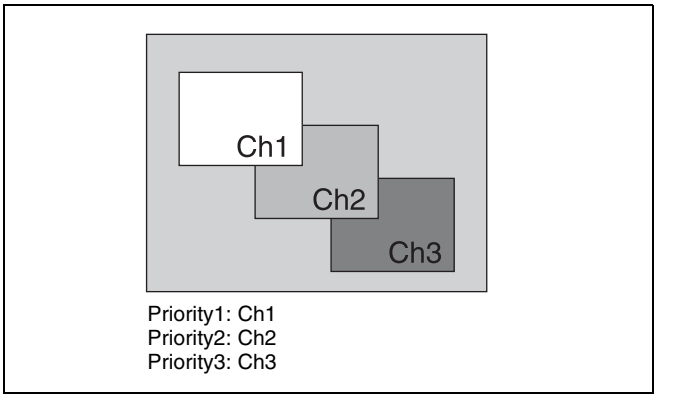
1 Open the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211).

2 Disable [Mix], [Auto], and [Depth], if enabled.

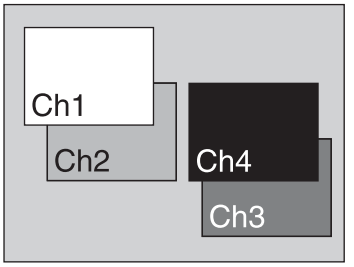
Press [Mix], [Auto], and [Depth], as required, turning them off.

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.



For “Ch1+Ch2, Ch3+Ch4”
Press [Ch1] and [Ch2] in the <Combiner1 Priority1> and <Combiner1 Priority 2> groups, respectively, and press [Ch3] and [Ch4] 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

Combine operation when using an SDI interface

This section describes combining channels 2+3 and combining channels 1+2 and channels 3+4 as examples.

Note

It is not possible to select channels using control panel buttons.

1 Open the Global Effect >Ch1-Ch4 >Combine Gp Select menu (4217).

2 In the <Combine Gp Select> group, select the channel combination.

To combine channels 2 and 3, select [Ch2+Ch3].
To combine channels 1 and 2 and channels 3 and 4 separately, select [Ch1+Ch2] and [Ch3+Ch4].
The selected channels are combined.

Note

The only two buttons that can be selected simultaneously are the combination of [Ch1+Ch2] and [Ch3+Ch4].

To cancel a combine

When [Ch2+Ch3] is enabled, for example, press [Ch2+Ch3] once more, turning it off. Alternatively, select a different combination button to select it and cancel the current combine selection.

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 277*.

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 278*.

For "Ch1+Ch2+Ch3+Ch4"

No.	Parameter	Adjustment
1	Mix1	Mix degree for mix of channel 1 with result of Mix2
2	Mix2	Mix degree for mix of channel 2 with result of Mix3
3	Mix3	Mix degree for 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 [Combiner 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 278*.

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 278*.

Automatically setting the priority of overlapping images

In the Global Effect >Ch1-Ch4 >Combiner Priority menu (4211), press [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

Note

The three-dimensional crossing function is not supported on the MVE-8000A.

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 in three dimensions

Note

The three-dimensional cross function is not supported on the MVE-8000A.

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

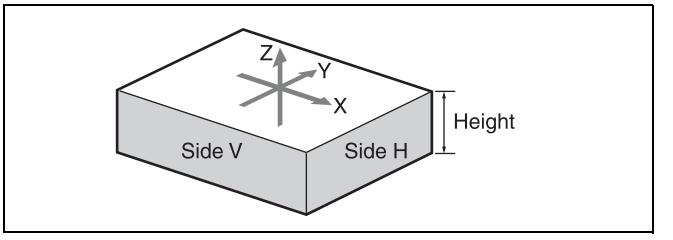
3 Press [Combiner2 Depth], turning it on.

4 Set the following parameter.

No.	Parameter	Adjustment
1	Soft2	Softness of edges of channel 3 and channel 4 crossed section

Brick Settings

This allows you to create a cuboid by using images of three consecutive channels.
The Brick effect can combine Ch1, Ch2, and Ch3, or combine Ch2, Ch3, and Ch4. The three images are displayed 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

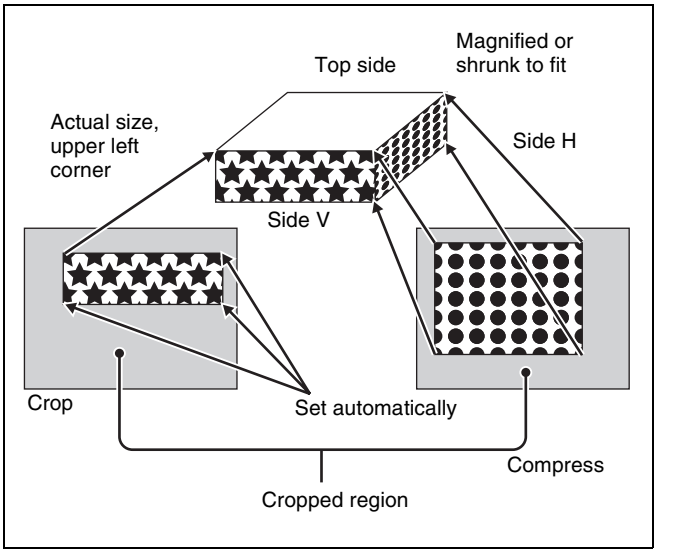
For example, to invert the image on the front of Side H, press the following buttons in the <Side H Front> group, turning them on.

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.
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

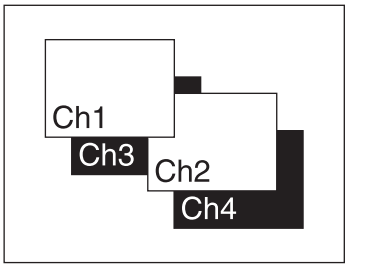
When the combiner function is disabled, the shadow function cannot be used.

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.

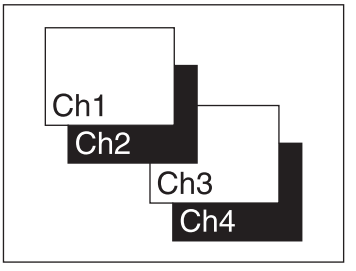
Video: Select Ch2 video input as the shadow.
Flat Color: Select a single color matte as the shadow.

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 the video 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 video 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 12

Control of External Devices

In this system, you can operate while controlling the following types of external device:
- P-Bus (Peripheral II protocol) devices
- GPI devices
- VTRs
- Disk recorders (video disk communications protocol, Odetics protocol)
- Extended VTRs (Abekas A53 protocol)

For details about the devices that can be connected, consult your Sony representative.

Notes

- To operate P-Bus devices, VTRs, Extended VTRs, and disk recorders in this system, the following settings are required on the SIU 9-pin serial port.
  - Device type setting
  - Device name
  - Setting of control panel to be used

  For details, see "Configuring Serial Port Settings" (page 466).
- When using a disk recorder or Extended VTR, be sure to go to the Device >DDR/VTR >File List menu (5333), and recall the file *(see page 296)*.

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 298)* (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 298)* 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, disk recorder, or Extended VTR control data.)
- Lock
- Name

File related functions

As effect data, you can save and recall, using the File menu.

Control of P-Bus Devices

In this system, you can control P-Bus devices through the 9-pin serial 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

At a keyframe point on the P-Bus timeline, you can set an action. 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 310).

For the action setting (or P-Bus timeline editing), use the Device menu.

You can save the data set in the Device menu in keyframe effect registers. 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 through the 9-pin serial port assigned to P-Bus.

Note

To use the P-Bus timeline, the P-Bus control mode must be set to [Timeline] in the Setup menu *(see page 426)*.

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.

The display of the 3rd parameter changes to reflect the selection of Store, Recall, or Trigger.

No.	Parameter	Adjustment
3	Store No	Register number for Store
3	Recall No	Register number for Recall
3	Trigger No	Trigger number

5 Press [Set].

To set other devices, repeat steps **2** to **5**.

Testing an action command

Press [Test Fire].
The action command is output from the 9-pin serial 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 427).

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 250) 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 426)*.
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

In this system, 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 GPI output ports to be registered at a keyframe point, and create the GPI timeline.

For details about keyframe creation, see "Creating and Editing Keyframes" (page 310).

For the GPI output settings (keyframe editing), use the Device menu.
The data set in the Device menu is saved in a keyframe effect register. When you recall the register and start execution of the keyframe effect, and advance the effect to the keyframe point for which the GPI output is set, a trigger pulse is output to the external device from the specified GPI output port.

GPI output port settings

Set the GPI output port number of the SIU which outputs GPI pulses at a keyframe point on the GPI timeline.

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 port on the rear panel of the SIU, select "2" (DCU).

4 Set the port number.

No.	Parameter	Adjustment
3	DCU Port No	SIU GPI 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 465).

5 Press [Set].

To set other GPI timeline ports, repeat steps **1** to **5**.

Testing trigger output

Press [Test Fire].
This outputs a pulse from the selected output port.

Clearing output 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 427).

Control of VTRs, Disk Recorders, and Extended VTRs

In this system, for up to 12 VTRs, disk recorders or Extended VTRs connected to an SIU, you can carry out the following manual operations and timeline settings.

- Controlling manually from the device control block (trackball).
  - VTR/disk recorder/Extended VTR selection
  - Tape/disk transport control
  - Start point/stop point setting
  - Recording to VTR/disk recorder
  - Loop/recue setting
- Saving a start point, stop point, start delay time, variable speed and so on in a data register, then recalling the register to control automatically from the utility/shotbox control block (Cueup & Play and VTR/disk recorder/ Extended VTR timeline).

To control a VTR, Extended VTR, or disk recorder in this system, the following settings are required.

- **Button assignment:** For a VTR, Extended VTR, or disk recorder connected to the SIU 9-pin serial port, assign a channel selection button in the device control block.
- **Serial port setting:** This sets the protocol (device type) to match the device connected to a 9-pin serial port.

For details, see "Associating a Serial Port with a Device Selection Button" (page 426) and "Serial Port Settings" (page 466).

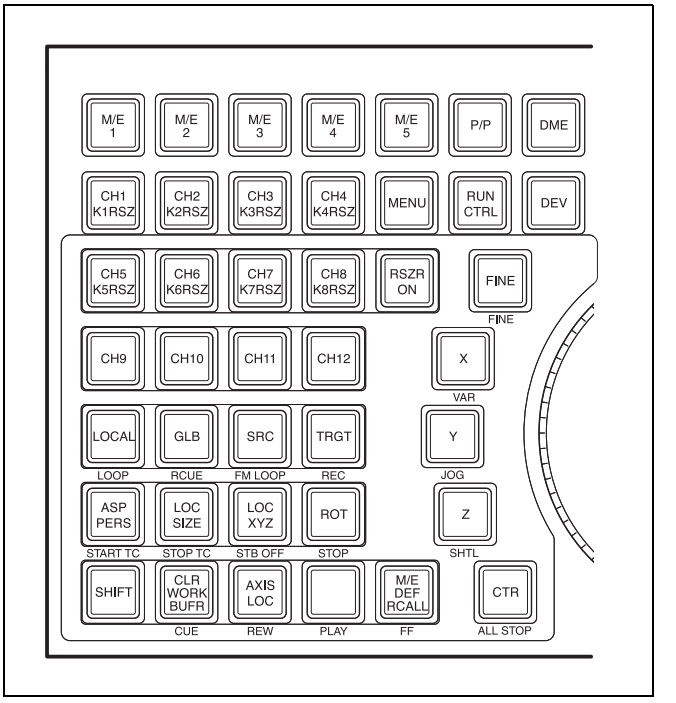
Controlling the Tape/Disk Transport

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.
REC (record) [a)]	Press this 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.

Button	Operation
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 VTR/disk recorder/Extended VTR

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 "Frame Memory Clip Operations" (page 164).

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.

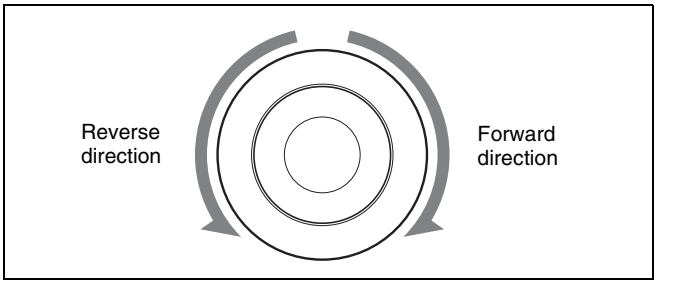
For details, see "Setting Transition Control Block Button Assignments" (page 411).

Variable playback speed modes

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.

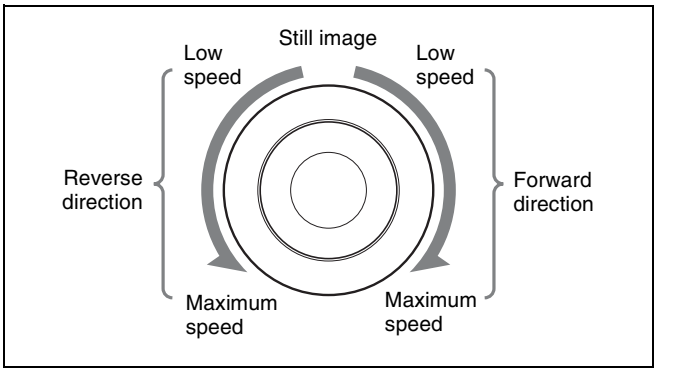
Jog mode

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.



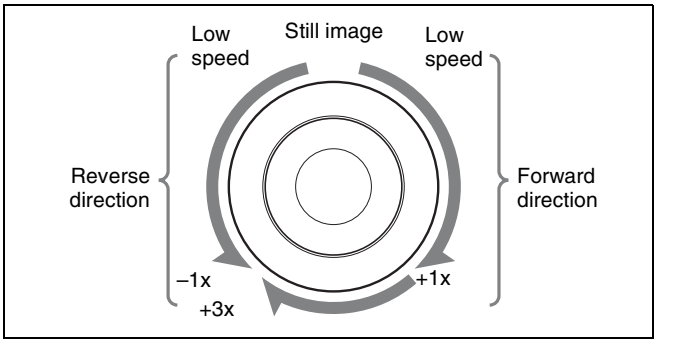
Shuttle mode

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 playback speed mode, press the [STOP] button. Additionally, pressing any of the [REW], [PLAY], [FF], [STB OFF], and [ALL STOP] editing buttons ends the variable playback speed mode.

Recording to VTRs and disk recorders

You can record to the VTR or disk recorder selected in the device control block.

Notes

- Recording is not possible if the VTR or disk recorder is not set to Recorder.
- The disk recorder type must be specified to use the video disk communications protocol *(see page 467)*.
- When using a disk recorder, recording is not possible unless a new file name is specified.
  For details about file name settings, see "Creating new files" (page 296).
- Recording is not possible when using the Odetics protocol.

1 Use the channel selection buttons of the device control block to select the VTR or disk recorder to which you want to record.

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.

Note

Note the following points about recording to a disk recorder.

- The maximum length of time that can be recorded in one operation is 30 minutes.
- If you want to record to a different file than the file used in the previous recording, use the Device >DDR/VTR >File List menu (5333) to create a new file.
- If you resume recording without executing [Unload] from the Device >DDR/VTR >File List menu (5333), recording starts at the position in the same file where recording was interrupted.

To stop recording

Press the [STOP] button or the [ALL STOP] button in the device control block.

Displaying VTR/Disk Recorder/ Extended VTR Information

You can check the following information in the Device >DDR/VTR >Cueup & Play menu (5331).

DEV (device name): DEV1 to DEV12 represent respectively device 1 to device 12.

Reg (register): Number of the register to which settings apply.

Status: Status of each device.

Operating status display	When VTR is used	When video disk communications protocol, Extended VTR, or Odetics protocol 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. b)
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 Extended VTR.
b) Not supported for the Odetics protocol.

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 operation 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) for a VTR, disk recorder or Extended VTR in an effect register. By recalling this register, you can operate the following buttons in the utility/shotbox control block to automatically control the VTR, disk recorder or Extended VTR.

[REWIND] button: Cue up to the start point timecode.

[RUN] button: Play.

With this function you can also stop the VTR, disk recorder or Extended VTR used for playback at the stop point timecode recalled from the same register.

Disk recorder (video disk communications protocol) operation when loop/recue is set

When loop is set: Playback repeatedly between the start point and stop point.

When recue is set: When playback reaches the stop point, automatically cue up to the start point.

Notes

- In an effect register set on the VTR/disk recorder timeline, Cueup & Play settings are not possible. To make Cueup & Play settings, first clear the VTR/disk recorder timeline setting before carrying out the operation.
- When using a disk recorder with Cueup & Play, if you carry out the following sequence of operations, the system 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.
  In such cases, first recall a different register, then carry out the following sequence:
  Recall the original register again ⟶ 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 307).

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 307).

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 VTR, Extended VTR or disk recorder by 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 292)*.

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 VTR, Extended VTR or disk recorder by 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 292)*.

9 To set a start delay time, use the Cueup & Play menu *(see page 292)*.

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

By recalling a register in which you have saved setting data for Cueup & Play, you can control the VTR/Extended VTR/disk recorder automatically in the same way as when automatically executing a keyframe effect.

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 307).

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 VTR/Extended VTR/disk recorder automatically advances to the timecode value set as the start point. While the VTR/Extended VTR/disk recorder is operating, the [ALL STOP] button in the device control block flashes amber, and when the start point is reached lights green.
If the operating VTR/Extended VTR/disk recorder is selected as the reference region in the device control block, the [CUE] button also flashes and lights in the same way as the [ALL STOP] button. Also, when the start point is reached, the [STOP] button lights amber.

5 Press the [RUN] button in the utility/shotbox control block.

The VTR/Extended VTR/disk recorder is now controlled according to the keyframe data.

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 the 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.

Selecting Loop or Recue as the playback mode

You can set the device operation mode to loop or recue.

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 and recue functions are only available when using the video disk communications protocol. Note that these functions 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 467)*.

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 Select the device.

3 In the <Mode> group, press [Loop] or [Recue], turning it on.

VTR/Disk Recorder/Extended VTR Timeline

For a keyframe effect controlled from the control panel, the timeline allows you to set a VTR, disk recorder or Extended VTR action at a keyframe point on the timeline.

Timeline actions

The actions that can be used on the timeline are as follows.

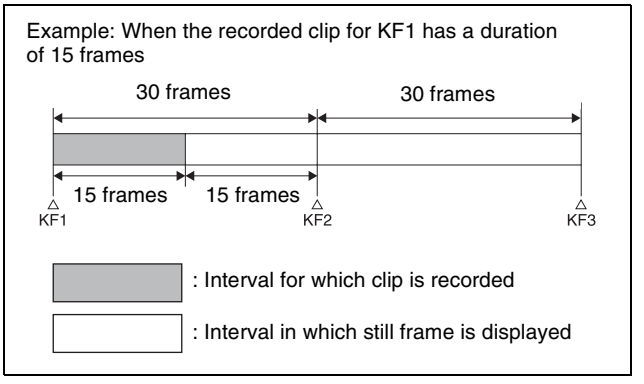
- Start
- Stop
- Cueup
- Variable speed

For the action settings (VTR/disk recorder/Extended VTR timeline editing), use the Device menu.
The data set in the Device menu is saved in a keyframe effect register. When you recall this register and start execution of the keyframe effect, and advance the effect to the keyframe point for which the action is set, an action command is output to the external device through the 9-pin serial port assigned to the VTR, disk recorder or Extended VTR.

Note

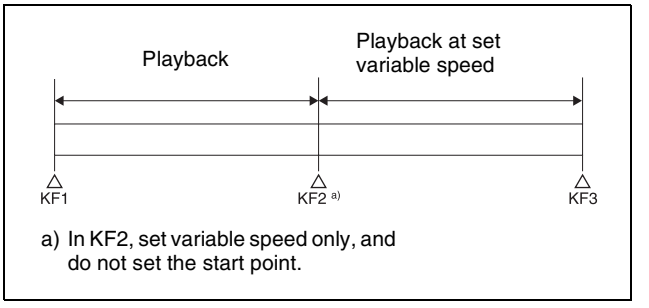
When executing a timeline using a disk recorder or Extended VTR, note the following points.

- It is not possible to use loop and recue on the timeline.
- For a disk recorder, the maximum number of files for a single register is eight.
- 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 executing the timeline using a disk recorder, also take note of the following points.

- 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 the VTR/disk recorder timeline, if you carry out the following sequence of operations, the system 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.
  In such cases, first recall a different register, then carry out the following sequence:
  Recall the original register again ⟶ press the [REWIND] button ⟶ press the [RUN] button.
- 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

KF1 action setting	Operating status of file A	KF2 action setting
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.

- When using the Odetics protocol, the variable speed action may not operate, depending on the connected device.

VTR/disk recorder/Extended VTR timeline editing

Set an action at a keyframe point, and edit the timeline.

For details about keyframe creation, see "Creating and Editing Keyframes" (page 310).

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 action type (start point, stop point, and variable speed) set for the keyframe.
The lower list is used for setting the action for the device selected in the upper list. This list shows the port name, current file, current time, status information, start point, stop point, variable speed, and file name (for a disk recorder or Extended VTR).

2 Select the device.

3 To set the name of a file when using an Extended VTR or disk recorder, recall the file using the Device >DDR/VTR >File List menu (5333).

Notes

- There is a limit of eight disk recorder files that can set on a single timeline.
- If you have not set the file name when using an Extended VTR, the file recalled in the Extended VTR when the keyframe point is passed is the subject 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.

Note

When the stop point and variable speed are both set, the variable speed setting takes priority.

Stop: Output a Stop command.

Note

Before executing the Stop command, if the timecode for the set stop point has been reached, or on an Extended VTR or disk recorder if the end of the file has been reached, then at that point the device stops.

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

For a disk recorder on which the start point is not set, the file recalled in the disk recorder when the keyframe point is passed is the subject 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 set other devices, repeat steps **2** to **7**.

To carry out start point and stop point settings and cueing up operations in the device control block

Use the following buttons of the device control block.

[START TC] button: Set the start point of the keyframe point to the current time.

[STOP TC] button: Set the stop point of the keyframe point to the current time.

[CUE] button: Cue up to the start point set for the keyframe point.

The current time, start point, and stop point can be viewed in the device control block display.

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 9-pin serial 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 VTR/disk recorder/Extended 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.

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 427).

Disk Recorder/Extended VTR File Operations

Material held on a disk recorder/Extended VTR is managed in units of files. You can recall a file to play it back. In the case of an Extended VTR, the register number is recalled.

Recalling a file

Before playback and similar operations on a disk recorder/Extended VTR, it is first necessary to display the list of files stored on the disk recorder/Extended VTR.

In the recalled file list, select the file you want to play back, and open the file.

In the case of a disk recorder, the recalled file name is displayed in the device control block display.

File list sharing

You can connect multiple SIU serial ports to a single disk recorder/Extended VTR.

You can share the recalled list of files between serial ports connected to the same disk recorder/Extended VTR.

For details, see "Sharing disk recorder/Extended VTR file lists" (page 426).

Refreshing (recalling) the disk recorder/Extended VTR file list

1 Open the Device >DDR/VTR >File List menu (5333).

In the status area, two lists appear.

The upper list shows the selected device name, the currently selected file name (register number), and set file name.

The lower list shows the file list of the device selected in the upper list. This list shows the file name (register number) set when the material was recorded, the length of the file data (timecode value), and the file update information.

Notes

- File update information is not shown when using the video disk communications protocol. When "Simple VDCP" is selected as the protocol, the file data length is also not displayed.
- For Extended VTR, the length of file data and file update information are not shown. The register number is shown as the file name.
- When using the Odetics protocol, the length of file data and file update information are not shown.

2 Select the device.

3 Press [File List Update].

To sort the files in the list

In the <Sort> group, select the sorting method.
File Name: Sort in alphabetical order of file name.
File No: Sort in ascending file number order (low → high).
Update: Sort in file update date order (new → old).

Notes

- Files cannot be sorted by the file update date and time when using the video disk communications protocol or Odetics protocol.
- For Extended VTR, it is not possible to sort files.

Loading files

Note

Files cannot be recalled when the disk recorder is set to Recorder.

1. Open the Device >DDR/VTR >File List menu (5333).
2. Select the device.
3. Select the file to load.
4. Press [Load].

Creating new files

A file name must be specified to record to a new file on a disk recorder (video disk communications protocol).

Notes

- New files cannot be created when the disk recorder is set to Player or Recorder/Player.
- For Extended VTR or when using the Odetics protocol, new files cannot be created.

1. Open the Device >DDR/VTR >File List menu (5333).
2. Press [New File].
3. 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 467).

When the loaded file is not a target for recording

Press [Unload].

Keyframes

Chapter 13

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/E1 to M/E5, PGM/PST, User1 to User8
  - DME: DME ch1 to DME ch8 (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 410)*.

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 435)*. The User regions shown in parenthesis are the default assignments.

- Color backgrounds 1 and 2 (User1)
- AUX1 to AUX48 (User2)
- Frame Memory 1 to 8 (User4)
- Color correctors 1 and 2

Notes on saving or recalling a frame memory still image for or by a snapshot/keyframe

- The saving and recalling of frame memory images for snapshots and keyframes is restricted to the still images or clips on the eight frame memory outputs. The settings made for frame memory images in the Freeze menu or other menus do not apply to snapshots or keyframes.
- To reproduce a frame memory still image or a clip of them by recalling a snapshot or keyframe, you must have the same images that were present in the frame memory when you saved the snapshot or keyframe. Therefore, when saving a snapshot or keyframe using frame memory, you must also save the images to a storage media, such as the local drive.

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 >DME ch5 >DME ch6 >DME ch7 >DME ch8 >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. The master region can be saved or recalled using the numeric keypad control block.

Registers

A register is an area of memory in a device which holds a snapshot *(see page 330)*, keyframe, macro *(see page 348)*, 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 also shared registers for each processor as shown in the following table. These are used for 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, as 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 represents an instantaneous state of an image; it can be saved and recalled for reuse.

Effects

By arranging a number of keyframes on the time axis, and interpolating between successive keyframes, you can create an effect in which there is a continuous change from each keyframe to the next. This change is called an effect. You can save the sequence of keyframes representing a single effect in a register *(see page 298)*. Then by recalling this register, you can replay the same effect.

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. The dissolve duration can be set in the Effect menu.

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 300)*.

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 300)*.
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 315)*.

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 315)*.

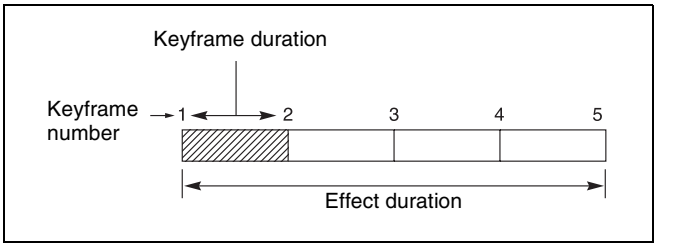
Time Settings

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 318)*.
In constant duration mode *(see page 299)*, 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 318)*.
When you change the effect duration, the keyframe duration for each keyframe in the effect is automatically recalculated proportionally.



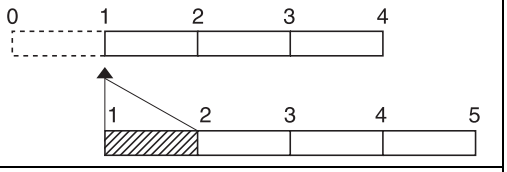
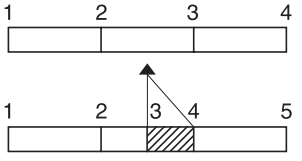
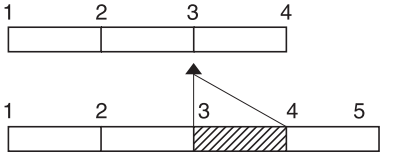
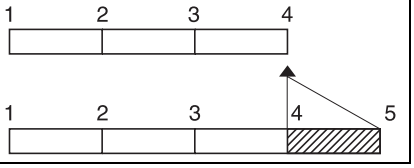
The effect duration may also be changed by inserting or deleting keyframes.

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 299)*, 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.

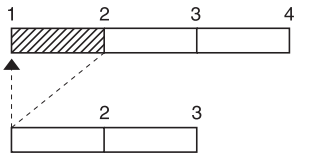
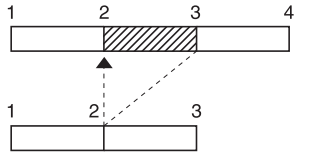
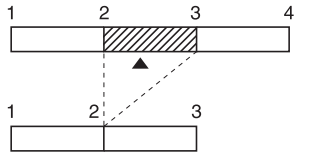
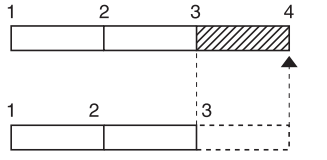
Insertion position	Change in effect duration
Insertion before the first keyframe	
Insertion between two keyframes	
Insertion at an existing keyframe	
Insertion at the last keyframe	

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 299)*, 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 319).

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.

Item		Paths that can be set
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 435).

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 All		Overall path settings for frame memory items are made simultaneously.
FM Still Store		Overall path settings for frame memory freeze image output items are made simultaneously.
	FM Still Store All	
	FM Still Store 1 to 8	Paths for frame memory freeze image outputs 1 to 8
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

Item		Paths that can be set
CCR		Overall path settings for color corrector items are made simultaneously.
	CCR All	
	CCR 1	Path for color corrector 1
	CCR 2	Path for color corrector 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 [a)]
	Art Edge	Path for art edge [a)]
	Flex Shadow	Path for flex shadow [a)]
	Wipe Crop	Path for wipe crop [a)]
	Color Mix	Path for color mix [a)]
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 [a)]
	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 [a)]
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

a) This cannot be used on the MVE-8000A.

DME Global Effect menu

Item	Paths that can be set
Global Effect All	Overall path settings for DME global effect items are made simultaneously.

Item	Paths that can be set
Combine	Path for combiner
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 321).

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 323) and "Recalling and Executing a Master Timeline" (page 325).

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 307)*
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 309)*
Select the region in which editing applies, and set the edit points.

⬇

Creating and editing keyframes *(see page 310)*
Create the keyframes that make up the effect, using operations to create, insert, modify, or delete keyframes.

⬇

Time settings *(see page 318)*
Set the overall duration of the effect or the duration of each keyframe.

⬇

Path setting *(see page 319)*
Set the type of interpolation used between successive keyframes.

⬇

Executing effects *(see page 321)*
This provides a smooth effect, based on the time and path settings.

⬇

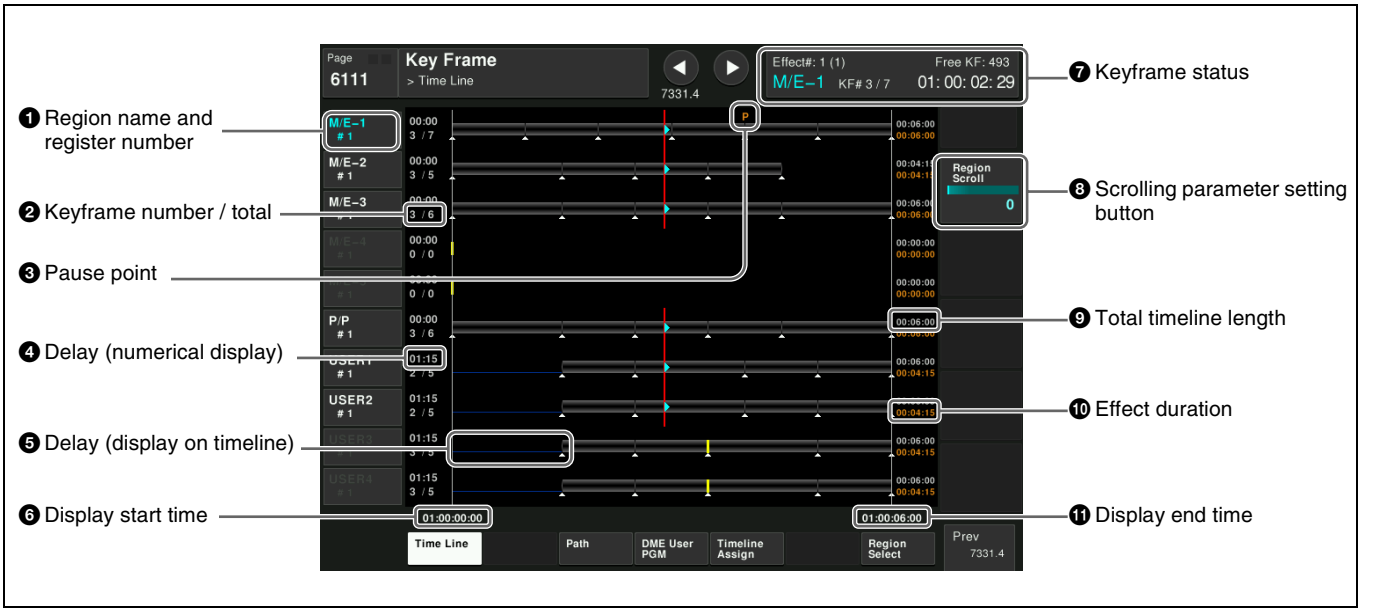
Saving effects *(see page 322)*
Save a completed effect in a register.

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 the global region) 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

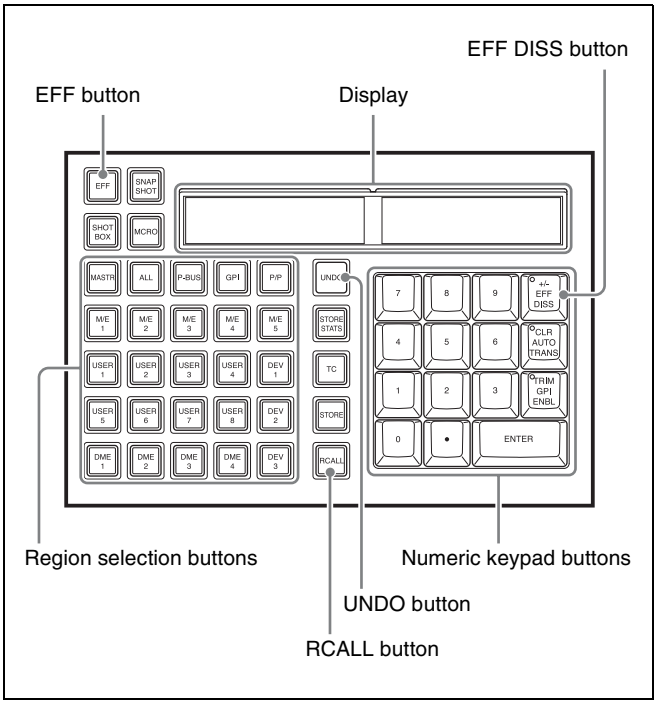
In the <Priority> group, press [Default].

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 297) and "Registers" (page 298).

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 [DME8]: 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 297).

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 297)*.
- The regions that are selected when [ALL] is pressed are set in the Setup menu *(see page 410)*.
- 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 DME8, PBUS, GPI, MCRO, ALL, MASTR

For details about region selection, see "Region selection in the numeric keypad control block" (page 307).

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 307).

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 307).

Recalling regions to edit (menu)

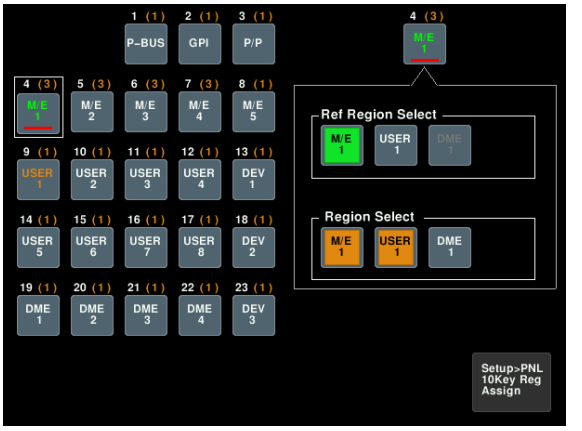
This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

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.

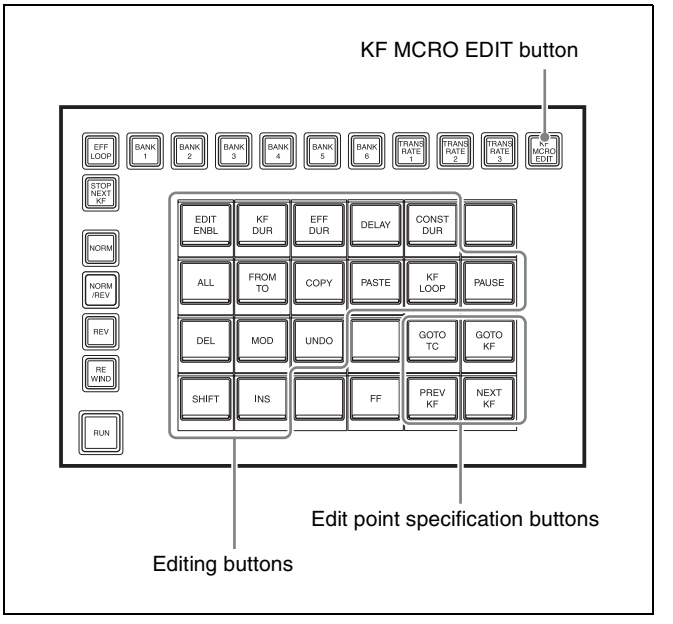
The regions assigned to the selected button appear on the right side of the status area.

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 299).

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 299)*, 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 312).

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 312).

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.

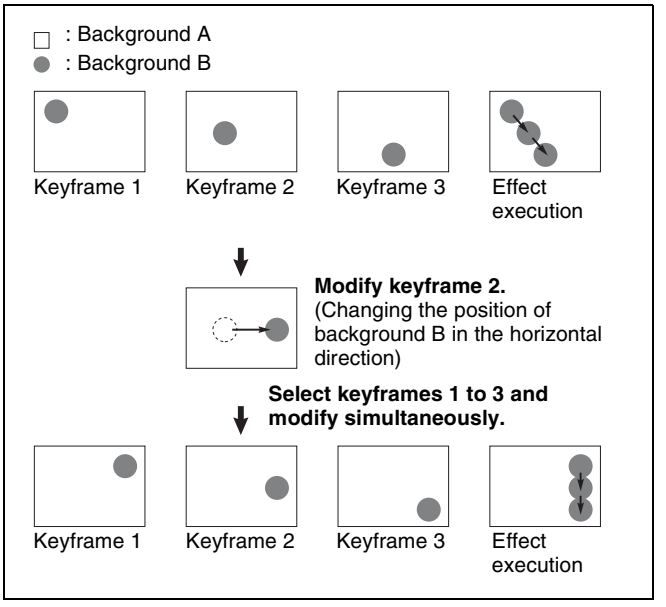
For the difference in the result, see "Differences in the changes when a number of keyframes are modified" (page 312).

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

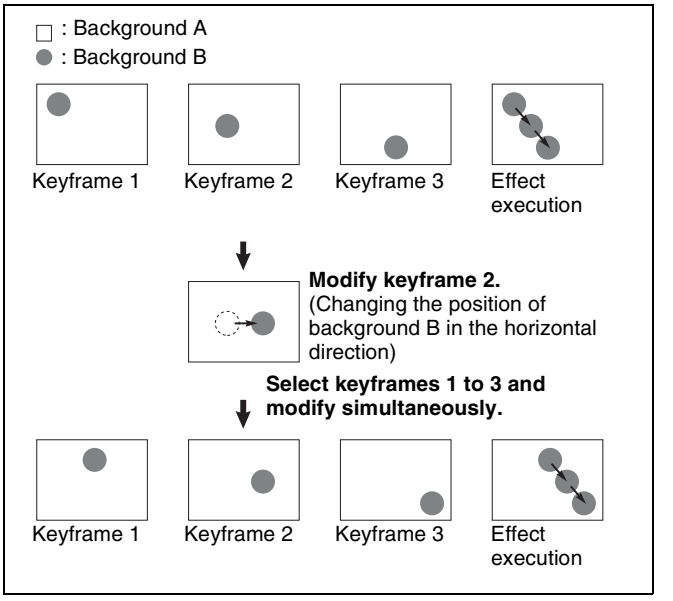
The modified parameter values are taken as absolute values, and applied to all of the selected keyframes.



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 311).

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 299)*, however, the duration does not change.

For details, see "Changes in the effect duration caused by deleting a keyframe" (page 300).

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 311).

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 moved keyframe before a keyframe
Press and hold the [SHIFT] button, and press the [PASTE] button.
This inserts the keyframe you have moved 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 311).

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.

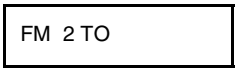
1 Press the [KF MCRO EDIT] button, then press the [EDIT ENBL] button, turning it on orange.

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.



"FM" (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.

```
FM  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 [ENTER] 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

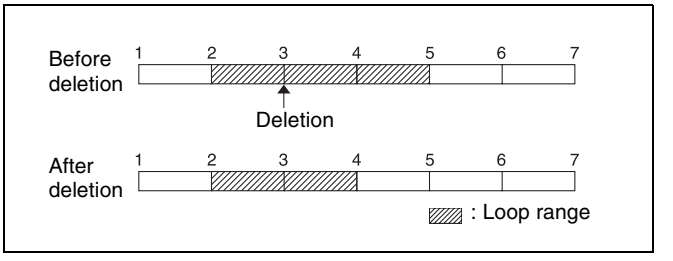
Press the [RUN] button.
The set loop range is executed repeatedly for the set loop count number of times.
The total loop count and the number of loops remaining are displayed in the timeline menu. If the loop count is infinite (inf), the remaining number is not shown.
If the [REV] button is lit, the loop is played in the reverse order.

Canceling keyframe loop execution

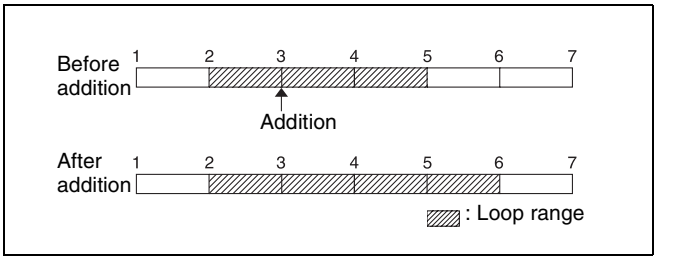
Press the [REWIND] button.

Changes to the loop range caused by keyframe insertion/deletion

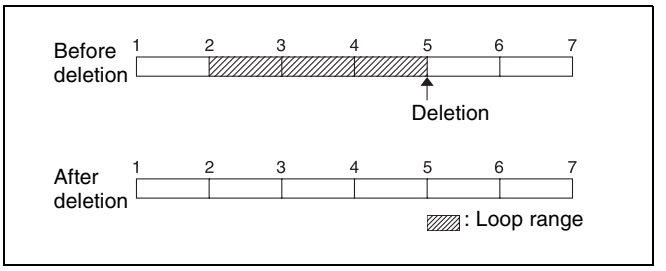
When a keyframe is inserted or deleted within the loop range, the loop range also changes. The following are examples.
Example 1: If keyframe 3 is deleted, the loop end point moves forward as follows.



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 299)*.

- 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 315)*.

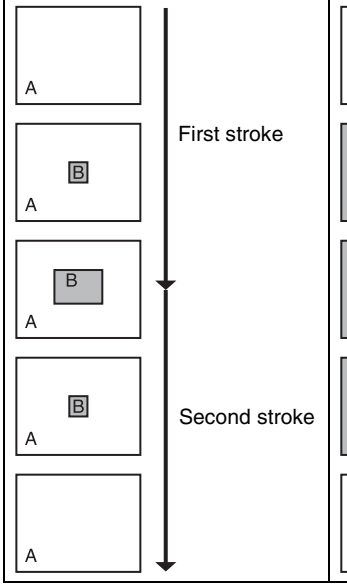
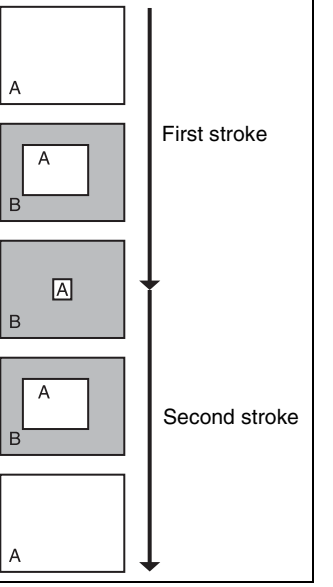
Frame in-out (Frame I/O): 1-channel or 2-channel, frame in-out transition mode. When the first transition completes, if you move the position of the image, you can move it both horizontally and vertically *(see page 315)*.

Frame in-out H (Frame I/O H): A type of frame in-out mode, 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 316)*.
The operation is carried out according to DME wipe patterns 1202, 1203, or 1204.

Frame in-out V (Frame I/O V): A type of frame in-out mode, 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 316)*.

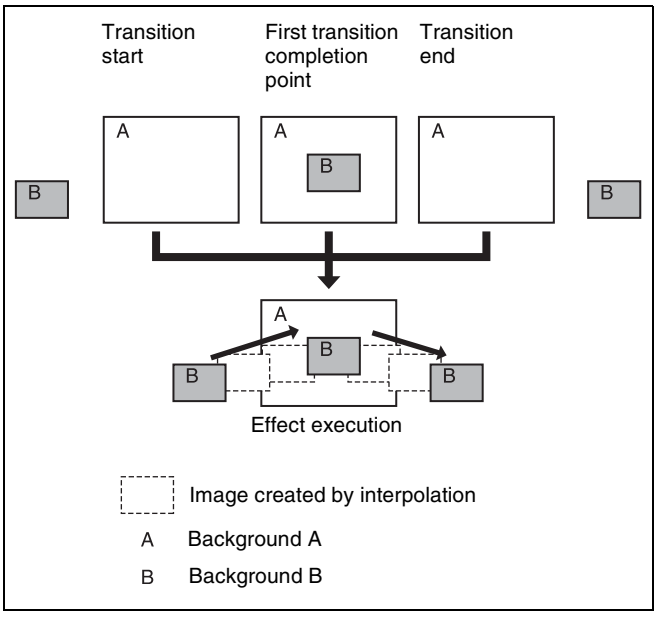
Transition mode “Compress”

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.”

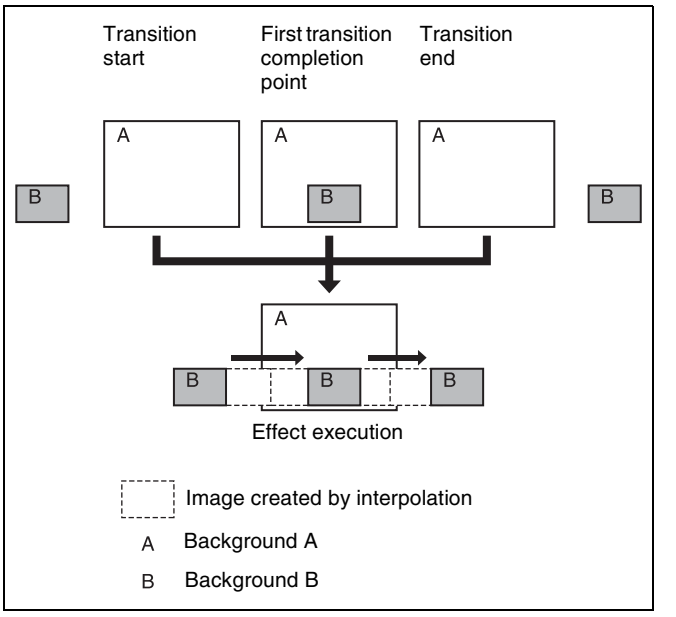
Example of the image change in the transition mode “Picture-in-picture” (1-channel mode)	Example of the image change in the transition mode “Compress”
	

Transition mode “Frame in-out”

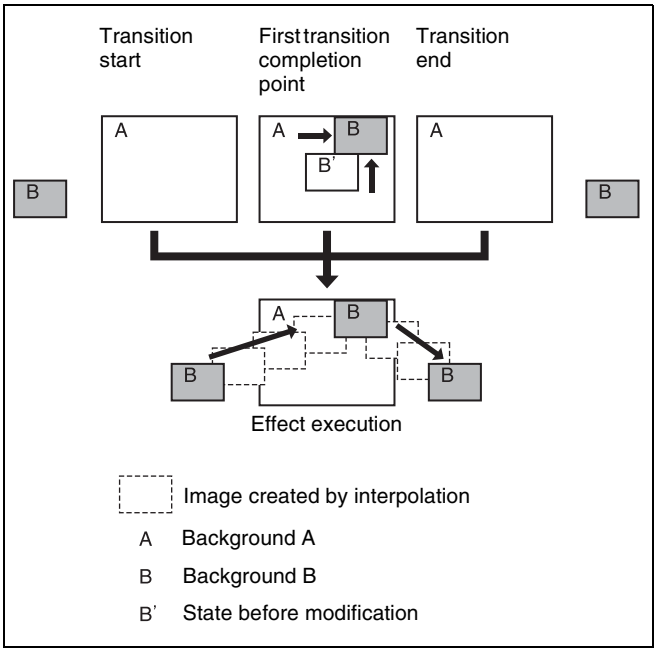
In this mode, when the first transition has completed, you can move the image with the positioner in both horizontal and vertical directions, but the image position at the transition start point and end point does not change.
The description is of an example of creating an effect such as the following.



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.

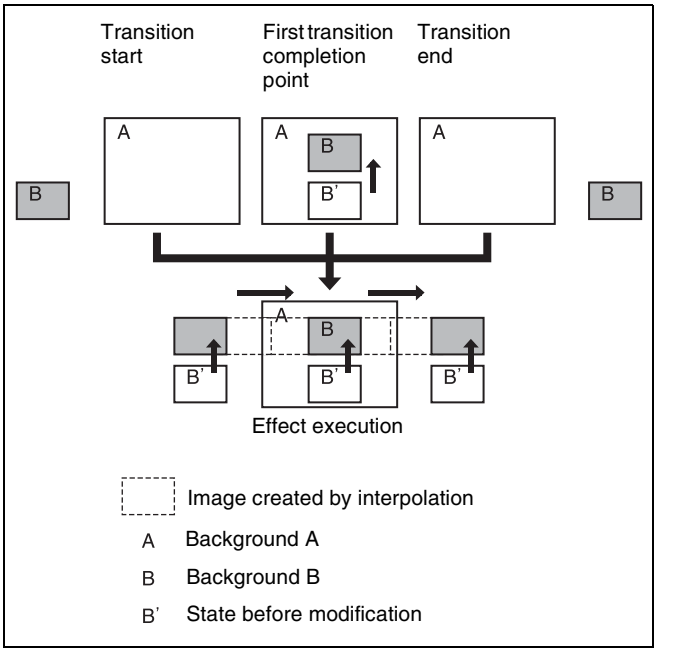


Transition mode "Frame in-out H"

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.

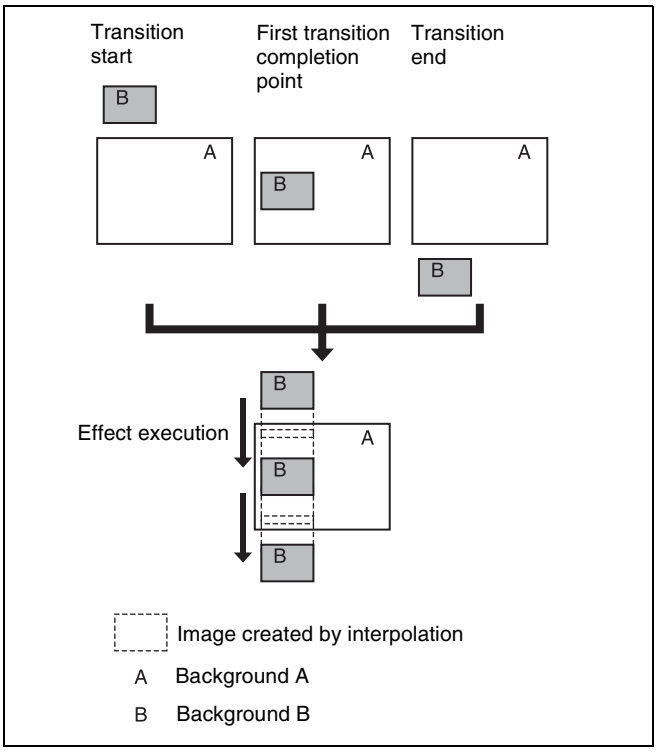


Transition mode "Frame in-out V"

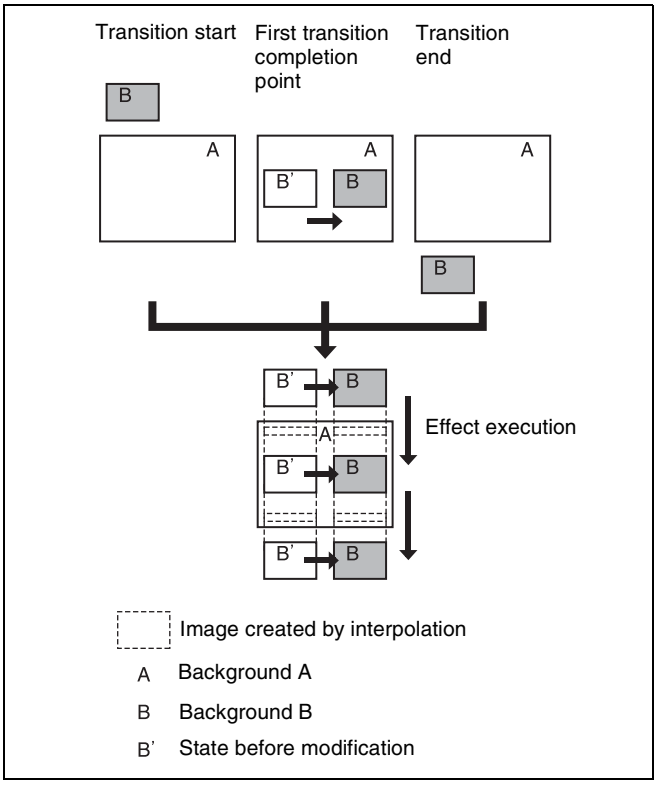
This mode is specified when creating a transition effect in the vertical direction.

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 DME external video signal, and the light gray portion with the signal selected as follows.

For details about patterns, see "DME Wipe Pattern List" (page 481).

For a DME dedicated interface

- When the DME channel used is 3 or 4, the signal selected on the DME utility 1 bus.
- When the DME channel used is 7 or 8, the signal selected on the DME utility 2 bus.

For a DME SDI interface

Signal selected on the AUX bus assigned in the Engineering Setup >Switcher >Device Interface >DME Type Setting >DME SDI I/F menu (7337.7). The AUX bus is determined by which DME channel is being used.

Note

For the SDI interface on the DME, in some cases the AUX bus is used in place of the DME external bus.

For details, see "Setting the Interface Between the DME and the Switcher" (page 455).

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 mode.
Compress: Select compress 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 150).

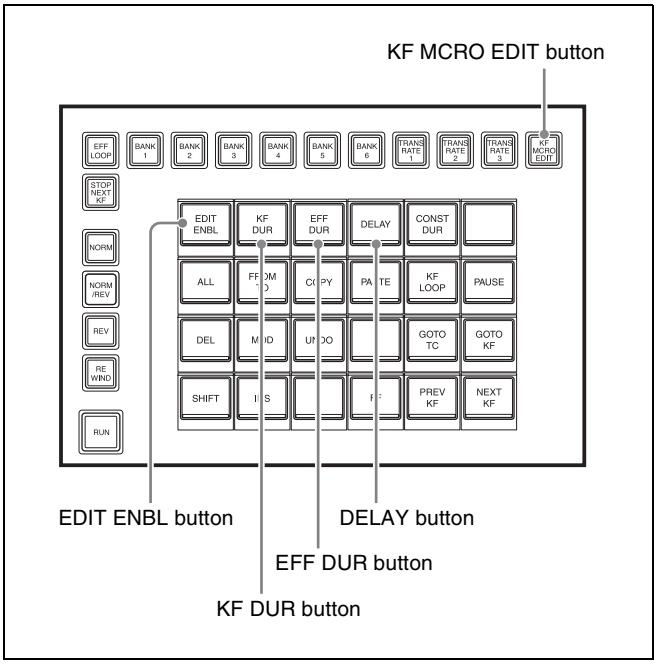
Note

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 299)*.
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 310)*.

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 299).

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 310)*.

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 299).

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 310)*.

4 Press the [ENTER] button to confirm the entry.

Path Settings

The term "path" *(see page 300)* 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

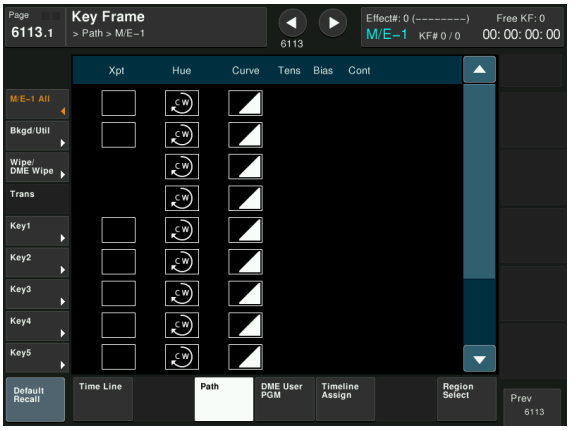
To select the M/E-1 bank, select [M/E-1] in the first row, and open the M/E-1 menu (6113.1).

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.

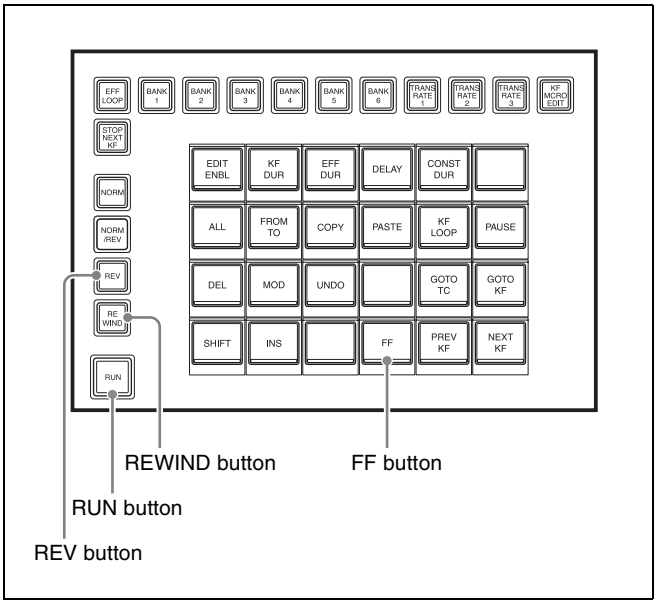
Effect Execution

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 303)*.
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 307).

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 321)*, 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 411)*.
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 DME8, PBUS, GPI, MCRO, ALL

For details about region selection, see "Region selection in the numeric keypad control block" (page 307).

For details about saving a master timeline, see "Creating and saving a master timeline" (page 323).

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 307).

5 To add an attribute (effect dissolve), press the [EFF DISS] button, turning it on.

For details about attributes, see "Effect Attributes" (page 298).

6 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 308).

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 307).

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 308).*

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”), ch5 (“DME5”), ch6 (“DME6”), ch7 (“DME7”), ch8 (“DME8”)
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 Select the register in which you want to save the master timeline.

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 status of each region in this master timeline.

5 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.

If the selected register is locked, a confirmation message appears asking whether or not to cancel the operation. Press [OK] to return to the previous menu display without carrying out the registration.
If the operation is carried out, the region selected in step **5** is registered on the master timeline.

7 Select the number of the effect register.

No.	Parameter	Adjustment
3	Effect Reg	Effect register number

8 Repeat steps **5** to **7** as required to set all regions and register numbers to be saved on the master timeline.

9 In the <Store> group, press [Store].

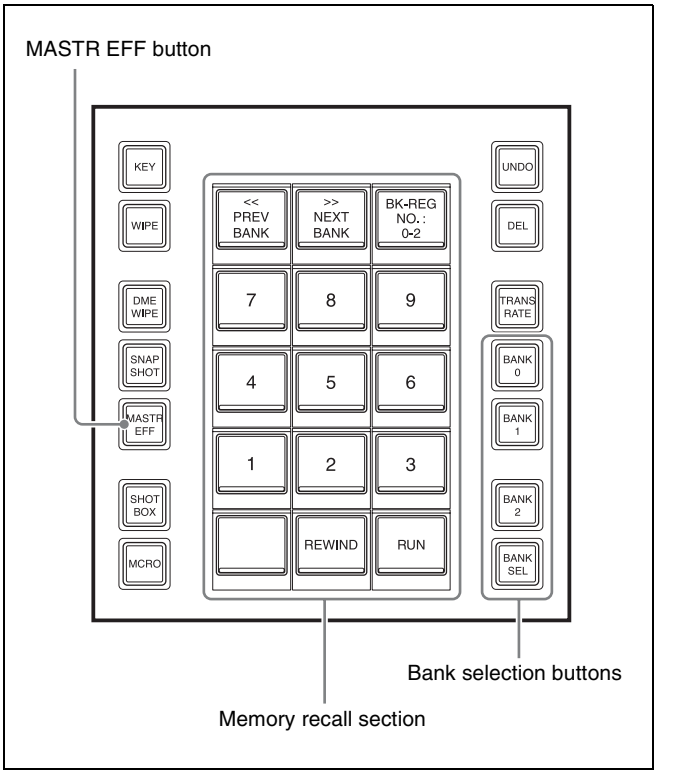
To return to the state before saving the master timeline content
In the <Store> group, press [Undo].

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 307).

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 334).

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 326)*
- Effect attribute settings *(see page 326)*
- Effect register editing *(see page 327)*

This section describes the menu for effect registers 1 to 99 as an example.
Carry out similar operations in the Effect 101-199 menu, Effect 201-299 menu, and Effect 301-399 menu for user programmable DME registers.
Also, 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

Setting 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 327)*.

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 ch8 (including Global) regions

3 Press [OK].

4 Select the source and destination registers.

To select all registers, press [ALL]. To select multiple registers, set the [Num] parameter *(see page 327)*.

5 To copy without transferring the name, in the <Copy> group, press [W/o Name], turning it on.

6 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 Press [OK].

4 Select the register to be at the back and the register to be at the front after the merge.

5 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 327)*.

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 ch8 >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 14 Snapshots

Overview

The term “snapshot” refers to a function whereby the various settings required to apply a particular effect to an image are saved in memory as a set of data, for recall as required, to reproduce the original state.
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 408)*.

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 297).

Master snapshot: This applies to the selected region and the register numbers saved in the region.
A master snapshot can be saved and recalled using the numeric keypad control block.

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 124)*.

Wipe snapshot: This includes the wipe settings of each of the banks *(see page 136)*.

DME wipe snapshot: This includes the DME wipe settings of each of the banks *(see page 149)*.

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 the key bus [XPT HOLD] button” (page 449).

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 the instant 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.

GPI output: A GPI output is sent to the preassigned GPI port the instant the snapshot is recalled.
The trigger type depends on the switcher GPI output settings made in the Setup menu.

For details, see "Setting Switcher GPI Outputs" (page 454).

Clip event: Recall a frame memory clip immediately after the snapshot is recalled.

Auto play: Play 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/E5, PGM/PST	User1 to 8	DME ch1 to ch8
Cross-point hold	Yes	Yes	Yes
Key disable	Yes	No	No
Effect dissolve	Yes	Yes	Yes
Auto transition	Yes	No	No
GPI outputs	Yes	Yes	No
Clip event	No	Yes	No
Auto play	No	Yes	No

Attribute display

You can check the attributes added to a snapshot in the Snapshot menu *(see page 337)*.

Temporary attributes

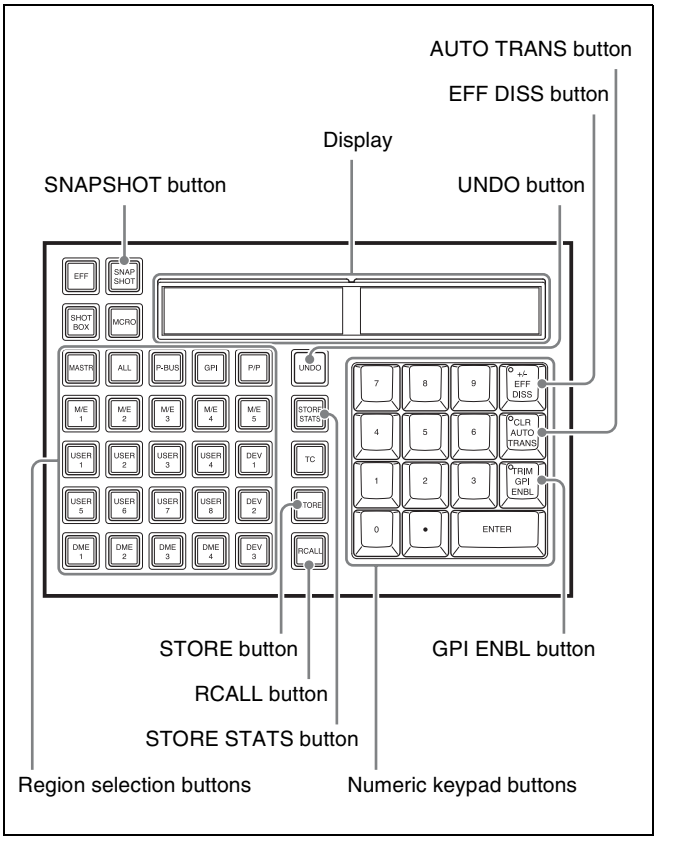
When recalling a snapshot, you can temporarily enable attributes distinct from the attributes set for each register. These are called "temporary attributes."
You set temporary attributes when recalling a snapshot.

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 DME8, RTR, ALL

For details about region selection, see "Region selection in the numeric keypad control block" (page 307).

For details about saving a master snapshot, see "Creating and saving a master snapshot" (page 333).

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 307).

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 330)*, press the following buttons, turning them on.

Attribute	Button
Effect dissolve	[EFF DISS] button
Auto transition	[AUTO TRANS] button
GPI output a)	[GPI ENBL] button

a) The GPI port that can be set is 1 (fixed).

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 336)*.

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 DME8, RTR, ALL, MASTER

For details about region selection, see "Region selection in the numeric keypad control block" (page 307).

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 307).

4 To add temporary attributes *(see page 330)*, press the following buttons, turning them on.

Control block	Temporary attribute	Button
Cross-point control block	A/B bus cross-point hold	[XPTHLD A] button and [XPTHLD B] button in the cross-point Flexi Pad
	Key cross-point hold	[XPTHLD KEY1] to [XPTHLD KEY8] buttons in the cross-point Flexi Pad a)
	Key disable	[XPTHLD KEY1] to [XPTHLD KEY8] buttons in the cross-point Flexi 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] in the Setup menu.

For details about operation modes, see "Setting the operation mode of the key bus [XPT HOLD] button" (page 449).

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.

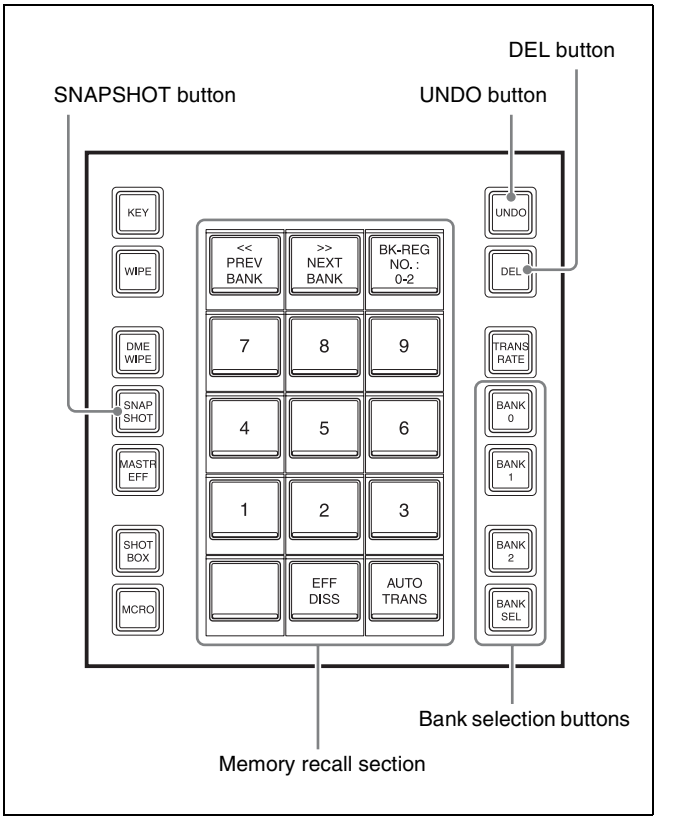
Creating and saving a master snapshot

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 323).

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

Note

The banks and number of registers that can be selected vary depending on the function.

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 dark blue: 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 334).

4 To add an attribute *(see page 330)*, 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 the cross-point hold or GPI output attributes. When adding attributes, use the menu *(see page 336)*.

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 410).

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 334).

3 To add temporary attributes *(see page 330)*, press the following buttons, turning them on.

Control block	Temporary attribute	Button
Cross-point control block	A/B bus cross-point hold	[XPTHLD A] button and [XPTHLD B] button in the cross-point Flexi Pad
	Key cross-point hold	[XPTHLD KEY1] to [XPTHLD KEY8] buttons in the cross-point Flexi Pad a)
	Key disable	[XPTHLD KEY1] to [XPTHLD KEY8] buttons in the cross-point Flexi 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] in the Setup menu.

For details about operation modes, see "Setting the operation mode of the key bus [XPT HOLD] button" (page 449).

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 334).

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 309).

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 327)*.

5 In the <Attribute> group, select the attribute *(see page 330)* you want to add.

Configure the attribute, as required.

To add the cross-point hold attribute

Note

To add key disable to the cross-point hold attribute requires a setting in the Setup menu.

For details, see "Setting the operation mode of the key bus [XPT HOLD] button" (page 449).

1 Press [Xpt Hold].

The Xpt Hold menu (6321.1) appears.
The status area shows a list of the currently selected regions and bus names.

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, press [RTR Level].

A window appears for selecting the router level.
When RTR (Router) is not selected, skip to step **5**.

4 Select the level for the cross-point hold setting, and press [OK].

To select all levels, press [ALL].

5 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 the GPI output attribute

1 Press [GPI Output], turning it on.

2 Set the port number.

No.	Parameter	Adjustment
4	GPI Out Port	GPI output port number

To add the clip event attribute

Note

The following operating procedure can be used only for frame memory assigned to a user region.

For details, see "Setting User Regions" (page 435).

1 Press [Clip Event].

The Clip Event menu (6321.2) appears.

2 In the <Frame Memory Select> group, press the target button.

On the left of the status area, the region name and content assigned to the selected frame memory (for example, User1) are shown. On the right, the content of the clip of the current frame memory is shown.

3 Press [Clip Event], turning it on.

The clip event attribute is added.

4 To select the clip in the "Current" field, press [Set].

5 To play the clip as soon as it is recalled, 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.
Fm1, Fm2	Cross-point hold is set for one of the frame memory 1 and 2 buses.
Ccr1, Ccr2	Cross-point hold is set for one of the color corrector 1 and 2 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 the GPI output attribute is added

Displayed character codes	Attributes set
Port number	GPI output is set for the port of the displayed number.

- When the clip event attribute is added

Displayed character codes	Attributes set
On	Clip event 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 Press [OK].

4 Select a register.

5 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 324).

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"), ch5 ("DME5"), ch6 ("DME6"), ch7 ("DME7"), ch8 ("DME8")
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 327).

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 328).

Register name display

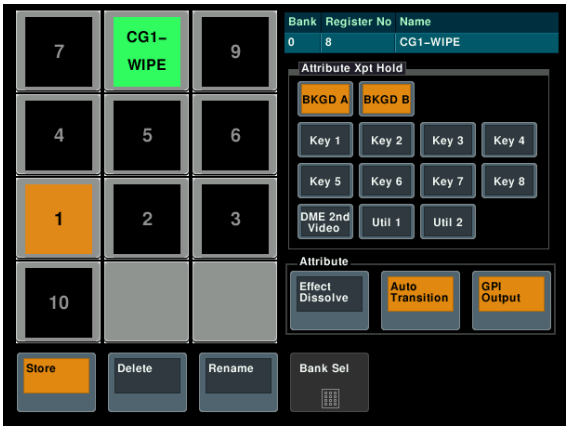
For the same number, the register name for the M/E-1 region takes precedence.
If there is no data for the M/E-1 region, then the register name appears in the sequence M/E-2 >M/E-3 >M/E-4 >M/E-5 >PGM/PST >User1 to 8 >DME ch1 to ch8 >Router.

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

To add key disable to the cross-point hold attribute requires a setting in the Setup menu.

For details, see "Setting the operation mode of the key bus [XPT HOLD] button" (page 449).

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.
GPI Output: Add the GPI output attribute. Set the GPI number using the parameter.

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 15

Utility Overview

The utility function refers to a function whereby you can assign an arbitrary action or a shortcut for frequently used menu to a particular button, then instantly recall the action or menu 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 of shotbox execution, see "Shotbox Execution" (page 345).

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 418).

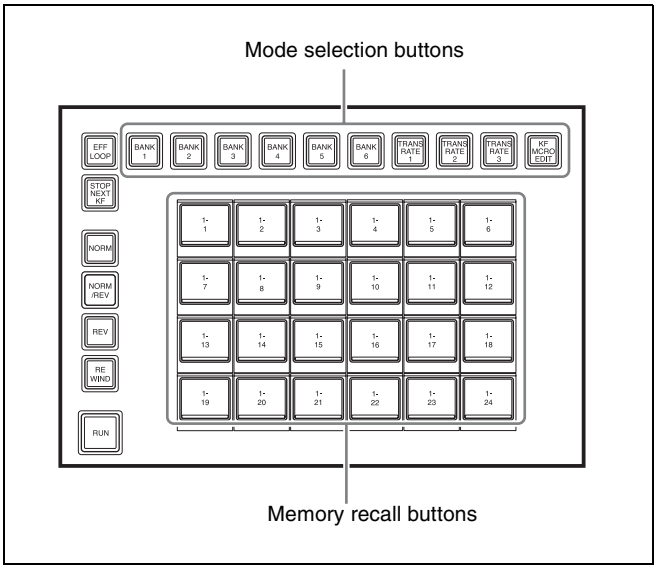
For details about user preference button assignment, see "Setting Menu Panel Button Assignments" (page 412).

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 421).

For details about mode selection button assignment, see "Setting Utility/Shotbox Control Block Button Assignments" (page 411).

To execute an assigned action

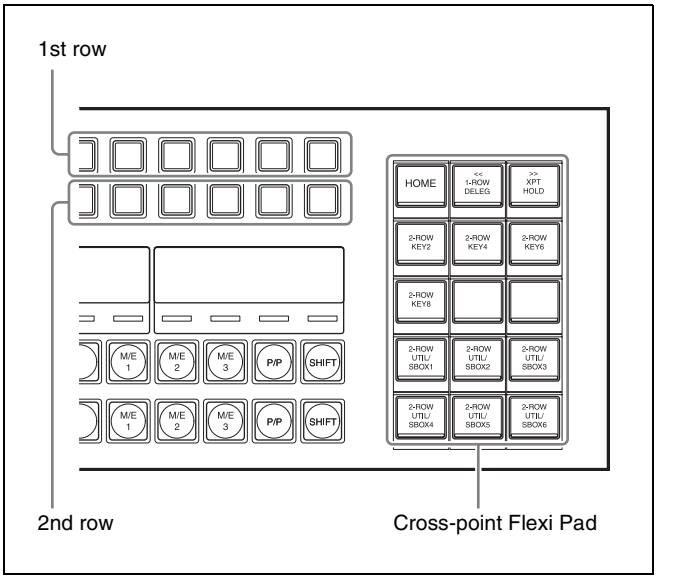
1 Select the target bank using the mode selection buttons.

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 1st row/2nd row buttons of 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 in the cross-point Flexi Pad.

- [1-ROW UTIL/SBOX1] to [1-ROW UTIL/SBOX10] buttons: Assigns banks 1 to 10 to 1st row.
- [2-ROW UTIL/SBOX1] to [2-ROW UTIL/SBOX10] buttons: Assigns banks 1 to 10 to 2nd row.

Action and button assignments are made in the Setup menu.

For details about action assignment, see "Assigning Functions to 1st Row/2nd Row Buttons of the Cross-Point Control Block" (page 425).

For details about delegation button assignment, see "Assigning a function to a cross-point Flexi Pad button" (page 430).

To execute an assigned action

This section describes assignment of bank 1 to the 2nd row in utility/shotbox mode as an example.

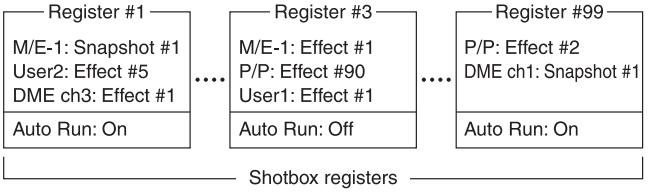
1 Press [2-ROW UTIL/SBOX1] in the cross-point Flexi Pad.

2 Press the cross-point button with the registered action you want to execute in the 2nd 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

The term “shotbox” refers to a function whereby for each specified region, any snapshot or keyframe effect can be recalled simultaneously.
The areas for storing specifications of target regions, snapshots, or keyframe effects to recall simultaneously are called “registers,” and there are 99 registers for 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 ch3 effect 1. Auto run is enabled for register 1, hence User2 and DME ch3 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 332).

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 307).

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 307).

7 Press [ENTER].

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 308).

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 343)*.

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 settings for each register.
Region settings: "Sxxx" is displayed if a snapshot is assigned, and "Exxx" is displayed if an effect is assigned (where xxx is the register number). The register name is also displayed.
Lock status: When the register is locked (write-protected), "L" is displayed.
Empty status: When the register is empty, "E" is displayed.
Auto run enable/disable: When simultaneous effect execution is enabled when they are recalled, "AR" is displayed.
Shotbox register name: The shotbox register name is displayed.

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"), ch5 ("DME5"), ch6 ("DME6"), ch7 ("DME7"), ch8 ("DME8")
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 Select a register.

4 Press [Edit].

The Edit menu (6411.1) appears.
You can also select the register in this menu using the [Shotbox Reg] parameter.
In the status area, the shotbox register status for each region appears.

5 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 the snapshot or effect to assign to the region.

Snapshot: Assign a snapshot.
Effect: Assign an effect.

If the selected register is locked, a confirmation message appears asking whether or not to cancel the operation. Press [OK] to return to the previous menu display without carrying out the registration.
If the operation is carried out, the region selected in step **5** is registered in the shotbox, and the parameters become enabled.

7 Depending on the selection in step **6**, set the following parameter.

When [Snapshot] is selected

No.	Parameter	Adjustment
3	Snapshot	Snapshot register number

When [Effect] is selected

No.	Parameter	Adjustment
3	Effect	Effect register number

8 To execute the assigned effects at the same time as they are recalled, press [Auto Run], turning it on.

9 Repeat steps **5** to **8** as required.

10 In the <Store> group, press [Store].

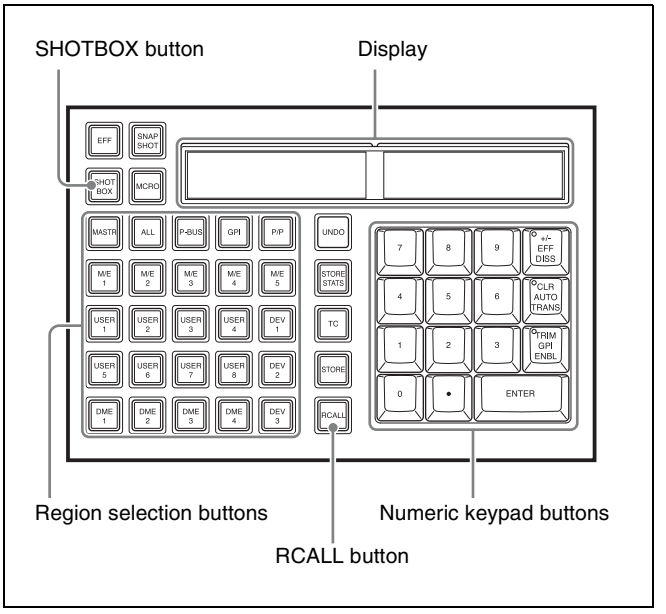
To return to the state before saving the setting
In the <Store> group, press [Undo].

To check settings by executing from the menu
Press [Recall] to execute the shotbox.

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.

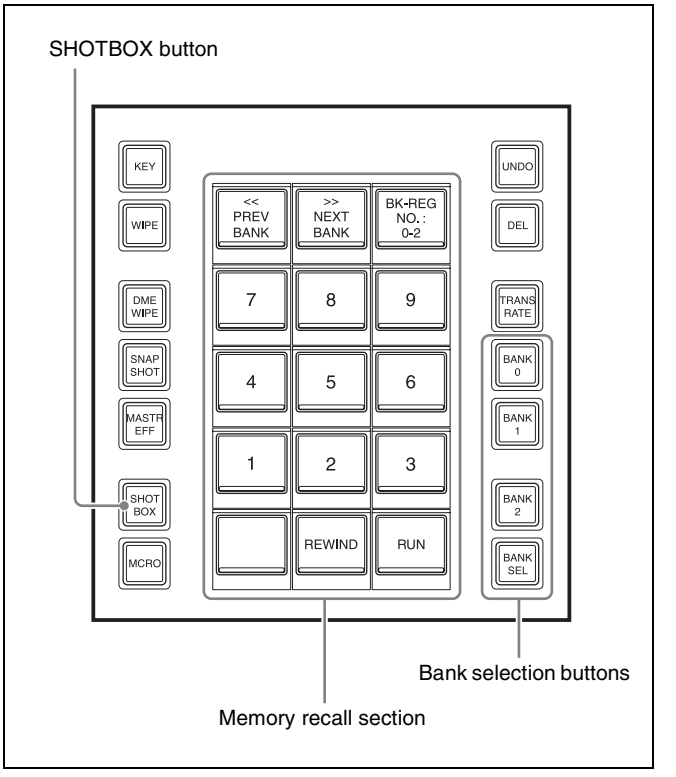
For details about selecting a register, see "Register selection in the numeric keypad control block" (page 307).

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 334).

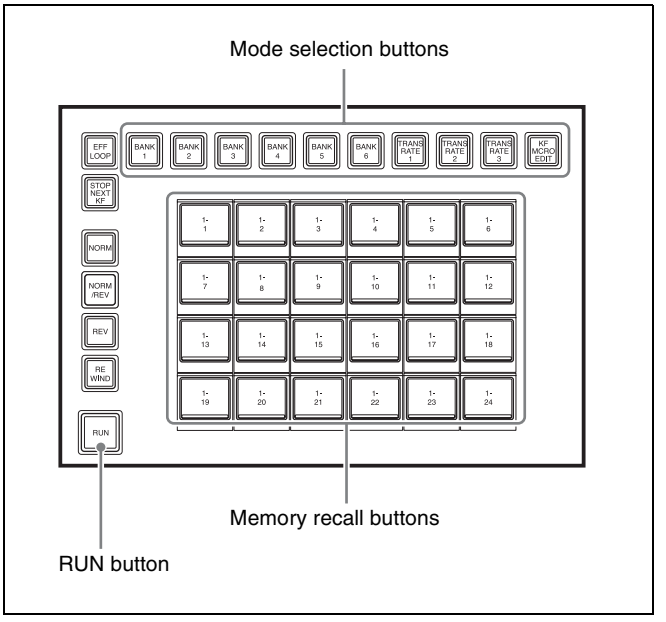
3 Press the button for the register you want to execute.

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 421).

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 name is displayed in white characters for registers with a registered shotbox. The register number is displayed in gray characters for empty registers.

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)

Assign a shotbox register to the 1st row/2nd row buttons of the cross-point control block and then select it 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 1st Row/2nd Row Buttons of the Cross-Point Control Block" (page 425).

To execute a shotbox register, you use the same procedure as executing a utility.

For details, see "Utility Execution (Cross-Point Control Block)" (page 341).

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 327).

Macros

Chapter 16

Macros

Overview

The term “macro” refers to the function whereby a sequence of signal selections and other operations on the control panel is saved as data in memory, so that it can be recalled as required to automatically execute the same sequence of operations.
To record menu operations in memory, see *“Menu Macros” (page 369)*.

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 1st row/2nd row button
AUX bus control block	• Cross-point selection • AUX mix transition enable/ disable
Transition control block	• Transition execution section auto transition and cut • 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/Extended VTR /frame memory clip playback, stop, cue-up [b)]
Flexi Pad control block	• Selection of transition type of independent key transition • Recalling the following data - Key snapshots - Snapshots - Wipe snapshots - DME wipe snapshots
Numeric keypad control block	Recalling the following data - Effects - Snapshots - Shotbox - Master snapshots - Master timelines
Device control block (trackball)	• VTR/disk recorder/Extended VTR /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/ Extended VTR files • Recalling the functions assigned to [PREFS 1] to [PREFS 16] buttons • Executing menu macros • Recalling frame memory clips

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, and the 1st row/2nd row 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 independent key transition control block, 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, include the background A/B bus cross-point.

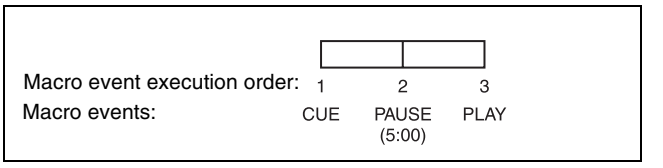
Macro TL with Region (Macro Timeline with Region): When registering an effect execution, rewind, or fast forward as a macro event, include the target region.

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/Extended VTR cue-up

For example, create a macro to cue up a VTR and then play back as follows.



Auto insert mode enable/disable

You can enable/disable the mode (auto insert mode) in which at the same time that a control panel operation is carried out, that event is automatically registered in a macro.

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. You can modify all events within a macro, or events within a specified range in a single operation.

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

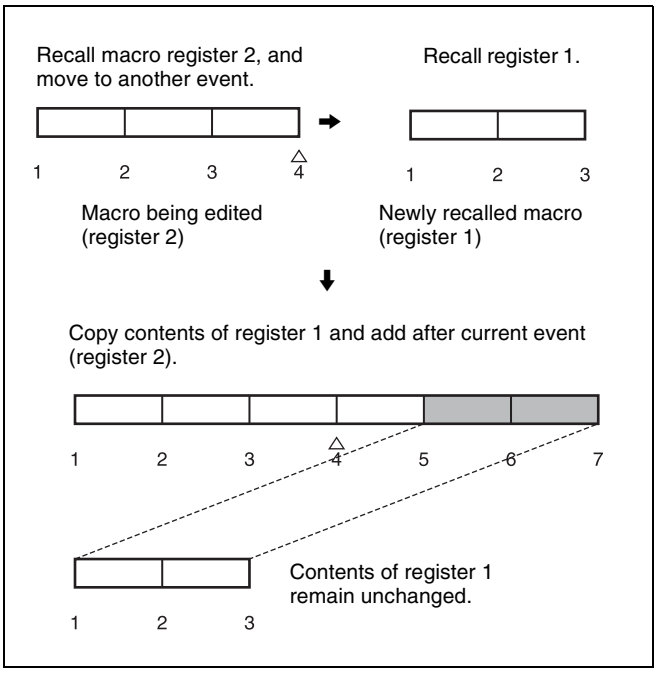
You can paste a copied or deleted event at a desired position within a macro.

Undoing an editing operation

You can undo the last event insertion, modification, deletion, 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.



Macro Execution

To execute a macro, recall the register in which the macro is held. Simultaneous with the register recall, all events stored in the macro are played back (executed) in sequence without pause.

Pausing and restarting macro execution

It is also possible to execute a macro in the following ways.

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.

Step execution (requires a Setup menu setting)

By selecting step execution mode in the Setup menu, you can make macro execution pause every time an event is executed.

Take operation

When a paused macro is restarted, this is referred to as a "Take" operation.

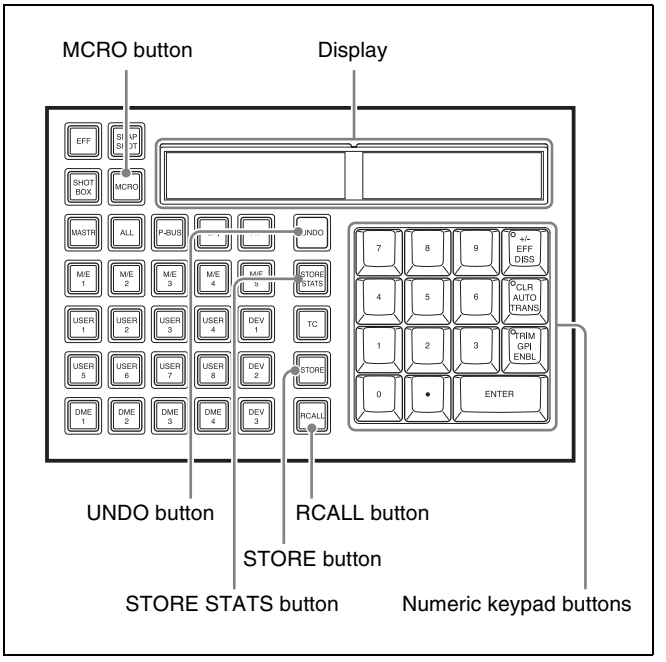
To execute a take operation, use the [TAKE] button in the Flexi Pad control block. "Take" operation functions can be assigned to the cross-point Flexi Pad buttons of the cross-point control block and memory recall buttons of the utility/shotbox control block in the Setup menu.

Macro operation triggered by GPI input

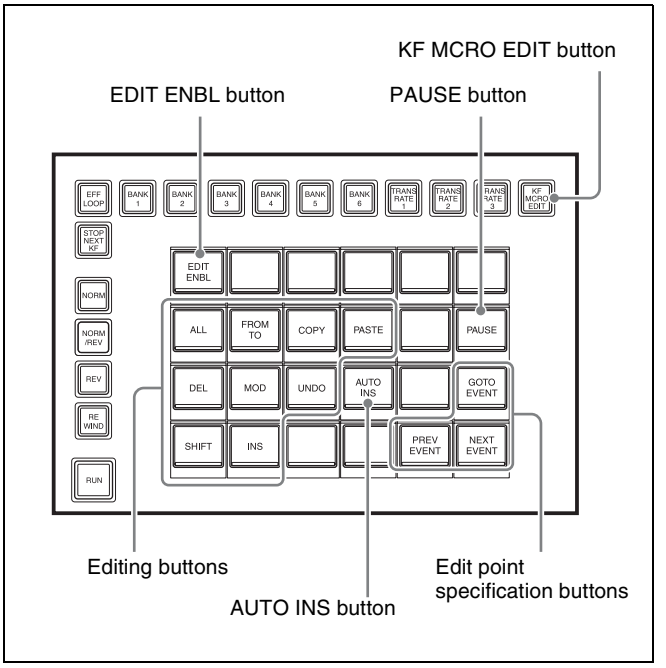
You can execute a macro take operation using a GPI input on the SIU (DCU function).

For details about GPI inputs, see "Configuring GPI Inputs" (page 462).

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 an empty register allows you to carry out macro editing operations.
Recalling a register holding a macro executes the macro immediately.

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 307).

3 Press the [ENTER] button.

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.

When you recall a register holding a macro

This immediately executes the macro.

Notes

- It is not possible to execute more than one macro at a time.
- If the same register is recalled again 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 Execution Mode" (page 429).*
- Individual events stored in a macro are executed according to the settings in the Setup menu. If you change the settings in the Setup menu, a saved macro may not have the expected effect.
- 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 Execution Mode" (page 429).*

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 saving after editing, see "Saving a Macro" (page 355).

Enabling/disabling auto insert mode

In auto insert mode, when creating or editing a macro, an operation carried out on the control panel is automatically registered as an event.
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 auto insert mode is disabled, press the [INS] button to register an event.

Note

When you start macro editing using the numeric keypad control block with the macro execution mode set to "Normal," auto insert mode is automatically enabled. When "Step" is selected as the macro execution mode, auto insert mode is automatically disabled.

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 351)*.

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 using the [AUTO INS] button of the utility/shotbox control block.

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 354)*.

For details about the events that can be registered, see "Events" (page 348).

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 353)*.

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 307).

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 351)*.

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 353)*.

2 If required, set auto insert mode using the [AUTO INS] button of the utility/shotbox control block.

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 353)*.

2 When the [AUTO INS] button is lit orange in the utility/shotbox control block, press the button to disable auto insert mode.

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 353)*.

2 Press the [DEL] button in the utility/shotbox control block.

Deleting a particular range of events

1 Specify an edit point *(see page 353)*.

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 353)*.

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 353)*.

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 354).

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 353)*.

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 354).

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 353)*.

2 If required, set auto insert mode using the [AUTO INS] button of the utility/shotbox control block.

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.

Merging macro register data

1 Specify an edit point *(see page 353)*.

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 307).

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, deleting, or pasting an event, you can undo the operation by pressing the [UNDO] button in the numeric keypad 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 307).

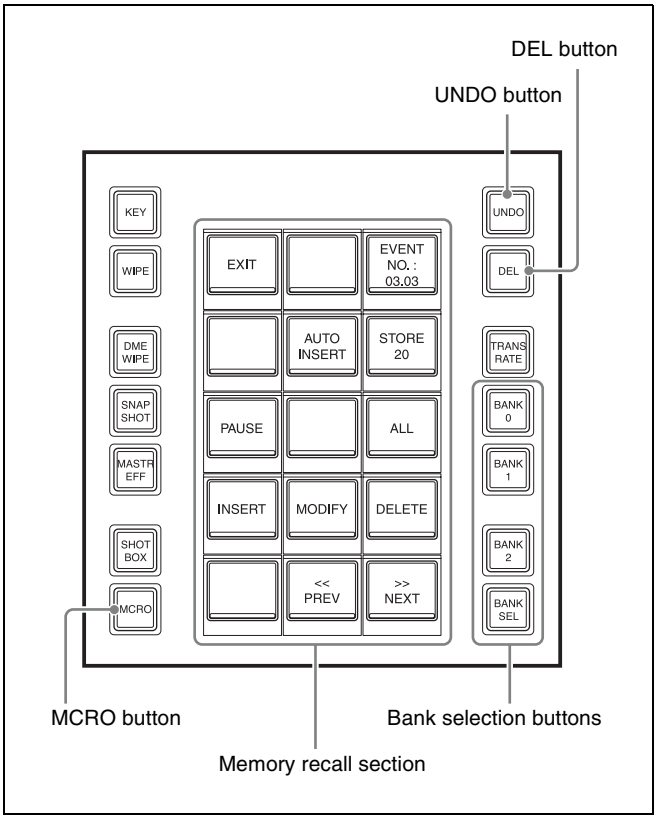
4 Press the [ENTER] button.

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 333).

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 334).

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

- It is not possible to execute more than one macro at a time.
- If the same register is recalled again 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 Execution Mode" (page 429).*
- Individual events stored in a macro are executed according to the settings in the Setup menu. If you change the settings in the Setup menu, a saved macro may not have the expected effect.
- 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 Execution Mode" (page 429).*

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 356).*

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

Enabling/disabling auto insert mode

In the auto insert mode, when creating or editing a macro, an operation carried out on the control panel is automatically registered as an event.
To enable auto insert mode, press the [AUTO INSERT] button in the memory recall section, turning it on orange. When auto insert mode is disabled, press the [INSERT] button in the memory recall section to register an event.

Note

When you start macro editing using the Flexi Pad control block with the macro execution mode set to "Normal," auto insert mode is automatically enabled. When "Step" is selected as the macro execution mode, auto insert mode is automatically disabled.

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 334).

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, press the [AUTO INSERT] button to toggle the auto insert mode.

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 358)*.

For details about the events that can be registered, see "Events" (page 348).

When auto insert mode is enabled, the event is registered automatically.
When auto insert mode is disabled, press the [INSERT] 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 334).

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 357)*.

2 If required, press the [AUTO INSERT] button to toggle the auto insert mode.

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 [INSERT] 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 357)*.

2 When the [AUTO INSERT] button is lit orange, press the button to disable auto insert mode.

3 Create an event.

4 Press the [MODIFY] button.

Deleting an event

1 Specify an edit point *(see page 357)*.

2 Press the [DELETE] button.

Deleting all events

You can delete all events within the selected macro register.

1 Specify an edit point *(see page 357)*.

2 Press the [ALL] button, turning it on orange.

3 Press the [DELETE] button.

Inserting a pause event

1 Specify an edit point *(see page 357)*.

2 If required, press the [AUTO INSERT] button to toggle the auto insert mode.

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 [INSERT] button to register the pause event after the current 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 334).

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 Flexi Pad buttons or 1st row/2nd row buttons in utility/shotbox mode on the cross-point control block.

To recall a macro register using 1st row/2nd row buttons

Assign a macro register to the 1st row/2nd row buttons of 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 1st Row/2nd Row Buttons of the Cross-Point Control Block" (page 425).

To recall a macro register, you use the same procedure as executing a utility.

For details, see "Utility Execution (Cross-Point Control Block)" (page 341).

To recall a macro register using cross-point Flexi Pad buttons

Assign a macro register to a cross-point Flexi 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 Flexi Pad.

For details about button assignment, see "Assigning a function to a cross-point Flexi Pad button" (page 430).

Macro Operations (Menu)

Using any of the menus in the following table, you can edit macro registers and macro events.

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 326)*. 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 327).

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 352)*, utility/shotbox control block *(see page 352)*, or Flexi Pad control block *(see page 357)* 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].

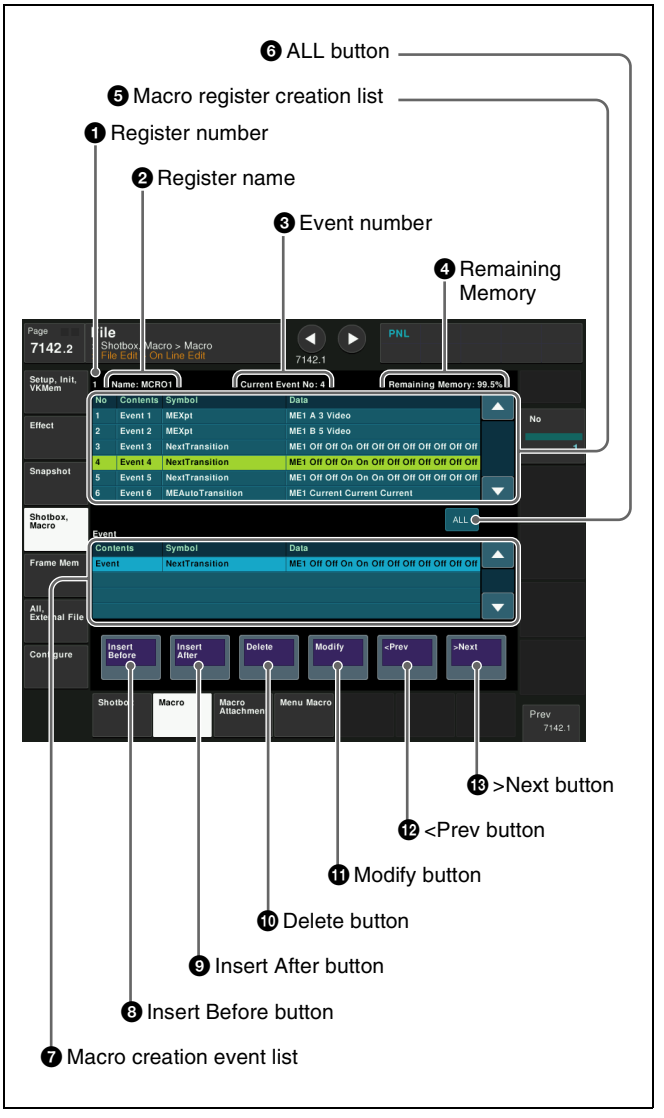
- Macro >Register >Lock menu (5412)
- Macro >Register >Delete menu (5416)
- Macro >Register >Rename menu (5417)
- File >Shotbox, Macro >Macro >File Edit menu (7142.1)

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 532).

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.
Depending on the switcher status, the cursor color changes as follows.
- **Yellow:** In macro editing mode.
- **Gray:** When the editing mode is exited by a control panel operation.
- **Blue:** During macro execution

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 532).

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 532).

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

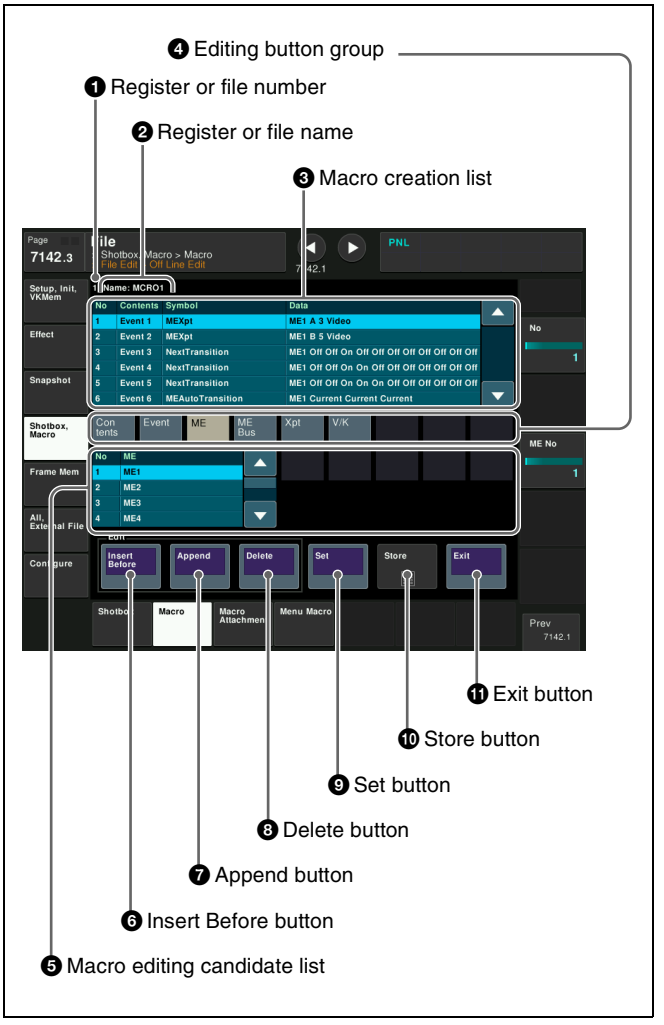
In any of the following menus, select the register or device holding the macro you want to edit, and press [Off Line Edit].
- Macro >Register >Lock menu (5412)
- Macro >Register >Delete menu (5416)
- Macro >Register >Rename menu (5417)
- File >Shotbox, Macro >Macro >File Edit menu (7142.1)

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 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 532).

❹ 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.

❺ Macro editing candidate list

Shows the list of editing candidates for the selection from the editing button group.

❻ Insert Before button

Inserts immediately before the event selected in the macro creation list.

❼ Append button

Adds an empty row at the end of the macro creation list.

❽ Delete button

Deletes the event selected in the macro creation list.

❾ Set button

Reflects the item selected in the macro editing candidate list, in the macro creation list and editing buttons.

❿ Store button

Saves the editing results of the macro register or macro file.

⓫ 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 532).

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 533).*

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 >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 363)* 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 to a button

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 Flexi Pad of the cross-point control block.
Post-macro	Press [POST MACRO] on the cross-point Flexi Pad of the cross-point control block.
Macro only	• Press the following buttons assigned with the “Macro Only Set” utility command. - User preference buttons in the menu panel - Memory recall buttons in the utility/ shotbox control block - 1st row/2nd row buttons of the cross-point control block (utility/shotbox mode) • [PRE MCRO] button and [POST MCRO] button pressed 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.

For each control panel, you can make up to 1000 macro attachment settings.

Macro attachments can be set for the following buttons.

Control block	Button
Cross-point control block	• Background A bus and B bus cross-point buttons • Key 1 bus to key 8 bus cross-point buttons • Utility 1 bus and 2 bus cross-point buttons • DME external video bus cross-point buttons • DME utility 1 bus and 2 bus cross-point buttons • Disabled buttons (set to “Inhibit”).
AUX Bus Control Block	Cross-point buttons of the bus assigned to the 3rd row/4th.
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, cut [a)]
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, 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 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.

Enabling/disabling a macro attachment

You can temporarily disable the macro attachment settings. When a macro attachment is disabled, pressing the button does not cause execution of the assigned macro. You can enable or disable macro attachments for each switcher bank.

Setting and Canceling a Macro Attachment

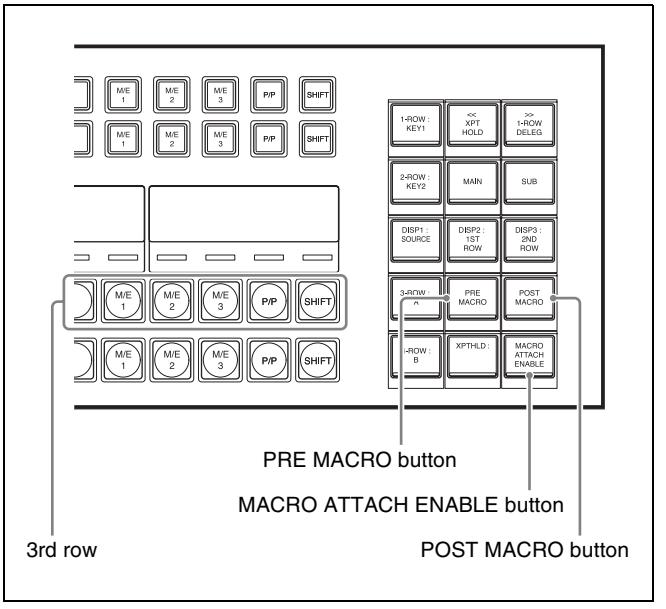
Setting a macro attachment to a button

This section describes setting a macro attachment to 3rd row (background A bus) button in the cross-point control block as an example.

Note

To select macro only mode, the "Macro Only Set" utility command must be assigned to the following buttons beforehand in the Setup menu.

- User preference buttons in the menu panel *(see page 418)*
- Memory recall buttons in the utility/shotbox control block *(see page 421)*
- 1st row/2nd row buttons of the cross-point control block (utility/shotbox mode) *(see page 425)*



Cross-point control block

1 Recall the macro register (1 to 250) that you want to assign to the button.

For details about the method of operation, see "Macro Operations (Numeric Keypad Control Block and Utility/Shotbox Control Block)" (page 351) and "Macro Operations (Flexi Pad Control Block)" (page 356).

2 To set to pre macro mode, press and hold the [PRE MACRO] button in the cross-point Flexi 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 recalled 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 set a macro attachment without changing cross-points

When you set a macro attachment to a cross-point button, you can make the setting without changing the bus cross-points. You can make this setting in the Engineering Setup >Panel >Operation >Macro menu (7326.6) *(see page 429)*.

To set a macro attachment in macro only mode

1 Recall the macro register (1 to 250) that you want to assign to the button.

For details about the method of operation, see "Macro Operations (Numeric Keypad Control Block and Utility/Shotbox Control Block)" (page 351) and "Macro Operations (Flexi Pad Control Block)" (page 356).

2 Press the button assigned with the "Macro Only Set" command.

This switches the mode to macro only mode.

3 Press and hold the [PRE MACRO] or [POST MACRO] button in the cross-point Flexi Pad and press a 3rd row cross-point button.

The selected cross-point button blinks green, and the register recalled in step **1** is assigned to the button.

Even without switching to macro only mode in step **2**, if you press and hold the [PRE MACRO] and [POST MACRO] buttons together and press a 3rd row cross-point button, it is possible to set a macro attachment in macro only mode.

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.

Note

In macro only mode, it is not possible to set a macro attachment.

1 Recall the macro register (1 to 250) that you want to assign to a fader lever.

For details about the method of operation, see "Macro Operations (Numeric Keypad Control Block and Utility/Shotbox Control Block)" (page 351) and

"Macro Operations (Flexi Pad Control Block)" (page 356).

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 Flexi Pad, and press the [PRIOR 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 recalled 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 Flexi 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 Flexi Pad, and press the [PRIOR 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 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 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 menu (5421).

2 In the <Xpt Attachment Mode> group, select one of the following.

Button Mode: Button number mode. Assign an attachment for combination of bus and button numbers.

Pair Mode: Pair number mode. Assign an attachment for 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 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 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 to a button" (page 365).

For details about the macro attachment list contents, see "Content Displayed in Macro Attachment List" (page 539).

Moving 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

The following buttons can be used to execute macro attachments.

Macro attachment location	Button
M/E and PGM/PST banks	Press [MACRO ATTACH ENABLE] on the cross-point Flexi 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 - 1st row/2nd row buttons of the cross-point control block (utility/shotbox mode)

Executing a macro assigned to a button

1 Depending on the location of the button you want to execute, press the [MACRO ATTCH 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 Flexi Pad, 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

- It is not possible to execute more than one macro at a time. Therefore, even if you simultaneously press multiple buttons for which macro attachments are set, only one macro is executed.
- 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 Execution Mode" (page 429).
- Individual events stored in a macro are executed according to the settings in the Setup menu. If you change the settings in the Setup menu, a saved macro may not have the expected effect.
- 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 ATTCH 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 Flexi Pad, 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 Flexi 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 447).
- 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 *(see page 429)*.
- Individual events stored in a macro are executed according to the settings in the Setup menu. If you change the settings in the Setup menu, a saved macro may not have the expected effect.
- 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 Flexi 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 any of the menus in the following table.

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 541).

Recalling a Menu Macro Register and Executing a Menu Macro

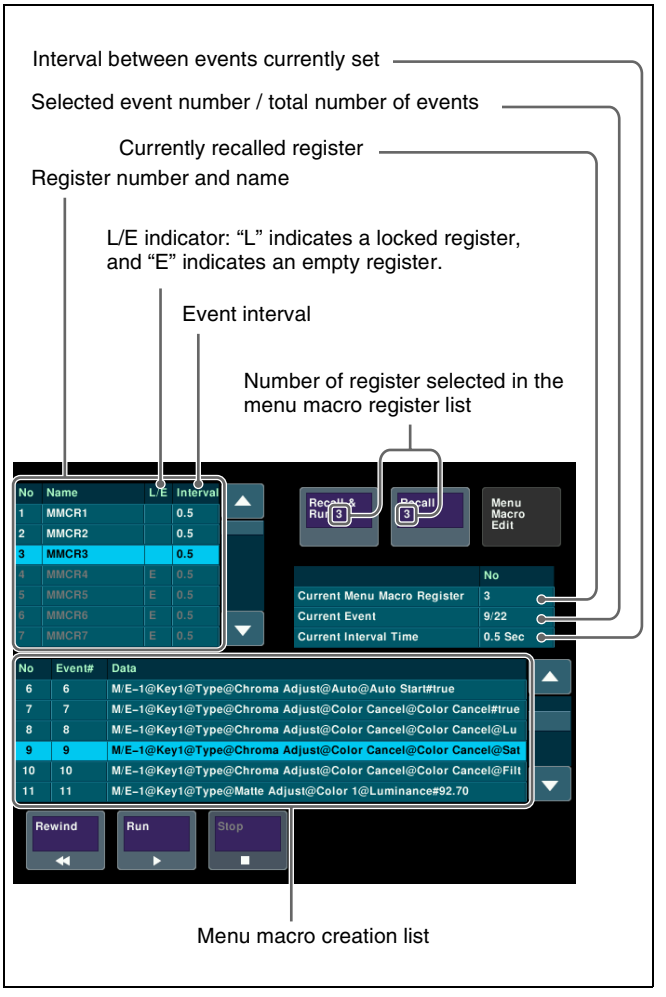
Menu macro operation is carried out by recalling a menu macro register.

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 saved in a menu macro are executed according to the settings in force when the event was registered, and therefore if you change the setup when recalling, it may not be possible to replay the event correctly.
- When two menu macros are recalled successively, the first executed has precedence.

Recalling a menu macro register

1 Open the Macro >Menu Macro Register >Recall & Run menu (5431).



2 Select a register.

3 Press [Recall & Run X] or [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].
To recall the register only, press [Recall X].

Executing a menu macro

In the Macro >Menu Macro Register >Recall & Run menu (5431), check that you are not in macro editing mode, then use the following procedure.

1 Select the start event to execute.

2 Press [Run].

To stop execution of a macro

Press [Stop].

To move to the start of a menu macro 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.

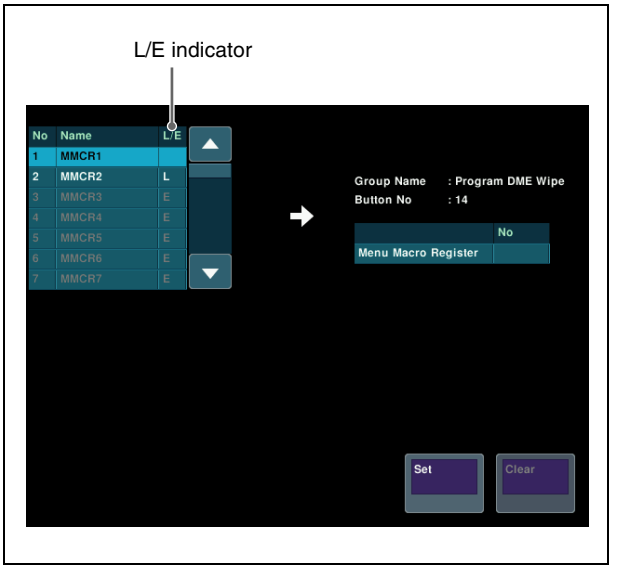
- *“Macro Operations (Numeric Keypad Control Block and Utility/Shotbox Control Block)” (page 351)*
- *“Macro Operations (Flexi Pad Control Block)” (page 356)*
- *“Macro Operations (Menu)” (page 360)*

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

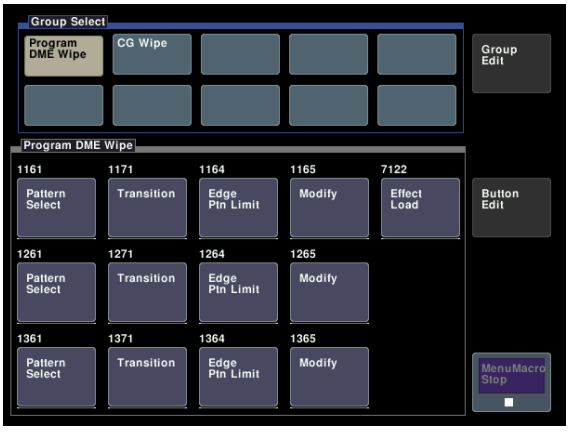


3 In the list on the left, select the button number to assign.

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 a menu macro during execution
Press [MenuMacro Stop].

Creating and Editing a Menu Macro

Note

It is not possible to execute a menu macro during editing. To run the macro, first press [Store] to end editing.

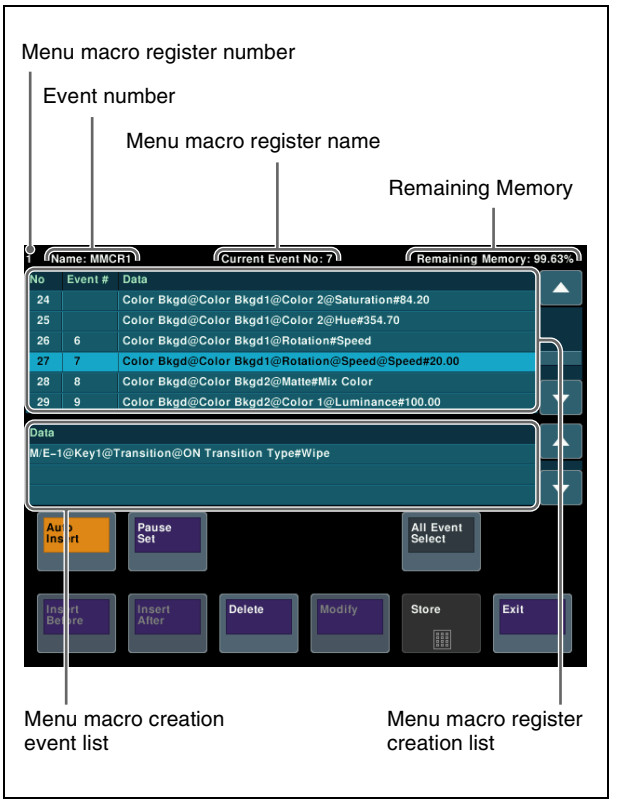
Creating a new menu macro

1 In the Macro >Menu Macro Register >Recall & Run menu (5431), select an empty register in the menu macro register list.

For details about the method of operation, see "Recalling a menu macro register" (page 370).

2 Press [Menu Macro Edit].

The Menu Macro Edit menu (7144.2) appears.
The menu macro register is recalled, and menu macro editing mode is invoked.



3 If required, press [Auto Insert] to enable/disable auto insert mode.

4 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 369).

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.

5 Repeat steps **3** and **4** to register the required events in the menu macro.

6 Set the event execution interval.

No.	Parameter	Adjustment
5	Interval Time (Sec)	Event interval (seconds)

The settings are applied to each menu macro register.

7 Press [Store].

8 Enter a menu macro register number as required in the numeric keypad window, and press [Enter].

The menu macro is saved with the specified number.
The menu returns to the state in step **1**.

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 In the Macro >Menu Macro Register >Recall & Run menu (5431), select a register in the menu macro register list.

For details about the method of operation, see "Recalling a menu macro register" (page 370).

2 Press [Menu Macro Edit].

The Menu Macro Edit menu (7144.2) appears.
The menu macro register is recalled, and menu macro editing mode is invoked.

3 Select the event you want to edit.

4 If required, press [Auto Insert] to enable/disable auto insert mode.

5 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 delete the selected event
Press [Delete].
To delete all events, select [All Event Select] and press [Delete].

6 Set the event execution interval.

No.	Parameter	Adjustment
5	Interval Time (Sec)	Event interval (seconds)

The settings are applied to each menu macro register.

7 Press [Store].

8 Enter a menu macro register number as required in the keyboard window, and press [Enter].

To exit the Menu Macro Edit menu without saving the editing results
Press [Exit].

To scroll the events display in the menu macro register creation list
Select the event to display, and then scroll the characters in the "Data" field using the [H Scroll] parameter.

About the menu macro editing mode display

If you switch to another menu while in menu macro editing mode, the display is as shown below.

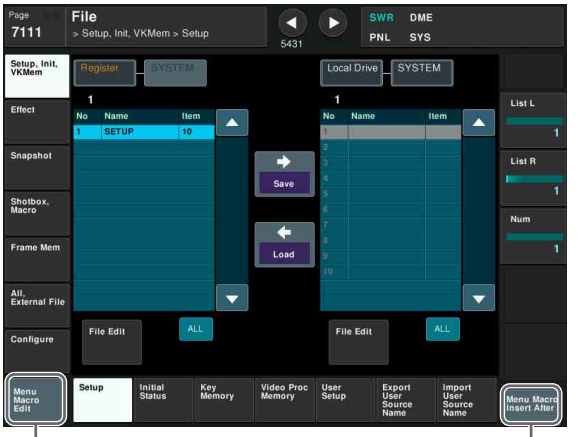
Screen when the keyframe status is displayed

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 326)*. 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 327).

Macro Timeline

By registering macro recall and execute actions on a timeline, in the same way as for key frames in an effect, you can automatically execute them in a sequence. 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 key frame 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 key frame 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 key frame data. You can manipulate this data by recalling the register in which it is saved, and using 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 key frame 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.
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 297).

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 410).
- 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 310).

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 427).

Files

Chapter 17

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.
You can operate on individual files or registers, or together in a batch.
Images in frame memory can be imported from an external device, converted to a different format, and then saved.

About local drives and removable drives

In this document and in the File menu, "Local Drive" refers to the internal hard disk and "Removable Drive" refers to general-purpose external USB-compatible storage devices connected to the system.

Types of 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 data
- Video process memory setting data
- Keyframe effect setting data
- Snapshot setting data
- Wipe snapshot setting data
- DME wipe snapshot setting data
- Key snapshot setting data
- Shotbox setting data
- Macro setting data
- Macro attachment data
- Menu macro setting data
- Frame memory image data
- List of files automatically created in a frame memory file backup to DDR/VTR (single data set)
- User setup setting data
- User source name setting 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, including on remote panels.
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, Copy, and Delete operations above are available.

Notes on transferring frame memory files in batch to a removable drive

- Transferring all of the files within frame memory in batch fails if the capacity of the removable drive is too small to hold the combined contents.
  In this case, replace the storage device with a larger capacity removable drive, or delete files on the drive until saving is possible.
  The following table is a guide between removable drive capacity and number of files that can be saved.

Removable drive capacity	Number of files that can be saved	
	SD system	HD system (except 720P)
256 MB	214	46

When transferring to the local drive, make sure there is sufficient capacity, so that the problems above do not occur.

- If you cancel the operation during a data transfer between frame memory and the local drive or removable drive, then any image which was not completely transferred will not be reproduced correctly. Avoid canceling file operations.
- When loading a file from the local drive or removable drive, if [Freeze Enable] is enabled in the Frame Memory >Still >Freeze/Store menu (2512), the loaded file may be overwritten by the frame memory input image.
  To avoid this, disable [Freeze Enable] before loading files.

Importing or exporting files to or from frame memory

Import: Import a file, converting the format, from the local drive or removable drive into a register.

Export: Save the data in a register, converting the format, to the local drive or removable drive.

You can import the following types of files.

File type	Format	File Name	Precautions
TIFF file	RGB uncompressed format	Maximum eight characters, plus extension ".tif"	• The layer function cannot be used. • If an alpha channel is present, two files are created as a pair file.
BMP file	Windows compatible 24-bit format	Maximum eight characters, plus extension ".bmp"	–
TARGA file	RGB uncompressed/compressed format	Maximum eight characters, plus extension ".tga"	• The layer function cannot be used. • If an alpha channel is present, two files are created as a pair file.
PNG file	RGB compressed format	Maximum eight characters, plus extension ".png"	• The layer function cannot be used. • If an alpha channel is present, two files are created as a pair file.

Note

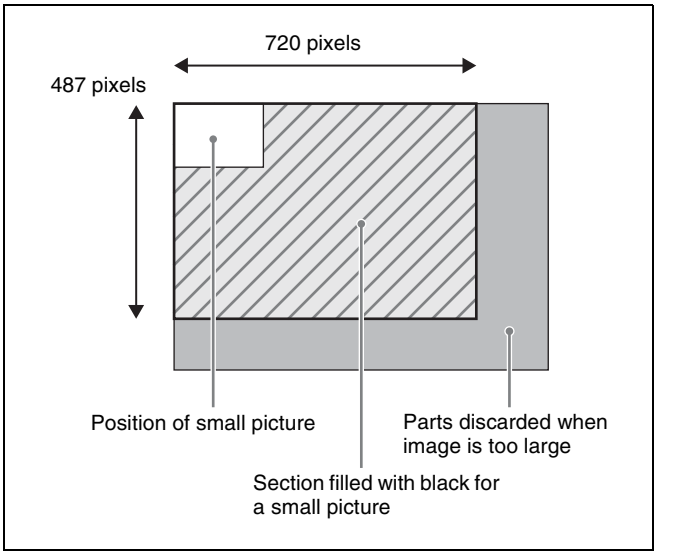
This functionality has been tested and confirmed to work with TIFF files created by Adobe Photoshop, but it may not be possible to use TIFF files created with some other software. Please be forewarned.

About import image size

Pay attention to the following points, depending on the signal format used.

SDTV (480i)

Images 720×487 pixels in size are images that will perfectly fill the picture frame.
The following figure shows how an import image is processed when the 480i/59.94 format is used.
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.



No pixel ratio conversion is performed when images are imported in SDTV format.
When the signal format is 480i/59.94, if you create an image with a size of 720×540 on a computer and then import it as-is, the image will be too tall. To maintain the shape of the image, first create it as a 720×540 image and then use computer software tools to reduce the vertical dimension to 487 pixels before importing it.

HDTV (1080i)

Images 1920×1080 pixels in size are images that will perfectly fill the picture frame.
Like SDTV, images are placed with the upper left of the frame as the origin.
When an image is smaller or larger than the frame, processing is the same as for SDTV.
Since the pixel ratio of the HDTV format is 1:1, files created on computers are imported in their original shapes.

The following table shows the image sizes which exactly fill the frame for various signal formats.

Signal format	Image size (H × V)
480i/59.94	720×487
576i/50	720×576

Signal format	Image size (H × V)
1080i/50	1920×1080
1080i/59.94	
1080PsF/23.98	
1080PsF/24	
1080PsF/25	
1080PsF/29.97	
1080P/50, 1080P/59.94	
720P/50	1280×720
720P/59.94	

Importing 720P and 1080P movie material

- To import movie material in 720P or 1080P format, it is necessary to treat each frame as a separate image file.
- For 1080P format, the individual files must have numbers which start from an even number (E.g.: consecutive numbers from 0000).

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 386).*
You can also inhibit operations on files, such as saving and deleting, for a directory.

Copying files between unit IDs/group IDs

Switcher and DME files on the local drive or removable drive are managed by unit ID or group ID.
You can copy files between different unit IDs/group IDs *(see page 387).*

Saving data loaded by autoload

At power on, you can automatically load data previously stored on the local drive (Autoload function).
The following data can be loaded by the autoload function.

- Keyframe effect setting data
- Snapshot setting data
- Wipe snapshot setting data
- DME wipe snapshot setting data
- Key snapshot setting data
- Shotbox setting data
- Macro setting data
- Macro attachment data
- Frame memory image data

To use the autoload function, the data required must first be saved *(see page 388).*

For details, see "Setting Automatic Loading of Register Data at Power On (Autoload Function)" (page 398).

Locking file loading operations

You can lock the loading of files for the following categories in the Setup menu *(see page 407).*
Setup, Initial Status, Key Memory, Video Proc Memory, Effect, Snapshot, Wipe Snapshot, DME Snapshot, Key Snapshot, Shotbox, Macro, Macro Attachment, Menu Macro, User Setup
A locked file cannot be downloaded 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

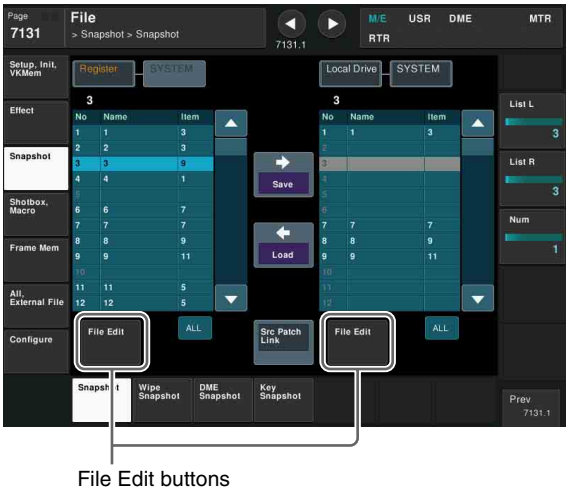
You can save or load the contents of an individual file or register.

Detailed File Information

This section describes snapshot file information as an example.

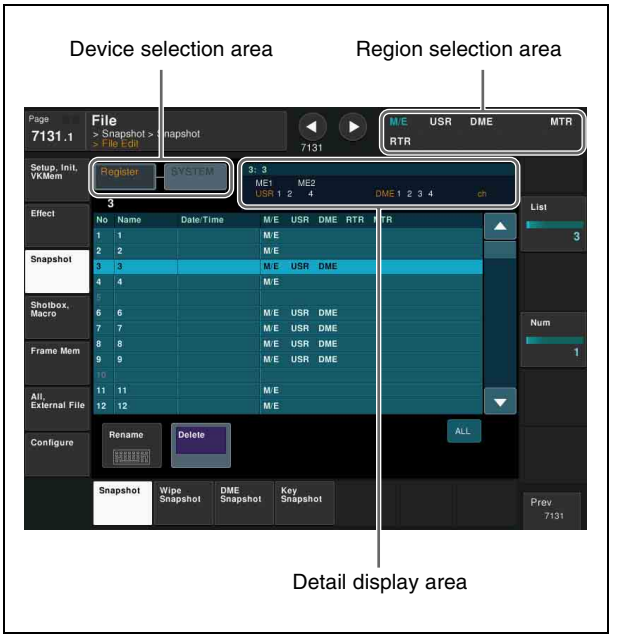
1 Open the File >Snapshot >Snapshot menu (7131).

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.
In the Frame Memory menu, the following fields are also shown.
Pair: For pair files, “P” is shown.
Ext: For extended clip files, “Ext” is shown.

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
- Frame memory
- Setup
- Initial status
- User setup
- User source names

In the above list, for frame memory in Dual Simul mode, you can select the target switcher to use for the operation in a way similar to the region selection. For setup and initial status, you can target files for operation on separate devices.

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, you can add [Network] to the device for operations.

For details about NFS, see "Configuring the NFS Server" (page 390).

Notes

- There is a risk that files saved on the local drive may become unusable if the local drive experiences trouble. Always keep separate backup copies of important files on a removable drive.
- Format a commercially available removable drive before using it for the first time *(see page 405)*.

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: File operations 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 device 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.
- For frame memory operations, three buttons are displayed in the device selection area. The button on the left selects the device, the button in the center selects the directory, and the button on the right selects the folder.

Saving Files

This section describes saving snapshot register data to a removable drive as an example.

Note

For key snapshots, snapshots, and effects, you cannot perform the following operation when [Src Patch Link] is enabled *(see page 478)*.

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 on the right, select [Local Drive] or [Removable Drive], then specify a directory.

4 Select the register to save and the destination file in which to save it.

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.

Saving frame memory files

Note

When the signal format is 1080P, saving a still image file creates two still image files for each frame. An 'A' is automatically appended to the first file name, and a 'B' is appended to the second file name. If either of these files is missing, it is not possible to recreate the image, and therefore for correct operation the two files must always be handled together.

For frame memory file operations, frame memory folder specification and data type selection is required.
Perform the following operation using the procedure in *"Saving Files" (page 379)*.

- In steps **2** and **3**, specify the frame memory folder.
  In the device selection area, press [DEFAULT] (default setting), then select the target folder in the pull-down menu.
- After step **3**, select the data type to display using the buttons above the list.
  Still: Still image files
  Clip: Clip files
  Ext Clip: Extended clip files
  All: All file types

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.

Loading frame memory files

Notes

- When the signal format is 1080P, extended clip files cannot be loaded.
- In a still image file saved in the 1080P signal format, there are two still image files for each frame image. If either of these two files is missing, it is not possible to recreate the image, and therefore for correct operation the two files must always be recalled together.

For frame memory file operations, frame memory folder specification and data type selection is required.
Perform the following operation using the procedure in *"Loading Files" (page 380)*.

- In steps **2** and **3**, specify the frame memory folder.
  In the device selection area, press [DEFAULT] (default setting), then select the target folder in the pull-down menu.
- After step **3**, select the data type to display using the buttons above the list.
  Still: Still image files
  Clip: Clip files
  Ext Clip: Extended clip files
  All: All file types

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.

Copying frame memory files

Note

In a still image file saved in the 1080P signal format, there are two still image files for each frame image. If either of these two files is missing, it is not possible to recreate the image, and therefore for correct operation the two files must always be copied together.

For frame memory file operations, frame memory folder specification and data type selection is required.
Perform the following operation using the procedure in *"Copying Files" (page 380)*.

- In steps **2** and **3**, specify the frame memory folder.
  In the device selection area, press [DEFAULT] (default setting), then select the target folder in the pull-down menu.

- After step **3**, select the data type to display using the buttons above the list.
  Still: Still image files
  Clip: Clip files
  Ext Clip: Extended clip files
  All: All file types

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 379)*.

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].

Note

- 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

Renaming frame memory files

Notes

- In a still image file saved in the 1080P signal format, there are two still image files for each frame image. When a register is selected for the operation, renaming one of the files will automatically rename the other paired file.
- When a device other than a register is selected for the operation, renaming one file does not automatically rename the other paired file. Except for the 'A' or 'B' suffix in the file name, both files must be renamed manually to maintain pairing.
  Ex: img111A and img111B (underlined portions must have the same file name)

1 Open the File >Frame Memory >Frame Memory menu (7151).

2 Press [File Edit].

3 Select the data type to display using the buttons above the list.

Still: Still image files
Clip: Clip files
Ext Clip: Extended clip files
All: All file types

4 Select the file to rename.

When [Clip] or [Ext Clip] is selected in step **3**, you cannot select more than one file.

5 Press [Rename].

6 Depending on the selections of steps **3** and **4**, enter a name in the keyboard window as follows and press [Enter].

- When a single file is selected with [Still] or [All]: Up to eight characters.
- When more than one file is selected with [Still] or [All]: Up to four characters.
- When [Clip] or [Ext Clip] is selected: Up to four characters.

Notes

- When [Register] is selected in the device selection area and more than one file is selected with [Still] or [All], renaming the files converts the still images to a clip.
- It is not possible to simultaneously select a file for which the Ext field in the status area is blank and a file for which the Ext field shows "Ext" to rename the files.
- When the signal format is 1080P, a still image file name is limited to up to seven characters.

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 379)*.

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].

Deleting frame memory files

Notes

- In a still image file saved in the 1080P signal format, there are two still image files for each frame image. When a register is selected for the operation, deleting one still image file will automatically delete the other paired file.
- When a device other than a register is selected for the operation, deleting one still image file does not automatically delete the other paired file. You must manually delete both files.

For frame memory file operations, frame memory folder specification and data type selection is required.
Perform the following operation using the procedure in *"Deleting Files" (page 381)*.

- In step **2**, specify the frame memory folder.
  In the device selection area, press [DEFAULT] (default setting), then select the target folder in the pull-down menu.
- After step **2**, select the data type to display using the buttons above the list.
  Still: Still image files
  Clip: Clip files
  Ext Clip: Extended clip files
  All: All file types

Interconversion of Frame Memory Clips and Extended Clips

Frame memory clips and extended clips on the local drive or a removable drive can be converted to extended clips and clips, respectively.

Note

When the signal format is 1080P, this operation is not possible.

1 Open the File >Frame Memory >Frame Memory menu (7151).

2 Press [File Edit].

The File Edit menu (7151.1) appears.

3 In the device selection area, select [Local Drive] or [Removable Drive], then specify a directory and frame memory folder.

4 Select the data type to display using the buttons above the list.

Clip: Clip files
Ext Clip: Extended clip files

5 Select the file to convert.

6 Convert the file.

To convert clips to extended clips, press [Clip –> Ext Clip.
To convert extended clips to clips, press [Ext Clip –> Clip].

Creating Frame Memory Folders

You can create a frame memory folder on the local drive or removable drive.

1 Open the File >Frame Memory >Frame Memory Folder menu (7152).

2 In the device selection area, select [Local Drive] or [Removable Drive], then specify a directory.

3 Press [New].

4 Enter a name of up to 8 characters in the keyboard window, and press [Enter].

Notes

- The following names cannot be used.
  Default, Flash1, Flash2
  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
- It is not possible to create 12 or more directories in the frame memory folder.

To rename a frame memory folder

1 Select a frame memory folder.

2 Press [Rename].

3 Enter a name of up to 8 characters in the keyboard window, and press [Enter].

To delete a frame memory folder

1 Select a frame memory folder.

2 Press [Delete].

3 Check the message, then press [Yes].

Saving a Frame Memory File List

If you save all files currently held in frame memory as a single backup data set using high-speed recording on video tape or other medium, a file of file list data is created that is needed for successful frame memory file restore operation. This file must be saved on the local drive or a removable drive.

1 Open the File >Frame Memory >File Name Data menu (7153).

2 In the operating device selection section on the left or right, select [Register].

The register name "FM_Bkup" appears.
In the device selection area on the opposite side, specify the save destination device.

3 In the device selection area for the save destination device, select [Local Drive] or [Removable Drive], then specify a directory.

4 Select the destination file for saving.

5 Press [Save].

The file is saved.
To load a saved file, press [Load].

To view detailed file information

Press [File Edit].
A detailed file list appears. You can edit the files in the same way as for other files.

Batch File Operations

You can process all files or registers in batch.

Saving Files in Batch

You can save the data in registers to the local drive or removable drive in batch.

Notes

- There is a risk that files saved on the local drive may become unusable if the local drive experiences trouble. Always keep separate backup copies of important files on a removable drive.
- Format a commercially available removable drive before using it for the first time *(see page 405)*.
- You cannot perform the following operation when [Src Patch Link] is enabled *(see page 478)*.

1 Open the File >All, External File >All menu (7161).

2 Select the target device for operation *(see page 379)*.

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 "Types of files" (page 375).

Note

Frame memory is not selected when you press [All Select]. To apply the setting to frame memory, press [Frame Memory], turning it on. When frame memory is selected, it is not possible to apply settings to <Category> group data.

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 407)*.

1 Open the File >All, External File >All menu (7161).

2 Select the target device for operation *(see page 379)*.

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 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 "Types of files" (page 375).

Notes

- Frame memory is not selected when you press [All Select]. To apply the setting to frame memory, press [Frame Memory], turning it on. When frame memory is selected, it is not possible to apply settings to <Category> group data.
- You cannot select [User Setup] when [Src Patch Link] is enabled *(see page 478)*.

4 Press [← Load].

5 Check the message, then press [Yes].

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

Note

When frame memory is selected for the setting, the data is always deleted before loading.

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 379)*.

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 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 "Types of files" (page 375).

Note

Frame memory is not selected when you press [All Select]. To apply the setting to frame memory, press [Frame Memory], turning it on. When frame memory is selected, it is not possible to apply settings to <Category> group data.

4 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.

Importing and Exporting Files

You can import or export frame memory image data from or to external recording media.

Import: Import a file in a different format from the local drive or removable drive as frame memory image data.

Export: Save the data in a register, converting the format, to the local drive or removable drive.

For details of the supported file formats, see "Importing or exporting files to or from frame memory" (page 376).

Note

When the signal format is 1080P, exporting is not possible.

Importing Frame Memory Data

This section describes importing bitmap-format data into a frame memory register as an example.

Note

When the signal format is 1080P, importing as an extended clip file is not possible.

Ford details about files for importing, see "About import image size" (page 376).

1. Open the File >All, External File >Import/Export menu (7162).
2. In the file format selection area at the top right of the screen, press [Frame Memory (.BMP)].

   Files of the selected type are shown in the list on the right.
3. Select the data type to display using the buttons at the top right of the screen.

   Still: Still image files
   Clip: Clip files
   Ext Clip: Extended clip files
   Frame memory data of the selected type appears in the list on the left.
4. In the device selection area in the list on the left, specify the frame memory folder for the import destination.
5. In the device selection area in the list on the right, select [Removable Drive], then specify a directory containing the file to import.

   Note

   Always place files to import from a removable drive in a directory immediately below root.
6. In the list on the right, select the file to import.
7. Press [← Import].

Exporting Frame Memory Data

This section describes exporting frame memory image data to a removable drive in bitmap format as an example.

1. Open the File >All, External File >Import/Export menu (7162).
2. In the file format selection area at the top right of the screen, press [Frame Memory (.BMP)].

   Files of the selected type are shown in the list on the right.
3. Select the data type to display using the buttons at the top right of the screen.

   Still: Still image files
   Clip: Clip files
   Ext Clip: Extended clip files

   Frame memory data of the selected type appears in the list on the left.
4. In the device selection area in the list on the right, select [Removable Drive], then specify an export destination directory.

   Note

   The displayed directories are only those directories immediately below root.
5. In the device selection area in the list on the left, specify the frame memory folder containing the file to export.
6. In the list on the left, select the file to export.
7. Press [→ Export].

   The frame memory in saved in bitmap format on the removable drive.

If a file with the same name already exists in the specified destination, a confirmation message appears. Select [Yes] to overwrite the existing data.

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 379)*.
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 379)*.
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 and group IDs)

- Renaming files
- Deleting files
- Offline editing of macro files
- Exporting user source name files
- Creating, renaming, and deleting frame memory folders
- Interconversion of frame memory clips and extended clips
- Deleting directories

1 Open the File >Configure >Directory menu (7171).

2 In the device selection area, select the target device for operation *(see page 379)*.

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 379)*.

3 Select a directory.

4 Press [Delete].

5 Check the message, then press [Yes].

Copying Files Between Unit IDs/Group IDs

Switcher and DME files on the local drive or removable drive are managed by unit ID *(see page 389)* or group ID*(see page 390)*.
Files with different unit ID and group ID cannot be copied using ordinary file operations. To copy files, use the menu for copying between different unit ID/group 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 collectively select all categories using [ALL], switcher-related categories using [SWR ALL], and DME-related categories using [DME ALL]

3 Press [OK].

4 Select the target device for operation *(see page 379)*.

In the device selection area in the list on the left, select the copy source device, then specify a directory.
In the device selection area in the list 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].

Copying Files Between Different Group IDs

Open the File >Configure >Group ID Copy menu (7173), and use the same procedure as for copying between unit IDs.

For details, see "Copying Files Between Different Unit IDs" (page 387).

Saving Files Loaded by Autoload

If you save effect setting data, frame memory image files, and so on in the PWON_LD directory on the local drive, then when the system is powered on this data is loaded automatically. This is known as the autoload function. To save the data to be loaded by the autoload function, use the menu for operations on individual files.

For details about the data loaded by the autoload function, see "Saving data loaded by autoload" (page 377).

For details about autoload settings, see "Setting Automatic Loading of Register Data at Power On (Autoload Function)" (page 398).

This section describes saving snapshot data 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 on the right, select [Local Drive].

Be sure to select [Local Drive] as the save destination.

4 Select the [PWON_LD] directory.

The PWON_LD directory is automatically created when [Power On File Load] is enabled in the Engineering Setup >System >Start Up menu (7314). If disabled, the directory does not appear.

5 Select the register to save and the destination file in which to save it.

You can select more than one register.
To select all registers, press [ALL].

6 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.

System Setup

Chapter 18

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 and connected DME units on the same network, it is necessary to set the unit ID on each device, as follows.

Switcher	Unit ID
1st switcher	1
2nd switcher	2

DME	Unit ID
DME1 for 1st switcher (Ch1 to Ch4)	1
DME2 for 1st switcher (Ch5 to Ch8)	2
DME1 for 2nd switcher (Ch1 to Ch4)	3
DME2 for 2nd switcher (Ch5 to Ch8)	4

Menu panel unit IDs are set in the Engineering Setup >System menu *(see page 390)*.
For details about unit IDs of devices other than the control panel, refer to the installation manual for each device.

Note

The unit ID for the MKS-7470X/7471X becomes DME1 or DME3.

- DME1 (unit ID: 1) when connected to the 1st switcher (unit ID: 1).
- DME3 (unit ID: 3) when connected to the 2nd switcher (unit ID: 2).

When the signal format is 1080P

You can connect up to four MVE-8000A units to the 1st switcher. The unit IDs for these DMEs are assigned as follows.

DME	Unit ID
DME1 for 1st switcher (Ch1/2)	1
DME2 for 1st switcher (Ch3/4)	2
DME3 for 1st switcher (Ch5/6)	3
DME4 for 1st switcher (Ch7/8)	4

Notes

- When the signal format is 1080P, the MKS-7470X is always DME1 (unit ID: 1), supporting four channels. And the MVE-8000A is DME3 (unit ID: 3) or DME4 (unit ID: 4).
- When DME3 and DME4 are connected, the maximum number of control panels that can be connected is two. When DME3 and DME4 are not connected, the maximum number of control panels that can be connected can be changed to four *(see page 405)*.
- The signal format for the 2nd switcher cannot be changed to 1080P.

Settings Relating to the Network

Devices connected to the switcher system LAN are automatically authenticated and listed on the display.

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 proceed 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].

Authenticating IP Addresses Automatically

1 In the Engineering Setup >System >Network Config menu (7311), press [Auto Config].

2 Check the message, then press [Yes].

Devices that support connection with the same group ID within the network are detected and displayed in list view.

3 To register the list of detected devices as the setting values at power-on, press [Define].

4 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].

Enabling 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 disable the NFS server. To use an NFS server after resetting the menu panel, enable the server again.

Settings Relating to System Configuration

Note

After changing settings, always press [Execute] to save the new values.
If you want to cancel the setting changes without saving them, press [Clear].

Selecting the Operation Mode

In the <Operation Mode> group of the Engineering Setup >System >System Config menu (7312), select one of the following.
Single Proc mode: The control panel controls a single switcher and DMEs.
Dual Simul mode: The control panel controls two switchers and DMEs simultaneously. This allows operation to continue on one switcher if the other switcher cannot communicate due to device failure or other cause.

Note

When the signal format is 1080P, Dual Simul mode cannot be selected.

Selecting the target system to set for Dual Simul mode

In Dual Simul mode, the target system must be selected in order to configure the two switchers and connected DMEs. In the <Setup Target> group of the Engineering Setup >System >System Config menu (7312), select [System1] or [System2]. You can also select both systems and configure them simultaneously.

Specifying the Switcher Controlled by the Control Panel

1 In the Engineering Setup >System >System Config menu (7312), press [Panel Assign].

The Panel Assign menu (7312.1) appears.

2 Specify the switcher to control from the selected control panel.

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 to operate.
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 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.

To select the lighting mode of the switcher bus selection buttons on the remote panel
When switching buses with the MKS-8080/8082 AUX Bus Remote Panel or other remote panel connected via S-Bus data link, you can select the lighting mode of the bus selection buttons.
In the <S-Bus Remote Sw'er Status> group of the Engineering Setup >System >System Config >Panel Assign menu (7312.1), select one of the following.
Mode1: Buttons whose selection is inhibited do not light even when pressed. For other buttons, the response time between pressing a button and the button turning on is longer than [Mode2].
Mode2: The response time between pressing a button and the button turning on is short. However, buttons whose selection is inhibited may turn on momentarily when pressed.

Notes

- Make sure that [Tally Master] is enabled.
- When simple connection is used between the center control panel and remote panel *(see page 531)*, this setting is disabled.

Specifying the DME to Connect to the Switcher

1 In the Engineering Setup >System >System Config menu (7312), press [Switcher Assign].

The Switcher Assign menu (7312.2) appears.

2 Select the target switcher to set.

3 Specify a DME.

When selecting a DME on SWR1: To use the 1st DME, select [DME1] in the <DME> group. To use the 2nd DME, select [DME2] in the <DME> group.
When selecting a DME on SWR2: To use the 1st DME, select [DME3] in the <DME> group. To use the 2nd DME, select [DME4] in the <DME> group.

Note

When using the MKS-7470X/7471X, select [DME1] or [DME3].

When the signal format is 1080P

You can connect up to four MVE-8000A units for SWR1. When selecting a DME on SWR1, the following combinations are available, depending on the number of DMEs connected.
One DME: DME1
Two DMEs: DME1, DME2
Three DMEs: DME1, DME2, DME3
Four DMEs: DME1, DME2, DME3, DME4
On the MVS-7000X, when using both the MKS-7470X/7471X and MVE-8000A units, the MKS-7470X/7471X becomes DME1 and the following combinations are available for the MVE-8000A units.
One MVE-8000A unit: DME3
Two MVE-8000A units: DME3, DME4

Depending on the DME combination, press [DME1] (1st DME), [DME2] (2nd DME), [DME3] (3rd DME), or [DME4] (4th DME), turning it on.
On SWR2, the signal format cannot be changed to 1080P.

Enabling the FM Data Port of the Switcher

When the FM data port is enabled, frame memory data can be transferred quickly between the switcher and the control panels.

1 In the Engineering Setup >System >System Config menu (7312), press [Switcher Assign].

The Switcher Assign menu (7312.2) appears.

2 Select the target switcher to set.

If there is only one switcher on the network, make the setting only for SWR1 (1st switcher).

3 Press [FM Data Port Enbl], turning it on.

Settings Relating to Signal Formats

Notes

- After changing signal format settings, always press [Execute] (or [FC Format Execute] after changing the format converter signal format) to save the settings. If you want to cancel the setting changes without saving them, press [Clear].
- When you press [Execute], some data is lost (such as frame memory images). If [FC Format Execute] is pressed, the data is not lost.

Restrictions on signal formats and re-entry

Re-entry restrictions for an M/E on which a selected signal format can be used depend on whether or not the color corrector is used.

For details, see "Restrictions on color corrector and M/E combinations" (page 186).

Setting the Signal Format

Specify the signal format to be handled by each device. The combinations of signal formats that can be selected are as follows.

System	Field frequency	Number of effective scan lines
HD system	50	1080i
	59.94	
	50	1080P
	59.94	
	23.98	1080PsF
	24	
	25	
	29.97	
	50	720P
	59.94	
SD system	59.94	480i
	50	576i

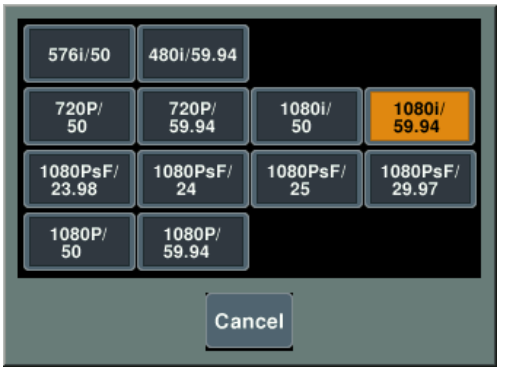
Note

When the MVS-8000X is used with 1080P signal format or the MVS-7000X is used with multiple formats, software options are required *(see page 400)*.

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.

Enabling Passage of 59.94 (2x) Format Signals on an AUX Bus

When the signal format is 1080i/59.94 or 1080PsF/29.97, passage of other format (59.94 (2x)) signals is enabled on the AUX bus only.
You can output signals from a connector for which any of the following is assigned.
Preset, Edit Preview, AUX1 to 48

Note

To enable this function requires BZS-8560X (for the MVS-8000X) or BZS-7560X (for the MVS-7000X) Switcher Upgrade Software.

1 In the Engineering Setup >System >Format menu (7313), press [Signal Format], and select [1080i/59.94] or [1080PsF/29.97].

2 Press [AUX Signal Format].

The AUX Signal Format menu (7313.5) appears.

3 Select the target data to set.

For each group, four outputs are selected together.

4 In the <AUX Signal Format> group, press [59.94Hz(2x)].

To pass 59.94 (2x) signals through the AUX bus, select [59.94Hz] or [29.97Hz].

5 Press [Execute].

6 Check the message, then select [Yes].

Notes

- Even if you press [Execute], the memory is not initialized, so frame memory images and other data is not lost.
- It is not possible to select a 59.94 (2x) format signal as output to a sub screen in the multi viewer.
- If you assign 59.94 (2x) to any of the following outputs, the corresponding format converter dedicated output is disabled.
  Output 1, Output 2, Output 25, Output 26

Switching the Input Reference Signal for HD System

Note

The input reference signal for the MKS-7470X/7471X is common to the switchers.

In the <Ref Input Format> group of the Engineering Setup >System >Format menu (7313), select one of the following.
Tri Sync: Tri-level sync for an HD system
BB (Black Burst): Black burst or sync
The following table shows the relationship between signal format and the supported input reference signal frequency.

Signal format	Input reference signal		
	Tri Sync	BB	
1080PsF/29.97 1080P/59.94 1080i/59.94	59.94	Black Burst 59.94	Sync 59.94
1080PsF/25 1080P/50 1080i/50	50	Black Burst 50	Sync 50
1080PsF/24	48	–	
1080PsF/23.98	47.952	Black Burst 59.94 a)	Sync 59.94 a)
720P/59.94	59.94	Black Burst 59.94	Sync 59.94
720P/50	–	Black Burst 50	Sync 50

a) Interlock mode. Cannot be set on the control panel.

Setting Conversion Formats (Format Converter)

Installing the MKS-8450X Format Converter Board in the MVS-8000X/7000X enables signal video format conversions.
You can also delay input signals using the frame delay function or sync input signals using the frame synchronizer.

The number of input signals that can undergo format conversion is given below.
- When the signal format is 1080P:
  Up to eight on the MVS-8000X (or up to four if only one MKS-8450X board is installed) and up to four on the MVS-7000X.
- When the signal format is other than 1080P:
  Up to 16 on the MVS-8000X (or up to eight if only one MKS-8450X board is installed) and up to eight on the MVS-7000X.

The number of output signals that can undergo format conversion is up to four (or up to two when no MKS-8160X board is installed).

Notes

- On the MVS-7000X, format conversion must be assigned to primary inputs in advance.
  For details, see "Selecting the Primary Input to use as the Format Converter" (page 439).
- For details about the switcher board configuration required for using the format converter when the signal format is 1080P, contact your Sony service or sales representative.

About the format converter

The following format conversion are supported.
- Up-converter: SD (4:3) to HD (16:9)
- Down-converter: HD (16:9) to SD (4:3)
- Cross-converter: HD (720P) to HD (1080i), or HD (1080i) to HD (720P)
- IP converter: HD (1080i) to HD (1080P)
- PI converter: HD (1080P) to HD (1080i)

Notes

- Input signals, converted by the format converter, and output signals are delayed by one frame with respect to the reference signal.
  When the signal format is 720P or 1080P, input signals converted by the format converter are delayed by two frames with respect to the reference signal. Output signals are not synchronized to the reference signal.
- When the signal format is 720P/59.94, 720P/50, 1080i/59.94, 1080i/50, 1080PsF/25, or 1080PsF/29.97 and the input reference signal is set to [Tri Sync], the format converter cannot be used.

Frame delay function

When the signal format is 720P, 1080i, or 1080P, you can set the delay of unconverted input signals. The amount of delay that can be configured is given below.
- 1080i: Up to 8 frames in 1-frame units
- 720P or 1080P: Up to 16 frames in 2-frame units

For details about delay settings, see "Setting the Frame Delay Function" (page 439).

Note

Use an input signal synchronized to the reference signal to obtain the same delay as that configured.

Frame synchronizer

You can synchronize input signals using the frame converter.
The following two methods are available.

Using an up-converter

When the signal format is 720P or 1080P, input signals can be synchronized by the up-converter.
When synchronizing, set to a frame synchronizer supported format ([480i/59.94 (with FS)], [576i/50 (with FS)]).

Notes

- You can synchronize the input signal to the reference signal within a range of ±0.5 frames with respect to the reference signal.
- If a frame synchronizer is used, the up-converter introduces the following delay.
  - 1080i: 2 frames with respect to the reference signal
  - 720P: 1.5 frames, 2 frames, or 2.5 frames (3 frames, 4 frames, or 5 frames in 720P signal format) with respect to the reference signal

Using the frame delay function

When the signal format is 720P, 1080i, or 1080P, you can use the frame delay function as a frame synchronizer by setting the frame delay value to 1.

Notes

- You can synchronize the input signal to the reference signal within a range of ±0.5 frames with respect to the reference signal.
- The frame synchronizer introduces the following delay.
  - 1080i: 1 frame with respect to the reference signal
  - 720P: 0.5 frames, 1 frame, or 1.5 frames (1 frame, 2 frames, or 3 frames in 720P signal format) with respect to the reference signal

- 1080P: 1 frame (2 frames in 1080P signal format) with respect to the reference signal

Supported conversion format combinations

The combinations of switcher signal formats and supported format converter formats are as follows.

Note

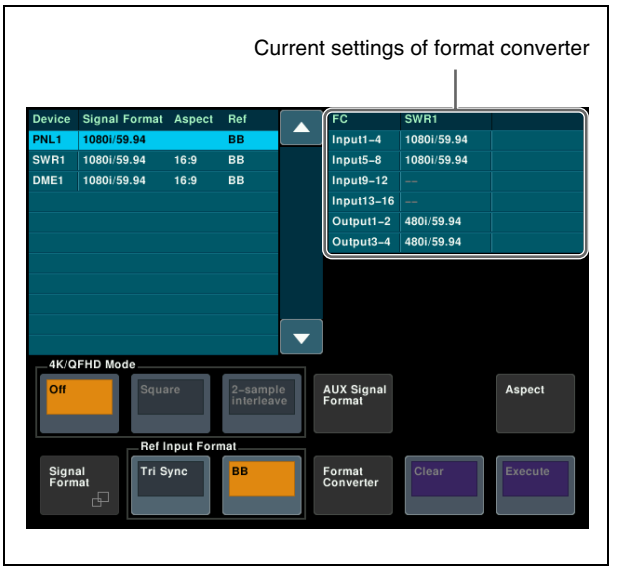
When the signal format is 1080PsF/23.98 or 1080PsF/24, the format converter cannot be used.

Switcher signal format	Signal formats supported by format converter	
	Inputs [a) b)] FC Input 1 to 4 / 5 to 8 / 9 to 12 / 13 to 16	Outputs FC Output 1, 2 / 3, 4
480i/59.94	720P/59.94 1080i/59.94 1080PsF/29.97	720P/59.94 1080i/59.94 1080PsF/29.97
576i/50	720P/50 1080i/50 1080PsF/25	720P/50 1080i/50 1080PsF/25
720P/50	576i/50 576i/50 (with FS) 1080i/50	576i/50 [c)] 1080i/50 [c)]
720P/59.94	480i/59.94 480i/59.94 (with FS) 1080i/59.94	480i/59.94 [c)] 1080i/59.94 [c)]
1080i/50	576i/50 576i/50 (with FS) 720P/50	576i/50 720P/50
1080i/59.94	480i/59.94 480i/59.94 (with FS) 720P/59.94	480i/59.94 720P/59.94
1080PsF/25	576i/50	576i/50
1080PsF/29.97	480i/59.94	480i/59.94
1080P/50	1080i/50	1080i/50 [c)]
1080P/59.94	1080i/59.94	1080i/59.94 [c)]

a) FC Input 9 to 12 and FC Input 13 to 16: MVS-8000X only
b) When the switcher signal format is 1080P, the supported inputs are FC Input 1, 3, 5, 7, 9, 11, 13, and 15 only (9, 11, 13, and 15 on the MVS-8000X only).
c) Output signals converted from 720P or 1080P are not synchronized to the reference signal. On the destination device, use an operation mode that can sync to the format converter output signal without using an external reference signal.

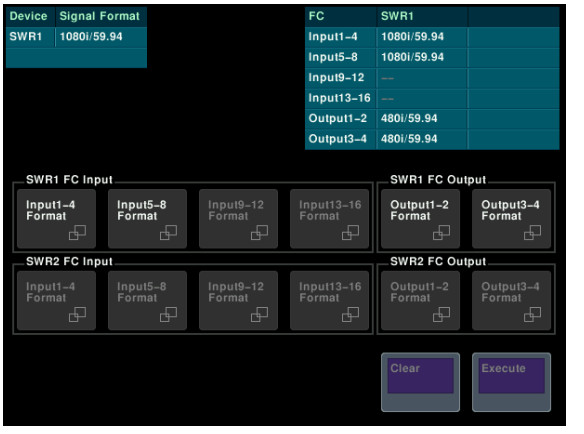
Setting the conversion format

1 Open the Engineering Setup >System >Format menu (7313).



2 Press [Format Converter].

The Format Converter menu (7313.4) appears.



3 To set the conversion format for SWR1 FC Input 1 to 4, press [Input 1-4 Format] in the <SWR1 FC Input> group.

4 Select the input signal format in the pop-up window.

5 Refer to steps **3** and **4** to select the input signal format for [Input 5-8 Format], [Input 9-12 Format], and [Input 13-16 Format].

6 To set conversion format for SWR1 FC Output 1 and 2, press [Output 1-2 Format] in the <SWR1 FC Output> group.

7 Select the output signal format in the pop-up window.

8 Refer to steps **6** and **7** to select the output signal format for [Output 3-4 Format].

9 Configure settings for SWR2 in the same way as required.

To use the frame delay function

In step **4**, press [Frame Delay] in the pop-up window
The same format as the switcher signal format is displayed for the input signal.
When using the frame delay function as a frame synchronizer, set the delay setting of the frame delay function to 1.

Setting Conversion Formats (4K Up-Converter)

About the 4K up-converter

Conversion from HD format to 4K format is supported by installing the MKS-8460X 4K format converter board.

Notes

- Dual up-converters are supported using one MKS-8460X board.
- Up to two MKS-8460X boards can be installed in the MVS-8000X, and only one can be installed in the MVS-7000X.
- On the MVS-8000X, both an MKS-8460X board and an MKS-8450X format converter board can be installed, but only the MKS-8460X can be used as an up-converter.
- Enabled only when the switcher signal format is set to 1080P.

Supported formats

The supported conversion formats are given below.

Switcher signal format	Inputs FC Input 1 to 4 / 5 to 8 / 9 to 12 / 13 to 16 a)	4K format after conversion
1080P/50	720P/50 1080i/50 1080P/50	2160P/50 b)
1080P/59.94	720P/59.94 1080i/59.94 1080P/59.94	2160P/59.94 b)

a) When only one MKS-8460X is used on the MVS-8000X, either FC Input 1 to 4 / 5 to 8 or FC Input 9 to 12 / 13 to 16 are enabled, depending on the installation slot.
On the MVS-7000X, only FC Input 1 to 4 / 5 to 8 are enabled.
b) Active area is 3840×2160.

Input signal formats can be configured for each group of four inputs (FC Input 1 to 4, 5 to 8, 9 to 12, 13 to 16), but only FC Input 1, 5, 9, and 13 can be up-converted to 4K format.
After 4K format conversion, the output is subdivided into four HD images.

Notes

- Only input video signals that are synchronized to a reference signal can be converted.
- When up-converting, a 3-field delay (3 frames at 1080P) occurs relative to the reference signal.
- The signal division method (square division or 2-sample interleave division) after conversion for a 4K system is determined by the setting in the Engineering Setup >System >Format menu (7313). For non-4K systems, square division method is applied.

Setting the input signal format

This sets the signal format of inputs of the up-converter.

Note

On the MVS-7000X, the primary input used by the up-converter must be selected in advance.
In the Engineering Setup >Switcher >Input >FC Input Select menu (7332.3), set the FC Input 1 and FC Input 5 input signals.

For details, see "Selecting the Primary Input to use as the Format Converter" (page 439).

1 In the Engineering Setup >System >Format menu (7313), press [Format Converter].

The Format Converter menu (7313.4) appears.

2 In the <SWR1 FC Input> group, press [Input 1-4 Format].

3 Select the input signal format in the pop-up window.

4 Refer to steps **2** and **3** to select the input signal format for [Input 5-8 Format], [Input 9-12 Format], and [Input 13-16 Format].

Switching the Screen Aspect Ratio

You can switch the screen aspect ratio between 16:9 and 4:3.

Setting the screen aspect ratio

1 In the Engineering Setup >System >Format menu (7313), press [Aspect].

The Aspect menu (7313.1) appears.

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.
Independ: Set the screen aspect ratio separately for M/E, P/P, and User on the switcher, and for each channel on the DME.

3 When [Independ] is selected in step **2**, select one of the following.

Switcher Aspect: Set the aspect ratio for the switcher.
DME Aspect: Set the aspect ratio for the DME.

4 Perform the following operations, according to the selection in step **3**.

When [Switcher Aspect] is selected: In each of the <M/E-1>, <M/E-2>, <M/E-3>, <M/E-4>, <P/P>, and <User> groups, select [16:9] or [4:3].
When [DME Aspect] is selected: In each of the <CH1> to <CH4> groups, select [16:9] or [4:3].

5 Press [Aspect Execute].

6 Check the message, then select [Yes].

Power-On (Startup) State Selection

This sets the initial state of each device when the system is powered on.
Select Resume mode or Custom mode for each device.

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 or ROM within each device.
You can set Setup mode and Initial Status mode settings separately.

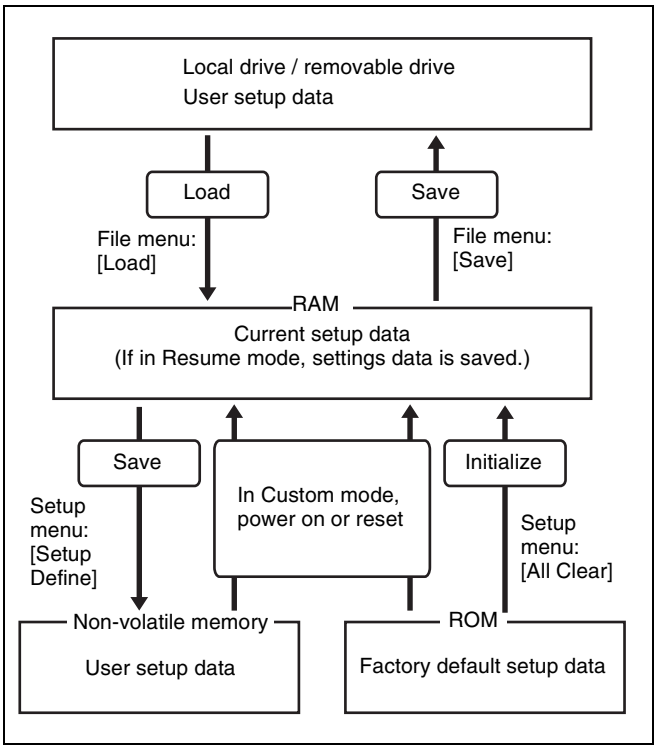
- **Setup mode:** Set one of the following setup states to use after powering on.
  User: Start up using the user data previously saved with [Setup Define].
  Factory: Start up with the factory default settings.
- **Initial Status mode:** Set one of the following states of each device after powering on (excludes Setup mode settings).
  User: Start up using the user data previously saved with [Initial Status Define].
  Factory: Start up with the factory default settings.

For details, see "Saving and Recalling Setup Data" (page 398).

Autoload function

This function automatically loads preset register data or frame memory image data when powering on. The data to load is configured in the File menu.

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.

  Note

  On DMEs, Resume mode cannot be used.

- In Custom mode *(see page 397)*, the user-defined settings (user setup data) saved in non-volatile memory or factory default setup data held in ROM in each device 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].

Saving User-Defined Settings

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].

For details about settings that are saved, see "Data Saved by [Setup Define] and [Initial Status Define]" (page 542).

Setting Automatic Loading of Register Data at Power On (Autoload Function)

You can set the system to load preset data at startup.
In the Engineering Setup >System >Start Up menu (7314), press [Power On File Load], turning it on.
When the autoload function is enabled, a directory "PWON_LD" appears in the File menu.

For details about saving data to load, see "Saving Files Loaded by Autoload" (page 388).

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

When the MVS-7000X is reset, the MKS-7470X/7471X is also reset at the same time.

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.

Note

The MKS-7470X/7471X software is included in the MVS-7000X software.

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.

Note

When the MKS-7470X/7471X is selected, the Detail Information menu cannot be displayed.

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: Ready for installation, but not completed.
   Error: An error occurred during installation.
   Cancel: Installation canceled.
   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**.

Note

When the MKS-7470X/7471X is selected, no software is displayed in the lower list.

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 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 menu (7316).

On the MVS-8000X

BZDM-9050 a)	Texture Lighting Software
BZS-8200X	Multi Program 2 Software
BZS-8420X	Color Corrector Software
BZS-8560X	Switcher Upgrade Software
BZDM-8560 b)	DME Upgrade Software
BZS-8570X	4K Upgrade Software

a) This can be used only on the MVE-9000.
b) This can be used only on the MVE-8000A.

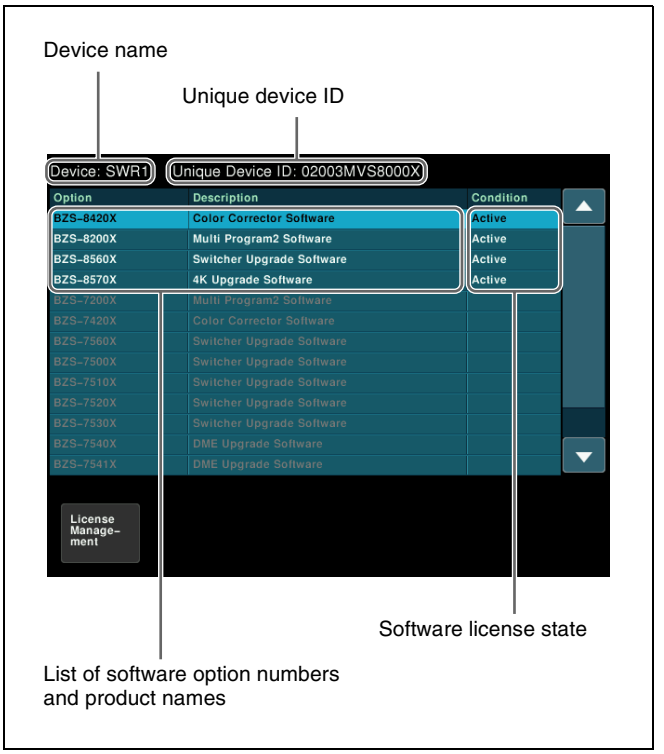
On the MVS-7000X

BZS-7500X a)	Switcher Upgrade Software
BZS-7510X	
BZS-7520X b)	
BZS-7530X c)	
BZS-7540X d)	DME Upgrade Software
BZS-7541X e)	
BZS-7561X	
BZDM-8560 f)	
BZDM-9050 g)	Texture Lighting Software
BZS-7200X	Multi Program 2 Software
BZS-7420X	Color Corrector Software
BZS-7560X	Switcher Upgrade Software
BZS-7570X	4K Upgrade Software

a) License common to the MVS-7000X and the MKS-7470X/7471X.
b) License required to support multiple signal formats when two or more MKS-7210X boards are used.
c) License required to support multiple signal formats when three MKS-7210X boards are used.
d) License required to support multiple signal formats on the MKS-7470X.
e) License required to support multiple signal formats on the MKS-7471X.
f) This can be used only on the MVE-8000A.
g) This can be used only on the MVE-9000.

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 (one only) with 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), then press [Deactivate License] in the License Management menu (7316.7).

Adding User Texture Patterns

You can add user created texture patterns to the texture patterns that can be selected as an image surface effect using the spotlighting function.

Note

This function is not supported on the MVE-8000A.

For details about spotlighting and texture patterns, see "Spotlighting Settings" (page 265).

The procedure for adding a texture pattern is as follows.

Prepare a texture file *(page 401)*

↓

Create a texture package *(page 403)*

↓

Install the texture package *(page 404)*

Preparing a texture file

Create a texture file meeting the following conditions, and save it on a removable drive.

File format: Windows bitmap (extension: bmp, 24-bit RGB)

File name: Alphanumeric (maximum 8 characters) + extension (bmp)
Example: wood_01.bmp

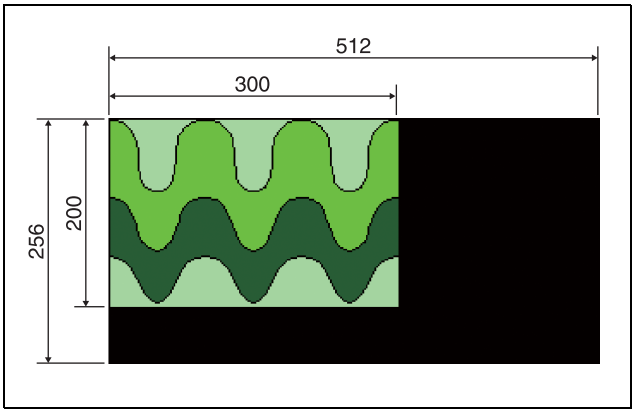
Image size (horizontal × vertical): 128×128 to 1024×1024 pixels

The maximum number of texture files that can be handled by the system is related to the image size of the texture files, as shown in the following table (when all images are the same size).

	Maximum number of texture files handled			
Size (horizontal) / Size (vertical)	**128 pixels**	**256 pixels**	**512 pixels**	**1024 pixels**
128 pixels	64	32	16	8
256 pixels	32	16	8	4
512 pixels	16	8	4	2
1024 pixels	8	4	2	1

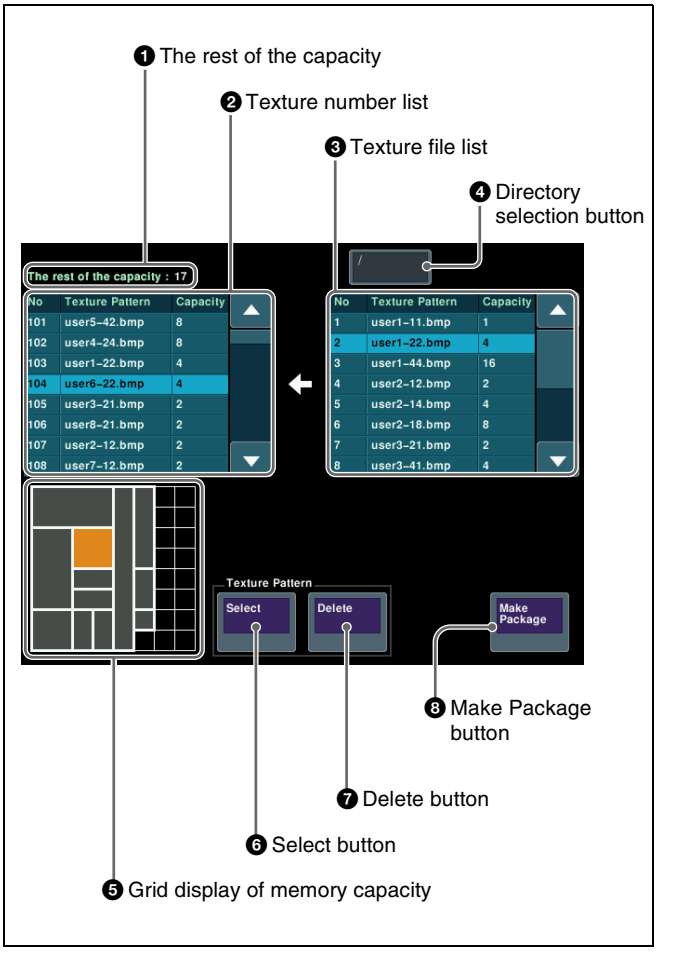
Notes

- Different image sizes can be mixed, but this will affect the total number of texture files that can be handled according to the combined file size.
- The number of texture files that can be handled may be reduced, depending on the way in which they are stored in memory.
- For a texture file with an image size outside the specification, the minimum enclosing image size is applied (see table above), and the region below and to the right is filled with black.
  Example: a 300×200 pixel texture file is treated as 512×256 pixels.



Texture Package menu

To create user texture patterns, use the Texture Package menu.



❶ The rest of the capacity (available memory space)
Displays the available memory space in units of 128×128 pixels (maximum of 64 units).

❷ Texture number list
Displays a list of the texture numbers (101 to 164) registered in the texture package.
The “Capacity” field shows the file size in units of 128×128 pixels (up to 64 units of texture files can be registered).

❸ Texture file list
Displays a list of the texture files stored on the removable drive.
If a texture file is stored in a directory, press the directory selection button and select the directory in the pop-up window to show a list of files.
The “Capacity” field shows the file size in units of 128×128 pixels.

❹ Directory selection button
Pressing this button displays a pop-up window where you can select a directory on the removable drive.

❺ Grid display of memory capacity
Displays a grid of how the texture files are stored in memory.

An 8×8 grid of 64 cells, where each cell represents 1 unit of 128×128 pixels.
The grid displays the location where the texture files are stored in memory using bold frames. The grid for the texture file selected in the texture number list is shown in amber.

❻ Select button
Pressing this button assigns the texture file selected in the texture file list to the number selected in the texture number list.

❼ Delete button
Pressing this button deletes the texture file assigned to the number in the texture number list.

❽ Make Package button
Pressing this button creates a texture package.

Creating a texture package

To use a user-prepared texture pattern with the spotlighting function, it is necessary to convert the texture files to vector files for bump mapping. This operation is referred to as "texture package creation."

1 Connect a removable drive containing software to install to the DEVICE connector of the menu panel.

2 Open the Engineering Setup >System >Install/Unit Config menu (7316).

3 Select a DME for which the spotlighting license is valid.

Note

The MKS-7470X/7471X does not require license registration.

4 Press [Texture Package].

The Texture Package menu (7316.9) appears.

Note

If you select a device for which the spotlighting license is not enabled, then [Texture Package] is not enabled.

5 In the texture number list, select the number you want to register in the texture package.

6 Select a texture file in the texture file list.

7 In the <Texture Pattern> group, press [Select].

The texture file selected in step **6** is assigned to the number selected in step **5** and displayed in the texture number list.

The grid display of memory capacity shows the location where the texture files are stored in memory using bold frames. The grid portion for the texture file selected in the texture number list is shown in amber.

8 Repeat steps **5** to **7** to assign all of the texture files to texture packages.

Notes

- If you assign a texture file that is already in the texture number list to a different texture number, then the previous assignment is deleted. It is not possible to assign the same texture file to two or more different texture numbers.
- In the following cases, texture file assignment is not possible.
  - If there is no available memory space ("The rest of the capacity: 0" appears)
  - If the selected texture file is too large to fit in the available memory space

To delete a texture file assignment
Select the texture file you want to delete in the texture number list, and press [Delete] in the <Texture Pattern> group.

9 Press [Make Package].

10 Check the message, then press [OK].

The texture package is created in the same location where the texture file is stored on the removable drive (extension: zsp, file name generated automatically).

Notes

- If you remove the removable drive on which the texture file is stored, it is not possible to create the texture package.
- If a texture package is already present on the removable drive, it is overwritten by a new texture package.
- If you carry out steps **9** and **10** without assigning a single texture file, it is not possible to create a texture package.
- If there is insufficient space on the removable drive to store the texture package, an error message appears, and the process is aborted. If this happens, delete unwanted files from the removable drive using your computer, so that there is enough free space on the removable drive, and repeat the process. As a guide, the space required is approximately equal to the total number of bytes of the texture files assigned in steps **5** to **8**.

Installing a texture package

1 Connect a removable drive containing software to install to the DEVICE connector of the menu panel.

2 Open the Engineering Setup >System >Install/Unit Config menu (7316).

3 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 information about the texture package that can be installed (Install, Title).
OK: Installation already completed.
On: Ready for installation, but not completed.
Error: An error occurred during installation.
Cancel: Installation canceled.
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.

4 Select a DME for which the spotlighting license is valid in the upper list.

5 Press [Display All Software], turning it on.

The lower list shows the texture packages.

6 Select the texture package you want to install.

7 Press [Set].

The selection is reflected in the “Install” field and “Title” field in the upper list.

8 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.

9 Press [Execute].

10 Check the message, then press [Yes].

The installation starts.
When completed successfully, “OK” appears in the “Install” field.

Registering a Frame Memory Clip with Ancillary Data

Note

When the signal format is 1080P, this function cannot be used.

1 In the Engineering Setup >System >Install/Unit Config menu (7316), select SWR1 or SWR2 and press [Unit Config].

The Unit Config menu (7316.8) appears.

2 Press [FM Ancillary] to set whether to enable (On) or disable (Off).

When enabled, the frame memory clip is saved with ancillary data.

Note

Switching between enable and disable initializes all frame memory data. Always make a backup of all required data before switching.

3 Press [Execute].

4 Check the message, then press [Yes].

Setting the DME Input/Output Signal Format

Note

This setting is enabled only when the system signal format is set to 1080P.

1 In the Engineering Setup >System >Install/Unit Config menu (7316), select SWR1 or SWR2 and press [Unit Config].

The Unit Config menu (7316.8) appears.

2 In the <DME I/F Type> group, select one of the following.

3G Mode: Use 3G mode (single 3G SDI signal) for DME input/output. [1)]
Dual Link Mode: Use dual link mode (two 1.5G SDI signals) for DME input/output. [2)]

1) 3G SDI: Standard defined by SMPTE 424M
2) Dual link: Standard defined by SMPTE 372M

Notes

- When the MKS-7470X/7471X is used, this setting is fixed to [3G Mode].
- When [Dual Link Mode] is selected, half as many DME units can be connected to the switcher. In this case, the available channels are DME1 channels 1 and 2, and DME2 channels 3 and 4.
- When [Dual Link Mode] is selected, you cannot use a the MVE-8000A connected via an SDI interface.

3 Press [Execute].

4 Check the message, then press [Yes].

Setting the Number of DMEs to Connect to the Switcher

If a 3rd DME (DME3) and 4th DME (DME4) are not connected and the signal format is 1080P, the maximum number of control panels that can be connected to the switcher can be increased from two to four.
To change the number of control panels that can be connected, it is necessary to set the number of DME units to connect to each switcher.

Notes

- This setting is available only when the signal format is 1080P.
- If the number of DMEs connected is two, the maximum number of control panels that can be connected is four. If the number of DMEs connected is four, the maximum number of control panels that can be connected is two.

1 In the Engineering Setup >System >Install/Unit Config menu (7316), select SWR1 and press [Unit Config].

The Unit Config menu (7316.8) appears.

2 In the <Max Number of DME> group, select the number of DMEs to connect.

2 units: Sets the maximum number of DMEs to two.
4 units: Sets the maximum number of DMEs to four.

3 Press [Execute].

4 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].

This sets the current time to the date and time set in step **1**, and changes the “Current” field in the status area.

Using a Removable Drive

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

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].

Note

When the local drive is operating normally, [Format] cannot be pressed.

2 Check the message, then press [Yes].

3 Check the message, then press [OK].

Locking Setup Menu Settings

To protect the 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 for locking" (page 406).

4 Press [Lock Item Select].

The selected menus become candidates for locking, and a  padlock icon (unlocked) appears in the "Lock" field.

Note

If there are already one or more locked menus, selection of lock candidates is not possible.

To deselect a lock candidate
Selecting a menu and press [Lock Item Select] again, making the "Lock" field blank.

To deselect all lock candidates by group
Press [Lock Item All Clear].

5 Repeat steps **2** to **4** to select all lock candidates.

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 the locked state  .

To release the lock
When the padlock icon is locked, press [Lock] and enter the password.

Changing the lock password

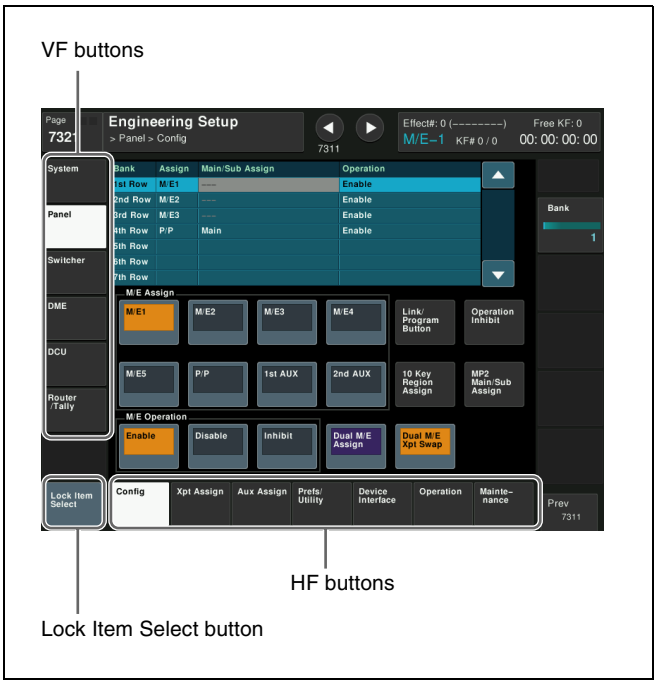
1 In the Engineering Setup >System >Maintenance >Setup Operation Lock menu (7317.1), press [Change Password].

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 for locking

With the menu you want to lock in the open state, press [Lock Item Select] at the lower left.



[Lock Item Select] turns red, and a padlock icon appears.

This selection is reflected in the lock candidate list in the Setup Operation Lock menu (7317.1).

Note

If there are already one or more locked menus, selection of lock candidates is not possible.
In this case, [Lock Item Select] changes as follows.

When the displayed menu is locked

When a menu other than the displayed menu is locked

To set a lock candidate, first remove the lock in the Setup Operation Lock menu (7317.1).

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
Press [Clear] to remove the “Lock” indicator in the “Lock” field.

4 Repeat steps **2** and **3** to select all lock candidates.

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 display color and the “Lock” indicator color in the “Lock” field both change to white.

To release the lock
When the padlock icon is locked, press [Lock] 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.

Control Panel Setup

Chapter 19

Settings Relating to Control Panel Configuration

Setting the Configuration for Each Bank

You can change the assignments for each bank.

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 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).

Notes

- 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.
- It is not possible to assign an M/E to a bank with 1st AUX and 2nd AUX assigned (AUX row).

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 408)*.

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.
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

Specify where in the 1024×1024 S-Bus space the link matrix is to be provided by setting the source and destination start addresses.
Make settings for the matrix selected in the External Bus Link menu.

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 Define the position of the matrix.

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.

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 matrix source to be linked to the button.

No.	Parameter	Adjustment
1	Main No	Switcher cross-point button
2	Source No	Matrix source selection

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.

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 router destination to be linked to the switcher bus.

No.	Parameter	Adjustment
2	Internal Bus	Switcher bus selection
3	Destination	Router destination selection

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	Select keyer to be master

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 Set the transition links between keyers.

For details about the method of operation, see "Linking Transitions Between Keyers" (page 410).

2 Press [Next Trans Link], turning it on.

The [KEY1] to [KEY8] next transition selection buttons in the transition control block are coupled (selected) with the transition links between keyers set in the Key Trans Link menu.

Note

This setting is common to the Key Trans Link menu (7321.2). It is not possible to make separate settings for each master keyer.

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
Select the target button to release, 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 in the transition control block is performed in the Transition Module1 menu (7321.9), and assignment of the buttons on the right 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 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 421).

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 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 user preference button function assignment, see "Assigning Functions to User Preference Buttons" (page 418).

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 in the menu.
The following control blocks can be inhibited.
- Cross-point control block
- Transition control block

Note

In the AUX bus control block and other control blocks which are not included in M/E and PGM/PST rows, the operations on the utility 2 bus and keys 1 to 8 are not inhibited.

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].

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.

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.

Note

When a number of 121 or higher is selected, “Insert” cannot be executed.
When a signal for a button with number 121 or higher is changed as a result of executing [Insert], the signal assigned to number 120 is automatically deleted, and signals assigned to numbers 121 or higher are maintained.

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.

Note

When a button number of 121 or higher is selected, [Delete] cannot be executed.
When a signal for a button with number 121 or higher is changed as a result of executing [Delete], the signal assigned to number 120 is moved to number 119, and signals assigned to numbers 121 or higher are maintained.

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 part 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 part 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.

Note

When a number of 121 or higher is selected, “Insert” cannot be executed.
When a signal for a button with number 121 or higher is changed as a result of executing [Insert], the signal assigned to number 120 is automatically deleted, and signals assigned to numbers 121 or higher are maintained.

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.

Note

When a button number of 121 or higher is selected, [Delete] cannot be executed.
When a signal for a button with number 121 or higher is changed as a result of executing [Delete], the signal assigned to number 120 is moved to number 119, and signals assigned to numbers 121 or higher are maintained.

Returning a table to defaults

1 In the Engineering Setup >Panel >Xpt Assign >V/K Pair Assign menu (7322.5) or the Engineering Setup >Panel >Xpt Assign >Table Button Assign menu (7322.1), press [Default Recall].

2 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).

1 In the Engineering Setup >Panel >Xpt Assign >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 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.

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 3).

To change the colors of User Color 1 to 3

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 3).

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.

4 Press [Execute].

To return to the previous source color
Press [Clear].

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.

Note

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.

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].

Exporting Source Names and Destination Names

You can send the source names and destination names to the S-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

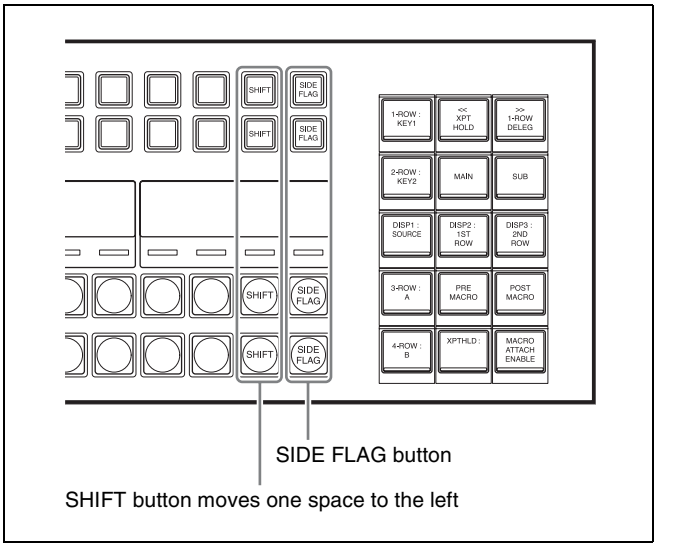
Destination names cannot be specified arbitrarily, so fixed names are used.

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 194).

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.

AUX Bus Control Block Settings

Setting the AUX Bus Block

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.

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 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.

Configuring Router Control

You can configuration destinations and level selection buttons in the Router >Router Control >Router Control menu (5111).

Assigning a destination to a destination selection button

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.

5 Press [Source Table Set].

6 Repeat steps **2** to **5** as required.

Setting the source table

1 In the Engineering Setup >Panel >Aux Assign >RTR Mode Setting menu (7323.1), press [Table Assign].

The Table Assign menu (7323.3) appears.

2 In the <Source Table Select> group, select the target source table to set.

3 Select the target button number to set and the source to assign.

To inhibit operation of buttons, press [Inhibit].

4 Press [Source 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 1st row/2nd row 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) SWR GPI Test Fire and DCU GPI Test Fire commands only

When [Macro Recall] is selected: Select the macro register to assign.

Number	Parameter	Adjustment
3	Macro	Macro register selection

When [Shotbox Recall] is selected: Select the shotbox register to assign.

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 register names in the Utility Command field

When [Macro Recall] or [Shotbox Recall] is selected in step **2**, you can select whether to display register names in the Utility Command field.

To enable display, 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
SWR Remote1 Enbl | SWR Remote4 Enbl	Switcher REMOTE1 enable/disable | Switcher REMOTE4 enable/disable	Enabled	Disabled
DME1 Editor Port Enbl	DME1 editor port enable/disable	Enabled	Disabled
DME2 Editor Port Enbl	DME2 editor port enable/disable	Enabled	Disabled
DME3 Editor Port Enbl	DME3 editor port enable/disable	Enabled	Disabled
DME4 Editor Port Enbl	DME4 editor port enable/disable	Enabled	Disabled
MEx PGM1 ST [a] | MEx PGM4 ST [a]	M/E-x PGM 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-PVW ST [a]	M/E-x key preview output safe title enable/disable x = 1 to 5	Enabled	Disabled
PP PGM1 ST [a] | PP PGM4 ST [a]	P/P PGM 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-PVW ST [a]	P/P key preview output safe title enable/disable	Enabled	Disabled
DME Mon Video ST [a]	DME Monitor Video output safe title enable/disable	Enabled	Disabled

Command name	Function	Button state	
		Lit amber	Off
DME Mon Key ST [a)]	DME Monitor Key output safe title enable/disable	Enabled	Disabled
Edit PVW ST [a)]	Edit preview output safe title enable/ disable	Enabled	Disabled
Preset ST [a)]	Preset 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
M/Ex PVW	M/E-x preview output x = 1 to 5	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
M/Ex KPVW2	M/E-x key preview 2 output x = 1 to 5	Output on the edit preview bus	Function assigned
P/P PVW	P/P preview output	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
P/P KPVW2	P/P key preview 2 output	Output on the edit preview bus	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
FM Src1 Frame Freeze	Frame freeze of frame memory source 1	During frame freeze	Either of the other two states
FM Src1 Field Freeze	Field freeze of frame memory source 1	During field freeze	Either of the other two states
FM Src1 Freeze Off	Release freeze of frame memory source 1	During freeze release	Either of the other two states
FM Src2 Frame Freeze	Frame freeze of frame memory source 2	During frame freeze	Either of the other two states
FM Src2 Field Freeze	Field freeze of frame memory source 2	During field freeze	Either of the other two states
FM Src2 Freeze Off	Release freeze of frame memory source 2	During freeze release	Either of the other two states
SWR GPI Enbl	Switcher GPI enable/disable	Enabled	Disabled
DME1 GPI Enbl	DME1 GPI enable/disable	Enabled	Disabled
DME2 GPI Enbl	DME2 GPI enable/disable	Enabled	Disabled
DME3 GPI Enbl	DME3 GPI enable/disable	Enabled	Disabled
DME4 GPI Enbl	DME4 GPI enable/disable	Enabled	Disabled
SWR GPI1 Test Fire | SWR GPI8 Test Fire	Test trigger output from switcher GPI1 | Test trigger output from switcher GPI8	Output (lit only at the instant the button is pressed)	Output assigned
DCU GPI1 Test Fire | DCU GPI50 Test Fire	Test trigger output from port assigned to DCU GPI1 | Test trigger output 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 Only Set	Macro only mode enable/disable	Enabled	Disabled

Command name	Function	Button state	
		Lit amber	Off
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	Macro execution	Pause during execution	Function assigned
Macro Cancel	Macro cancel	Lit only at the instant the button is pressed	Function assigned
Macro Auto Ins	Macro auto insert mode enable/disable	Enabled	Disabled
Macro AT with Rate	Mode enable/disable for storing transition rate when registering an auto transition macro event	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	Enabled	Disabled
Macro TL with Region	Mode enable disable for saving target regions when registering a timeline macro event	Enabled	Disabled
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	Function assigned
Inhibit Set	Inhibit cross-point button	Can be set only while pressed (lit)	Function assigned
Inhibit All Clear	Clear all cross-point button inhibit settings	Can be set only while pressed (lit)	Function assigned
SWR1 LAN Status	SWR1 communications status [b]	Communications disconnected	During communication
SWR2 LAN Status	SWR2 communications status [b]	Communications disconnected	During communication

a) The safe title enable/disable commands display the name of the signal assigned to the output.
b) Control LAN status only.

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) SWR GPI Test Fire and DCU GPI Test Fire commands only

When [Macro Recall] is selected: Select the macro register to assign.

No.	Parameter	Adjustment
3	Macro	Macro register selection

When [Shotbox Recall] is selected: Select the shotbox register to assign.

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 register names in the Utility Command field

When [Macro Recall] or [Shotbox Recall] is selected in step **3**, you can select whether to display register names in the Utility Command field.
To enable display, 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
SWR Remote1 Enbl | SWR Remote4 Enbl	Switcher REMOTE1 enable/disable | Switcher REMOTE4 enable/disable	Enabled	Disabled
DME1 Editor Port Enbl	DME1 editor port enable/disable	Enabled	Disabled
DME2 Editor Port Enbl	DME2 editor port enable/disable	Enabled	Disabled
DME3 Editor Port Enbl	DME3 editor port enable/disable	Enabled	Disabled
DME4 Editor Port Enbl	DME4 editor port enable/disable	Enabled	Disabled
MEx PGM1 ST a) | MEx PGM4 ST a)	M/E-x PGM 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-PVW ST a)	M/E-x key preview output safe title enable/disable x = 1 to 5	Enabled	Disabled
PP PGM1 ST a) | PP PGM4 ST a)	P/P PGM 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-PVW ST a)	P/P key preview output safe title enable/disable	Enabled	Disabled
DME Mon Video ST a)	DME Monitor Video output safe title enable/disable	Enabled	Disabled

Command name	Function	Button state	
		Lit orange	Lit dark blue
DME Mon Key ST [a)]	DME Monitor Key output safe title enable/disable	Enabled	Disabled
Edit PVW ST [a)]	Edit preview output safe title enable/ disable	Enabled	Disabled
Preset ST [a)]	Preset 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
M/Ex PVW	M/E-x preview output x = 1 to 5	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
M/Ex KPVW2	M/E-x key preview 2 output x = 1 to 5	Output on the edit preview bus	Function assigned
P/P PVW	P/P preview output	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
P/P KPVW2	P/P key preview 2 output	Output on the edit preview bus	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
FM Src1 Frame Freeze	Frame freeze of frame memory source 1	During frame freeze	Either of the other two states
FM Src1 Field Freeze	Field freeze of frame memory source 1	During field freeze	Either of the other two states
FM Src1 Freeze Off	Release freeze of frame memory source 1	During freeze release	Either of the other two states
FM Src2 Frame Freeze	Frame freeze of frame memory source 2	During frame freeze	Either of the other two states
FM Src2 Field Freeze	Field freeze of frame memory source 2	During field freeze	Either of the other two states
FM Src2 Freeze Off	Release freeze of frame memory source 2	During freeze release	Either of the other two states
SWR GPI Enbl	Switcher GPI enable/disable	Enabled	Disabled
DME1 GPI Enbl	DME1 GPI enable/disable	Enabled	Disabled
DME2 GPI Enbl	DME2 GPI enable/disable	Enabled	Disabled
DME3 GPI Enbl	DME3 GPI enable/disable	Enabled	Disabled
DME4 GPI Enbl	DME4 GPI enable/disable	Enabled	Disabled
SWR GPI1 Test Fire | SWR GPI8 Test Fire	Output test trigger from switcher GPI1 | Output test trigger from switcher GPI8	Output (lit only at the instant the button is pressed)	Output assigned
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 Only Set	Macro only mode enable/disable	Enabled	Disabled

Command name	Function	Button state	
		Lit orange	Lit dark blue
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	Macro execution	Lit light purple during execution Lit purple during pause	Function assigned (gray characters displayed on black background)
Macro Cancel	Macro cancel	Lit only at the instant the button is pressed	Function assigned
Macro Auto Ins	Macro auto insert mode enable/disable	Enabled	Disabled
Macro AT with Rate	Mode enable/disable for storing transition rate when registering an auto transition macro event	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	Enabled	Disabled
Macro TL with Region	Mode enable disable for saving target regions when registering a timeline macro event	Enabled	Disabled
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	Lit light purple during execution Lit red when execution completed (image in black state)	Function assigned (lit purple)
SWR1 LAN Status	SWR1 communications status [b)]	Communications disconnected	During communication
SWR2 LAN Status	SWR2 communications status [b)]	Communications disconnected	During communication

a) The safe title enable/disable commands display the name of the signal assigned to the output.
b) Control LAN status only.

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 1st Row/2nd Row Buttons of the Cross-Point Control Block

You can assign functions to the 1st row/2nd row 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 the 1st row/2nd row 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) SWR GPI Test Fire and DCU GPI Test Fire commands only

When [Macro Recall] is selected: Select the macro register to assign.

No.	Parameter	Adjustment
3	Macro	Macro register selection

When [Shotbox Recall] is selected: Select the shotbox register to assign.

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 register names in the Utility Command field

When [Macro Recall] or [Shotbox Recall] is selected in step **3**, you can select whether to display register names in the Utility Command field.
To enable display, press [Reg Name Display], turning it on.

For details about utility commands that can be assigned to the 1st row/2nd row buttons, see *"List of utility commands and user preference button states" (page 419)*.

Settings names to show on the display

You can set the display of names on the display when menu shortcuts or utility commands are assigned to the 1st row/2nd row 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 External 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.

Associating a Serial Port with a Device Selection Button

You can assign the channel selection buttons (CH1 to CH12) on the device control block to an SIU serial port. This allows you to operate a device (VTR, disk recorder, Extended VTR) connected to the port using the specified channel selection button.

For details about serial port settings, see "Serial Port Settings" (page 466).

1 In the Engineering Setup >Panel >Device Interface menu (7325), press [Device Assign].

The Device Assign menu (7325.4) appears.

2 Select the SIU serial port.

3 In the <Assign> group, select the device (DEV CH1 to DEV CH12) to assign.

[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 more than one device to the same port. The subsequently selected device is enabled.
- If P-Bus is assigned to a serial port, it is not possible to assign a device to that port.

4 Repeat steps **2** and **3** as required to set other ports.

Sharing disk recorder/Extended VTR file lists

You can share files when the same disk recorder/Extended VTR is connected to more than one port.

Note

Only ports assigned for the disk recorder or Extended VTR are enabled.

1 In the Engineering Setup >Panel >Device Interface >Device Assign menu (7325.4), select the target port to set.

2 In the <Assign> group, select the device (DEV CH1 to DEV CH12) for sharing the file list.

[DEV CH1] to [DEV CH12] correspond to the [CH1] to [CH12] channel selection buttons on the device control block.

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 462)*.

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 Transition Indicator Display in Non-Sync State

In the <Non Sync Fader Indicator> group of the Engineering Setup >Panel >Operation menu (7326), 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.

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 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, and DDR/VTR 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/Extended VTR timeline
Macro: Macro timeline

Setting Source Names and Destination Names

You set the source and destination names to use in the control panel.

Note

Before configuring these settings, it is necessary to set the number of the S-Bus description name *(see page 471)*.

1 In the <Source/Dest Name> group of the Engineering Setup >Panel >Operation menu (7326), select the name to use.

Sw'er Local: Source names set in the Xpt Assign menu, and fixed bus names
S-Bus Descript: Description names set in the router.
S-Bus Type+Num: Type + Num set in the router (display is a fixed eight characters).

2 In the <Name Display Mode> group, select the display method.

Auto: Optimize display according to the number of characters.
- 2-character 1-line display for two characters or fewer
- 4-character 1-line display for four characters or fewer
- 3-line display for 12 characters or fewer
- 4-line display for 16 characters or fewer

2 Character: The first two characters are displayed.
4 Character: The first four characters are displayed.

To replace a name set in the Xpt Assign menu with an S-Bus description name

Press [S-Bus Name Link], turning it on.
When enabled, the source name is updated each time the description name is updated on the router. This allows you to always use the same description name between the router and the switcher.
Even when [Sw'er Local] is selected, the same name can be displayed when [S-Bus Descript] is selected. The S-Bus description name is also displayed in the Xpt Assign menu.

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, set 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, set one of the following.
Register No: Register number display
Register Name: Register name display

Setting the Button Operation Mode

In the Engineering Setup >Panel >Operation menu (7326), press [Custom Button] to open the Custom Button 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: When the [BKGD] button is pressed twice in quick succession, all currently inserted keys are selected and removed by the next transition.
Enable: Double-pressing of the [BKGD] button is disabled.

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 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 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 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

This setting is only valid in the independent key transition execution section of the transition control block.

Setting the [TRANS PVW] button operation mode

In the <Trans Pvw> group, select one of the following.
Lock: Pressing the [TRANS PVW] button switches between transition preview mode and normal mode each time the button is pressed.
Hold: Transition preview mode is enabled only while the [TRANS PVW] button is pressed.
The one-time mode setting is set in the Engineering Setup >Switcher >Transition menu (7334) *(see page 446)*.

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: [KEY] button operation is enabled, allowing key signals to be selected when lit, and video signals to be selected when not lit.

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 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.

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

Setting the sensitivity when recalling a menu using double-press

In the <Double Click> group, select one of the following.
Fast: High speed
Normal: Normal
Slow: Low speed

Setting the Macro Execution Mode

1. In the Engineering Setup >Panel >Operation menu (7326), press [Macro].

   The Macro menu (7326.6) appears.

2. In the <Macro Execution Mode> group, select the macro execution mode.

   Normal: Normal execution
   Step: Step execution

3 In the <Attachment Setting Mode> group, select whether to enable cross-point button operations when a macro attachment is set.

With Btn Function: Enable cross-point button operations.
W/o Btn Function: Disable cross-point button operations.

4 In the <Macro 2nd Recall Mode> group, set the action to occur during macro execution or when a macro is paused if the cross-point button that sets the macro attachment set is double-pressed.

Continue: Execution of a macro that has been paused is resumed, and an executing macro continues.
Cancel: A paused macro or a macro during execution is terminated.

5 In the <Macro Recall Override> group, set the action to occur during macro execution or when a macro is paused if another macro is recalled.

Disable: Ignore the other macro recall.
Enable: Execute the other macro.

To set a cross-point button with a macro attachment lit continuously

Press [Attchd Btn Indication], turning it on.
When the [MACRO ATTACH ENABLE] button in the cross-point Flexi Pad is on and lit orange, cross-point buttons with a macro attachment are always lit green.

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 when background A bus and B bus cross-point buttons are lit.

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 <A/B Bus 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 Flexi Pad

Assigning a function to a cross-point Flexi Pad button

1 In the <Xpt Flexi Pad> group of the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Flexi Pad Btn Assign].

The Flexi Pad Btn Assign menu (7326.14) appears. The left side of the status area shows the currently display page number and buttons, and the right side of the status area 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.

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 Recall], check the message, then press [Yes].

To rename a page

1 Select the target page number 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 Flexi Pad.

About re-entry button assignment

The following re-entry buttons can be assigned to buttons on the cross-point Flexi Pad.

- n-ROW P/P PGM1, n-ROW M/E-1 PGM1 to n-ROW M/E-5 PGM1 (n = 1 to 4)
- n-ROW P/P PGM2, n-ROW M/E-1 PGM2 to n-ROW M/E-5 PGM2 (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
n-ROW P/P PGM1	284	124	P/P OUT1	P/P OUT1
n-ROW M/E-1 PGM1	281	121	M/E-1 OUT1	M/E-1 OUT1
n-ROW M/E-2 PGM1	282	122	M/E-2 OUT1	M/E-2 OUT1
n-ROW M/E-3 PGM1	283	123	M/E-3 OUT1	M/E-3 OUT1
n-ROW M/E-4 PGM1	285	129	M/E-4 OUT1	M/E-4 OUT1
n-ROW M/E-5 PGM1	286	131	M/E-5 OUT1	M/E-5 OUT1
n-ROW P/P PGM2	294	128	P/P OUT6	P/P OUT6
n-ROW M/E-1 PGM2	291	125	M/E-1 OUT6	M/E-1 OUT6
n-ROW M/E-2 PGM2	292	126	M/E-2 OUT6	M/E-2 OUT6
n-ROW M/E-3 PGM2	293	127	M/E-3 OUT6	M/E-3 OUT6
n-ROW M/E-4 PGM2	295	130	M/E-4 OUT6	M/E-4 OUT6
n-ROW M/E-5 PGM2	296	132	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 Flexi Pad

This sets the page that is displayed when the [HOME] button on the cross-point Flexi Pad is pressed.

1 In the <Xpt Flexi Pad> group of the Engineering Setup >Panel >Operation >Xpt Module Operation menu (7326.12), press [Home Page Set].

2 Enter the page number to set (1 to 14) using the numeric keypad window, then press [Enter].

Setting the display mode

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 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 rename a display mode

The specified name is displayed on the display mode buttons in the cross-point Flexi 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 Flexi Pad.

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 control block, Flexi Pad control block, and utility/shotbox control block.
Display Brightness: Adjust the brightness of the control panel display (organic EL display devices).
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.

5 Check the message, then press [Yes].

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 pop-up 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).

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.

Switcher Setup

Chapter 20

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

When the signal format is 720P, 1080PsF, or 1080P, the switching timing cannot be specified.

Setting the Operation Mode

This sets the output signal configuration for each bank.
In the <M/E Config> group of the Engineering Setup >Switcher >Config menu (7331), select the operation mode for each M/E or PGM/PST bank.
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 output signal selection (M/E Output Assign), 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).

Note

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.

Assigning the output of each bank in multi-program mode

This configures settings when [Multi Program] is selected as the operation mode.

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, 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/E1 OUT1 to 6
7 to 12: M/E2 OUT1 to 6
13 to 18: M/E3 OUT1 to 6
19 to 24: M/E4 OUT1 to 6
25 to 30: M/E5 OUT1 to 6

4 In each of the <Key1> to <Key8> groups, select [Enable] or [Disable].

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 standard mode or 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/E1 OUT1 to 6
7 to 12: M/E2 OUT1 to 6
13 to 18: M/E3 OUT1 to 6
19 to 24: M/E4 OUT1 to 6
25 to 30: M/E5 OUT1 to 6

5 In each of the <Key1> to <Key8> groups, select the key state.

Link: Follows the key on/off state.
On: Key is always on.
Off: Key is always off.

Setting User Regions

You assign user regions, comprising color backgrounds 1 and 2, AUX1 to 48, frame memory 1 to 8, and color correctors 1 and 2, to any of User1 to User8.

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.

Note

[M/E-5] is not displayed on the MVS-8000X.

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 (Ch1 to Ch8) 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 194).

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 both 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 194).*

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)*.

Settings Relating to Signal Inputs

You can configure the following inputs.

On the MVS-8000X

- Primary inputs: 1 to 144
- Premium inputs: 145 to 164 (PREM1 to PREM20)
- Format converter dedicated inputs: 165 to 180 (FC1 to FC16)

On the MVS-7000X

- Primary inputs: 1 to 80
- Inputs converted using format converter: 81 to 88 (FC1 to FC8)

Setting Through Mode

This sets through mode for inputs. You can set this independently for each primary input or premium input (MVS-8000X only).

Note

On the MVS-8000X, the format converter dedicated inputs cannot be set to through mode.
On the MVS-7000X, through mode is disabled for the input signals which have been converted in the format converter.

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 Video Process

This sets the video process for each input signal, and adjusts the brightness, hue and so on.

Note

If the color corrector is selected in the Engineering Setup >Switcher >Key/Wipe/FM/CCR >Bus CCR/Input CCR/ Video Proc menu (7335.3), the video process cannot be configured.

For details, see "Enabling the Input Signal and AUX Bus Color Corrector" (page 447).

1 In the Engineering Setup >Switcher >Input menu (7332), press [Video Process].

The Video Process menu (7332.1) appears.

2 Select the target input signal to set.

3 Press [Video Process], turning it on.

4 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 set the parameter settings to their defaults, press [Unity].

Setting the Input Signal Color Corrector

If the color corrector is enabled in the Engineering Setup >Switcher >Key/Wipe/FM/CCR >Bus CCR/Input CCR/ Video Proc menu (7335.3), the following color corrector functions for input signals cannot be set.
- Video process
- Primary Color Correction
- RGB Clips

Notes

- Up to 32 inputs can use the color corrector.
- The input signal color corrector cannot be used at the same time as the AUX bus color corrector.
  If inputs with color corrector enabled are selected on an AUX bus that has color corrector enabled, the input signal color corrector will have no effect.
- If inputs with color corrector enabled are selected on the following buses, the input signal color corrector has no effect.
  - CCR 1 and 2 buses
  - DME Utility 1 and 2 buses
  - Frame memory source 1 and 2 buses
- If inputs with through mode enabled are selected on a bus that has through mode enabled, the input signal color corrector will have no effect.

1 In the Engineering Setup >Switcher >Input menu (7332), press [CCR].

The CCR menu (7332.5) appears.
The remaining number of inputs that can use the color corrector is displayed in “Free Input CCR.”

2 Select the target input to set.

3 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.
When disabled, the settings of each function of the color corrector return to their defaults.

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 >CCR menu (7332.5), press [Video Process], turning it on.

For details about the video process, see “Input Video Process” (page 188).

Applying the primary color correction effect

In the <Primary CCR> group of the Engineering Setup >Switcher >Input >CCR menu (7332.5), press [Primary CCR], turning it on.

For details about primary color correction settings, see “Primary Color Correction” (page 188).

Applying the RGB clip effect

In the <RGB Clip> group of the Engineering Setup >Switcher >Input >CCR menu (7332.5), press [RGB Clip], turning it on.

For details about RGB clips, see “RGB Clips” (page 193).

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.

Selecting the Primary Input to use as the Format Converter

On the MVS-7000X, the primary input used by the format converter must be specified.

1 In the Engineering Setup >Switcher >Input menu (7332), press [FC Input Select].

The FC Input Select menu (7332.3) appears.
The status area shows the format converter list on the left and the primary input number list on the right.

2 In the list on the left, select the FC (format converter) number.

3 In the list on the right, select the primary input number.

4 Press [Set].

5 To enter the name of the input signal converted in the format converter, press [FC Name].

6 Enter a name of up to 16 characters in the keyboard window, and press [Enter].

Setting the Frame Delay Function

1 In the Engineering Setup >Switcher >Input menu (7332), select the target input signal to set.

You can select input signals for which the frame delay function is enabled in advance.

2 Set the following parameter.

No.	Parameter	Adjustment
2	Frame Delay	Delay (1 to 8 frames) a)

a) When the signal format is 720P or 1080P, the delay (number of frames) is twice the set adjustment value.

Selecting the Format Converter Conversion Method

This sets the input used for the format converter and the conversion method.

Note

The setup menu display varies if IP converter or 4K up-converter is selected.

For details about the IP converter, see "Setting the IP Converter Conversion Method" (page 441).

For details about the 4K up-converter, see "Setting the 4K Up-Converter Conversion Method" (page 442).

Selecting the target inputs to set

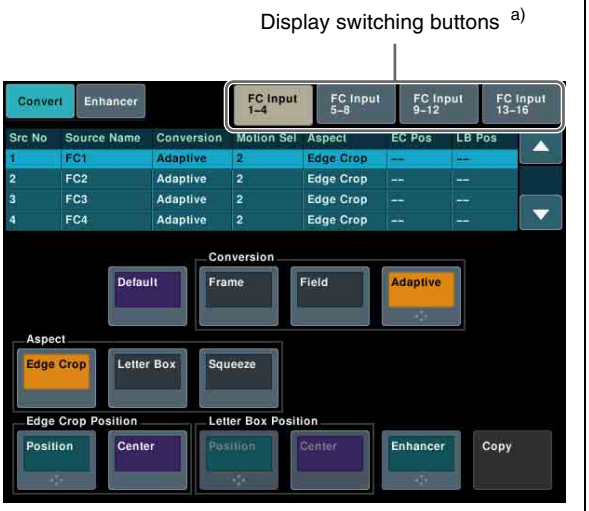
The same settings are applied to each of four groups: FC1 to FC4, FC5 to FC8, FC9 to FC12, and FC13 to FC16.

Notes

- FC9 to FC12 and FC13 to FC16 can be used only on the MVS-8000X.
- For the cross-converter, conversion method settings are not required.

1 In the Engineering Setup >Switcher >Input menu (7332), press [FC Adjust].

The FC Adjust menu (7332.2) appears.



a) These buttons do not appear when the frame delay function is set.

2 Press [FC Input 1-4], [FC Input 5-8], [FC Input 9-12], or [FC Input 13-16] to select the group.

3 Select the target to set.

Setting the up-converter conversion method

1 In the Engineering Setup >Switcher >Input >FC Adjust menu (7332.2), select the target input to set.

2 In the <Conversion> group, select one of the following.

Frame: Conversion in frame units

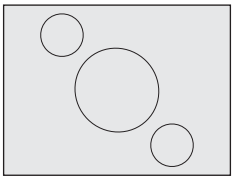
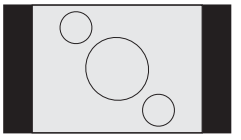
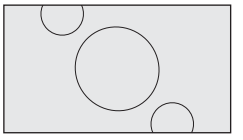
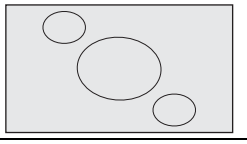
Field: Conversion in field units
Adaptive: Automatically switching between frame mode and field mode
When [Adaptive] is selected, set the following parameter.

No.	Parameter	Adjustment
2	Motion Select	Motion detection sensitivity [a]

a) 1: Still priority mode, 2: Standard mode, 3: Motion priority mode

3 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)	Up-converted image (16:9)
	Edge Crop 
	Letter Box 
	Squeeze 

To set the image position in edge crop up-conversion

1 In the <Edge Crop Position> group of the FC Adjust menu (7332.2), press [Position], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
2	EC Position	Image position

To return the edge crop image to the center
In the <Edge Crop Position> group, press [Center].

To set the image position in letter box up-conversion

1 In the <Letter Box Position> group of the FC Adjust menu (7332.2), press [Position], turning it on.

2 Set the following parameter.

No.	Parameter	Adjustment
2	LB Position	Image position

To return the letterbox image to the center
In the <Letter Box Position> group, press [Center].

To configure the enhancer

1 In the FC Adjust menu (7332.2), 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]

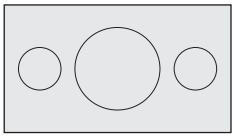
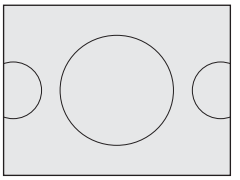
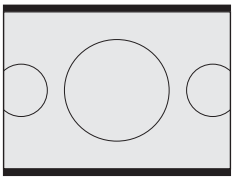
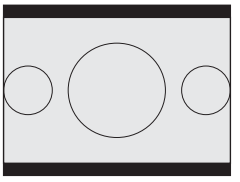
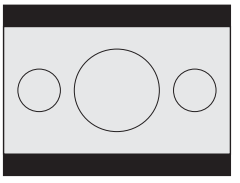
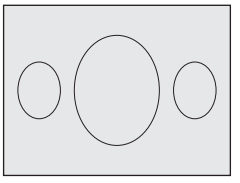
No.	Parameter	Adjustment
2	Frequency	Set the central frequency for edge enhancement
3	H/V Ratio	Set the horizontal/vertical ratio for edge enhancement

Setting the down-converter conversion method

1 In the Engineering Setup >Switcher >Input >FC Adjust menu (7332.2), select the target input to set.

2 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 13:9 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 13:9 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)	Down-converted image (4:3)
	Edge Crop 
	Letter Box 13:9 
	Letter Box 14:9 
	Letter Box 16:9 
	Squeeze 

To set the image position in edge crop up-conversion

Set in the same way as for an up-converter *(see page 440)*.

To configure the enhancer

Set in the same way as for an up-converter *(see page 440)*.

Copying format converter input data

1 In the Engineering Setup >Switcher >Input >FC Adjust menu (7332.2), press [Copy].

The Copy/Swap >Copy >Format Converter menu (3121) appears.

2 In the <Data Select> group, select [Input].

3 Select the copy source and copy destination data.

4 Press [Copy].

Setting the IP Converter Conversion Method

This sets the conversion mode for the IP converter input.

Note

Setting the conversion mode for PI converter output is not required.

1 In the Engineering Setup >Switcher >Input menu (7332), press [FC Adjust].

The FC Adjust menu (7332.2) appears.

2 Select the target input to set.

3 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 between conversion using frame units and field units.
Adaptive Y/C: Detects motion in the luminance and hue signals, and automatically switches between conversion using frame units and field units.

When [Adaptive Y] or [Adaptive Y/C] is selected, set the following parameter.

No.	Parameter	Adjustment
1	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)

Setting the 4K Up-Converter Conversion Method

This sets the conversion method mode and enables/disables the super resolution function used when up-converting.

Note

The conversion mode is enabled only when the input signal format is set to 1080i.

1 In the Engineering Setup >Switcher >Input menu (7332), press [FC Adjust].

The FC Adjust menu (7332.2) appears.

2 Select the target input to set.

3 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 between conversion using frame units and field units.
Adaptive Y/C: Detects motion in the luminance and hue signals, and automatically switches 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)

4 Press [Super Resolution] to enable/disable the super resolution function.

When super resolution is enabled, a sharper image is produced according to the resolution and noise processing adjustments.
[Super Resolution] is enabled by factory default. There is no need to change this under normal circumstances, however, if you want to disable it, press [Super Resolution] to turn it off.

Settings Relating to Signal Outputs

Note

For a format converter dedicated output, Video Clip, V Blank, Through, Safe Title, and 4:3 Crop cannot be set.

Assigning Output Signals

1 In the Engineering Setup >Switcher >Output menu (7333), press [Output Assign].

The Output Assign menu (7333.1) appears.

2 In the <Output Assign> group, select one of the following.

[Re-Entry Source]: The following can duplicated and assigned.
M/E-1 Output 1 to 6 [1)]
M/E-2 Output 1 to 6 [1)]
M/E-3 Output 1 to 6 [1)]
M/E-4 Output 1 to 6 [1)]
M/E-5 Output 1 to 6 [1)]
P/P Output 1 to 6 [1)]
M/E-1 to 5 Proc Video
P/P Proc Video
M/E-1 to 5 Proc Key
P/P Proc Key
DME Monitor Video
DME Monitor Key
Color Corrector 1, 2
Undefined
Color Bkgd 2
Frame Memory 1 to 8

[Aux Bus]: The following cannot be duplicated and assigned.
Preset
Edit Preview
AUX1 to 48

1) M/E output signals assigned using the M/E Output Assign menu.

3 Select the output port number and signal to assign.

For output connectors not assigned, press [Inhibit].

4 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 Vertical Blanking Interval Adjustment and Through Mode

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.
480i: 10 to 19
576i: 6 to 22
1080i/1080PsF: 7 to 20
720P: 7 to 25
1080P: 15 to 41

To return the parameters to their default settings
Press [Default].

4 To enable through mode, press [Through Mode], turning it on.

The through mode can be enabled for the following outputs.
- Aux 1 to 48 outputs
- 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

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 In the Misc >Safe Title menu (3221), press [Safe Title], turning it on, to enable safe title.

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, select one of the following.
80.00%: Set the grid size to 80% of the screen frame.
85.00%: Set the grid size to 85% of the screen frame.
90.00%: Set the grid size to 90% of the screen frame.
100.00%: Set the grid size to 100% of the screen frame (full size).

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 an HD system

In an HD system, this allows you to crop an image having a screen aspect ratio of 16:9 to an aspect ratio of 4:3 for output.

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.

Note

When a screen aspect ratio of 16:9 is selected for all banks in the Engineering Setup >System >Format >Aspect menu (7313.1), the [4:3 Crop] setting is disabled.

Setting Format Converter Outputs

Selecting the format converter conversion method

Open the Engineering Setup >Switcher >Output >FC Adjust menu (7333.6).
The operation is the similar to setting format converter inputs.

For details, see "Selecting the Format Converter Conversion Method" (page 439).

Copying format converter output data

1 In the Engineering Setup >Switcher >Output >FC Adjust menu (7333.6), press [Copy].

The Copy/Swap >Copy >Format Converter menu (3121) appears.

2 In the <Data Select> group, select [Output].

3 Select the copy source and copy destination data.

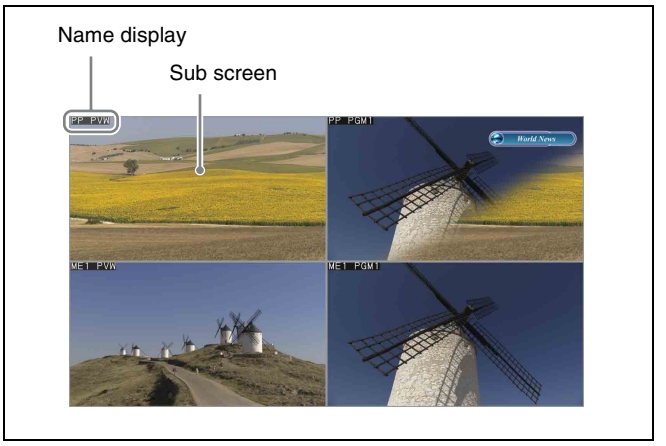
4 Press [Copy].

Configuring Multi Viewer

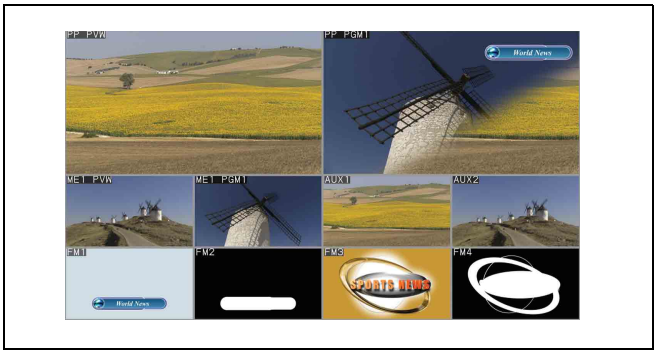
The multi viewer is a function for splitting the screen into sub screens and displaying assigned images in those sub screens.
The screen can be split into 4 or 10 sub screens, and controlled independently using a 2-system multi viewer.

A split window is referred to as a "sub screen."

Example of 4-split screen:



Example of 10-split 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 to set (1 or 2).

The status area shows a list of outputs assigned to the sub screens.

3 In the <Split Mode> group, select the number of split windows.

Split 4: Split the screen into 4 sub screens.
Split 10: Split the screen into 10 sub screens.

4 To add a border to the sub-screens, press [Border Enable], turning it on.

About tally colors

Tallies are shown on the multi viewer screen for the input signals used in the on-air video.
The tally is represented by frames in the following two colors.
Red frame: Video with a red tally.
Green frame: Video with a green tally.

For details about tally settings, see "Setting the On-Air Tally" (page 427) and "Configuring Tally Generation" (page 473).

Note

When [Independ] is set in the Engineering Setup >Panel >Operation >Button Tally menu (7326.9), multi-viewer tallies are not output.

Displaying/hiding the names of sub screens

1 In the Engineering Setup >Switcher >Output >Multi Viewer menu (7333.9), select the target sub screen to set.

2 Press [Name Enable] to display the name (Enable) or hide the name (Disable).

To make the setting for all sub screens, press [All Name Enable].

3 Set the display position of the name.

No.	Parameter	Adjustment
2	Name Position H	Horizontal position
3	Name Position V	Vertical position

Note

If you change any of the parameter values, the name display position will change on all sub screens. You cannot adjust the name display position for each sub screen individually.

Assigning an output signal to a sub screen

1 In the Engineering Setup >Switcher >Output >Multi Viewer menu (7333.9), press [Output Assign].

The Output Assign menu (7333.10) appears.

2 In the list on the left, select the target sub screen to set.

3 In the list on the right, select the target output to set.

Note

You can select the sub screen output from among the signals assigned to number 1 to 24 output connectors (Multi Viewer 1) and number 25 to 48 output connectors (Multi Viewer 2).

4 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 94).

Note

When an AUX mix transition is enabled, the video process and 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, 11 and 12).

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].

Settings Relating to Video Switching

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 the independent key transition mode of the transition control block

In the <Key Transition> group of the Engineering Setup >Switcher >Transition menu (7334), select one of the following.

Same: The transition settings for the on and off directions are shared.

Independ: The transition settings for the on and off directions can be set 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 87).

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 only valid in multi program mode or DSK mode.

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 <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].

3 In the <Non Drop Key> group, select the key setting for a transition including a key.

To execute a transition with the key state maintained, press [Key1] to [Key8], turning them on.

4 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.

Settings Relating to Keys, Wipes, Frame Memory, and Color Correction

Enabling the Input Signal and AUX Bus Color Corrector

You can use the AUX bus and input signal color corrector instead of setting the video process.

Note

The following configuration operations are supported only on switcher board configurations that support the input signal color corrector.
For details about the switcher board configuration required for the input signal color corrector, contact your Sony service or sales representative.

1 In the Engineering Setup >Switcher >Key/Wipe/FM/CCR menu (7335), press [Bus CCR/Input CCR/Video Proc].

The Bus CCR/Input CCR/Video Proc menu (7335.3) appears.

2 In the <CCR/Video Proc> group, press [CCR], turning it on.

The input signal and AUX bus color corrector is enabled for use.

Note

When [CCR] is selected, all video process and video process memory functions on the switcher are disabled.
To use the video process function, select [Video Process].

For details about input signal color corrector settings, see "Setting the Input Signal Color Corrector" (page 438).

Enabling/disabling the color corrector on each AUX bus

When using the color corrector, you can enable/disable the color corrector on each AUX bus.
The maximum number of AUX buses that can have color corrector enabled is 16.

1 In the Engineering Setup >Switcher >Key/Wipe/FM/CCR >Bus CCR/Input CCR/Video Proc menu (7335.3), select the target AUX bus to set.

Note

When AUX mix transitions are enabled, even-numbered buses cannot be selected as the target.

2 Press [Bus CCR] to enable the color corrector (Enable) or disable the color corrector (Disable).

For details about each color corrector function, see "Setting the Color Corrector for an AUX Bus" (page 182).

Setting the Video Process Memory

In the Engineering Setup >Switcher >Key/Wipe/FM/CCR menu (7335) or the Engineering Setup >Switcher >Key/Wipe/FM/CCR >Bus CCR/Input CCR/Video Proc menu (7335.3), press [Video Proc Memory], turning it on, to enable the video process memory.

Note

When [CCR] is selected in the <CCR/Video Proc> group of the Bus CCR/Input CCR/Video Proc menu (7335.3), the video process memory cannot be set.

Setting Show Key

1 In the Engineering Setup >Switcher >Key/Wipe/FM/CCR menu (7335), press [Show Key].

The Show Key menu (7335.1) appears.

2 In the <Show Key Enable> group, select the target signal to set.

3 To set the time for which "show key" is held, 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

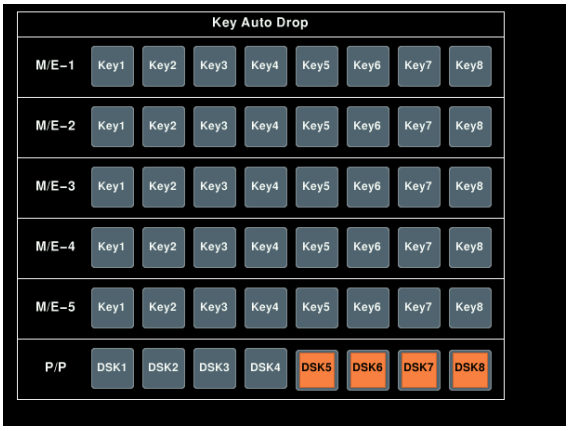
The "key auto drop" function automatically switches off a particular key when you press a cross-point button in a bus that outputs the background on the particular switcher bank.

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 87).

1 In the Engineering Setup >Switcher >Key/Wipe/FM/CCR 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.

Automatically Naming when Saving to Frame Memory

In the Engineering Setup >Switcher >Key/Wipe/FM/CCR menu (7335), press [FM Auto Store], turning it on.

Note

When the signal format is 1080P, this function cannot be used.

Selecting the Bank to Configure

Select the target bank to set, 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/CCR menu (7335), select the mode (Full, Simple, Off).

For details, see "Key Memory" (page 97).

Selecting the processing order of masks and borders

In the <Mask/Border Process> group of the Engineering Setup >Switcher >Key/Wipe/FM/CCR 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/CCR menu (7335), select one of the following.

Normal: The key priority sequence can be set arbitrarily.

Fix: Fixed at the currently set priority sequence.

Note

In DSK mode, [Fix] is set and the sequence cannot be selected.

Setting the operation mode of the key bus [XPT HOLD] button

In the <Xpt Hold Mode> group of the Engineering Setup >Switcher >Key/Wipe/FM/CCR menu (7335), select one of the following.

Key Disable: The [XPT HOLD] button of the key bus functions not only as a cross-point hold button, but also as a key disable button. When the [XPT 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 [XPT HOLD] button of the key bus functions as a cross-point hold button. When the [XPT HOLD] button is enabled, the cross-point selection information in not reflected, even when recalling a snapshot or keyframe effect.

Note

This setting is valid for the attributes of snapshots as well as the operation mode of the [XPT HOLD] button.

To change cross-point hold attributes of a snapshot

When [Key Disable] is selected, key disable is also applied to the cross-point hold attributes.

When [Key Dsbl with Status] is selected, the key disable function is applied, including the key on/off status.

Setting the operation mode when the pattern limit is released

In the <Pattern Limit Transition> group of the Engineering Setup >Switcher >Key/Wipe/FM/CCR 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. Until you move the fader lever or press the [AUTO TRANS] button, the transition is not executed.

Setting the default wipe edge softness

1. In the Engineering Setup >Switcher >Key/Wipe/FM/CCR 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

Enabling selection of all signals for color corrector input

You can select signals generated internally in the switcher as material for input to the color corrector.

To enable, in the Engineering Setup >Switcher >Key/Wipe/FM/CCR menu (7335), press [CCR Intrnl Signl Enbl], turning it on.

Note

When you select an M/E re-entry signal as material for input to the color corrector, a 1H delay occurs to the M/E output signal.

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.

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.

4 In the <Bus Select> group, select [Master Bus] (link source bus).

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

With one of M/E-1 to M/E-5 Trans PGM and P/P Trans PGM selected for [Master Bus], the link setting become effective as soon as you start moving the fader lever.

6 In the <Bus Select> group, select [Linked Bus] (link destination bus).

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, and press [Link Table Set].

No.	Parameter	Adjustment
3	Link Table No	Link table selection

To release the link

In the Engineering Setup >Switcher >Link >Internal Bus Link menu (7336.1), select a link and press [Clear].

Setting a Link Table

1 In the Engineering Setup >Switcher >Link >Internal Bus Link menu (7336.1), press [Link Table Select].

The Link Table Select menu (7336.3) appears.

2 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

3 Press [Link Src Set].

To initialize the set source address

Press [Init Link Table], check the message, then press [Yes].

To change the link number and link table number

Select the link number and link table number, and press [Link Table Set].

No.	Parameter	Adjustment
1	Link No	Target link number to set
3	Link Table No	Link table number

Linking Cross-Point Buttons and GPI Output Ports

Configures links between cross-point buttons, [CUT] button, and [AUTO TRANS] button with the GPI output ports.

1 In the Engineering Setup >Switcher >Link menu (7336), press [GPI Link].

The GPI Link menu (7336.4) appears.

2 Select the GPI output port.

3 Press [GPI Link Adjust].

The GPI Link Adjust menu (7336.5) appears.

4 Select the target to set.

Up to eight links can be configured for each GPI port.

No.	Parameter	Adjustment
1	GPI Port	GPI output port selection
2	Link No	Link number selection
3	Video/ Button No	Selection of video or button name to link

5 In the <Video/Button> group, press [Select].

The selected video or button name is reflected in the status area.

To release a video/button name link
In the <Video/Button> group, press [Clear].

6 Select the target bus to set for the GPI link.

7 In the <Bus> group, select one of the following.

Enable: Enable the GPI link setting for the selected bus.
Disable: Disable the GPI link setting for the selected bus.
All Enable: Enable the GPI link setting for all buses.

Setting the delay

1 In the Engineering Setup >Switcher >Link >GPI Link >GPI Link Adjust menu (7336.5), select the target port to set and the delay value.

No.	Parameter	Adjustment
1	GPI Port	Target GPI output port to set
5	Delay	Delay value for the output port

2 Press [Delay Set].

Setting the re-entry button operation mode

When you select a re-entry button for an M/E bank (upstream M/E bank) in the cross-point control block of another M/E bank (downstream M/E bank), the image of the upstream M/E bank is imported. If a GPI output is linked to the selected cross-point on the A bus[1)] of the upstream M/E bank, the system can be set so that it triggers the GPI output (upstream trigger).
To enable the setting, in the Engineering Setup >Switcher >Link >GPI Link menu (7336.4), press [Re-Entry Enable], turning it on.

1) When the bus fixed mode is set, the target bus changes, depending on the position of the fader lever.

Notes

- Re-entry with this setting enabled is limited to 1 stage only.
- This setting is common to all GPI output ports.
- This setting is enabled only when a re-entry button is selected on buses for which GPI link is set to [Enable] in the GPI Link Adjust menu (7336.5).
- The GPI output is triggered when you press a cross-point re-entry button, when the re-entry button is selected by macro execution, or when you press the re-entry button on the AUX bus remote panel.

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 displays a link list showing link source banks and link destination banks (M/E and PGM/PST), and a selection list.

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 Refer to step **4** and select the M/E or PGM/PST bank to make the link destination, and 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.

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].

Settings Relating to External Device Connections

Setting the 9-Pin Port Device Interface

This section describes settings for the REMOTE1 port as an example.

1 In the Engineering Setup >Switcher >Device Interface menu (7337), press [Remote Assign].

The Remote Assign menu (7337.1) appears.

2 In the <Remote1> group, select the device interface you want to set for the REMOTE1 port.

Editor A: Assign Editor A to the REMOTE1 port.
Editor B: Assign Editor B to the REMOTE1 port.
AUX: Assign AUX to the REMOTE1 port.

The device interfaces which can be selected for REMOTE2 are the same as for REMOTE1. [DME1] can also be selected for REMOTE3, and [DME2] can be selected for REMOTE4.

Note

When REMOTE3 and REMOTE4 are respectively assigned to [DME1] and [DME2], you can switch the AUX bus from the DME (DME-3000/7000) connected to these ports.
At this time, connect the DME input video signals and key signals as follows.

- DME1 video input: AUX1 output
- DME1 key input: AUX2 output
- DME2 video input: AUX4 output
- DME2 key input: AUX5 output

Note that for a DME external video signal, you can select any of AUX1 to AUX14 on the DME. Connect to the selected AUX bus.

Setting Switcher GPI Inputs

1 In the Engineering Setup >Switcher >Device Interface menu (7337), press [GPI Input].

The GPI Input menu (7337.2) appears.

2 Select the target to set.

No.	Parameter	Adjustment
1	Port	Port selection
2	No	Selection of number for action to be assigned

3 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.
No Operation: Not triggered by an input pulse.

4 In the <Target> group, select the target bank to set.

M/E-1 to M/E-5, P/P: Set the actions relating to each bank.
Common/Setup: Set an action relating to all banks, or an action relating to setup.

5 Select the action to set.

No.	Parameter	Adjustment
3	Action	Action selection
4	Reg No	Register number

6 Press [Action Set].

Trigger type and actions list 1)

- **When the trigger type is other than "Level"**
  When Target is M/E-x: Cut, Auto Trans, Keyx Cut, Keyx Auto Trans, SS ? Recall, Keyx SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, KF Rev Run, No Action
  When Target is P/P: Cut, Auto Trans, DSKx Cut, DSKx Auto Trans, FTB Cut, FTB Auto Trans, SS ? Recall, DSKx SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, KF Rev Run, No Action
  When Target is Common/Setup: FM Src1 Field Freeze, FM Src1 Frame Freeze, FM Src2 Field Freeze, FM Src2 Frame Freeze, FM Src1 Freeze Off, FM Src2 Freeze Off, FM Src1 Clip Record, FM Src1 Clip Stop, FM Src2 Clip Record, FM Src2 Clip Stop, FM1 to FM8 Clip Cueup, FM1 to FM8 Clip Play, FM1 to FM8 Clip Stop, User1 to 8 SS ? Recall, User1 to 8 EFF ? Recall, User1 to 8 EFF ? Recall & Run, User1 to 8 KF Run, User1 to 8 KF Stop, User1 to 8 KF Rewind, User1 to 8 KF Reverse Run, No Action
- **When the trigger type is "Level"**
  When Target is M/E-x or P/P: Aspect, Bkgd A Side Flags, Bkgd B Side Flags, No Action
  When Target is Common/Setup: Format, Aspect, Level Enable, 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)
DSKx: where x is the DSK number (1 to 8)

Notes

- "Level Enable" is a function that determines whether GPI inputs are enabled ("Enable") or disabled ("Disable") for the "Aspect" and "Format" actions that can be used when the trigger type is "Level". When "Level Enable" is used, if the input is "Disable" then it is not possible to switch "Aspect" or "Format" by GPI input.
  If a GPI action is triggered just as system power is turned off, such as by switching "Aspect" or "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.
- When using the format converter with "Action" set to "Format," you can set the conversion format of the format converter for "FC Input 1-4," "FC Input 5-8," "FC Input 9-12" (MVS-8000X only), "FC Input 13-16" (MVS-8000X only), "FC Output 1-2," and "FC Output 3-4."

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 >Switcher >Device Interface >GPI Input menu (7337.2), select an action and press [H/L Set].

The H/L Set menu (7337.3) 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 "Format," press [H Set] or [L Set] in the <SWR> group.

Notes

- When the action is "Format," these settings conflict with the current settings, but after making the settings, agreement is restored after a pulse change or power off/on.

- When the action is “Bkgd A Side Flags” or “Bkgd B Side Flags,” the levels are fixed, as follows.
  High level: Off
  Low level: On

To set the level for the format converter

1 Select the “Format” action in step **5** in *“Setting Switcher GPI Inputs” (page 452)*.

The format converter list appears.

2 Select the target format converter to set.

3 Refer to step **2** in *“Configuring level settings” (page 453)* and select a setting (signal format).

4 In the <FC Input/Output> group, press [H Set] or [L Set].

Setting Switcher GPI Outputs

1 In the Engineering Setup >Switcher >Device Interface menu (7337), press [GPI Output].

The GPI Output menu (7337.4) appears.

2 Select the target to set.

No.	Parameter	Adjustment
1	Port	Port selection

3 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.

No Operation: The trigger has no effect on the relay state or the output level.

4 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.

5 In the <Source> group, select the source bank to set.

M/E-1 to M/E-5, P/P: Set the actions relating to each bank.

Common: Set an action relating to error status.

6 Select the action to set.

No.	Parameter	Adjustment
2	Action	Action selection
5	Reg No	Register number

7 Press [Action Set].

Trigger type and actions list [1)]

- **When the trigger type is other than “Status”**
  When Source is M/E-x: Cut, Auto Trans, Keyx Cut, Keyx Auto Trans, Keyx SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, No Action
  When Source is P/P: Cut, Auto Trans, DSKx Cut, DSKx Auto Trans, FTB Cut, FTB Auto Trans, DSKx SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, No Action
  When Source is Common: No Action
- **When the trigger type is “Status”**
  When Source is M/E-x: Keyx On, No Action
  When Source is P/P: DSKx On, No Action
  When Source is Common: Error Make, Error Break, 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)
DSKx: where x is the DSK number (1 to 8)

Testing trigger output

In the Engineering Setup >Switcher >Device Interface >GPI Output menu (7337.4), press [Test Fire].
This outputs a trigger from the selected output port.

Note

This is no output when the trigger type is “Status.”

Setting AUX Bus Control

1 In the Engineering Setup >Switcher >Device Interface menu (7337), press [Aux Control].

The Aux Control menu (7337.5) appears.

2 In the <Control> group, select the target 9-pin port to set.

Remote1: Make settings for the REMOTE1 port.
Remote2: Make settings for the REMOTE2 port.
Remote3: Make settings for the REMOTE3 port.
Remote4: Make settings for the REMOTE4 port.

3 Select the AUX bus.

4 In the <Control Mode> group, select one of the following.

Enable: Enable control of the port selected in step **2**.
Disable: Disable control of the port selected in step **2**.
Manual: Set whether control of the port selected in step **2** is enabled according to the setting in the Misc menu.

5 Repeat steps **2** to **4** as required to set other ports.

Setting the Interface Between the DME and the Switcher

1 In the Engineering Setup >Switcher >Device Interface menu (7337), press [DME Type Setting].

The DME Type Setting menu (7337.6) appears.

2 In the <DME1 Type> group and <DME2 Type> group, set DME1 and DME2 to one of the following.

Dedicated: The DME is connected via a dedicated interface.
SDI: The DME is connected via an SDI interface.

Note

If the system signal format is set to 1080P and the DME input/output signal format is set to Dual Link Mode, the SDI interface cannot be selected.
For details about the connection of DME units and the switcher, refer to the MVS-8000X-C/7000X-C Installation Manual.

3 In the <DME Assignment for Proc Key> group, select one of the following.

Single DME unit: Mode in which a processed key operation is executed with a dedicated interface DME only or an SDI interface DME only.
Dual DME units: Mode in which two processed key operations, one each using a dedicated interface DME and an SDI interface DME, can be executed simultaneously on the same M/E. When this mode is selected and a signal is combined with a processed key that uses an SDI interface DME, select the material for the second channel not on the DME external video bus, but on the AUX bus.

Setting AUX Bus Outputs and Re-entry Inputs

This sets the signal input to the DME (AUX bus output) and the signal returned as the switcher primary input (re-entry input).

1 In the Engineering Setup >Switcher >Device Interface >DME Type Setting menu (7337.6), press [DME SDI Interface].

The DME SDI Interface menu (7337.7) appears.

2 Select the target DME channel to set.

Note

When using the MVE-8000A, it is not possible to select DME 1 Ext In to DME 8 Ext In.

3 In the <Select> group, select the AUX bus or re-entry to assign to the DME channel.

Aux Bus: Set the AUX bus.
Re-Entry: Set re-entry.

4 Depending on the selection in step **3**, set the following parameters.

When [Aux Bus] is selected

No.	Parameter	Adjustment
2	Src No	AUX bus number

When [Re-Entry] is selected

No.	Parameter	Adjustment
2	Src No	Re-entry number

5 Press [Set].

6 Repeat steps **2** to **5** as required.

Setting the Key Off Mode for Control from an Editor

This selects the mode for turning off keys when the “All Stop” command is received from an editor.

1 In the Engineering Setup >Switcher >Device Interface menu (7337), press [Editor I/F].

The Editor I/F menu (7337.8) appears.

2 In the <Key Off Mode> group, select the mode.

All: When the “All Stop” command is received, all keys for the corresponding regions are turned off.
Specified: When the “All Stop” command is received, only the keys for the corresponding regions specified by the editor are turned off.

Note

When the “All Stop” command is received during transition execution, the keys selected for the next transition are also turned off.

DME Setup

Chapter 21

About DME setup

Configure DME1 and DME2.
When the signal format is 1080P, up to four DMEs can be connected, so configure DME1 to DME4.

This section describes settings for DME1 as an example.

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.

Adjusting DME System Phase

This adjusts the DME reference phase.

1 In the Engineering Setup >DME >Input menu (7341), press [System Phase].

2 Set the following parameters.

No.	Parameter	Adjustment
1	DME1 Phase	DME1 system phase adjustment
2	DME2 Phase	DME2 system phase adjustment

Note

When the signal format is 1080P, you can configure DME3 and DME4 using the [DME3 Phase] and [DME4 Phase] parameters.

Setting the TBC Window Center Position

1 In the Engineering Setup >DME >Input menu (7341), press [TBC Center].

The TBC Center menu (7341.1) appears.
The status area shows the TBC center positions for external input signals on each DME.

Note

The TBC center position values for external input signals are shown only when an MVE-9000 or MKS-7470X/7471X is used.

2 Select the target input number to set.

3 In the <Video/Key> group or <External Video> group, set the TBC center position (0H, 0.5H, or 1H).

The settings in the <Video/Key> group are valid only when using an MVE-8000A/9000 SDI interface.
The settings in the <External Video> group are valid only when using an MVE-9000 or MKS-7470X/7471X.

Settings Relating to Signal Outputs

Adjusting the DME Output Video Clip Level

When the MVE-8000A/MVE-9000 is used with an SDI interface, you can adjust the DME output video clip levels.

1 In the <DME1 (Ch1-Ch4)> group of the Engineering Setup >DME >Output menu (7343), press [Clip Adjust].

2 Set the following parameters.

No.	Parameter	Adjustment
1	White Clip	White clip
2	Dark Clip	Dark clip
3	Chroma Clip	Chroma clip

To return the settings to the defaults
In the <DME1 (Ch1-Ch4)> group, press [Default].

Setting the Monitor Output

You can select the signals output from the four monitor output systems.

1 In the Engineering Setup >DME >Output menu (7343), press [Monitor Output].

The Monitor Output menu (7343.1) appears.

2 In the <Select> group, select the target DME to set.

3 In the list on the left of the status area, select the target monitor to set.

Note

On the MVE-8000A, when the signal format is 1080P, Moni Out#2 and Moni Out#4 cannot be selected.

4 In the list on the right of the status area, select the signal you want to output.

5 Press [Set].

Settings Relating to External Device Connections

Setting the Editor Protocol

In the <DME1 Editor Protocol> group of the Engineering Setup >DME >Device Interface menu (7344), select the protocol of the editor port.

DME: Control using DME protocol through the editor port.

VTR: Control using VTR protocol through the editor port.

Note

This setting is disabled for the MKS-7470X/7471X.

Setting the Editor Port Mode

In the <DME1 Editor Port Setting> group of the Engineering Setup >DME >Device Interface menu (7344), select the editor port mode.

Common: Control channels 1 to 4 together using editor ports 1 to 4.

Independ: Control channels 1 to 4 individually using editor ports 1 to 4.

Note

This setting is disabled for the MKS-7470X/7471X.

Setting DME GPI Inputs

Set the GPI input port and trigger polarity, and configure action settings.

Note

On the MVE-8000A, when GPI inputs are set, the Ch1/Ch2 settings apply to DME1/DME3, and the Ch3/Ch4 settings apply to DME2/DME4.

1 In the Engineering Setup >DME >Device Interface menu (7344), press [DME1 GPI Input].

The DME1 GPI Input menu (7344.1) appears.

2 Select the target to set.

No.	Parameter	Adjustment
1	Port	Input port selection
2	No	Selection of number for action to be assigned

3 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.

No Operation: Not triggered by an input pulse.

4 In the <Target> group, select what this applies to (Ch1 to Ch4, or Proc).

5 Select the action to set.

No.	Parameter	Adjustment
3	Action	Action selection
4	Reg No	Register number

6 Press [Action Set].

Trigger type and actions list

- **When the trigger type is other than "Level"**
  When Target is Ch1, Ch2, Ch3, or Ch4: Freeze, SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, KF Reverse Run, No Action
  When Target is Proc: No Action
- **When the trigger type is "Level"**
  When Target is Ch1, Ch2, Ch3, or Ch4: Aspect, No Action
  When Target is Proc: Format Aspect, Level Enable, No Action

Notes

- "Level Enable" is a function that determines whether GPI inputs are enabled ("Enable") or disabled ("Disable") for the "Aspect" and "Format" actions that can be used when the trigger type is "Level". When "Level Enable" is used, if the input is "Disable" then it is not possible to switch "Aspect" or "Format" by GPI input.
  If a GPI action is triggered just as system power is turned off, such as by switching "Aspect" or "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.

- When the DME is an MKS-7470X/7471X, “Format” is disabled.

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 >DME >Device Interface >DME1 GPI Input menu (7344.1), select an action and press [H/L Set].

The H/L Set menu (7344.2) appears.

2 Select the setting.

No.	Parameter	Adjustment
1	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.

Setting DME GPI Outputs

Set the GPI output port and trigger polarity, and configure action settings.

Note

On the MVE-8000A, when GPI outputs are set, the Ch1/Ch2 settings apply to DME1/DME3, and the Ch3/Ch4 settings apply to DME2/DME4.

1 In the Engineering Setup >DME >Device Interface menu (7344), press [DME1 GPI Output].

The DME1 GPI Output menu (7344.3) appears.
The output port is fixed to number 1.

2 In the <Trigger Type> group, select the trigger polarity.

Status: The relay opens/closes or the output goes high/low level in response to the status.
No Operation: The trigger has no effect on the relay state or the output level.

3 Select the action to set.

You can select Error Make, Error Break, or No Action.

4 Press [Action Set].

DCU Setup

Chapter 22

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 and 9-pin serial port on the rear panel. 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).

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

On the MKS-X2700, 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.

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.
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.

4 Select the action to set.

No.	Parameter	Adjustment
2	Action	Action selection
4	Aux Bus No	AUX bus selection
5	Reg No	Register number
5	Src No	Source signal selection

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 DSKx Cut, P/P DSKx Auto Trans, FTB Auto Trans, FTB Cut, Master SS ? Recall, SS ? Recall, M/E-x Keyx SS ? Recall, P/P DSKx SS ? Recall, Master Effect ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, FM Src1 Field Freeze, FM Src1

Frame Freeze, FM Src1 Freeze Off, FM Src2 Field Freeze, FM Src2 Frame Freeze, FM Src2 Freeze Off, FM Src1 Clip Record, FM Src1 Clip Stop, FM Src2 Clip Record, FM Src2 Clip Stop, FM1 to FM8 Clip Cueup, FM1 to FM8 Clip Play, FM1 to FM8 Clip Stop, Shotbox ? Recall, Macro Take, Macro ? Recall, No Action
Aux ? O'ride Src ?? [2)]

- **When the trigger type is "Level"**
  System Format, System Aspect, M/E-x Aspect, P/P Aspect, DME Ch1 Aspect, DME Ch2 Aspect, DME Ch3 Aspect, DME Ch4 Aspect, DME Ch5 Aspect, DME Ch6 Aspect, DME Ch7 Aspect, DME Ch8 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)
DSKx: where x is the DSK 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.
- When using the format converter with "Action" set to "System Format," you can set the conversion format of the format converter for "FC Input 1-4," "FC Input 5-8," "FC Input 9-12" (MVS-8000X only), "FC Input 13-16" (MVS-8000X only), "FC Output 1-2," and "FC Output 3-4."
- 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.

To set the level for the format converter

1 Select the "System Format" action in step **4** in *"Configuring GPI Inputs" (page 462)*.

The format converter list appears.

2 Select the target format converter to set

3 Refer to step **2** in *"Configuring level settings" (page 463)* and select a setting (signal format).

4 In the <FC Input/Output> group, press [H Set] or [L Set].

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).

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

On the MKS-X2700, select 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.

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.

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.

5 Select the action to set.

No.	Parameter	Adjustment
2	Action	Action selection
5	Reg No	Register number
5	GPI No	GPI 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 DSKx SS ? Recall, No Action
- **When the trigger type is "Status"**
  M/E-x Keyx SS ? Recall, P/P DSKx SS ? Recall, M/E-x Keyx On, P/P DSKx On, Error Make, Error Break, Keep Make, Keep Break, Device Recording, 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)
DSKx: where x is the DSK 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."

Serial Port Settings

This sets the protocol (device type) to match the device connected to a 9-pin serial port. You also select the control panel used for device operations.

Configuring Serial Port Settings

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial Port Assign menu (7355), select one of the following.

DCU1: Set SIU1 ports.
DCU2: Set SIU2 ports.

2 Select the serial port.

No.	Parameter	Adjustment
1	Port No	Serial port

Note

On the MKS-X2700, select 1 for the slot and a value in the range 1 to 6 for the port.

3 Select the device type corresponding to the connected device.

1. No Assign: Nothing is connected to the serial port.
2. P-Bus: P-Bus compatible device
3. VTR: VTR
4. DDR VDCP: Disk recorder (video disk communication protocol)
5. Simple VDCP: Disk recorder with low-performance communications (video disk communications protocol)
6. DDR Odetics: Disk recorder (Odetics protocol)
7. Extended VTR (Abekas A53 protocol)

4 Press [Device Type Set].

5 To enter the name of the serial port, press [Set] in the <Name> group.

Enter a name of up to 16 characters in the keyboard window, and press [Enter].
If no name is set for the serial port, "DCUd_PORTs_p" is displayed.
d: 1, 2 (DCU No)
s: 1 to 6 (Slot No)
p: 1 to 6 (Port No)

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 serial port settings

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the serial port.

3 Press [Clear].

Configuring Detailed Settings for an External Device Connected to the Serial Port

After configuring the serial port, configure detailed settings for operation of the connected external device.

Configuring detailed settings for a P-Bus device

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the serial port connected to the target P-Bus device to set.

3 Press [Port Setting].

The P-Bus Setting menu (7355.1) appears.
The target serial port, slot number, device type, serial port name, and PNL number appear at the top of the status area. The device name and response speed settings state for each command appears at the bottom on the status area.

4 Select an ID for which to set a device name.

5 In the <Name> group, press [Set].

6 Enter a 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 field (number of fields)

9 Press [Delay Set].

10 Repeat steps **4** to **9** as required to set other commands.

Configuring detailed settings for a VTR

1 In the <DCU Select> group of the Engineering Setup >DCU >Serial Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the serial port connected to the target VTR to set.

3 Press [Port Setting].

The VTR Setting menu (7355.2) appears.
The target serial port, slot number, device type, serial port name, PNL number, and timecode source appear at the top of the status area. The VTR constants appear 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 reference signal specified here.

5 Select the target item to set.

Block	Byte	Item
BLOCK 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
BLOCK 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 Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the serial 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.

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 recalled file as 00:00:00:00.
SOM based: Mode in which sensing occurs using the timecode saved in the recalled file.

Note

The details of the above operation modes depend on the connected device. For more information, consult 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 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 function: Replay the recalled file in a continuous loop. Press [Loop] to enable/disable the function.
Recue function: After playing the recalled 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 Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the serial port connected to the target disk recorder to set.

3 Press [Port Setting].

The DDR Odetics Setting menu (7355.7) appears. The target serial port, slot number, device type, serial port name, and PNL number appear at the top of the status area. The setting status 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 recalled file as 00:00:00:00.
SOM based: Mode in which sensing occurs using the timecode saved in the recalled file.

Note

The details of the above operation modes depend on the connected device. For more information, consult 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 Port Assign menu (7355), select the target to set (DCU1 or DCU2).

2 Select the serial port connected to the target Extended VTR to set.

3 Press [Port Setting].

The Extended VTR Setting menu (7355.5) appears. The target serial port, slot number, device type, serial port name, and PNL number appear at the top of the status area. The response speed setting status 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.

Router Interface and Tally Setup

Chapter 23

Router Interface Settings

In this system, the interface with a router (routing switcher) uses the S-Bus protocol. It is therefore necessary to assign inputs and outputs of the switcher and so on to S-Bus space.
The settings used are common to both parallel and serial tallies.

Assigning Switcher Inputs/Outputs to S-Bus Space

Assign the switcher matrix to S-Bus space, and then select the matrix size and positioning level, source address settings, and so on.

1 In the <Device> group of the Engineering Setup >Router/Tally >Router menu (7361), select the target device to set.

SWR1: Settings apply to switcher 1.
SWR2: Settings apply to switcher 2.

Note

When there are two switchers on the same network, the SWR2 (second switcher) settings are required. If there is only one switcher, the settings are not required.

2 In the <Matrix Size> group, select the matrix size.

320×348 (Standard): Assign the switcher input/outputs to S-Bus space at 320×348 size.
272×274: Assign the switcher input/outputs to S-Bus space at 272×274 size.
182×256: Assign the switcher input/outputs to S-Bus space at 182×256 size.
136×138: Assign the switcher input/outputs to S-Bus space at 136×138 size.
128×128: Assign the switcher input/outputs to S-Bus space 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 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 space. Configure the matrix size, assignment level, source address, and other settings.

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 102.

4 Set the following parameters.

No.	Parameter	Adjustment
1	Source	Source start address
2	Destination	Destination start address
3	Level	S-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 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 an S-Bus description name

Set the group number of an S-Bus description 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 [a]

a) When a value of 1 to 7 is selected, a "0" description name appears if a name is not set.
If the "0" description name is also not registered, "Type" and "No" appears.

3 In the <Alias Name Gp> group, press [Set].

Note

Send the description name selected here from the router.

Tally Group Settings

Using the S-Bus protocol, tally control is possible for groups 1 to 8.
In this system, you select groups to use from among groups 1 to 4 or among groups 5 to 8. You can also set whether or not to transfer the tally information over the S-Bus.

1 Open the Engineering Setup >Router/Tally >Group Tally menu (7362).

2 To use both groups 1 to 4 and groups 5 to 8, press [All Group Enable], turning it on.

3 In the <Tally Group> group, select groups from among groups 1 to 4 or among groups 5 to 8.

To select more than one group, select groups with consecutive numbers from among the groups.

4 To enable tally information on the S-Bus, press [SBus Tally Enable], turning it on.

Wiring Settings

When configuring a system in which the switcher inputs and outputs are connected to a router, the connection configuration (referred to as “wiring”) must be set S-Bus space (inputting physical connection information).
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 Refer to steps **2** and **3** in *“Configuring Wiring” (page 472)* and modify the parameters.

It is not possible to modify the settings for multiple destinations at the same time. Specify the target address to modify using the [Destination (Address)] parameter.

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 **5** in *"Configuring Tally Generation" (page 473)* 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].

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

Configure the parallel port on which to output tally information for each source and destination. For each tally output terminal number, specify the tally type, and source address or destination level and address.

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 destination address and level.

The level setting is only required when [Dest] is selected in step **4**.

No.	Parameter	Adjustment
1	Address	Destination address
2	Level	Destination level

6 To set the tally type, set the following parameter.

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

There are two serial tally ports in each system interface unit.
Configure settings, including tally type and source address, for each serial tally port.

Note

The system interface units that support serial tally output are SIU1 to SIU4.

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

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 Select the bit number of the port.

4 Select the 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.

User Setup

Chapter 24

Source Patching

Source patching is a function that automatically converts recorded signal pairs into data that allows key snapshots, snapshots, and keyframes to be used without modification on other systems.

In the following description, there are two different switcher systems referred to as switcher A and switcher B.

Source Patching Operation Flow

On switcher A, assign a name (user source name) to each signal pair.

↓

Export a user source name file to a removable drive.

↓

On switcher B, import the user source names from the removable drive.

↓

Create a signal pair conversion correspondence table (patch table).

↓

On switcher B, recall the snapshot, key snapshot, or keyframe file created using switcher A (signal pairs are substituted according to the patch table).

Exporting a User Source Name File to a Removable Drive

On switcher A, use the following procedure.

1. Open the User Setup >Source Patch >User Source Name menu (7211).
2. In the list on the left, select the pair to set.
3. Press [Usr Src Name].
4. Enter a name of up to 16 characters in the keyboard window, and press [Enter].
5. Repeat steps **2** to **4** to set all of the necessary names.
6. Press [File >Exp Usr Src Name].

   The File >Setup, Init, VKMem >Export User Source Name menu (7116) appears.
7. Select the removable drive in the export destination control device selection area, and press [⟶ Export].

   The user source name file is exported to the removable drive.

To apply the pair settings in the patch table to the menu

Press [Apply Patch Tbl].

Creating a Patch Table (Conversion Table)

Load the removable drive created on switcher A onto switcher B, and use the following procedure.

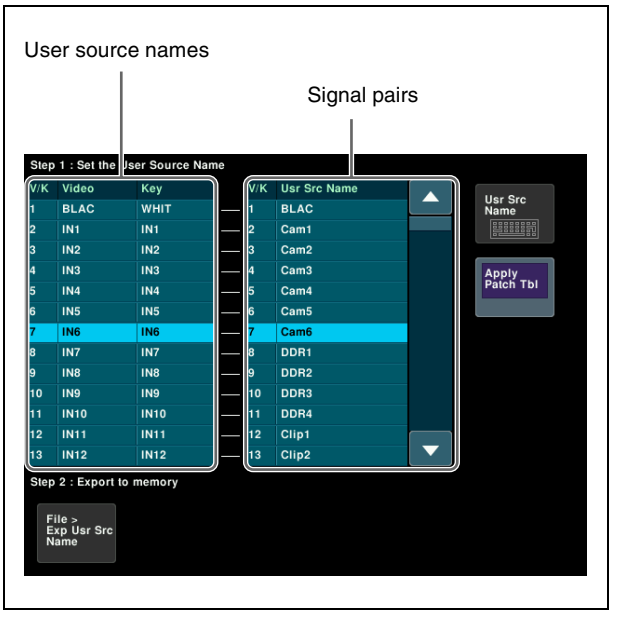
1. Open the User Setup >Source Patch >Patch Table menu (7212).
2. Press [File >Imp Usr Src Name].

   The File >Setup, Init, VKMem >Import User Source Name menu (7117) appears.
3. Select the removable drive in the import source control device selection area, and press [⟵ Import].

   The user source name file is imported from the removable drive.
4. Press [Patch Table Assign].

   The Patch Table Assign menu (7212.1) appears. The switcher A user source names imported in step **3** are displayed in the list on the left. The video and key

pairs configured on switcher B are displayed in the list on the right.



5 In the list on the left, select the target user source name to set.

6 In the list on the right, select the signal pair you want to assign.

7 In the <Table Assign> group, press [Set].

The video/key signal name selected in the list on the right is reflected in the list on the left.

8 Repeat steps **5** to **7** to create the patch table.

You can also perform the following edit functions.

To insert above the signal name selected in the list on the left
In the <Table Assign> group, press [Insert].

To delete the signal name selected in the list on the left
In the <Table Assign> group, press [Delete].

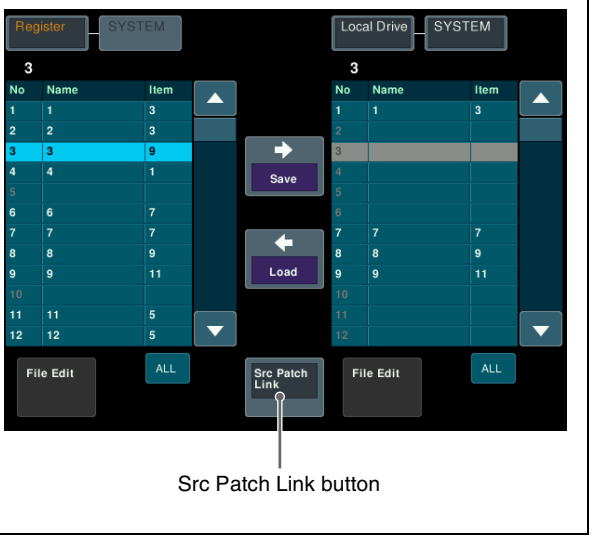
Replacing Signal Pairs Using the Patch Table

Source patching is useful for key snapshots, snapshots, and keyframes.
This section describes operation of snapshots as an example.

Copy a snapshot file created on switcher A to the removable drive in preparation.

1 In the User Setup >Source Patch >Patch Table menu (7212), press [File >Snapshot].

The File >Snapshot >Snapshot menu (7131) appears.



2 In the list on the right, select the file you want to recall to the register.

3 Press [Src Patch Link], turning it on.

4 Press [← Load].

The snapshot substituted for the signal pair, according to the patch table, is recalled on switcher B.

Communications Status

In the Diag menu, you can check the LAN communications status within the system.

Communications Status Display

Open the Diag >System Info >LAN Status menu (7431).

The following information is displayed.
Device: Devices that send information
Target: Devices that receive information
Status: Connection status

- Connected: Ready for communication from Device to Target.
- Not Connected: Not Ready for communication from Device to Target.

Note

System configuration devices are displayed only when connected.

Appendix

Wipe Pattern List

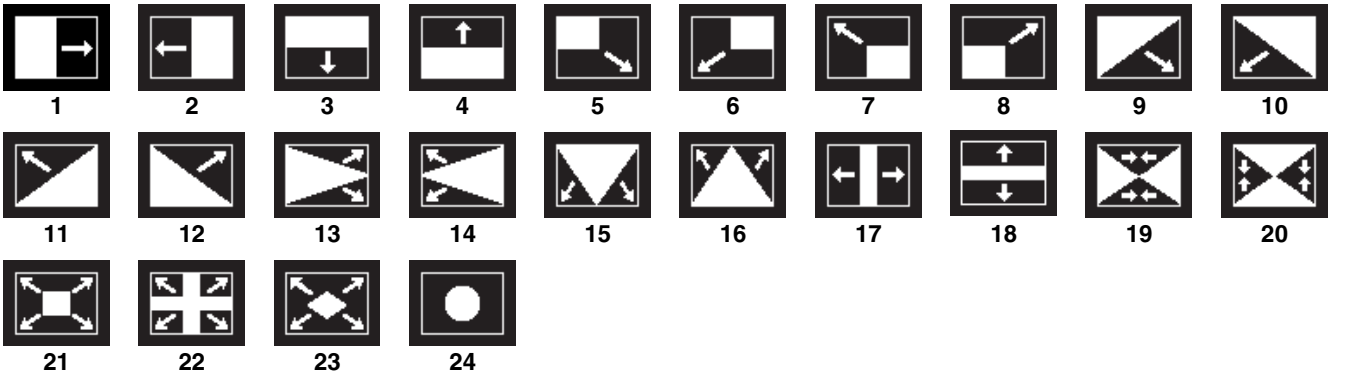
Interpreting the illustrations for patterns
The black part of the pattern represents the old video, and the white part the new video, with the wipe taking place in the direction of the arrow.

Note

When 3M/E mode or 4M/E mode is selected on the MVS-7000X, there are cases in which “U2” (utility 2 bus) appears as “U1” (utility 1 bus), and “U2” does not appear.

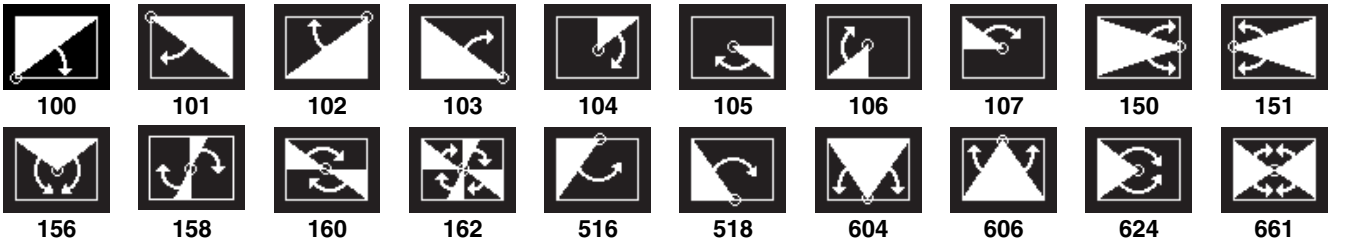
Wipe Pattern List

Standard wipes

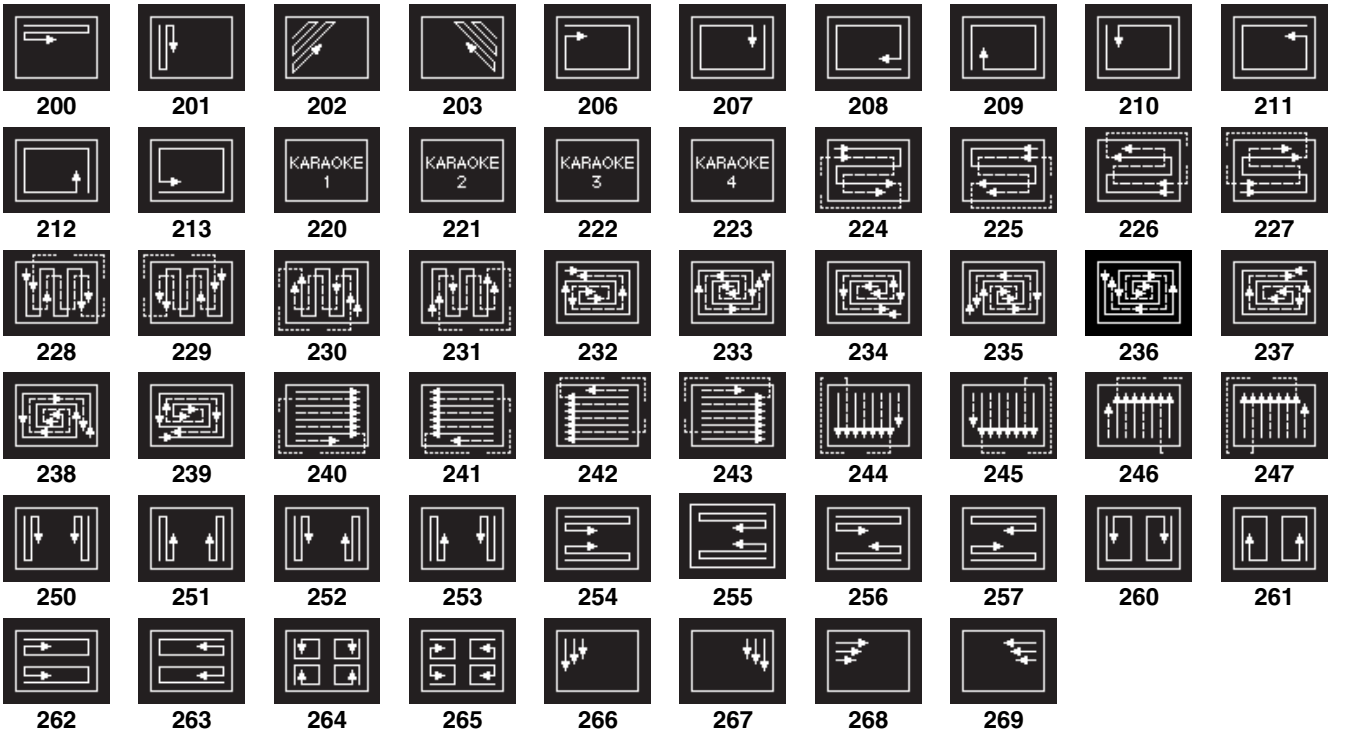


Enhanced wipes

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

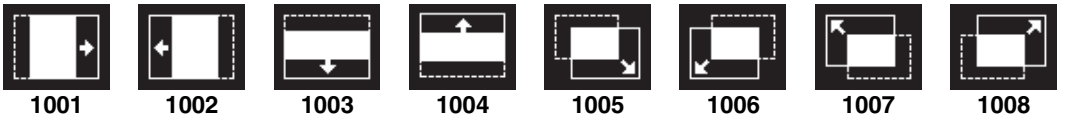
Random/diamond dust wipes

270 271 272 273 274

DME Wipe Pattern List

DME wipe patterns available in 1-channel mode

Slide

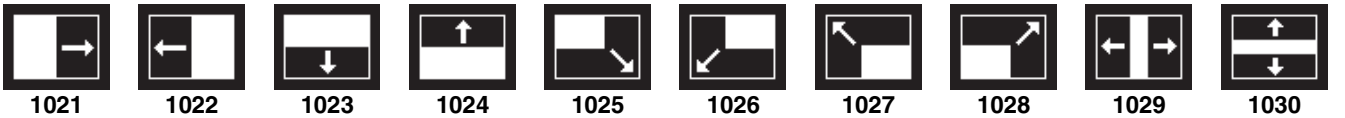


1001 1002 1003 1004 1005 1006 1007 1008

Split

1011 1012 1013

Squeeze



1021 1022 1023 1024 1025 1026 1027 1028 1029 1030


1031

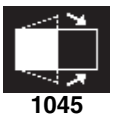
Door

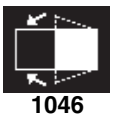

1041


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

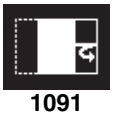

1072

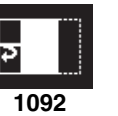

1074


1076


1077


1088


1091

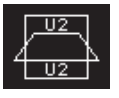

1092


1093


1094

Flip tumble


1101


1102


1103


1104


1109

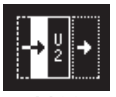

1110


1121


1122


1124


1131


1132


1133

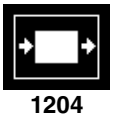

1135

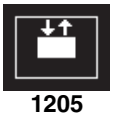
Frame in-out


1201


1202


1203


1204


1205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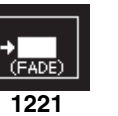
1208



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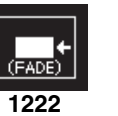

1222

1223

1224

Picture-in-picture


1251

Page turn


1301


1302


1303


1304


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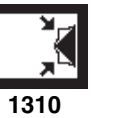
1309


1310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Roll


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1322


1323


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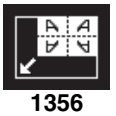
1350

Mirror


1355


1356


1357


1358

Sphere


1365

Character trail


1371


1372

Wave

1378

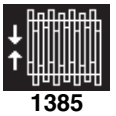
1379

Ripple


1381

Split slide


1384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1386


1387


1388


1389

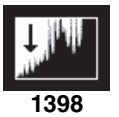
Sparkle

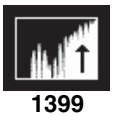

1391


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

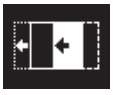
• • •

1999

DME wipe patterns available in 2-channel mode

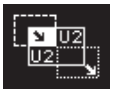
Slide


2601

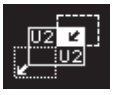

2602


2603


2604



2605



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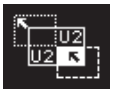

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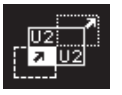
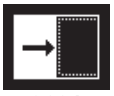


2608

Squeeze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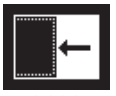
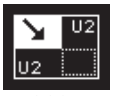

2622


2623


2624



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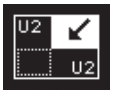

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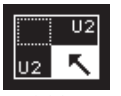

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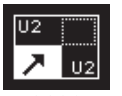
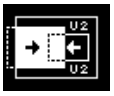


2628

3D trans



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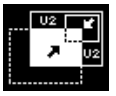
2632



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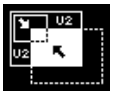
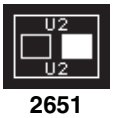


2634

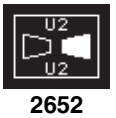
2642

2644

Picture-in-picture



2651



2652

Page turn


2701


2702


2703


2704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2713


2715


2716


2717


2718


2741


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Roll


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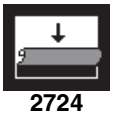
2722


2723


2724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2738


2746


2747


2748


2749


2750

Brick


2801


2802


2803


2804


2811

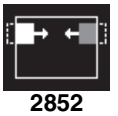

2812


2813


2814

Frame in-out

2851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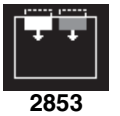
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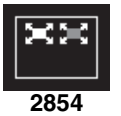
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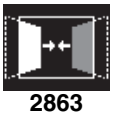
2861

2862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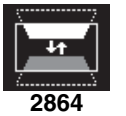

2864

User programmable DME

The illustrations for patterns 2901 to 2999 show an effect register number or register name.

2901

2999

DME wipe patterns available in 3-channel mode

Brick


3601

User programmable DME

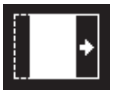
The illustrations for patterns 3901 to 3999 show an effect register number or register name.

3901

3999

Resizer DME Wipe Pattern List

Slide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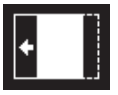
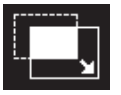

7002


7003


7004

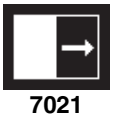

7005


7006


7007


7008

Squeeze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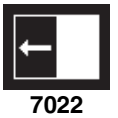
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7023

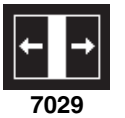

7024


7025


7026


7027


7028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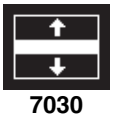

7030

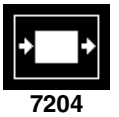

7031

Frame in-out


7201


7202


7203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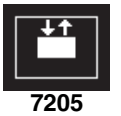
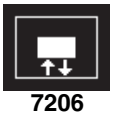

7205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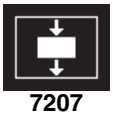
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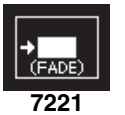
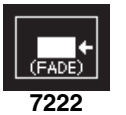
7208



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.

For details, see "Disabled Operation and Settings Menus" (page 510).

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
  - CCR >CCR1 menu and CCR >CCR2 menu
- Parameter units
  - Menus that display "Yes" in the "Default Recall" column in the menu tree.

M/E-1 Menu

The functions and configuration of the M/E-1, M/E-2, M/E-3, M/E-4, and M/E-5 menus are the same.
But the menu page numbers vary as follows.

- M/E-1 menu: 11XX
- M/E-2 menu: 12XX
- M/E-3 menu: 13XX
- M/E-4 menu: 81XX
- M/E-5 menu: 82XX

This section describes the M/E-1 pages as an example.

Note

M/E-5 menus are displayed only in 6M/E configurations on the MVS-7000X.

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]	HF1: Type (1111)			Yes [g]
		Chroma Adjust (1111.1)		Yes [g]
		Matte Adjust (1111.2) [b]		Yes
			Mix Ptn Select (1112.2) [c]	Yes
			Pattern Select (1116.2) [c]	–
			Matte Adjust (1112.1)	Yes [g]
			Wipe Adjust (1116.1)	Yes [g]
		Pattern Select (1116.2) [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 (1116.2) [f]	–
			Main Mask (1113) [f]	Yes [g]
			Matte Adjust (1112.1)	Yes [g]
			Wipe Adjust (1116.1)	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: Processed Key/Resizer (1115)			Yes
		Monitor (1115.1)		–
		Border/Crop (1115.2)		Yes
		Resizer Process (1115.3)		Yes
		Enhanced Effect (1115.4)		Yes
			Mask (1115.5)	Yes
		Rotation (1115.6)		Yes
	HF6: Transition (1116)			Yes [g]
		Wipe Adjust (1116.1)		Yes [g]
			Pattern Select (1116.2)	–
		DME Wipe Adjust (1116.3)		Yes
			1ch Pattern Select (1116.4)	–
			2ch Pattern Select (1116.5)	–
			Remove From Begin (1116.7)	–
	HF7: Video Process (1117)			Yes
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]
		Clip Transition (1176) [e]	Yes [g]
	HF2: Video Process (1172)		Yes
	HF3: Key Priority (1173)		–
	HF4: Next Key Priority (1174)		–
	HF5: Key Assign (1175)		–
	HF6: Clip Transition (1176) [e]		Yes [g]
		Clip (1176.1) [e]	–
		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 (1116.2) is displayed.

d) When [Key Wipe Pattern] is selected in the <Key Type> group, the Pattern Select menu (1116.2) 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 (1116.2) 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.

PGM/PST Menu

Menu (Page No.)				Default Recall
VF1: DSK1 [a] VF2: DSK2 [a] VF3: DSK3 [a] VF4: DSK4 [a] VF1: DSK5 [a] VF2: DSK6 [a] VF3: DSK7 [a] VF4: DSK8 [a]	HF1: Type (1411)			Yes [g]
		Chroma Adjust (1411.1)		Yes [g]
		Matte Adjust (1411.2) [b]		Yes
			Mix Ptn Select (1412.2) [c]	Yes
			Pattern Select (1416.2) [c]	–
			Matte Adjust (1412.1)	Yes [g]
			Wipe Adjust (1416.1)	Yes [g]
		Pattern Select (1416.2) [d]		–
		Main Pattern (1451) [d] [e]		Yes
		Signal Select (1411.3) [b] [d]		–
		Key Priority (1473)		–
	HF2: Edge (1412)			Yes
		Matte Adjust (1412.1)		Yes [g]
			Mix Ptn Select (1412.2)	Yes
		Zabton Adjust (1412.3)		Yes
			Mix Ptn Select (1412.2) [f]	Yes
			Pattern Select (1416.2) [f]	–
			Main Mask (1413) [f]	Yes [g]
			Matte Adjust (1412.1)	Yes [g]
			Wipe Adjust (1416.1)	Yes [g]
		Key Delay Mode (1412.4)		–
	HF3: Main Mask (1413)			Yes [g]
		Mask Ptn Select (1413.1)		Yes
	HF4: Sub Mask (1414)			Yes
		Main Pattern (1451) [e]		Yes
	HF5: Processed Key/Resizer (1415)			Yes
		Monitor (1415.1)		–
		Border/Crop (1415.2)		Yes
		Resizer Process (1415.3)		Yes
		Enhanced Effect (1415.4)		Yes
			Mask (1415.5)	Yes
		Rotation (1415.6)		Yes
	HF6: Transition (1416)			Yes [g]
		Wipe Adjust (1416.1)		Yes [g]
			Pattern Select (1416.2)	–
		DME Wipe Adjust (1416.3)		Yes
			1ch Pattern Select (1416.4)	–
			2ch Pattern Select (1416.5)	–
			Remove From Begin (1416.7)	–
	HF7: Video Process (1417)			Yes

Menu (Page No.)				Default Recall
VF5: Wipe	HF1: Main Pattern (1451) e)			Yes
	HF2: Pattern Mix (1452)			Yes
	HF3: Sub Pattern (1453)			Yes
	HF4: Edge/Direction (1454) e)			Yes g)
		Matte Adjust (1454.1)		Yes g)
			Mix Ptn Select (1454.2)	Yes
	HF5: Main Modify (1455) e)			Yes g)
		Multi Adjust (1455.1)		Yes
	HF6: Sub Modify (1456)			Yes g)
		Multi Adjust (1456.1)		Yes
	HF7: Wipe Snapshot (1457) e)			–
		DME Wipe Snapshot (1467) e)		–
		HF7: Video Process (1417)		Yes
VF6: DME Wipe	HF1: 1ch (1461) e)			–
	HF2: 2ch (1462) e)			Yes
	HF3: 3ch (1463) e)			Yes
	HF4: Edge/Direction (1464) e)			Yes g)
		Matte Adjust (1454.1)		Yes g)
	HF5: Modify (1465) e)			Yes
		Remove From Begin (1465.1) e)		–
	HF7: DME Wipe Snapshot (1467) e)			–
		Wipe Snapshot (1457) e)		–
VF7: Misc	HF1: Transition (1471) e)			Yes g)
		Clip Transition (1476) e)		Yes g)
	HF2: Video Process (1472)			Yes
	HF3: Key Priority (1473)			–
	HF4: Next Key Priority (1474)			–
	HF5: Key Assign (1475)			–
	HF6: Clip Transition (1476) e)			Yes g)
		Clip (1476.1) e)		–
		Transition (1471) e)		Yes g)
		Snapshot (1477) e)		–
	HF7: Snapshot (1477) e)			–

a) The VF1 to VF4 buttons switch display between DSK1 to DSK4 and DSK5 to DSK8.
For DSK2 to DSK8, the menu page number changes as follows.
DSK2: 142X, DSK3: 143X, DSK4: 144X, DSK5: 181X, DSK6: 182X, DSK7: 183X, DSK8: 184X

b) When [Matte] is selected in the <Key Fill> group, the Matte Adjust menu (1411.2) is displayed, and when [Key Bus] is selected, the Signal Select menu (1411.3) is displayed.

c) When [Key Edge Pattern] is selected in the <Mix Pattern> group, the Mix Ptn Select menu (1412.2) is displayed, and when [Key Wipe] is selected, the Pattern Select menu (1416.2) is displayed.

d) When [Key Wipe Pattern] is selected in the <Key Type> group, the Pattern Select menu (1416.2) is displayed, when [Wipe Pattern] is selected, the Main Pattern menu (1451) is displayed, and when another option is selected, the Signal Select menu (1411.3) 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 (1412.2) is displayed, when [Key Wipe] is selected, the Pattern Select menu (1416.2) is displayed, and when [Mask Pattern] is selected, the Main Mask menu (1413) is displayed.

g) Some parameters cannot be reset to default values using Default Recall.

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 (2311)	HF1: Video Process (2311)	Yes
	HF2: CCR (2312)	Yes

CCR Menu

Menu (Page No.)				Default Recall
VF1: CCR1	HF1: Input Process (2411)			Yes
	HF2: Primary CCR (2412)			Yes [a]
		Mask 1 Adjust (2412.1)		Yes [a]
			Mask Ptn Select (2412.2)	Yes
		Mask 2 Adjust (2412.3)		Yes [a]
			Mask Ptn Select (2412.4)	Yes
	HF3: Secondary CCR (2413)			Yes [a]
		Mask 1 Adjust (2412.1)		Yes [a]
			Mask Ptn Select (2412.2)	Yes
		Mask 2 Adjust (2412.3)		Yes [a]
			Mask Ptn Select (2412.4)	Yes
	HF5: Luminance Process (2415)			Yes
	HF6: Spot CCR/Output (2416)			Yes [a]
		Mask 1 Adjust (2412.1)		Yes [a]
			Mask Ptn Select (2412.2)	Yes
		Mask 2 Adjust (2412.3)		Yes [a]
			Mask Ptn Select (2412.4)	Yes
	HF7: YUV Clip/RGB Clip (2417)			Yes

Menu (Page No.)				Default Recall
VF2: CCR2	HF1: Input Process (2421)			Yes
	HF2: Primary CCR (2422)			Yes [a]
		Mask 1 Adjust (2422.1)		Yes [a]
			Mask Ptn Select (2422.2)	Yes
		Mask 2 Adjust (2422.3)		Yes [a]
			Mask Ptn Select (2422.4)	Yes
	HF3: Secondary CCR (2423)			Yes [a]
		Mask 1 Adjust (2422.1)		Yes [a]
			Mask Ptn Select (2422.2)	Yes
		Mask 2 Adjust (2422.3)		Yes [a]
			Mask Ptn Select (2422.4)	Yes
	HF5: Luminance Process (2425)			Yes
	HF6: Spot CCR/Output (2426)			Yes [a]
		Mask 1 Adjust (2422.1)		Yes [a]
			Mask Ptn Select (2422.2)	Yes
		Mask 2 Adjust (2422.3)		Yes [a]
			Mask Ptn Select (2422.4)	Yes
	HF7: YUV Clip/RGB Clip (2427)			Yes
VF5: Copy/Swap (2451)	–			–

a) Some parameters cannot be reset to default values using Default Recall.

Frame Memory Menu

Menu (Page No.)			Default Recall
VF1: Still	HF1: Recall (2511)		–
	HF2: Freeze/Store (2512)		Yes
	HF4: Animation Record (2514)		–
	HF5: Create Key Frame (2515)		–
VF2: Clip	HF1: Recall (2521)		–
	HF2: Play (2522)		–
	HF3: Record (2523)		–
	HF5: Ancillary Enable (2525)		–
VF3: Reposition/Lock	HF1: Reposition (2531)		Yes
	HF2: Lock (2532)		–
VF4: File	HF1: Pair Recombination (2541)		–
		Recall (2511)	–
		Recall (2521)	–
	HF2: Auto Extraction (2542)		–
	HF4: Move (2544)		–
	HF5: Delete (2545)		–
	HF6: Rename (2546)		–
VF5: Folder (2551)	–		–

Menu (Page No.)			Default Recall
VF6: External Device	HF1: Ext HDD Format (2561)		–
	HF2: Ext HDD Backup/Restore (2562)		–
	HF4: Backup to DDR/VTR (2564)		–
		File Name Data (7153)	–
	HF5: Restore from DDR/VTR (2565)		–
		File Name Data (7153)	–

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: Copy	HF1: Format Converter (3121)	–

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 [b)]
		Pattern Select (4116.1)	Yes
	HF7: Color Mix (4117)		Yes [b)]
		Mix Pattern Select (4117.1)	Yes
VF2: Video Modify	HF1: Defocus/Blur (4121)		Yes
		Mask (4127)	Yes [b)]
	HF2: Multi Move (4122)		Yes
	HF3: Color Modify (4123)		Yes
		Mask (4127)	Yes [b)]
	HF4: Mosaic (4124)		Yes
		Mask (4127)	Yes [b)]
	HF7: Mask (4127)		Yes [b)]
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) [a)] Combiner Priority (4221) [a)]	Yes

Menu (Page No.)				Default Recall
VF5: Light/Trail	HF1: Lighting (4151)			Yes
	HF2: Trail (4152)			Yes
		Color Mix (4117)		Yes [b]
	HF3: Motion Decay (4153)			Yes
	HF4: KF Strobe (4154)			Yes
	HF5: Wind (4155)			Yes
		Color Mix (4117)		Yes [b]
	HF6: Spot Lighting (4156)			Yes
		Texture Ptn Select (4156.1)		Yes [b]
		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
VF6: Input/Output	HF1: Bkgd (4161)			Yes
		Color Mix (4117)		Yes [b]
	HF2: Video/Key (4162)			Yes
	HF3: Process (4163)			Yes [b]
	HF4: Graphic (4164)			Yes
VF7: Enhanced Video Modify	HF1: Sketch (4171)			Yes
		Mask (4127)		Yes [b]
	HF2: Metal (4172)			Yes
		Mask (4127)		Yes [b]
	HF3: Dim & Fade (4173)			Yes
	HF4: Glow (4174)			Yes
		Mask (4127)		Yes [b]

a) Menus corresponding to the selected DME channel are displayed.
b) 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
	HF7: Combine Gp Select (4217)	–
VF2: Ch5-Ch8	HF1: Combiner Priority (4221)	Yes
	HF2: Brick (4222)	Yes
	HF3: Shadow (4223)	Yes
	HF7: Combine Gp Select (4227)	–

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)		–

Macro Menu

Menu (Page No.)			Default Recall
VF1: Register	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 (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 Event (6321.2)		–
			Play (2522)	–
	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)	–
	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)	–
	HF5: User Setup (7115)		–
		File Edit (7115.1)	–
	HF6: Export User Source Name (7116)		–
		File Edit (7116.1)	–
	HF7: Import User Source Name (7117)		–
		File Edit (7117.1)	–
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)	–

Menu (Page No.)				Default Recall
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)		–
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)		–
	HF2: Frame Memory Folder (7152)			–
	HF3: File Name Data (7153)			–
		File Edit (7153.1)		–
VF6: All, External File	HF1: All (7161)			–
	HF2: Import/Export (7162)			–
VF7: Configure	HF1: Directory (7171)			–
	HF2: Unit ID Copy (7172)			–
	HF3: Group ID Copy (7173)			–

User Setup Menu

Menu (Page No.)			Default Recall
VF1: Source Patch	HF1: User Source Name (7211)		–
		Exp Usr Src Name (7116)	–
	HF2: Patch Table (7212)		–
		Patch Table Assign (7212.1)	–
		Imp Usr Src Name (7117)	–
		Effect 1-99 (7121)	–
		Snapshot (7131)	–
		Key Snapshot (7134)	–
		All (7161)	–

Engineering Setup Menu

Menu (Page No.)					Default Recall
VF1: System	HF1: Network Config (7311)				–
	HF2: System Config (7312)				–
		Panel Assign (7312.1)			–
		Switcher Assign (7312.2)			–
	HF3: Format (7313)				–
		Aspect (7313.1)			–
			Switcher Aspect (7313.2)		–
				DME Aspect (7313.3)	–
			DME Aspect (7313.3)		–
				Switcher Aspect (7313.2)	–
		Format Converter (7313.4)			–
		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) [a)]		–
				Logical M/E Assign (7331.5) [a)]	–
		Texture Package (7316.9)			–
		Install (7316.10)			–
	HF7: Maintenance (7317)				–
		Setup Operation Lock (7317.1)			–
		File Load Lock (7317.2)			–

Menu (Page No.)							Default Recall
VF2: Panel	HF1: Config (7321)						–
		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)				–
			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)					–
	HF3: Aux Assign (7323)						–
		RTR Mode Setting (7323.1)					–
			Table Assign (7323.3)				–
			Level Button Assign (7323.4)				–

Menu (Page No.)				Default Recall
VF2: Panel	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)		–
	HF5: Device Interface (7325)			–
		Device Assign (7325.4)		–
	HF6: Operation (7326)			–
		Effect Mode (7326.2)		–
		Flexi Pad Mode (7326.3)		–
		Custom Button (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)	–
			Flexi Pad Button Assign (7326.14)	–
			Display Mode Setting (7326.15)	–
	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)		–
	HF2: Input (7332)			–
		Video Process (7332.1) [a)]		–
		CCR (7332.5) [a)]		–
		FC Adjust (7332.2)		–
			Format Converter (3121)	–
		FC Input Select (7332.3) [b)]		–
			Xpt Assign (7322) [b)]	–
		Active Area Size (7332.4)		–

Menu (Page No.)				Default Recall
VF3: Switcher	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)		–
		FC Adjust (7333.6)		–
			Format Converter (3121)	–
		Multi Viewer (7333.9)		–
			Output Assign (7333.10)	–
		Aux Mix (7333.12)		–
		Active Area Size (7333.13)		–
	HF4: Transition (7334)			–
		Preset Color Mix (7334.1)		–
		Transition Curve (7334.2)		–
	HF5: Key/Wipe/FM/CCR (7335)			–
		Show Key (7335.1)		–
		Key Auto Drop (7335.2)		–
		Bus CCR/Input CCR/Video Proc (7335.3)		–
	HF6: Link (7336)			–
		Internal Bus Link (7336.1)		–
			Link Bus Select (7336.2)	–
			Link Table Select (7336.3)	–
		GPI Link (7336.4)		–
			GPI Link Adjust (7336.5)	–
		M/E Link (7336.6)		–
		Key Transition Link (7336.7)		–
	HF7: Device Interface (7337)			–
		Remote Assign (7337.1)		–
		GPI Input (7337.2)		–
			H/L Set (7337.3)	–
		GPI Output (7337.4)		–
		AUX Control (7337.5)		–
		DME Type Setting (7337.6)		–
			DME SDI I/F (7337.7)	–
		Editor I/F (7337.8)		–

Menu (Page No.)			Default Recall
VF4: DME	HF1: Input (7341)		–
		TBC Center (7341.1)	–
	HF3: Output (7343)		–
		Monitor Output (7343.1)	–
	HF4: Device Interface (7344)		–
		DME1 GPI Input (7344.1)	–
		H/L Set (7344.2)	–
		DME1 GPI Output (7344.3)	–
		DME2 GPI Input (7344.4)	–
		H/L Set (7344.5)	–
		DME2 GPI Output (7344.6)	–
		DME3 GPI Input (7344.7)	–
		H/L Set (7344.8)	–
		DME3 GPI Output (7344.9)	–
		DME4 GPI Input (7344.10)	–
		H/L Set (7344.11)	–
		DME4 GPI Output (7344.12)	–
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 Port Assign (7355)		–
		P-Bus Setting (7355.1) [c] VTR Setting (7355.2) [c] DDR VDCP Setting (7355.4) [c] Extended VTR Setting (7355.5) [c] Simple VDCP Setting (7355.6) [c] DDR Odetics Setting (7355.7) [c]	–
		Device Assign (7325.4)	–

Menu (Page No.)			Default Recall
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)	–
	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) When the Input menu button is [Video Process], the Video Process menu (7332.1) is displayed, and when it is [CCR], the CCR menu (7332.5) is displayed.
b) Displayed only on the MVS-7000X.
c) 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)	–
VF3: System Info	HF1: LAN Status (7431)	–

Disabled Operation and Settings Menus

Disabled Menus on the MVS-8000X

On the MVS-8000X, the following operations and settings relating to M/E-5 are disabled.

Menu number	Menu
3111	Copy/Swap >Copy/Swap >M/E
3112	Copy/Swap >Copy/Swap >Key
3113	Copy/Swap >Copy/Swap >Wipe
3114	Copy/Swap >Copy/Swap >DME Wipe
3115	Copy/Swap >Copy/Swap >Matte
3116	Copy/Swap >Copy/Swap >Color
3213	Misc >Enable >Side Flags
3231	Misc >Transition >Key/ME/FTB
6113.23	Key Frame >Path >M/E-5
6113.24	Key Frame >Path >M/E-5 Sub
6211.1	Effect >Master Timeline >Store >Edit
6221	Effect >Effect 1-99 >Attribute
6222	Effect >Effect 1-99 >Lock
6223	Effect >Effect 1-99 >Copy/Merge
6224	Effect >Effect 1-99 >Move
6225	Effect >Effect 1-99 >Swap
6226	Effect >Effect 1-99 >Delete
6227	Effect >Effect 1-99 >Rename
6311.1	Snapshot >Master Snapshot >Store >Edit
6321	Snapshot >Snapshot >Attribute
6321.1	Snapshot >Snapshot >Attribute >Xpt Hold
6322	Snapshot >Snapshot >Lock
6323	Snapshot >Snapshot >Copy
6324	Snapshot >Snapshot >Move
6325	Snapshot >Snapshot >Swap
6326	Snapshot >Snapshot >Delete
6327	Snapshot >Snapshot >Rename
6332	Snapshot >Wipe Snapshot >Lock
6333	Snapshot >Wipe Snapshot >Copy
6334	Snapshot >Wipe Snapshot >Move
6335	Snapshot >Wipe Snapshot >Swap
6336	Snapshot >Wipe Snapshot >Delete
6337	Snapshot >Wipe Snapshot >Rename
6342	Snapshot >DME Snapshot >Lock
6343	Snapshot >DME Snapshot >Copy
6344	Snapshot >DME Snapshot >Move
6345	Snapshot >DME Snapshot >Swap

Menu number	Menu
6346	Snapshot >DME Snapshot >Delete
6347	Snapshot >DME Snapshot >Rename
6351	Snapshot >Key Snapshot >Attribute
6352	Snapshot >Key Snapshot >Lock
6353	Snapshot >Key Snapshot >Copy
6354	Snapshot >Key Snapshot >Move
6355	Snapshot >Key Snapshot >Swap
6356	Snapshot >Key Snapshot >Delete
6357	Snapshot >Key Snapshot >Rename
6411.1	Shotbox >Register >Store/Recall >Edit
7121	File >Effect >Effect 1-99
7121.1	File >Effect >Effect 1-99 >File Edit
7131	File >Snapshot >Snapshot
7131.1	File >Snapshot >Snapshot >File Edit
7132	File >Snapshot >Wipe Snapshot
7132.1	File >Snapshot >Wipe Snapshot >File Edit
7133	File >Snapshot >DME Snapshot
7133.1	File >Snapshot >DME Snapshot >File Edit
7134	File >Snapshot >Key Snapshot
7134.1	File >Snapshot >Key Snapshot >File Edit
7313.2	Engineering Setup >System >Format >Aspect >Switcher Aspect
7321	Engineering Setup >Panel >Config
7321.2	Engineering Setup >Panel >Config >Link/Program Button >Key Trans Link
7321.3	Engineering Setup >Panel >Config >Link/Program Button >External Bus Link
7321.6	Engineering Setup >Panel >Config >Link/Program Button >External Bus Link >Link Bus Adjust
7321.7	Engineering Setup >Panel >Config >10 Key Region Assign
7321.11	Engineering Setup >Panel >Config >MP2 Main/Sub Assign
7321.17	Engineering Setup >Panel >Config >Link/Program Button >Trackball Module
7321.18	Engineering Setup >Panel >Config >Operation Inhibit >M/E Operation Inhibit
7321.19	Engineering Setup >Panel >Config >Link/Program Button >Menu Panel
7322	Engineering Setup >Panel >Xpt Assign
7322.5	Engineering Setup >Panel >Xpt Assign >Main, V/K Pair Assign
7322.6	Engineering Setup >Panel >Xpt Assign >Src Name/Src Color
7323	Engineering Setup >Panel >Aux Assign
7324.3	Engineering Setup >Panel >Prefs/Utility >Utility Module Assign >Trans Rate Mode Assign
7326.14	Engineering Setup >Panel >Operation >Xpt Module Operation >Flexi Pad Button Assign
7331	Engineering Setup >Switcher >Config
7331.1	Engineering Setup >Switcher >Config >M/E Output Assign
7331.2	Engineering Setup >Switcher >Config >PGM Config
7331.3	Engineering Setup >Switcher >Config >K-PVW Config
7331.6	Engineering Setup >Switcher >Config >DME Config
7333.1	Engineering Setup >Switcher >Output >Output Assign
7334	Engineering Setup >Switcher >Transition
7334.1	Engineering Setup >Switcher >Transition >Preset Color Mix
7335	Engineering Setup >Switcher >Key/Wipe/FM/CCR

Menu number	Menu
7335.1	Engineering Setup >Switcher >Key/Wipe/FM/CCR >Show Key
7335.2	Engineering Setup >Switcher >Key/Wipe/FM/CCR >Key Auto Drop
7336.2	Engineering Setup >Switcher >Link >Internal Bus Link >Link Bus Select
7336.5	Engineering Setup >Switcher >Link >GPI Link >GPI Link Adjust
7336.6	Engineering Setup >Switcher >Link >M/E Link
7336.7	Engineering Setup >Switcher >Link >Key Transition Link
7337.2	Engineering Setup >Switcher >Device Interface >GPI Input
7337.4	Engineering Setup >Switcher >Device Interface >GPI Output
7352	Engineering Setup >DCU >GPI Input Assign
7354	Engineering Setup >DCU >GPI Output Assign

Disabled Menus in 4K Systems

The following operations and settings in the menu are not supported in 4K systems. They are disabled and have no affect, even if selected and/or configured.

Notation conventions

- "M/E-x" indicates M/E-1 to M/E-4 on the MVS-8000X and M/E-1 to M/E-5 on the MVS-7000X.
- Key1 to Key8 corresponds to DSK1 to DSK8 for operations and settings relating to keys on the PGM/PST bank.

Top menu

The menus displayed on the following top menu selection buttons (or top menu list buttons) are disabled.

- [M/E2] to [M/E4] on the MVS-8000X, [M/E1] to [M/E5] on the MVS-7000X (M/E-x menu) [a)]
- [CCR] (CCR menu)
- [STATS] (Status menu)
- [DME] (DME menu)
- [GLB EFF] (Global Effect menu)

M/E-x menu, PGM/PST menu [b)]

Menu number	Menu	Disabled operations/settings
1111 1121	M/E-1 >Key1 >Type M/E-1 >Key2 >Type	• <Key Type> group [Wipe Pattern] settings • <Key Type> group [Luminance] and [Linear] Filter parameter settings • <Key Type> group [Color Vector] Y Filter and C Filter parameter settings • [Key Position] settings
1111.1 1121.1	M/E-1 >Key1 >Type >Chroma Adjust M/E-1 >Key2 >Type >Chroma Adjust	• Auto chroma key sample mark cannot be set to a region spanning two or more divided sub-images (square division method). • [Key Active] Filter parameter settings • <Color Cancel> group [Color Cancel] Filter parameter settings • <Color Cancel> group [Key Position] settings • [Shadow] settings
1112 1122	M/E-1 >Key1 >Edge M/E-1 >Key2 >Edge	All menu operations
1113 1123	M/E-1 >Key1 >Main Mask M/E-1 >Key2 >Main Mask	• <Rotation> group [Speed] settings [c)] • [Multi] settings
1114 1124	M/E-1 >Key1 >Sub Mask M/E-1 >Key2 >Sub Mask	All menu operations

Menu number	Menu	Disabled operations/settings
1115 1125	M/E-1 >Key1 >Processed Key/Resizer M/E-1 >Key2 >Processed Key/Resizer	• [Dual Rszr Effect] settings • <DME Select> group DME selection buttons • [Override] settings • [Ext Proc Key] settings • [FM Feed] operation • [Resizer] settings (square division method)
1115.1 1125.1	M/E-1 >Key1 >Processed Key/Resizer >Monitor M/E-1 >Key2 >Processed Key/Resizer >Monitor	All menu operations
1115.2 1125.2	M/E-1 >Key1 >Processed Key/Resizer >Border/Crop M/E-1 >Key2 >Processed Key/Resizer >Border/Crop	• All menu operations other than [Resizer] (2-sample interleave division method) • All menu operations (square division method)
1115.3 1125.3	M/E-1 >Key1 >Processed Key/Resizer >Resizer Process M/E-1 >Key2 >Processed Key/Resizer >Resizer Process	All menu operations (square division method)
1115.4 1125.4	M/E-1 >Key1 >Processed Key/Resizer >Enhanced Effect M/E-1 >Key2 >Processed Key/Resizer >Enhanced Effect	• All menu operations other than [Resizer] (2-sample interleave division method) • All menu operations (square division method)
1115.5 1125.5	M/E-1 >Key1 >Processed Key/Resizer >Mask M/E-1 >Key2 >Processed Key/Resizer >Mask	• All menu operations other than [Resizer] (2-sample interleave division method) • All menu operations (square division method)
1115.6 1125.6	M/E-1 >Key1 >Processed Key/Resizer >Rotation M/E-1 >Key2 >Processed Key/Resizer >Rotation	All menu operations (square division method)
1116 1126	M/E-1 >Key1 >Transition M/E-1 >Key2 >Transition	• <Transition Type> group [DME Wipe] settings (square division method) • <Blink> group [Edge Blink] settings
1116.1 1126.1	M/E-1 >Key1 >Transition >Wipe Adjust M/E-1 >Key2 >Transition >Wipe Adjust	• <Rotation> group [Speed] settings [c)] • [Multi] settings
1116.3 1126.3	M/E-1 >Key1 >Transition >DME Wipe Adjust M/E-1 >Key2 >Transition >DME Wipe Adjust	• <Crop Mode> group settings and operations (2-sample interleave division method) • <Edge> group settings (2-sample interleave division method) • All menu operations (square division method)
1116.4 1126.4	M/E-1 >Key1 >Transition >DME Wipe Adjust >1ch Pattern M/E-1 >Key2 >Transition >DME Wipe Adjust >1ch Pattern	• Pattern selection other than [Resizer Slide / Squeeze] and [Resizer Frame I/O] (2-sample interleave division method) • All menu operations (square division method)
1116.5 1126.5	M/E-1 >Key1 >Transition >DME Wipe Adjust >2ch Pattern M/E-1 >Key2 >Transition >DME Wipe Adjust >2ch Pattern	All menu operations
1116.7 1126.7	M/E-1 >Key1 >Transition >DME Wipe Adjust >Remove From Begin M/E-1 >Key2 >Transition >DME Wipe Adjust >Remove From Begin	All menu operations
1131 to 1137 1141 to 1147 1511 to 1517 1521 to 1527 1531 to 1537 1541 to 1547	M/E-1 >Key3 M/E-1 >Key4 M/E-1 >Key5 M/E-1 >Key6 M/E-1 >Key7 M/E-1 >Key8	All menu operations
1151	M/E-1 >Wipe >Main Pattern	[Rotary], [Mosaic 1], [Mosaic 2], [Mosaic 3], and [Random/Dust] pattern selection
1152	M/E-1 >Wipe >Pattern Mix	All menu operations

Menu number	Menu	Disabled operations/settings
1153	M/E-1 >Wipe >Sub Pattern	All menu operations
1154	M/E-1 >Wipe >Edge/Direction	<Edge Fill> group [Utility2 Bus] settings
1154.1	M/E-1 >Wipe >Edge/Direction >Matte Adjust	All menu operations other than <Edge Matte> group [Flat Color]
1154.2	M/E-1 >Wipe >Edge/Direction >Matte Adjust >Mix Pattern Select	All menu operations
1155	M/E-1 >Wipe >Main Modify	• <Rotation> group [Speed] settings [c)] • [Multi] settings • <Pairing> group settings • <Modulation> group [H], [V], and [Fringe] Speed parameter settings
1155.1	M/E-1 >Wipe >Main Modify >Multi Adjust	All menu operations
1156	M/E-1 >Wipe >Sub Modify	All menu operations
1156.1	M/E-1 >Wipe >Sub Modify >Multi Adjust	All menu operations
1161	M/E-1 >DME Wipe >1ch	• Pattern selection other than [Resizer Slide / Squeeze] and [Resizer Frame I/O] (2-sample interleave division method) • All menu operations (square division method)
1162	M/E-1 >DME Wipe >2ch	All menu operations
1163	M/E-1 >DME Wipe >3ch	All menu operations
1164	M/E-1 >DME Wipe >Edge/Direction	• <Edge> group settings (2-sample interleave division method) • All menu operations (square division method)
1165	M/E-1 >DME Wipe >Modify	• <Crop Mode> group settings and operations (2-sample interleave division method) • All menu operations (square division method)
1165.1	M/E-1 >DME Wipe >Modify >Remove From Begin	All menu operations
1171	M/E-1 >Misc >Transition	• <Transition Type> group [DME Wipe] settings (square division method) • <Transition Type> group [FM1&2 Clip] and [FM3&4 Clip] settings • <Preset Color Mix Fill> group [Utility2 Bus] settings
1172	M/E-1 >Misc >Video Process	<Utility1>, <Utility2>, and <Utility3> group settings
1173	M/E-1 >Misc >Key Priority	Settings relating to Key3 to Key8
1174	M/E-1 >Misc >Next Key Priority	Settings relating to Key3 to Key8
1176	M/E-1 >Misc >Clip Transition	All menu operations
1176.1	M/E-1 >Misc >Clip Transition >Clip	All menu operations
1177	M/E-1 >Misc >Snapshot	<Attribute Xpt Hold> group [DME 2nd Video], [Util 1], and [Util 2] settings

Frame Memory menu [d)]

Menu number	Menu	Disabled operations/settings
2511	Frame Memory >Still >Recall	[Pair] settings
2512	Frame Memory >Still >Freeze/Store	All menu operations
2514	Frame Memory >Still >Animation Record	All menu operations
2515	Frame Memory >Still >Create Key Frame	[Pair] settings
2521	Frame Memory >Clip >Recall	[Pair] settings
2522	Frame Memory >Clip >Play	[Pair] settings
2523	Frame Memory >Clip >Record	All menu operations

Menu number	Menu	Disabled operations/settings
2531, 2532	Frame Memory >Reposition/Lock	All menu operations
2541	Frame Memory >File >Pair Recombination	All menu operations
2542	Frame Memory >File >Auto Extraction	All menu operations
2561	Frame Memory >External Device >Ext HDD Format	All menu operations
2562	Frame Memory >External Device >Ext HDD Backup/Restore	All menu operations
2564	Frame Memory >External Device >Backup to DDR/VTR	All menu operations
2565	Frame Memory >External Device >Restore from DDR/VTR	All menu operations

Color Bkgd menu

Menu number	Menu	Disabled operations/settings
2210	Color Bkgd >Color Bkgd1	All menu operations other than <Matte> group [Flat Color]
2220	Color Bkgd >Color Bkgd2	All menu operations other than <Matte> group [Flat Color]

Aux menu

Menu number	Menu	Disabled operations/settings
2311	Aux >Video Process	Settings relating to AUX11 to AUX48

Copy/Swap menu

Menu number	Menu	Disabled operations/settings
3111	Copy/Swap >Copy/Swap >M/E	Operations relating to M/E-2 to M/E-4 on the MVS-8000X,[a)] and all menu operations on the MVS-7000X
3112	Copy/Swap >Copy/Swap >Key	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to Key3 to Key8
3113	Copy/Swap >Copy/Swap >Wipe	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to Key3 to Key8
3114	Copy/Swap >Copy/Swap >DME Wipe	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X (2-sample interleave division method) [a)] • Operations relating to Key3 to Key8 (2-sample interleave division method) • All menu operations (square division method)
3115	Copy/Swap >Copy/Swap >Matte	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to Key3 to Key8 • Operations relating to Key1 Edge Fill and Key2 Edge Fill • Operations relating to Wipe Border • Operations relating to Color Bkgd1 and Color Bkgd2
3116	Copy/Swap >Copy/Swap >Color	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to Key3 to Key8 • Operations relating to Key1 Edge Fill and Key2 Edge Fill • Operations relating to Key1 Zabton and Key2 Zabton • Operations relating to Wipe Border Color2 • Operations relating to Color Bkgd1 and Color Bkgd2 • Operations relating to DME
3117	Copy/Swap >Copy/Swap >DME	All menu operations
3121	Copy/Swap >Copy >Format Converter	• Operations other than FC Input 1, 5, 9, and 13 • Operations relating to the MKS-8450X 4K Format Converter Board

Misc menu

Menu number	Menu	Disabled operations/settings
3211	Misc >Enable >Port Enable	• <DME1> and <DME2> group settings • <DME Override> group settings
3213	Misc >Enable >Side Flags	All menu operations
3231	Misc >Transition >Key/ME/FTB	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to Key3 to Key8
3232	Misc >Transition >Aux Mix	Operations relating to Aux 11 to Aux 47

Key Frame menu

Menu number	Menu	Disabled operations/settings
6113, 6113.1 to 6113.16, 6113.21, 6113.23	Key Frame >Path	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to Key3 to Key8 • Operations relating to Util 1 and Util 2 • Operations relating to DME 2nd Video • Operations related to DME Wipe (square division method) • Operations relating to FM Src and FM Proc • Operations relating to Aux 11 to Aux 48 • Operations relating to CCR • Operations relating to DME
6114	Key Frame >DME User PGM	All menu operations

Effect menu

Menu number	Menu	Disabled operations/settings
6211.1	Effect >Master Timeline >Store >Edit	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to DME
6221 to 6227	Effect >Effect 1-99	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to DME
6231 to 6237	Effect >User DME Wipe Effect 101-199	All menu operations
6241 to 6247	Effect >User DME Wipe Effect 201-299	All menu operations
6251 to 6257	Effect >User DME Wipe Effect 301-399	All menu operations

Snapshot menu

Menu number	Menu	Disabled operations/settings
6311.1	Snapshot >Master Snapshot >Store >Edit	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to DME
6321 to 6327	Snapshot >Snapshot	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to DME
6321.1	Snapshot >Snapshot >Attribute >Xpt Hold	• <Xpt Hold> group settings related to Key3 to Key8 • Xpt Hold group settings relating to Util 1, Util 2, and Util 3 • <Xpt Hold> group settings related to DME 2nd Video • <Xpt Hold> group settings related to Aux 11 to Aux 48
6332 to 6337	Snapshot >Wipe Snapshot	Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)]
6342 to 6347	Snapshot >DME Snapshot	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X (2-sample interleave division method) [a)] • All menu operations (square division method)
6351 to 6357	Snapshot >Key Snapshot	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to Key3 to Key8

Shotbox menu

Menu number	Menu	Disabled operations/settings
6411.1	Shotbox >Register >Store/Recall >Edit	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to DME

File menu

Menu number	Menu	Disabled operations/settings
7111	File >Setup, Init, VKMem >Setup	• Operations relating to DME • Operations relating to CCR
7111.1	File >Setup, Init, VKMem >Setup >File Edit	Operations relating to DME
7112	File >Setup, Init, VKMem >Initial Status	Operations relating to DME
7112.1	File >Setup, Init, VKMem >Initial Status >File Edit	Operations relating to DME
7121	File >Effect >Effect 1-99	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to DME
7121.1	File >Effect >Effect 1-99 >File Edit	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to DME
7122	File >Effect >User DME Wipe Effect 101-199	All menu operations
7122.1	File >Effect >User DME Wipe Effect 101-199 >File Edit	All menu operations
7123	File >Effect >User DME Wipe Effect 201-299	All menu operations
7123.1	File >Effect >User DME Wipe Effect 201-299 >File Edit	All menu operations
7124	File >Effect >User DME Wipe Effect 301-399	All menu operations
7124.1	File >Effect >User DME Wipe Effect 301-399 >File Edit	All menu operations
7131	File >Snapshot >Snapshot	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to DME
7131.1	File >Snapshot >Snapshot >File Edit	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to DME
7132	File >Snapshot >Wipe Snapshot	Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)]
7132.1	File >Snapshot >Wipe Snapshot >File Edit	Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)]
7133	File >Snapshot >DME Snapshot	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X (2-sample interleave division method) [a)] • All menu operations (square division method)
7133.1	File >Snapshot >DME Snapshot >File Edit	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X (2-sample interleave division method) [a)] • All menu operations (square division method)

Menu number	Menu	Disabled operations/settings
7134	File >Snapshot >Key Snapshot	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to Key3 to Key8
7134.1	File >Snapshot >Key Snapshot >File Edit	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Operations relating to Key3 to Key8
7151	File >Frame Memory >File Name Date	All menu operations
7151.1	File >Frame Memory >File Name Date >File Edit	All menu operations
7161	File >All, External File >All	Operations related to DME Snapshot (square division method)

Engineering Setup menu

Menu number	Menu	Disabled operations/settings
7313.1	Engineering Setup >System >Format >Aspect	All menu operations
7313.2	Engineering Setup >System >Format >Aspect >Switcher Aspect	All menu operations
7313.3	Engineering Setup >System >Format >Aspect >DME Aspect	All menu operations
7313.4	Engineering Setup >System >Format >Format Converter	Operations relating to the MKS-8450X 4K Format Converter Board
7321	Engineering Setup >Panel >Config	Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)]
7321.2	Engineering Setup >Panel >Config >Link/ Program Button >Key Trans Link	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to Key3 to Key8
7321.6	Engineering Setup >Panel >Config >Link/ Program Button >External Bus Link >Link Bus Adjust	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to M/E-x, P/P Key3 to Key8, Utility1, Utility2, and DME External • Settings relating to Frame Memory Source1 and Frame Memory Source2 • Settings relating to DME Utility1 and DME Utility2 • Settings relating to CCR1 and CCR2 • Settings relating to AUX11 to AUX48
7321.7	Engineering Setup >Panel >Config >10 Key Region Assign	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to DME
7321.9	Engineering Setup >Panel >Config >Link/ Program Button >Transition Module1	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to Key3 to Key8 • DME settings (square division method) • SHIFT and ADD settings • FM1&2 CLIP to FM7&8 CLIP settings
7321.11	Engineering Setup >Panel >Config >MP2 Main/ Sub Assign	All menu operations
7321.12	Engineering Setup >Panel >Config >Link/ Program Button >Xpt Module	Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)]

Menu number	Menu	Disabled operations/settings
7321.18	Engineering Setup >Panel >Config >Operation Inhibit >M/E Operation Inhibit	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to Key3 to Key8 • <M/E Operation Inhibit> group [Util2 Bus] settings
7321.19	Engineering Setup >Panel >Config >Link/ Program Button >Menu Panel	The following button settings: - M/E2 to M/E4 on the MVS-8000X and M/E1 to M/E5 on the MVS-7000X [a)] - CCR - STATS - DME - GLB EFF
7321.27	Engineering Setup >Panel >Config >Operation Inhibit >Trackball Module	All menu operations
7321.34	Engineering Setup >Panel >Config >Link/ Program Button >Transition Module2	• Operations relating to M/E-2 to M/E-4 on the MVS-8000X and operations relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to Key3 to Key8
7322	Engineering Setup >Panel >Xpt Assign	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to M/E-x, P/P KEY3 to KEY8 (DSK3 to DSK8), UTIL1, UTIL2, and EXT DME • Settings relating to AUX11 to AUX48 • Settings relating to FM • Settings relating to DME • Settings relating to DME UTIL1 and DME UTIL2 • Settings relating to CCR1 and CCR2
7322.6	Engineering Setup >Panel >Xpt Assign >Src Name/Src Color	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to primary inputs other than numbers 1, 5, 9, and so on • Settings relating to premium inputs other than numbers 1, 5, 9, and so on • CCR1 and CCR2 settings • M/E-x, P/P OUT5, and OUT6 settings • M/E-x, P/P PROV, and PROK settings
7322.10	Engineering Setup >Panel >Xpt Assign >Side Flags Button Assign	All menu operations
7323	Engineering Setup >Panel >Aux Assign	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • M/E-x, P/P KEY3 to KEY8 (DSK3 to DSK8), UTIL1, UTIL2, and EXT DME settings • AUX11 to AUX48 settings • FM1 and FM2 settings • Settings relating to DME • DME UTIL1 and DME UTIL2 settings • CCR1 and CCR2 settings

Menu number	Menu	Disabled operations/settings
7324 7324.1 7324.2	Engineering Setup >Panel >Prefs/Utility Engineering Setup >Panel >Prefs/Utility >Utility Module Assign Engineering Setup >Panel >Prefs/Utility >Xpt Module Assign	• Utility command settings relating to the following output safe titles: - Output related to M/E-2 to M/E-4 on the MVS-8000X and output related to M/E-1 to M/E-5 on the MVS-7000X [a)] - DME Mon Video and DME Mon Key - AUX11 to AUX48 • The following utility command settings: - Settings relating to frame memory - Settings relating to DME - SWR2 LAN Status
7326.11	Engineering Setup >Panel >Operation >Custom Button >Next Trans All	<Next Trans All> group [Key3] to [Key8] settings
7326.13	Engineering Setup >Panel >Operation >Xpt Module Operation >Key Deleg/AUX Assign	• KEY3 to KEY8, UTIL1, UTIL2, EXT DME, DME UTIL1, DME UTIL2, AUX11 to AUX48, FMS1, FMS2, CCR1, and CCR2 settings • Settings relating to DME
7326.14	Engineering Setup >Panel >Operation >Xpt Module Operation >Flexi Pad Button Assign	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to M/E-x, P/P Key3 to Key8, Utility1, Utility2, and DME External • Settings relating to DME Utility1 and DME Utility2
7331	Engineering Setup >Switcher >Config	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings other than <M/E Config> group [Standard] settings
7331.1	Engineering Setup >Switcher >Config >M/E Output Assign	All menu operations
7331.2	Engineering Setup >Switcher >Config >PGM Config	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • <Key Enable> group [Key3] to [Key8] settings
7331.3	Engineering Setup >Switcher >Config >K-PVW Config	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to Key3 to Key8
7331.4	Engineering Setup >Switcher >Config >User1-8 Config	• AUX11 to AUX48 settings • Settings relating to frame memory • CCR1 and CCR2 settings
7331.5	Engineering Setup >Switcher >Config >Logical M/E Assign	<Logical M/E to Physical P/P> group [M/E-1], [M/E-3], and [M/E-4] settings on the MVS-8000X, and <Logical M/E to Physical P/P> group [M/E-2] to [M/E-5] settings on the MVS-7000X
7331.6	Engineering Setup >Switcher >Config >DME Config	All menu operations
7331.7	Engineering Setup >Switcher >Config >Side Flags	All menu operations
7332	Engineering Setup >Switcher >Input	• Settings relating to primary inputs other than numbers 1, 5, 9, and so on • Settings relating to premium inputs other than numbers 1, 5, 9, and so on

Menu number	Menu	Disabled operations/settings
7332.1	Engineering Setup >Switcher >Input >Video Process	• Settings relating to primary inputs other than numbers 1, 5, 9, and so on • Settings relating to premium inputs other than numbers 1, 5, 9, and so on • Settings relating to format converter dedicated inputs other than numbers 1, 5, 9, and so on
7332.2	Engineering Setup >Switcher >Input >FC Adjust	Operations relating to the MKS-8450X 4K Format Converter Board
7332.3	Engineering Setup >Switcher >Input >FC Input Select	• Settings relating to format converter dedicated inputs other than numbers 1 and 5 • Operations relating to the MKS-8450X 4K Format Converter Board
7333.4	Engineering Setup >Switcher >Output >Safe Title	• [Grid] settings (square division method) • Safe title settings disabled when active area is set to [4096×2160] in the Engineering Setup >Switcher >Input >Active Area Size menu
7333.5	Engineering Setup >Switcher >Output >4:3 Crop	All menu operations
7333.9	Engineering Setup >Switcher >Output >Multi Viewer	All menu operations
7333.10	Engineering Setup >Switcher >Output >Multi Viewer >Output Assign	All menu operations
7333.12	Engineering Setup >Switcher >Output >Aux Mix	Settings relating to AUX11 to AUX48
7334	Engineering Setup >Switcher >Transition	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • <FTB> group [PGM2] to [PGM4] settings
7334.1	Engineering Setup >Switcher >Transition >Preset Color Mix	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • <Non Drop Key> group [Key3] to [Key8] settings
7335	Engineering Setup >Switcher >Key/Wipe/FM/CCR	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • <Mask/Border Process> group settings • [CCR Intrnl Signal Enbl] settings • [FM Auto Store] settings
7335.1	Engineering Setup >Switcher >Key/Wipe/FM/CCR >Show Key	Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)]
7335.2	Engineering Setup >Switcher >Key/Wipe/FM/CCR >Key Auto Drop	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Key3 to Key8 settings
7336.2	Engineering Setup >Switcher >Link >Internal Bus Link >Link Bus Select	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to M/E-x and P/P Key3 to Key8 • M/E-x, P/P Utility1, Utility2, and DME External settings • Frame Memory Source1 and Frame Memory Source2 settings • AUX11 to AUX48 and AUX11 to AUX48 as Key settings • DME Utility1, DME Utility2, CCR1, and CCR2 settings

Menu number	Menu	Disabled operations/settings
7336.5	Engineering Setup >Switcher >Link >GPI Link >GPI Link Adjust	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to M/E-x and P/P Key3 to Key8 • M/E-x, P/P Utility1, Utility2, Utility3, and DME External settings • Frame Memory Source1 and Frame Memory Source2 settings • AUX11 to AUX48 settings • DME Utility1, DME Utility2, CCR1, and CCR2 settings
7336.6	Engineering Setup >Switcher >Link >M/E Link	Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)]
7336.7	Engineering Setup >Switcher >Link >Key Transition Link	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • Settings relating to M/E-x and P/P Key3 to Key8
7337.2	Engineering Setup >Switcher >Device Interface >GPI Input	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • The following action settings: - Settings relating to Key3 to Key8 - Settings relating to frame memory - Settings relating to Aspect - Settings relating to Side Flags
7337.4	Engineering Setup >Switcher >Device Interface >GPI Output	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • The following action settings: - Settings relating to Key3 to Key8
7337.6	Engineering Setup >Switcher >Device Interface >DME Type Setting	All menu operations
7337.7	Engineering Setup >Switcher >Device Interface >DME Type Setting >DME SDI I/F	All menu operations
7341 to 7344	Engineering Setup >DME	All menu operations
7352	Engineering Setup >DCU >GPI Input Assign	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • The following action settings: - Settings relating to Key3 to Key8 - Settings relating to frame memory - Settings for primary signals that cannot be selected using AUX bus when the action is Aux ? O'ride Src ?? - Settings relating to Aspect
7354	Engineering Setup >DCU >GPI Output Assign	• Settings relating to M/E-2 to M/E-4 on the MVS-8000X and settings relating to M/E-1 to M/E-5 on the MVS-7000X [a)] • The following action settings: - Settings relating to Key3 to Key8

a) You can change the banks that are not used to P/P, M/E-3, and M/E-4 on the MVS-8000X, and to P/P and M/E-2 to M/E-5 on the MVS-7000X. This operation is configured in the Engineering Setup >Switcher >Config >Logical M/E Assign menu (7331.5).
b) The menu numbers shown by way of example are those for M/E-1. The same applies for the M/E-2 to M/E-5, and PGM/PST menus.
c) Functions only when [Speed] is set after pressing [Angle].
d) Operation not supported for 4K format images. Operation is only supported on the four divided sub-images.

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 8 signals assigned buttons	Frame Memory >Still >Recall	*page 159*
Color Bkgd1 signal assigned button	Color Bkgd >Color Bkgd1	*page 176*
Color Bkgd2 signal assigned button	Color Bkgd >Color Bkgd2	
CCR1 signal assigned button	CCR >CCR1 >XX	*page 187*
CCR2 signal assigned button	CCR >CCR2 >XX	
FMS1	Frame Memory >Still >Recall	*page 159*
FMS2	Frame Memory >Still >Recall	
1-ROW KEY1 a), 2-ROW KEY1 a)	• M/E-1, 2, 3, 4, 5 >Key1 >XX • PGM/PST >DSK1 >XX	*page 98*
1-ROW KEY2 a), 2-ROW KEY2 a)	• M/E-1, 2, 3, 4, 5 >Key2 >XX • PGM/PST >DSK2 >XX	
1-ROW KEY3 a), 2-ROW KEY3 a)	• M/E-1, 2, 3, 4, 5 >Key3 >XX • PGM/PST >DSK3 >XX	
1-ROW KEY4 a), 2-ROW KEY4 a)	• M/E-1, 2, 3, 4, 5 >Key4 >XX • PGM/PST >DSK4 >XX	
1-ROW KEY5 a), 2-ROW KEY5 a)	• M/E-1, 2, 3, 4, 5 >Key5 >XX • PGM/PST >DSK5 >XX	
1-ROW KEY6 a), 2-ROW KEY6 a)	• M/E-1, 2, 3, 4, 5 >Key6 >XX • PGM/PST >DSK6 >XX	
1-ROW KEY7 a), 2-ROW KEY7 a)	• M/E-1, 2, 3, 4, 5 >Key7 >XX • PGM/PST >DSK7 >XX	
1-ROW KEY8 a), 2-ROW KEY8 a)	• M/E-1, 2, 3, 4, 5 >Key8 >XX • PGM/PST >DSK8 >XX	

a) Cross-point Flexi Pad delegation buttons only on the cross-point control block.

Transition control block

Button	Menu recalled by double-press	See page
KEY1	• M/E-1, 2, 3, 4, 5 >Key1 >XX • PGM/PST >DSK1 >XX	*page 98*
KEY2	• M/E-1, 2, 3, 4, 5 >Key2 >XX • PGM/PST >DSK2 >XX	
KEY3	• M/E-1, 2, 3, 4, 5 >Key3 >XX • PGM/PST >DSK3 >XX	
KEY4	• M/E-1, 2, 3, 4, 5 >Key4 >XX • PGM/PST >DSK4 >XX	
KEY5	• M/E-1, 2, 3, 4, 5 >Key5 >XX • PGM/PST >DSK5 >XX	
KEY6	• M/E-1, 2, 3, 4, 5 >Key6 >XX • PGM/PST >DSK6 >XX	
KEY7	• M/E-1, 2, 3, 4, 5 >Key7 >XX • PGM/PST >DSK7 >XX	
KEY8	• M/E-1, 2, 3, 4, 5 >Key8 >XX • PGM/PST >DSK8 >XX	
WIPE	M/E-1, 2, 3, 4, 5, PGM/PST >Wipe >Main Pattern	*page 125*
DME WIPE	M/E-1, 2, 3, 4, 5, PGM/PST >DME Wipe >XX	*page 143*
SUPER MIX	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Transition	*page 79*
PST COLOR MIX	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Transition	*page 79*
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 168*
PRIOR SET	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Key Priority	*page 78*
KEY PRIOR	M/E-1, 2, 3, 4, 5, PGM/PST >Misc >Next Key Priority	*page 78*

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 125*
DME WIPE	M/E-1, 2, 3, 4, 5, PGM/PST >DME Wipe >XX	*page 143*
SNAPSHOT	Snapshot >Snapshot >XX	*page 336*
MASTR EFF	Effect >Master Timeline >Store	*page 324*
SHOTBOX	Shotbox >Register >Store/Recall	*page 344*
MCRO	Macro >Register >XX	*page 360*

Flexi Pad control block

Button	Menu recalled by double-press	See page
KEY1 [a]	• M/E-1, 2, 3, 4, 5 >Key1 >XX • PGM/PST >DSK1 >XX	*page 98*
KEY2 [a]	• M/E-1, 2, 3, 4, 5 >Key2 >XX • PGM/PST >DSK2 >XX	
KEY3 [a]	• M/E-1, 2, 3, 4, 5 >Key3 >XX • PGM/PST >DSK3 >XX	
KEY4 [a]	• M/E-1, 2, 3, 4, 5 >Key4 >XX • PGM/PST >DSK4 >XX	
KEY5 [a]	• M/E-1, 2, 3, 4, 5 >Key5 >XX • PGM/PST >DSK5 >XX	
KEY6 [a]	• M/E-1, 2, 3, 4, 5 >Key6 >XX • PGM/PST >DSK6 >XX	
KEY7 [a]	• M/E-1, 2, 3, 4, 5 >Key7 >XX • PGM/PST >DSK7 >XX	
KEY8 [a]	• M/E-1, 2, 3, 4, 5 >Key8 >XX • PGM/PST >DSK8 >XX	
WIPE [a]	• M/E-1, 2, 3, 4, 5 >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition >Wipe Adjust >Pattern Select • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Transition >Wipe Adjust >Pattern Select	*page 134*
DME WIPE [a]	• M/E-1, 2, 3, 4, 5 >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition >DME Wipe Adjust >1ch Pattern Select • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Transition >DME Wipe Adjust >1ch Pattern Select	*page 147*

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 >Key1 >XX • PGM/PST >DSK1 >XX	*page 98*
KEY2	• M/E-1, 2, 3, 4, 5 >Key2 >XX • PGM/PST >DSK2 >XX	
KEY3	• M/E-1, 2, 3, 4, 5 >Key3 >XX • PGM/PST >DSK3 >XX	
KEY4	• M/E-1, 2, 3, 4, 5 >Key4 >XX • PGM/PST >DSK4 >XX	
KEY5	• M/E-1, 2, 3, 4, 5 >Key5 >XX • PGM/PST >DSK5 >XX	
KEY6	• M/E-1, 2, 3, 4, 5 >Key6 >XX • PGM/PST >DSK6 >XX	
KEY7	• M/E-1, 2, 3, 4, 5 >Key7 >XX • PGM/PST >DSK7 >XX	
KEY8	• M/E-1, 2, 3, 4, 5 >Key8 >XX • PGM/PST >DSK8 >XX	
LUM	• M/E-1, 2, 3, 4, 5 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Type	
LIN		
PTN		
CRK	• M/E-1, 2, 3, 4, 5 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust	*page 100*

a) The menu recalled depends on which of the M/E delegation buttons are selected.

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 326* *page 324*
SNAPSHOT	• Snapshot >Snapshot >XX [a] • Snapshot >Master Snapshot >Store [b]	*page 336* *page 338*
SHOTBOX	Shotbox >Register >Store/Recall	*page 344*
MCRO	Macro >Register >XX	*page 360*
STORE [c]	Key Frame >Region Select	*page 309*
RCALL [c]	Key Frame >Region Select	*page 309*

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 180*

Device control block (trackball)

Button	Menu recalled by double-press	See page
CH1 to CH8 [a]	DME >XX	*page 227*
CH1 to CH12 [b]	Device >DDR/VTR >Cueup & Play	*page 292*
FM1 CLIP to FM8 CLIP	Frame Memory >Clip >Recall	*page 164*
K1RSZ to K8RSZ [c]	• M/E-1, 2, 3, 4, 5 >Key1, 2, 3, 4, 5, 6, 7, 8 >Processed Key/Resizer • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Processed Key/Resizer	*page 117*

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.

Spotlighting

Texture Patterns

Material provided by Digital Archive Japan, INC.

Shape Patterns

Functional Differences Between DME Models

Yes: Available, No: Not available

Function	Menu number	MVE-8000A	MVE-9000	MKS-7470X/7471X	See page
Border signal selection	4111	Single color only	Flat Color Ext Video Mix Color	Flat Color Ext Video Mix Color	*page 227*
CG border	4111	No	No	Yes	*page 228*
Key border	4113	No	Cannot be enabled at the same time as Glow.	Cannot be enabled at the same time as Glow.	*page 230*
Art Edge	4114	No	Yes	Yes	*page 230*
Flex shadow	4115	No	Yes	Yes	*page 233*
Wipe crop	4116	No	Yes	Yes	*page 236*
Color mix	4117	No	Yes	Yes	*page 238*
Defocus/blur	4121	Cannot be enabled at the same time as Glow.	Yes	Yes	*page 239*, *page 239*
Mask	4127	Yes Effect groups 1 and 2 cannot be selected at the same time. Pattern 304 (Round Corner) is not available.	Yes	Yes	*page 244*
Adjustment of Lighting/ Spotlighting [Total Ambient] parameter (brightness of whole image)	4151 4156	No	Yes	Yes	*page 259*, *page 268*
Setting the bar mode of the highlight area	4151	No	Yes	Yes	*page 260*
Adjustment of highlight area [Bar Diffuse Color] parameter (color of diffused lighting regions)	4151	No	Yes	Yes	*page 260*
Trail afterimage signal selection	4152	Freeze Video Flat Color Hue Rotate	No limitation	No limitation	*page 261*
Trail combine process	4152	No	Yes	Yes	*page 262*
Trail defocus function	4152	No	Yes	Yes	*page 262*
Keyframe strobe combine process	4154	No	Yes	Yes	*page 264*
Wind	4155	No	Yes	Yes	*page 264*
Spotlighting	4156	No	Yes	Yes	*page 265*
Background signal selection	4161	Single color only	Flat Color Ext Video Mix Color	Flat Color Ext Video Mix Color	*page 272*
Interpolation settings	4163	Yes (SD only)	Yes (both SD/HD)	Yes (both SD/HD)	*page 274*
Anti-moiré filter	4163	Yes	No	No	*page 275*
Flex shadow center axis settings	4164	No	Yes	Yes	*page 225*
Dim and fade	4173	No	Yes	Yes	*page 243*

Function	Menu number	MVE-8000A	MVE-9000	MKS-7470X/7471X	See page
Glow	4174	Cannot be enabled at the same time as Defocus/Blur.	Cannot be enabled at the same time as Key Border.	Cannot be enabled at the same time as Key Border.	*page 244*
Combiner [Depth] settings (three-dimensional crossing function)	4211	No	Yes	Yes	*page 280*
Adding user texture patterns (Spotlighting)	7316.9	No	Yes	Yes	*page 401*
AUX bus output/re-entry input settings	7337.7	DME1 to 8 Ext In settings unavailable	DME1 to 8 Ext In settings supported	DME1 to 8 Ext In settings supported	*page 455*
TBC window center position (Video/Key)	7341.1	Yes (SDI interface only)	Yes (SDI interface only)	No	*page 458*
TBC window center position (External Video)	7341.1	No	Yes	Yes	*page 458*
Adjustment of output video clip level	7343	Yes only when SDI interface is used.	Yes only when SDI interface is used.	No	*page 458*
Editor port usage settings	7344	Yes	Yes	No	*page 459*
1080P support	7313	Yes	No	Yes	*page 392*

Simple Connection of the MKS-8080/8082 AUX Bus Remote Panel

Procedure for Simple Connection

To connect the MKS-8080/8082 AUX Bus Remote Panel to the control panel using an S-Bus data link requires a 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 control panel 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 control panel 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

4 In the Engineering Setup >System >Initialize menu (7315), select PNL and carry out a reset.

This carries out a restart, and when the restart is completed connection to the MKS-8080/8082 is possible.

5 In the Engineering Setup >Router/Tally >Router menu (7361), set the position in the MVS-8000X/7000X 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 center control panel.

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 MVS-8000X/7000X 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.

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 0099)
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 532)*.
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 532)*.

Continue statement: Begins with "Continue?", and defines the macro event content *(see page 532)*.
Some events cannot be used *(see page 533)*.

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 533)*.

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 534)*.
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

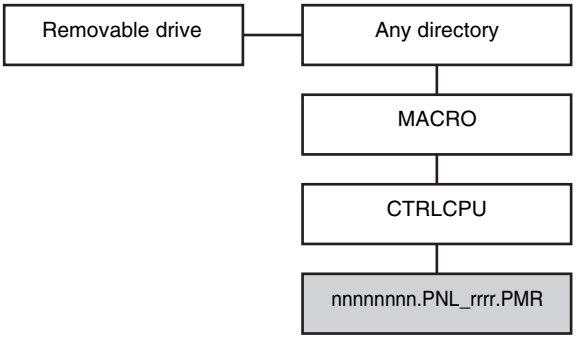
Set the file name as follows.
Example: nnnnnnnn.PNL_rrrr.PMR
nnnnnnnn: In a file created on the switcher, this is a register name automatically set by the switcher.
The name for a new file is limited to eight characters.
The following characters may not be used.
space, \, /, :, ;, , (comma), . (period), <, >, *, ?, ", |
rrrr: macro register number (0001 to 0099)

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 it in the >All, External File menu.

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 545).

Correspondence Between Events and Symbols

For details about events, see "Events" (page 348).

Event	Symbol	Using Continue
Cross-point selection in the AUX bus control block	AuxXpt	No
Cross-point selection in the router	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 and take in the independent key transition execution section	KeyAutoTransition	Yes
Key insertion and removal in the independent key transition execution section	KeyCut	Yes
Independent key transition type selection	KeyTransitionType	No
VTR/disk recorder/Extended VTR/frame memory clip start point setting	StartTc	Yes
VTR/disk recorder/Extended VTR/frame memory clip playback	Play	Yes
VTR/disk recorder/Extended VTR/frame memory clip stop	Stop	Yes
VTR/disk recorder/Extended VTR/frame memory clip cue-up	Cue	Yes
VTR/disk recorder/Extended VTR/frame memory clip fast forward	FF	Yes
VTR/disk recorder/Extended VTR/frame memory clip rewind	Rewind	Yes
Loading of disk recorder/Extended VTR files	DiskFileLoad	No
Recall snapshot	Snapshot	Yes
Recall key snapshot	KeySnapshot	Yes

Event	Symbol	Using Continue
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 keyframe	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 1st row/2nd row 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
Record device	DeviceRecord	Yes
AUX mix transition enable/disable	AuxMix	No

a) For details about pause events, see *"Macro Execution" (page 350)*.

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

Symbol	Parameter name	Arguments	Description
AuxXpt	AuxBus?	EditPreview, Aux1 to Aux48, FrameMemory1, FrameMemory2, DME1Video to DME8Video, DME1Key to DME8Key, DME1Video2nd to DME8Video2nd (a), DME1Key2nd to DME8Key2nd (b), DMEUtility1, DMEUtility2, CCR1, CCR2	Target AUX bus (a): DMEnVideo2nd= Bus for selecting background video signal of DMEn channel (n=1 to 8), (b): DMEnKey2nd= Bus for selecting background key signal of DMEn channel (n=1 to 8)
	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 control block
	Time?	Current (a), 0 to 999	Transition rate (number of frames) (a): Mode in which the current value set on the independent key transition control block 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 control block
	Direction?	ToOn (a), ToOff (b), Any (c)	Transition execution mode (a): Key is inserted (b): Key is removed (c): Transition is always executed
Play	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Target device
	Mode?	Normal (a), Recue (b), Loop (c)	Playback mode (a): Normal mode For Frame Memory 1 Clip to Frame Memory 8 Clip, settings are ignored and operation mode is fixed to “Normal.” (b): Recue mode (c): Loop mode

Symbol	Parameter name	Arguments	Description
Cue	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Target device
	Timecode?	Current (a), hh:mm:ss:ff	Start point timecode hh=hours (00 to 23) As for Frame Memory 1 Clip to Frame Memory 8 Clip, 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 FrameMemory8Clip	Target device
FF	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Target device
Rewind	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Target device
DiskFileLoad	Device?	1 to 12	Target device
	FileName?	File Name	Name of file being set (max. 23 characters)
Snapshot	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME8, Router	Target region
	Register?	1 to 99	Target register number
	Attribute?	Off, Dissolve, AutoTransition, Dissolve&AutoTransition	Target snapshot attribute
	Time?	Current (a), 0 to 999	Duration of effect dissolve (number of frames) (a): Mode in which the currently set value is used
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 DME8, PBus, Device1 to Device12, GPI	Target region
	Register?	1 to 399	Target register number
TimelineRun	Region?	ME1 to ME5, PP, User1 to User8, DME1 to DME8, 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 DME8, 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 DME8, 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)

Symbol	Parameter name	Arguments	Description
StartTc	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	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 1024	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 applicable 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 DME8, 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
TimelineDirectionReverse	Region?	ME1 to ME5, PP User1 to User8, DME1 to DME8, 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 DME8, 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 DME8, 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
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 FrameMemory8Clip	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
	KeyBusUtilityButton?	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?	FrameMemory1Clip to FrameMemory8Clip	Target clip
	ClipType?	Pair, Single	Clip type (pair/single)
	Clip?	Clip Name	Name of clip (up to four characters)
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

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 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	(nothing) Shift	XPT 1 : XPT 128
KEY1 Bus : KEY8 Bus	1st Row, 2nd Row 1st Row Shift, 2nd Row Shift	
KEY1 Src Bus : KEY8 Src Bus	V 1st Row, V 2nd Row K 1st Row, K 2nd Row V 1st Row Shift, V 2nd Row Shift K 1st Row Shift, K 2nd Row Shift	
Sub A Bus Sub B Bus	(nothing) Shift	
Sub KEY1 Bus : Sub KEY8 Bus Main&Sub A Bus Main&Sub B Bus Main&Sub KEY1 Bus : Main&Sub KEY8 Bus	1st Row, 2nd Row 1st Row Shift, 2nd Row Shift	
Sub KEY1 Src Bus : Sub KEY8 Src Bus Main&Sub KEY1 Src Bus : Main&Sub KEY8 Src Bus	V 1st Row, V 2nd Row K 1st Row, K 2nd Row V 1st Row Shift, V 2nd Row Shift K 1st Row Shift, K 2nd 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, V 2nd Row K 1st Row, K 2nd Row V 1st Row Shift, V 2nd Row Shift K 1st Row Shift, K 2nd Row Shift	
Dual A Bus Dual B Bus Sub Dual A Bus Sub Dual B Bus Main&Sub Dual A Bus Main&Sub Dual B Bus	V Shift	

Block Select: P/P, Block: P/P Trans

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.

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 : DME8V	V V Shift V 4th Row V 4th Row Shift	
DME1K : DME8K	K K Shift K 4th Row K 4th Row Shift	
DMEUtility1 DMEUtility2	V K V Shift K Shift V 4th Row K 4th Row V 4th Row Shift K 4th Row Shift	
CCR1 CCR2 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	

Button (1)	Button (2)	Button (3)
DSK1 : DSK8 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	XPT 1 : XPT 128
DSK1 Src : DSK8 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	

Other Blocks

Block Select: Others, Block: Trackball

Button (1)	Button (2)	Button (3)
DEV	CUE PLAY STOP START TC	(nothing)

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, in individual menus

Menu number	Menu path
0011 to 0023	All menus under Home
2541	Frame Memory >File >Pair Recombination
2542	Frame Memory >File >Auto Extraction
2544	Frame Memory >File >Move
2545	Frame Memory >File >Delete
2546	Frame Memory >File >Rename
2551	Frame Memory >File >Folder
2561	Frame Memory >External Device >Ext HDD Format
2562	Frame Memory >External Device >Ext HDD Backup/Restore
5333	Device >DDR/VTR >File List
5412 to 5441	All menus under Macro
7111 to 7173	All menus under File
7311 to 7317	All menus under Engineering Setup >System menu
7327	Engineering Setup >Panel >Maintenance

Data Saved by [Setup Define] and [Initial Status Define]

This section lists the data saved in the Engineering Setup >System >Start Up menu (7314) by [Setup Define] and [Initial 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
2511	Frame Memory >Still >Recall	[Direct Recall] settings
2521	Frame Memory >Clip >Recall	[Direct Recall] settings
6115	Key Frame >Timeline Assign	All data relating to Timeline Assign menu
7314	Engineering Setup >System >Start Up	[Power On File 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 interface
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

Menu number	Menu path	Saved data
7322.5	Engineering Setup >Panel >Xpt Assign >Main, V/K Pair Assign	All data relating to Main, V/K Pair Assign menu
7322.6	Engineering Setup >Panel >Xpt Assign >Src Name/ Src Color	All data relating to Src Name/Src Color menu
7326.2	Engineering Setup >Panel >Operation >Effect Mode	Setting of [Default KF Duration] for switcher keyframes
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/CCR	All data relating to Key/Wipe/FM/CCR 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
7326.2	Engineering Setup >Panel >Operation >Effect Mode	• Settings relating to [Default KF Duration] for DME keyframes • Setting data for [Effect Auto Save]
7341 to 7344	Engineering Setup >DME	All data relating to DME menu

Data Saved by [Initial 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 buttons, [TC], [RCALL], and [STORE] button settings • Menu panel [SUB MENU SITE] button settings • Utility/shotbox control block mode selection button settings • Cross-point Flexi Pad button settings on the cross-point control block ([MACRO ATTACH ENABLE], display mode button, 1st row or 2nd row delegation buttons, [DUAL BKGD BUS], [1-ROW PROT] to [4-ROW PROT]), cross-point Flexi Pad display page numbers • AUX bus control block bus delegation button settings, cross-point Flexi Pad button settings (display mode button, [2ND DELEG], [DEST], [KEY], [2ND KEY]), cross-point Flexi Pad display page numbers • Transition control block [KF] button settings • Flexi Pad control block mode selection button settings, bank 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 [Initial Status Define].

Menu number	Menu path	Saved data
–	–	• The following data for each M/E cross-points, transitions, Key1 to Key8 (including independent key transition settings), wipes, DME wipes, video process • Color background 1 and 2 • Frame memory • AUX bus (including video processing and AUX mix transition settings) • CCR
3211	Misc >Enable >Port Enable	<Switcher> group settings data
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
4121 to 4124	DME >Video Modify	All data relating to Video Modify 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
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
4211, 4221	Global Effect >Ch1-Ch4 >Combine Priority Global Effect >Ch5-Ch8 >Combine Priority	All data relating to Combine Priority menu
4212, 4222	Global Effect >Ch1-Ch4 >Brick Global Effect >Ch5-Ch8 >Brick	All data relating to Brick menu
4213, 4223	Global Effect >Ch1-Ch4 >Shadow Global Effect >Ch5-Ch8 >Shadow	All data relating to Shadow 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
4127	DME >Video Modify >Mask	All data relating to Mask 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
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
4174	DME >Enhanced Video Modify >Glow	All data relating to Glow menu
3211	Misc >Enable >Port Enable	<DME1> and <DME2> group 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 545)*.
When an error has already been cleared: The Error Log menu appears *(see page 545)*.

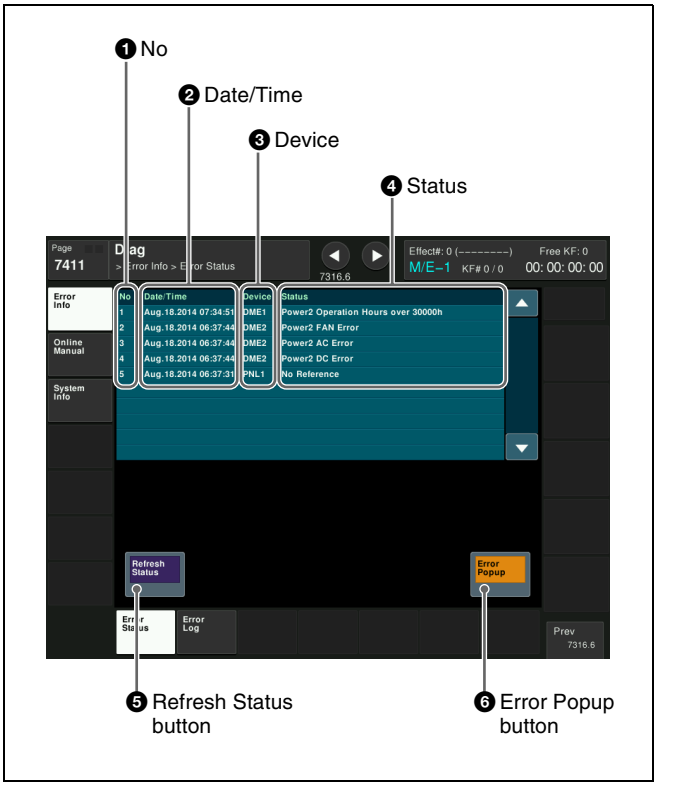
You can select whether or not to indicate the occurrence of an error by the word “ERROR” shown on the menu title button, by setting [Error Popup] in the Error Status menu or Error Log menu.

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.

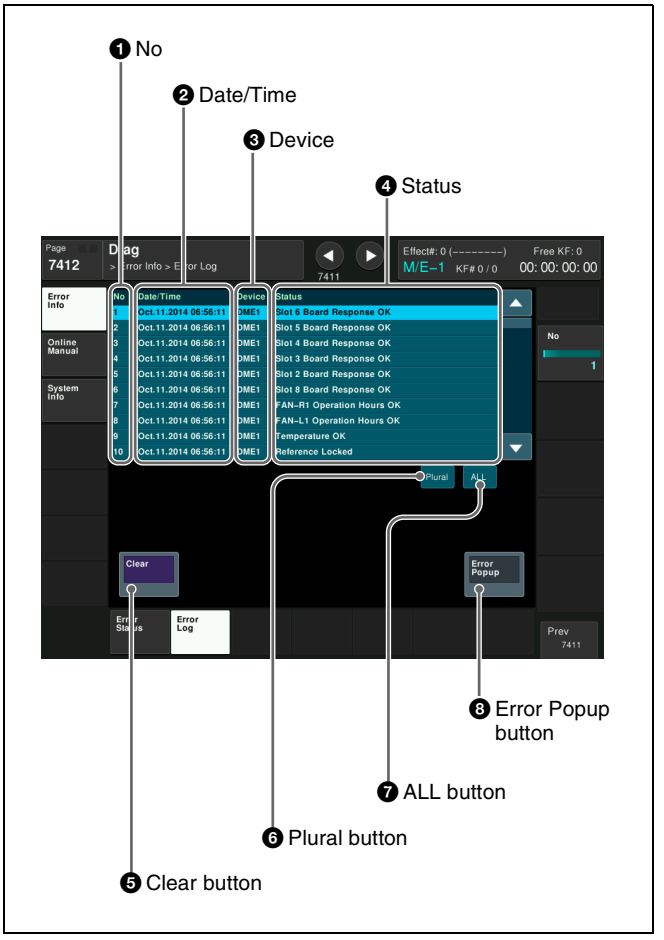
❹ Status
This shows the details of the error.

❺ Refresh Status button
This refreshes the list display.

❻ 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 1024 error status changes appear, and when the number exceeds 1024, 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.

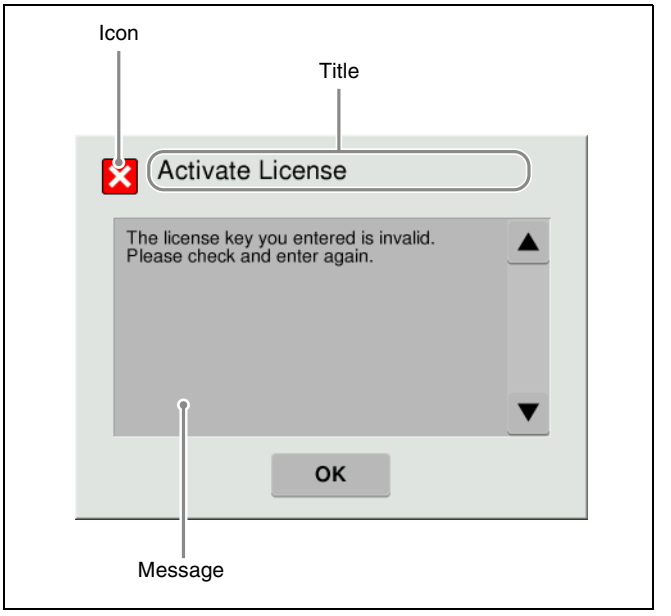
6 Plural button
Press [Plural] to enable selection of more than one log. To cancel the selection, press once again to return to the normal display.

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
Append Key Frame		
✖	[Append Key Frame] cannot be executed. FMx is not assigned to a user region.	2515: Frame Memory >Still >Create Key Frame When [Append Key Frame] was executed, the frame memory output (FMx) was not assigned to a User region. Make the assignment in menu 7331.4 (Engineering Setup >Switcher >Config >User1-8 Config), and try again.
✖	[Append Key Frame] cannot be executed. Key Frame Register is locked. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Append Key Frame] was executed, the register (UserX region) was locked. Unlock the register.
✖	[Append Key Frame] cannot be executed. Key Frame Register is busy. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Append Key Frame] was executed, files were being loaded into the register (UserX region). Try again after file loading has finished.
✖	[Append Key Frame] cannot be executed. Key Frame Register is being edited. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Append Key Frame] was executed, keyframe creation or editing was in progress using the register (UserX region). Try again after the keyframe operation has finished.
✖	[Append Key Frame] cannot be executed. Key Frame Register is full. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Append Key Frame] was executed, there were no remaining keyframes in the register (UserX region).
✖	[Append Key Frame] cannot be executed. Key Frame Register is not active. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Append Key Frame] was executed, the region selection button for a register in the numeric keypad control block was not selected. Select the region selection button [UserX] in the numeric keypad control block, and try again.
Backup		
✖	No external HDD was found (–2).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, the external HDD could not be found. Check that the external HDD is connected correctly.
✖	Format operation failed (–10). Format operation failed (–11).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, formatting of the external HDD failed.
✖	Cannot access the partition (–12).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, the logical drives of the external HDD could not be accessed. Check that the external HDD is formatted correctly.
✖	Cannot access the directory (–20). Cannot access the directory (–21).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, the directory of the external HDD could not be accessed.
✖	The external HDD is busy (–22).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, the external HDD was busy and could not be accessed. Check that the access lamp of the external HDD or the menu indicator is turned off, and try again.
✖	ERROR (–31).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, the external HDD could not be written to because a clip is currently playing or recording.
✖	Backup operation failed (–34). Backup operation failed (–36).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, the process to store the file to the external HDD failed.
✖	Cannot be executed. Amount of FM files exceeds the capacity of usable frame memory.	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, the number of files exceeded the storage limit.
✖	Cannot be executed. The function requires two frames of frame memory.	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, two files were required but there was only one file remaining.
✖	No directory exists (–50).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, the specified directory did not exist.
✖	Rename operation failed (–52). Rename operation failed (–53).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Backup] was pressed, renaming the directory failed.

Icon	Message	Description
	Invalid FM OutCh (–6).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, the specified frame memory output channel could not be used.
	Specified FM OutCh was locked (–7).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, the specified frame memory output channel was locked.
	Not enough free register area for Backup or Restore process (–10).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, there was insufficient capacity to carry out the backup.
	Prepare failed, not any file was found on this board (–11).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, no image files were found.
	Backup failed, not prepared yet (–12).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, the device was not yet ready.
	Backup failed, bad Clip id (–13).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, All One Clip recall failed (internal processing error).
	Prepare failed, all one Clip create failed (–14).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, All One Clip creation failed (internal processing error).
	Prepare failed, insufficient Clip id (–15).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, there were insufficient Clip IDs (internal processing error).
	Prepare failed, symbol files create failed (–16).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, marker frame file creation failed (internal processing error).
	Prepare failed, all one Clip recall failed (–17).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, All One Clip recall failed (internal processing error).
	ERROR (–19). Bad register number.	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, Register Number was an invalid value (internal processing error).
	Prepare failed, because there is clip playing (–22).	2564: Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed, processing failed because clip playback was in progress.

Change Password

	Failed. The password was not changed.	7317.1: Engineering Setup >System >Maintenance >Setup Operation Lock The password could not be changed.

Create Key Frame

	[Create Key Frame] cannot be executed. FMx is not assigned to a user region.	2515: Frame Memory >Still >Create Key Frame When [Create Key Frame] was executed, the frame memory output (FMx) was not assigned to a User region. Make the assignment in menu 7331.4 (Engineering Setup >Switcher >Config >User1-8 Config), and try again.
	[Create Key Frame] cannot be executed. Key Frame Register is locked. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Create Key Frame] was executed, the register (UserX region) was locked. Unlock the register.
	[Create Key Frame] cannot be executed. Key Frame Register is busy. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Create Key Frame] was executed, files were being loaded into the register (UserX region). Try again after file loading has finished.
	[Create Key Frame] cannot be executed. Key Frame Register is being edited. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Create Key Frame] was executed, keyframe creation or editing was in progress using register (UserX region). Try again after the keyframe operation has finished.
	[Create Key Frame] cannot be executed. There are no empty Key Frame Registers. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Create Key Frame] was executed, an insufficient number of usable keyframes were in UserX region.

Icon	Message	Description
	[Create Key Frame] cannot be executed. Key Frame Register is not active. (UserX)	2515: Frame Memory >Still >Create Key Frame When [Create Key Frame] was executed, the region selection button for the register in the numeric keypad control block was not selected. Select the region selection button [UserX] in the numeric keypad control block, and try again.

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 An attempt was made to assign a locked register. Unlock the register before carrying out the assignment.
	The file was not able to be read.	7142.1: File >Shotbox, 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 >File Edit >Off Line Edit The file could not be written when storing. Try to store once more.
	Failed...	7162: File >All, External File >Import/Export Importing a file failed. Check the format of the original file, and try again.
	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.

Extraction

	ERROR (–1).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, an internal processing error occurred.
	Create thumbnail failed (–2).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, thumbnail creation failed (internal processing error).
	Red Symbol file not match (–3).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, a red marker frame file was invalid.
	Blue Symbol file not match (–4).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, a blue marker frame file was invalid.
	No data between two symbol files (–5).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, there was no data between two marker frames.
	Cannot find symbol file (–8).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, the marker frame file could not be found.
	Clip frame error (–10).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, the number of frames in a clip was invalid (internal processing error).
	Clip not found (–12).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, the specified clip did not exist.
	Clip is playing or being edited (–13).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, the specified clip was being played back or edited.
	Clip register error (–14).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, the data in the specified register could not be processed (internal processing error).
	Can’t extract pair clip (–15).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, an attempt was made to extract a pair clip.
	Clip id not enough (–50).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, there were over 100 clips.

Icon	Message	Description
✕	Still frame on FM 2nd board (–51).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, a still image was extracted from an external clip.
✕	Clip frame number can't be ODD in 720P format (–52).	2542: Frame Memory >File >Auto Extraction When [Extraction Start] was pressed, an odd number of clips were extracted (720P format only).

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 7162: File >All, External File >Import/Export An attempt was made to load a file with the same name as a file already in the register.

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 Port Assign) or menu 7325.4 (Engineering Setup >Panel >Device Interface >Device Assign).
	ERROR (02)	
	ERROR (FF): No target device has been assigned	

Format

!	Success!! But some partitions cannot be created because the capacity of the local drive is not enough.	7317: Engineering Setup >System >Maintenance Formatting of the local drive was completed successfully. However, because of insufficient local drive capacity, only the possible number of partitions were created.
✕	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 such cases, 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.

GPI Input

!	Please set Target.	7337.2/3: Engineering Setup >Switcher >Device Interface >GPI Input 7344.1/2: Engineering Setup >DME >Device Interface >DME1 GPI Input 7344.4/5: Engineering Setup >DME >Device Interface >DME2 GPI Input 7344.7/8: Engineering Setup >DME >Device Interface >DME3 GPI Input 7344.10/11: Engineering Setup >DME >Device Interface >DME4 GPI Input 7352/7352.1: 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 Target.	7337.4: Engineering Setup >Switcher >Device Interface >GPI Output 7344.3: Engineering Setup >DME >Device Interface >DME1 GPI Output 7344.6: Engineering Setup >DME >Device Interface >DME2 GPI Output 7344.9: Engineering Setup >DME >Device Interface >DME3 GPI Output 7344.12: Engineering Setup >DME >Device Interface >DME4 GPI Output 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.	

HDD Format

✕	No external HDD was found (–2).	2561: Frame Memory >External Device >Ext HDD Format When [5 Partition] or [15 Partition] was pressed, the external HDD could not be found. Check that the external HDD is connected correctly.
✕	Format operation failed (–11).	2561: Frame Memory >External Device >Ext HDD Format When [5 Partition] or [15 Partition] was pressed, formatting of the external HDD failed.

Icon	Message	Description
	Cannot access the partition (–12).	2561: Frame Memory >External Device >Ext HDD Format When [5 Partition] or [15 Partition] was pressed, the external HDD logical drive could not be accessed. Check that the external HDD is formatted correctly.
	Cannot access the directory (–20).	2561: Frame Memory >External Device >Ext HDD Format When [5 Partition] or [15 Partition] was pressed, the external HDD directory could not be accessed.
	The external HDD is busy (–22).	2561: Frame Memory >External Device >Ext HDD Format When [5 Partition] or [15 Partition] was pressed, the external HDD was in use and could not be accessed. Check that the access lamp of the external HDD or the menu indicator is turned off, and try again.

Import

	Cannot create the clip file, because the number of selected files is insufficient.	7162: File >All, External File >Import/Export When importing a clip file, insufficient files were selected to create the clip.

Install

	An error occurred during the install process. For more details, see Page 9900.	7316.10: Engineering Setup >System >Install/Unit Config >Install The menu software installation package does not match the model on which it is to be installed.
	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 memory card is inserted 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).

Invalid Name

	Empty...	2512: Frame Memory >Still >Freeze/Store A Store operation was carried out without specifying a name. 71XX: File Menu 7171: File >Configure >Directory When renaming a file or creating a directory, a name was not entered. Specify the correct name.
	The file exists already...	2512: Frame Memory >Still >Freeze/Store The file name specified when [Store] was executed already exists in the switcher. Specify a different name.

Icon	Message	Description
Loading Texture Pattern		
✕	Target File: XXXXX Failed to load target bmp file./Illegal Name. This operation is canceled.	7316.9: Engineering Setup >System >Install/Unit Config >Texture Package An error occurred when loading a texture file. Delete texture files with an illegal size or illegal file name, then try again.
	Target File: XXXXX Failed to load target bmp file./Illegal Size. This operation is canceled.	
Make Package		
✕	Texture file: XXXXX Not Found. This texture file does not exist on the removable drive.	7316.9: Engineering Setup >System >Install/Unit Config >Texture Package When loading an existing texture package, a texture file within the texture package could not be found.
✕	This operation is canceled, because capacity is full. Please clear texture pattern.	7316.9: Engineering Setup >System >Install/Unit Config >Texture Package When making a texture package using Make Package, there was insufficient space on the removable drive.
Password		
✕	Password Incorrect	7317.1: Engineering Setup >System >Maintenance >Setup Operation Lock The wrong password was entered. Enter the correct password.
Record		
✕	Cannot be executed. Maximum number of clips are created.	2523: Frame Memory >Clip >Record When [Rec Start] was executed, the number of recorded clips reached the upper limit.
Refresh Status		
✕	No external HDD was found (–2).	2561: Frame Memory >External Device >Ext HDD Format 2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Refresh Status] was pressed, the external HDD could not be found. Check that the external HDD is connected correctly.
✕	Cannot access the partition (–12).	2561: Frame Memory >External Device >Ext HDD Format 2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Refresh Status] was pressed, the logical drives of the external HDD could not be accessed. Check that the external HDD is formatted correctly.
✕	Cannot access the directory (–20).	2561: Frame Memory >External Device >Ext HDD Format 2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Refresh Status] was pressed, the directory of the external HDD could not be accessed.
	Cannot access the directory (–21).	
✕	The external HDD is busy (–22).	2561: Frame Memory >External Device >Ext HDD Format 2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Refresh Status] was pressed, the external HDD was busy and could not be accessed. Check that the access lamp of the external HDD or the menu indicator is turned off, and try again.
Rename		
✕	This operation is inhibited because of the illegal combination in the selected files.	7151.1: File >Frame Memory >Frame Memory >File Edit When [Rename] was pressed, multiple files of different types were selected. Check that the selected files are all of the same type.
✕	Files currently used for playback cannot be renamed.	2546: Frame Memory >File >Rename When [Rename] was pressed, the selected files included a movie (clip) currently being played back.
✕	No external HDD was found (–2).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Rename] was pressed, the external HDD could not be found. Check that the external HDD is connected correctly.
✕	Cannot access the directory (–20).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Rename] was pressed, the directory of the external HDD could not be accessed.

Icon	Message	Description
✕	The external HDD is busy (–22).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Rename] was pressed, the external HDD was busy and could not be accessed. Check that the access lamp of the external HDD or the menu indicator is turned off, and try again.

Restore

!	Success!! But some files were not restored.	2562: Frame Memory >External Device >Ext HDD Backup/Restore Recalling a file from the external HDD was completed successfully. However, some files were not restored because of a different video format or file corruption.
!	Success!! But the number of folder exceeds the limit (12) and the files expected for the folders were restored in the default folder. Or the name was changed because it was the same file name.	2562: Frame Memory >External Device >Ext HDD Backup/Restore Recalling a file from the external HDD was completed successfully. However, the limit on the number of folders was reached, and therefore files were restored to the default folder. Alternatively, the file name was changed because a file of the same name already exists.
!	Success!! But the number of folder exceeds the max limit (12) and the files expected for the folders were restored in the default folder (–50)!	2565: Frame Memory >External Device >Restore from DDR/VTR Recalling a file from the external device was completed successfully. However, the limit on the number of folders was reached, and therefore files were restored to the default folder.
!	Success!! But some still files had been renamed because the same file name already existed (–51)!	2565: Frame Memory >External Device >Restore from DDR/VTR Recalling a file from the external device was completed successfully. However, some files were renamed because of still image file name conflicts.
!	Success!! But some Clip files had been renamed because the same Clip name already existed (–52)!	2565: Frame Memory >External Device >Restore from DDR/VTR Recalling a file from the external device was completed successfully. However, some clips were renamed because of clip name conflicts.
✕	No external HDD was found (–2).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Restore] was pressed, the external HDD could not be found. Check that the external HDD is connected correctly.
✕	Format operation failed (–10).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Restore] was pressed, formatting of the external HDD failed.
	Format operation failed (–11).	
✕	Cannot access the partition (–12).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Restore] was pressed, the logical drives of the external HDD could not be accessed. Check that the external HDD is formatted correctly.
✕	Cannot access the directory (–20).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Restore] was pressed, the directory of the external HDD could not be accessed.
	Cannot access the directory (–21).	
✕	The external HDD is busy (–22).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Restore] was pressed, the external HDD was busy and could not be accessed. Check that the access lamp of the external HDD or the menu indicator is turned off, and try again.
✕	ERROR (–41)	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Restore] was pressed, the file could not be recalled from the external HDD because the clip is currently playing or recording.
✕	Restore operation failed (–43).	2562: Frame Memory >External Device >Ext HDD Backup/Restore Recalling a file from the external HDD failed.
	Restore operation failed (–46).	
✕	No directory exists (–50).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Restore] was pressed, the specified directory did not exist.
✕	Rename operation failed (–52).	2562: Frame Memory >External Device >Ext HDD Backup/Restore When [Restore] was pressed, renaming the directory failed.
	Rename operation failed (–53).	
✕	Invalid FM OutCh (–6).	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, the specified frame memory output channel could not be used.

Icon	Message	Description
	Specified FM OutCh was locked (–7).	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, the specified frame memory output channel was locked.
	Restore failed, some Clip files cannot be deleted on this board (–8).	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, restoring failed because a clip file could not be deleted.
	Not enough free register area for Backup or Restore process (–10).	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, there was insufficient capacity to carry out the restore operation.
	Prepare failed, insufficient Clip id (–15).	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, there were insufficient Clip IDs (internal processing error).
	Restore failed, Cannot find symbol files on this tape (–18).	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, a marker frame file could not be found.
	ERROR (–19). Bad register number.	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, Register Number was an invalid value (internal processing error).
	Restore failed, file name already exist, try to rename but unsuccessful (–20).	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, renaming failed.
	Cannot find the File Name Data, please load the File Name Data first (–21).	2565: Frame Memory >External Device >Restore from DDR/VTR When [Restore Start] was pressed, the file list was not loaded.

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.

Trim

	The Start TC or Stop TC is not properly set.	2522: Frame Memory >Clip >Play When [Trim] was pressed, neither the Start TC nor the Stop TC was set.
		2522: Frame Memory >Clip >Play When [Trim] was pressed, the interval between Start TC (or Clip Begin) and Stop TC (or Clip End) was the entire clip.
		2522: Frame Memory >Clip >Play When [Trim] was pressed, the Start TC (or Clip Begin) value was greater than the Stop TC (or Clip End) value.
	This file is locked.	2522: Frame Memory >Clip >Play When [Trim] was pressed, the file was locked.
	This file is using for playback.	2522: Frame Memory >Clip >Play When [Trim] was pressed, the target file was 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 When [Store] was pressed, the target register was locked. Unlock the register before executing [Store].
	No Switcher information available. Please confirm “Network Configuration” on Page 7311.	When starting up the menu system, the switcher was not present in the system information. Check the LAN connections, and retry [Auto Config] in menu 7311 (Engineering Setup > System > Network Config).

Icon	Message	Description
Warning (System Config)		
	Illegal Network Config Information (Page 7311)	When starting up the menu system, one of the messages on the left appears, depending on the status, if the system information read from the control panel is not correct. According to the message, execute operations in menu 7311 (Engineering Setup > System > Network Config) or menu 7312 (Engineering Setup > System > System Config).
	Illegal Panel Assign Information for Dual Simul Operation (Page 7312)	
	No Panel Assign Information (Page 7312)	
	No Switcher Assign Information (Page 7312)	
	No System Operation Mode Information (Page 7312)	
	No DME Channel Information	

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.

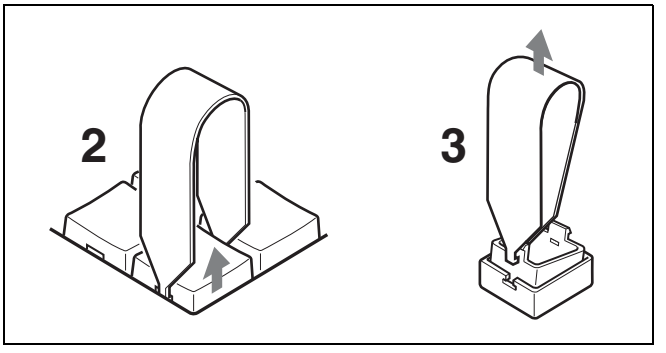
Error message	Error description/measures
[Error] Server Not Respond	There is absolutely no response on the LAN from the processor. Check the LAN connections and the power source of the processor.
[Error] No Space	There is insufficient space on the local drive or removable drive.

Maintenance

Replacing Keytop Labels

A tool for removing keytops is supplied with the control panel.
You can change the display labels of buttons with different assigned patterns using the following procedure.

1. Enter a new pattern on a supplied replacement label.
2. Insert the supplied tool into the holes on both sides of the button, and remove the button.
3. Grasp the notch portion of the inner cap on both sides using the tool, and twist slightly to pull it up and out.
4. Replace the old label with the new label.
5. Fit the white cap.
6. Reattach the button in its original position.



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 Flexi 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.

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MVS-8000X System
MVS-7000X System
(SY)
4-567-369-**01** (1)

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