SONY

Multi Format Switcher System

MVS-8000X System
MVS-7000X System

(With CCP-8000 Series Center Control Panel)

User's Guide Volume 1 English

Software Version 11.10 or Later

1st Edition (Revised 1)

4287522020

SONY

MVS-8000X/7000X System (With CCP-8000 Series)

Volume 1

MVS-8000X System
MVS-7000X System
(SY)
4-287-522-**02** (1)

Sony Corporation
http://www.sony.net/
Printed on recycled paper.

Printed in Japan
2011.07 32
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Functions Newly Supported in Version 11.10

The functions newly supported in the MVS-8000X/7000X system version 11.10 are as follows.

Functions relating to the switcher

Classification	Functions supported	Menu No.	See page	
			Vol. 1	Vol. 2
Signal inputs and outputs	Combination setting of format converter signal formats in units of 4 inputs	7313.4	-	143
	Frame delay mode in the format converter	7332	-	144, 204
Key	Key rotation by the resizer	1115	147	-
Frame memory	Ancillary data	7316.8	208	153
System	3D support	7331.13 7331.9 7331.10 7331.12	248	-
	3M/E mode and 4M/E mode in the M/E configuration [a)]	7316.11	254	-
Signal outputs	Multi Viewer	7333.9	-	209

a) In MVS-7000X only

Functions relating to the setup

Classification	Functions supported	Menu No.	See page	
			Vol. 1	Vol. 2
User setup	Source patch	7211 7212 7212.1	-	248

Functions relating to the DME

Classification	Functions supported	Menu No.	See page	
			Vol. 1	Vol. 2
Switcher connection	Connection by SDI interface	7337.7	-	222
Applying special effects (edge effects)	Flex shadow	4115	283	-
Applying special effects (effects on the overall video signal)	Masking the glow effect	4174	297	-
System	Support for SD format by MKS-7470X/7471X	-	257	-

Functions Not Supported in Version 11.10

The following functions are not supported in the MVS-7000X system version 11.10.

Classification	Functions supported	Menu No.	See page	
			Vol. 1	Vol. 2
System	Support for 1080P format by MKS-7470X/7471X	-	-	-
	Key assignment for 3M/E mode or 4M/E mode	7331.13	-	-

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MVS-8000X/7000X Functions

Chapter 1

Introduction

This manual is the User's Guide for the MVS-8000X/7000X Multi Format Switcher system.
This manual describes principally the operation of the system using the CCP-8000 of center control panels.
The User's Guide for this system comprises two volumes. For the contents of each volume, see the section "Organization of This User's Guide" at the front of this volume.

Devices and system nomenclature

In this manual, when discussing the principal components of the MVS-8000X/7000X system, in place of the formal product names, abbreviated names characterizing the functions and features are sometimes used. When distinctions between system configurations must be drawn, the terms in the following table are used.

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	Term used in this manual
MVS-8000X/7000X Multi Format Switcher Processor	Switcher or switcher processor
DME Board Set MKS-7470X	DME or DME Board set or MKS-7470X/7471X
Additional DME Board MKS-7471X	
MVE-8000A Multi Format DME Processor	DME or DME processor or MVE-8000A
MVE-9000 Multi Format DME Processor	DME or DME processor or MVE-9000
CCP-8000, CCP-6224, CCP-6324 Center Control Panel	Control panel or center control panel
DCU-8000 (MKS-8700) Device Control Unit	DCU or MKS-8700
DCU-2000 (MKS-2700) Device Control Unit	DCU or MKS-2700

System nomenclature

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

System configuration and features	Term for 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 center control panel has five M/E banks	5M/E system
A system in which the center control panel has four M/E banks	4M/E system
A system in which the center control panel has three M/E banks	3M/E system
A system in which the center control panel has two M/E banks	2M/E system

Related manuals

MVS-8000X-C/7000X-C Switcher Processor Pack
- MVS-8000X-C/7000X-C Operation Manual
- MVS-8000X-C/7000X-C Installation Manual

MVE-8000A DME Processor Pack
- MVE-8000A Operation Manual
- MVE-8000A Installation Manual

MVE-9000-C DME Processor Pack
- MVE-9000-C Operation Manual
- MVE-9000-C Installation Manual

CCP-6000/8000 Center Control Panel Pack
- CCP-6000/8000 Operation Manual
- CCP-6000/8000 Installation Manual

DCU-8000 Device Control Unit Pack
- DCU-8000 Operation Manual
- DCU-8000 Installation Manual

DCU-2000 Device Control Unit Pack
- DCU-2000-C Operation Manual
- DCU-2000-C Installation Manual

Features of the MVS-8000X/7000X Multi Format Switcher System

The MVS-8000X/7000X Multi Format Switcher system boasts extensible high performance and multifunctionality. 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 extensible DME processor, which provides any number from one to eight channels, for a maximum of eight channels of DME functionality.

When the signal format is 1080P, you can also connect up to four MVE-8000A units, which provides a maximum of eight channels of DME functionality.

For the MVS-7000X, by installing the optional MKS-7470X/7471X DME board set, you can use a maximum of four channels of DME functionality.

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 routing switcher provides an all-inclusive 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, and each keyer is capable not only of chroma keying, but also independent key transitions separate from the 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 HDTV system (approximately 2000 frames in 720P/59.94 format), or approximately 5000 frames in an SDTV 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 functions.

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 control block provides a large color LCD panel, with rapid touch-panel menu selection.

The source name displays and buttons in the Flexi Pad™ and shotbox control blocks have color backlit LCD displays. The signal names, and graphical representations of the patterns associated with buttons provide intuitive feedback, and allow the immediate decisions that are required in a live operating environment.

Basic Video Processing

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

Transitions

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 of the images, the background, and keys 1 to 8 (downstream keys 1 to 8 in the PGM/PST bank), and also vary combinations of these simultaneously.

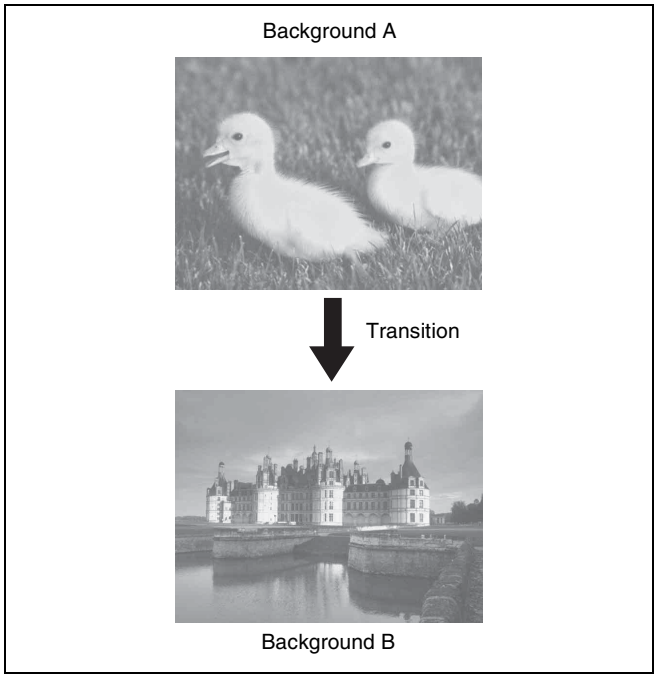
Notes

When the signal format is 1080P, four keyers can be used (keys 1 to 4).

The following are examples of transition.

Changing the background

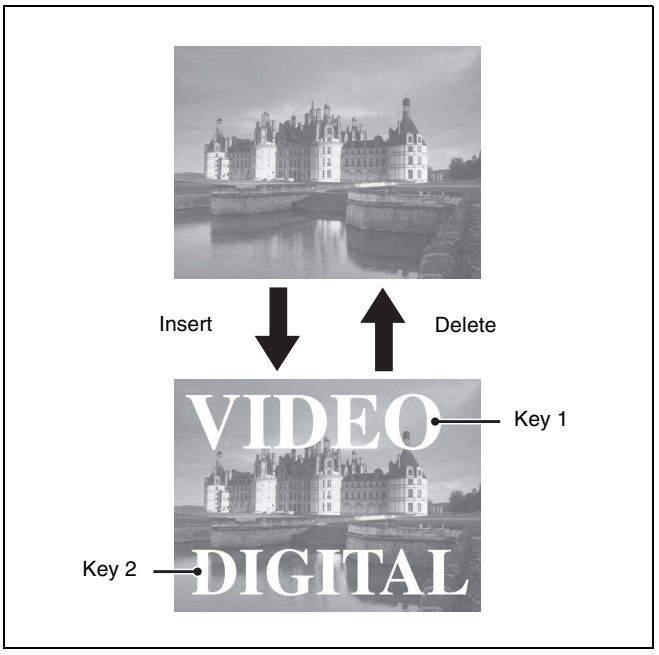
A background transition switches from the video currently selected on the background A bus (the current video) to the video selected on the background B bus (the new video).



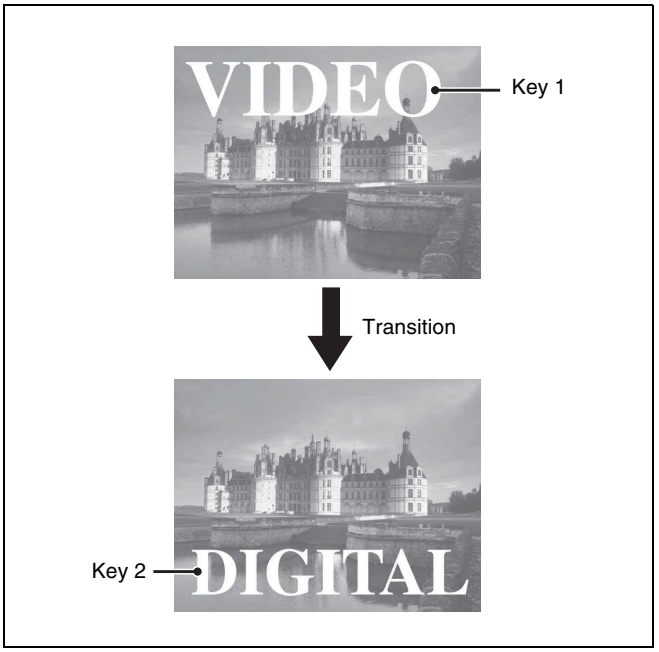
In the default selection of flip-flop mode *(see page 100)*, the background always switches in the direction from the A bus to the B bus. When the transition completes, the cross-point selections on the A and B buses are interchanged.

Inserting and deleting a key

You can insert one or more of the eight keys (downstream keys on the PGM/PST bank).
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.



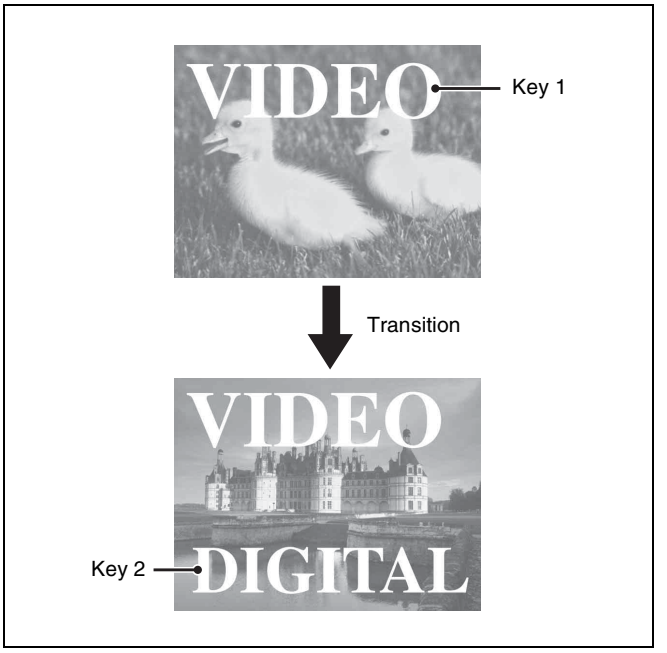
Inserting or deleting key 1 and key 2



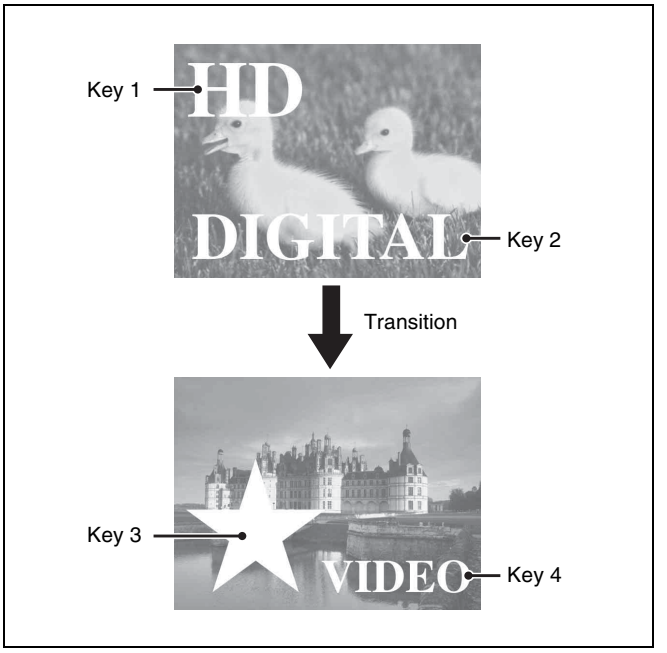
Deleting key 1 and inserting key 2

Simultaneously changing the background and keys

You can change any of the eight keys (downstream keys on the PGM/PST bank) and the background at the same time.



Changing the background and key 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 are the transition type.

- 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.

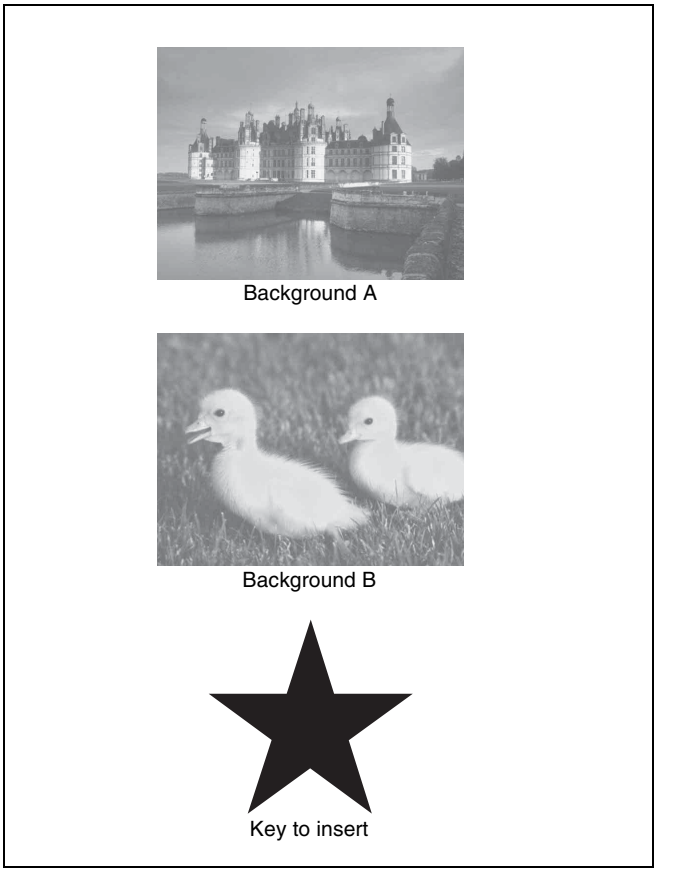
Independent Key Transitions

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. 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.

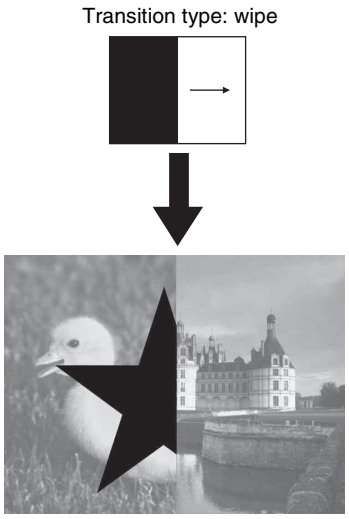
The following description compares the independent key transition with a common transition, taking a simultaneous change of the background and key as an example.

Video used in the transition



Effect of a common transition

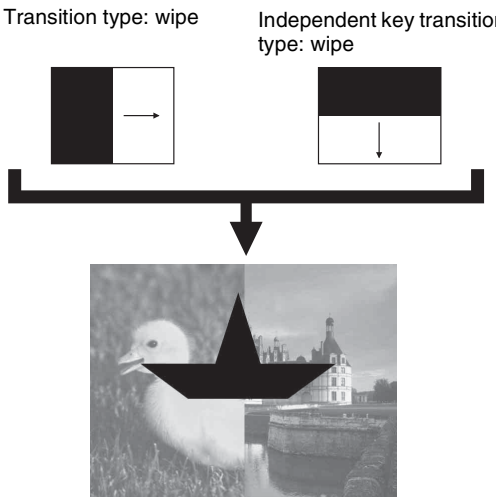
In the case shown in the previous illustration, carrying out a common transition produces the following change in the image.



Effect of a common transition

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.



Effect of a background transition and independent key transition

For details, see Chapter 3 "Signal Selection and Transitions" (page 78).

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 "key source," and the signal that replaces the cut-out part is termed "key fill." The system component responsible for processing a key is referred to as a keyer.
Each switcher bank has eight keyers, each providing the same functionality.

On each switcher bank, 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. To prevent unwanted holes in the background, or if a key is not the desired shape, you can correct this with a mask.

Resizer

This function allows you to apply effects, similar to a DME, such as zoom, movement, or aspect ratio change to a part of a created key. You can use the following operations.
- Two-dimensional transform of a key
- 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 112).

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 wipe patterns
- Enhanced wipes
- Rotary wipes
- Mosaic wipe pattern

• Random and diamond dust wipe patterns

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 152).

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, Page 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 172).

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 191).

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 Background" (page 217).

Copy and Swap

This function can be used to copy and swap the settings among the M/E-1 to M/E-3, and PGM/PST banks or between keyers.
The following settings can be copied or swapped.

- Overall settings for the M/E and PGM/PST banks
- Keyer settings
- Wipe settings in a transition control block
- Wipe settings in an independent key transition control block
- DME wipe settings in a transition control block
- DME wipe settings in an independent key 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 219).

Video Process

The term "video process" is applied to adjustments to the gain, hue, black level of the input video signal. There are two types of adjustment; adjustment of an individual input signal and adjustment as image effects on a particular bus.

For details, see "Video Process" (page 226).

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.

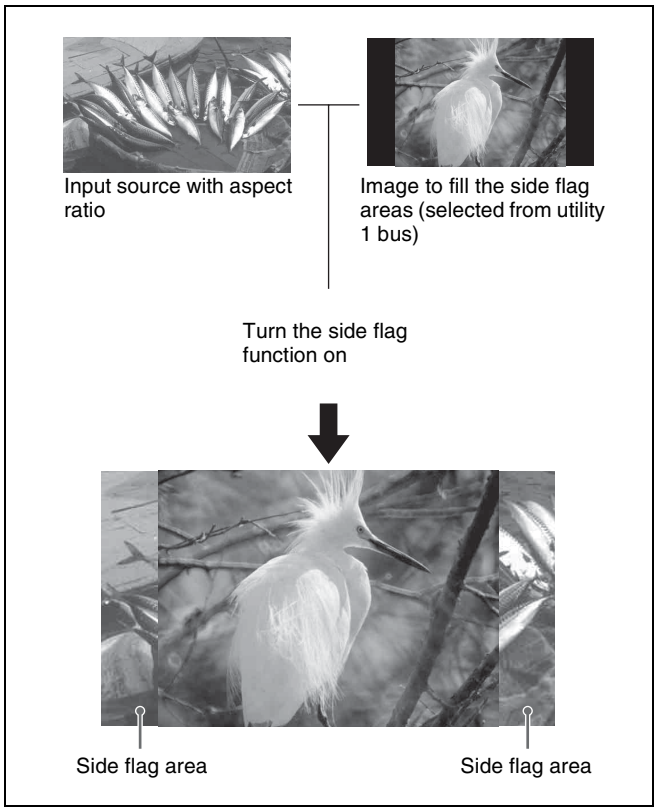
- Input video processing
- Primary color correction
- Secondary color correction
- Luminance processing
- Spot color adjustment
- Output video processing
- YUV/RGB clip

For details, see "Color Corrector" (page 228).

Side Flags

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

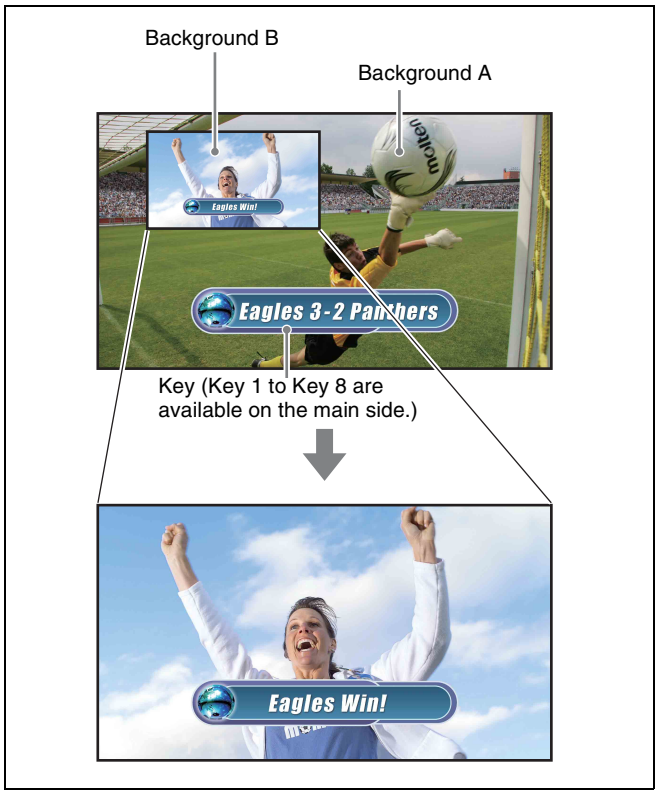


For details, see "Side Flags" (page 238).

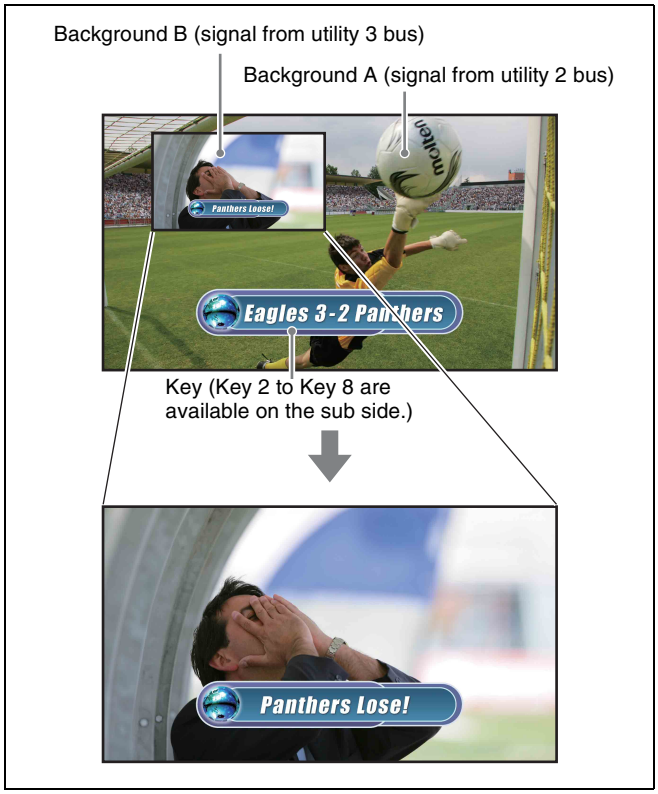
Multi Program 2

By operating the switcher in Multi Program 2 mode, a single switcher mix/effects bank can be used to create two separate video outputs, referred to as "main" and "sub." You can set backgrounds, keys, and transitions for each of main and sub. 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 241).

3D Support

Installing the BZS-8560 switcher upgrade software in an MVS-8000X/ 7000X, and the BZDM-8560 DME upgrade software in an MVE-8000A/MVE-9000, enables the processing of video in 3D mode.

For details, see "3D Support" (page 248).

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, Crop, Beveled Edge, Key Border, Art Edge, Flex Shadow
- **Effects for entire image:** Defocus, Blur, Multi Move
- **Effects for video image:** 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
- **Lighting effects:** Lighting, Spotlighting
- **Recursive effects:** Trail, Motion Decay, Keyframe Strobe
- **Background color**
- **Separate Sides** (effects for front and back sides)
- **Signal inversion** (Invert effect)
- **Key density adjustment**
- **Key source selection**

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 "DME Operations" (page 256).

External Devices

In this system, you can operate while controlling the following types of external device:
- Devices supporting P-Bus (Peripheral II protocol)
- Devices supporting GPI
- VTRs
- Disk recorder (Sony disk 9-pin protocol and video disk communications protocol)
- Extended VTR (Abekas A53 protocol)

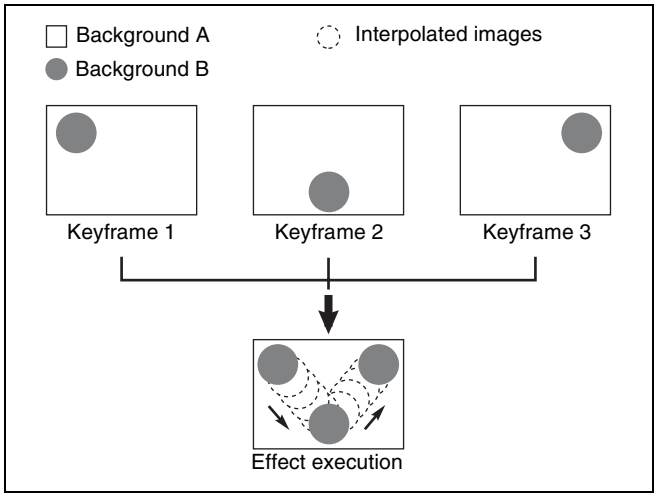
For details on the devices that can be connected, consult your Sony representative.

You can control an external device by previously registering timeline keyframes.

For details, see Chapter 12 "External Devices" (Volume 2).

Keyframes

A keyframe represents an instantaneous state of an image; it 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. This is 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 Chapter 13 "Keyframe Effects" (Volume 2).

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 divided as follows.
- Snapshots applying to a particular region (functional block of the switcher or DME)
- Master snapshot
- Key snapshot
- Wipe snapshot
- DME wipe snapshot

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.

For details, see Chapter 14 "Snapshots" (Volume 2).

Utility

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.

For details, see "Utility Execution" in Chapter 15 (Volume 2).

Shotbox

The term "shotbox" refers to a function whereby for each specified region *(see "Regions" in Chapter 13 (Volume 2))* any snapshot or keyframe effect can be recalled simultaneously.

For details, see "Shotbox" in Chapter 15 (Volume 2).

Macros

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 (macro register), so that it can be recalled as 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 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.

Macro timeline

By recording macro recall and execute action on a timeline, in the same way as for keyframes in an effect, you can automatically execute them in a sequence.

Macro attachment

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.

For details, see Chapter 16 “Macros” (Volume 2).

Files

You can save register data, including setup information and snapshot information, as a file on a hard disk or memory card, and recall it as required.
You can operate on individual files or registers, or together in a batch.
Regarding frame memory, it is possible to capture image data stored in an external device into frame memory.

The following 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

For details, see Chapter 17 “Files” (Volume 2).

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,” and you can carry out the setup operations from the Engineering Setup menu.

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

System setup (System)

For details, see Chapter 18 “System Setup” (Volume 2).

Panel setup (Panel)

For details, see Chapter 19 “Control Panel Setup (Panel)” (Volume 2).

Switcher setup (Switcher)

For details, see Chapter 20 “Switcher Setup (Switcher)” (Volume 2).

DME setup (DME)

For details, see Chapter 21 “DME Setup (DME)” (Volume 2).

DCU setup (DCU)

For details, see Chapter 22 “DCU Setup (DCU)” (Volume 2).

Router/tally setup (Router/Tally)

For details, see Chapter 23 “Setup Relating to Router Interface and Tally (Router/Tally)” (Volume 2).

User setup (User Setup)

For details, see Chapter 24 “User Setup (User Setup)” (Volume 2).

Menus and Control Panel

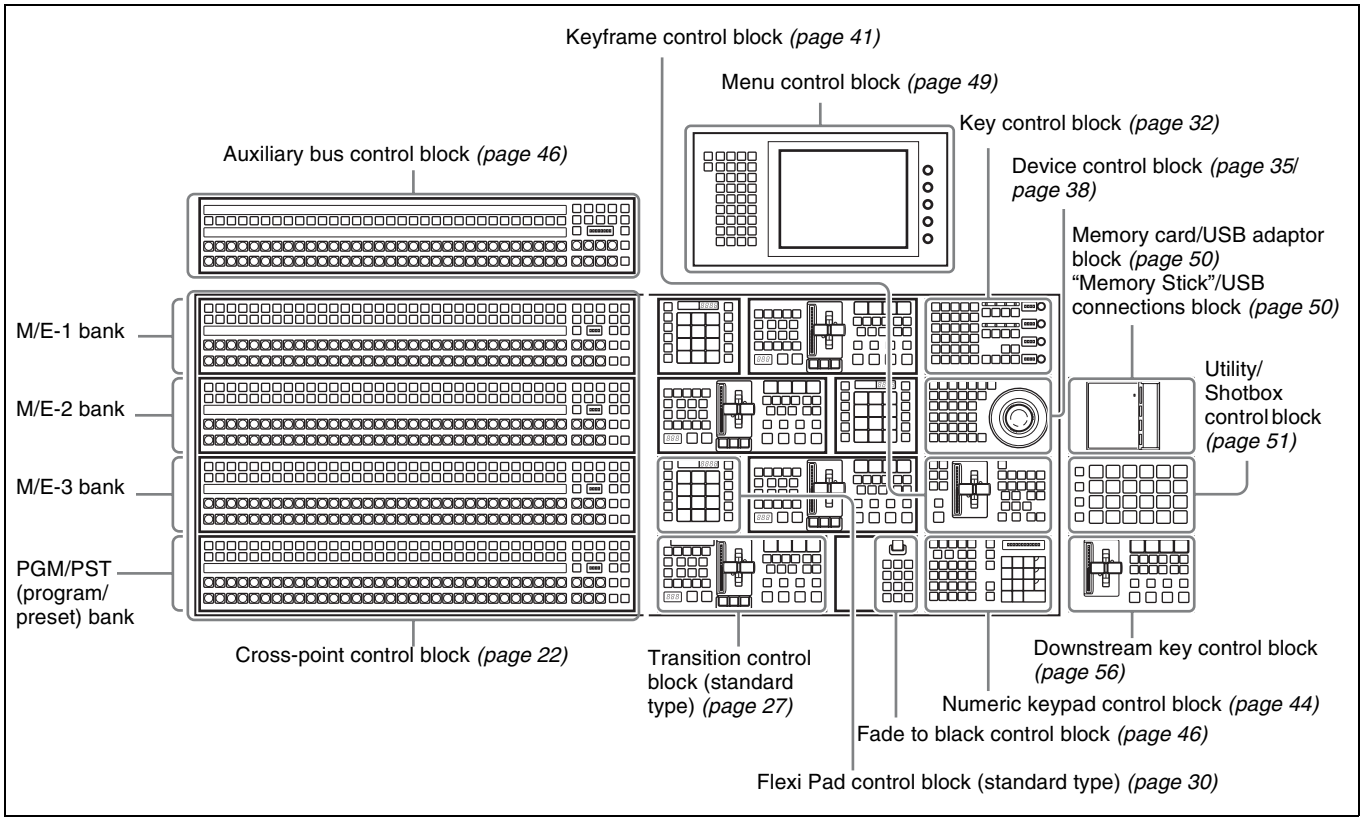
Chapter 2

Names and Functions of Parts of the Control Panel

Control Panel: Example Configuration 1 (With Standard Transition Modules)

The MVS-8000X/7000X system control panel comprises a number of modules.

The following illustration shows a typical 32-button, 4-M/E configuration, with standard transition modules used in the transition control block.

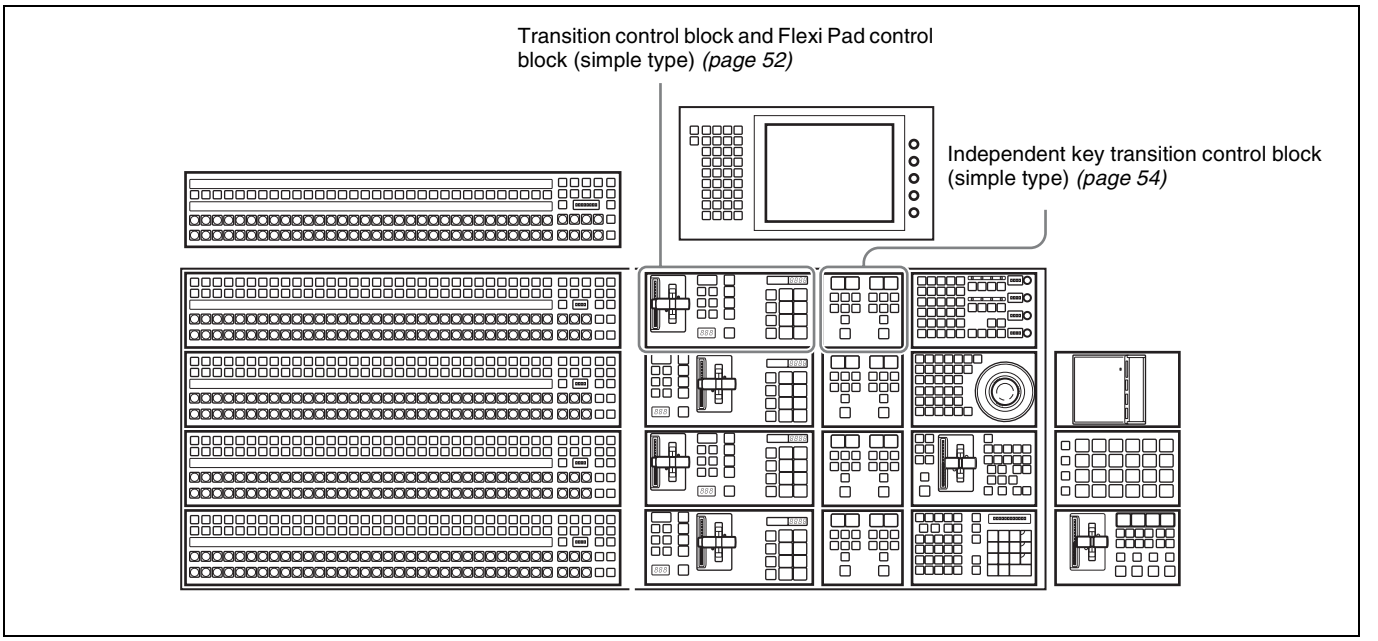


Control panel configuration 1 (with standard transition modules)

Control Panel: Example Configuration 2 (With Simple Transition Modules)

The following illustration shows a typical configuration, with simple transition modules used in the transition control block.

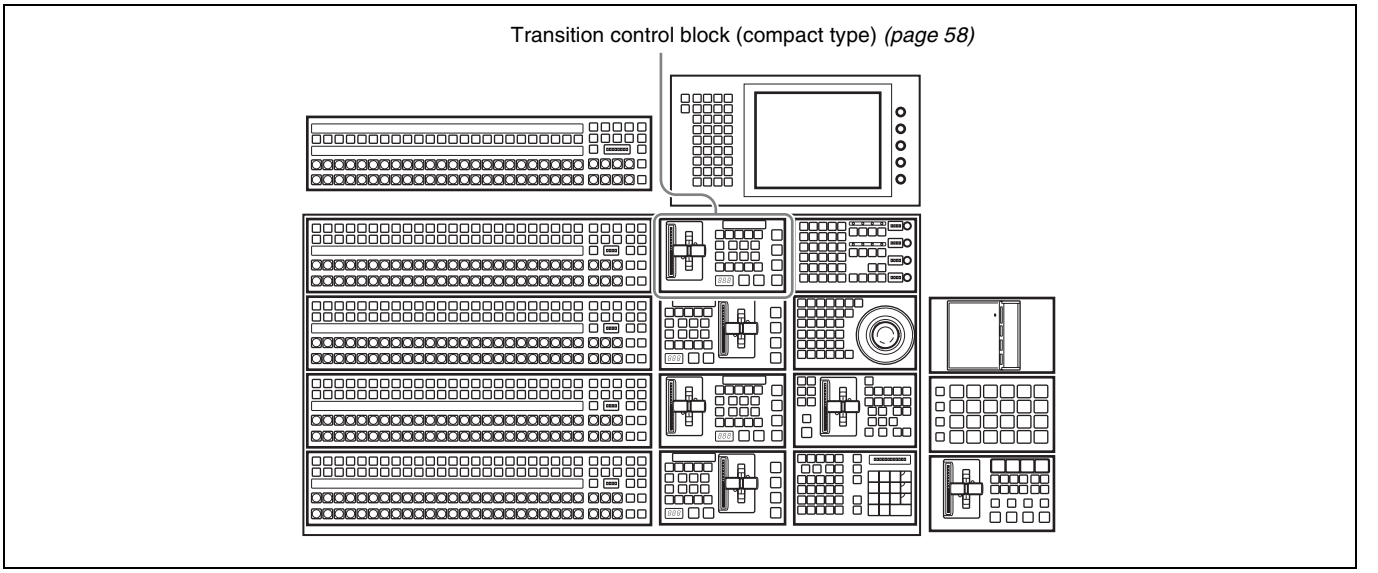
Except for the simple modules, this is the same configuration as in example configuration 1.



Control panel configuration 2 (with simple transition modules)

Control Panel: Example Configuration 3 (With Compact Transition Modules)

The following illustration shows a typical configuration, with compact transition modules used in the transition control block.



Control panel configuration 3 (with compact transition modules)

Cross-Point Control Block

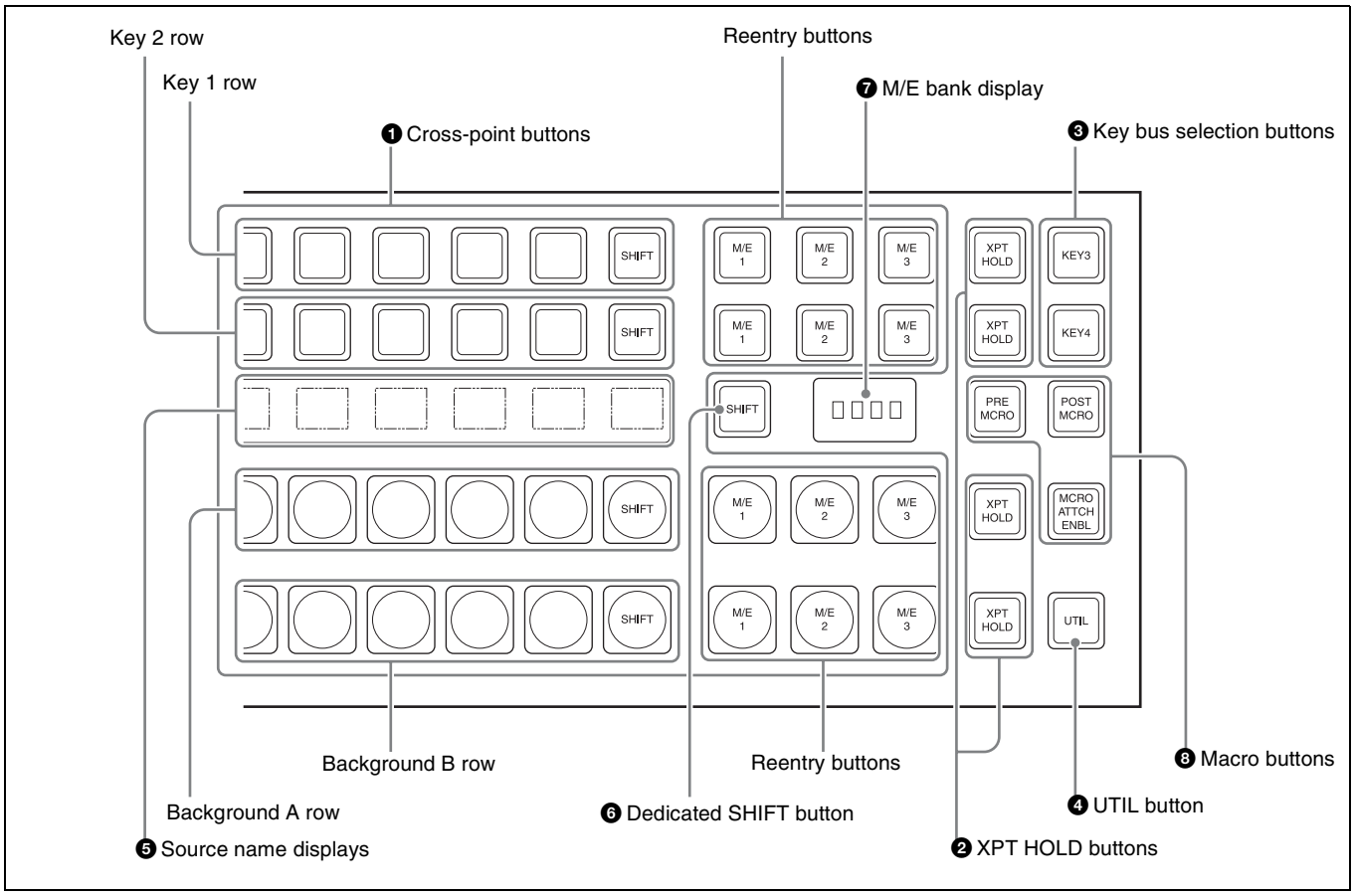
In the cross-point control block, you can select the signals to be used in this M/E bank or PGM/PST bank.

There are also modules without the source name displays shown in the following figure.

All operations except those of the [SHIFT] button are the same as for a module with source name displays.

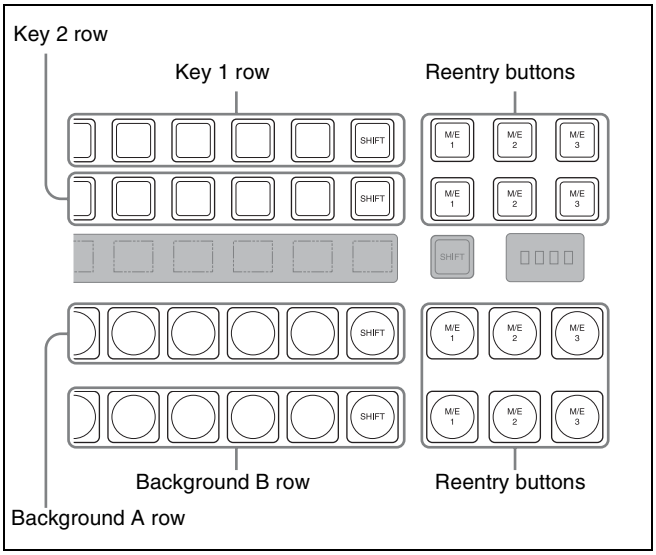
Notes

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



❶ Cross-point buttons

These buttons select the signals used for video creation on this M/E bank or PGM/PST bank. Each row of buttons corresponds to one or more signal buses within the switcher.



For details of assignment and selection of keys 5 to 8, see the following sections in Appendix: "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 381) and "Selecting Input Signals for Keys 5 to 8 in the Cross-Point Control Block" (page 382).

Name	Description
Key 1 row	• The buttons in this row select the key 1 or key 3 signals to be inserted into the video on this M/E bank or PGM/PST bank. • To select the key 1 fill signal, check that the right-hand [KEY3] button in the M/E bank (or the [DSK3] button in the PGM/PST bank) is off, then press the button assigned to the desired signal. • To select the key 3 fill signal, press the [KEY3] button, turning it on. • While the [UTIL] button on the right hand side is held down, these buttons are assigned to the DME external video bus allowing you to select the signal on that bus.

Name	Description
Key 2 row	• The buttons in this row select the key 2 or key 4 signals to be inserted into the video on this M/E bank or PGM/PST bank. • To select the key 2 fill signal, check that the right-hand [KEY4] button in the M/E bank (or the [DSK4] button in the PGM/PST bank) is off, then press the button assigned to the desired signal. • To select the key 4 fill signal, press the [KEY4] button, turning it on. • While the [UTIL] button on the right hand side is held down, these buttons are assigned to the DME utility 1 or 2 bus as follows. **When the [KEY 4] button is off:** DME utility 1 bus **When the [KEY 4] button is on:** DME utility 2 bus
Background A row	• To select the signal as the current background video on this M/E bank or PGM/PST bank. • While the [UTIL] button on the right hand side is held down in Hold mode, these buttons are assigned to the utility 1 bus, and can be used to select the signal on that bus.
Background B row	• To select the signal as the background video after the transition on this M/E bank or PGM/PST bank. • While the [UTIL] button on the right hand side is held down in Hold mode, these buttons are assigned to the utility 2 bus, and can be used to select the signal on that bus.
Reentry buttons	• These allow you to select the video created on another bank as background A or B or one of the keys 1 to 8. • For example, to use the video created on the M/E-1 bank as background B on the M/E-2 bank, press the reentry button [M/E 1] in the background B row of buttons on the M/E-2 bank.

Cross-point button numbers
Cross-point button and reentry buttons are respectively numbered *(see page 82)*.

Assigning signals to button
You can assign a signal to each button using the Setup menu.

For details, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 2).

Visual indications on cross-point buttons

For details, see "Colors of lit cross-point buttons" (page 84).

Assigning a Delegation Function to the Key 1 Row

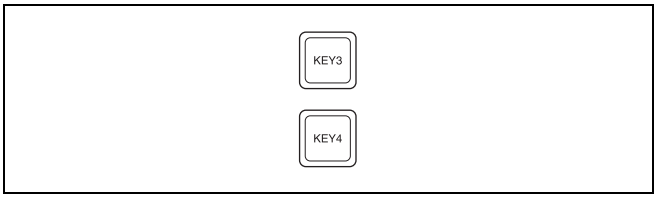
You can assign the key/AUX bus delegation function to the key 1 row so that signals can be selected in the key 2 row.

For details, see "Assigning a Key or AUX Bus to a Button in the Key 1 or Key 2 Row" in Chapter 19 (Volume 2).

❷ XPT (cross-point) HOLD buttons
Turning one of these buttons on enables you to recall a keyframe or snapshot while keeping the current cross-point selection unchanged.
Function of this button varies depending on the operation mode selected in the Setup menu.

For details, see "Selecting the Bank to Make the Settings" in Chapter 20 (Volume 2).

❸ Key bus selection buttons
With the following buttons you can assign the key 1 or key 2 cross-point buttons to the key 3 or key 4 fill bus.



Name	Description
KEY3 button	Press this button, turning it on, to assign the key 1 cross-point buttons to the key 3 fill bus.
KEY4 button	Press this button, turning it on, to assign the key 2 cross-point buttons to the key 4 fill bus.

Pressing one of the key delegation buttons [KEY1] to [KEY4] in the transition control block (standard type) twice in rapid succession changes the state of the corresponding one of these buttons, so that you can make cross-point selections on the key bus *(see page 30)*.
Using these buttons and the dedicated SHIFT button, you can assign keys 5 to 8 to cross-point buttons *(see page 382)*.

❹ UTIL (utility) button
While this button is held down, the cross-point buttons are assigned to the following buses, respectively.
Background A row: utility 1 bus
Background B row: utility 2 bus
Key 1 row: DME external video bus
Key 2 row: DME utility 1 bus when the [KEY4] button is off, or DME utility 2 bus when the [KEY4] button is lit.
In a Setup menu, you can select either of the following two modes for these buttons.
• The button takes effect while being held down.

- Every time the button is pressed, it toggles between the on and off states for key 1 and key 2 rows. For background A and background B rows, utility buses remain disabled.

❺ Source name displays

These show the names of the signals which can be selected on the cross-point buttons, in two or four characters, or in auto mode.

While the [SHIFT] button on the right hand side or the [SHIFT] button assigned to the column of cross-point buttons is enabled, the source name of the signal assigned to the column of cross-point buttons in shift mode appears.

You can select green, orange, or yellow for the background color of the source name display, for each source separately. You can set the source name display mode and background color in a Setup menu.

❻ Dedicated SHIFT button

This button has the following three functions.

Selection buttons for key 5 to 8 signals: When this button is enabled, you can select key 5 and 7 signals in the key 1 row, and key 6 and 8 signals in the key 2 row. Each time you press the button toggles between enabled and disabled.

Source name display shift button: When this button is enabled, the source name display shows the shifted signal name. Each time you press the button toggles between enabled and disabled. In a module with no source name display, this button is disabled.

Bus shift button: When this button is enabled, it acts as a shift button for all buses on this M/E (PGM/PST) bank. Each time you press the button toggles between enabled and disabled.

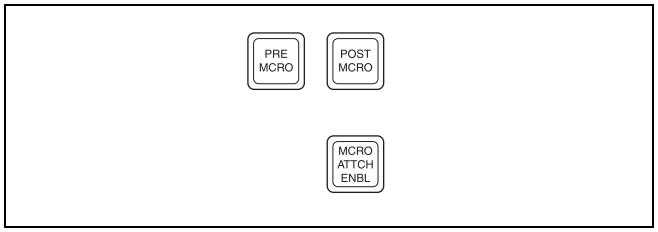
You can select the mode in a Setup menu.

❼ M/E bank display

This indicates the notional mix/effect bank name to which the particular M/E bank is assigned, as a four-character identifier.

❽ Macro buttons

With the following buttons you can enable macro attachments, and select the mode for using macro attachments.

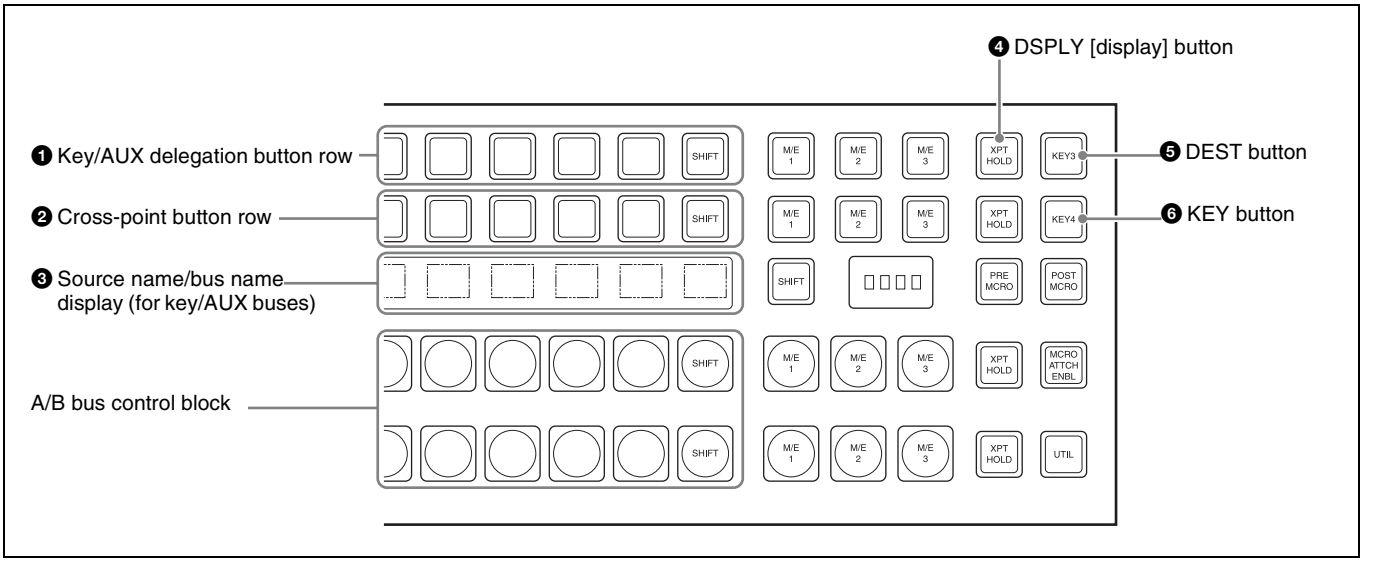


Name	Description
PRE MCRO (pre macro)	• Use this button to set a macro attachment in pre macro mode. • For setting in macro only mode, use this in combination with a macro only set button assigned to the utility/shotbox control block or a user preference button. Alternatively, without using the button, you can make the selection simply, by pressing simultaneously with the [POST MCRO] button. • Function of this button varies as follows depending on the operation mode selected in the Setup menu. - Switching dual background bus mode - Switching utility/shotbox mode - Disabling cross-point button operations *For details, see "Setting the Assignment of Macro Operation Buttons" in Chapter 19 (Volume 2).* **Notes** For the CCP-6224/6324, [AUX CTRL] is assigned to this button *(see page 63)*.
POST MCRO (post macro)	• Use this button to set a macro attachment in post macro mode. • For setting in macro only mode, use this in combination with a macro only set button assigned to the utility/shotbox control block or a user preference button. Alternatively, without using the button, you can make the selection simply, by pressing simultaneously with the [PRE MCRO] button. *For details, see "Setting the Assignment of Macro Operation Buttons" in Chapter 19 (Volume 2).* **Notes** For the CCP-6224/6324, [AUX DSPLY] is assigned to this button *(see page 63)*.
MCRO ATTCH ENBL (macro attachment enable)	When this button is on, the macro attachments set for the buttons of the M/E bank are enabled. You can make a setup setting such that enabled buttons light.

Cross-Point Control Block in Key/AUX Bus Delegation Mode

You can assign key and AUX buses to the key 1 row buttons in the cross-point control block for use as delegation buttons so that signal selection can be made in the key 2 row.
In this case, the buttons in the cross-point control block operate as follows.

For details of assignment, see "Assigning a Key or AUX Bus to a Button in the Key 1 or Key 2 Row" in Chapter 19 (Volume 2).



❶ Key/AUX delegation button row

These buttons select a key bus or AUX bus.
In setup you can assign the following buses.
KEY1 to KEY8, DSK1 to DSK8, UTILITY 1, UTILITY 2, EXT DME, DME UTIL 1, DME UTIL 2, EDIT PVW AUX 1 to 48, FMS 1, FMS 2, DME 1 V/K to DME 8 V/K, CCR 1, CCR2

❷ Cross-point button row

These buttons select a cross-point on the bus selected with the key/AUX delegation buttons.

Notes

- When you press a button in the cross-point button row while holding down the button to which any of KEY1 to KEY8 and DSK1 to DSK8 buses is assigned in the Key/AUX delegation button row, you can select the cross-point of the key source bus.
- When you select a cross-point while holding down the button to which any of DME 1 V.K to DME 4 V.K buses is assigned in the Key/AUX delegation button row, you can select the image on the reverse side of the currently viewed DME image.

❸ Source name / bus name display (for key/AUX buses)

When the DSPLY button is on, these show the names of the signals corresponding to the current bus delegation.

The following displays may also appear, depending on the state of other buttons.

Button name			Display
[DSPLY]	[DEST]	[KEY]	
Off	Off	-	A/B bus signal names
On	Off	Off	Key/AUX bus video signal name or key signal names [a]
On	On	-	Key/AUX bus names
On	Off	On	Key/AUX bus video signal name or key signal names [b]

a) When you are holding down the button to which any of KE1 to KEY8 and DSK1 to DSK8 buses is assigned in the key/AUX delegation button row, the video signal name is displayed. To display the key signal names when other bus is selected, keep the KEY button held down.
b) When you are holding down the button to which any of KEY1 to KEY8 and DSK1 to DSK8 buses is assigned in the key/AUX delegation button row, the key signal names are displayed. To display the key signal names when other bus is selected, keep the KEY button held down.

❹ DSPLY [display] button

Press to light this button, in order that the source name / bus name displays show the signal names or bus names corresponding to the current bus delegation.

❺ DEST button

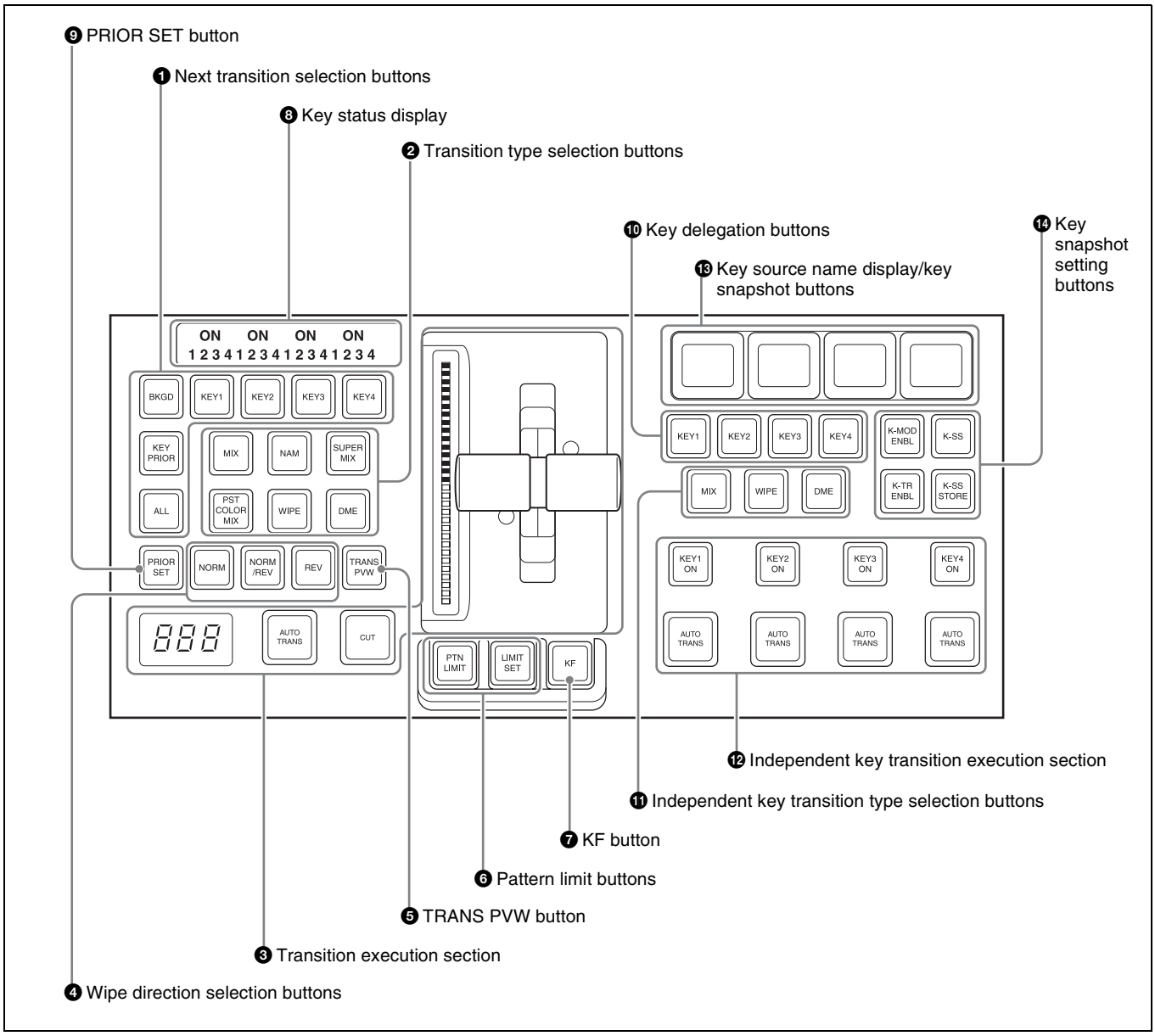
When both the DSPLY button and this button are on, the key bus names or AUX bus names are displayed.

❻ KEY button

When you press a cross-point button while holding down this button, the key signal is selected.

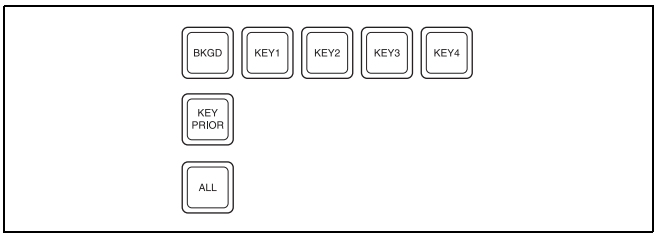
Transition Control Block (Standard Type)

In the transition control block, you can modify the output of the M/E bank or PGM/PST bank, and perform transitions. Both common transition and independent key transition operations are possible.



❶ Next transition selection buttons

Press these buttons, turning them on, to determine what the next transition will apply to.



Name	Description
BKGD	Next transition changes the background.
KEY1 to KEY8 (DSK1 to DSK8 in the PGM/PST bank)	• Press this button, turning it on, to make the next transition insert or remove the corresponding key (keys 1 to 8). • If a key is currently inserted it will be removed, and vice versa. • In the PGM/PST bank, this inserts or removes downstream keys 1 to 8. *For details of assignment and selection of keys 5 to 8, see the following sections in Appendix: "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 381) and "Selecting Keys 5 to 8 for Next Transition" (page 382).*
KEY PRIOR (priority)	When this button is lit, the setting of the key priority after the next transition is enabled. The key priority after the next transition appears in the key status display.
ALL	Pressing this button turns on a preselected set of the [BKGD], [KEY1] to [KEY8], and [KEY PRIOR] buttons. Make this setting in a Setup menu.

❷ Transition type selection buttons

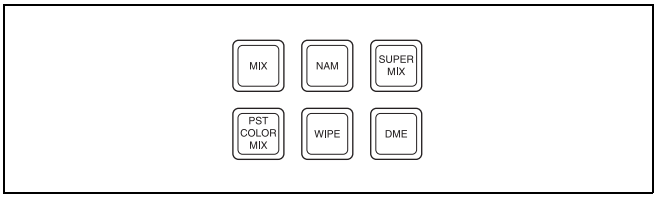
Press one of these buttons, turning it on, to determine the type of the next transition *(see page 85)*.

For the method of assigning transition types, see "Transition Control Block Button Assignments" in Chapter 19 (Volume 2).

When multi-program mode is selected in the Setup menu, two or more of the following buttons may light.

For details of multi-program mode, see "Setting Transition Control Block Button Assignments" in Chapter 19 (Volume 2).

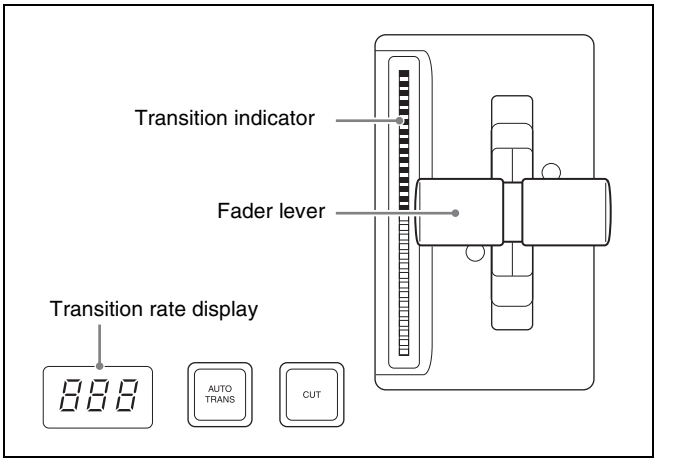
You can also assign a function to these buttons to select whether or not the fader levers are used as keyframe faders.



Name	Description
MIX	In a background transition, the new video fades in as the current video fades out.
NAM (non-additive mix)	The current and new video signals are compared, and the signal with the higher luminance level is given priority in the output.
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%.
PST (preset) COLOR MIX	The color matte (unpatterned display) is inserted during transition, replacing the current video by the color matte, and then replacing the color matte by the new video.
WIPE	The current video is replaced by the new video, using the wipe pattern selected in the Wipe menu.
DME (DME wipe)	A wipe type of transition is carried out, using the DME effect selected in the DME Wipe menu.
FM1&2CLIP, FM3&4CLIP, FM5&6CLIP, FM7&8CLIP	A recorded clip is played back together with the transition. At this point, you can also carry out a transition (wipe or mix (dissolve)) simultaneously together with the clip.
KF (keyframe)	Press this button, turning it on, to enable using the fader lever as a keyframe fader.

❸ Transition execution section

This section is used to carry out a transition and check the progress of the transition.



Name	Description
Transition indicator	This comprises multiple LEDs, which show the progress of the transition.
Fader lever	• Move up or down to carry out the transition. • When the [KF] button or a transition type selection button to which the KF button function has been assigned is lit, you can use this as a keyframe fader.

Name	Description
Transition rate display	• This shows the “transition rate” (the time from the beginning of a transition to its completion) set for an auto transition, in frames. • You can set the transition rate using the numeric keypad control block, Flexi Pad control block, or menu.
AUTO TRANS (transition) button	• Pressing this button carries out an auto transition of the set transition rate (duration). The transition starts immediately, and the button lights amber. • When the transition completes, the button goes off.
CUT button	Pressing this button carries out the transition as a cut (i.e. instantaneously).

❹ Wipe direction selection buttons

When a wipe or DME wipe is selected as the transition type, you can press to light these buttons to select the wipe direction.

Name	Description
NORM (normal)	The wipe proceeds in the direction from black to white as shown on the pattern in the lists of patterns *see“Wipe Pattern List” (page 344)* and *“DME Wipe Pattern List” (page 348)*, or in the direction of the arrow.
REV (reverse)	The wipe proceeds in the opposite direction to that when the [NORM] button is pressed.
NORM/REV (normal/ reverse)	The wipe direction alternates between normal and reverse every time a transition is executed.

❺ TRANS PVW (transition preview) button

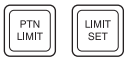
When this button is lit, you can check in advance the video changes during the transition, on the preview output from the M/E or PGM/PST bank.

During the preview, you can use the fader lever, [AUTO TRANS] button, and [CUT] button. One of the following functions of this button can be selected in a Setup mode.

- When the transition completes, the system returns to the normal mode.
- The transition preview mode is maintained while this button is pressed.
- Switching is made between the transition preview mode and normal mode every time this button is pressed.

❻ Pattern limit buttons

The following buttons are used to set a pattern limit.



Name	Description
PTN (pattern) LIMIT	Pressing this button, turning it on, enables the pattern limit function.
LIMIT SET	• Use this button to set a pattern limit when the [PTN LIMIT] button is off. • Move the fader lever to the position of a particular pattern size, and stop it there, then press this button to set the pattern limit range.

❼ KF (keyframe) button

Pressing this button to turn it on allows you to use the fader lever as a keyframe fader.

❽ Key status display

For each of the next transition selection buttons, [KEY1] to [KEY4], the corresponding ON indicator lights when the key is inserted. It also shows the priority (1 to 4) of each key.

❾ PRIOR (priority) SET button

While this button is held down, you can set the key priority.

The setting mode when this button is pressed depends on whether or not the [KEY PRIOR] button is lit, as follows.

- When the [KEY PRIOR] button is off, the current key priority is set.
- When the [KEY PRIOR] button is lit, the key priority after the next transition is set.

Press the [KEY PRIOR] button as required, to switch between these two modes.

In either mode, hold down the [PRIOR SET] button, and press the button ([KEY1] to [KEY8]) corresponding to the key you want to bring to the front.

Notes

The key priority establishes a separate priority order within each of the groups of keys 1 to 4 and keys 5 to 8. You can make any setting within the groups of keys 1 to 4 or keys 5 to 8, but not for combinations of keys from different groups. For example, it is not possible to set a priority sequence of keys 1, 5, and 2.

For details, see “Setting the Key Priority in the Transition Control Block” (page 88).

The following controls are used as the independent key transition control block.

❿ Key delegation buttons

These buttons delegate this independent key transition control block to a desired keyer. Press one of the [KEY1] to [KEY8] buttons ([DSK1] to [DSK8] in the PGM/PST bank), turning it on.

You can press more than one button to select two or more keyers.

While these buttons are held down, you can select a key source with the cross-point buttons for the key bus.

Pressing one of these buttons twice in rapid succession changes its state so that you can make cross-point selections on the corresponding key bus.

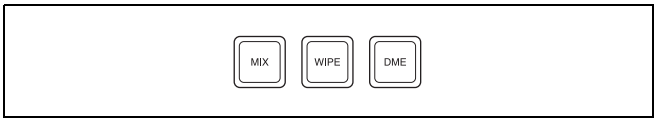
For details of assignment of keys 5 to 8, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 381) in Appendix.

⓫ Independent key transition type selection buttons

Press one of the following buttons, turning it on, to select the independent key transition type.

You can assign any transition types to these buttons in setup

For details, see "Setting Transition Control Block Button Assignments" in Chapter 19 (Volume2).

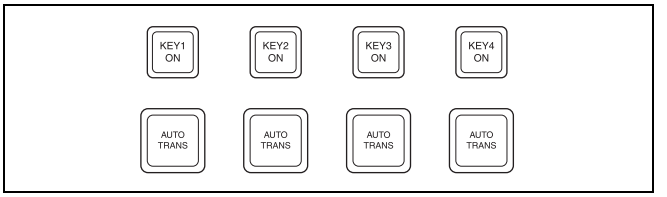


Name	Description
MIX	Faded in or out.
WIPE	Inserted or deleted with a wipe.
DME (DME wipe)	Inserted or deleted with a DME wipe.
CUT	Instantaneously insert or remove the key selected with the delegation buttons.

⓬ Independent key transition execution section

The following buttons are used to insert or delete a key, and carry out an auto transition.

For details of assignment of keys 5 to 8, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 381) in Appendix.



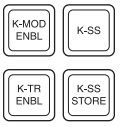
Name	Description
KEY1 ON to KEY8 ON (DSK1 ON to DSK8 ON in the PGM/PST bank)	• Press the corresponding one of these buttons to cut key 1 to key 4 in or out instantaneously. • When the key corresponding to the button appears in the final program output, the button lights red, and otherwise lights amber.
AUTO TRANS (transition)	• These correspond to keys 1 to 4 from left to right; press one to carry out an auto transition. • The transition rate for an independent key transition can be set in the numeric keypad control block, in the Flexi Pad control block, or in a menu.

⓭ Key source name display/key snapshot buttons

These display the source name selected on the corresponding keyer. In key snapshot mode, press these buttons, corresponding to registers 1 to 8 for the selected keyer, to save or recall a key snapshot.

⓮ Key snapshot setting buttons

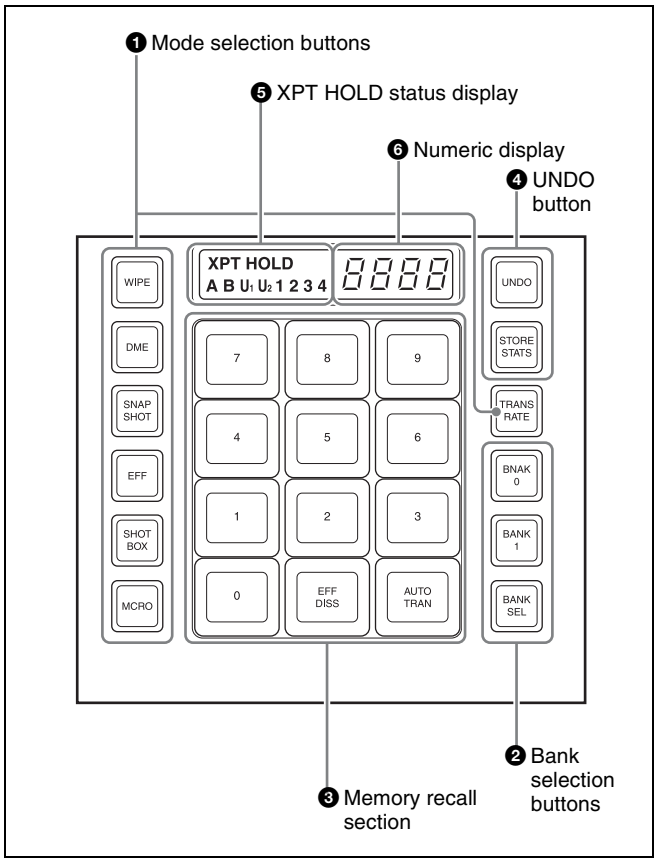
The following buttons are used to operate a key snapshot.



Name	Description
K-SS (key snapshot)	This enables key snapshot mode.
K-SS STORE (key snapshot store)	To save a key snapshot, hold down this button, and press the key source name display/key snapshot button corresponding to the register you want to save.
K-MOD ENBL (key modifier enable)	To recall key adjustment values and key modifier settings when recalling a key snapshot, press this button, turning it on.
K-TR ENBL (key transition enable)	To recall independent key transition settings when recalling a key snapshot, press this button, turning it on.

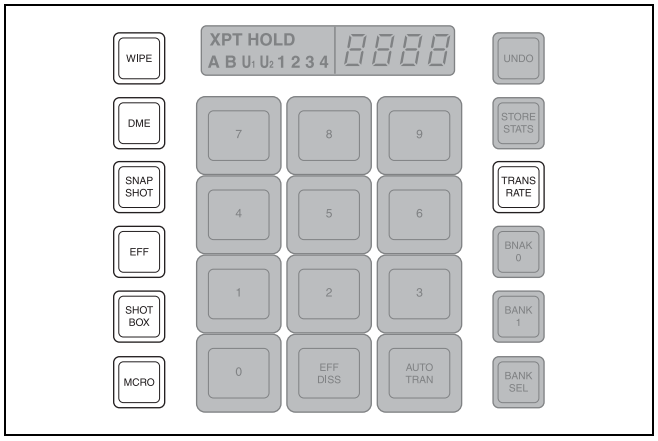
Flexi Pad Control Block (Standard Type)

The Flexi Pad control block is used for saving and recalling wipe snapshots, DME wipe snapshots, and snapshots, for recalling effects, and shotbox content, and for entering the transition rate.



❶ Mode selection buttons

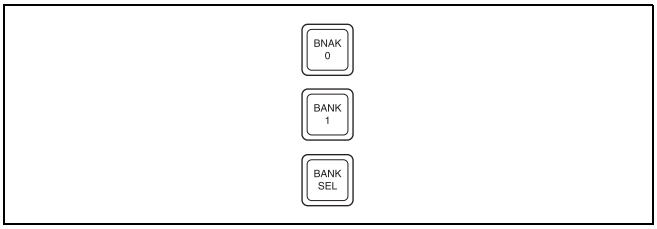
Pressing the following buttons selects the operation mode.



Name	Description
WIPE	To save or recall a wipe snapshot, or recall the pattern number of a wipe pattern, use this in combination with the buttons of the memory recall section.
DME	To save or recall a DME wipe snapshot, or recall the pattern number of a DME wipe pattern, use this in combination with the buttons of the memory recall section.
SNAPSHOT	To save or recall a snapshot, use this in combination with the buttons of the memory recall section.
EFF (effect)	To recall the master timeline or run an effect, use this in combination with the buttons in the memory recall section.
SHOTBOX	To recall or execute a shotbox, use this in combination with the buttons of the memory recall section.
MCRO (macro)	To save, recall or edit a macro, use this in combination with the buttons of the memory recall section.
TRANS RATE (transition rate)	• To enter the transition rate, press this button, turning it on. • To enter the independent key transition rate, hold down this button, and press the key delegation button in the independent key transition control block. • To select whether the value is entered in frames or as a timecode value, switch the [TC] button in the memory recall section on or off.

❷ Bank selection buttons

The following buttons are used to select a bank, and assign the memory recall section to the registers of the selected bank.



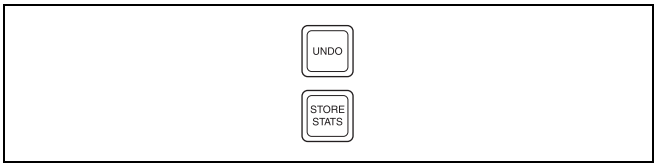
Name	Description
BANK0 (bank 0)	Assigns the memory recall section to bank 0, of registers 1 to 10.
BANK1 (bank 1)	Assigns the memory recall section to bank 1, of registers 11 to 20.
BANK SEL (bank selection)	After pressing this button, press a button in the memory recall section to select banks 0 to 9.

❸ Memory recall section

This consists of 12 buttons with LCDs. These display changes, according to various operation modes.

❹ UNDO button

The following buttons are used to return a register to its state before the register recall operation.



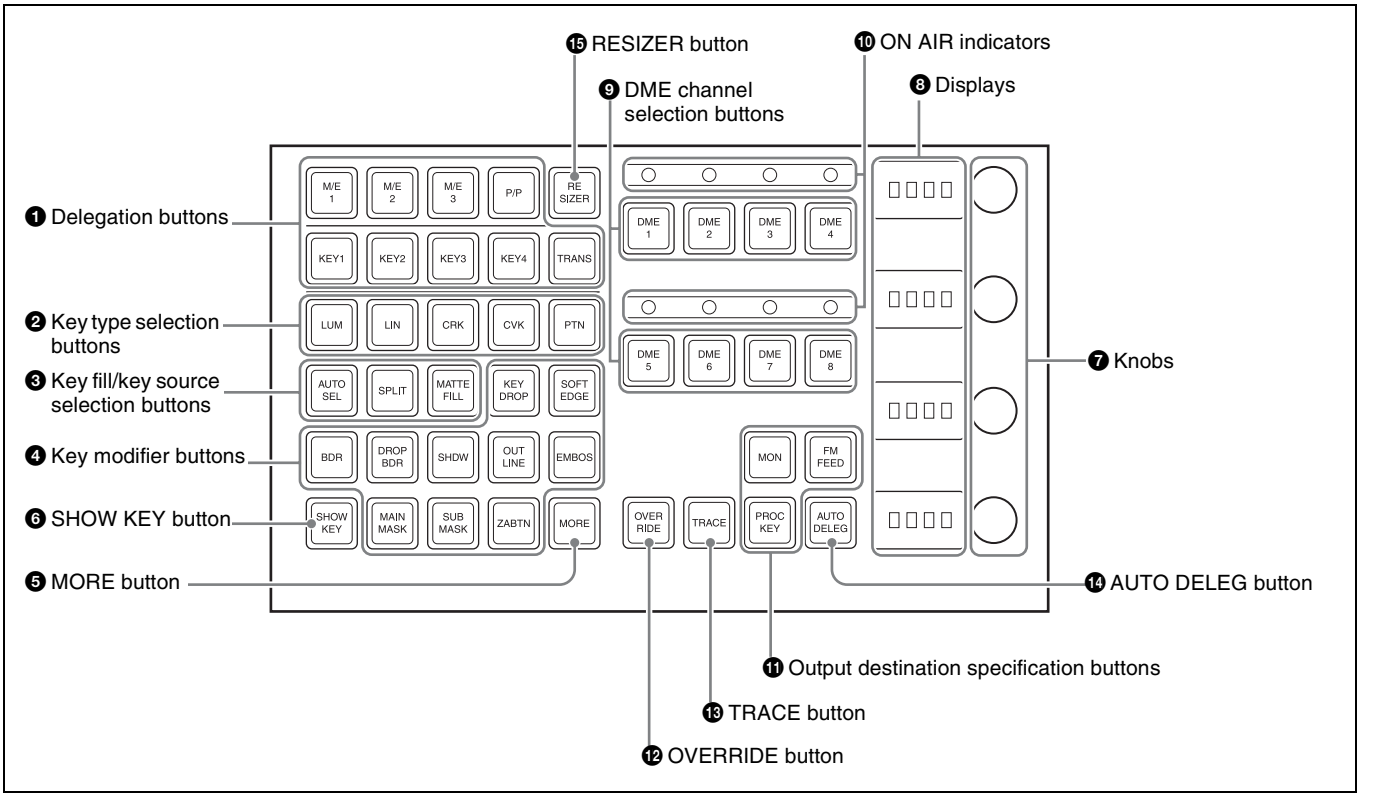
Name	Description
UNDO	• After recalling a register, press this button to return to the state before recalling the register. • When contents have been saved to a register, hold down the [STORE STATS] button and press this button to return the register to its state before the save operation.
STORE STATS (store status)	• When a save or delete operation has been carried out on a register, this button lights amber. • After saving to a register, hold down this button and press the relevant register button to delete the data in the register. • Again, after a save operation on a register, hold down this button and press the [UNDO] button to restore the register to its state before the save operation.

❺ XPT HOLD (cross-point hold) status display
A bus for which cross-point hold is set appears as a green light.

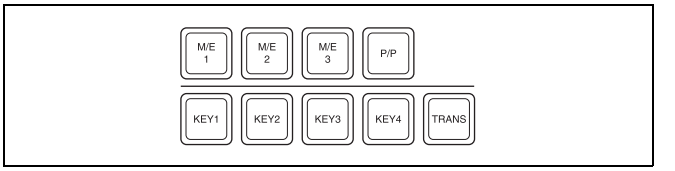
❻ Numeric display
Depending on the operation mode, this shows the pattern number of a wipe or DME wipe, a bank number, a register number, a transition rate, and so on in up to four digits.

Key Control Block

Each of the M/E banks and the PGM/PST bank includes eight keyers (for keys 1 to 8), and you can delegate this control block to any desired keyer. In this control block, you can adjust and modify keys.



❶ Delegation buttons
Pressing the following buttons selects a keyer and an M/E or PGM/PST bank to which the key control block is delegated.



Name	Description
M/E delegation	Press one of the [M/E 1] to [M/E 4], and [P/P] buttons to select the bank (an M/E bank or the PGM/PST bank) to which the key control block is delegated. *For details of [M/E 4] button assignment, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 380) in Appendix.*
Key delegation	Press one of the [KEY1] to [KEY8] buttons to delegate the key control block to the corresponding keyer. *For details of assignment of keys 5 to 8, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 381) in Appendix.*
TRANS	• By pressing this button, you can check the DME channel used for DME wipes on the M/E or PGM/PST bank. • By pressing this button, then pressing one of the DME channel selection buttons, you can preset the DME channel to be used when a DME wipe is selected as the transition type for the transition. • When presetting the DME channel for an independent key transition, hold down this button, then press one of the [KEY1] to [KEY8] buttons, turning the two buttons on, beforehand.

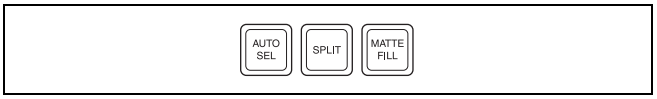
❷ Key type selection buttons

Press one of these buttons, turning it on, to select the desired key type.
Depending on the selected key type, various parameters are displayed, and you can set the values with the knobs.
The following key types can be selected.
LUM: luminance key
LIN: linear key
CRK: chroma key
CVK: color vector key
PTN: key wipe pattern key

For details, see "Key Types" (page 112).

❸ Key fill/key source selection buttons

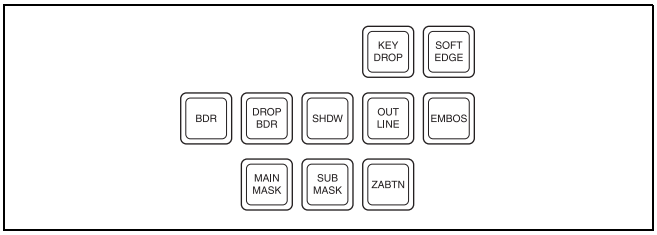
Pressing the following buttons selects key fill and key source.



Name	Description
AUTO SEL (selection)	• Use the signal selected on the key fill bus, and the paired key source signal. The setting of key fill and key source pairs is carried out in a Setup menu. • To use the signal selected on the key fill bus as key source (self keying), press the [AUTO SEL] button and [SPLIT] button at the same time, so that both are off.
SPLIT	• To use the signal selected on the key fill bus as key fill, and a signal separate from the signal assigned in a pair with key fill for key source, press this button, turning it on. • To select the signal on the key source bus, hold down this button, and press a button in the key 1 or key 2 row in the cross-point control block. • To use the signal selected on the key fill bus as key source (self keying), press the [AUTO SEL] button and [SPLIT] button at the same time, so that both are off.
MATTE FILL	• To use a color matte from the internal generator as key fill, press this button, turning it on. You can adjust the color matte using the knobs. • When this button is off, the signal selected on the key fill bus is used as key fill.

❹ Key modifier buttons

To add an edge modifier to the key, press one of these buttons, turning it on.
Depending on the button pressed, parameters appear in the displays, and you can set the values with the knobs.
To select a normal edge as the edge type, turn the BDR (border), DRP BDR (drop border), SHDW (shadow), EMBOS [emboss] and OUTLINE buttons off.



Name	Description
KEY DROP	• When the selected edge type is "normal" and soft edge is off or when drop border or shadow is selected, turning this button on lowers the key fill and key source position by four or eight scan lines as set in the key menu. To select 4H or 8H, use the Key menu. • When the selected edge type is "normal" and soft edge is selected or when border, outline, or emboss is selected, this button lights automatically.

Name	Description
BDR (border) a)	Apply a border of a uniform thickness to the whole key.
DROP BDR (drop border) a)	Apply a border to two sides of the key (for example, below and to the right, or below and to the left).
SHDW (shadow) a)	Apply a shadow to two sides of the key (for example, below and to the right, or below and to the left).
OUTLINE	• Use the outline of the key. • Use the key fill signal selected for the key in the edge portions.
EMBOS (emboss)	• Apply an embossing effect to the periphery of the key. • When emboss is selected, you can use the dedicated color matte signal for the emboss function.
MAIN MASK	Press this button, turning it on, to enable the key mask using the main pattern.
SUB MASK	Press this button, turning it on, to enable the key mask using the sub pattern.
ZABTN (zabton)	Press this button, turning it on, a translucent pattern is inserted behind the key.
SOFT EDGE	Press this button, turning it on, to soften the key edge portions.

a) When one of these buttons is selected, you can use a special color matte or a signal selected on the utility 1 bus for the edge.

❺ MORE button
When there are more than four parameters, this button lights amber. When it is pressed, it changes from amber to green and the fifth and subsequent parameters are assigned to the knobs, allowing them to be adjusted.

❻ SHOW KEY button
While this button is held down, a key processed key source signal is output from the specified output port. You can make the output specification independently for each of edit preview and the preview of each M/E or PGM/PST bank in a Setup menu.

❼ Knobs
Turn the knobs to adjust the parameter values.

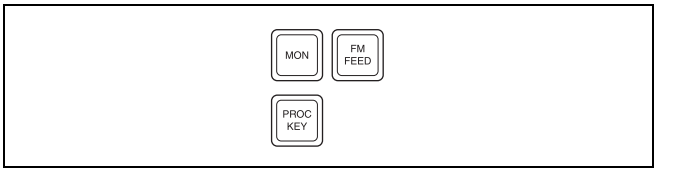
❽ Displays
Each display shows the initial letters of the parameter name and the parameter value (maximum three digits including a minus sign for a negative value).

❾ DME channel selection buttons
Press one of these buttons, turning it on, to delegate a DME channel to the keyer.
The number of valid DME channel selection buttons depends on the number of channels installed in the DME processor.

A maximum of four consecutively numbered DME channels from the two sets, DME 1 to 4 and DME 5 to 8, can be assigned to one keyer.
On the MVS-8000X, when the signal format is 1080P only, the consecutive channel combinations that can be selected are any of DME1 and DME2, DME3 and DME4, DME5 and DME6, or DME7 and DME8.
On the MVS-7000X, when the signal format is 1080P, the above restriction also applies if using the MVE-8000A. There is no such restriction for the MKS-7470X/7471X.
DME channel assigned to a keyer cannot be selected on another keyer.
However, using the override function it is possible to allocate a channel already allocated to another keyer to the currently selected keyer. If DME channel allocations have been made in a Setup menu, these buttons cannot be used to make DME channel allocations. Using the trace function, it is possible to check which keyer a DME channel is allocated to.

❿ ON AIR indicators
These light red when the corresponding DME channels are included in the final program output.

⓫ Output destination specification buttons
Pressing the following buttons selects and checks the output signal.



Name	Description
MON (DME monitor)	• Hold down this button and press the selection button for the DME channel you want to assign to the monitor output; you can then monitor the output signal on the DME monitor output. • While this button is held down, the DME channel selection buttons light as follows, allowing you to check the monitor assignment. **Lit amber:** DME channel that can currently be monitored **Lit green:** DME channel currently assigned to the monitor output

Name	Description
FM FEED (frame memory feed)	• When you press this button, it lights momentarily amber, then for the currently selected keyer, the key processed signals are selected for frame memory sources 1 and 2. • If a DME is selected on the currently selected keyer, the key fill and key source signals to which a DME effect is applied are assigned; otherwise the key fill and key source are assigned. • Carrying out a frame memory feed causes the [PROC KEY] button to light amber.
PROC KEY (processed key)	• When this button is on, the key fill/source signal subjected to key processing or signal subjected to a DME effect on the currently selected keyer can be selected as a reentry signal (PROC V or PROC K) for the M/E or PGM/PST bank, on the auxiliary bus or the like. • If a DME is selected on the currently selected keyer, the key fill and key source signals to which a DME effect is applied are assigned; otherwise the key fill and key source are assigned.

⓬ OVERRIDE button
To select a DME channel already allocated to another keyer or transition to the currently selected keyer (or transition), hold down this button, and press the DME channel selection button.

⓭ TRACE button
When a DME channel is already allocated to another keyer or transition, hold down this button, and press the corresponding DME channel selection button, to switch to the state in which the keyer (or transition) to which the DME channel is allocated is currently selected.

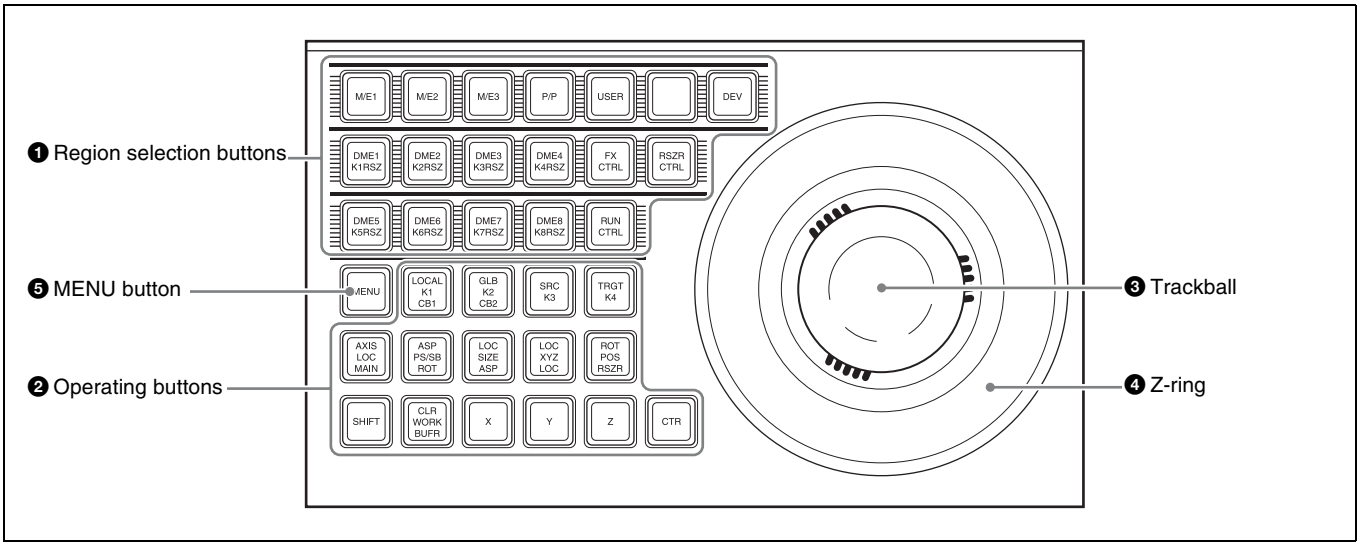
⓮ AUTO DELEG (auto delegation) button
When this button is on, the key delegation selection state of the key control block is linked to the key delegation selection state of the independent key transition control block.

⓯ RESIZER button
Enables or disables resizer.
When this is set to On, you can turn the knob to shrink, magnify, or move a key.
You can also rotate the key by pressing the following buttons assigned in the Setup menu in advance.
ROT X button: Rotate the key in the horizontal direction.
ROT Y button: Rotate the key in the vertical direction.

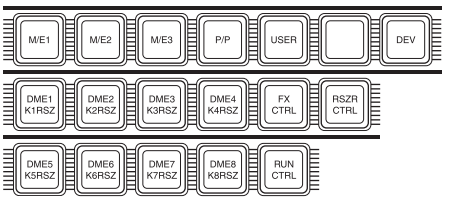
For details on resizer, see page 141.

Device Control Block (Trackball)

The device control block is used for three-dimensional transform operations using a DME, for wipe pattern position setting, and for VTR/disk recorder/frame memory clip operation.



❶ Region selection buttons
The operation mode allocated to the device control block depends on the selection state of the region selection buttons.

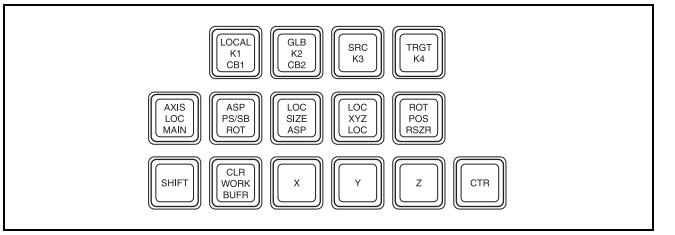


Selected buttons	Overview of assigned operation
[M/E 1] to [M/E 4], [P/P]	• This enables the wipe pattern position setting (positioner) operation mode in the device control block. • You can select multiple buttons simultaneously. *For details of [M/E 4] button assignment, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 380) in Appendix.*
[USER]	This enables pattern position setting used for color backgrounds.
[DME1] to [DME8]	• This enables the three-dimensional transform operation mode in the device control block. • Press a button, turning it on, to select a DME channel. • You can select multiple buttons simultaneously. • The number of valid buttons depends on the number of DME processor channels installed.
[DEV]	• This enables the VTR/disk recorder/frame memory operation mode in the device control block. • Each button functions as follows. (From upper left to right in the above figure) - [M/E1] to [M/E3]: DEV1 (device 1) to DEV3 (device 3) - [P/P]: DEV4 (device 4) - [USER]: FM1CLIP (frame memory clip 1) - [Unused]: FM2CLIP (frame memory clip 2) - [DME1] to [DME4]: DEV5 (device 5) to DEV8 (device 8) - [FX CTRL]: FM LOOP (frame memory loop) - [DME5] to [DME8]: DEV9 (device 9) to DEV12 (device 12) • To exit from this mode, press the [DEV] button again, turning it off.
[RUN CTRL]	This enables the effect run control mode in the device control block.
[RSZR CTRL]	• This enables the resizer control mode in the device control block. • In resizer control mode, select the key with the region selection button [K1RSZ] to [K8RSZ].

Selected buttons	Overview of assigned operation
[FX CTRL]	Leave this button off for operation. *Alternatively, for details of operation of this button, refer to the help information for the MPES-FX01 Programmable Effector software.*

❷ Operation buttons

The following buttons are used to carry out the corresponding operations. Function of each button varies with the operation mode.



When the positioner operation mode is enabled

For details of assignment of keys 5 to 8, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 381) in Appendix.

Name	Description
K1 CB1 a) b)	• Press this button to enable wipe pattern position setting for key 1 (DSK1). • When the [USER] button is selected, pattern position setting for color background 1 is enabled.
K2 CB2 a) b)	• Press this button to enable wipe pattern position setting for key 2 (DSK2). • When the [USER] button is selected, pattern position setting is enabled for color background 2.
K3 a) b)	Press this button to enable wipe pattern position setting for key 3 (DSK3).
K4 a) b)	Press this button to enable wipe pattern position setting for key 4 (DSK4).
MAIN a)	Press this button to enable main wipe pattern position setting for normal transitions.
SB a)	Press this button to enable sub wipe pattern position setting for normal transitions.
POS	• Press this button to enable pattern movement in the x-axis and y-axis directions with the trackball. • When the [USER] button is selected, this enables the trackball to move the pattern in the x-axis and y-axis directions, and the Z-ring to adjust the size of the pattern.
X, Y, Z	These restrict the axes affected by the trackball and Z-ring to the x-, y- or z-axis.

Name	Description
CTR (center)	• When this button is pressed, the pattern position returns to the center. • When the [USER] button is selected, the pattern size also returns to 50.00.
CLR WORK BUFR	Press this button twice in rapid succession to reset all parameters on the target M/E or PGM/PST to their initial values.

a) Among these buttons, you can select multiple buttons.
b) By setting the operation mode in setup, you can select keys 5 to 8 with these buttons. In this case, it is not possible to select more than one of keys 1 to 8.

When the three-dimensional transform operation mode is enabled
The buttons are used for three-dimensional DME transformations.

For details, see "Three-Dimensional Transformation Operations" (page 270).

When the VTR/disk recorder/frame memory operation mode is enabled
The buttons are used for VTR control or playback of frame memory clips.

For details, see "Controlling the Tape/Disk Transport" in Chapter 12 (Volume 2).

When the resizer control mode is enabled

Name	Description
LOC SIZE (ASP: aspect)	• Pressing this button and operating the trackball or Z-ring changes the aspect ratio of a key to which the resizer function is applied to. • When this button is held down, the trackball or Z-ring operation is switched to a finer control. (fine mode)
LOC XYZ (LOC: location)	• Pressing this button and operating the trackball or Z-ring moves, shrinks, or magnifies a key to which the resizer function is applied. • When this button is held down, the trackball or Z-ring operation is switched to a finer control. (fine mode)
ROT (RSZR: resizer)	Press this button, turning it on, to enable the resizer.
ASP PS (ROT: Rotation)	• Pressing this button and operating the trackball or Z-ring rotates the key to which the resizer function is applied or adjusts perspective. • When this button is held down, the trackball or Z-ring operation is switched to a finer control. (fine mode)
SHIFT/CLR WORK BUFR (clear work buffer)	• Pressing this button once returns the two-dimensional transformation settings to the defaults. • Pressing the [CLR WORK BUFR] button twice, or holding down [SHIFT] and pressing the [CLR WORK BUFR] button returns all resizer parameter values to the defaults.
X, Y, Z	These restrict the axes affected by the trackball and Z-ring to the x-, y- or z-axis.
SHIFT/CTR (center)	• Pressing this button once changes the two-dimensional transformation settings to the closest detent values. • Pressing the [CTR] button twice, or holding down [SHIFT] and pressing the [CTR] button returns the two-dimensional transformation values to the defaults.

❸ Trackball
The effect of operation depends on the operating mode as follows.

When the positioner operation mode is enabled
By moving this, you can move the pattern in the x-axis and y-axis directions.

When the three-dimensional transform operation mode is enabled
Move the trackball to control the x- and y-axes in a three-dimensional transform.
When the [SRC] or [TRGT] button is held down, the trackball operation is switched to a finer control. (fine mode)

When the resizer control mode is enabled
By turning the trackball, you can move in the x and y directions of the key to which the resize is applied, change the aspect ratio, and rotate around the x-axis and y-axis.
When the [LOC SIZE], [LOC XYZ], or [ASP PS] button is held down, the trackball operation is switched to a finer control. (fine mode)

❹ Z-ring
The effect of operation depends on the operating mode as follows.

When the positioner operation mode is enabled
When the [USER] button is selected, by turning the ring you can adjust the size of the pattern.

When the three-dimensional transform operation mode is enabled
Turn this ring to control the z-axis in a three-dimensional transform.
When the [SRC] or [TRGT] button is held down, the Z-ring operation is switched to a finer control. (fine mode)

When the effect run control mode is enabled
By turning the Z-ring, you can run the keyframe effect, independent of the STOP NEXT KF, EFF LOOP, and similar settings in the keyframe control block. Turn clockwise to run the effect in the normal direction, and counterclockwise for the reverse direction.

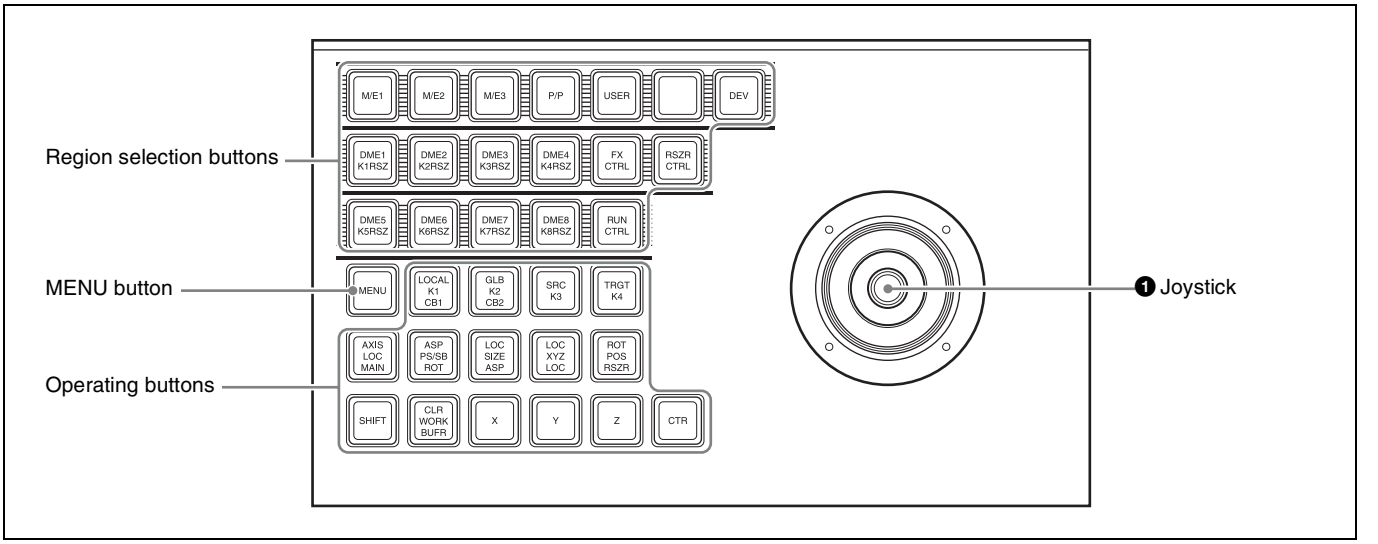
When the VTR/disk recorder/frame memory operation mode is enabled
Turning the Z-ring controls the tape transport/disk drive/ frame memory clip operations, at a speed determined by the operating buttons. Turn clockwise for the normal direction, and counterclockwise for the reverse direction.
When the [LOC SIZE] or [LOC XYZ] button is held down, the Z-ring operation is switched to a finer control. (fine mode)

When the resizer control mode is enabled
By turning the ring, you can zoom the key to which the resizer is applied, and change the aspect ratio and perspective.
When the [LOC SIZE], [LOC XYZ], or [ASP PS] button is held down, the trackball operation is switched to a finer control. (fine mode)

❺ MENU button
Press this button, turning it on, to enable adjusting the parameters allocated to the knobs in the menu using the trackball and Z-ring.
In the case of the DME menu, the operation applies to the selected DME channel.
In VTR/disk recorder/frame memory operation mode, press this button, setting it to On. This makes it possible to carry out timeline start/stop point setting operation for the device selected with the device selection buttons (timeline setting mode).

Device Control Block (Joystick)

All functions of the joystick type device control block are equivalent to the functions of the trackball type, except that the trackball and Z-ring operations are carried out with the joystick.



❶ Joystick

When the positioner operation mode is enabled
By moving this, you can move the pattern in the x-axis and y-axis directions.
When the [USER] button is selected, by turning the end of the joystick you can adjust the size of pattern.

When the three-dimensional transform operation mode is enabled
By moving this, you can carry out operations in the x-, y-, and z-axes.
When the following buttons are held down, the joystick operation is switched to a finer control. (fine mode)

- The button on the end of the joystick
- [SRC] button
- [TRGT] button

When the effect run control mode is enabled
By moving the joystick sideways, you can run the keyframe effect, independent of the STOP NEXT KF, EFF LOOP and similar settings in the keyframe control block. Move to the right to run the effect in the normal direction, and to the left for the reverse direction.

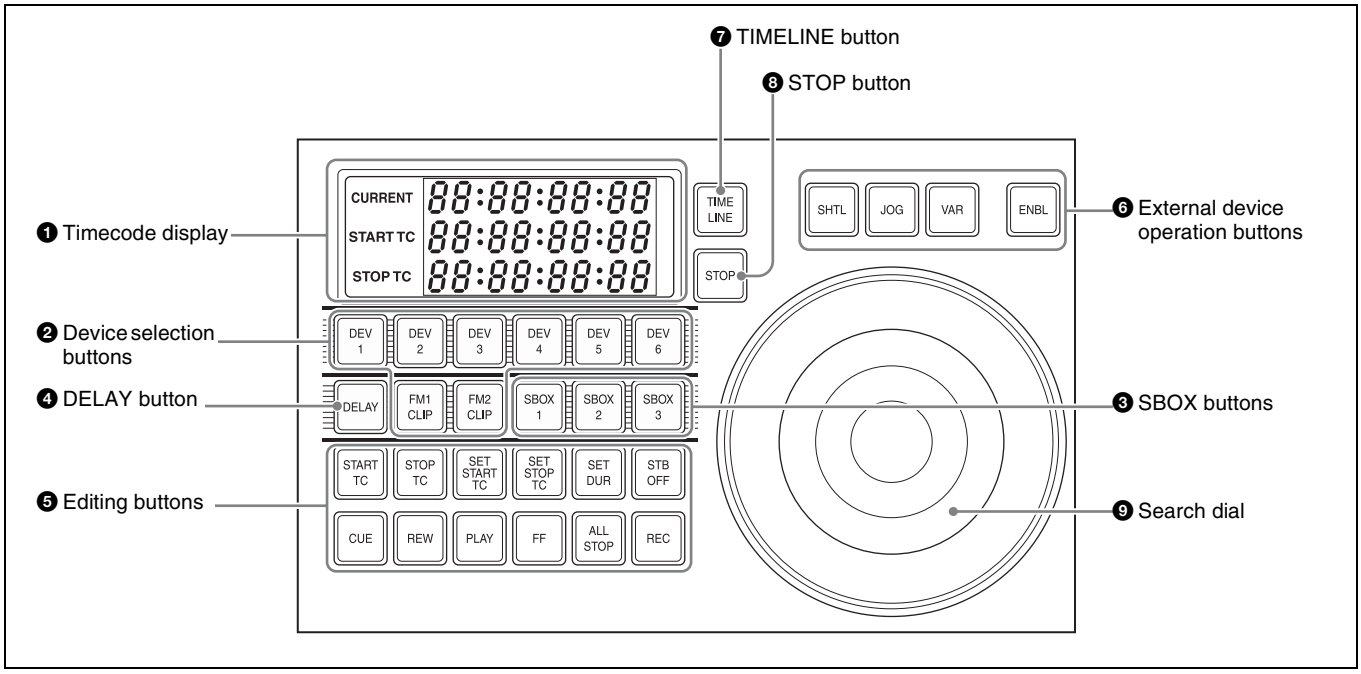
When the VTR/disk recorder/frame memory operation mode is enabled
Moving the joystick sideways controls the tape transport/ disk drive/frame memory clip operation, at a speed determined by the operating buttons.

When the resizer control mode is enabled
Move for operations in the x-, y-, and z-axes.

When the following buttons are held down, the joystick operation is switched to a finer control. (fine mode)
- The button on the end of the joystick
- [LOC SIZE] button
- [LOC XYZ] button
- [ASP PS] button

Device Control Block (Search Dial)

Using the device control block (search dial), you can directly operate an XDCAM, disk recorder, VTR, other external device, frame memory clip, or shotbox. The device control block (trackball) and device control block (joystick) can be used together.



❶ Timecode display

This shows the current time (CURRENT) and the start and stop point timecode values for the current reference device (START TC, STOP TC). When you press a device selection button, the button lights, selecting the assigned device as the reference device, and displaying its setting value.
In the case of the [SBOX] buttons, the display does not change. When the operation applies to a VTR/disk recorder, the displayed setting value depends on whether the [TIMELINE] button is on or off, as follows.

When the [TIMELINE] button is on: Displays the start and stop points of the last set keyframe on the timeline. When the keyframe number is changed and the last register and keyframe change, the display also changes. (timeline setting mode)

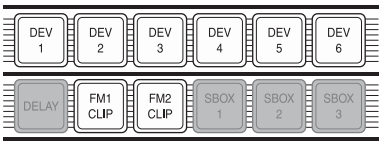
When the [TIMELINE] button is off: Displays the Cueup & Play (rewind action) start and stop points.

❷ Device selection buttons

These buttons are used for selecting assigned external devices or frame memory clips.
Each button can only be assigned to a single device. Carry out the assignment in the Setup menu.

For details, see "Assigning Functions to the Device Control Block" in Chapter 19 (Volume 2).

To select an assigned device, press the corresponding button, which lights green. To select more than one device simultaneously, hold down the button for the first selection, while pressing the buttons for the other selections in turn. The second and subsequent selected buttons light amber. If you press another button without holding down the first selected button, the second button will be the reference device and light green.



Name	Description
DEV1 to DEV6	Assign external devices DEV1 to DEV12.
FM1 CLIP, FM2 CLIP	• Assign frame memory clips FM1 to FM8. • Device selection buttons can be set as SBOX buttons or DELAY button in the Setup menu.

❸ SBOX (shotbox) buttons

Assign a shotbox saved in registers 1 to 99. When you press a button, the assigned shotbox is selected, and executed. Carry out the assignment in the Setup menu.

For details, see "Assigning Functions to the Device Control Block" in Chapter 19 (Volume 2).

You can freely assign the portions for device selection, SBOX, and DELAY buttons in setup.

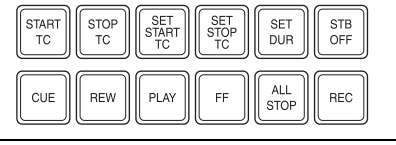
❹ DELAY button

When pressed, this button lights green, the numeric keypad control block display changes to DELAY__ : , and you can set the start delay time for the selected device. The setting range is from 00:00 to 59:29 (depends on the video format). This button goes off when another timecode setting button ([START TC], [STOP TC], [SET START TC], [SET STOP TC], or [SET DUR]) is pressed.
The DELAY button can be set as a device selection button or an SBOX button in the Setup menu. Carry out the assignment in the Setup menu.

For details, see "Assigning Functions to the Device Control Block" in Chapter 19 (Volume 2).

❺ Editing buttons

These buttons set start and stop points. These operations are only valid while a device is selected with the device selection buttons.



Name	Description
START TC	Press this button to set the timecode of the start point at that time. The timecode of the start point is updated to the current time each time this button is pressed. When the device the operation applies to is a VTR/disk recorder, the start point updated by the setting of the [TIMELINE] button is as follows. **When the [TIMELINE] button is On:** start point of the timeline **When the [TIMELINE] button is Off:** start point of Cueup & Play
STOP TC	Press this button to set the timecode of the stop point at that time. The timecode of the stop point is updated to the current time each time this button is pressed. When the device the operation applies to is a VTR/disk recorder, the stop point updated by the setting of the [TIMELINE] button is as follows. **When the [TIMELINE] button is On:** stop point of the timeline **When the [TIMELINE] button is Off:** stop point of Cueup & Play
SET START TC, SET STOP TC, SET DUR	• When pressed, these buttons light green, "START TC", "STOP TC" or "DUR" appears in the numeric keypad control block display, and you can enter a timecode from the numeric keypad. If you enter a numeric value and press the [ENTER] button, the button goes off, whereas if you press the [ENTER] button without entering a numeric value the numeric keypad control block display shows "--:--:--:--". If the timecode has been set correctly, the entered numeric value appears in the timecode display. • To exit the numeric value entry mode, either repeat pressing the same button, or press a different numeric keypad control block linked button, or a mode selection button such as the [EFF] and [SNAPSHOT] buttons in the numeric keypad control block.
STB (standby) OFF	• When pressed, this button flashes amber, and the device selected with the device selection buttons exits from the standby mode. • This button cannot be used for frame memory clip operations.
CUE	• When pressed, this button flashes amber together with the [ALL STOP] button, and the device selected with the device selection button is cued up to the start point of the material. • When more than one device is selected, the amber flashing continues until the reference device is cued up, and when the cueing up is finished, this button lights green.
REW	When pressed, this button lights amber, and material of the device selected with the device selection buttons is rewound.

Name	Description
PLAY	• When pressed, this button lights amber, and the device selected with the device selection buttons plays. The playback stops not only if the [STOP] button is pressed, but also if any of the [STB OFF], [SHTL], [JOG], [CUE], [REW], [PLAY], [FF], and [ALL STOP] buttons is pressed. • When the [VAR] button is pressed while the device is playing back, the device plays at one times normal speed in variable mode.
FF	When pressed, this button lights amber, and the material of the device selected with the device selection buttons is fast forwarded.
ALL STOP	• When pressed, all device material playback stops. • During cueing up of any of the devices, this button flashes amber, and when all cueing up operations are completed, it lights green.
REC	• When pressed simultaneously with the [PLAY] button, this button lights red (the [PLAY] button lights amber), and the image from the selected device is recorded. • This button cannot be used for frame memory clip operations.

❻ External device operation buttons

Pressing the following buttons selects the search dial mode.

Name	Description
ENBL (enable)	When this is pressed, turning it on, the search dial [VAR], [JOG], and [SHTL] button operations are enabled.
VAR (variable)	Sets the search dial to variable mode.
JOG	Sets the search dial to jog mode.
SHTL (shuttle)	Sets the search dial to shuttle mode.

❼ TIMELINE button

Press to switch the device selected with the device selection buttons to timeline setting mode.

❽ STOP button

When pressed, this lights amber, and operation of the device selected with the device selection buttons stops.

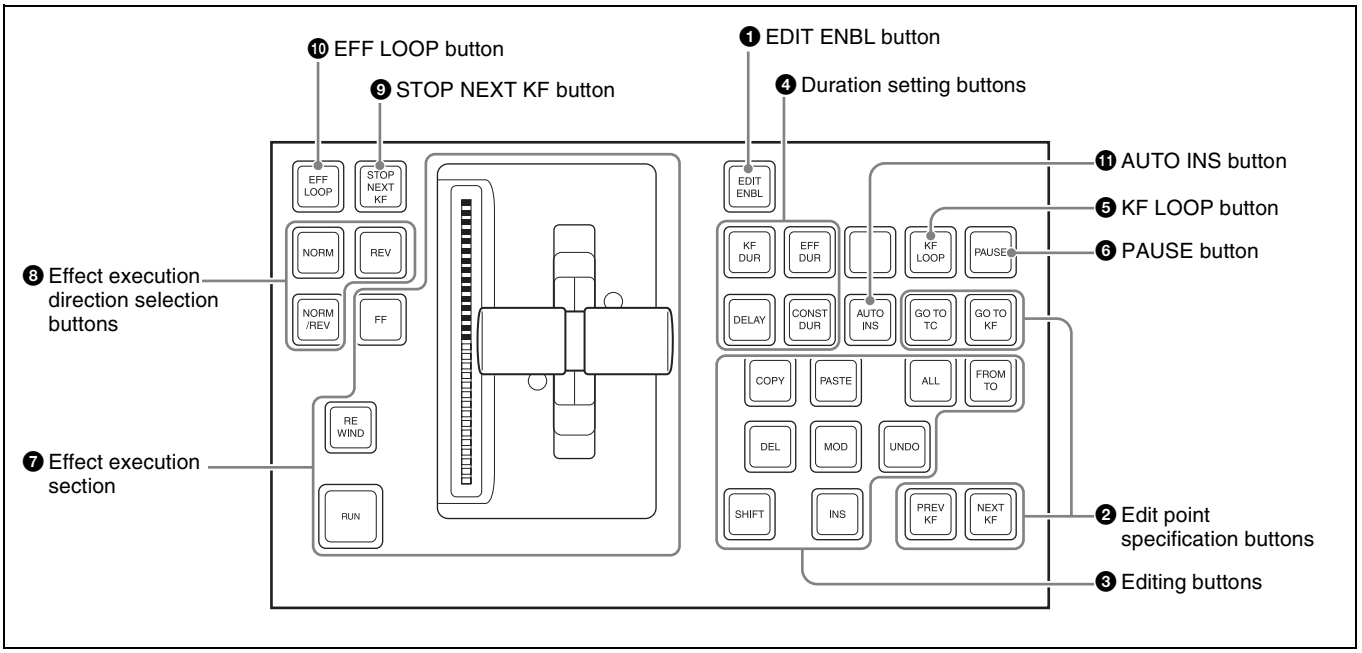
❾ Search dial

Use this for search and other operations on the material of an external device.

For details, see "Controlling Tape/Disk Transport" in Chapter 12 (Volume 2).

Keyframe Control Block

In the keyframe control block, you can carry out effect editing and execution.

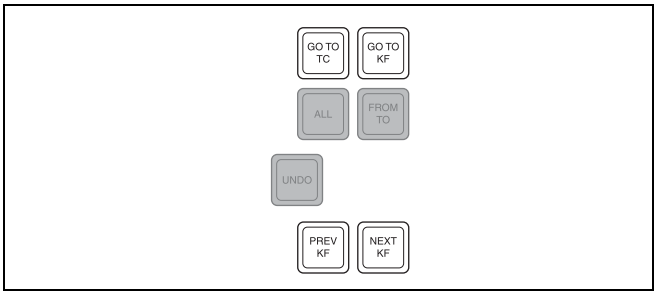


❶ EDIT ENBL (edit enable) button

Press this button, turning it on, to enable effect editing operations with the keyframe control block.
When macro editing is carried out, this button lights red.

❷ Edit point specification buttons

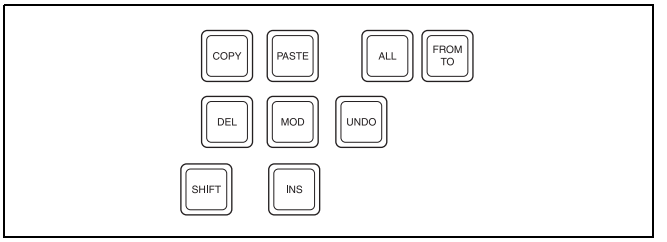
The following buttons are used to set an edit point.



Name	Description
GO TO TC (Go to timecode)	Press this button, turning it on, to enter a numeric value from the numeric keypad control block, and move the edit point to the specified timecode position.
GO TO KF (Go to keyframe)	• Press this button, turning it on, to enter a numeric value from the numeric keypad control block, and move the edit point to the specified keyframe. • During macro editing, pressing this button moves the edit point to the event number specified by numeric entry with the numeric keypad control block.
PREV KF (previous keyframe)	• When this button is pressed, the edit point moves to the keyframe immediately before the current time (the position where the effect is currently stopped). • During macro editing, pressing this button moves the edit point to the event immediately before the current event.
NEXT KF (next keyframe)	• When this button is pressed, the edit point moves to the keyframe immediately after the current time. • During macro editing, pressing this button moves the edit point to the event immediately after the current event.

❸ Editing buttons

The following buttons are used to edit keyframes.



Name	Description
ALL	Press this button, turning it on, to select all keyframes (during macro editing, all events) in the effect.
FROM TO	Press this button, turning it on, to enter numeric values from the numeric keypad control block, and select a specified range of keyframes (during macro editing, the specified range of events).
INS (insert)	• When this button is pressed, a new keyframe is inserted after the current keyframe. • Pressing this button while holding down the [SHIFT] button inserts a new keyframe before the current keyframe. • During macro editing, pressing this button registers an event after the current event. • During macro editing, holding down the [SHIFT] button and pressing this button inserts a new event before the current event.
MOD (modify)	• When this button is pressed, the selected keyframe is modified with the values of the current keyframe. • When the edit point is between two keyframes, the immediately preceding keyframe is modified. • You can also select multiple keyframes, and modify them in a single operation. At this time, pressing this button while holding down the [SHIFT] button modifies all selected keyframes with the changed values taken as relative values. • During macro editing, pressing this button amends the selected event. • You can also select multiple events, and edit them in a single operation.
DEL (delete)	• When this button is pressed, the selected keyframe is deleted. • When the edit point is between two keyframes, the immediately preceding keyframe is deleted. • During macro editing, pressing this button deletes the selected event. • You can also select multiple keyframes or macro events, and delete them in a single operation.
COPY	• When this button is pressed, the selected keyframe (during macro editing, macro event) is copied. • You can also select multiple keyframes or macro events, and copy them in a single operation.

Name	Description
PASTE	• When this button is pressed, the deleted or copied keyframe (during macro editing, macro event) is inserted after the current keyframe (during macro editing, macro event). • Pressing this button while holding down the [SHIFT] button inserts the deleted or copied keyframe (during macro editing, macro event) before the current keyframe (during macro editing, macro event).
SHIFT	Hold down this button, and press the [INS] button, [MOD] button, or [PASTE] button, to obtain the shifted function for the button.
UNDO	When this button is pressed, the last executed keyframe (during macro editing, macro event) insertion, modification, or deletion, or paste operation is canceled.

❹ Duration setting buttons

The following buttons are used to set the duration of a keyframe.

Name	Description
KF DUR (keyframe duration)	Press this button, turning it on, to set the keyframe duration of the selected keyframe, by numeric value entry from the numeric keypad control block.
EFF DUR (effect duration)	Press this button, turning it on, to set the effect duration from the numeric keypad control block.
DELAY	Press this button, turning it on, to enter a delay value from the numeric keypad control block.
CONST DUR (constant duration)	• Select the duration mode. • When this is lit, the mode is constant duration mode, and when off, variable duration mode.

❺ KF LOOP (keyframe loop) button

Press this button, turning it on, to execute the effect the specified number of times through the keyframes in the specified range.

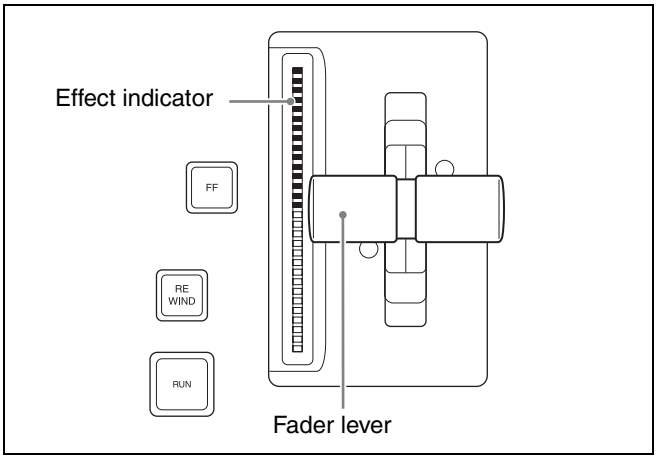
❻ PAUSE button

When this button is pressed, a pause is applied to the selected keyframe.

When editing a macro, press this button, turning it on, to include a pause event in the macro. The pause length can be set in the numeric keypad control block.

❼ Effect execution section

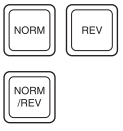
This section is used to execute an effect, and check the progress of the effect execution.



Name	Description
RUN button	• When this button is pressed, the effect is run from the first keyframe to the last keyframe. However, if a pause is set on a keyframe, the effect stops at that point. • Press this button again to resume execution, and continue to the next pause point or the end of the effect.
Effect indicator	This comprises multiple LEDs, which show the progress of the effect.
Fader lever	Moving this up or down manually runs the effect.
REWIND button	When this button is pressed, the currently recalled effect is rewound to the first keyframe.
FF (fast forward) button	When this button is pressed, the currently recalled effect is advanced to the last keyframe.

❽ Effect execution direction selection buttons

The following buttons are used to set the direction of effect execution.



Name	Description
NORM (normal)	• When this button is lit, effect execution runs from the first keyframe to the last keyframe. • This button automatically goes off when the [REV] button is pressed, turning it on.
REV (reverse)	• When this button is lit, effect execution runs from the last keyframe to the first keyframe. • This button automatically goes off when the [NORM] button is pressed, turning it on.

Name	Description
NORM/REV (normal/ reverse)	Press this button, turning it on, to reverse the direction of the effect when it reaches the last keyframe or first keyframe.

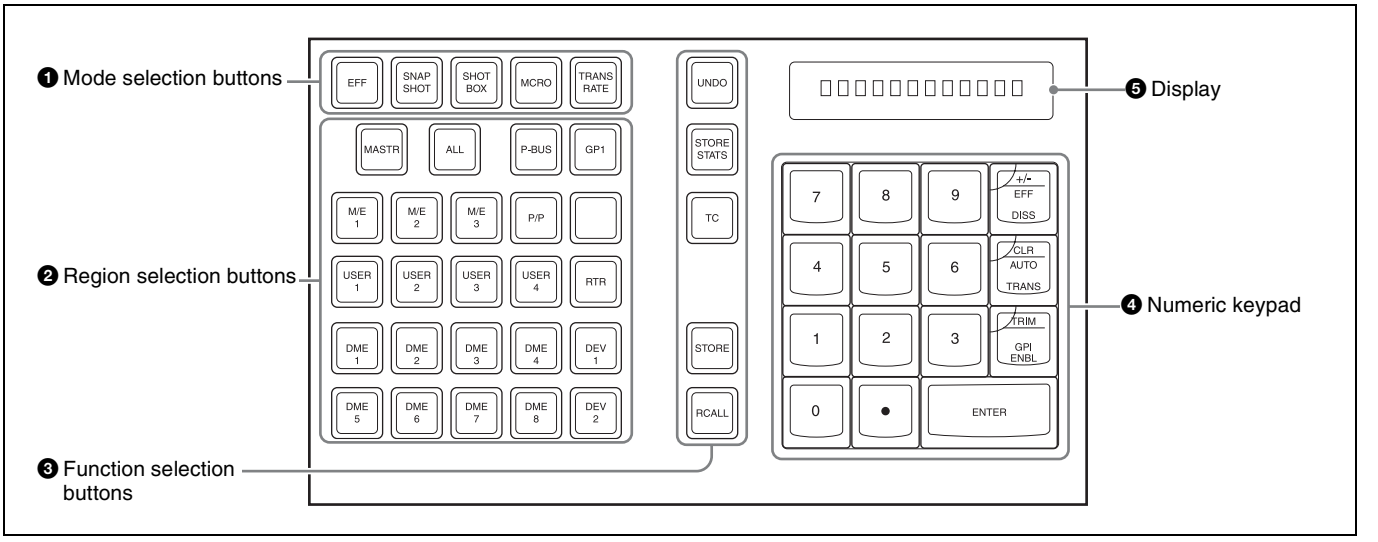
❾ STOP NEXT KF (stop next keyframe) button
When this button is pressed, turning it on, the effect execution range is from the current time to the next keyframe.

❿ EFF LOOP (effect loop) button
When the effect reaches the last keyframe with this button on, it returns to the first keyframe and repeats.

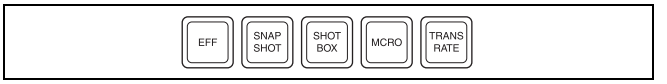
⓫ AUTO INS (auto insert) button
When editing a macro, press this button, turning it on, to enable the auto insert function, so that every control panel operation you carry out is added to the macro as an event.

Numeric Keypad Control Block

The numeric keypad control block is used for region selection, for saving and recalling snapshots, effects and shotboxes, for entering numeric values for trackball operation and keyframe operation, and for transition rate entry.

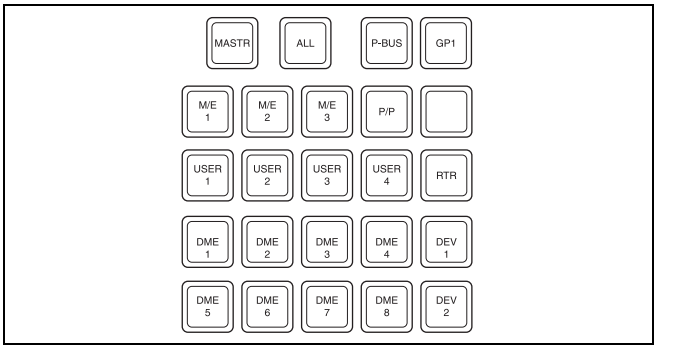


❶ Mode selection buttons
Pressing the following buttons changes the mode.



Name	Description
EFF (effect)	Press to save or recall an effect.
SNAPSHOT	Press to save or recall a snapshot.
SHOTBOX	Press to save or recall a shotbox.
MCRO (macro)	Press to save, recall or edit a macro.
TRANS RATE (transition rate)	• Press to set the transition rate. • Hold down this button, and press one of the key delegation buttons [KEY1] to [KEY8] in the transition control block to set an independent key transition rate.

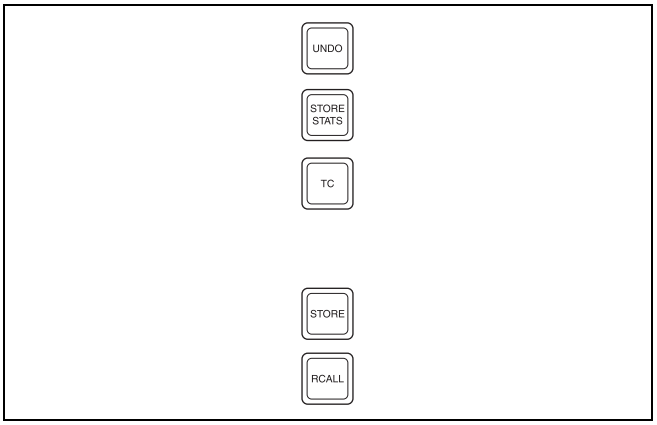
❷ Region selection buttons
These select the functional block (“region”) of the control panel to which operations apply.
You can select more than one region at the same time.
The first button you press is taken as the reference region, and lights green, while the next pressed button lights amber.
With the exception of the [MASTR] and [ALL] buttons, you can change the region assignment to the buttons as desired in the Setup menu.



Name	Description
MASTR (master)	Press this, turning it on, to save region information in a master snapshot register or master timeline register, or to recall such region information.
ALL	• Select all regions. • When any region is already selected, pressing this button makes all regions unselected.
M/E 1 to M/E 4, P/P	Select the corresponding regions, M/E-1, M/E-2, M/E-3, M/E-4, and PGM/PST. *For details of [M/E 4] button assignment, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 380) in Appendix.*
USER 1 to USER 8	Select a User region.
DME1 to DME8	Select a DME channel.
P-Bus	Select the P-Bus region.
GPI	Select the GPI region.
RTR	Select the router region.
DEV1 to DEV12	Select the Device 1 to Device 12 regions respectively.
MCRO	Select the macro region.

❸ Function selection buttons

The following buttons are used to switch the function.

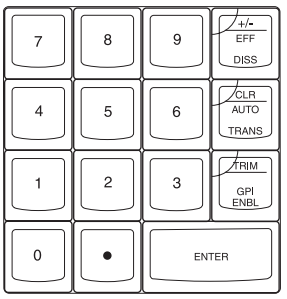


Name	Description
UNDO	After recalling a register, press this button to return to the state before recalling the register.
STORE STATS (store status)	• This lights amber when data is stored in a register. • After saving data to a register, hold down this button and press the [UNDO] button to return the register to the state before the data was saved.
TC (timecode)	Press this button, turning it on, to switch transition rate entry to the timecode entry mode.
STORE [a]	Press this button to switch to the mode for saving a snapshot, effect, shotbox or macro in a register.
RCALL (recall) [a]	Press this button to switch to the mode for recalling a snapshot, effect, shotbox or macro from a register.

a) [STORE] button or [RCALL] button flashes amber when one or more of the regions assigned to the Region selection buttons are not selected by the Region Select menu.

❹ Numeric keypad

In addition to the buttons for numeric input, this includes buttons for adding attributes to snapshots.

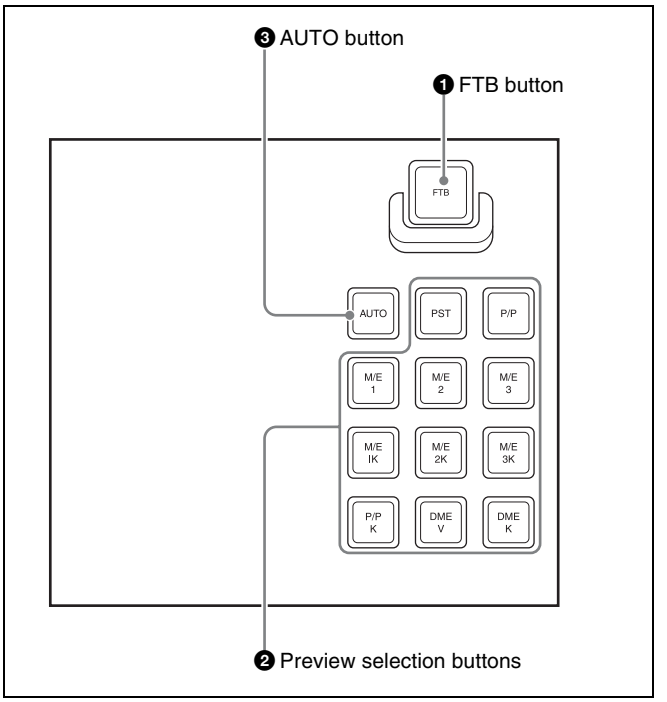


Name	Description
0 to 9	Used to input numeric digits.
. (period)	• Enters the decimal point. • When the [TC] button is lit, enters "00." • When the [EFF] button, [SNAPSHOT] button or [SHOTBOX] button is lit, this is used to find an empty register.
+/–/EFF DISS (effect dissolve)	• Invert the sign, negative or positive. • When the [SNAPSHOT] button is lit, applies the effect dissolve attribute to a snapshot.
CLR/AUTO TRANS (clear/auto transition)	• Clear an input value, returning to the previous state. • When the [SNAPSHOT] button is lit, applies the auto transition attribute to a snapshot.
TRIM/GPI ENBL (enable)	• After entering a difference value to be added to an existing setting, press this button to confirm the change. • When the [SNAPSHOT] button is lit, adds a GPI output attribute to the snapshot.
ENTER	Confirm an entered value.

❺ Display

This shows the selected region name, register number and entered numeric values.

Fade to Black Control Block



❶ FTB (fade to black) button

Press this button to fade to black the program output of the PGM/PST bank, at the set transition rate. You can set the fade to black transition rate in the menu.

❷ Preview selection buttons

Each of these buttons can be assigned to any preview output in setup.

Each button can be assigned to any preview output in setup.

For details, see "Assigning Preview Output to Preview Selection Buttons" in Chapter 19 (Volume 2).

Name	Description
PST (preset)	When this button is pressed, the signal selected on the background B row of the PGM/PST bank is selected on the edit preview bus.
M/E 1 to M/E 4, P/P (M/E1 to M/E 4, P/P preview)	The preview signal (M/E-1 PVW, M/E-2 PVW, M/E-3 PVW, M/E-4 PVW, P/P PVW) of the M/E or PGM/PST bank corresponding to the pressed button is selected on the edit preview bus. *For details of [M/E 4] button assignment, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 380) in Appendix.*
M/E1 K to M/E4 K, P/P K (M/E1 to M/E 4, P/P key preview)	The key preview signal (M/E-1 K-PVW, M/E-2 K-PVW, M/E-3 K-PVW, M/E-4 K-PVW, P/P K-PVW) of the M/E or PGM/PST bank corresponding to the pressed button is selected on the edit preview bus. *For details of [M/E 4] button assignment, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 380) in Appendix.*
DME V (DME monitor video)	When this button is pressed, the DME monitor output video signal (DME MON V) is selected on the edit preview bus.
DME K (DME monitor key)	When this button is pressed, the DME monitor output key signal (DME MON K) is selected on the edit preview bus.

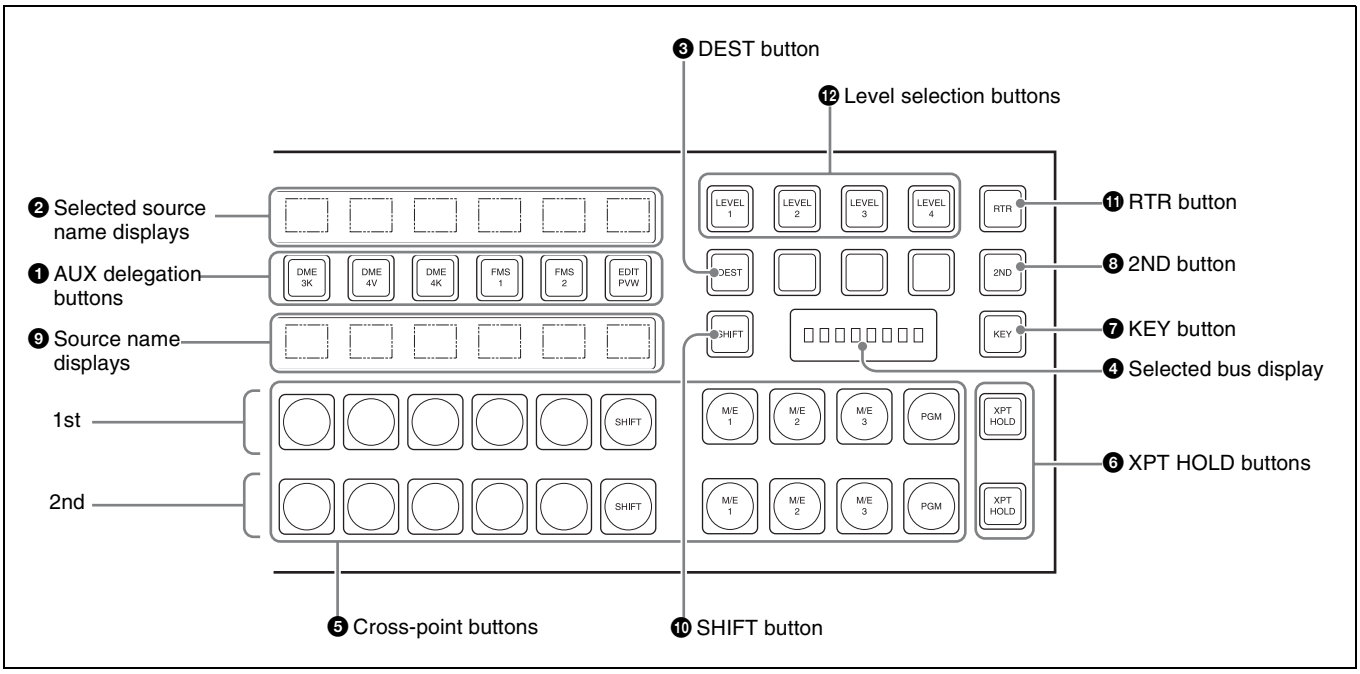
❸ AUTO button

When this button is pressed, the M/E or PGM/PST bank preview signal selected on the edit preview bus is automatically switched to the program signal depending on the on-air status.

Auxiliary Bus Control Block (for AUX Buses)

There are also models without the selected source name displays and source name displays shown in the following figure.

All operations except those of the [DEST] button and [SHIFT] button are the same as for a model with selected source name displays and source name displays.



❶ AUX delegation buttons

Press one of these buttons, turning it on, to select the bus to which to assign the cross-point buttons in the auxiliary bus control block.

For buses that can be selected, see "Bus Selection" (page 79).

❷ Selected source name displays

These show the name of the currently selected signal (source) on the bus corresponding to the delegation button.

❸ DEST (destination) button

Press this button, turning it on, to display the names of buses allocated to the delegation buttons in the selection source name displays.
In the case of a module without selected source name displays, this button is invalid.

❹ Selected bus display

This shows the name of the bus selected by the auxiliary bus delegation buttons.

❺ Cross-point buttons

The cross-points in the auxiliary bus control block are arranged in two rows: an upper row (1st row) and a lower row (2nd row), and are allocated to the buses selected with the AUX delegation buttons. The 1st row contains the cross-point buttons for unshifted buses, and the 2nd row contains the cross-point buttons for shifted buses.
When the DME 1V/K to 8V/K buses are selected with the AUX delegation buttons, the 1st row cross-point buttons are for the currently showing side of DME, and the 2nd row are for the reverse side.
In the case of a module without source name displays, this button is invalid.

By holding down the [2ND] button and making an AUX delegation selection, you can allocate the 2nd row to a different bus from the 1st row.
In this case, if the 32nd button is set to be a [SHIFT] button (in a 32-button system), you can select the shifted cross-point buttons in the 1st and 2nd rows.

❻ XPT HOLD (cross-point hold) buttons

Press one of these buttons, turning it on, to enable cross-point hold.

❼ KEY button

While this button is held down, you can use the cross-point row of buttons to select key signals.

❽ 2ND button

After selecting a bus with an AUX delegation button, hold down this button, and select another AUX delegation, thus allocating a different bus in the 2nd row from the 1st row.

❾ Source name displays

These show the names of the source signals which can be selected by the cross-point buttons. While the [SHIFT] button is enabled, the shifted signal name is displayed. If a different bus is allocated to the 2nd row, while the [2ND] button is held down, the 2nd row signal name is displayed. While the [KEY] button is held down, the source name of the key signal assigned to the cross-point buttons appears.

❿ SHIFT button

While this button is enabled, the shifted signal names appear in the source name display. Pressing this buttons toggles the source name display between the shifted signal names and unshifted signal names.
button is invalid.

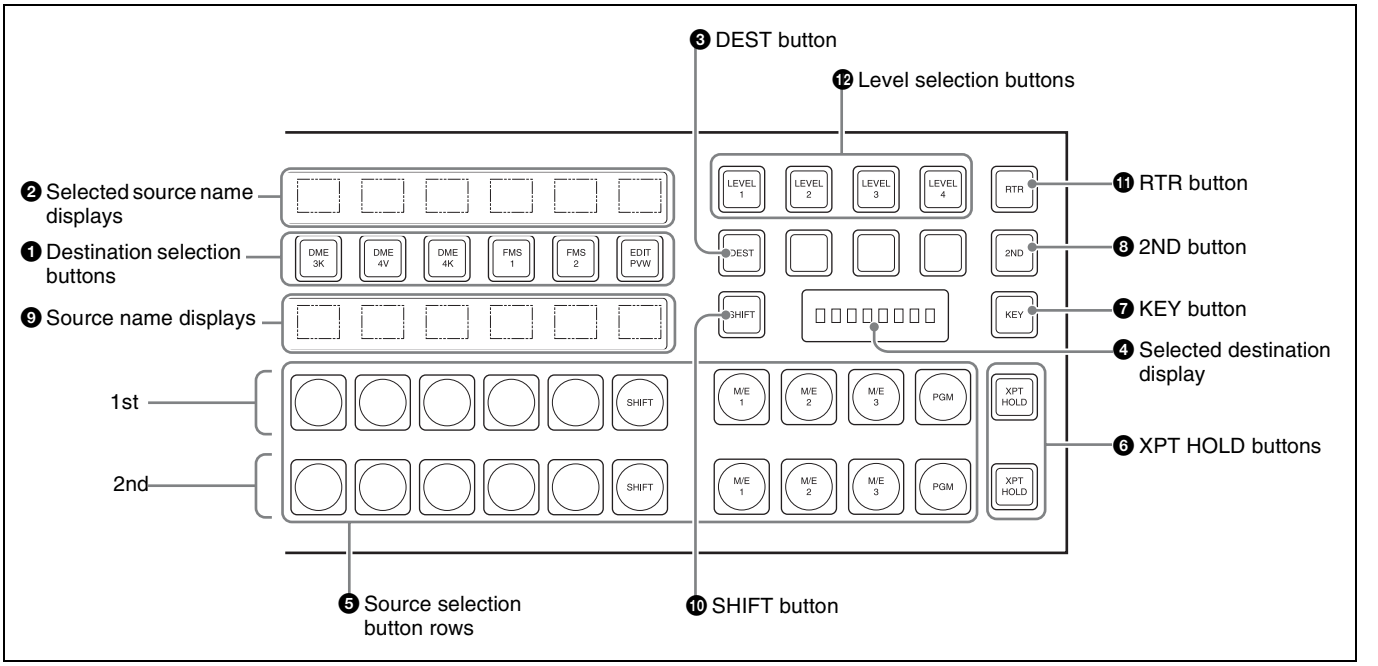
⓫ RTR (router) button
Press this button, turning it on, to assign the auxiliary bus control block to router control.

For details of the names and functions of parts for router control, see the next section.

⓬ Level selection buttons
Used when the auxiliary bus control block is carrying out router control.

Auxiliary Bus Control Block (for Router Control)

Press the [RTR] button, turning it on, to assign the auxiliary bus control block to router control.



❶ Destination selection buttons
Press a button, turning it on, to select the destination to which the router source is assigned.
The button pressed to assign a destination to a source selection button in the 1st row lights amber. When another button is pressed to assign a different destination to a source selection button in the 2nd row, it lights green.

❷ Selected source name displays
These show the source name selected for the destination. If the source names and destination names are set in the Setup menu to "SW'er Local" mode, then the description names appear here.

❸ DEST (destination) button
Press this button, turning it on, to display the names of the destinations assigned to the destination selection buttons in the selected source name displays.

❹ Selected destination display
This shows the name of the destination selected by the destination selection buttons. If a protected destination is selected, the indication "PROTECT" appears.

❺ Source selection button rows
The destination selected with a destination selection button is assigned to a source selection button. Press a source selection button to select a source. The 1st row of buttons are source selection buttons for the unshifted destinations, and the 2nd row are shifted source selection buttons. By holding down the [2ND] button, and selecting a destination, you can assign a different destination from the 1st row to the 2nd row. In the 1st row, the button to which a destination is assigned lights amber. If a different destination is assigned to a button in the 2nd row, the button lights green.
When the 32nd button is set as a [SHIFT] button (in a 32-button system), you can select the shifted sources in the 1st and 2nd rows. Also, by using the [KEY] button, you can expand the source selection as follows.

Source selection	[SHIFT]	[KEY]	Selection operation
1 to 31	Off	Off	Press the source selection button.

Source selection	[SHIFT]	[KEY]	Selection operation
32 to 62	On	Off	Press the [SHIFT] button, then press the source selection button.
63 to 93	Off	On	Hold down the [KEY] button, and press the source selection button.
94 to 124	On	On	Hold down the [KEY] button, and press the [SHIFT] button, turning it on (the [SHIFT] button locks here, even when in Hold mode), then press the source selection button.

❻ XPT HOLD (cross-point hold) buttons
Not used in router control mode.

❼ KEY button
When this button is enabled by a setting in the Setup menu, by holding it down during a source selection you can expand the function of the [SHIFT] button.

See "Using the Auxiliary Bus Control Block for Router Control Setting Button" in Chapter 19 (Volume 2).

❽ 2ND button
After selecting a destination with the destination selection buttons, hold down this button and make another destination selection to assign a different destination from the 1st row to the 2nd row.

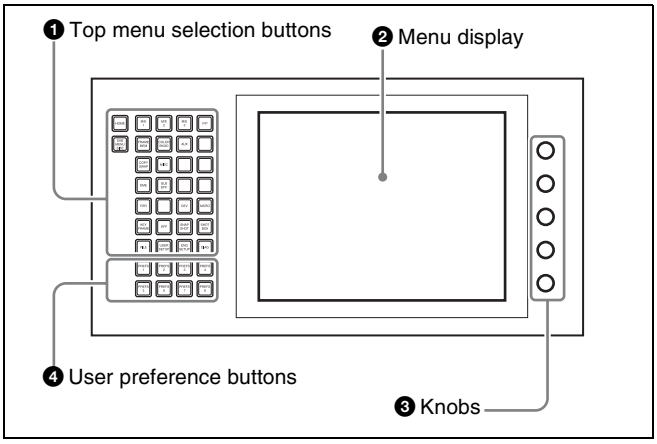
❾ Source name displays
These display the names of signals (sources) that can be selected with the cross-point buttons. While the [SHIFT] button is active, the shifted signal names appear. While the [KEY] button is held down, the expanded signal names appear.
When a different destination is assigned to the 2nd row, the 2nd row signal names appear only while the [2ND] button is held down.

❿ SHIFT button
While this button is active, the source name displays show the shifted signal names. Press this button to toggle between the shifted and unshifted states.

⓫ RTR (router) button
Press this button, turning it on, to assign the auxiliary bus control block to router control.

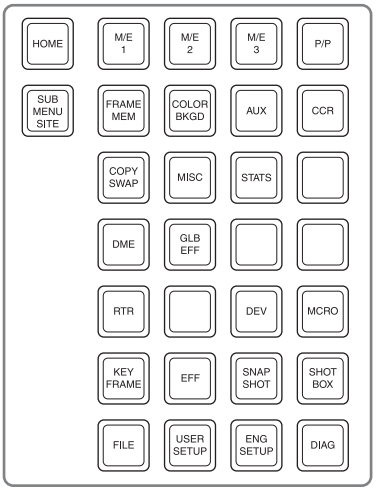
⓬ Level selection buttons
To each of the four buttons, plural S-Bus levels are assigned in the Setup menu. Press a button, turning it on, to make operations apply to those S-Bus levels.

Menu Control Block



❶ Top menu selection buttons
These select the menu appearing in the menu display.
It is also possible to change the assignment of these buttons in setup.

For details, see "Assigning Functions to the Menu Control Block Top Menu and User Preference Buttons" in Chapter 19 (Volume 2).



❷ Menu display
This shows the menu currently in use.

❸ Knobs
These adjust the parameter values appearing in the menu.

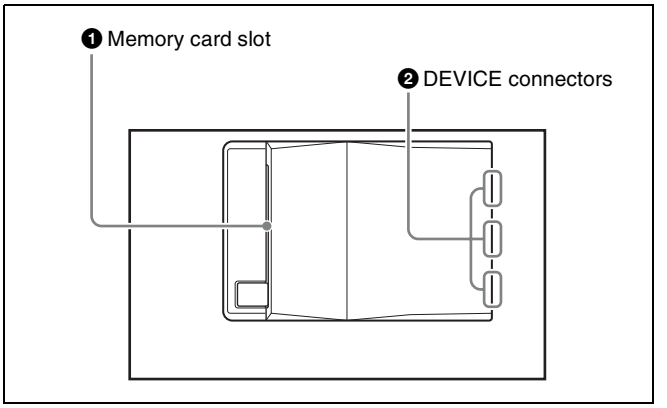
❹ User preference buttons
These recall the functions or menus assigned to them in the Setup menu.

In the default setup, nothing is assigned to the [PREFS 1] to [PREFS 7] buttons.
It is also possible to change the assignment of these buttons in setup.

For details, see "Assigning Functions to User Preference Buttons" in Chapter 19 (Volume 2).

PREFS 8 button: When this button is on, control of an editor from the Remote1 port on the rear panel of the switcher is possible. However, even when it is off, control of the Edit PVW bus is always possible.

Memory Card/USB Adaptor Block

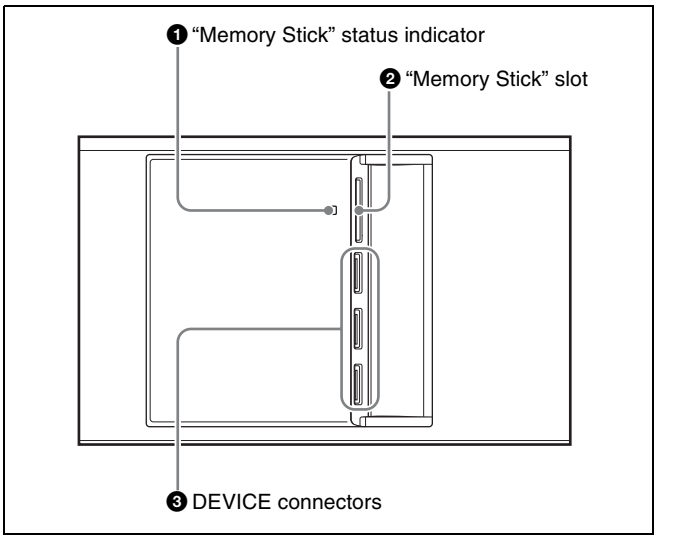


❶ Memory card slot
This slot accepts a PCMCIA Type II compliant memory card. You can use it in software installation, and for saving and reading in data, such as snapshot, keyframe, effect, and setup data.

❷ DEVICE connectors
There are three USB connectors.
You can connect a device such as a mouse, keyboard, USB storage, and so on, that is equipped with a USB interface to any of these connectors.

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

"Memory Stick"/USB Connections Block



❶ "Memory Stick" status indicator
Lights in red during access to a "Memory Stick."

Notes

Do not power the unit off or remove a "Memory Stick" when the "Memory Stick" status indicator is lit.

❷ "Memory Stick" slot
Insert "Memory Sticks." You can use it in software installation, and for saving and reading data, such as snapshot, keyframe, effect, and setup data.

See the next item, "About "Memory Sticks"" for more information about the usable "Memory Sticks" and their handling.

❸ DEVICE connectors
There are three USB connectors.
You can connect a device such as a mouse, keyboard, USB storage, and so on, that is equipped with a USB interface to any of these connectors.

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

About "Memory Sticks"

Usable "Memory Sticks"

This unit has been confirmed to operate with those of the following "Memory Sticks" that have a capacity of 8 GB (gigabytes) or less. However, operation with all "Memory Sticks" is not guaranteed.

- "Memory Stick"
- "Memory Stick PRO"
- "Memory Stick Duo"

• “Memory Stick PRO Duo”

Notes

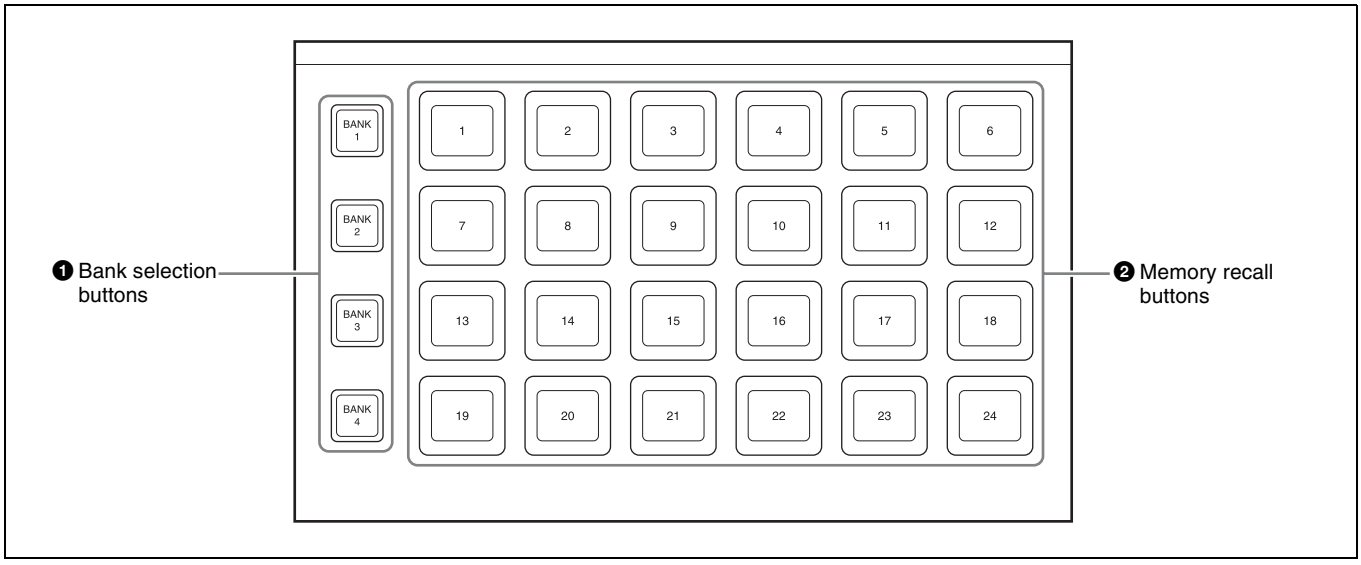
- When using a “Memory Stick PRO,” high-rate data transfer using parallel interface is not supported.
- A “MagicGate Memory Stick” can also be used, but this system does not support the MagicGate function.
- When using a “Memory Stick Duo,” be sure to use it with a “Memory Stick Duo Adaptor” (MSAC-M2 or equivalent). If you insert a “Memory Stick Duo” without using the adaptor, there is the possibility that the stick cannot be removed, resulting in a serious accident.

Handling “Memory Sticks”

When using “Memory Sticks,” pay attention to the following points.

- Do not touch the connector of the “Memory Stick” with anything, including your finger or metallic objects.
- Do not attach anything other than the supplied label to the “Memory Stick” labeling position.
- Attach the label so that it does not stick out beyond the labeling position.
- Carry and store the “Memory Stick” in its case.
- Do not strike, bend, or drop the “Memory Stick.”
- Do not disassemble or modify the “Memory Stick.”
- Do not allow the “Memory Stick” to get wet.
- Do not use or store the “Memory Stick” in a location that is:
  - Extremely hot, such as in a car parked in the sun
  - Under direct sunlight
  - Very humid or subject to corrosive substances

Utility/Shotbox Control Block



❶ Bank selection buttons

Press any of the [BANK1] to [BANK4] buttons to select a bank of 24 memory recall buttons. The selected button lights amber.

❷ Memory recall buttons

You can use these buttons to recall frequently used menus, utility functions, shotbox registers, or macro registers that you have assigned.

When a utility function is allocated to a button, the button lights orange (or green depending on the status), and the allocated function name appears.

Pressing the button executes the allocated function. When the function constitutes a switching on/off operation, the button lights green; otherwise, it only momentarily lights green.

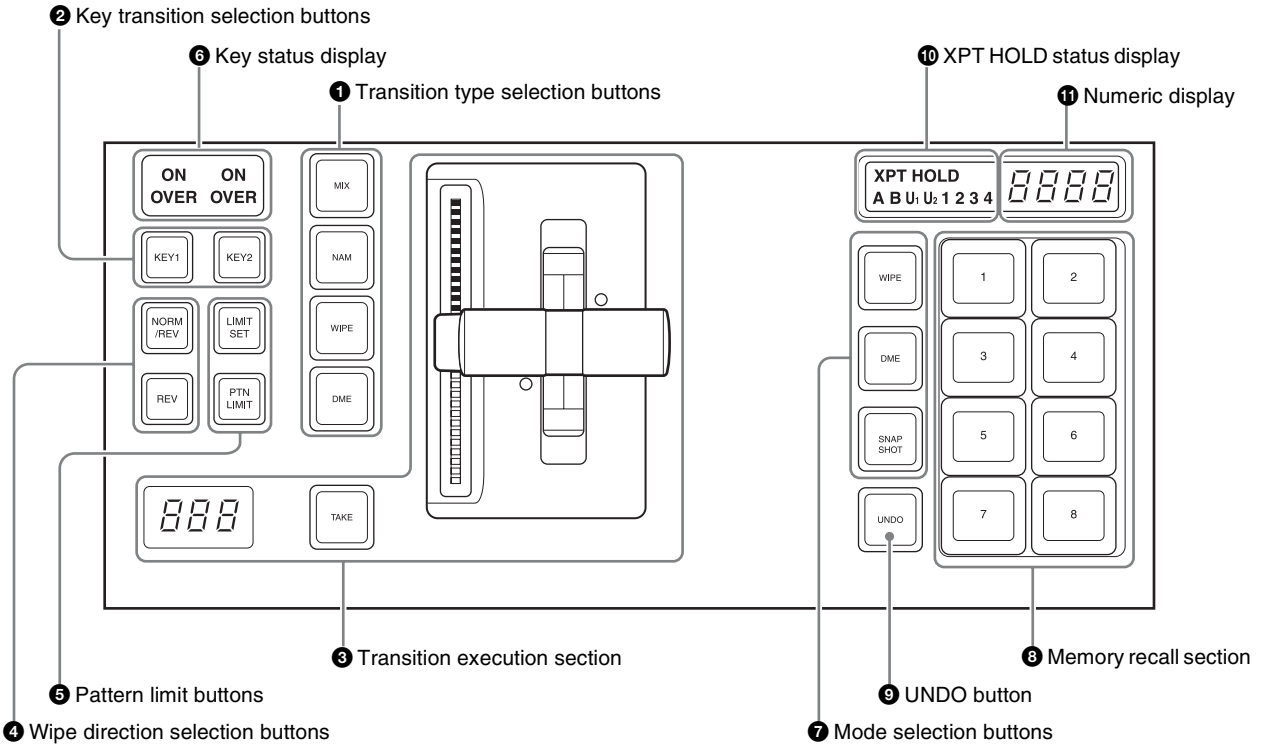
When a shotbox register or macro register recall is assigned to a button, the button lights orange, and the assigned register name appears. (If the register is empty, the button goes off.) In the case of a shotbox function, pressing the button executes the assigned shotbox function, and the button lights yellow. In the case of a macro register, pressing the button executes the assigned macro, and the button flashes yellow.

You can also assign enabling and disabling of macro attachment to use as the MCRO ATTCH ENBL button. You can make a setup setting such that when MCRO ATTCH ENBL is On, the buttons for which a macro attachment is set light.

For details, see “Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block” in Chapter 19 (Volume 2).

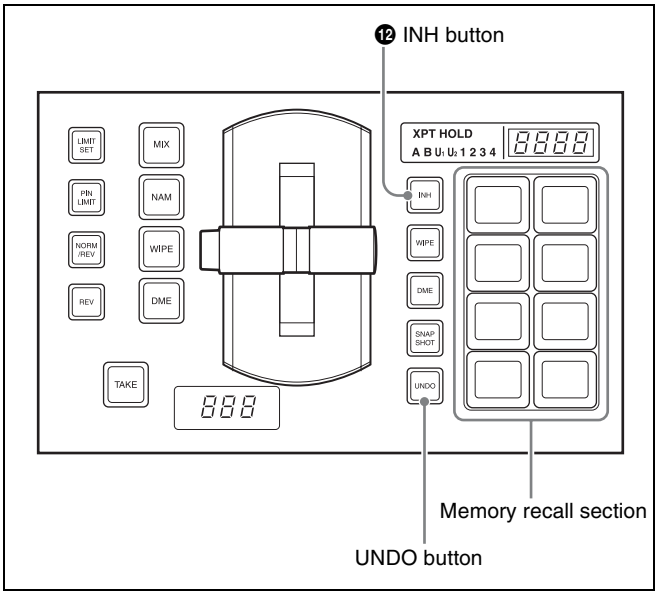
Transition Control Block and Flexi Pad Control Block (Simple Type)

The simple versions of the transition control block and Flexi Pad control block shown in the following figure is designed to allow simplified operations than with the standard type. The transitions carried out using these simple-type control blocks are also referred to as “simple transitions” in this User’s guide.



Shown above is the right-hand type transition control block (with the right-hand fader lever).

Transition Control Block and Flexi Pad Control Block (with INH button)



❶ Transition type selection buttons

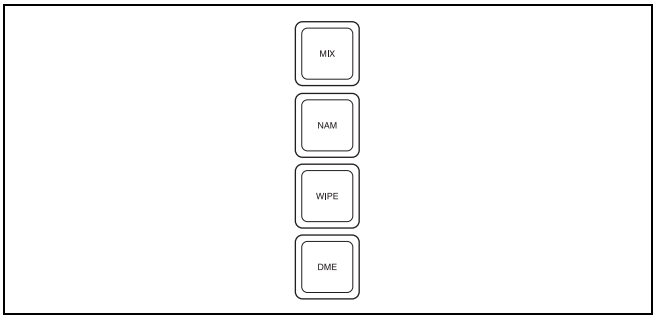
You can assign these buttons in setup to any transition type.

For details, see “Overall Control Panel Settings (Config Menu)” in Chapter 19 (Volume 2).

Press any of the following buttons, turning it on, to select the transition type.
Press one of these buttons, turning it on, to determine the type of the next transition for a background.
To select the key transition type *(see page 85)*, hold down the [KEY1] or [KEY2] button, and press one of the following buttons, turning it on.
When multi-program mode is selected in the Setup menu, two or more of the following buttons may light.

For details, see “Setting the Operation Mode” in Chapter 20 (Volume 2).

You can also assign a function to these buttons to select whether or not the fader levers are used as key frame faders.



Name	Description
MIX	In a background transition, the new video fades in as the current video fades out.
NAM (non-additive mix)	The current and new video signals are compared, and the signal with the higher luminance level is given priority in the output.
WIPE (DME wipe)	The current video is replaced by the new video, using the wipe pattern selected in the Wipe menu.
DME	A wipe type of transition is carried out, using the DME effect selected in the DME Wipe menu.
FM1&2CLIP, FM3&4CLIP, FM5&6CLIP, FM7&8CLIP	A recorded clip is played back together with the transition. At this point, you can also carry out a transition (wipe or mix (dissolve)) simultaneously together with the clip.
KF (keyframe)	Press this button, turning it on, to enable using the fader lever as a keyframe fader.

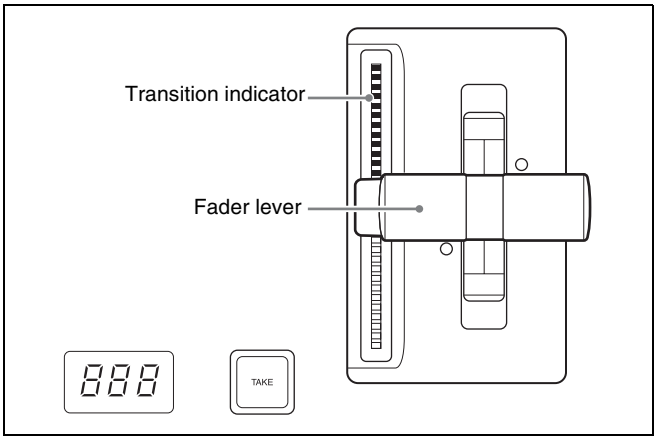
❷ Key transition selection buttons

To insert or delete key 1 on the next transition, hold down the [KEY1] button, and select the type of transition using the transition type selection buttons. If the key is currently not inserted, the transition will insert it, and if the key is currently inserted, the transition will delete it. You can use the [KEY2] button in a similar way.

While these buttons are held down, you can select a key source with the cross-point buttons on the key bus. Pressing one of these buttons twice in rapid succession changes the state of the corresponding key bus so that a cross-point can be selected.

❸ Transition execution section

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



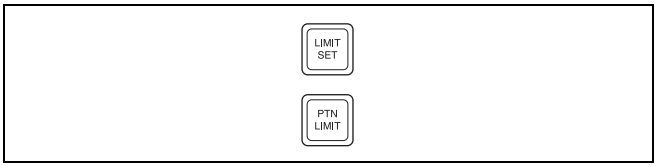
Name	Description
Fader lever	• Move this vertically to carry out a transition. • When the [KF] button or a transition type selection button to which the KF button function has been assigned is lit, you can use this as a key frame fader. • When the split fader function is enabled, by pressing the projection on the left side of the grip you can release the lock and separate the two halves of the fader lever. With the split fader lever, in a background mix transition, you can control the background A and B buses independently.
Transition indicator	This comprises multiple LEDs, which show the progress of the transition.
Transition rate display	• This displays the transition rate (the time from the beginning of the transition to its completion) set for an auto transition, in frames. • You can set the transition rate using the numeric keypad control block or menu.
TAKE button	• Pressing this button carries out an auto transition of the set transition rate. The transition starts immediately, and the button lights amber. • When the transition completes, the button goes off.

❹ Wipe direction selection buttons

For details, see "Wipe direction selection buttons" (page 29).

❺ Pattern limit buttons

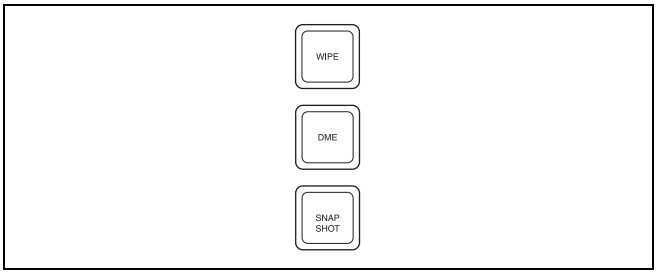
The following buttons are used to set a pattern limit.



Name	Description
LIMIT SET	• Move the fader lever to the position of a particular pattern size, and stop it there, then press this button to set the pattern limit range. • This button is enabled when the [PTN LIMIT] button is off.
PTN (pattern) LIMIT	When a wipe or DME wipe is selected, pressing this button, turning it on, enables the pattern limit function.

❻ Key status display
For each of keys 1 and 2, when the key is inserted, the corresponding ON indicator lights. The OVER indicators show the priority between keys 1 and 2, by lighting when the corresponding key is on top. For example, when key 1 appears over key 2 on the program monitor, the OVER indicator for key 1 lights.
The following is the Flexi Pad control block.

❼ Mode selection buttons
The following buttons are used to save and recall a snapshot, wipe snapshot, and DME wipe snapshot.



Name	Description
WIPE	When saving or recalling a wipe snapshot, use this in combination with the buttons of the memory recall section.
DME	When saving or recalling a DME wipe snapshot, use this in combination with the buttons of the memory recall section.
SNAPSHOT	When saving or recalling a snapshot, use this in combination with the buttons of the memory recall section.

❽ Memory recall section
This consists of eight buttons with LCDs, whose display changes according to the operation mode. Use these in combination with the mode selection buttons to save or recall wipe snapshots, DME wipe snapshots, or snapshots.

❾ UNDO button
After recalling a register, press this button to return to the state before recalling the register.
With a setup setting, this can be switched to a mode selection button for macro setting, and used in combination with the buttons in the memory recall section for recalling and executing a macro.

❿ XPT HOLD (cross-point hold) status display
A bus for which cross-point hold is set appears as a green light.

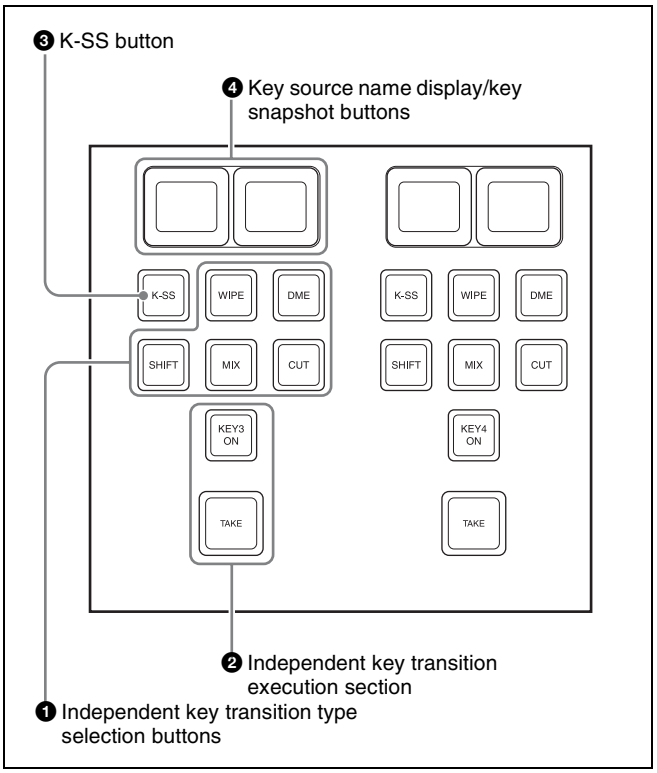
⓫ Numeric display
Depending on the operation mode, this shows a wipe or DME wipe pattern number, or a register number in up to four digits.
In macro mode, this provides indications for macro editing.

⓬ INH (inhibit) button
Pressing this button, turning it on, disables the buttons in the memory recall section and the [UNDO] button.

Independent Key Transition Control Block (Simple Type)

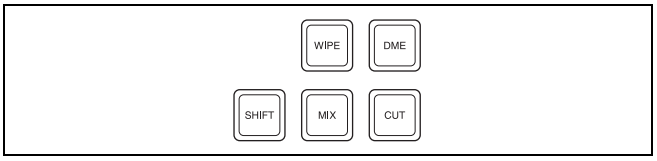
The left side of this control block controls key 3, and the right side controls key 4.
The control block for key 3 only is described as an example, but the operations on the key 4 control block are the same.
In setup you can assign any key to either side of this control block.
You can also assign the key selection function (key delegation) for keys 1 to 8 to any buttons in this control block.

For details, see "Assigning Keys to the Independent Key Transition Control Block (Simple Type)" in Chapter 19 (Volume 2).



❶ Independent key transition type selection buttons

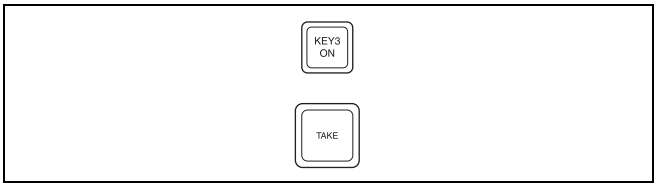
Press one of the following buttons, turning it on, to select the independent key transition type.



Name	Description
MIX	Faded in or out.
WIPE	Inserted or deleted with a wipe.
DME	Switches the key with a DME wipe.
CUT	Inserted or deleted instantaneously.
SHIFT	• When setting is made in the Setup menu to allow a different transition type for inserting or deleting a key, it is possible to display and set the transition type after the next transition while this button is held down. • While this button is held down, you can select a key source with the cross-point buttons for the key bus. • If you press this button twice in rapid succession, the key bus selection button [KEY3] in the cross-point control block lights, and a key 3 key bus cross-point can be selected. • If you press this button, while holding down [TRANS RATE] button in the numeric keypad control block, you can set the independent key transition rate on the control block.

❷ Independent key transition execution section

The following buttons are used to carry out independent key transition operations.



Name	Description
KEY3 ON	• This inserts or deletes key 3 instantaneously. • When key 3 is present in the final program output from the switcher, this lights red, and otherwise lights amber.
TAKE	This carries out an auto transition on key 3.

❸ K-SS (key snapshot) button

This enables key snapshot mode. In key snapshot mode, it is possible to save and recall key snapshots.

❹ Key source name display/key snapshot buttons

These show the signal name of the key fill selected for key 3 and the transition rate on two buttons. In key snapshot mode, these correspond to registers 1 and 2 for key 3; press to save or recall a key snapshot.

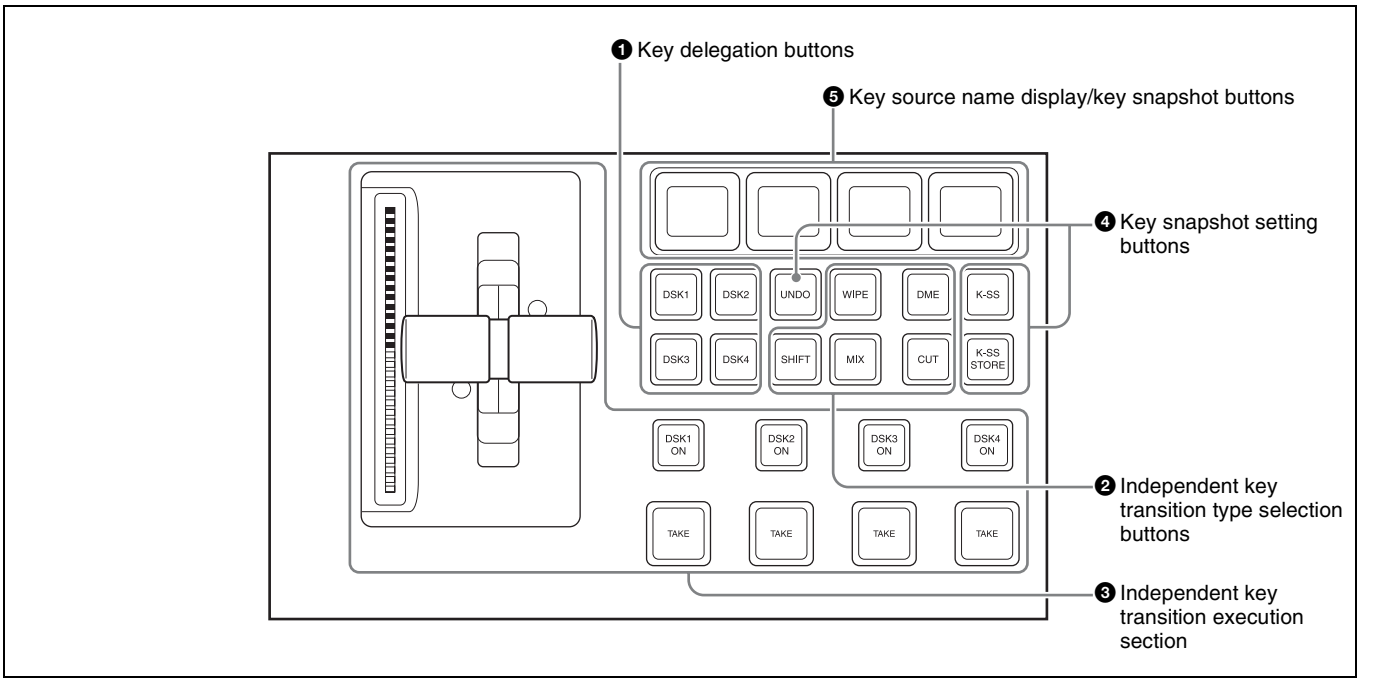
To save a key snapshot, with the [K-SS] button lit amber, hold down [SHIFT] button and press one of the key snapshot buttons.

This saves a key snapshot in the button you pressed, which lights yellow.

By assigning [K-SS 3/4] to a key in the Setup menu, you can press the button to switch between key snapshot registers 1/2 and 3/4.

For details, see the section "Assigning a Function to the Independent Key Transition Control Block (Simple Type)" in Chapter 19 (Volume 2).

Downstream Key Control Block

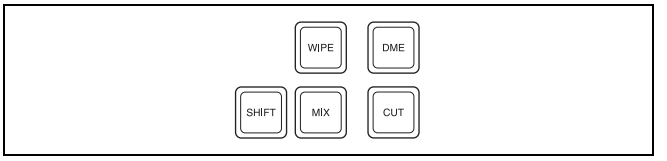


❶ Key delegation buttons

Press one of the [DSK1] to [DSK4] buttons to delegate this control block to the corresponding keyer.
Using the Setup menu, it is possible to assign these to DSK5 to DSK8 or M/E keys 1 to 8.
While these buttons are held down, you can select a key source with the cross-point buttons for the key bus.
Pressing one of these buttons twice in rapid succession changes its state so that you can make cross-point selections on the corresponding key bus.

❷ Independent key transition type selection buttons

Press one of these buttons, turning it on, to select the downstream key transition type.

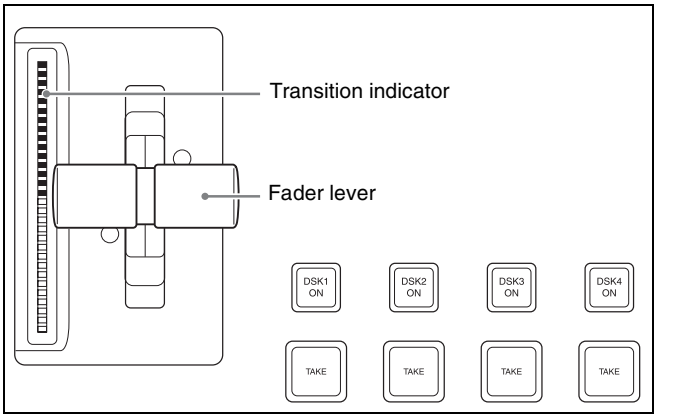


Name	Description
MIX	Carry out a dissolve with the key selected with the key delegation buttons.
WIPE	Carry out a wipe with the key selected with the key delegation buttons.
DME	This switches the key selected with the key delegation buttons, using a DME wipe.
CUT	Instantaneously insert or delete the key selected with the key delegation buttons.

Name	Description
SHIFT	When setting is made in the Setup menu to allow a different transition type for inserting or deleting a key, it is possible to display and set the transition after the next transition while this button is held down.

❸ Independent key transition execution section

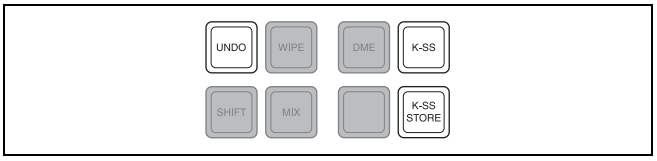
This section is used to carry out an independent key transition, and check the progress of the transition.



Name	Description
DSK1 (downstream key 1) ON to DSK4 ON buttons	• Press these to instantaneously cut the downstream keys 1, 2, 3, and 4 in or, when the downstream keys are already inserted, cut them out. • When the key corresponding to the button appears in the final program output, the button lights red, and otherwise lights amber.
TAKE buttons	• These correspond to downstream keys 1, 2, 3, and 4 from left to right; press to execute an auto transition. The transition starts immediately, and the button lights amber. • When the transition completes, the button goes off.
Fader lever	Move this vertically to carry out a manual downstream key transition.
Transition indicator	This comprises multiple LEDs, which show the progress of the downstream key transition.

❹ Key snapshot setting buttons

Pressing the following buttons carries out key snapshot operations.

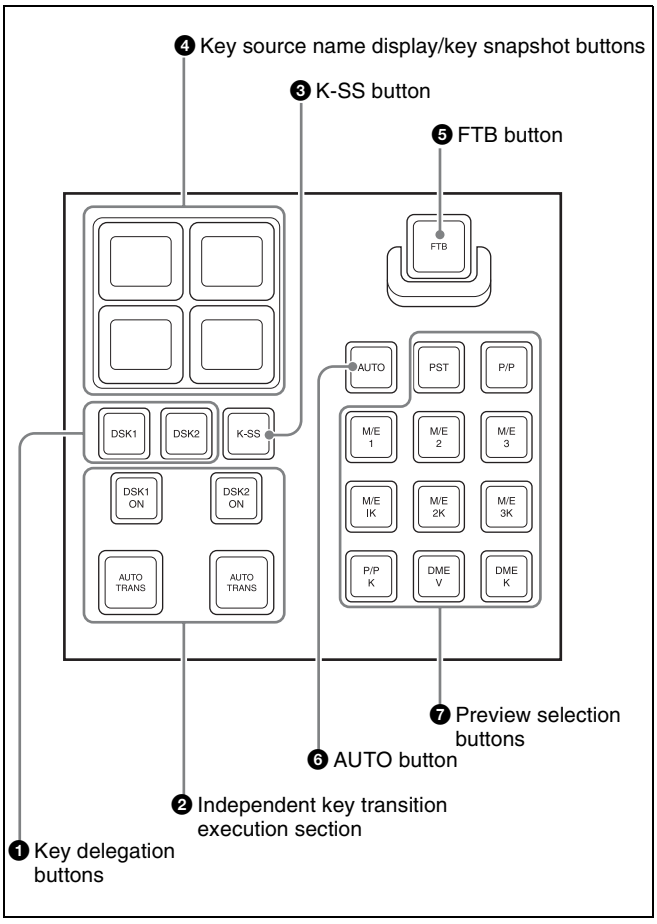


Name	Description
K-SS (key snapshot)	This enables key snapshot mode.
K-SS STORE (key snapshot store)	To save a key snapshot, hold down this button, and press the key source name display/key snapshot button for the register you want to save.
UNDO (key snapshot recall undo)	This undoes the last key snapshot recall.

❺ Key source name display/key snapshot buttons

These display the selected source name for each corresponding keyer. In snapshot mode, they correspond to registers 1 to 4 of the selected keyer, and pressing the button saves or recalls a key snapshot.

Downstream Key/Fade-to-Black Control Block



❶ Key delegation buttons

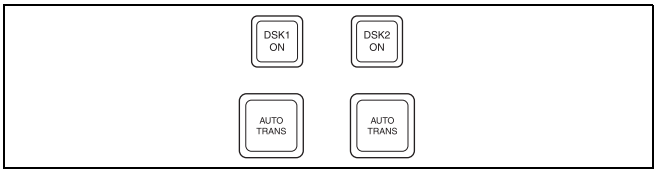
Press DSK1 or DSK2, to select the keyer. Each button can be assigned to any key in setup.

For details, see "Assigning Keys to the DSK1 and DSK2 Buttons in the Downstream Key/Fade-to-Black Control Block" in Chapter 19 (Volume 2).

While these buttons are held down, you can select a key source with the cross-point buttons on the key bus. Pressing one of these buttons twice in rapid succession changes its state so that you can make cross-point selections on the corresponding key bus in the PGM/PST bank.

❷ Independent key transition execution section

Pressing the following buttons carries out transition operations of the corresponding downstream key.



Name	Description
DSK1 ON, DSK2 ON	• Press these to cut in the corresponding downstream key 1 or 2. • When the key is already inserted, pressing the button cuts it out. • Each button lights red when the corresponding key is inserted in the program output (final output from the switcher), and lights amber at other times.
AUTO TRANS	• The left button applies to DSK1 and the right button to DSK2; press these buttons to carry out an auto transition. • The transition immediately starts, and the button lights amber. • When the transition completes, the button goes off.

❸ K-SS (key snapshot) button
Pressing this button, turning it on, enables the key snapshot mode. In this mode, you can save and recall key snapshots.

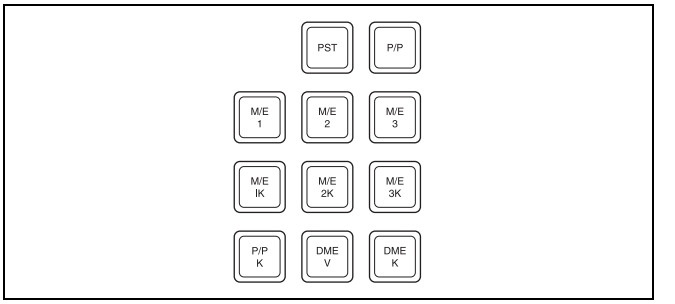
❹ Key source name display/key snapshot buttons
Each column of two buttons relates to the corresponding downstream key 1 or 2. The upper button displays the name of the key fill signal selected for the key, and the lower button shows the transition rate.
In key snapshot mode, these buttons correspond to registers 1 to 4 of the keyer selected with the key delegation buttons, and pressing a button recalls the key snapshot. To save a key snapshot, hold down the [STORE] button in the numeric keypad control block, and press the button for the desired register.

❺ FTB (fade to black) button
Press this button to fade to black the program output of the PGM/PST bank, at the set transition rate. You can set the fade to black transition rate in the menu.

❻ AUTO button
When this button is pressed, the M/E or PGM/PST bank preview signal selected on the edit preview bus is automatically switched to the program signal depending on the on-air status.

❼ Preview selection buttons
Press one of these buttons to select a signal on the edit preview bus. Each of these buttons can be assigned to any key in setup.

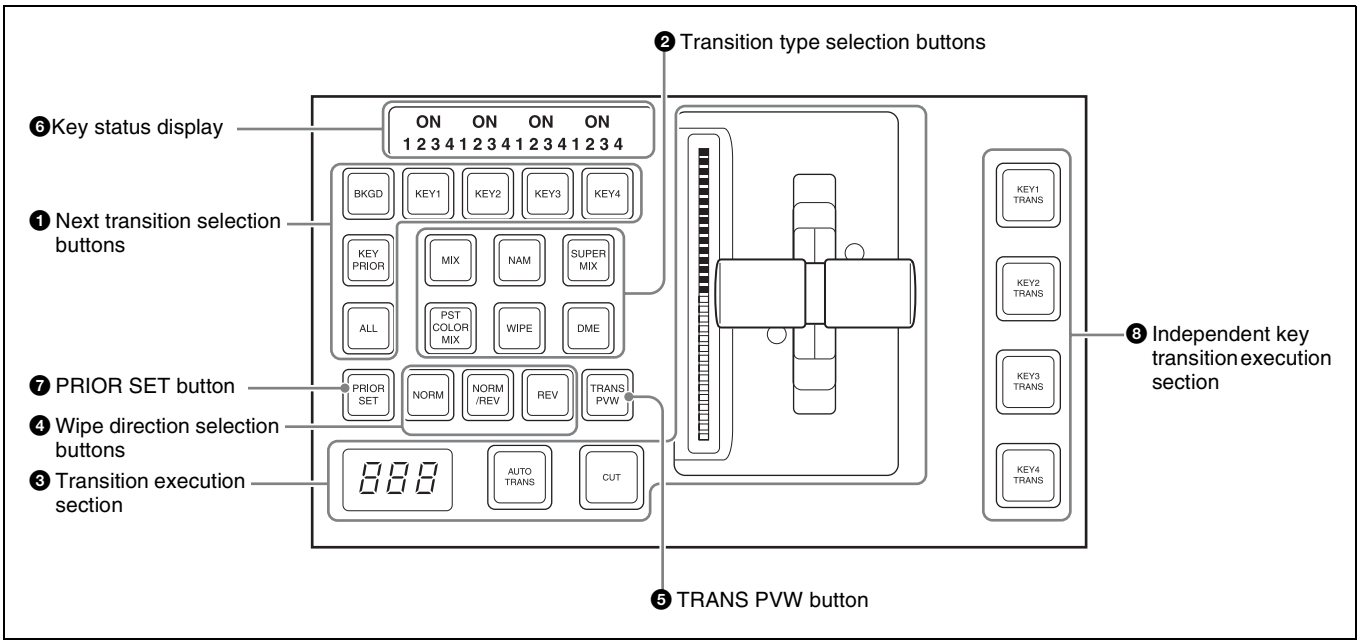
For details, see "Assigning Preview Output to Preview Selection Buttons" in Chapter 19 (Volume 2).



Name	Description
PST (preset)	When this button is pressed, the signal selected on the background B row of the PGM/PST bank is selected on the edit preview bus.
M/E 1 to M/E 4, P/P (M/E1 to M/E 4, P/P preview)	The preview signal (M/E-1 PVW, M/E-2 PVW, M/E-3 PVW, M/E-4 PVW, P/P PVW) of the M/E or PGM/PST bank corresponding to the pressed button is selected on the edit preview bus. *For details of [M/E 4] button assignment, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 380) in Appendix.*
M/E1 K to M/E4 K, P/P K (M/E1 to M/E 4, P/P key preview)	The key preview signal (M/E-1 K-PVW, M/E-2 K-PVW, M/E-3 K-PVW, M/E-4 K-PVW, P/P K-PVW) of the M/E or PGM/PST bank corresponding to the pressed button is selected on the edit preview bus. *For details of [M/E 4] button assignment, see ""Assigning a Button for M/E-4 Selection in the Setup Menu" (page 380) in Appendix.*
DME V (DME monitor video)	When this button is pressed, the DME monitor output video signal (DME MON V) is selected on the edit preview bus.
DME K (DME monitor key)	When this button is pressed, the DME monitor output key signal (DME MON K) is selected on the edit preview bus.

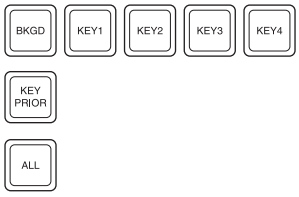
Transition Control Block (Compact Type)

The compact version of the transition control block shown in the following figure has fewer buttons than the standard type. Independent key transition operations can also be controlled with the compact transition control block.



❶ Next transition selection buttons

Press these buttons, turning them on, to determine what the next transition will apply to.



Name	Description
BKGD	Next transition changes the background.
KEY1 to KEY8 (DSK1 to DSK8 in the PGM/PST bank)	• Press this button, turning it on, to make the next transition insert or remove the corresponding key (keys 1 to 8). • If a key is currently inserted it will be removed, and if it is not currently inserted, it will be inserted. • In the PGM/PST bank, this inserts or removes downstream keys 1 to 8. *For details of assignment and selection of keys 5 to 8, see the "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 381) and ""Selecting Keys 5 to 8 for Next Transition" (page 382).*
KEY PRIOR (priority)	• When this button is lit, the setting of the key priority after the next transition is enabled. • The key priority after the next transition appears in the key status display.
ALL	• Pressing this button turns on a preselected set of the [BKGD], [KEY1] to [KEY8], and [KEY PRIOR] buttons. • Make this setting in a Setup menu.

❷ Transition type selection buttons

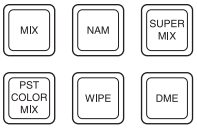
You can assign these buttons in setup to any transition type.

For details, see "Setting Transition Control Block Button Assignments" in Chapter 19 (Volume 2).

Press one of these buttons, turning it on, to determine the type of the next transition *(see page 85)*.
When multi-program mode is selected in the Setup menu, two or more of the following buttons may light.

For details, see "Settings for Switcher Configuration (Config Menu)" in Chapter 20 (Volume 2).

You can also assign a function to these buttons to select whether or not the fader levers are used as keyframe faders.

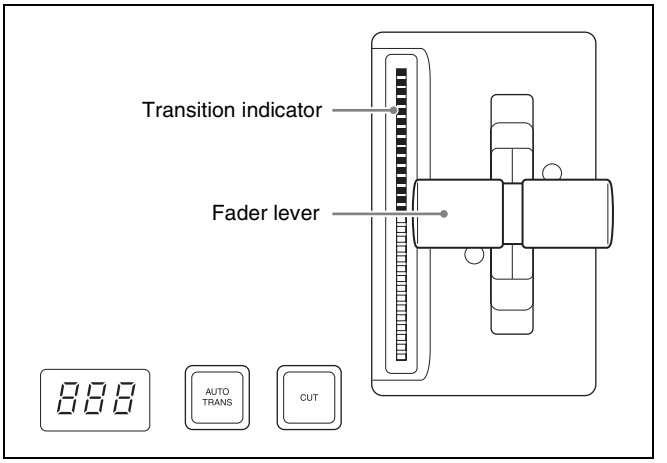


Name	Description
MIX	In a background transition, the new video fades in as the current video fades out.
NAM (non-additive mix)	The current and new video signals are compared, and the signal with the higher luminance level is given priority in the output.
SUPER MIX	The current video is maintained at 100% output for the first half of the transition as the new video is mixed while increasing progressively to 100%.

Name	Description
PST (preset) COLOR MIX	The color matte (unpatterned display) is inserted during transition, replacing the current video by the color matte, and then replacing the color matte by the new video.
WIPE (DME wipe)	The current video is replaced by the new video, using the wipe pattern selected in the Wipe menu.
DME	A wipe type of transition is carried out, using the DME effect selected in the DME Wipe menu.
FM1&2CLIP, FM3&4CLIP, FM5&6CLIP, FM7&8CLIP	A recorded clip is played back together with the transition. At this point, you can also carry out a transition (wipe or mix (dissolve)) simultaneously together with the clip.
KF (keyframe)	Press this button, turning it on, to enable using the fader lever as a keyframe fader.

❸ Transition execution section

This section is used to carry out a transition, and check the signal status during the transition.



Name	Description
Transition indicator	This comprises multiple LEDs, which show the progress of the transition.
Fader lever	• Move this vertically to carry out a manual transition. • When the [KF] button or a transition type selection button to which the KF button function has been assigned is lit, you can use this as a keyframe fader.
Transition rate display	• This shows the “transition rate” (the time from the beginning of a transition to its completion) set for an auto transition, in frames. • You can set the transition rate using the numeric keypad control block, Flexi Pad control block, or menu.
AUTO TRANS (transition) button	• Pressing this button carries out an auto transition of the set transition rate (duration). The transition starts immediately, and the button lights amber. • When the transition completes, the button goes off.
CUT button	Pressing this button carries out the transition as a cut (i.e. instantaneously).

❹ Wipe direction selection buttons

For details, see “Wipe direction selection buttons” (page 29).

❺ TRANS PVW (transition preview) button

When this button is lit, you can check in advance the video changes during the transition, on the preview output from the M/E or PGM/PST bank.

During the preview, you can use the fader lever, [AUTO TRANS] button, and [CUT] button. One of the following functions of this button can be selected in a Setup menu.

- When the transition completes, the system returns to the normal mode.
- The transition preview mode is maintained while this button is pressed.
- Switching is made between the transition preview mode and normal mode every time this button is pressed.

❻ Key status display

For each of keys 1 to 4, the corresponding ON indicator lights when the key is inserted. It also shows the priority (1 to 4) of each key.

❼ PRIOR (priority) SET button

While this button is held down, you can set the key priority.

The setting mode when this button is pressed depends on whether or not the [KEY PRIOR] button is lit, as follows.

- When the [KEY PRIOR] button is off, the current key priority is set.
- When the [KEY PRIOR] button is lit, the key priority after the next transition is set.

Press the [KEY PRIOR] button as required, to switch between these two modes.

In either mode, hold down the [PRIOR SET] button, and press the button ([KEY1] to [KEY8]) corresponding to the key you want to bring to the front.

Notes

The key priority establishes a separate priority order within each of the groups of keys 1 to 4 and keys 5 to 8. You can make any setting within the groups of keys 1 to 4 or keys 5 to 8, but not for combinations of keys from different groups. For example, it is not possible to set a priority sequence of keys 1, 5, and 2.

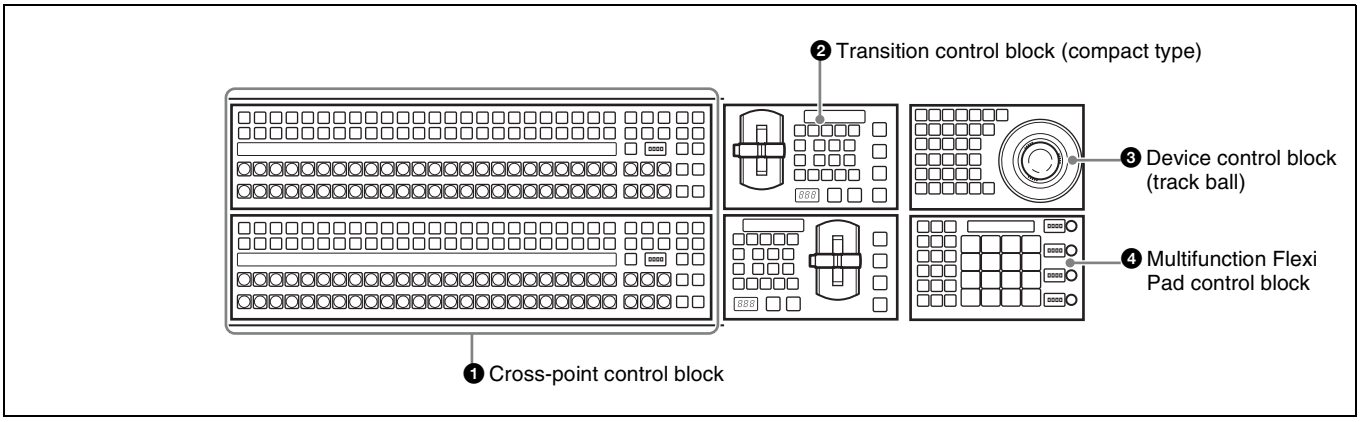
For details, see "Setting the Key Priority in the Transition Control Block" (page 88).

❽ Independent key transition execution section KEY1 TRANS (transition) to KEY8 TRANS (DSK1 TRANS to DSK8 TRANS in the PGM/PST block)

buttons: Press the corresponding one of these buttons to cut key 1 to key 8 in or out automatically at the set transition rate. When the key corresponding to the button appears in the final program output, the button lights red, and otherwise lights amber. During a transition, the button lights green.

CCP-6224 2M/E Control Panel

In this system, you can use the built-in CCP-6224 2M/E Control Panel. This panel has two cross-point control blocks, two transition control blocks (compact type), one device control block (track ball), and one Multifunction Flexi Pad control block.



❶ Cross-point control block

For details of cross-point control block operation, see "Cross-Point Control Block" (page 22).

For operations in AUX control mode, see "Auxiliary Bus Control Block (for AUX Buses)" (page 46) and "Cross-Point Control Block (CCP-6224/6324) in the AUX Operating Mode" (page 62).

❷ Transition control block (compact type)

For details of operations, see "Transition Control Block (Compact Type)" (page 58).

❸ Device control block (track ball)

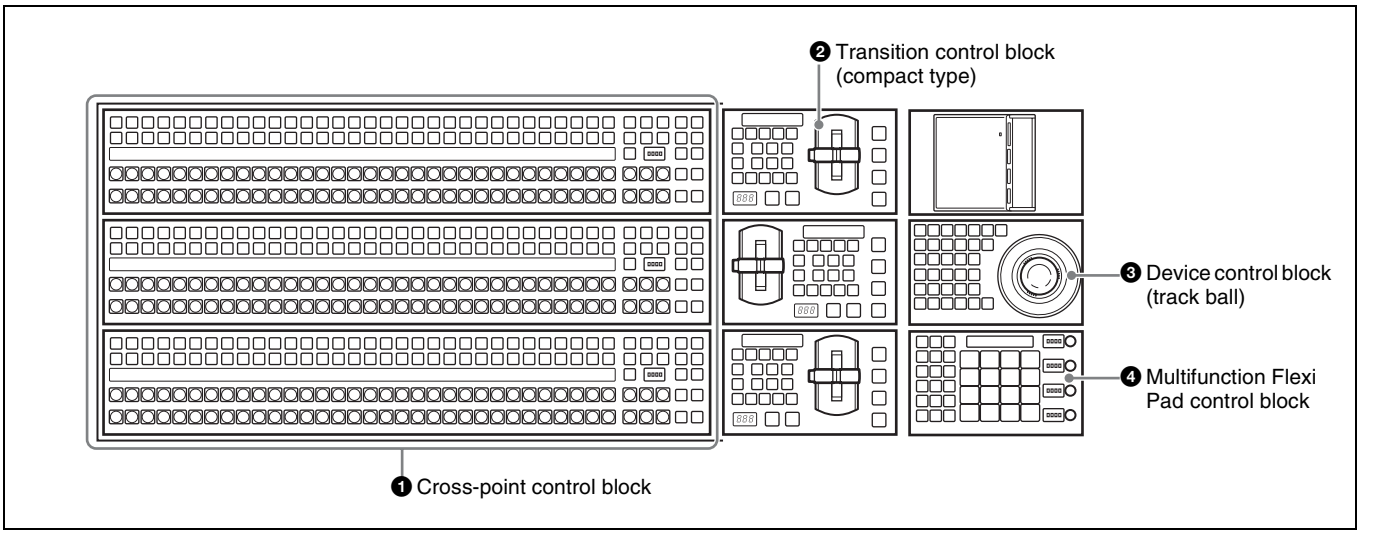
For details of operations, see "Device Control Block (Trackball)" (page 35).

❹ Multifunction Flexi Pad control block

For details of operations, see "Multifunction Flexi Pad Control Block" (page 63).

CCP-6324 3M/E Control Panel

In this system, you can use the built-in CCP-6324 3M/E Control Panel. This panel has three cross-point control blocks, three transition control blocks (compact type), one device control block (trackball), and one Multifunction Flexi Pad control block.



❶ Cross-point control block

For details of operations, see "Cross-Point Control Block" (page 22) and "CCP-6224 2M/E Control Panel" (page 61).

❷ Transition control block (compact type)

For details of operations, see "Transition Control Block (Compact Type)" (page 58).

❸ Device control block (track ball)

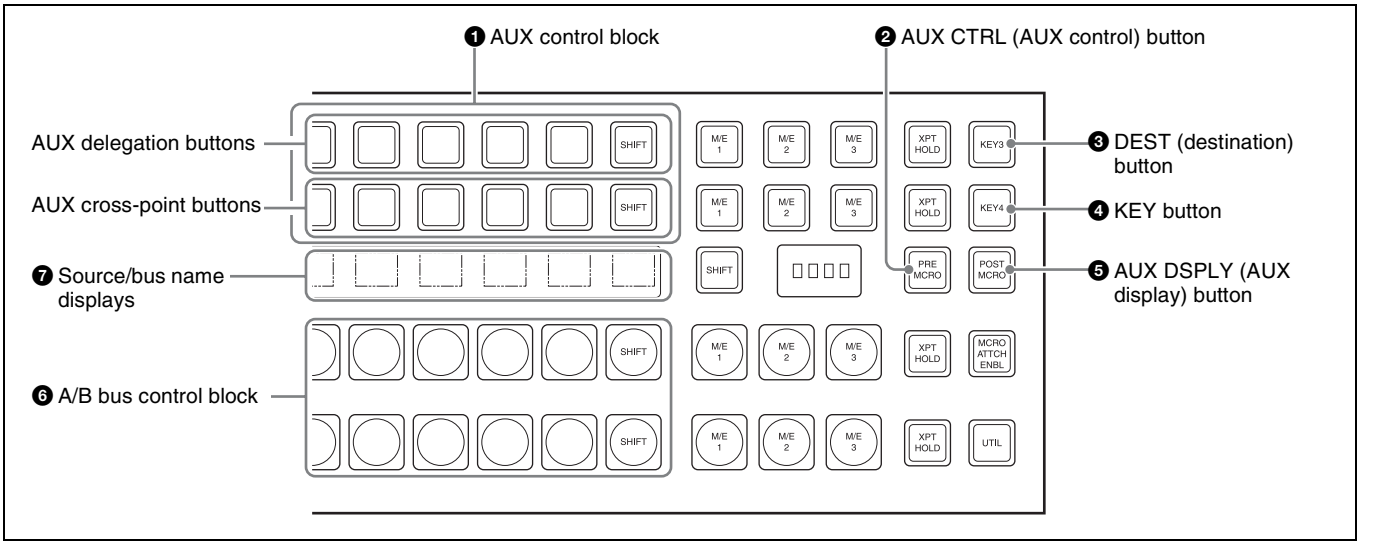
For details of operations, see "Device Control Block (Trackball)" (page 35).

❹ Multifunction Flexi Pad control block

For details of operations, see "Multifunction Flexi Pad Control Block" (page 63).

Cross-Point Control Block (CCP-6224/6324) in the AUX Operating Mode

On the CCP-6224/6324, when using a [24-column] cross-point control block, if the [PRE MCRO] button is assigned to switch to AUX operating mode, by pressing this button you can switch the control block button functions as follows, and select the AUX bus and its source signals (AUX panel-less function).

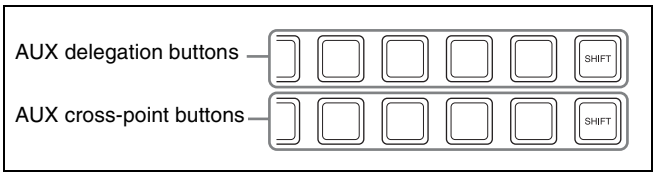


❶ AUX control block

This selects the AUX bus and the assigned source signals. This cross-point control block can be switched to AUX control mode with the [AUX CTRL] button, and the key 1 row used as AUX delegation buttons, and the key 2 row used as AUX bus cross-point selection buttons, with the source name display showing the source names or the bus names (AUX panel-less function). To use this function, the

function for switching to AUX control mode must first be assigned to the [PRE MCRO] and [POST MCRO] buttons.

For the method of making this assignment, see Chapter 19 "Assigning the AUX Bus Control Mode Switching Function" (Volume 2).



Name	Description
AUX delegation buttons	• These select the AUX bus. • When you press a button, turning it on, this selects the assigned bus as the AUX bus. • You can make the rightmost button a [SHIFT] button, in which case each button can be used to select two buses. *For details of the buses that can be selected, see "Bus Selection" (page 79).*
AUX cross-point buttons	• These select the source signal to be assigned to the AUX bus. • When you press a button, turning it on, this selects the assigned video/key source signal and assigns it to the bus selected with the AUX delegation buttons. • To select a key, hold down the [KEY] button and press the AUX cross-point button to which the desired key signal is assigned. • You can make the rightmost button a [SHIFT] button, in which case each button can be used to select two video/key source signals. • When one of the DME 1V/K to 4V/K buses is selected with the AUX delegation buttons, this selects the video side currently visible on the DME, and if you hold down the AUX delegation button, you can also select the reverse side of the video.

❷ AUX CTRL (AUX control) button
This switches the cross-point control block to the AUX operating mode. However, using this function requires an assignment to have been made in the Setup menu.

For details of assigning the function for switching to AUX operating mode, see "Assigning the AUX Bus Control Mode Switching Function" in Chapter 19 (Volume 2).

❸ DEST (destination) button
When you press this button, turning it on, the source name displays show the names of the buses assigned to the AUX delegation buttons.

❹ KEY button
When you press this button, turning it on, the source name displays show the names of the key source signals assigned to the AUX cross-point buttons, and they are now selectable.

❺ AUX DSPLY (AUX display) button
This switches the source name displays to the AUX operating mode (by default showing the video source signal names).

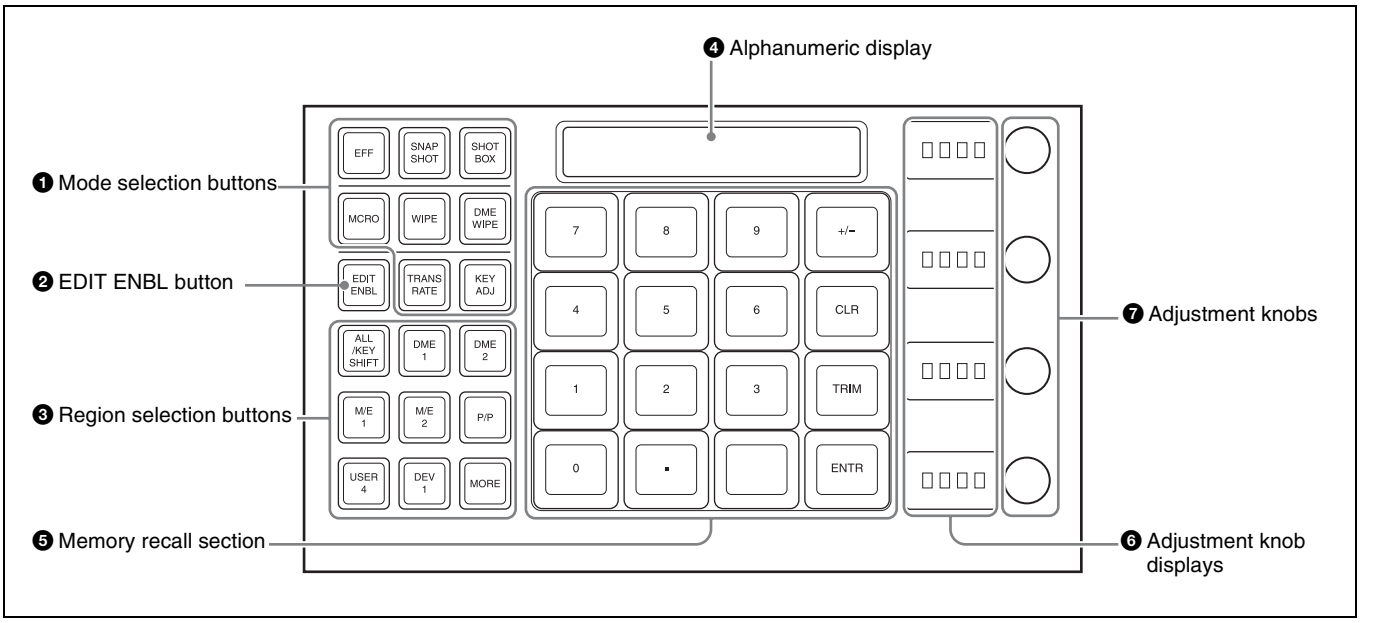
❻ A/B bus control block
Select the source signals for the background A/B buses.

❼ Source/bus name displays
In the AUX operating mode, these show the information in the following table, according to the states of the [AUX DSPLY], [DEST], and [KEY] buttons.

[AUX DSPLY]	[DEST]	[KEY]	Indication
Off	Off	Off	Background A/B bus source signal names
On	Off	Off	Video source signal names for AUX bus
On	On	Off	Bus names for AUX bus
On	Off	On	Key source signal names for AUX bus

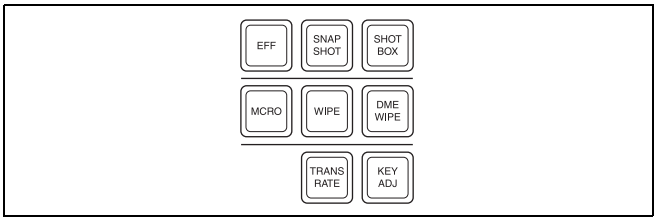
Multifunction Flexi Pad Control Block

You can use the Multifunction Flexi Pad control block for creating, saving, and recalling snapshots, wipe snapshots, and DME wipe snapshot key snapshots, effects, shotbox recall, macro execution, transition rate settings, and key adjustments.



❶ Mode selection buttons

Pressing the following buttons selects the mode.



Name	Description
EFF (effect)	Press this to carry out effect creation/recall/editing/execution/deletion.
SNAPSHOT	Press this to carry out snapshot creation/recall/editing/deletion.
SHOTBOX	Press this to carry out shotbox creation/recall/editing/execution/deletion.
MCRO (macro)	Press this to carry out macro creation/editing/execution/deletion.
WIPE (wipe snapshot)	Press this to carry out wipe snapshot creation/recall/deletion and wipe adjustments.
DME WIPE (DME wipe snapshot)	Press this to carry out DME wipe snapshot creation/recall/deletion and DME wipe adjustments.
TRANS RATE (transition rate)	Press this to set the transition rate.
KEY ADJ (key adjust)	Press this to carry out key adjustments and set modifiers.
KEY SS (key snapshot)	• Press this to carry out key snapshot creation/recall/deletion. • By default, this is not assigned to a mode selection button, so before use it is necessary to assign to a mode selection button in the Setup menu.

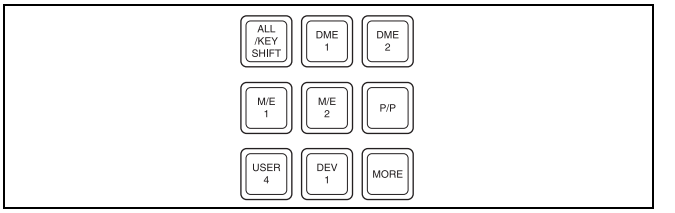
❷ EDIT ENBL (edit enable) button

By pressing this, turning it on, you can carry out the following operations.

- Effect creation/editing
- Snapshot attribute setting
- Shotbox creation/editing
- Macro creation/editing
- Wipe adjustments
- DME wipe adjustments

❸ Region selection buttons

These select the function block to which operations apply. When the mode selection button selection is EFF/SNAPSHOT/SHOT BOX/MCRO, you can select multiple region selection buttons simultaneously. In this case, the first button pressed lights green as the reference region, and the other buttons pressed light amber (the buttons for the regions shown in the memory recall section are yellow).



Name	Description
ALL/KEY SHIFT	• Selects all regions. • When any region is selected, press this button to unset the selection of all regions. • When KEY ADJ (key adjust) or KEY SS (key snapshot) is selected as the function mode, these buttons are for KEY5 to KEY8 selection.
DME1 to DME2	Select DME channels.

Name	Description
M/E1, M/E2, P/P	Select the M/E-1, M/E-2, and PGM/PST regions respectively.
USER4	Selects the USER4 region.
DEV1	Selects the device 1 region.
MORE	• Displays buttons in the memory recall section for regions not assigned to a region selection button, so that they can be selected. • By default the following regions are shown on the memory recall section buttons. MSTR (master snapshot, master timeline registers), USER1 to 3, USER5 to 8, MCRO (macro), DEV2 (device 2), PBUS, GPI, RTR (router) • If there is a region selected in the memory recall section, this is indicated by the MORE button lighting green. • To revert the button displays in the memory recall section, press the [MORE] button once more, or press the [EXIT] button that appears in the memory recall section. • Note that except for the [ALL], [EXIT], and [MORE] buttons, you can freely change the assignment to regions in the Setup menu.

❹ Alphanumeric display
This shows the selected region name or register number, and entered numeric values.

❺ Memory recall section
This comprises 16 LCD buttons, each with a display that changes according to the operating mode.

❻ Adjustment knob displays
Each of these shows the initial letter of the parameter that can be adjusted with the knob to the right, and the setting value (three digit places, including the minus sign).

❼ Adjustment knobs
Use these to adjust the parameters selected with the memory recall section buttons.

Basic Menu Operations

Overview

In the MVS system, all detailed settings for basic operations such as transitions, keys, wipes, and DME are made in menus.
You can also display menus on an external monitor, and use a mouse. The menu operations using a mouse are basically the same as the menu control block operations described here, with mouse clicks in place of button presses. However, since the monitor has no knobs for adjusting the parameters in the menu control block.

For details of operations corresponding to these knob operations, see "Operation With a Mouse" (page 75).

About the Top Menu List

When the control panel is powered on, the top menu list appears as shown below.

You can also display this by selecting VF1 'Top Menu List' after pressing the [HOME] button at the upper left in the top menu selection button area of the menu control block.

To display the top menu from the top menu list

In the same way as for the top menu selection buttons in the menu control block, press each button to display the particular top menu in the menu display.

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 setup has no effect on the top menu list.

To shut down the menus

Press the [Shutdown] button at the lower right.
This operation is the same as the shut down operation in the top menu window *(see page 70)*.

Accessing Menus

You can use any of the following methods to access a menu, and the initially displayed menu page depends on the method used.

Pressing a top menu selection button in the menu control block

This displays the page you last accessed in the particular menu. After initially powering on the system, however, the page of VF1 - HF1 of the particular menu is always selected.

For details of the menus which can be recalled, see "Menus accessed from a top menu selection button" (page 66).

For details of the VF buttons and HF buttons, see "Interpreting the Menu Screen" (page 67).

Pressing a button other than a top menu button twice in rapid succession

Depending on the button, this may display a fixed page or the page selected last time you accessed the menu.

For details of the menus which can be recalled, see "Menus accessed by pressing a button twice" (page 383).

Press the menu page selection button at the top left of the menu display

The top menu window appears; press the top menu selection button for the particular menu, or enter the menu number with the numeric keypad, and press the Enter button.

Menus accessed from a top menu selection button

Buttons	Menus	Function	See
HOME	Home	Recalling menus using the top menu list or shortcut menu	Top menu list: *page 65* Shortcut menu: *page 76*
M/E 1	M/E-1	Transition, keys, and wipe settings for the M/E-1 bank	*page 91* (transitions), *page 113* (keys), *page 152* (wipes)
M/E 2	M/E-2	Transition, keys, and wipe settings for the M/E-2 bank	
M/E 3	M/E-3	Transition, keys, and wipe settings for the M/E-3 bank	
M/E 4	M/E 4	Transition, keys, and wipe settings for the M/E-4 bank	
P/P	PGM/PST	Transition, downstream key, and wipe settings for the PGM/PST bank	
FRAME MEM	Frame Memory	Frame memory settings	*page 193*
COLOR BKGD	Color Bkgd	Color background settings	*page 217*
AUX	Aux	AUX bus settings	*page 224*
CCR	CCR	Color corrector settings	*page 228*
COPY SWAP	Copy/Swap	Copy and swap settings	*page 219*
MISC	Misc	Settings for side flag, safe title, transition settings, and connection to external devices	*page 223*
STATS	Status	Status display	*page 225*
DME	DME	DME special effect settings	*page 275*
GLB EFF	Global Effect	Global effect settings	*page 336*
RTR	Router	Router settings	*page 225*
DEV	Device	Settings for external device operation	Chapter 12 (Volume 2)

Buttons	Menus	Function	See
MCRO	Macro	Macro register and macro timeline settings	Chapter 16 (Volume 2)
KEY FRAME	Key Frame	Keyframe settings	Chapter 13 (Volume 2)
EFF	Effect	Keyframe effect register settings	Chapter 13 (Volume 2)
SNAP SHOT	Snapshot	Snapshot register settings	Chapter 14 (Volume 2)
SHOTBOX	Shotbox	Shotbox register settings	Chapter 15 (Volume 2)
FILE	File	File settings	Chapter 17 (Volume 2)
USER SETUP	User setup	User setup settings	Chapter 24 (Volume 2)
ENG SETUP	Engineering Setup	Setup functions	Chapter 18 to Chapter 23 (Volume 2)
DIAG	Diagnosis	Status information display	Chapter 25 (Volume 2)

Example of Displaying a Menu

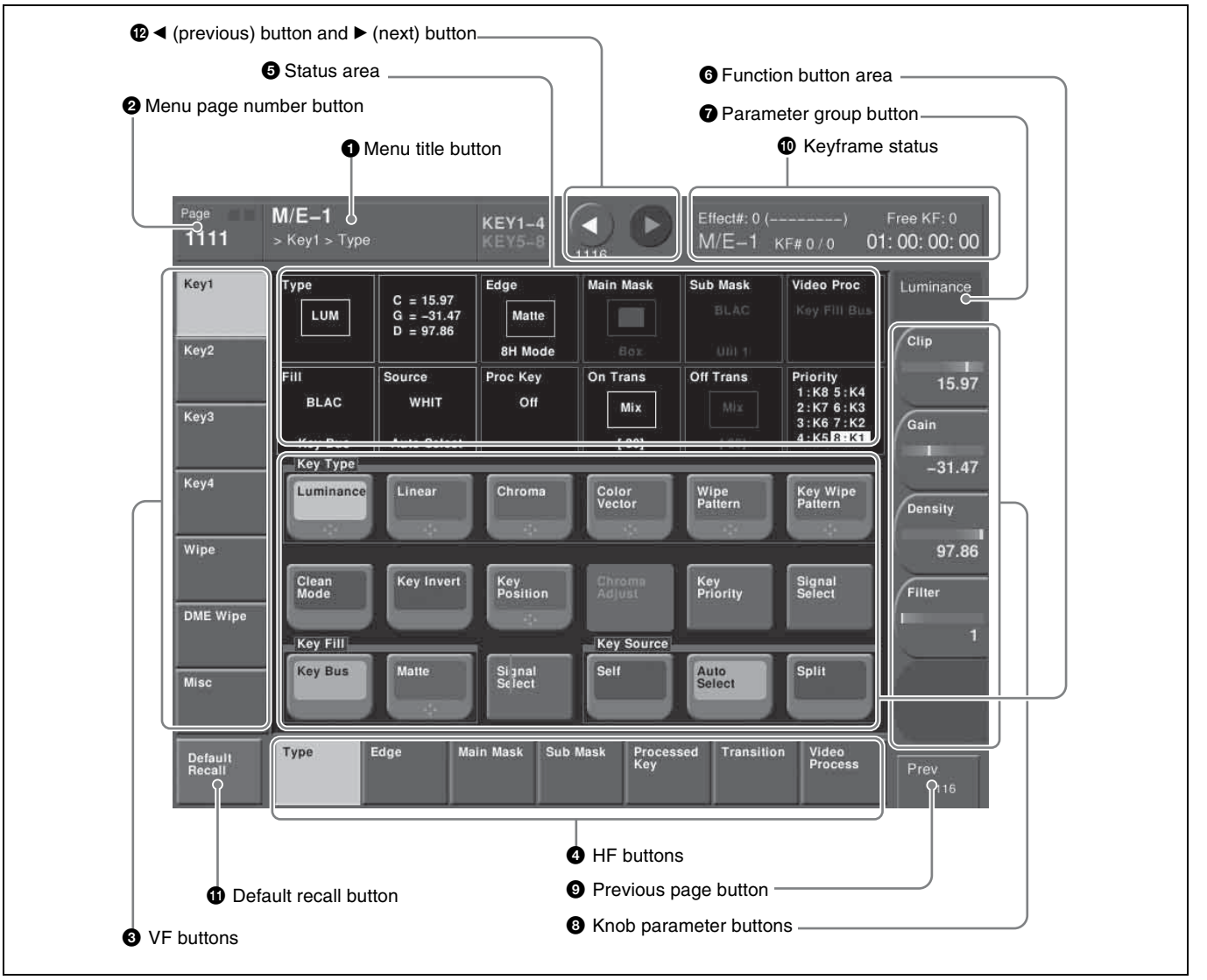
To display, for example, the M/E-1 >Key1 >Type menu, use either of the following operations.

- Press the top menu selection button [M/E 1], then press the VF1 ‘Key1’ button and the HF1 ‘Type’ button in that order.
- Press the menu page number button in the upper left corner of the menu screen to display the top menu window, then enter the page number of the M/E-1 >Key1 >Type menu, which is 1111, and press the [Enter] button.
  For details of the menu page numbers, see “Menu Tree” (page 359).

The M/E-1 >Key1 >Type menu appears in the menu display as follows.

Interpreting the Menu Screen

The menu screen consists of the following principal parts. When buttons on the screen are lit or represented in a depressed state, this indicates that the corresponding item or function is selected (set on).
The following describes the M/E-1 >Key1 >Type menu screen as an example.



M/E-1 >Key1 >Type menu

❶ Menu title button

This shows the title of the menu screen.
You can set different colors for the main menu site and subsidiary menu site *(see page 74)*.

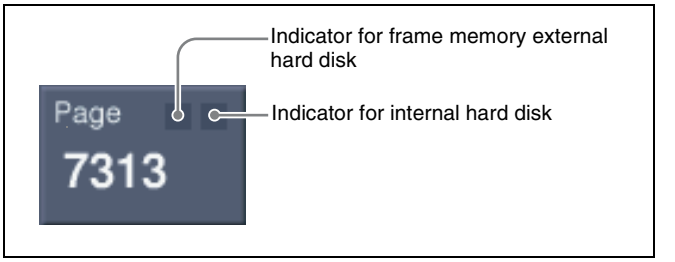
Switching the VF buttons between the Key1 to Key4 and Key5 to Key8 button displays

Switch the displays with the [KEY1-4] and [KEY5-8] menu title buttons.

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

❷ Menu page number button

This shows the menu screen page number.
When you press this button, the top menu window *(see page 70)* appears. 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.
While the system is accessing the hard disk, the indicator lights red.



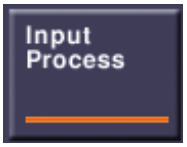
Notes

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

1) When an external hard disk drive is connected

❸ VF buttons
These indicate the larger subdivisions of this menu. Depending on the selected item, the menu screen contents including the HF button indications change.

❹ HF buttons
These indicate the items within the menu.
Depending on the selected item, the menu indications change.
Depending on the function, if any one is on, the status is shown by an orange bar, as in the following figure.



❺ Status area
This 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 shows the functions which can be operated in the currently selected menu by means of buttons.
Each function button corresponds to a function which can be set in the currently selected menu. Press it to enable the function, to display a parameter group and adjust the parameters with the knobs, or to execute the function.
These buttons are in groups by function. In the screen example shown on the previous page, the [Key Bus] and [Matte] function buttons constitute the <Key Fill> group.

❼ Parameter group button
This displays parameter group names for which the knobs can make adjustments, the current parameter setting page number, and the total number of the parameter setting pages. (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 controlled by the knobs.

❽ Knob parameter buttons
These show the parameters currently controlled by the knobs and their values. Pressing one of these buttons displays the numeric keypad window *(see page 71),* and you can then enter a new value for the corresponding parameter with the numeric keypad.

❾ Previous page button
This shows the page number of the previously displayed menu screen. Press it to go back to that page. When the indication [Parent] appears, this displays the parent directory.

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 parts of menus such as the File menu, this functions as a “Region selection area,” for selecting the region to which operations apply.

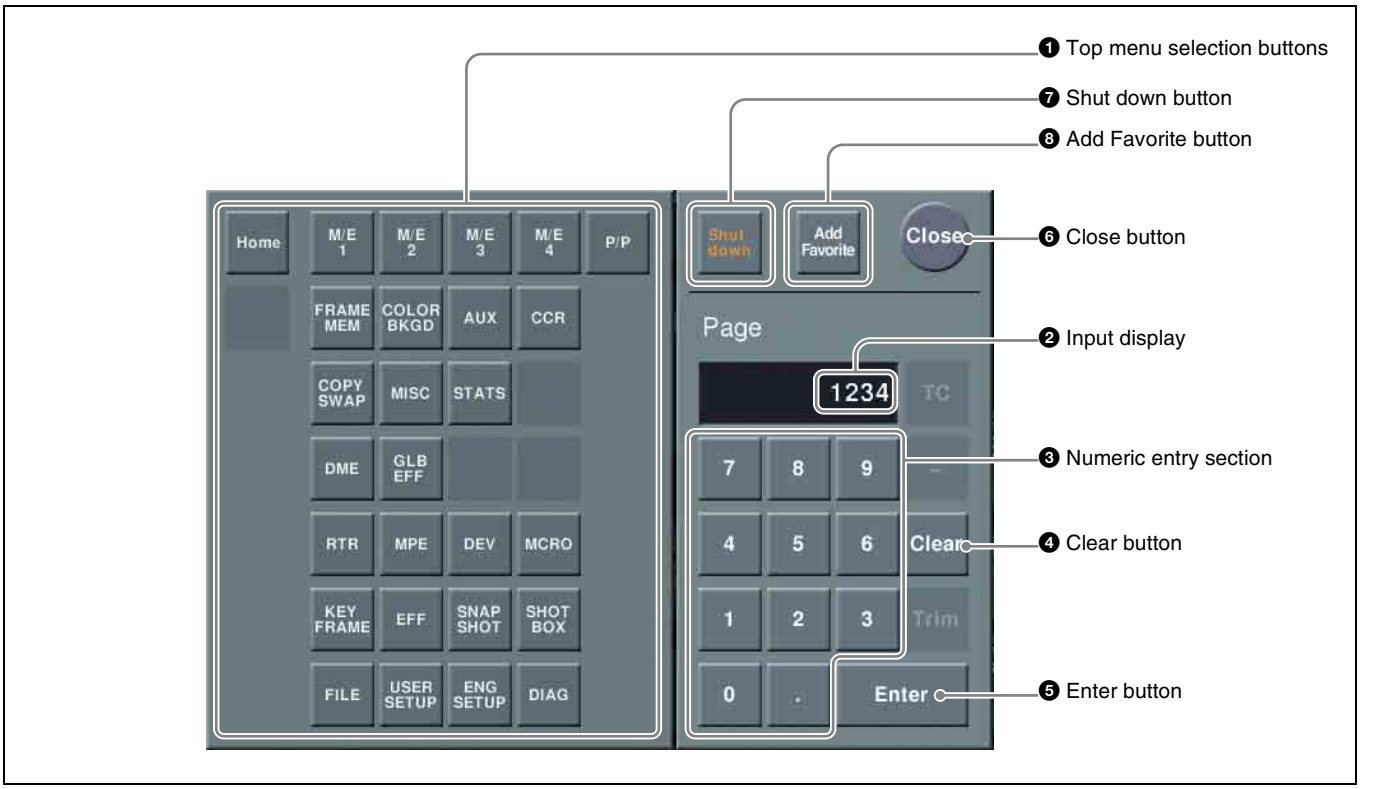
⓫ Default recall button
This only appears in those menus for which the default recall function is available.

For details of the menus which can be initialized, see “Menus allowing a return to default settings” (page 389) in Appendix.

Press this button, turning it on, then press a VF button or knob parameter button to return the settings to their default values, in the following groupings.
- Function grouping: the functions within an HF menu under the VF button
- Knob parameters (parameters currently controlled by the knobs)

⓬ ◄ (previous) button and ► (next) button
The ◄ button returns to the previous menu. Press the ► button to continue to the next menu.

Names and Functions of Parts of the Top Menu Window



❶ Top menu selection buttons
These are the same as the top menu selection buttons in the menu control block. Pressing one of these buttons closes the top menu window and displays the selected menu in the menu display.

❷ Input display
This shows the page number entered with the numeric entry section.

❸ Numeric entry section
Enter a page number.

❹ Clear button
Press this to clear the input display.

❺ Enter button
Pressing this button without entering a page number closes the top menu window with the current menu remaining in the menu display.
If you enter a page number then press this button, this confirms the value in the input display. If it is a correct page number, the top menu window closes, and the menu display shows the new menu. If it is not correctly set, the input display changes color.

❻ Close button
Press this to close the top menu window.

❼ Shut down button
Shuts down the menus.

Notes

Be sure to shut down the menus before powering off the control panel.

Shutting down the menus

1 In the menu screen, press the menu page number button to open the top menu window.

2 Press [Shut down].

A confirmation message appears.

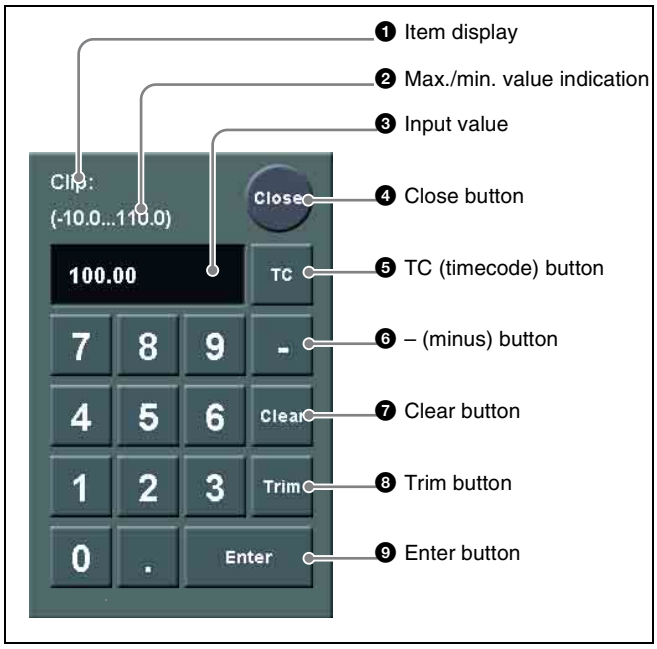
3 Press [Yes].

This shuts down the menu system after a while, and the menu display changes to black. Now power off the system.

To restart menu operations
Power on the control panel once more.

❽ Add Favorite button
Pressing this button allows the currently displayed menu to be registered to the Shortcut menu *(see page 76)*.

Names and Functions of Parts of the Numeric Keypad Window



❶ Item display
This is the name of the parameter being set in the numeric keypad window.

❷ Max./min. (maximum/minimum) value indication
This shows the maximum and minimum settings of the parameter.

❸ Input value
This is the value being input into the numeric keypad window.

❹ Close button
This closes the numeric keypad window.

❺ TC (timecode) button
When the numeric keypad window is opened for a setting requiring a timecode value to be entered, this button appears in a depressed state.
You can enter a timecode value in the range that depends on the signal format.
00:00:00:00 to 23:59:59:nn,
where nn = (number of frames per second) – 1.

❻ – (minus) button
This toggles the sign of the entered value. When it is pressed, the value is negative.

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

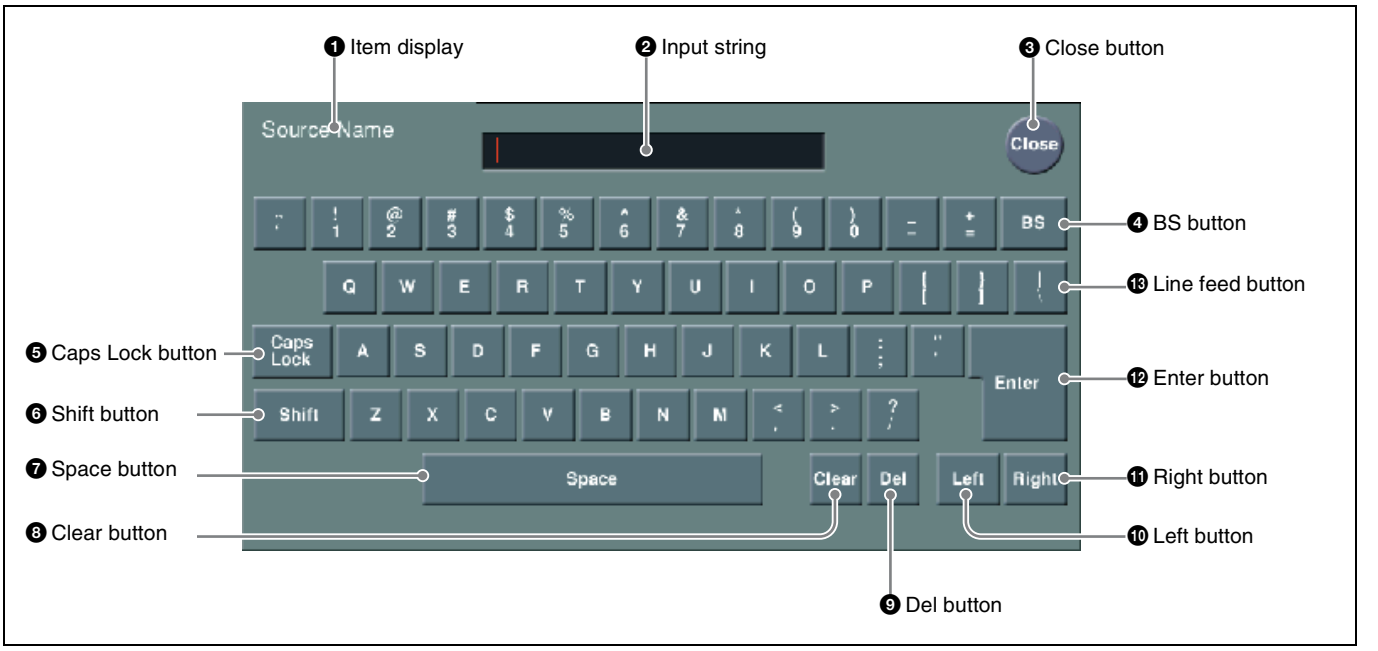
❽ Trim button
After entering the difference from the current value, press this button to confirm the numeric input.

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

Names and Functions of Parts of the Keyboard Window

Notes

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



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

❷ Input string
This is the character string being input in the keyboard window.

❸ Close button
This closes the keyboard window.

❹ BS button
This clears the character immediately before the cursor in the input string.

❺ Caps Lock button
This enables input of capital letters only.

Notes

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

❻ Shift button
This selects the characters on the shift side of the keys. The shift is released when you enter a character.

❼ Space button
This enters a space character.

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

❾ Del button
This clears the character immediately after the cursor in the input string.

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

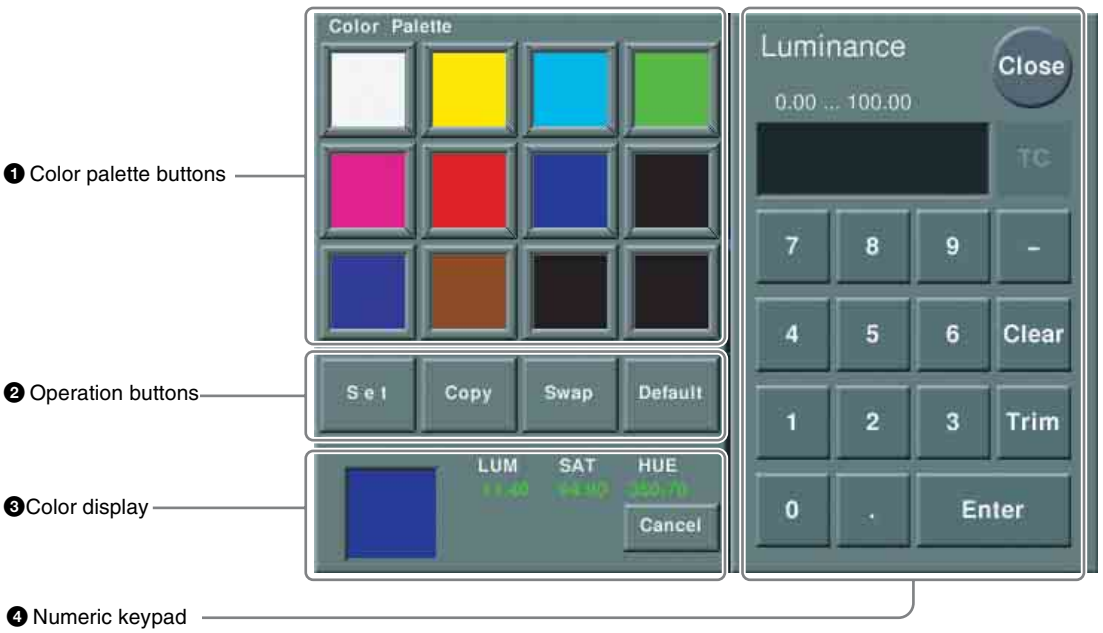
⓫ Right button
This moves the cursor one character to the right in the input string.

⓬ Enter button
This sets the input string as a parameter value, and closes the keyboard window if the value has been entered correctly. If the value has not been entered correctly, the display color changes.

⓭ Line feed button
After pressing the Shift button, press this button to feed a line. The input string shows "|".

Names and Functions of Parts of the Color Pallet Window

When a parameter is assigned to the knobs as a combination of luminance, saturation, and hue, pressing a knob parameter button displays a color palette window.



❶ Color palette buttons

Press one of these to enter the corresponding color in the display.

By default the following settings are available.

First row: white, yellow, cyan, green

Second row: magenta, red, blue, black

Third row: all black

❷ Operation buttons

Set: If you press any color palette button with this button held down, the color shown in the color display 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

This shows the setting color, and the parameters (LUM, SAT, and HUE).

By adjusting the parameters with the knobs, you can create any color.

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

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

❹ Numeric keypad

Use this to enter numeric values for parameters.

For details of use, see page 71.

Menu Operations

The method of menu operation is basically the same when using a mouse with an external monitor, but with mouse clicks in place of button presses. There is no difference in the menu control block operation described here. However, the monitor has no knobs for adjusting the parameters in the menu control block.

For details of operations corresponding to these knob operations, see the section below, "Operation With a Mouse" (page 75).

Selecting an Item

1 Press the VF button (1 to 7) for the desired group of items.

The HF button (1 to 7) indications change to show the items within the selected group.

2 Press the HF button for the desired item.

The indications in the status area and function button area change, and you can now make various changes to the selected item.

Selecting a Function

Press the appropriate function button within the function button area.

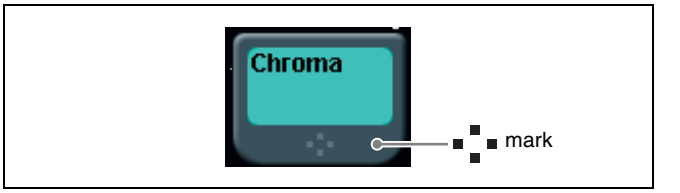
Shape and color of the button

Pressing the button turns it on, and it lights, showing the state.

Lit pale blue: The function is enabled, and the parameters can currently be adjusted with the knobs.
Lit orange: The function is enabled.
Lit purple: Execution button. Pressing the button immediately executes the function. (Example: [Auto Start] button in the Chroma Adjust menu)

Pressing a button of this type displays a further menu, allowing more detailed settings. (Example: [Chroma Adjust] button in the Type menu)

Setting Parameters



This marking on a function button indicates that there are parameters which can be adjusted with the knobs.
Pressing this function button assigns parameters to the knobs.
You can set the parameter values by either of the following methods.

- Turn the knob (1 to 5) corresponding to the parameter, to adjust the value.
- Press the knob parameter buttons (1 to 5) corresponding to the parameter. This displays the numeric keypad window allowing you to enter the desired value.

In the description of specific setting procedures, the knob adjustment is described, as follows.
Example: When wipe pattern key is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00
3	Density	Key density	0.00 to 100.00

When the [MENU] button in the device control block is lit, you can use the trackball and Z-ring to control the parameters.

- Move the trackball on the x-axis to control the parameter for knob 1 or on the y-axis to control the parameter for knob 2. Moving up or to the right increases the parameter value, and moving down or to the left decreases the parameter value.
- Use the Z-ring to adjust the parameter for knob 3. Turning clockwise increases the parameter value, and turning counterclockwise decreases the parameter value.

Switching Between the Main Menu Site and Subsidiary Menu Site

For menu transitions, you can store two separate versions in the main and subsidiary menu sites.
By switching sites, and pressing the ◀ button and the ▶ button you can trace the history in each menu.

To switch the subsidiary menu site on and off

Assign [SUB MENU SITE] to a menu control block top menu selection button or user preference button.
To switch to the subsidiary menu site, press this button, turning it on.

For details, see "Assigning Functions to the Menu Control Block Top Menu and User Preference buttons" in Chapter 19 (Volume 2).

Going Back to the Previous Menu

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

Returning to Default State in Function Groupings

1 Press the [Default Recall] button, turning it on.

This enters the menu default recall mode.

2 Press the VF button you want to return to the default state.

This returns the settings within the function grouping to the default state, and the [Default Recall] button goes off.

Notes

The default state of the settings depends on the setting of the initial status mode, set in the Setup menu of system setup, as follows.
User: The state when [Initial Status Define] is executed.
Factory: Factory default settings

Returning Knob Parameters to Default State

1 Press the [Default Recall] button, turning it on.

This enters the menu default recall mode.

2 Press the knob parameter button you want to return to the default state.

This returns the knob parameter value to the default state, and the [Default Recall] button goes off.

For details, see the table, "Knob parameters subject to restriction on default recall" on page 391.

Notes

The default recall function does not return the horizontal (H) and vertical (V) position settings to their default state individually. Returning the horizontal (H) position to its default state also returns the vertical (V) position to its default state automatically, and vice versa.

Operation With a Mouse

If you display the menus in an external monitor, operated with a mouse, then you click the mouse instead of pressing a button as described in the previous section, "Menu Operations."
However, in the following cases there are special operations with a mouse.

To set a parameter with the mouse

To adjust the value of a knob setting parameter button with the mouse, you can use either of the following three methods.

- Position the cursor over the knob setting parameter button for which you want to adjust the value, and turn the mouse wheel.
- Position the cursor over the knob setting parameter button for which you want to adjust the value, then hold down the right mouse button, and drag the bar showing the setting to the desired value.
- Position the cursor over the knob setting parameter button for which you want to adjust the value, then click the left mouse button to open the numeric keypad window by which you can input the desired value.

To scroll a list with the mouse

Position the cursor over the list you want to scroll, and turn the mouse wheel.
In the setup menus you can select the direction of mouse wheel rotation that increases the setting value. And you can also switch the functions of the right and left mouse buttons.

For details, see Chapter 19 "Setting the Mouse Wheel Scrolling Direction for Parameter Setting" (Volume 2).

Shortcut Menu

Registering a Menu To the Shortcut Menu

1 In the Home >Favorites >Shortcut menu, select the desired group.

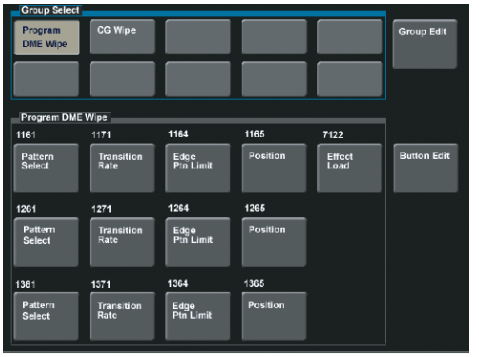
2 Display the menu you want to register, and then press the [Add Favorite] button.

The currently displayed menu is automatically registered to a blank button.

Recalling a Menu Using the Shortcut Menu

1 In the Home menu, select VF2 ‘Favorites’ and HF1 ‘Shortcut.’

The following menu appears.



2 In the [Group Select] box, select the group.

The group buttons appear.

3 Press the button for the desired menu.

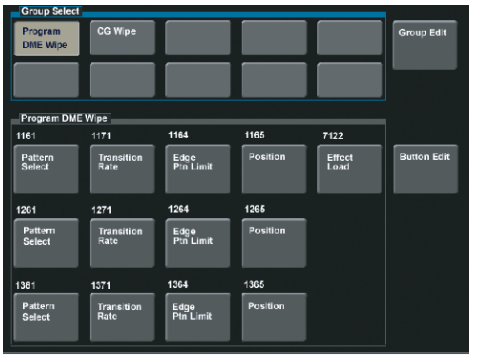
Customizing the Shortcut Menu

Assign frequently used menus to buttons, to create a “Favorites” menu.

To create a menu group

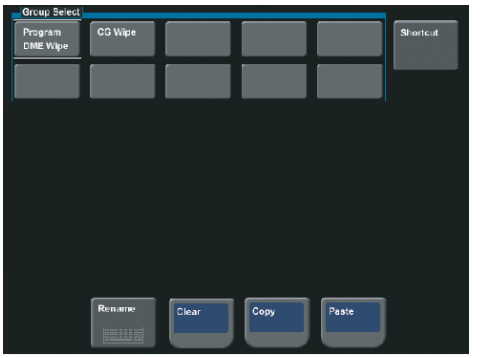
1 In the Home menu, select VF2 ‘Favorites’ and HF1 ‘Shortcut.’

The following menu appears.



2 Press [Group Edit].

The following menu appears.



3 With the cursor, select the group name (in this case a blank button) for the operation.

4 Press [Rename].

A keyboard window appears.

5 Enter a group name (maximum 24 characters), and press Enter.

This confirms the group name.

To copy a menu group

1 In the Home >Favorites >Group Edit menu, press the button for the copy source group.

2 Press [Copy].

3 Press the button for the copy destination group.

4 Press [Paste].

This copies the menu group settings.

To delete menu group settings

1 In the Home >Favorites >Group Edit menu, select the group to be deleted.

2 Press [Clear].

A confirmation message appears.

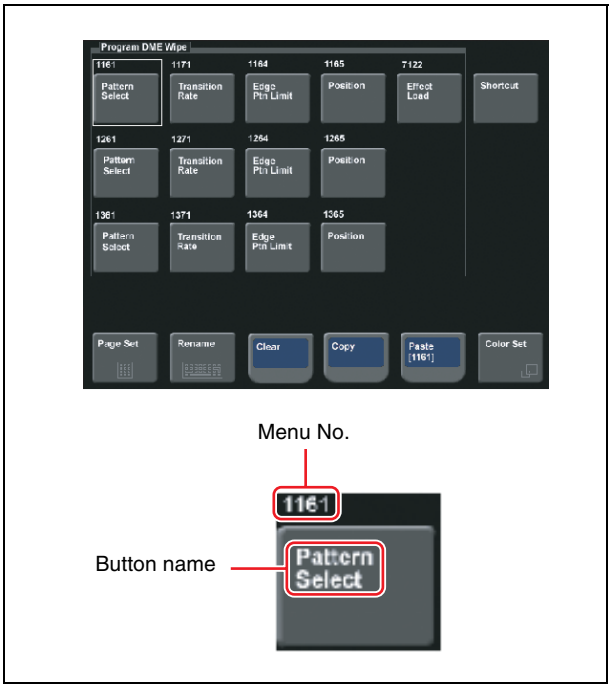
3 Press [Yes].

This deletes the settings.

To register a menu on a button

You can register 15 buttons in one group.

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



2 Move the cursor to the position where you want to display the button. To change the content of an already displayed button, press the button to select it.

3 Press [Page Set].

A page number input window appears.

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

5 Press [Rename].

A keyboard window appears.

6 Enter the button name (maximum 24 characters).

7 To change the button color, press [Color Set].

Button color samples appear.

8 Press the desired color.

This completes the assignment of the menu to the button.

9 Repeat steps **2** to **8** to complete the “Favorites” menu.

To copy button settings

1 In the Home >Favorites >Button Edit menu, press the copy source button to select it.

2 Press [Copy].

3 Press the copy destination button to select it.

4 Press [Paste].

This copies the button settings.

To delete button settings

In the Home >Favorites >Button Edit menu, press [Clear]. This deletes the button settings.

Notes

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

To register a menu macro on a button

See “Recalling a Menu Macro Register and Executing a Menu Macro” in Chapter 16 (Volume 2).

To execute a menu macro with a button

See “Recalling a Menu Macro Register and Executing a Menu Macro” in Chapter 16 (Volume 2).

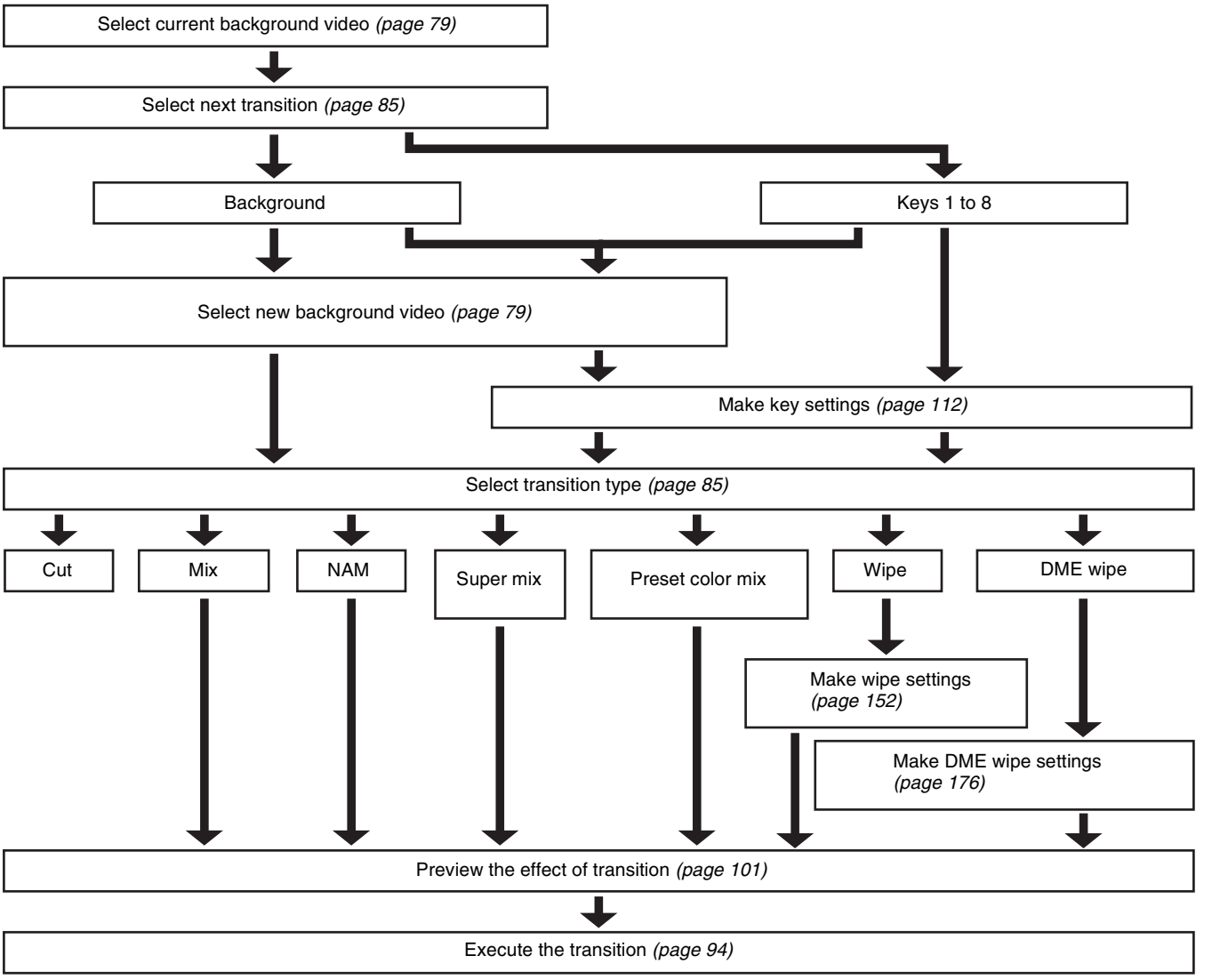
Signal Selection and Transitions

Chapter 3

Video Processing 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.

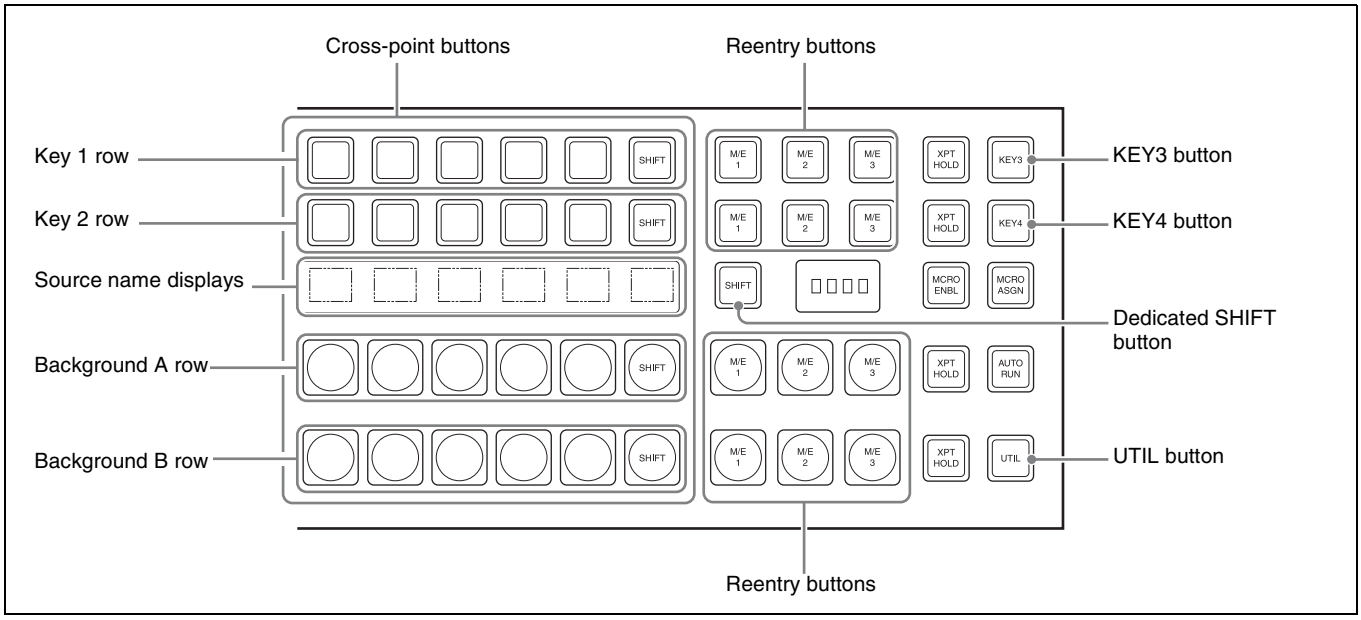
The following illustration shows the flow of operations for carrying out a transition on an M/E bank or the PGM/PST bank.



Signal Selection

You carry out signal selection with the cross-point buttons in the cross-point control block of each M/E bank or the PGM/PST bank, and the buttons in the auxiliary bus control block.

The number of buttons in each cross-point row may be 16, 24, or 32, but here the description is of the 32-button case as an example.



Cross-point control block

Basics of Signal Selection

Each of the M/E banks, PGM/PST bank and auxiliary bus control block has 32 cross-point buttons and three reentry buttons (four in the case of the auxiliary bus control block). These buttons are identified by numbers common to all of the banks and block, and a signal is assigned to each number.

The basis of signal selection is to select, in a cross-point button row, the cross-point button to which is assigned the desired signal.

Reentry buttons

To use the output of one M/E bank as background input to another bank, use the reentry buttons [M/E1], [M/E2], and [M/E3] (on the auxiliary bus control block, [M/E1], [M/E2], [M/E3], and [PGM]) in the cross-point control block of the destination bank.

For example, to feed the output from the M/E-1 bank as the background B input to M/E-2, in the M/E-2 cross-point control block, press the [M/E1] button in the background B row.

Notes

- To select M/E 4, it is necessary to assign M/E 4 to a button *(see page 380)*.
- For a 5M/E system, a maximum of four re-entry stages are possible. For other restrictions on re-entry, *see page 228*.

Bus Selection

Each row of 32 cross-point buttons is shared by multiple buses.

To assign a bus to the cross-point buttons in the auxiliary bus control block, press one of the AUX delegation buttons to select the bus.

Notes

- When using the CCP-6224/6324, buses may be assigned with the cross-point button rows for keys 1 and 2 as the auxiliary bus control block.

- You can enable assigning a key and AUX bus to the key 1 row of cross-point buttons, and selecting the signal in the key 2 row.

For details, see "Assigning a Key or AUX Bus to a Button in the Key 1 or Key 2 Row" in Chapter 19 (Volume 2).

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

Bank	Bus name	Cross-point button row	Delegation operation
M/E-1, M/E-2, M/E-3, M/E-4 [a]	Background A bus [b]	Background A row	–
	Background B bus [b]	Background B row	–
	Key 1 bus	Key 1 row	Turn off the dedicated [SHIFT] button, then turn off the [KEY3] button. [c]
	Key 2 bus	Key 2 row	Turn off the dedicated [SHIFT] button, then turn off the [KEY4] button. [c]
	Key 3 bus	Key 1 row	Turn off the dedicated [SHIFT] button, then turn on the [KEY3] button. [c]
	Key 4 bus	Key 2 row	Turn off the dedicated [SHIFT] button, then turn on the [KEY4] button. [c]
	Key 5 bus [d]	Key 1 row	Turn on the dedicated [SHIFT] button, then turn off the [KEY3] button.
	Key 6 bus [d]	Key 2 row	Turn on the dedicated [SHIFT] button, then turn off the [KEY4] button.
	Key 7 bus [d]	Key 1 row	Turn on the dedicated [SHIFT] button, then turn on the [KEY3] button.
	Key 8 bus [d]	Key 2 row	Turn on the dedicated [SHIFT] button, then turn on the [KEY4] button.
PGM/PST	Program bus [b]	Program row	–
	Preset bus [b]	Preset row	–
	DSK 1 bus	DSK 1 row	Turn off the dedicated [SHIFT] button, then turn off the [DSK3] button. [c]
	DSK 2 bus	DSK 2 row	Turn off the dedicated [SHIFT] button, then turn off the [DSK 4] button. [c]
	DSK 3 bus	DSK 1 row	Turn off the dedicated [SHIFT] button, then turn on the [DSK 3] button. [c]
	DSK 4 bus	DSK 2 row	Turn off the dedicated [SHIFT] button, then turn on the [DSK 4] button. [c]
	DSK 5 bus [d]	DSK 1 row	Turn on the dedicated [SHIFT] button, then turn off the [DSK 3] button.
	DSK 6 bus [d]	DSK 2 row	Turn on the dedicated [SHIFT] button, then turn off the [DSK 4] button.
	DSK 7 bus [d]	DSK 1 row	Turn on the dedicated [SHIFT] button, then turn on the [DSK 3] button.
	DSK 8 bus [d]	DSK 2 row	Turn on the dedicated [SHIFT] button, then turn on the [DSK 4] button.
M/E-1, M/E-2, M/E-3, M/E-4 [a], PGM/PST	Utility 1 bus	Background A row	When [UTIL] button mode is Hold, hold down the [UTIL] button.
	Utility 2 bus	Background B row	
	DME external video bus	Key 1 row	Hold down the [UTIL] button.
	DME utility 1 bus	Key 2 row	Hold down the [UTIL] button, and press the [KEY4] button, turning it off.
	DME utility 2 bus		Hold down the [UTIL] button, and press the [KEY4] button, turning it on.

Bank	Bus name	Cross-point button row	Delegation operation
Auxiliary bus control block [e]	AUX1 to AUX48 buses	1st row, 2nd row	Turn on the appropriate buttons in accordance with the signal assignment made in the Setup menu.
	Frame memory source 1 and frame memory source 2 buses		
	DME 1 to DME 8 video buses		
	DME 1 to DME 8 key buses		
	Edit preview bus		
	M/E-1 UTILITY 1 and M/E-1 UTILITY 2 buses		
	M/E-2 UTILITY 1 and M/E-2 UTILITY 2 buses		
	M/E-3 UTILITY 1 and M/E-3 UTILITY 2 buses		
	M/E-4 UTILITY 1 and M/E-4 UTILITY 2 buses		
	P/P UTILITY 1 and P/P UTILITY 2 buses		
	M/E-1 Key 1 fill to M/E-1 Key 8 fill buses		
	M/E-1 Key 1 source to M/E-1 Key 8 source buses		
	M/E-2 Key 1 fill to M/E-2 Key 8 fill buses		
	M/E-2 Key 1 source to M/E-2 Key 8 source buses		
	M/E-3 Key 1 fill to M/E-3 Key 8 fill buses		
	M/E-3 Key 1 source to M/E-3 Key 8 source buses		
	M/E-4 Key 1 fill to M/E-4 Key 8 fill buses		
	M/E-4 Key 1 source to M/E-4 Key 8 source buses		
	DSK 1 source to DSK 8 source buses		
	DSK 1 fill to DSK 8 fill buses		
	M/E-1 external DME bus		
	M/E-2 external DME bus		
	M/E-3 external DME bus		
	M/E-4 external DME bus		
	P/P external DME bus		
	DME UTILITY 1 and DME UTILITY 2 buses		

a) M/E-4 requires assignment.
b) Dual background bus mode (see below) can be selected.
c) A dedicated [SHIFT] button operation is required when the dedicated [SHIFT] button operation mode is set in setup to “Key5-8 Select.” For other settings, a dedicated [SHIFT] button operation is not required.
d) Only valid when the dedicated [SHIFT] button operation mode is set in setup to “Key5-8 Select.” For other settings, assignment is not possible.
e) An assignment to the delegation buttons is required in setup, to assign the bus for operations.

Dual background bus mode

In this mode, the shifted signal on the background A row can be selected on the key 1 row, and the shifted signal on the background B row can be selected on the key 2 row. To switch this mode on and off, it is necessary to assign this function to the [PRE MCRO] button in the cross-point control block.

For details of the assignment operation, see "Assigning the Dual Background Bus Mode Switching Function" in Chapter 19 (Volume 2).

Notes

For the following switcher banks, dual background bus mode is not available.
- When set to "Dual M/E Assign"
- When M/E Config is set to "DSK"

AUX Panel-less Function

When using 24-column cross-point control blocks for the CCP-6224/CCP-6324 Control Panel, you can use the key 1 and key 2 rows as the auxiliary bus control block. This is called the panel-less function.

Preparations

Assign the function for switching to the AUX control mode to the [PRE MCRO] and [POST MCRO] buttons. Hereafter this button is called the [AUX CTRL] button. In the source name display you can display either the source name or the bus name.

For details of how to make the assignment, see "Assigning the AUX Bus Control Mode Switching Function" in Chapter 19 (Volume 2).

Selecting the AUX bus

1. Switch the operation mode with the [AUX CTRL] button.
2. In the key 1 row, select the AUX bus for the operation.
3. In the key 2 row, select the desired signal.

Signal Assignment and Selection

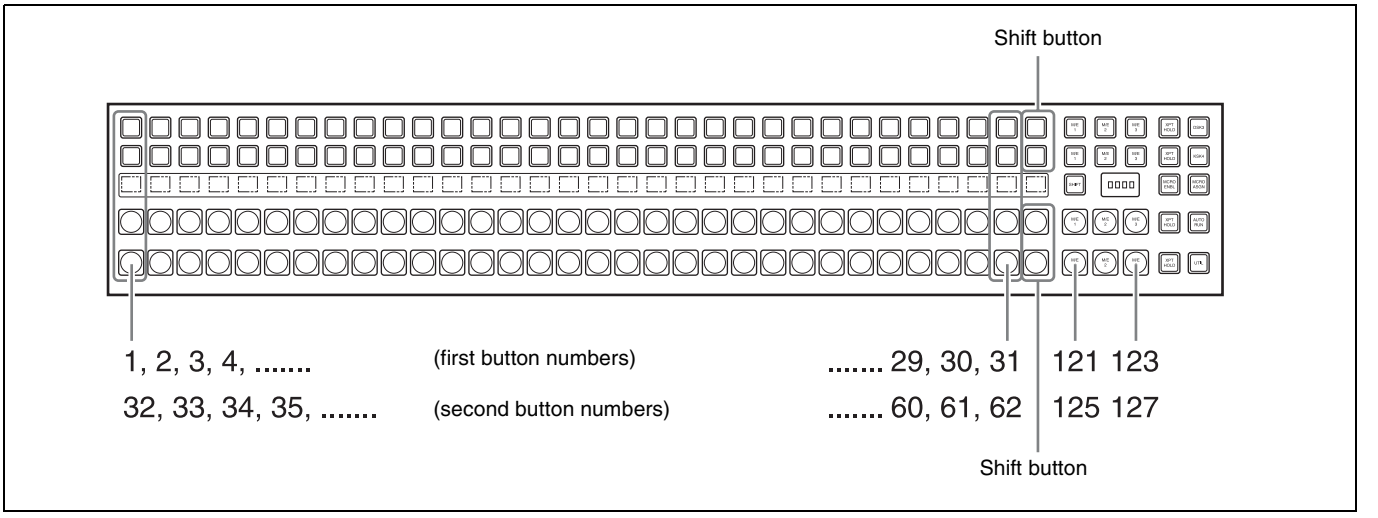
Assigning signals to buttons

Each of the 32 cross-point buttons and reentry buttons has a corresponding button number, to which you assign a signal.
In addition to the signals input to the following connectors, you can also select signals generated within the switcher.
- The PRIMARY INPUTS connectors on the rear panel of the switcher (1 to 144 in MVS-8000X, 1 to 80 in MVS-7000X)
- The PREMIUM INPUTS 1 to 20 connectors (only in MVS-8000X)
- The FC INPUTS 1 to 16 connectors (only in MVS-8000X)

Each button has assigned to it a video signal and a key signal, forming a pair. You can set these video and key combinations in a Setup menu.

For details of Setup menu operations, see "Creating Cross-Point Assign Tables" in Chapter 19 (Volume 2).

Cross-point button control block button numbers



On each M/E bank and the PGM/PST bank, each cross-point button and reentry button has two button numbers, and you use the shift button to switch between these numbers.

In the case of a 32-button layout, the button numbers are as follows.

Cross-point control block button numbers

Button	Number when the shift button is not pressed	Number when the shift button is pressed
From the left end to the 31st button	1 to 31	32 to 62
Reentry buttons	121 to 123	125 to 127

Notes

You can use the rightmost button (number 32) as a [SIDE FLAG] button. In this case, the shift button moves one to the left, to number 31, and the button numbers are offset by one.

For details of the [SIDE FLAG] button, see "Assigning a Cross-Point Button to Enable/Disable Side Flags" in Chapter 19 (Volume 2).

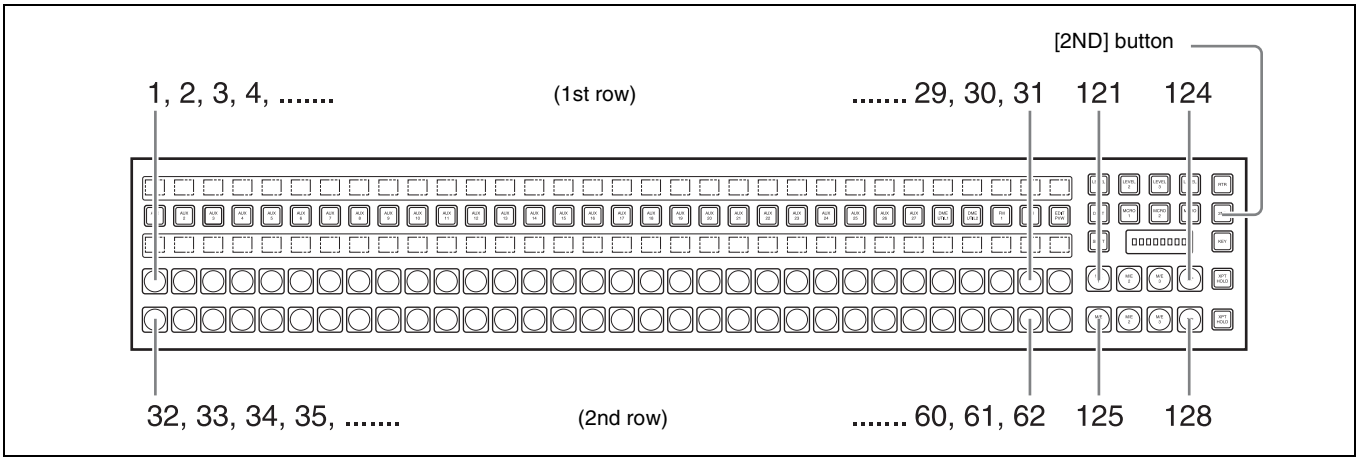
Switching button numbers

The rightmost (32nd) button functions as a shift button. (The shift button function can be disabled in a Setup menu.)

When selecting the signals of button numbers 1 to 31, press the cross-point button for the desired signal.

To select button numbers 32 to 62, hold down the shift button, and press the cross-point button for the desired signal.

Button numbers in the auxiliary bus control block



When the [2ND] button is unlit

The cross-point buttons and reentry buttons in the auxiliary bus control block have separate upper (1st row) and lower (2nd row) numbers.

In the case of a 32-button layout, the button numbers are as follows.

Auxiliary bus control block button numbers ([2ND] button unlit)

Button	Button	Button numbers
1st row	From the left end to the 31st button	1 to 31
	Reentry buttons	121 to 124
2nd row	From the left end to the 31st button	32 to 62
	Reentry buttons	125 to 128

When the [2ND] button is lit

Different buses can be assigned to the 1st-row buttons and 2nd-row buttons. When the 32nd button is set as a shift button, the 1st-row buttons and 2nd-row buttons both have the following button numbers.

Auxiliary bus control block button numbers ([2ND] button lit)

Button	Number when the shift button is not pressed	Number when the shift button is pressed
From the left end to the 31st button	1 to 31	32 to 62
Reentry buttons	121 to 124	125 to 128

Inhibiting cross-point button operations

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

Notes

This setting is cleared when you reset the control panel.

Assigning a button to the function of disabling cross-point button operation

You can assign the button to be used for the operation to the [PRE MCRO] button, in setup.

For details, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 2).

You can also use the [Inhibit Set] and [Inhibit All Clear] functions, assigned to user preference buttons.

For details, see "Assigning Functions to User Preference Buttons" in Chapter 19 (Volume 2).

Buses for which operations can be inhibited

This setting applies to the auxiliary bus control block (when using the CCP-8000) and the cross-point buttons in each switcher bank. However, when using the CCP-6224/6324, buses may be assigned with the cross-point button rows for keys 1 and 2 as the auxiliary bus control block.
For example, if you make the setting for one cross-point button in a switcher bank, this inhibits operation of all cross-point buttons with the same number in the following buses.
The corresponding name also disappears from the source name display.

- Background A, background B
- Keys 1 to 8
- Utility 1, Utility 2
- DME utility 1, DME utility 2
- External DME

To inhibit operation of a cross-point button

Hold down the button which "Inhibit Set" is assigned, and press the cross-point button whose operation you want to inhibit.
The button you pressed flashes amber, and this makes the operation inhibited.

Notes

Even when you inhibit operation of a cross-point button, macro attachment settings are still possible.

For details, see "Setting and Canceling a Macro Attachment" in Chapter 16 (Volume 2).

To clear a cross-point button operation inhibit setting

Hold down the button to which "Inhibit Set" is assigned, and press the button whose operation is inhibited (flashing amber).
This clears the operation inhibit setting for the button you pressed.

To clear all operation inhibit settings

Press the button to which "Inhibit Set" is assigned and the button to which "Inhibit All Clear" is assigned simultaneously.

Selection of signals linked with the audio mixer

When you select a signal in a switcher bank background A, key 1 or key 2 row (of the CCP-6224/6324 control panel in AUX control mode) or AUX bus control block (of the CCP-8000), and the bank and signal are set to be linked to the audio mixer, then the program output of the audio mixer follows the signal selection.

For details of the setting, see "Making Settings for Audio Mixer" in Chapter 19 (Volume 2).

Notes

- For details of audio mixers that can be connected, contact your Sony service or sales representative.
- When the signal is switched with a snapshot, keyframe, and so on, the audio mixer is not linked.
- When bus fixed mode is selected in setup *(see page 100)*, the audio mixer program output is linked to the bus output as the background.

Signal Name Display

You can attach a name (source name) to each signal assigned to a cross-point button, with a maximum of 16 characters.

- The source name displays in the cross-point control block and auxiliary bus control block show the source names of the video signals assigned to numbers 1 to 31.
- To display the source names for numbers 32 to 62, press the [SHIFT] button to the right of the source name displays.
- To display the source names of the key signals assigned to buttons, hold down the [SPLIT] button in the key control block or the [KEY] button in the auxiliary bus control block.

When using the AUX panel-less function *(see page 82)* with the CCP-6224/6324 Control Panel, you can use the cross-point control block as an AUX bus control block with the [AUX CTRL] button.
In this case, use the key 1 row as AUX delegation buttons, and the key 2 row as AUX bus cross-point selection buttons; the source name displays show the bus names and source names.

Colors of lit cross-point buttons

In a particular row of cross-point buttons, only the last pressed button is effective, and lights amber or red. The amber indicates the "low tally" state, and the red indicates the "high tally" state, to indicate whether or not the selected signal appears in the final output video.

Significance of colors of lit cross-point buttons

Color	State	Significance
Amber	Low tally	Does not appear in final output video
Red	High tally	Appears in final output video

Transitions

Selecting the Next Transition

To execute a transition, it is first necessary to decide how the image will be changed as a result of the transition. This selection is carried out using the next transition selection buttons *(see page 27)* in the transition control block of each M/E or PGM/PST bank.

For details of operations, see "Procedure for Basic Transition Operation" (page 86).

Transition Types

Selecting the transition type determines the way in which the transition occurs.
Carry out the type selection with the transition type selection buttons in the transition control block of each M/E or PGM/PST bank.

For details of this operation, see "Procedure for Basic Transition Operation" (page 86).

The following are the transition types.

Mix

This is a dissolve, in which the new video progressively fades in over the current video, with the sum of the two video outputs maintained constant. At the mid-point of the transition (when the fader lever is in the center position), the output of each is 50%.
This transition type can also be selected for an independent key transition. In this case, the key either dissolves in or dissolves out similarly, with the progress of the transition.

NAM (non-additive mix)

In this dissolve, the current video and new video signals are compared, and the signal with the higher luminance level is given priority in the output. The current video is maintained at 100% output for the first half of the transition as the new video increases progressively to 100%, then the current video is progressively reduced from 100% to zero in the second half with the new video maintained at 100% output.

Notes

This transition type is not available for an independent key transition.

Super mix

In this dissolve, 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%, then the current video is progressively reduced from 100% to zero in the second half with the new video maintained at 100% output.

Notes

This transition type is not available for an independent key transition.

For details on super mix settings, see page 92.

Preset color mix

This is a two-stage dissolve, comprising two transitions, the first a dissolve to a color matte, and the second from the color matte to the new video.
In the first transition, the current video is replaced by the color matte in a mix (dissolve), then in the second transition the color matte is replaced by the new video also in a mix (dissolve).

Notes

This transition type is not available for an independent key transition.

For details on color matte settings, see page 92.

Wipe

A wipe replaces the current video by the new video according to a predetermined pattern. This transition type can also be selected for an independent key transition.

For details, see Chapter 5 "Wipes" (page 152).

DME wipe

Using a DME effect, it is possible to obtain a transition to a new image from the current image, as in a wipe. You can also use this transition type as an independent key transition.

For details, see Chapter 6 "DME Wipes" (page 172).

Clip transitions

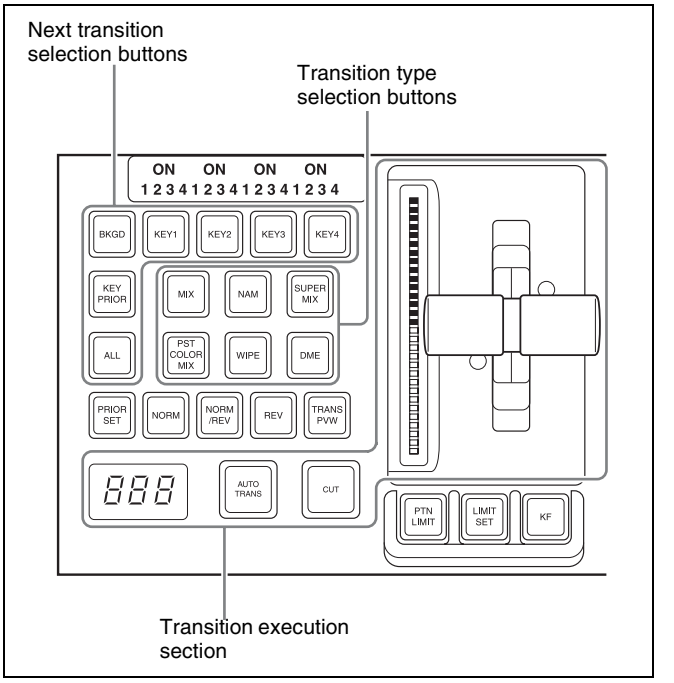
Linked to a mix (dissolve) or wipe transition, a frame memory clip (movie) is played back.

Cut

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

Procedure for Basic Transition Operation

The positions of the principal buttons used for basic transition operation are as follows.



Transition control block (for standard transitions)

1 In the cross-point control block, select the background video with the background A row of cross-point buttons.

2 Select the way in which the transition will affect the image, using the next transition selection buttons in the transition control block.

For an overview, see "Selecting the Next Transition" (page 85).

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

To insert or delete a key: Press one of the [KEY1] to [KEY4] buttons (or [DSK1] to [DSK4] buttons in the PGM/PST bank), turning it on.

For details of the operation to select [Key5] to [Key8], see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 381) in Appendix.

To enable the key priority setting, which determines the key overlay order after the transition: Press the [KEY PRIOR] button, turning it on.
You can press more than one button at the same time.

To change the keys and background presets in Setup menus simultaneously: Press the [ALL] button.

To allocate a particular next transition button to the [ALL] button function, see "Setting the Operation Mode of the [ALL] Button in the Transition Control Block" in Chapter 19 (Volume 2).

3 For the transition to change the key priority, set the priority for after the transition.

When using keys 1 to 8, see "Priority Setting for Keys 1 to 8" (page 90). For details of the key priority setting operation, see "Key Priority Setting" (page 88).

4 Select the new video used for the transition.

- In the background B row of cross-point buttons, select the new background video.
- When inserting a key, select the key signal, and make any required settings.

For details of key settings, see Chapter 4 "Keys" (page 112).

To carry out a cut transition, skip to step **7**; otherwise continue to step **5**.

5 Select one of the transition type selection buttons in the transition control block.

To carry out a dissolve to the new video: Press one of the [MIX], [NAM], [SUPER MIX], and [PST COLOR MIX] buttons, turning it on.
To carry out a wipe: Press the [WIPE] or [DME] button, turning it on.
To carry out a transition while playing back a frame memory clip: Press one of the buttons corresponding to the clip to be used (FM1&2CLIP, FM3&4CLIP, FM5&6CLIP, and FM7&8CLIP).

You can also use the Misc >Transition menu to select a desired transition type for the M/E or PGM/PST bank. *(See "Selecting the Transition Type by a Menu Operation" (page 91).)*

For an overview, see "Transition Types" (page 85).

Notes

The transition type selection buttons in the transition control block can be interchanged in the setup menu.

For details, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 2).

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

For details of the settings, see the relevant section.

Super mix: *"Super Mix Settings" (page 92)*
Preset color mix: *"Color Matte Settings" (page 92)*
Wipe: *"Basic Procedure for Wipe Settings" (page 152)*
DME wipe: *"Basic Procedure for DME Wipe Settings" (page 176)*
Clip transition: *"Clip Transition Operations" (page 208)*

Using the transition preview function *(see page 101)*, you can check the transition on the preview monitor.

7 Carry out the transition in the transition execution section.

For a gradual transition such as a mix (dissolve) or wipe: Press the [AUTO TRANS] button, or operate the fader lever.
To execute a transition by pressing the [AUTO TRANS] button, first set the transition rate (specified as the duration of the transition). *(See "Setting the Transition Rate" (page 94).)*
When you have selected a wipe or DME wipe as the transition type, you can also set the transition range. *(See "Pattern Limit" (page 97).)*
For an instantaneous transition: Press the [CUT] button.

For details, see "Executing a Transition" (page 94).

Transition linked to the audio mixer

If the video signal selected in the background B row is linked to the audio mixer in setup, then the audio mixer sound changes with the transition. That is, pressing the [AUTO TRANS] button gives a cross fade, and pressing the [CUT] button gives an instantaneous sound switch.

For details of setup, see "Making Settings for Audio Mixer" in Chapter 19 (Volume 2).

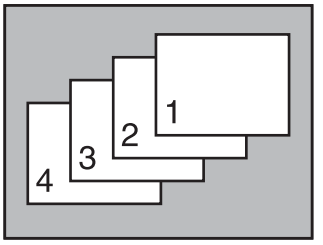
Notes

- The audio mixer is not linked to a snapshot or key frame transition.
- The audio mixer is not linked to a transition using the fader lever.
- If the bus-fixed mode *(see page 100)* is selected in the setup menu, and the fader lever is in the lowest position, there is a cross fade from the audio selected on the B row to the audio selected on the A row.
- The audio mixer is not linked to a key transition.
- In the following cases, the audio and video may be out of sync.
  - When carrying out a cross fade in some DME wipes (for example, "picture in picture")
  - When executing a preset color mix in two-stroke mode
- For details of audio mixers that can be used, contact your Sony service or sales representative.

Key Priority Setting

If a number of keys are already inserted in the current video, you can check or change the key priority, that is to say, the order in which the keys are overlaid.
When a key priority ([KEY PRIOR]) is selected as the next transition, you can also change the key priority in the new video.

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



Priority sequence on the screen

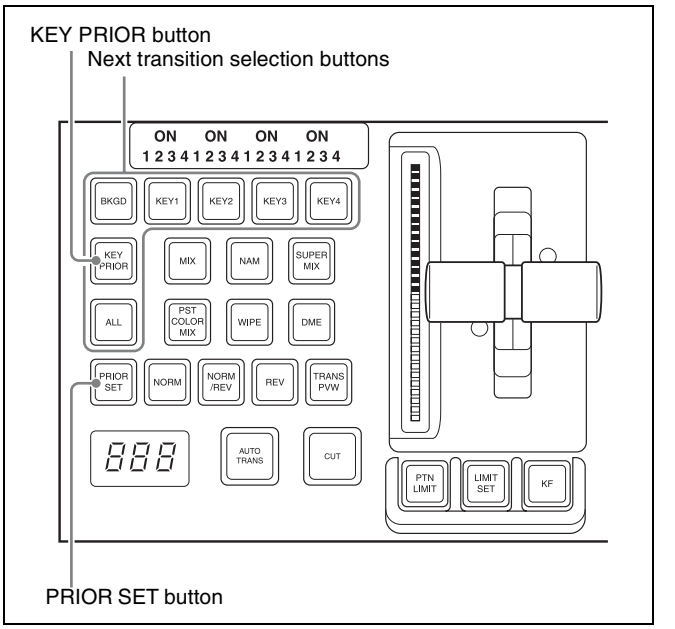
There are two ways of setting the priority: either using the [PRIOR SET] button in the transition control block, or using the Misc menu to access the Key Priority menu for the M/E or PGM/PST bank.

Notes

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

Setting the Key Priority in the Transition Control Block

The positions of the buttons used for the operation are as follows.



Transition control block (standard type)

Changing the currently inserted key priority

1 If the next transition selection button [KEY PRIOR] is on, press another next transition selection button to turn the [KEY PRIOR] button off.

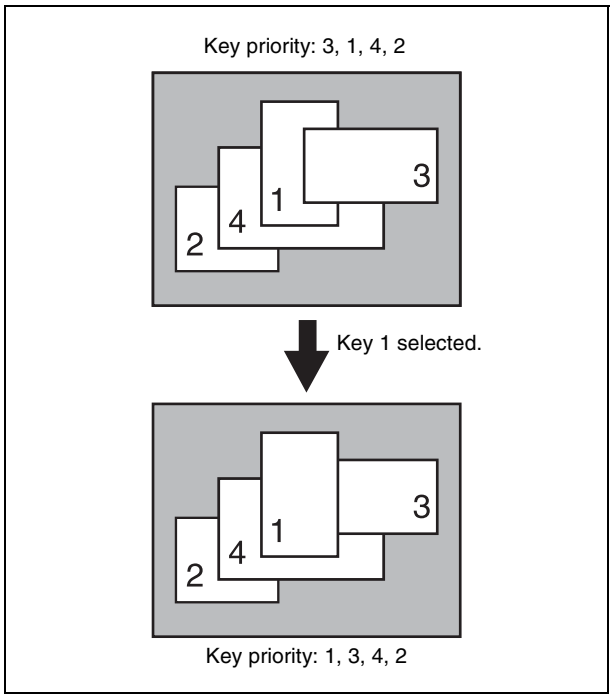
(When the [KEY PRIOR] button is on, the transition control block switches to the mode for changing the key priority for after the transition.)

2 Holding down the [PRIOR SET] button, press the one of the next transition selection buttons [KEY1] to [KEY4] ([DSK1] to [DSK4] buttons in the PGM/PST bank) for the key to appear on top.

Notes

- To select [Key5] to [Key8], or [DSK5] to [DSK8] requires an assignment *(see page 381)*.
- The key priority establishes a separate priority order within each of the groups of keys 1 to 4 and keys 5 to 8. You can make any setting within the groups of keys 1 to 4 or keys 5 to 8, but not for combinations of keys from different groups.
  For example, it is not possible to set a priority sequence of keys 1, 5, and 2.

The selected key now appears on top, on the program monitor.
The priority of keys other than the selected one does not change.



To change the priority of more than one key, repeat this operation as required.

Changing the key priority for after the transition

When executing a transition, turning on the next transition selection button [KEY PRIOR] causes the keys to be rearranged based on the set priority.
To set the key priority for after the transition, use the following procedure.

1 In the transition control block, hold down the [PRIOR SET] button and press the [KEY PRIOR] button to turn it on. Do not release the [PRIOR SET] button before advancing to step **2**.

The [KEY PRIOR] button lights green, and it becomes possible to change the key priority setting for after the transition.

2 Hold down the [PRIOR SET] button, and press the one of the next transition selection buttons [KEY1] to [KEY4] ([DSK1] to [DSK4] buttons in the PGM/PST bank) for the key you want to bring to the front after the transition.

To set the priority to be the same as before the transition, press the [BKGD] button.

Notes

- The [BKGD] button is only effective when in the mode for changing the key priority for after the transition.
- To select [Key5] to [Key8], or [DSK5] to [DSK8] requires an assignment *(see page 381)*.
- The key priority establishes a separate priority order within each of the groups of keys 1 to 4 and keys 5 to 8. You can make any setting within the groups of keys 1 to 4 or keys 5 to 8, but not for combinations of keys from different groups. For example, it is not possible to set a priority sequence of keys 1, 5, and 2.

When the next transition selection button [KEY PRIOR] is on, the selected key appears on top on the preview monitor. The priority of keys other than the selected one does not change.

3 To change the priority of more than one key, repeat the previous operation as required.

4 Execute the transition.

The keys are rearranged based on the set priority.

Setting the Key Priority by a Menu Operation

When using keys 1 to 8, set the priority separately for the two groups *(see page 90)*.

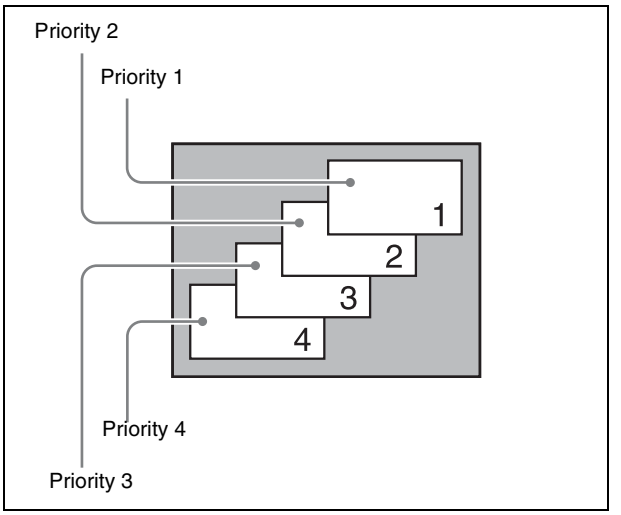
Changing the priority of the currently inserted keys

1 In the M/E or PGM/PST menu, select first VF7 ‘Misc,’ then HF3 ‘Key Priority.’

The Key Priority menu appears.

2 For each of <Priority1>, <Priority2>, <Priority3>, and <Priority4>, select a key, to determine the key priority sequence.

The keys are inserted in the key priority sequence with priority 1 at the front.



Notes

It is not possible to select the same key for two or more priority numbers.

The keys appear in the set order on the program monitor.

Changing the key priority for after the transition

1 In the M/E or PGM/PST menu, select first VF7 'Misc,' then HF4 'Next Key Priority.'

The Next Key Priority menu appears.

2 For each of <Priority1>, <Priority2>, <Priority3>, and <Priority4>, select a key, to determine the key priority sequence.

*For details of the key priority sequence, see the figure shown for step **2** in the previous item (see page 89).*

The keys appear in the set order on the preview monitor.

3 Execute the transition.

The keys are rearranged in the set order on the program monitor.

Display of the Key Output Status and Key Priority

You can check whether keys are currently output, and the key priority setting, using the key status display in the transition control block of the M/E or PGM/PST bank. The display is above the next transition selection buttons [KEY1] to [KEY4] ([DSK1] to [DSK4] buttons in the PGM/PST bank).

Notes

You can change the assignment of the next transition selection buttons [KEY1] to [KEY4]. If this is changed, the output status and priority is shown for the assigned key.

Display of the key output status

When a key is included in the output from the M/E or PGM/PST bank, the corresponding ON indicator lights.

Key priority display

The key priority is indicated by numerals 1 to 4 lighting. The topmost key as seen on the program monitor is priority 1, and the keys underneath are numbered 2, 3, 4 away from the viewer *(see page 89)*.

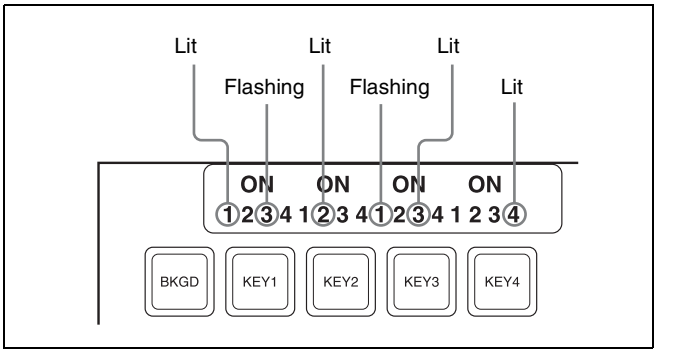
To display the key priority for after the transition, press the [KEY PRIOR] button in the transition control block, turning it on. For keys for which the priority after the transition is different from the current priority, the corresponding numerals 1 to 4 flash. For a key with the same priority, the indication remains on.

Example key status display given when the [KEY PRIOR] button is pressed:

Current key priority: 1, 2, 3, 4

Key priority after the transition: 3, 2, 1, 4

Indicators: 1, 3 (flashing), 2, 1 (flashing), 3, 4



Example key status display
(showing the key priority after the transition)

Priority Setting for Keys 1 to 8

Set the priority for each of the groups consisting of keys 1 to 4 and keys 5 to 8.

1 In the VF7 ‘Misc’ menu, select HF3 ‘Key Priority,’ to display the Key Priority menu.

2 In <Higher Group>, press the button for the group you want to be higher.

The button you pressed lights green, and this becomes the reference group.

3 Set the reference group priority.

4 In <Higher Group>, select the other group.

5 Set the priority for the other group.

Selecting the Transition Type by a Menu Operation

You can also select the required transition type by a menu operation.

1 In the M/E or PGM/PST menu, select first VF7 ‘Misc,’ then HF1 ‘Transition.’

The Transition menu appears.

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

The parameter settings can now be adjusted with the knobs according to the selected transition type.

For details, see the following.
- *“Super Mix Settings” (page 92)*
- *“Color Matte Settings” (page 92)*
- *“Setting the Transition Rate” (page 94)*

Notes

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

For details, see “Setting the Operation Mode” in Chapter 20 (Volume 2).

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%.

Notes

This transition type is not available for an independent key transition.

1 In the M/E or PGM/PST menu, select first VF7 ‘Misc,’ then HF1 ‘Transition.’

The Transition menu appears.

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

3 Turn the knobs to adjust the output levels.

Knob	Parameter	Adjustment	Setting values
2	A Gain	Background A output level	0.00 to 100.00%
3	B Gain	Background B output level	0.00 to 100.00%

Color Matte Settings

You can specify the color matte by luminance, saturation, and hue values.
Also, in place of a color matte you can use an image selected on the utility 2 bus.

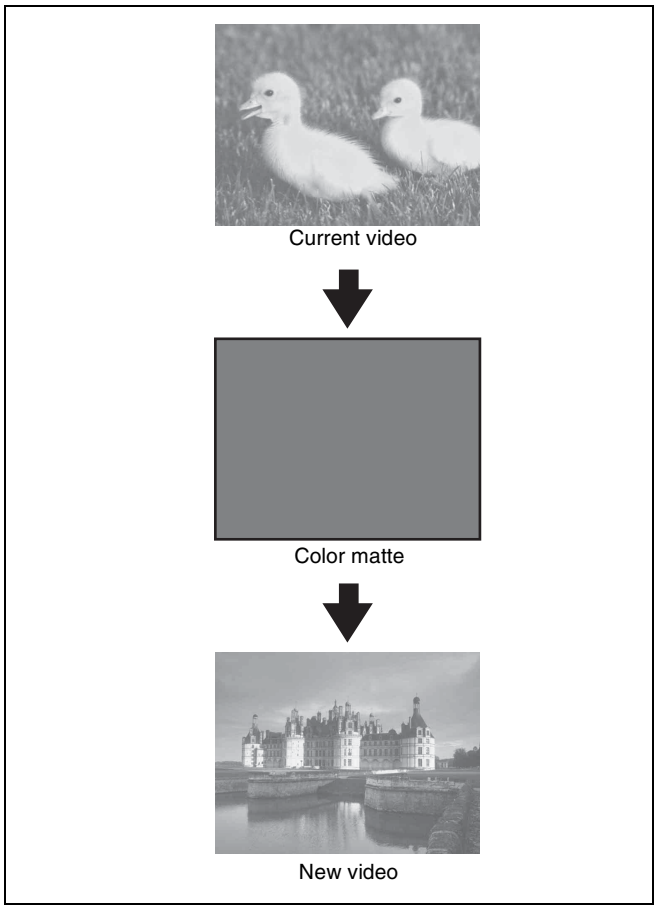
Notes

- This transition type is not available for an independent key transition.
- In the multi-program mode, you can use a preset color mix only when selecting the background for the next transition.

One-stroke mode and one-time mode

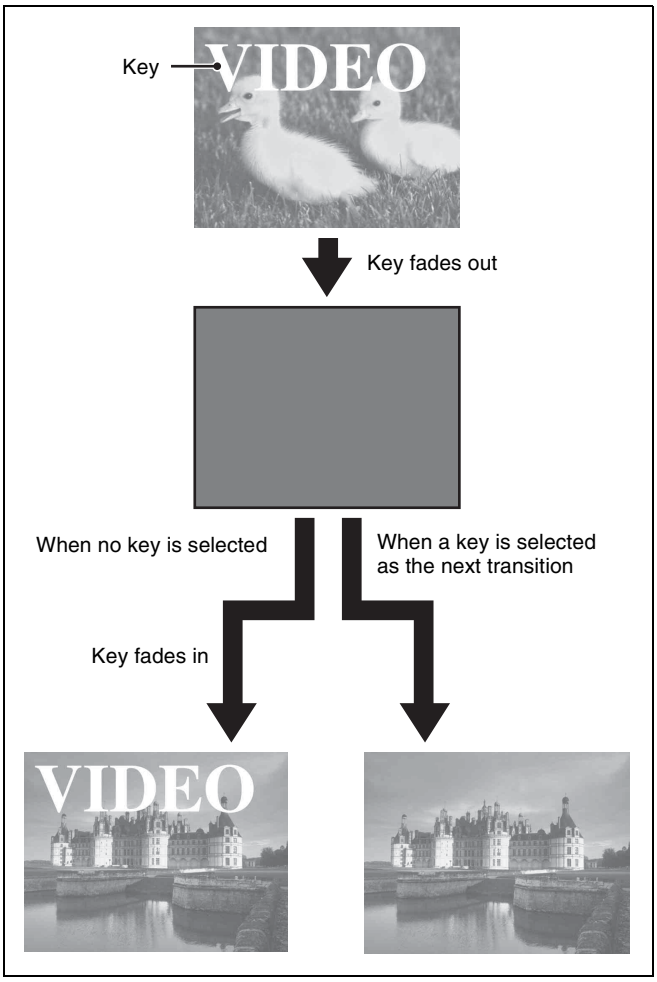
- You can make a setting such that a preset color mix is carried out in a single transition. This is called “one-stroke mode.”
  When the bus fixed mode is selected with a Setup menu setting, a preset color mix is always carried out in the one-stroke mode.
- You can also make a setting such that when a preset color mix is completed, the next transition switches to the previous transition type automatically. This is called “one-time mode.”

When only the background is changed



Preset color mix (changing background only)

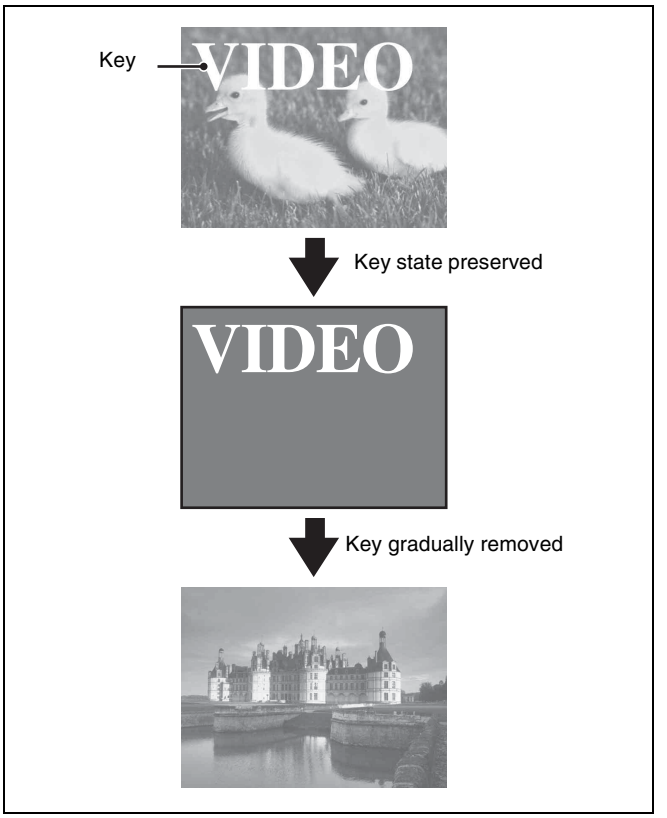
When a key is inserted



Preset color mix (transition including key)

By means of a Setup menu setting, it is possible to preserve the key state while carrying out the color matte mix.

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



Preset color mix (when set to preserve key state)

Setting the color matte

1 In the M/E or PGM/PST menu, select first VF7 ‘Misc,’ then HF1 ‘Transition.’

The Transition menu appears.

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

3 In the <Preset Color Mix Fill> group, select one of the following.

Flat Color: monochrome color matte
Utility 2 Bus: signal selected on the utility 2 bus

4 When “Flat Color” is selected, turn the knobs to adjust the color matte.

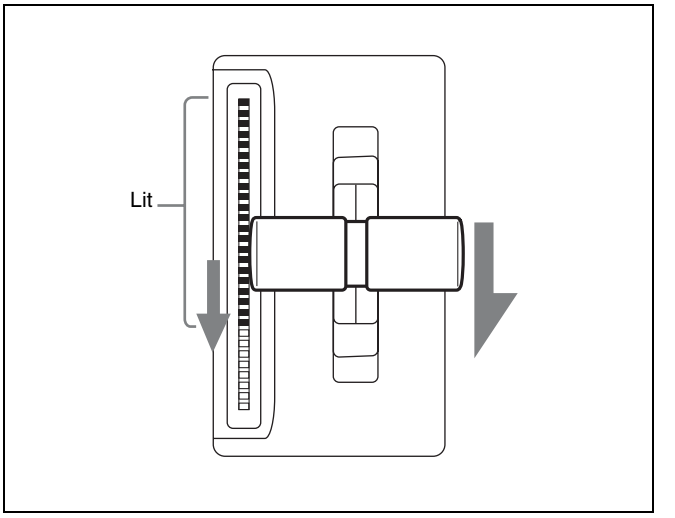
Knob	Parameter	Adjustment	Setting values
2	Luminance	Luminance	0.00 to 100.00
3	Saturation	Saturation	0.00 to 100.00
4	Hue	Hue	359.99 to 0.00

Executing a Transition

There are two modes of executing a transition: an auto transition by button operation or a manual transition 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.
When the audio mixer is linked in setup, you can carry out an auto transition, and also switch the sound with the audio mixer *(see page 87)*.

Transition Indicator Function

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.



Transition indicator

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 go off.

Setting the Transition Rate

There are two ways of setting the transition rate: using the Flexi Pad control block, Multifunction Flexi Pad control block or numeric keypad control block to enter a numeric value, or using the Misc menu to access the 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 of the M/E and PGM/PST banks, and change the settings *(see page 223)*.

Notes

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 *(page 95)*, Multifunction Flexi Pad control block or the numeric keypad control block *(page 96)*.

Frame input mode: The entered value is a number of frames.
Example: Entering 123 constitutes an entry of 123 frames

Timecode input mode: The entered value is a timecode value.
Example: Entering 123 constitutes an entry of 1 second 23 frames.

Notes

Whereas you can enter a value of up to 999 in frame input mode, a value not smaller 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 one of these modes in setup.

For details, see "Setting the Transition Rate Display Mode" in Chapter 19 (Volume 2).

Notes

The setting is common to all banks of the switcher.

Frame display mode: Values are shown as from 0 to 999 frames. In this display mode, a value entered in timecode input mode is converted for display as a number of frames.

Timecode display mode: Values are shown as timecode values, consisting of seconds and frames. In this display mode, a value entered in frame input mode is converted for display as a timecode value. If the value consists of four or more digits, the last digit is not shown.
Example: A value of 9 seconds 23 frames appears as "9.23" and a value of 10 seconds 1 frame appears as "10.0."

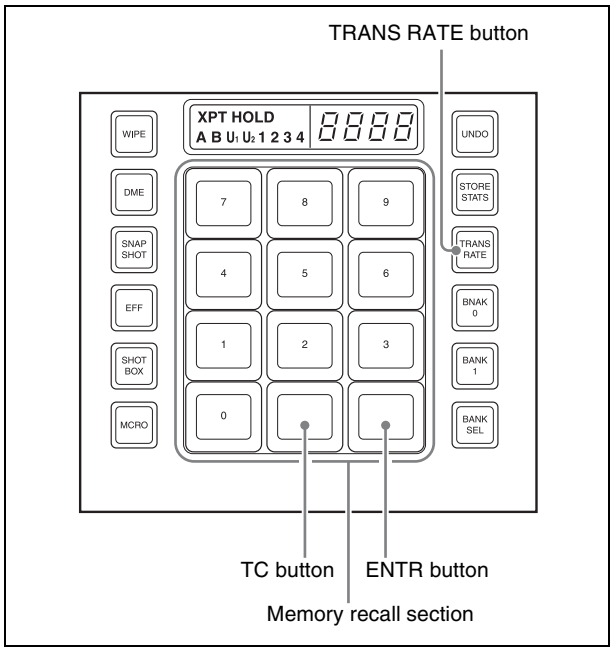
Setting the transition rate in the Flexi Pad control block

Notes

When using a simple-type transition control block, you cannot use the Flexi Pad control block to set the transition rate.

1 In the M/E bank Flexi Pad control block, press the [TRANS RATE] button.

The memory recall section display is now ready to accept the entered transition rate.



Flexi Pad control block (standard type)

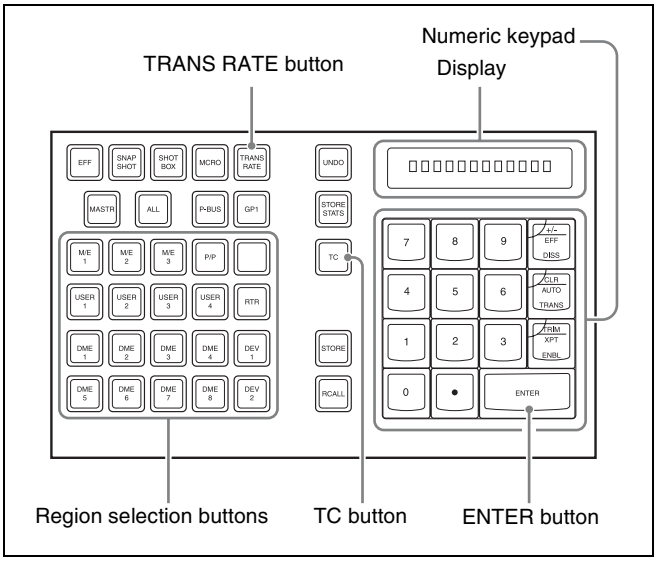
2 Enter the desired transition rate with the numeric keypad.
If required, press the [TC] button to toggle the input mode (frame input or timecode input).

- Enter a value of up to three digits.
- To cancel the entry, press any of the six buttons in the leftmost column ([WIPE], [DME], ...) or the [TRANS RATE] button.

3 Press the [ENTR] button.

This confirms the entry, and the new setting appears in the transition control block display.

Setting the transition rate in the numeric keypad control block



Numeric keypad control block

1 In the numeric keypad control block, press the [TRANS RATE] button.

2 Press the region selection button for the M/E or PGM/PST bank for which you want to set the transition rate, turning it on.

The numeric keypad control block display now shows the selected region name and the current transition rate setting for the region.

3 With the numeric keypad, enter the transition rate.

If required, press the [TC] button to toggle the input mode (frame input or timecode input).
- Enter a value of up to three digits.
- To clear the entry, press the [CLR] button.

4 Press the [ENTER] button.

This confirms the entry, and the selected region name and the set transition rate appear in the numeric keypad control block display.
The transition control block display of the same bank (M/E or PGM/PST) also shows the setting.

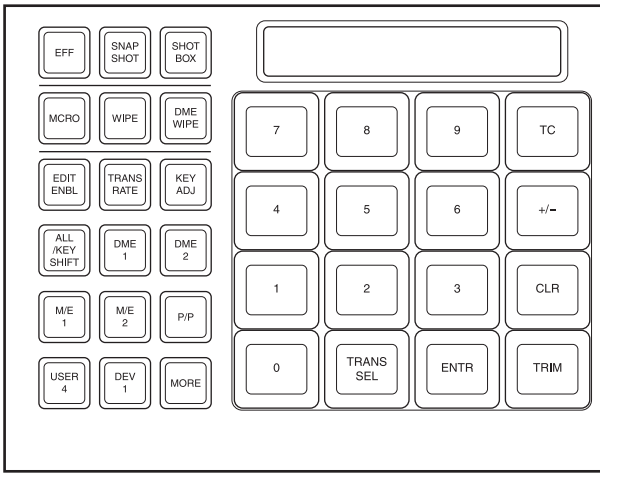
To enter a difference from the current value

After pressing the [+/–] button, enter the difference and press the [TRIM] button.
To change the sign (+ or –), press the [+/–] button.

Setting the transition rate in the Multifunction Flexi Pad control block

1 In the Multifunction Flexi Pad control block, press the [TRANS RATE] button.

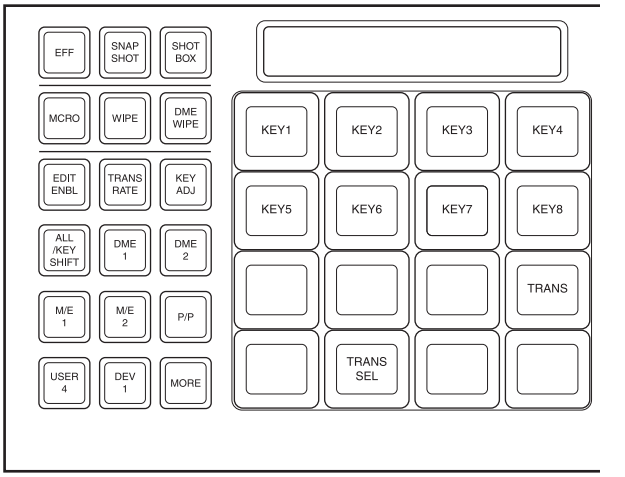
The button displays in the memory recall section change as shown in the following illustration, and the Multifunction Flexi Pad control block switches to the transition rate setting mode.



2 In the region selection buttons, select the switcher bank.

3 Press the [TRANS SEL] button in the memory recall section.

The button displays in the memory recall section change as shown in the following illustration, and you can select the type of transition for which to set the rate.



4 Press the [TRANS] button.

You can now set the M/E-1 block background transition rate.

5 Watching the alphanumeric display, enter the transition rate you want to set with the memory recall section button.

If required, press the [TC] button to switch the input mode (frame count input or timecode input).

- Enter a value of up to three digits.
- To cancel the input, press any of the mode selection buttons.

6 Press the [ENTR] button.

Setting the transition rate by a menu operation

1 In the switcher bank, select first VF7 ‘Misc,’ then HF1 ‘Transition.’

The Transition menu appears.

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

3 Turn the knob to set the transition rate.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition Rate	0 to 999 (frame count)

Displaying the transition rates in a menu and changing the settings

For each of the M/E and PGM/PST banks, you can display the transition rate, independent key transition rate and fade-to-black transition rate, and change the settings *(see page 223)*.

Pattern Limit

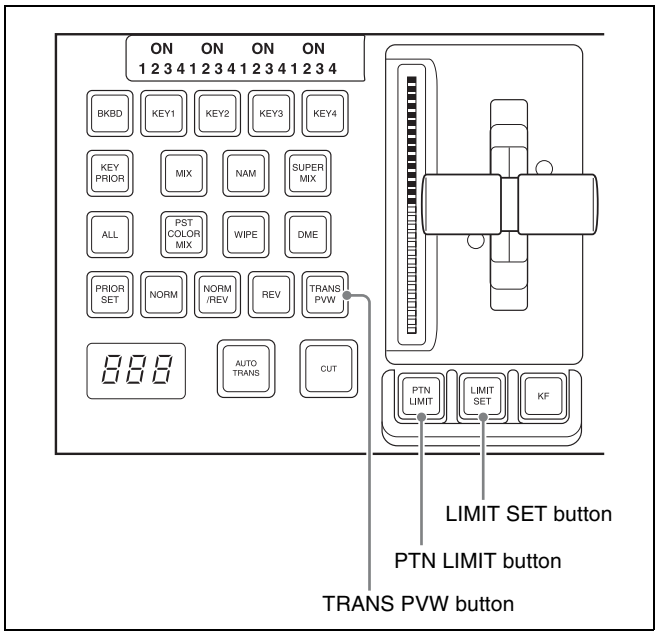
When a wipe or DME wipe pattern is selected for the transition, you can specify the range of movement of the wipe pattern through the course of the transition, for each bank independently.
When the pattern limit function is enabled, carrying out a transition results in the following effect for example 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 in the normal case (with the pattern limit function disabled); the wipe pattern does not complete.
- When the limit value is set to 0%, the wipe effect is completely disabled, and carrying out the transition produces no change in the image.
- When the limit value is set to the maximum 100%, the image changes in exactly 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 menu or DME Wipe menu to access the 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.
- A pattern limit cannot be applied to an independent key transition *(see page 102)*.



Transition control block (standard type)

Setting the pattern limit with the fader lever

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

- First make sure that the [PTN LIMIT] button is off.
- To check the pattern size on the preview monitor, first press the [TRANS PVW] button, to select the transition preview mode *(see page 101)*.

2 Press the [LIMIT SET] button.

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

Setting the pattern limit by a menu operation

1 When a wipe is selected as the transition type, in the M/E or PGM/PST menu, select first VF5 ‘Wipe,’ then HF4 ‘Edge/Direction.’

When a DME wipe is selected as the transition type, in the M/E or PGM/PST menu, select first VF6 ‘DME Wipe,’ then HF4 ‘Edge/Direction.’

The Edge/Direction menu appears.

2 Press the [Pattern Limit] button, turning it on.

3 Turn the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Pattern Limit	Pattern limit	0.00 [a] to 100.00 [b] %

a) 0.00%: Executing the transition does not change the video output at all.
b) 100.00%: The transition is the same as when no pattern limit is set, 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, turning it on.

The button you pressed lights amber.

2 Carry out 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 Carry out the transition once again.

The status before the previous transition is restored.

To cancel the pattern limit

To cancel the pattern limit after completion of step **3** in the previous procedure, press the [PTN LIMIT] button, turning it off.
If after carrying out step **2** in the previous procedure, the pattern limit has been reached, carry out the following procedure.

1 Press the [PTN LIMIT] button.

The button you pressed lights green.

2 Carry out the transition.

The [PTN LIMIT] button goes off, and the pattern limit state is released.
Depending on the way in which the transition was executed, the action will be as follows.

- When you press the [CUT] button, the pattern limit is immediately released, and the image switches instantaneously.
- When you press the [AUTO TRANS] button, until the state of the next transition, the transition is carried out over the duration given by the transition rate.
- When you move the fader lever, the transition is carried out from the pattern limit state to the state before the pattern limit transition was carried out. 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 settings, the transition may be executed at the instant you press the [PTN LIMIT] button, and the button goes off. In this case, execution continues for the time specified by the dedicated transition rate in the menu setting, as far as the state of the next transition.

For details of the setting, see "Selecting the Bank to Make the Settings" in Chapter 20 (Volume 2).

To set the transition rate when the pattern limit is released

1 In the <Pattern Limit Release> group of the Edge/Direction menu, select one of the following.

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

2 If you selected "Independ Trans Rate" in step **1**, adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Independent transition rate	0 to 999 (frames)

Executing an Auto Transition

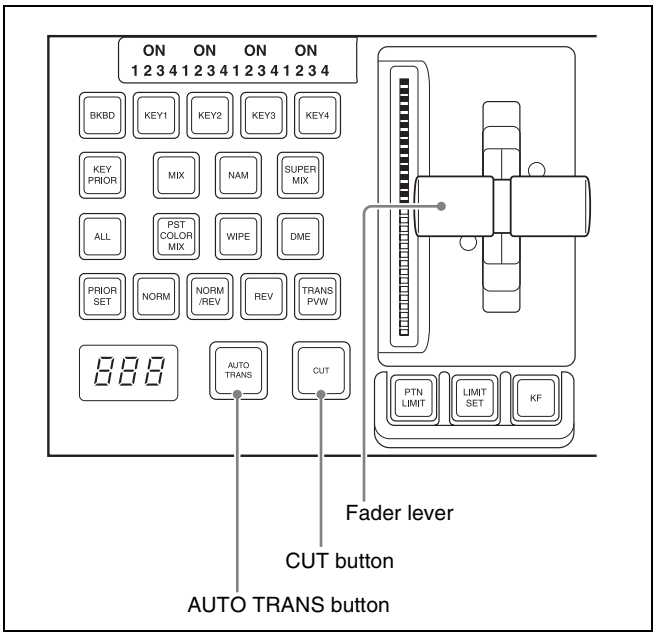
The following two modes can be used for auto transition.

Cut

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

Auto transition

The transition from the current video to the new video is carried out automatically at a constant rate, using the transition effect selected as the transition type.
You can set the transition rate in advance *(see page 94)*.



Transition control block (standard type)

To execute a transition on the M/E or PGM/PST bank by a button operation, use the following procedure in the transition control block.

To carry out an instantaneous cut transition: Press the [CUT] button.

To carry out a gradual transition: Press the [AUTO TRANS] button.
This executes the transition at the preset transition rate *(see page 94)*.
While the transition is executing, the [AUTO TRANS] button lights amber. When it completes the button goes off.

To complete a partially executed transition instantaneously: Press the [CUT] button.
The [AUTO TRANS] button goes off.

Executing a Transition With the Fader Lever (Manual Transition)

Using the fader lever, you can manually control the progress of the transition. 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 carry out 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.

Combinations of Auto and Manual Transitions

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

Moving the fader lever during an auto transition

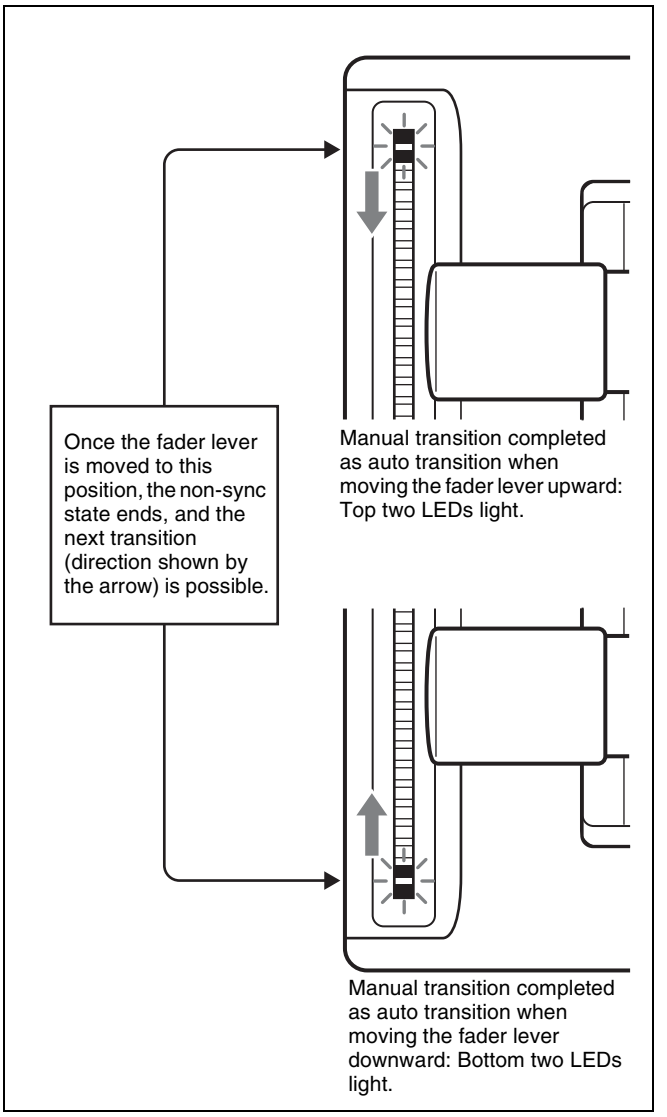
During an auto transition started by pressing the [AUTO TRANS] button, operating the fader lever immediately enables the fader lever, and the [AUTO TRANS] button goes off. Thereafter, the fader lever controls the progress of the transition.

Executing an auto transition after partly moving the fader lever

- Press the [CUT] button to instantaneously complete the transition.
- Press the [AUTO TRANS] button to complete the rest of the transition at the preset transition rate.
  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 carried out 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 a non-sync state.
In a non-sync state, two lit LEDs indicate the position from which a normal transition can be carried out. This is either at one end position or both end positions of the fader lever travel.
Moving the fader lever toward the position of the lit LEDs does not carry out a transition, but when the fader lever reaches the end position the non-sync state is released, and it is now possible to carry out the next transition.



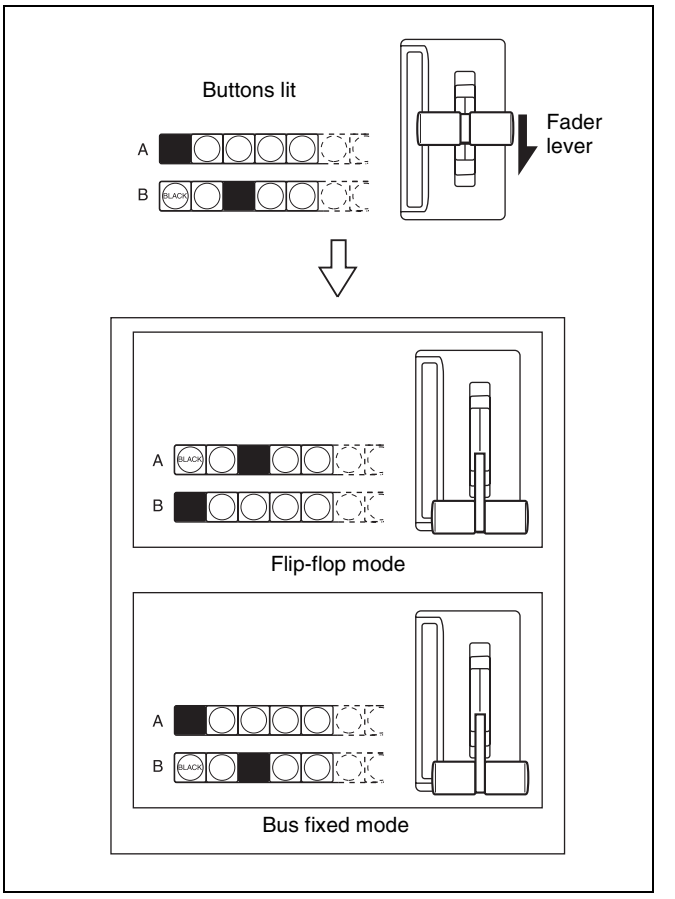
- If the fader lever is moved in the direction away from the lit LEDs, this carries out the next transition, over the remaining part of the fader lever travel.
- Even in a non-sync state, you can carry out an auto transition by pressing the [AUTO TRANS] button. During the auto transition, the indicators show the transition progress in the usual way, but when the transition completes, they once again indicate the non-sync state.

Fader Lever Operation in Bus Fixed Mode

Flip-flop mode and bus fixed mode

The following describes the difference between flip-flop mode and bus fixed mode, taking an M/E bank as an example; the functionality is the same, however, on the PGM/PST bank.

Normally, when a background transition is carried out on an M/E bank, the signals selected on the A and B rows of cross-point buttons 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. 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%.



Flip-flop mode and bus fixed mode

In the bus fixed mode there is a fixed relationship between the position of the fader lever and the signal output on each bus. Depending on the direction of the transition, the fader lever must therefore always be moved in a particular direction, as shown in the following table. This does not affect an auto transition, which is executed regardless of the fader lever direction.

Next transition	Transition direction	Fader lever movement
Background	A → B	Downward
	B → A	Upward
Keys 1, 2, 3, 4, 5, 6, 7, and 8	On → Off (deletion)	Downward
	Off → On (insertion)	Upward

- When a transition applies to a combination of more than one of the background and keys 1, 2, 3, 4, 5, 6, 7, and 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, this is a non-sync state *(see page 99)* and LEDs light at both end positions of the fader lever travel. Moving the fader lever does not carry out a transition, but when the fader lever reaches the end position the non-sync state is released, and it is now possible to carry out the next transition. If the fader lever is moved in the direction away from the lit LEDs, this carries out the next transition, over the remaining part of the fader lever travel.

Transition Preview

With the preview output of the M/E banks and PGM/PST bank, you can check the effect of a transition in advance. To carry out a transition preview, press the [TRANS PVW] button in the transition control block.

Notes

In multi-program mode, DSK mode or bus fixed mode *(page 100)*, it is not possible to carry out a transition preview.

Carrying out a transition preview

1 In the M/E or PGM/PST bank transition control block, press the [TRANS PVW] button.

The [TRANS PVW] button lights green, and the switcher is now in the transition preview mode. At this point, the preview output is the same as the program output before the [TRANS PVW] button was pressed.

2 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.

To terminate a transition preview

There are three modes for a transition preview. To terminate a transition preview, carry out the operation which depends on the mode, and press the [TRANS PVW] button, turning it off.

Lock: Toggling the [TRANS PVW] button on and off switches between the transition preview mode and the normal mode.

Hold: The preview mode obtains only while the [TRANS PVW] button is held down.

One Time: Each time a transition ends, it reverts to the normal mode.

Set the transition preview mode in the following combinations.

For details, see "Setting the Button Operation Mode" in Chapter 19 and "Settings Relating to Video Switching (Transition Menu)" in Chapter 20 (Volume 2).

Transition Preview mode	Switcher setup (Transition menu) <Transition Preview> group	Panel setup (Operation >Custom Button menu) <Trans Pvw> group
Lock	Normal	Lock
Hold	Normal	Hold

Transition Preview mode	Switcher setup (Transition menu) <Transition Preview> group	Panel setup (Operation >Custom Button menu) <Trans Pvw> group
One Time	One Time	–

Notes

- During a transition, whether executed with the [AUTO TRANS] button or the fader lever, it is not possible to press the [TRANS PVW] button.
- In bus fixed mode *(see page 100),* transition previews are not available.
- When using the simple-type transition control block *(see page 109),* transition previews are not available.

Independent Key Transitions

What is an 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. 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. It is also possible to use different transition types for key insertion and key deletion by means of a Setup menu setting *(see page 105)*.

Combining other 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 (dissolve) *(see page 85)* to the key simultaneously.

When carrying out such a combination of transitions simultaneously on a key as auto transitions *(see page 98)*, the result depends on the timing of pressing the respective [AUTO TRANS] buttons.

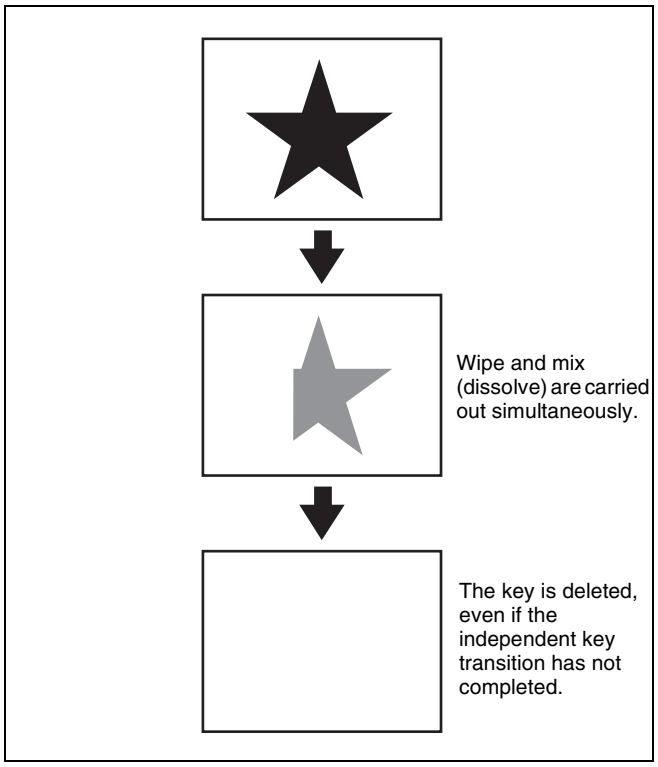
Simultaneous execution

If the [AUTO TRANS] buttons for the two transitions are pressed simultaneously, the following is the result.

Note that in both cases the common transition is a wipe and the independent key transition is a mix (dissolve).

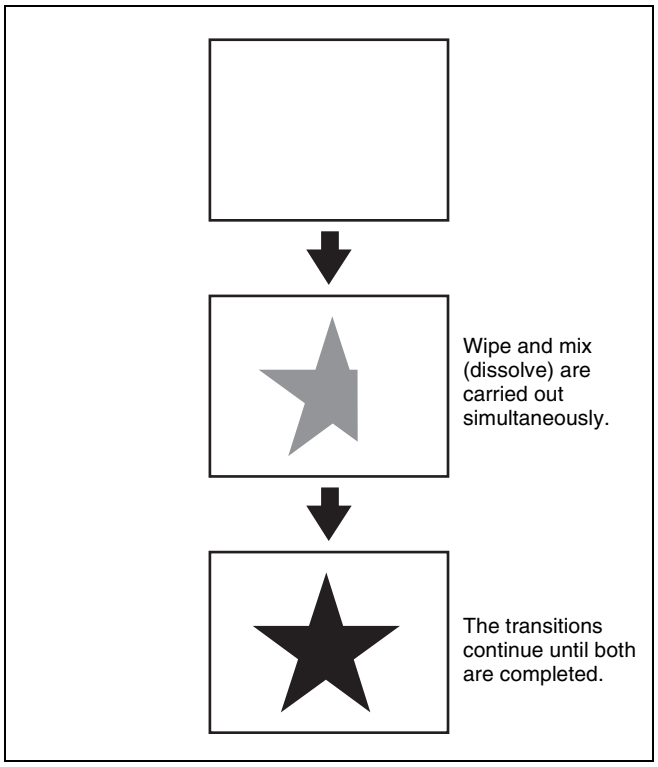
Deleting a key with simultaneous transitions: With the key inserted, it is deleted simultaneously with the two transitions.

When the common transition completes, even if the independent key transition is still not completed, the two end simultaneously.



Deleting a key with simultaneous transitions

Inserting a key with simultaneous transitions: With the key not inserted, it is inserted simultaneously with the two transitions. If the common transition or independent key transition ends first, the other continues to completion.

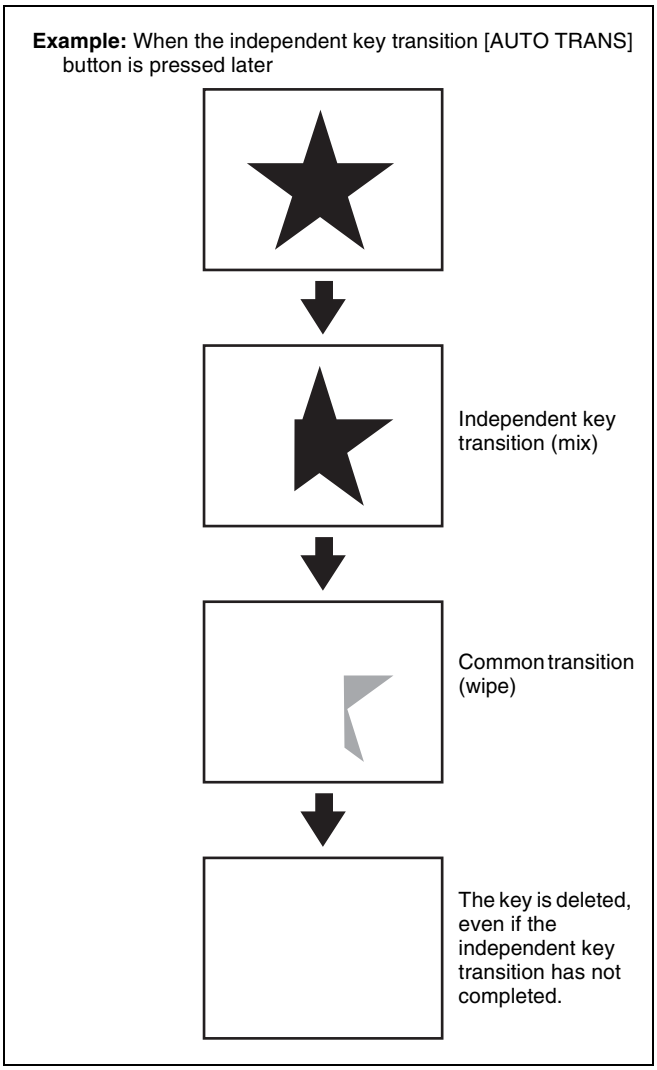


Inserting a key with simultaneous transitions

Time offset execution

If the [AUTO TRANS] buttons for the two transitions are pressed with a time offset, the following is the result. Note that in both cases the common transition is a wipe and the independent key transition is a mix (dissolve).

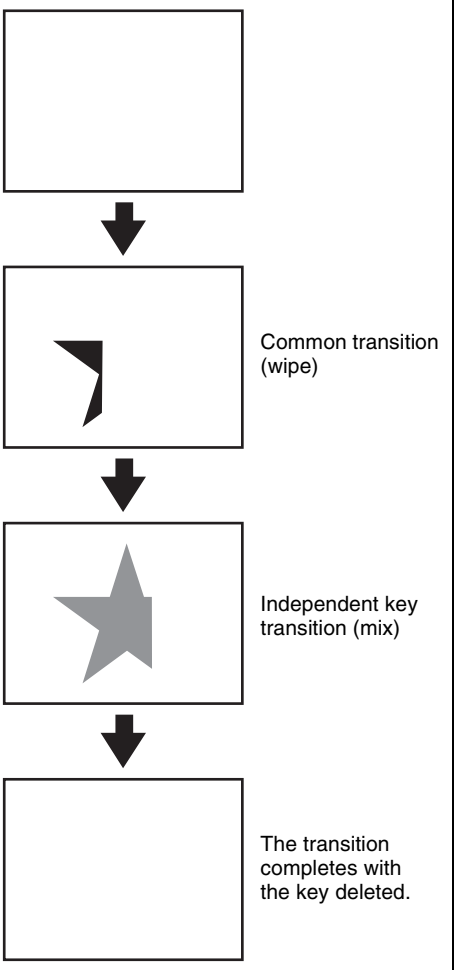
Time offset execution with the key inserted: With the key inserted, it is deleted with the two transitions acting with a time offset.
Whichever button is pressed first, when the common transition completes, even if the independent key transition is still not completed, the two end simultaneously.



Time offset execution with the key inserted

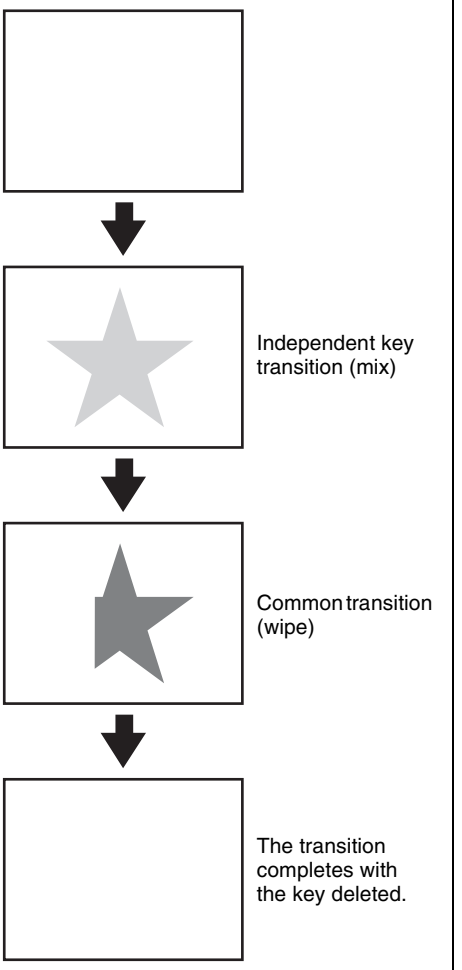
Time offset execution with the key not inserted: With the key not inserted, it is inserted with the transition whose [AUTO TRANS] button is pressed first. Since the key is then in the inserted state, with the transition whose [AUTO TRANS] button is pressed later, the key is deleted. When the key is completely deleted, both transitions complete.

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



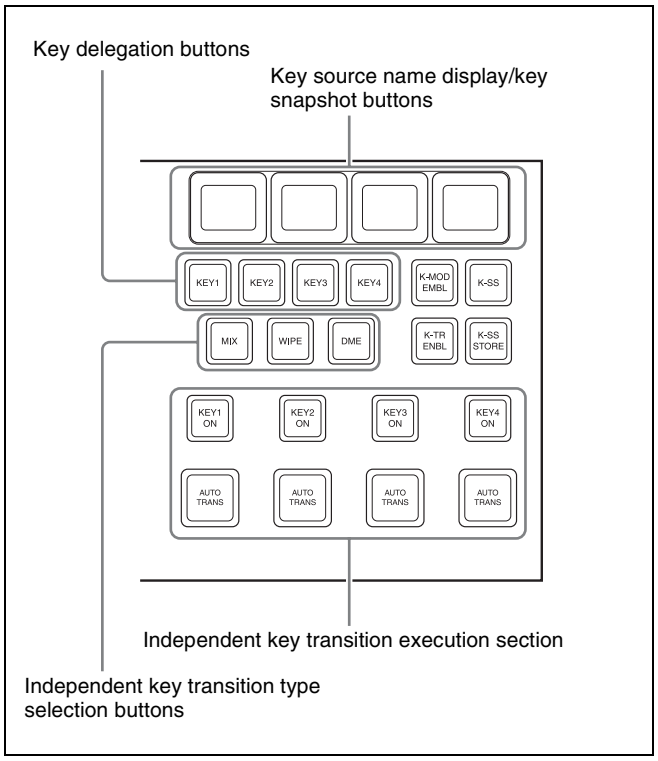
Time offset execution with the key not inserted

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



Time offset execution with the key not inserted

Basic Independent Key Transition Operations



Independent key transition control block (standard type)

To set independent transitions for the keyers on the M/E or PGM/PST bank, use the independent key transition control block.

1 Select one or more of the delegation buttons [KEY1] to [KEY4] ([DSK1] to [DSK4] in the PGM/PST bank), turning them on.

You can press more than one button at the same time.

Notes

The buttons for [Key5] to [Key8] and [DSK5] to [DSK8] require previous assignment in the Setup menu *(see page 381)*.

2 Select the transition type.

To fade a key in or out: Press the [MIX] button, turning it on.

To insert or delete a key using a dedicated wipe pattern: Press the [WIPE] button, turning it on.

To insert or delete a key using a dedicated DME wipe pattern: Press the [DME] button, turning it on.

To instantaneously insert or remove the key: press the [CUT] button, turning it on.

If, in the Setup menus, you set insertion and deletion as independent modes, make the settings for the next transition in the independent key transition control block.

Separate settings are required both when inserting a key and when deleting it. For example, with the key not inserted, if you select the transition type and carry out a transition, this will be the setting when inserting a key.

You can also use the Transition menu to select a desired independent key transition type for each key *(see the next section)*.

For details of the wipe settings, see "Wipe Settings for Independent Key Transitions" (page 164). For details of DME wipe settings, see "DME Wipe Settings for Independent Key Transitions" (page 182).

3 Execute the transition.

To insert or delete the key gradually with a mix or wipe transition: Press the [AUTO TRANS] button.

For details of the transition rate, see "Setting the Independent Key Transition Rate" (page 106).
For details of operation together with a common transition, see "Combining other transitions with independent key transitions" (page 102).

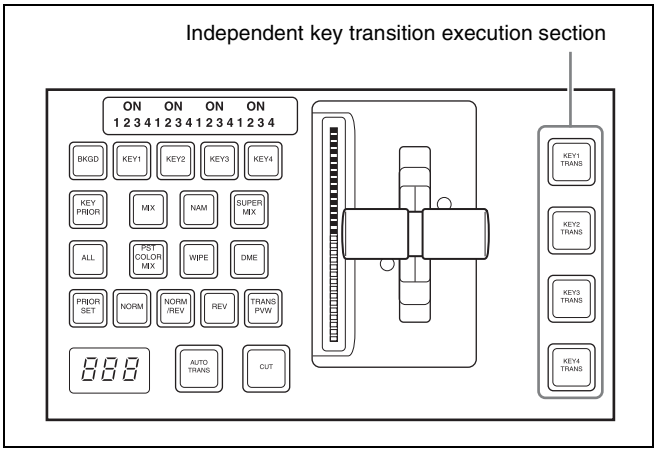
To cut the key in or out instantaneously: Press the [KEY ON] button on the keyer.

Notes

- In an independent key transition, the pattern limit function is not available.
- When the following DME effects are set, the effects may be applied during wipe transitions. If the effects are not necessary, cancel the settings.
  - Trail
  - Motion Decay
  - Wind

  When the Keyframe Strobe effect is set, operating keyframes do the same effect. Cancel the unnecessary settings.

Independent key transition operations when using the CCP-6224/6324 Control Panel



Transition control block (compact type)

To carry out an independent key transition, press the corresponding button in the independent key transition execution section of the transition control block.
The color of the button shows the status as follows.
Lit green: transition in progress.
Lit amber: key inserted.
Lit red: key inserted into final program output.
Off: no key inserted.

For details of setting the transition rate, see "Setting the transition rate in the Flexi Pad control block" (page 95).

Notes

The buttons for [Key5] to [Key8] and [DSK5] to [DSK8] require previous assignment in the Setup menu *(see page 381)*.

Setting the Independent Key Transition Type by a Menu Operation

You can also select the required independent key transition type by a menu operation.

1 In the M/E or PGM/PST menu, select first the desired one from VF1 'Key1' to VF4 'Key4,' then HF6 'Transition.'

The Transition menu for the selected appears.

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

If, in the Setup menus, you set insertion/deletion as independent modes, make the settings for insertion in the <On Transition Type> group, and the settings for deletion in the <Off Transition Type> group.

Setting the Independent Key Transition Rate

There are two ways of setting the transition rate: using the Flexi Pad control block, Multifunction Flexi Pad control block or numeric keypad control block to enter a numeric value, or using the Key menu to access the 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 of the M/E and PGM/PST banks, and change the settings *(see page 223)*.
When the setup selection is for separate transition rates for inserting or deleting a key, you can set both rates independently. For example, with the system in the state with the key not inserted, the transition rate setting applies to key insertion.

Setting the independent key transition rate in the Flexi Pad control block

Notes

In the PGM/PST bank or when using a simple-type transition control block, you cannot use the Flexi Pad control block to set the transition rate.

1 In the Flexi Pad control block of the M/E bank, hold down the [TRANS RATE] button, and in the independent key transition control block, press the delegation button [KEY1] to [KEY8] for the key for which you want to set the transition rate.

The memory recall section display is now ready to accept the entered independent key transition rate.

2 Enter the desired transition rate with the numeric keypad.

- Enter a value of up to three digits.
- To cancel the entry, press any of the six buttons in the leftmost column ([WIPE], [DME], ...) or the [TRANS RATE] button.

For details of frame input mode and timecode input mode, see page 95.

3 Press the [ENTR] button.

Setting the independent key transition rate in the numeric keypad control block

Notes

You cannot use the numeric keypad control block to set the transition rate for a simple transition.

1 In the numeric keypad control block, hold down the [TRANS RATE] button, and in the independent key transition control block, press the delegation button [KEY1] to [KEY8] ([DSK1] to [DSK8] in the PGM/PST bank) for the key for which you want to set the transition rate.

The numeric keypad control block changes to the mode for inputting the independent key transition rate, and its display now shows the corresponding region name and the current transition rate set for the region.

2 With the numeric keypad, enter the transition rate.

- Enter a value of up to three digits.
- To clear the entry value, press the [CLR] button.

For details of frame input mode and timecode input mode, see page 95.

3 Press the [ENTER] button.

This confirms the entry, and the selected region name and the set transition rate appear in the numeric keypad control block display.

To enter a difference from the current value

After pressing the [+/–] button, enter the difference and press the [TRIM] button.
To change the sign (+ or –), press the [+/–] button.

Setting the independent key transition rate in the Multifunction Flexi Pad control block

For example, to set the independent key transition rate for M/E-1 key1, carry out the following procedures.

1 In the Multifunction Flexi Pad control block, press the [TRANS RATE] button.

The Multifunction Flexi Pad control block switches to the transition rate setting mode.

2 In the region selection buttons, select the switcher bank.

3 Press the [TRANS SEL] button in the memory recall section.

You can select the type of transition for which to set the rate.

4 Press the [KEY1] button.

This enables setting of the independent key transition rate for M/E-1 key1.

5 Watching the alphanumeric display, enter the transition rate you want to set with the memory recall section button.

If required, press the [TC] button to switch the input mode (frame count input or timecode input).

- Enter a value of up to three digits.
- To cancel the input, press any of the mode selection buttons.

6 Press the [ENTR] button.

Setting the independent key transition rate by a menu operation

1 In the M/E or PGM/PST menu, select first the desired one from VF1 ‘Key1’ to VF4 ‘Key4,’ then HF6 ‘Transition.’

The Transition menu for the selected key appears.

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

If, in the Setup menus, you set insertion/deletion as independent modes, make the settings for insertion in the <On Transition Type> group, and the settings for deletion in the <Off Transition Type> group.

3 Turn the knob to set the transition rate.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition rate	0 to 999 (frame count)

Independent key transition rate display

To check the set independent key transition rate, press the key source name display/key snapshot button above the corresponding delegation button when the [K-SS] button is off.

Displaying the independent key transition rates in a menu and changing the settings

For each of the M/E and PGM/PST banks, you can also display the transition rate, independent key transition rate and fade-to-black transition rate, and change the settings *(see page 223)*.

Fade to Black

The PGM/PST bank provides a fade-to-black function, controlled with the [FTB] button in the fade to black control block.

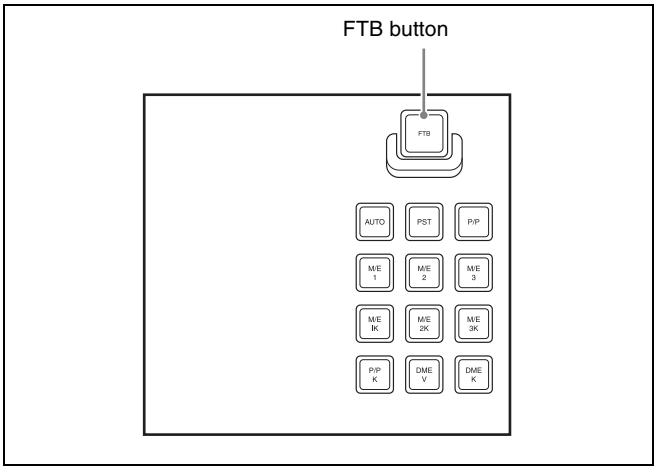
Notes

In multi-program mode or DSK mode, it is possible to carry out a fade-to-black on a number of programs simultaneously.

You can also make a Setup menu setting such that a fade-to-black does not apply to particular programs.

For details of the setting, see "Settings Relating to Video Switching (Transition Menu)" in Chapter 20 (Volume 2).

Fade to Black Operation



Fade to black control block

Carrying out a fade to black

Press the [FTB] button in the fade to black control block. The fade to black is carried out with the transition rate set for the program output of the PGM/PST bank.
During the transition, the [FTB] button lights amber. When the transition completes (the video is completely black), the button lit color changes to red.

Setting the Fade to Black Transition Rate

Setting the fade to black transition rate

1 In the PGM/PST menu, select first VF7 'Misc,' then HF1 'Transition.'

The Transition menu appears.

2 Select [FTB].

3 Turn the knob to set the fade to black transition rate.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition rate	0 to 999 (frame count)

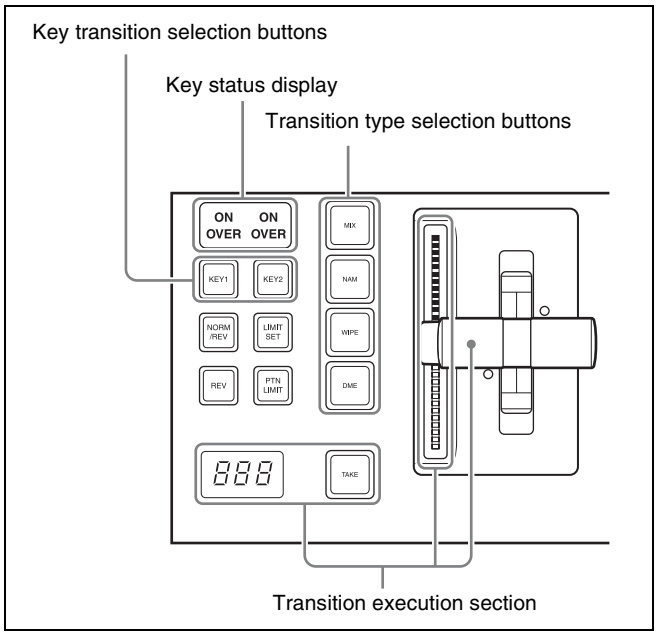
Displaying the transition rates in a menu and changing the settings

You can also display the transition rate, independent key transition rate, and fade-to-black transition rate for each of the M/E and PGM/PST banks, and change the settings *(see page 223)*.

Simple Transition

Basic Operations for Simple Transitions

A simple-type transition control block is used to carry out a transition.



Transition control block (simple right-hand type)

Notes

The simple transition control block cannot be installed in the CCP-6224/6324 Control Panel.

Carrying out a transition using a simple-type transition control block

1 With the background A row of cross-point buttons in the cross-point control block, select the background video.

2 Using one of the following methods, select the way in which the transition will affect the image.

Use a combination of the transition type selection buttons ([MIX], [NAM], [WIPE] and [DME]) and the next transition selection buttons ([KEY1] and [KEY2]).

For an overview of the mix, NAM, wipe, and DME wipe transition types, see "Transition Types" (page 85).

To change the background only: Press one of the [MIX], [NAM], [WIPE], and [DME] buttons. The [KEY1] and [KEY2]buttons go off, and the system changes to the background transition mode.

To insert or delete key 1: Hold down the [KEY1] button and press one of the [MIX], [NAM], [WIPE], and [DME] buttons.

To insert or delete key 2: Hold down the [KEY2] button and press one of the [MIX], [NAM], [WIPE], and [DME] buttons.

To insert or delete key 1 and key 2 simultaneously: Hold down the [KEY1] and [KEY2] buttons, and press one of the [MIX], [NAM], [WIPE], and [DME] buttons.

To use a super mix or preset color mix: Select [Super Mix] or [Preset Color Mix] in the Misc >Transition menu for the M/E or PGM/PST bank.

To set the key priority, use the Misc >Key Priority menu for the M/E or PGM/PST bank *(see page 89)*.

Notes

The transition type selection buttons ([MIX], [NAM], [WIPE], and [DME]) can be assigned to other transition types in setup.

For details, see "Setting Transition Control Block Button Assignments" in Chapter 19 (Volume 2).

3 Select the new background for after the transition.

- Select the background video with the background B row of cross-point buttons.
- To insert a key, select the key signal, and make various settings as required.

For details of key settings, see Chapter 4 "Keys" (page 112).

4 Depending on the transition type selected in step **2**, make the required settings.

For details of the settings, see the following sections:

Super mix: *"Super Mix Settings" (page 92)*
Preset color mix: *"Color Matte Settings" (page 92)*
Wipe: *"Basic Procedure for Wipe Settings" (page 152)*
DME Wipe: *"Basic Procedure for DME Wipe Settings" (page 176)*
Clip transition: *"Clip Transition Operations" (page 208)*

5 Carry out the transition in the transition execution section.

For a gradual transition such as a mix or wipe: Press the [TAKE] button, or operate the fader lever.

See "Setting the Transition Rate" (page 94) and "Pattern Limit" (page 97) as required.

Display of the Key Output Status and Key Priority

You can check the output status of keys 1 and 2 and the key priority setting, in the key status display in the transition control block.
The key status display includes two ON indicators corresponding to keys 1 and 2.

Display of the key output status

When the key is inserted in the output from the M/E or PGM/PST bank, the indication "ON" lights, and when it is not inserted, the indication goes off.

Key priority display

The key lying in front on the program monitor has an indication "OVER" lit.
To set the key priority, use the Misc >Key Priority menu for the M/E or PGM/PST bank *(see page 89)*.

Split Fader

What does "split fader" mean?

The term "split fader" refers to the function of carrying out a transition with the fader lever split into left and right halves, so that the background A and background B buses can be manipulated separately.
To use the split fader, the following conditions must be met.

- The fader lever is in bus fixed mode.
  For details, see "Selecting the Bank to Make the Settings" in Chapter 20 (Volume 2).
- The necessary settings have been made in a Setup menu to enable the split fader.
  For details, see "Selecting the Bank to Make the Settings" in Chapter 20 (Volume 2).
- A background is selected for the next transition.
- For the transition type, [MIX] or [NAM] is selected.

Split fader operation

The two halves of the split fader lever correspond to the buses as follows.
Right fader lever: Background A bus
Left fader lever: Background B bus
The relationship between the positions of the two fader levers and the image output in a mix is as follows.

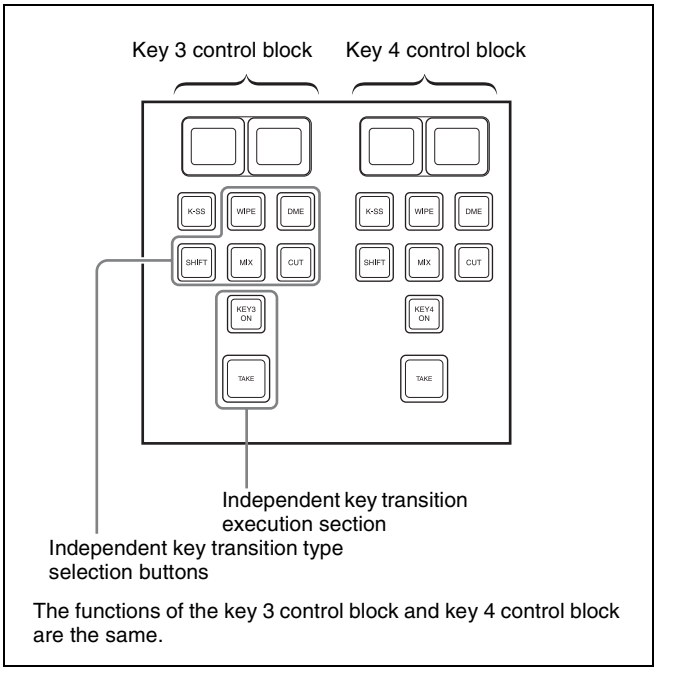
Left lever position	Right lever position	A bus output	B bus output
Top	Top	100%	0%
Bottom	Top	100%	100%
Top	Bottom	0%	0%
Bottom	Bottom	0%	100%
Center	Center	50%	50%

- When the transition type is NAM, the outputs of the A bus and B bus in the above table are the outputs subjected to NAM.
- The transition indicators always show the progress of the background A bus.
- The operation of the left lever and that of the right lever can be swapped.
  For details, see "Specifying Main Split Fader" in Chapter 19 (Volume 2).

Independent Key Transitions With a Simple Transition Module

You carry out independent key transition operations using the independent key transition control block (simple type). This controls only keys 3 and 4. However, each key button can be assigned to any key in setup.

For details , see "Assigning a Function to the Independent Key Transition Control Block (Simple Type)" in Chapter 19 (Volume 2).



Independent key transition control block (simple type)

Carrying out a transition using a simple-type independent key transition control block

1 Select the transition type for key 3 or key 4 using the independent key transition type selection buttons.

To fade a key in or out: Press the [MIX] button, turning it on.

To insert or delete a key using a dedicated wipe pattern: Press the [WIPE] button, turning it on.

To insert or delete a key using a dedicated DME wipe pattern: Press the [DME] button, turning it on.

For details of wipe settings, see "Wipe Settings for Independent Key Transitions" (page 164). For details of DME wipe settings, see "DME Wipe Settings for Independent Key Transitions" (page 182).

To cut the key instantaneously in or out: Press the [CUT] button, turning it on.

If, in the Setup menus, you set insertion and deletion as independent modes, make the settings for the next transition in the independent key transition control block.

Separate settings are required both when inserting a key and when deleting it. For example, with the key not inserted, if you select the transition type and carry out a transition, this will be the setting when inserting a key.

2 Carry out the transition in the independent key transition execution section.

To insert or delete the key gradually with a mix or wipe transition: Press the [TAKE] button.
To set the independent key transition rate using a simple-type transition control block, use the key 3 and key 4 Transition menus *(see page 106)*.

To cut the key in or out instantaneously: Press the [KEY 3 ON] button or [KEY 4 ON] button.

Notes

In an independent key transition, the pattern limit function is not available.

Chapter 4 Keys

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 “key source,” and the signal that replaces the cut-out part is termed “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).

Key Types

The key type indicates the manner in which the key source signal is used to cut out the background. In each bank, you can use the following key types. You can select the key type using the key type selection buttons in the key control block or Multi function Flexi Pad control block, or by a setting in the Type menu for the keyer *(see page 116)*.

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.

Linear key

This is a type of luminance key, but there is a reduced variability in gain, allowing more precise adjustment.

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.

Clean mode

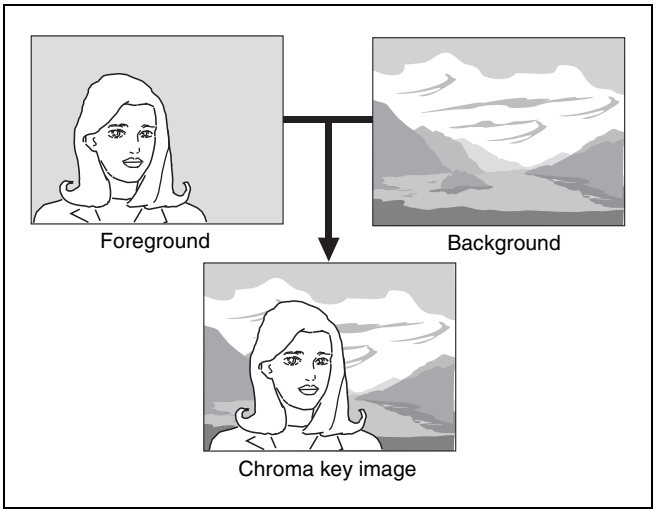
In a luminance key, linear key or color vector key, you can enable the clean mode. When the clean mode is on, the key source does not affect the key fill, which is added unchanged to the background. This improves the keyed image quality, but means that the part of the key fill signal which is not to be inserted must be completely black, or it will color the background. You set the clean mode with the Type menu of the respective keyer.

For details, see “Setting the key type in a menu” (page 116).

Note that in the following situations, the clean mode goes off, and cannot be turned on.
- When the key type is a pattern key
- When key inversion is on
- When the key fill is a matte
- When the key edge is an outline
- When the key edge is normal with soft edge being on
- When fine key is on
- When the key positioner is on

Chroma key

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.



For details of chroma key, see (page 119) and (page 120) .

Wipe pattern key

This uses the wipe pattern selected for a transition as the key source.

Key wipe pattern key

This uses the wipe pattern selected for an independent key transition as the key source.

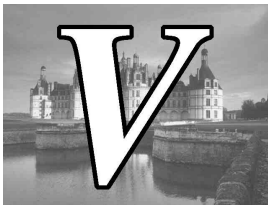
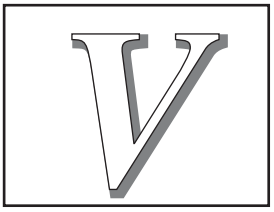
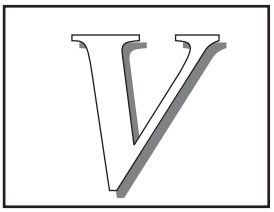
Note on wipe pattern modifiers

In a wipe pattern key or key wipe pattern key, you can apply various modifications, depending on the pattern used, and the modifiers in common with a wipe. However, modifiers which relate to the wipe direction and edge are not reflected.

Key Modifiers

Edge modifiers

You can apply borders and other effects to the edge of the key *(see pages 123 and 133)*.

Name	Effect	Image
Normal	This is the state with no key edge modifiers applied.	
Border	This applies a uniform width border to the edge of 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	This applies a border below and to the right for example, of the key. You can adjust the border width, position, and density.	
Shadow	This applies a shadow below and to the right for example, of the key. You can adjust the shadow width, position, and density.	
Outline	This uses the outline of the original key as the key. You can adjust the width and density of the outline. You can also enable the separate edge function, and adjust the top, bottom, left, and right outline widths separately.	
Emboss	This applies an embossing effect to the outline of the key. You can adjust the width and position of the embossing and the density. You can adjust the density separately for key fill and key edge. When embossing is on, the Fine Key and zabton functions go off.	–
Soft edge	This softens the edge of the key.	–
Zabton	This inserts a translucent pattern behind a key. 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 downward.

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 the 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 on, the edge width is forced to the range 0.00 to 4.00.

Note that in the following situations, the key drop mode is forcibly turned on.

- When the edge type is border, outline, or emboss
- When the edge type is normal with soft edge being on
- When Fine Key is on

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

Switch frame delay mode on.

Regardless of the fine key and edge type settings, key fill and key source are fixed in key drop off mode. In this mode key image has a one-frame delay.

Notes

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 modifier is selected, you can select a signal to fill these edge effects. 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.

Masks

A mask is used to inhibit the effect of a key over a part of the image. This allows parts of the background which would otherwise be keyed to be protected, or to correct the key if it is not of the desired shape.

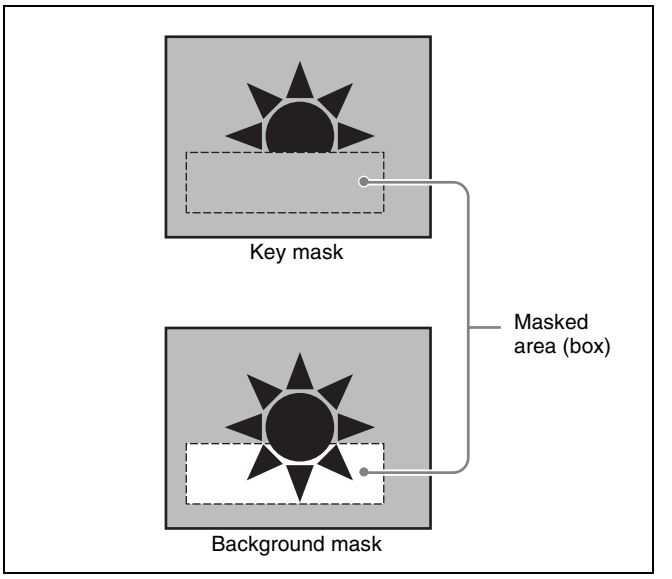
For details of masking operations, see “Masks” (pages 126 and 134).

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, which will result in the background appearing.

Background mask: This masks out a part of the background, which will result in the key fill appearing.



Main mask and subsidiary (“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 dedicated box generator provided on each keyer, or the signal from the dedicated pattern generator as the mask source.

When the box generator is selected, a rectangular mask is formed. You can adjust the positions of the four sides of the box separately.

When the 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 in 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 inversion, 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 transition (the same parameters as simple mode, Fine Key, key modifiers, main and sub mask settings, chroma key detailed settings, and so on)

For the settings for these modes, see "Selecting the Bank to Make the Settings" in Chapter 20 (Volume 2).

Key Default

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 keying, all adjustment values return to their default values.
- Key position
- Key inversion
- Clean mode

For details, see "Returning the key adjustment values to their defaults" (page 137).

For the menu operation to return the key adjustment values to their defaults, see "Returning to Default State in Function Groupings" (page 75).

Key Setting Operations Using Menus

There are two ways of making key settings: either using menus, or using the key control block or the Multifunction Flexi Pad control block.
This section describes basic procedures for making key settings using the menus, taking the M/E-1 >Key1 menu as an example.
Operations in the Key menus are the same for all banks (M/E-1 to M/E-3 and PGM/PST).

For details of the method of using the key control block, see "Key Setting Operations with the Key Control Block" (page 131).

Key Setting Menus

The key setting menus for each bank (M/E-1 to M/E-3 and PGM/PST) are as follows.

Bank	Keys set	Menus
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
PGM/PST	Downstream keys 1 to 8	PGM/PST >DSK1 to 8

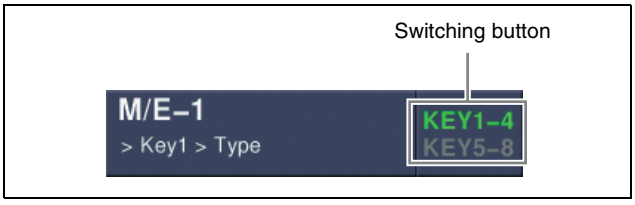
Notes

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

Accessing a key setting menu

For example, to access the M/E-1 >Key1 menu, carry out any of the following procedures.

- In the menu control block, select the top menu selection button [M/E 1], then press VF1 'Key1.'
  If VF1 'Key5' is shown, press the [KEY1-4] switching button at the top of the menu, turning it on, then press VF1 'Key1.'



- In the M/E-1 bank transition control block, press the KEY1 next transition selection button twice in rapid succession.
- In the M/E-1 bank independent key transition control block, press the key delegation button [KEY1] twice in rapid succession.
- In the key control block, press the M/E delegation button [M/E1], then press the key delegation button [KEY1] twice in rapid succession.

Note that you can access the DSK menus by pressing the button for the corresponding key in the downstream key control block twice in rapid succession.

Notes

- To select [M/E 4] with the top menu selection buttons, it is first necessary to assign a button in the Setup menu *(see page 380)*.
- To select [Key5] to [Key8], and [DSK5] to [DSK8] in the key control block, a previous assignment in the Setup menu is required *(see page 381)*.

Key Type Setting

Setting the key type in a menu

1 In the M/E-1 >Key1 menu, select HF1 'Type.'

The Type menu appears.

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 Carry out the following settings as required, depending on the key type selected in step **2**.

To enable clean mode *(see page 112)* for a luminance key, linear key or color vector key: Select [Clean Mode] so that it is set on.
When clean mode is enabled, key fill is added to the background without cutting out with key source.

When chroma key is selected: Select [Chroma Adjust] to access the Chroma Adjust menu *(see page 120)*, and make the required settings.

When a wipe pattern key is selected: In the M/E-1 >Wipe menu *(see page 152),* select the pattern and set any modifiers, then return to the M/E-1 >Key1 menu.

When a key wipe pattern key is selected: In the M/E-1 >Key1 >
Transition >Wipe Adjust menu *(see page 164)*, carry out pattern selection and modifier setting, then return to the M/E-1 >Key1 >Type menu.

Notes

For a wipe pattern selected for a wipe pattern key or key wipe pattern key, the [Edge] and [Direction] modifier settings are not available.

4 Set the parameters.

When a luminance key or linear key is selected

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for generating the key signal	+109.59 to –7.31
2	Gain	Key sensitivity	–100.00 to +100.00
3	Density	Key density	0.00 to 100.00
4	Filter	Filter coefficient	1 to 9 a)

a) Setting this value to 1, produces the "through" state in which no filter is applied. The larger the value, the more strongly the filter applies.

When a chroma key is selected

Knob	Parameter	Adjustment	Setting values
3	Density	Key density	0.00 to 100.00

When a color vector key is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Y Clip	Reference level for creating luminance signal	+109.59 to –7.31
2	Y Gain	Luminance signal sensitivity	–100.00 to +100.00
3	C Clip	Reference level for creating chrominance signal	100.00 to 0.00
4	C Gain	Chrominance signal sensitivity	–100.00 to +100.00
5	Density	Key density	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Y Filter	Luminance signal filter coefficient	1 to 9
2	C Filter	Chrominance signal filter coefficient	1 to 9

When a wipe pattern key or key wipe pattern key is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Degree of edge softness	0.00 to 100.00
3	Density	Key density	0.00 to 100.00

5 Make the following settings as required.

To invert the black and white sense 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 parameters.

Knob	Parameter	Adjustment	Setting values
1	H Phase	Key horizontal position	–4.00 to +4.00
2	Left	Key left edge position	–4.00 to +4.00
3	Right	Key right edge position	–4.00 to +4.00

To set the key priority: Press [Key Priority] or select VF7 'Misc' and HF3 'Key Priority' to access the Key Priority menu.

For details, see "Setting the Key Priority by a Menu Operation" (page 89).

Selecting Key Fill and Key Source

Notes

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

Selecting key fill and key source

To select key fill and key source for key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF1 'Type.'

The Type menu appears.

2 In the <Key Fill> group, select either of the following for use as key fill.

Key Bus: signal selected on the key 1 fill bus
Matte: signal from the dedicated color matte generator

3 If you selected [Key Bus] in step **2**, select the key fill signal on the key 1 row in the cross-point control block.

For the CCP-6224/6324 Control Panel, it is necessary to set the [AUX CTRL] button to Off in order to exit the AUX panel-less function *(see page 82)*.

4 If you selected [Matte] in step **2**, in the same Type menu, press the [Matte Adjust] button to display the Matte Adjust menu, then adjust the single-color or two-color combination color matte. Select whether to use a single-color matte or a two-color combination in the <Fill Matte> group.

Flat Color: Adjust color 1 with the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Mix Color: Carry out a color mix. Adjust color 1 and color 2, and select a mix pattern *(see the next section)*.

5 In the <Key Source> group, specify the key source selection mode.

Self: The key fill bus signal is automatically selected as the key source.
When the key type is selected as chroma key, select [Self].

Auto Select: The signal allocated, being paired with the key fill bus signal, to a cross-point button is automatically selected as the key source. The setting of key fill and key source pairs is carried out in the Setup menu.

For details, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 2).

Split: You can select a key source signal independently of the key source automatically selected in Auto Select mode.

6 When [Split] was selected in step **5**, hold down the [SPLIT] button in the key control block or the Multifunction Flexi Pad Control block, then in the cross-point control block key 1 row, select the key source signal. Alternatively, hold down the key delegation button in the transition control block and press a cross-point button in the key 1 row to select the key source signal.

Notes

- In the above-stated key 1 row operation, you can only select a key signal assigned to a cross-point

button. *For the method of selecting a video signal, see "To select a video signal assigned to a cross-point button" below.*

- When [Split] is selected, the key memory function *(see page 114)* is disabled.

To select a video signal assigned to a cross-point button

By selecting the key source bus with an auxiliary bus control block AUX delegation button, and pressing the cross-point button, it is possible to select the video signal assigned to the cross-point button.
(If you press the cross-point button with holding down [KEY], the key signal assigned to the cross-point button.)

Notes

In the above operation, the following settings must have been made.

- Assigning the key source bus to an AUX delegation button
  For details, see "Auxiliary Bus Control Block Settings (Aux Assign Menu)" in Chapter 19 (Volume 2).
- Setting the [KEY] button operating mode
  For details, see "Setting the Button Operation Mode" in Chapter 19 (Volume 2).

Selecting key source and key fill in the menu

Selecting key source

For example, to select the key source for M/E-1 key 1, use the following procedure.

1 In the <Key Fill> group of the M/E-1 >Key1 >Type menu, hold down [Key Bus].

2 Press [Signal Select].

The Signal Select menu appears.

3 In the <Target> group, press [Source].

4 In the <Key Source> group, select the key source selection mode (Self, Auto Select, or Split).

*See step **5** in "Selecting Key Fill and Key Source" (page 117).*

5 If you selected [Split], using any of the following methods, select the key source signal.

- Press directly on the list on the right.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Setting	Values
1	No	Button number	1 to 300

6 In the <Assign> group, select the video signal or key signal from the V/K pair to assign to the key source.

7 Press [Set Xpt].

This selects the key source signal.

Selecting key fill

For example, to select the key fill for M/E-1 key 1, use the following procedure.

1 In the M/E-1 >Key1 >Type menu status area, press "Fill."

The Signal Select menu appears.

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

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

4 Press [Set Xpt].

This selects the key fill signal.

Carrying out a color mix for key fill

When [Matte] is selected for key fill, you can combine color 1 and color 2. For the combination, you can use not only a key wipe generator pattern, but also the dedicated pattern for key edge color mix.

1 In the <Key Fill> group of the Type menu, select [Matte] and press [Matte Adjust].

The Matte Adjust menu appears.

2 Select [Mix Color] in the <Fill Matte> group.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Soft	Softness of the edge of the pattern	0.00 to 100.00

4 Select the combining pattern in the <Mix Pattern> group.

Key Wipe: The wipe pattern selected for an independent key transition is used for combination. You can change this pattern by pressing [Pattern Select] to open the menu for key wipe pattern selection (Pattern Select menu), and make adjustments by pressing [Pattern Adjust] to open the menu for pattern adjustment (Wipe Adjust menu).

Key Edge Pattern: Combine using the dedicated pattern selected for the color mix in the key edge fill. You can change this pattern by pressing [Pattern Select] to open the menu for edge color mix dedicated wipe pattern selection (Mix Pattern Select menu), and make adjustments by pressing [Pattern Adjust] to open the menu for pattern adjustment (Matte Adjust menu).

For details, see "Carrying out a color mix for the key edge fill matte" (page 124).

5 In the Type menu, adjust color 1 and color 2.

To adjust color 1, select [Color1], and to adjust color 2, select [Color2], then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

6 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Chroma Key Composition and Basic Settings

In creating a chroma key image, either a normal mix or an additive mix can be used. To select which, use the Type >Chroma Adjust menu for the keyer.

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.

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 prevent this, it is possible to set a particular luminance level for the background, and any parts below this level are cut forcibly.

Composing an image by chroma keying

1 In the M/E-1 >Key1 menu, select HF1 'Type.'

2 Select [Chroma] in the <Key Type> group.

It becomes possible to adjust the key density *(see page 116)*.

3 Select [Chroma Adjust].

The Chroma Adjust menu appears.

4 Carry out auto chroma key adjustments.
Also carry out manual adjustments if necessary to obtain an optimum chroma key image.

5 In the <Mix Mode> group, select [Normal Mix] or [Additive Mix] depending on the desired type of chroma key composition.

When using an additive mix for chroma keying, the (typically blue) background parts of the foreground video must be converted to black. For this, use the color cancel function *(see page 121)*.

Using the plane function

In an additive mix, since no key is applied to the foreground, any variations in the (typically blue) background may 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.

1 In the Chroma Adjust menu, set [Plane] on.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance level	0.00 to 100.00

Key Adjustments (Menus)

This section describes key adjustments made by a menu operation.
You can adjust the following functions by a menu operation.

- Chroma Key Adjustment *(page 120)*
- Key Edge Modifications *(page 123)*
- Masks *(page 126)*
- Applying a DME effect to a key *(page 127)*
- Specifying the Key Output Destination *(page 129)*
- Key Modify Clear *(page 130)*
- Blink Function *(page 130)*
- Video Processing *(page 130)*

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 this function is off, only the foreground is output and you can make adjustments of color cancel *(see the next paragraph)*.

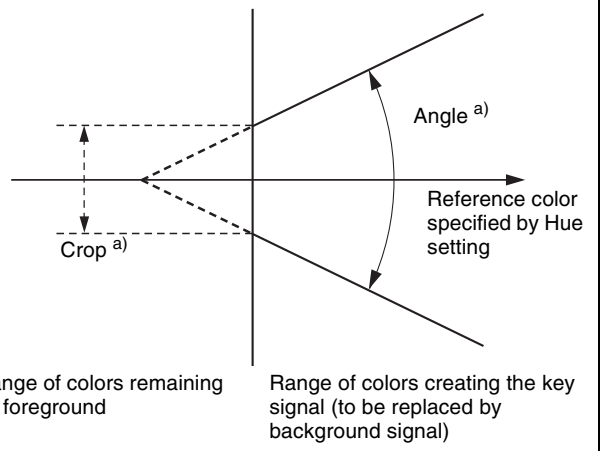
Color cancel

If the foreground image includes shades of the background color, turn this function on to remove the color from the foreground image.

Chroma key window

You can adjust the range over which the key signal is determined as matching the specified hue. When this adjustment is off the default ranges are used.

Chroma keying generates a key signal based on a particular color (reference color) in the foreground (typically a plain 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.
As seen on a vectorscope (that is, in the hue-saturation color space), the range for this matching corresponds to a truncated sector. This range is specified by two parameters: the "Angle" parameter, which determines the range of the hue parameter, and the "Crop" parameter, which determines the degree of truncation *(see the following figure)*.



a) The Crop and Angle values do not change even if you use the auto chroma key function.

Window adjustment

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. This can therefore be used to provide an impression of smoke, for example.
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 provides a more realistic treatment when the shadow of an object in the field of view falls on the blue background. 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.

Making auto chroma key adjustments

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 menu, select HF1 ‘Type,’ then select [Chroma] in the <Key Type> group.

2 Select [Chroma Adjust].

The Chroma Adjust menu appears.

3 Select [Sample Mark] in the <Auto> group.

The foreground video only appears on the monitor, with a white box-shaped sample selector.

4 Adjust the position and size of the sample selector, to specify the color to be used as the basis of chroma keying (typically a blue background).

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–100.00 to +100.00 a)
2	Position V	Vertical position	–100.00 to +100.00 a)
3	Size	Size	1.00 to 100.00

a) The setting ranges depend on the signal format, screen aspect ratio, and size settings.

5 Select [Auto Start] in the <Auto> group.

This executes an auto chroma key based on the color specified by the sample selector, and displays the composite image on the monitor.

Making key active adjustments

When the key active function is on, 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 off, only the foreground image appears. Set this off when manually adjusting color cancel *(see the next section)*.

1 In the Chroma Adjust menu, set [Key Active] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Clip	Chroma key reference level	0.00 to 100.00
2	Gain	Key gain	–100.00 to +100.00
3	Hue	Hue	359.99 to 0.00
4	Density	Density	0.00 to 100.00
5	Filter	Filter coefficient	1 to 9

Making color cancel adjustments

If the background color is leaking into the foreground video, turning the color cancel function on allows you to eliminate this leakage.

1 In the Chroma Adjust menu, turn [Key Active] off.

Only the foreground image appears on the monitor.

2 In the <Color Cancel> group, set [Color Cancel] on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00
5	Filter	Filter coefficient	1 to 9

4 Set [Key Active] on.

The chroma key composite image now appears in the monitor.

Making key signal adjustments for color cancel

When the color cancel function is set on, you can adjust the key signal for color cancel.

1 In the <Color Cancel> group of the Chroma Adjust menu, set [Color Cancel] on.

2 In the <Color Cancel> group, set [Cancel Key] on.

The cancel key is now on, and you can now adjust the key signal for color cancel.

Knob	Parameter	Adjustment	Setting values
1	Clip	Color cancel key reference level	0.00 to 100.00
2	Gain	Color cancel key gain	–100.00 to +100.00

3 Make the following settings, as required, in the <Color Cancel> group.

When setting [Key Position] on and adjusting the color cancel key edge position

Knob	Parameter	Adjustment	Setting values
1	H Phase	Move left and right edges of the color cancel key simultaneously	Left edge position value shown

Knob	Parameter	Adjustment	Setting values
2	Left	Move left edge of the color cancel key	–3.00 to +3.00
3	Right	Move right edge of the color cancel key	–3.00 to +3.00

When setting [Window] on and adjusting the detection range of the color cancel key

Knob	Parameter	Adjustment	Setting values
1	Crop	Crop value	100.00 to 0.00
2	Angle	Angle value	180.00 to 0.00

For details of the crop and angle parameters, see "Chroma key window" (page 120).

When setting [Y Balance] on and adjusting the ratio in which Y balance is added to the color cancel key

Knob	Parameter	Adjustment	Setting values
1	Mixture	Ratio of Y balance key	0.00 to 100.00

Adjusting the window

Setting the window *(see page 120)* function on allows you to adjust the detection range used to determine the key signal. When this function is off, the default range is used for the key.
After making sure that the values of Clip, Gain, and Hue are adjusted appropriately, use the following procedure to make the window adjustment.

1 In the Chroma Adjust menu, set [Window] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Crop	Crop value	100.00 to 0.00
2	Angle	Angle value	180.00 to 0.00

Adjusting the Y balance

Setting the Y balance *(see page 120)* on 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 Chroma Adjust menu, set [Y Balance] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Clip	Luminance range	0.00 to 100.00
2	Gain	Key gain	–100.00 to +100.00
3	Luminance	Luminance	0.00 to 100.00

Adjusting the chroma key shadow

This function allows a shadow falling on the (typically blue) background color to be rendered more realistically. Since portions of the (blue) background of less than a certain luminance are treated as shadows, there is no effect on cutting out of the foreground.

1 In the Chroma Adjust menu, set [Shadow] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Reference luminance for shadows	0.00 to 100.00
2	Gain	Shadow key gain	–100.00 to +100.00
3	Density	Shadow opacity	0.00 to 100.00
4	Soft	Shadow softness	0.00 to 100.00

Notes

When chroma key shadow is on, key edge is changed to normal, and soft edge is switched off.

Adjusting the video signal

You can change the gain of the foreground signal, or vary the Hue. There are separate adjustments for the gain of the whole video signal, or Y and C individually.

1 In the Chroma Adjust menu, set [FRGD CCR] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Overall gain of video signal	–100.00 to +100.00
2	Y Gain	Y signal gain	–100.00 to +100.00
3	C Gain	C signal gain	–100.00 to +100.00
4	Hue	Hue offset amount	–180.00 to +180.00

Key Edge Modifications

To modify the key edge of key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF2 'Edge.'

The Edge menu appears.

2 Select the edge type *(see page 113)* in the <Edge> group.

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 you select [Normal], skip to step **7**.

3 Set the border width and other parameters.

When border or outline is selected: The setting parameters depend on the key type and whether the separate edge function is enabled or not. To enable the separate edge function, press [Separate Edge], setting it on.

- **Separate edge off**

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0.00 to 8.00 a) (0.00 to 100.00) b)
3	Density	Density	0.00 to 100.00

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0.00 to 4.00.
b) When a wipe pattern key or key wipe pattern key is selected as the key type

- **Separate edge on**
  The left, right, top, and bottom border or outline widths can be adjusted independently. The separate edge function is only valid when a luminance key, linear key, or chroma key is selected as the key type.

Knob	Parameter	Adjustment	Setting values
1	Top	Top edge width	0.00 to 8.00 a)
2	Left	Left edge width	0.00 to 8.00 a)
3	Right	Right edge width	0.00 to 8.00 a)
4	Bottom	Bottom edge width	0.00 to 8.00 a)
5	Density	Density	0.00 to 100.00

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0.00 to 4.00.

When drop border or shadow is selected: The setting parameter values depend on the on/off setting of key drop and the selection of 4H mode/ 8H mode *(see page 114)*.

- **"Key drop off" mode**

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0.00 to 8.00 a)
2	Position	Position	359.99 to 180.00
3	Density	Density	0.00 to 100.00

- **"Key drop on" mode**

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0.00 to 8.00 a)
2	Position	Position	359.99 to 0.00
3	Density	Density	0.00 to 100.00

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0.00 to 4.00.

When emboss is selected:

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0.00 to 4.00
2	Position	Position	359.99 to 0.00
3	Density a)	Density	0.00 to 100.00

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, the embossed edge effect only can be applied.

To make edge fill adjustments, carry out the settings in step **6**.

4 Select the edge fill signal in the <Edge Fill> group.

Utility 1 Bus: signal selected on the utility 1 bus
Matte: signal from dedicated color matte generator. It becomes possible to adjust color 1.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

When the edge type is outline, in place of the edge fill signal, the selected key fill signal fills the outline, and elsewhere remains as the background.

5 Carry out the following operation, depending on the selection in step **4**.

When [Utility 1 Bus] is selected: Hold down the [UTIL] button in the cross-point control block, and select the signal in the background A bus row. While the [UTIL] button is held down, the background A bus changes to the utility 1 bus.

Notes

To enable the [UTIL] button, its operation mode must be set to [Hold] beforehand.

For details, see "Setting the Button Operation Mode" in Chapter 19 (Volume 2).

When [Matte] is selected: Press [Matte Adjust] in the same EDGE menu, to display the Matte Adjust menu, and adjust a single color or two-color combination color matte.
You can select whether to use a single color matte or a two-color combination color matte in the <Edge Matte> group.

For the color mix operation, see "Carrying out a color mix for the key edge fill matte" (page 124).

6 When emboss is selected for the edge type, adjust the color in the <Emboss Fill> group.

To adjust matte 1 press [Matte1], and to adjust matte 2 press [Matte2], then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

7 To make the edge soft, press [Soft Edge] to set it on, and adjust the softness.

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0.00 to 100.00

For a normal edge, when [Soft Edge] is enabled, [Key Drop] is kept on.

8 To make separate fine adjustments to the positions of the left, right, top, and bottom of the source edge, press [Fine Key], to set it on, and adjust the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Key top edge position	–2.00 to +2.00
2	Left	Key left edge position	–2.00 to +2.00
3	Right	Key right edge position	–2.00 to +2.00
4	Bottom	Key bottom edge position	–2.00 to +2.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	H Phase	Key horizontal position	Left edge position value shown
2	V Phase	Key vertical position	Top edge position value shown

Notes

In the emboss function it is not possible to set [Fine Key] on.

- When the edge type is normal, drop border or shadow, enabling the [Fine Key] function keeps [Key Drop] on.
- When applying a border to the key edge, enabling the [Fine Key] function halves the border width setting range.

To fix key fill and key source in key drop off mode

1 In the Edge menu, press [Key Delay Mode].

The Key Delay Mode menu appears.

2 Press [Frame Delay], setting it to On.

Notes

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.

Carrying out a color mix for the key edge fill matte

When you select 'Matte' 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 Edge menu, select [Matte], then press [Matte Adjust].

The edge fill Matte Adjust menu appears.

2 In the <Edge Matte> group, select [Mix Color], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Softness of pattern edge	0.00 to 100.00
3	Pattern	Pattern number	1 to 24 [a)]

a) The patterns are the same as standard wipes. *(For details, see "Wipe Pattern List" in (page 344).)*

To select the pattern, display the Mix Pattern Select menu by pressing [Mix Pattern] in the edge fill Matte Adjust menu.
After selecting one of the patterns (standard wipe patterns 1 to 24) displayed in the Mix Pattern Select menu, you can adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Softness of pattern edge	0.00 to 100.00

4 Adjust color 1 and color 2.

To adjust color 1 press [Color 1], and to adjust color 2 press [Color 2], turning it on respectively, and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

5 If required, set the pattern modifiers.

When turning [Position] on and setting the pattern position

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See *page 158*.

When turning [Multi] on and replicating the pattern

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See *page 160*.

When turning [Aspect] on and setting the aspect ratio of the pattern

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See *page 160*.

When turning [Angle] on in the <Rotation> group and inclining the pattern

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See *page 159*.

When turning [Speed] on in the <Rotation> group and rotating the pattern at a constant speed

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See *page 159*.

6 To interchange color 1 and color 2, press [Color Invert], turning it on.

Applying the zabton effects

1 In the Edge menu, press [Zabton], turning it on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Pattern edge softness	0.00 to 100.00
3	Density	Density	0.00 to 100.00

Notes

If in the pattern selection described below you select "Mask Pattern," and "Box" for the main mask, the "Size" parameter here cannot be adjusted. Set "Size" in the Main Mask menu.

3 To adjust the pattern and color, press [Zabton Adjust].

The Zabton Adjust menu appears.

4 In the <Zabton Pattern> group, select the pattern.

Key Wipe: Use a key wipe.
You can change this pattern by pressing [Pattern Select] to open the menu for key wipe pattern selection (Pattern Select menu), and make adjustments by

pressing [Pattern Adjust] to open the menu for pattern adjustment (Wipe Adjust menu).

Key Edge Pattern: Use a color mixing pattern for key edge.
You can change this pattern by pressing [Pattern Select] to open the menu for edge color mix dedicated wipe pattern selection (Mix Pattern Select menu), and make adjustments by pressing [Pattern Adjust] to open the menu for pattern adjustment (Matte Adjust menu).

Mask Pattern: Use the main mask Box or Pattern.

You can also press [Pattern Select], and in the corresponding pattern adjustment menu, change the pattern.

5 To adjust the color, press [Zabton Color] and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00
4	Density	Density	0.00 to 100.00

Masks

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 subsidiary mask.
You can either use the main mask and subsidiary mask independently, or at the same time.

Using the main mask

For example, to use the main mask for key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF3 'Main Mask.'

The Main Mask menu appears.

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 the dedicated box generator
Pattern: signal from the dedicated pattern generator

4 Set the mask source parameters.

When a box is selected

Knob	Parameter	Adjustment	Setting values
1	Top	Top position	–100.00 to +100.00
2	Left	Left position	–100.00 to +100.00
3	Right	Right position	–100.00 to +100.00
4	Bottom	Bottom position	–100.00 to +100.00
5	Soft	Box softness	0.00 to 100.00

When a pattern is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00
5	Pattern	Pattern number	1 to 24 a)

a) The pattern is the same as a standard wipe. *(See "Wipe Pattern List" in Appendix (Volume 1) (page 344).)*

To select the pattern, display the Mask Ptn Select menu by pressing the [Mask Ptn Select] button in the Main Mask menu.
After selecting one of the patterns (standard wipe patterns 1 to 24) displayed in the Mask Ptn Select menu, you can adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

5 To invert the black and white sense of the mask source, press the [Mask Invert] button, turning it on.

6 When a pattern is selected as the mask source, set the pattern modifiers as required.

When turning [Position] on and setting the pattern position

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See *page 158*.

When turning [Multi] on and replicating the pattern

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63

Knob	Parameter	Adjustment	Setting values
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See *page 160*.

When turning [Aspect] on and setting the aspect ratio of the pattern

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See *page 160*.

When turning [Angle] on in the <Rotation> group and setting the angle of the pattern rotation

Knob	Parameter	Adjustment	Setting values
1	Angle	Pattern angle	–100.00 to +100.00 a)

a) See *page 159*.

When turning [Speed] on in the <Rotation> group and setting the rate of pattern rotation

Knob	Parameter	Adjustment	Setting values
1	Speed	Rate of pattern rotation	–100.00 to +100.00 a)

a) See *page 159*.

Using the subsidiary mask

For example, to use the subsidiary mask for key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF4 'Sub Mask.'

The Sub Mask menu appears.

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
If you select [Wipe], select the pattern and make modifier settings in the M/E-1 >Wipe menu *(see page 152),* then return to this M/E-1 >Key1 menu. In the case of a wipe pattern selected for a mask, the modifier [Edge] and [Direction] settings are not available.

Utility 1 Bus: signal selected on the utility 1 bus
When you selected [Utility 1 Bus], hold down the [UTIL] button in the M/E-1 bank cross-point control block, and select the signal with the background A bus buttons. While the [UTIL] button is pressed, the background A bus switches to the utility 1 bus.

Notes

To enable the [UTIL] button, its operation mode must be set to [Hold] beforehand.

For details, see "Assigning a Bus to an AUX Delegation Button" in Chapter 19 (Volume 2).

4 Set the mask source parameters.

When wipe is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

When utility 1 bus is selected

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for creating mask signal	+109.59 to –7.31
2	Gain	Gain	–100.00 to +100.00

5 To invert the black and white sense of the mask source, press the [Mask Invert] button, turning it on.

Applying a DME Effect to a Key

Notes

- 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.

- MVS-8000X

Applicable block	Key to which DME effects are applied	DME wipe pattern for background	Number of keys to which DME effects can be applied simultaneously
Other than M/E-4	Keys 1 to 4	No DME wipe used	2
		One-channel mode	1
		Two- or three-channel mode	0
	Keys 5 to 8	-	2 a)
M/E-4	Keys 1 to 4	No DME wipe used	2 b)
		One-channel mode	1 c)
		Two- or three-channel mode	0
	Keys 5 to 8	-	0

- 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	No DME wipe used	2
	One-channel mode	1
	Two- or three-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. (Requires a setting in setup.)
For details, see "Setting DME and Switcher Interfaces" in Chapter 20 (Volume 2).

Assigning a DME to a key

1 In the M/E-1 >Key1 menu, select HF5 'Processed Key.'

The Processed Key menu appears.

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: Shows the DME assigned to the currently selected key.
Lit amber: Shows the DME assigned to a key other than the currently selected key.
Off: DME is not assigned.

To select a DME being used by another keyer
Press [Override], turning it on, then select the DME channel.
The later selection is valid, and the button lights green.

Using two or three DME channels on one keyer

When using the DME dedicated interface, proceed as follows.

Notes

- 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 above restriction also applies if using the MVE-8000A. There is no such restriction for the MKS-7470X/7471X.

1 Select the DME for the first channel *(see the previous item, "Assigning a DME to a key"),* then select the successive channel for the second channel. For the third channel select the channel after that.

2 To select the video signal for the second channel, hold down the [UTIL] button in the cross-point control block, and select the signal in the Key1 row (DME external video bus).

3 To select the video signal for the third channel, hold down the [UTIL] button in the cross-point control block, and carry out the following operation.

- If the selected DME is channel 3 or channel 4, turn off the [KEY4] button in the key 2 row, then select the signal in the key 2 row (DME utility 1 bus).
- If the selected DME is channel 7 or channel 8, turn on the [KEY4] button in the key 2 row, then select the signal in the key 4 row (DME utility 2 bus).

Using four DME channels on one keyer

When using the DME dedicated interface, proceed as follows.

Notes

- On the MVS-8000X, when the signal format is 1080P, this operation cannot be carried out.
- On the MVS-7000X, when the signal format is 1080P, the above restriction also applies if using the MVE-8000A. There is no such restriction for the MKS-7470X/7471X.

1 Select the DME channel 1 (or channel 5) for the first channel *(see "Assigning a DME to a key" (page 128))*. In the same way, select the DME channel 2 (channel 6) for the second channel, the DME channel 3 (channel 7) for the third channel, and the DME channel 4 (channel 8) for the fourth channel.

2 To select the video signal for the second channel, hold down the [UTIL] button in the cross-point control block, and select the signal in the Key1 row (DME external video bus).

3 To select the video signal for the third channel, hold down the [UTIL] button in the cross-point control block, and carry out the following operation.

- If the selected DME is channel 3, turn off the [KEY4] button in the key 2 row, then select the signal in the key 2 row (DME utility 1 bus).
- If the selected DME is channel 7, turn on the [KEY4] button in the key 2 row, then select the signal in the key 4 row (DME utility 2 bus).

4 To select the video signal for the fourth channel, hold down the [UTIL] button in the cross-point control block, and carry out the following operation.

- If the selected DME is channel 4, turn on the [KEY4] button in the key 2 row, then select the signal in the key 4 row (DME utility 2 bus).
- If the selected DME is channel 8, turn off the [KEY4] button in the key 2 row, then select the signal in the key 2 row (DME utility 1 bus).

When using the SDI interface

The operations to select the video signals for the third and fourth channels differ from those in the previous procedure: select the video signals on the AUX bus allocated in a Setup menu (Engineering Setup >Switcher >Device Interface >DME Type Setting >DME SDI Interface menu).

Notes

In setup (Engineering Setup >Switcher >Device Interface menu), if "Dual DME units" is selected, the second channel video signal is also selected on the AUX bus.

For details, see "Setting the Interface Between the DME and the Switcher" in Chapter 19 (Volume 2).

You can check the DME operating status in the Status menu *(see page 225)*.

Assigning a DME output signal as a monitor signal

1 In the Processed Key menu, press [Monitor].

The Monitor menu 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 colors with which [DME1] to [DME8] are lit show the key assignment status.
Lit green: DME currently being monitored
Lit amber: DME that can be monitored
Off: Unassigned DME

Specifying the Key Output Destination

Using the key processed keyer signals (external processed key)

To select the key processed keyer key fill and key source signals on the AUX bus or edit preview bus, press [Ext Proc Key] turning it on, in the Processed Key menu.
This assigns the key fill and key source signals for M/E-1 key 1 to reentry signals PROC V and PROC K.
When a DME is selected on the keyer, the key fill and key source signals to which a DME effect is applied are assigned.

Notes

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

Using the key processed keyer signals or signals to which a DME effect is applied in frame memory (frame memory feed)

To use the key processed keyer key fill and key source signals on the frame memory source buses, in the Processed Key menu, press [FM Feed]. [Ext Proc Key] turns on, and the key fill and key source signals processed on the currently selected keyer are automatically assigned to frame memory source buses 1 and 2. When a DME is selected on the keyer, the key fill and key source signals to which a DME effect is applied are assigned.

Key Modify Clear

A simple button operation or a menu operation returns the key settings to the initial status settings.
Press [Default Recall] at the lower left of the menu display, turning it on, then press the corresponding VF button (VF1 to VF4) to return the key settings to their initial status.

For details of the initial status, see "Saving User-Defined Settings" in Chapter 18 (Volume 2).
For the menu operation to return the key state to that set in initial status, see "Returning to Default State in Function Groupings" (page 75).

Blink Function

With the blink function, you can obtain the following effects.

Key blink: The key is alternately inserted and deleted at regular intervals. You can set the period of blinking, and the proportion of each cycle for which the key is inserted.

Edge blink: The key fill and key edge fill signals are interchanged at regular intervals. You can set the period of blinking, and the proportion of each cycle for which the original state holds.

The blink settings are in the Transition menu for each key.

Using the blink function

For example, to make the required settings for key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF6 'Transition.'

The Transition menu appears.

2 In the <Blink> group, select [Key Blink] or [Edge Blink] to set it on.

3 Set the blink parameters.

When key blink is selected

Knob	Parameter	Adjustment	Setting values
1	Blink Rate	Length of blink cycle	1 to 100
2	Duty	Proportion of cycle for which key inserted	0.00 to 100.00

When edge blink is selected

Knob	Parameter	Adjustment	Setting values
1	Blink Rate	Length of blink cycle	1 to 100
2	Duty	Proportion of cycle for which original state holds	0.00 to 100.00

Video Processing

You can adjust the luminance and hue of the selected key fill signal.
For example, to apply video processing to the signal selected on the M/E-1 bank key 1 fill bus, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF7 'Video Process.'

The Video Process menu appears.

2 Press [Video Process], turning it on.

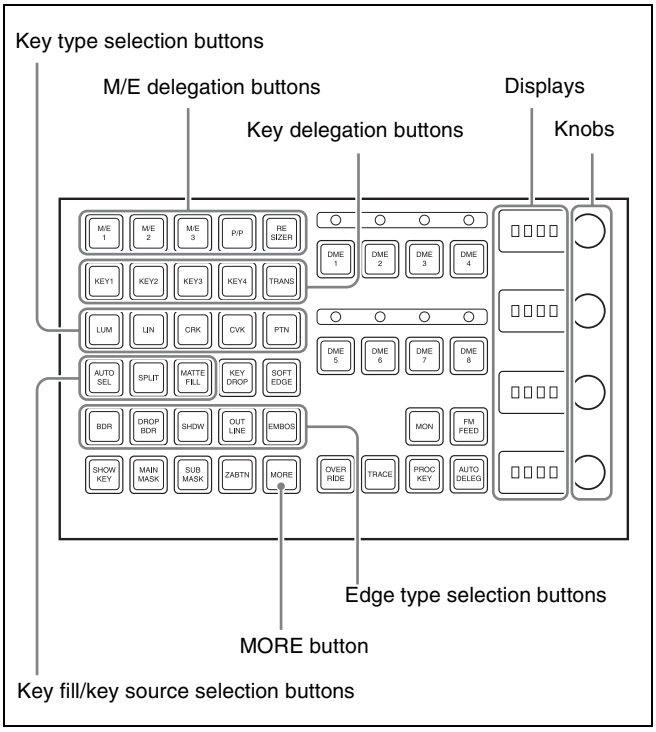
3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video gain	–200.00 to +200.00
2	Y Gain	Luminance gain	–200.00 to +200.00
3	C Gain	Chrominance gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Luminance black level	–7.31 to +109.59

To return adjustment values to their defaults
Press [Unity].

Key Setting Operations with the Key Control Block

This section describes the basic procedures for key settings using the key control block.



Notes

To select [M/E 4], [Key5] to [Key8], and [DSK5] to [DSK8] in the key control block, a previous assignment in the Setup menu is required *(see page 381)*.

Selecting the Bank and Keyer

To make key settings, first select the bank (from M/E-1 to M/E-3 and PGM/PST) and keyer, then assign them to the key control block.
For example, to set key 1 on M/E-1 with the key control block, use the following procedure.

1 Using the M/E delegation buttons in the key control block, press the [M/E1] button, setting it on.

2 Using the key delegation buttons in the key control block, press the [KEY1] button, setting it on.

This assigns the key control block to M/E-1 key 1.

Selecting the Key Type

To select the key type, press one of the key type *(see page 112)* selection buttons in the key control block.
[LUM] button: luminance key
[LIN] button: linear key
[CRK] button: chroma key
[CVK] button: color vector key
[PTN] button: key wipe pattern key
When using a wipe pattern key as the key type, in the <Key Type> group of the Type menu for the keyer, select [Wipe Pattern] and make the settings.

The button you pressed lights green, and you can now adjust the parameters with the knobs. The display beside each knob shows the first letter of the parameter name and the three-digit setting value.

Parameter Adjustment with the Knobs

When the button for a function requiring parameter settings is pressed (that is, on), you can set the parameters with the four knobs. If there are more than four values to be assigned to the knobs, the [MORE] button lights amber. At this point, press the [MORE] button, which turns green, to assign the fifth and subsequent parameters to the knobs, so that the parameter settings can be made.

When the [LUM] or [LIN] button is lit green

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for generating the key signal	+109 to –7
2	Gain	Key sensitivity	–100 (shown as –00) to +100
3	Density	Key density	0 to 100
4	Filter	Filter coefficient	1 to 9

When the [CRK] button is lit green

Knob	Parameter	Adjustment	Setting values
1	Clip	Chroma key reference level	0 to 100
2	Gain	Key sensitivity	–100 (shown as –00) to +100
3	Hue	Hue	0 to 359
4	Density	Key density	0 to 100

- When [Key Active] is off, only the parameters Hue and Density are displayed.
- When both [Key Active] and [Color Cancel] are off, only the parameter Density is displayed.

When the [CVK] button is lit green

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Y Clip	Reference level for Y signal	+109 to –7
2	Y Gain	Y signal sensitivity	–100 (shown as –00) to +100
3	C Clip	Reference level for chrominance signal	100 to 0
4	C Gain	Chrominance signal sensitivity	–100 (shown as –00) to +100

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Y Filter	Y signal filter coefficient	1 to 9
2	C Filter	Chrominance signal filter coefficient	1 to 9
4	Density	Key density	0 to 100

When the [PTN] button is lit green

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0 to 100
2	Soft	Edge softness	0 to 100
3	Density	Key density	0 to 100

Selecting Key Fill

Select whether to use a color matte as key fill, or the signal on the key fill bus.

When using a color matte: Press the [MATTE FILL] button, setting it on. The button lights green, and you can now set the parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Color 1 luminance	0 to 100
2	Saturation	Color 1 saturation	0 to 100
3	Hue	Color 1 hue	359 to 0

When [Mix Color] is selected in the key fill Matte Adjust menu, you can further adjust color 2.

When [Mix Color] is on, and the [MORE] button is lit amber

Knob	Parameter	Adjustment	Setting values
1	Luminance	Color 1 luminance	0 to 100
2	Saturation	Color 1 saturation	0 to 100
3	Hue	Color 1 hue	359 to 0
4	Size	Pattern size	0 to 100

When [Mix Color] is on, and the [MORE] button is lit green

Knob	Parameter	Adjustment	Setting values
1	Luminance	Color 2 luminance	0 to 100
2	Saturation	Color 2 saturation	0 to 100
3	Hue	Color 2 hue	359 to 0
4	Soft	Edge softness	0 to 100

When using the key fill bus signal: Press the [MATTE FILL] button, turning it off.

To select the key fill signal, use the key 1 or key 2 bus buttons in the cross-point control block.

For the CCP-6224/6324 Control Panel, it is necessary to set the [AUX CTRL] button to Off in order to exit the AUX panel-less function *(see page 82)*.

Selecting Key Source

- To use the key source paired with the key fill signal selected on the key fill bus, press the [AUTO SEL] button, turning it on. The pairing of the cross-point buttons for key fill and key source is carried out in the Setup menu.
  For details, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 2).
- To select key source independently of the key fill signal selected on the key fill bus and paired with key source, hold down the [SPLIT] button, turning it on, then press the desired Key 1 or Key 2 button in the cross-point control block.
- To use as key source the same signal as the key fill signal selected on the key fill bus, select the SELF mode by pressing the [AUTO SEL] button and [SPLIT] button simultaneously so that both are off. When chroma key is selected as the key type, select the SELF mode.

Key Adjustments (Key Control Block)

This section describes the various key adjustments provided by the control panel key control block.

Key Edge Modifications

To apply a modification to the key edge *(see page 113)*, press one of the edge type selection buttons in the key control block.

[BDR] button: border
[DROP BDR] button: drop border
[SHDW] button: shadow
[OUTLINE] button: outline
[EMBOS] button: emboss

The pressed button lights green, and you can now adjust the parameters with the knobs. The display beside each knob shows the first letter of the parameter name and the three-digit setting value.

Setting the border parameters

When the [BDR] button is lit green, the parameter settings depend on the key type and whether the separate edge function is active. To activate the separate edge function, press [Separate Edge], setting it on, in the Edge menu for the key.

Separate edge off

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0 to 8 a) (0 to 100) b)
4	Density	Border density	0 to 100

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0 to 4.
b) When a wipe pattern key or key wipe pattern key is selected as the key type

Separate edge on
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, or chroma key is selected as the key type.

Knob	Parameter	Adjustment	Setting values
1	Top	Top edge width	0 to 8 a)
2	Left	Left edge width	0 to 8 a)
3	Right	Right edge width	0 to 8 a)
4	Bottom	Bottom edge width	0 to 8 a)

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0 to 4.

To adjust the edge fill color
When [BDR] is selected, the [MORE] button lights amber. Pressing the [MORE] button to turn it green then allows you to adjust the edge fill color parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0 to 100
2	Saturation	Saturation	0 to 100
3	Hue	Hue	359 to 0
4	Density	Density	0 to 100

Setting the drop border or shadow parameters

When the [DROP BDR] or [SHDW] button is lit green, the parameter settings differ between the "key drop OFF" and "key drop ON" modes *(see page 114)* as shown below. Switching between these two modes is made by turning the [KEY DROP] button on or off.

"Key drop OFF" mode

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0 to 8 a)
2	Position	Position	359 to 180
4	Density	Density	0 to 100

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0 to 4.

"Key drop ON" mode

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0 to 8 a)
2	Position	Position	359 to 0
4	Density	Density	0 to 100

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0 to 4.

To adjust the edge fill color
When [DROP BDR] or [SHDW] is selected, the [MORE] button lights amber. Pressing the [MORE] button to turn it green then allows you to adjust the edge fill color parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0 to 100
2	Saturation	Saturation	0 to 100
3	Hue	Hue	359 to 0
4	Density	Density	0 to 100

Setting the outline parameters

When the [OUTLINE] button is lit green, the parameter settings depend on the key type and whether the separate

edge function is active. To activate the separate edge function, press [Separate Edge], setting it on, in the Edge menu for the key.

Separate edge off

Knob	Parameter	Adjustment	Setting values
1	Width	Outline width	0 to 8 a) (0 to 100) b)
4	Density	Outline density	0 to 100

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0 to 4.
b) When a wipe pattern key or key wipe pattern key is selected as the key type

Separate edge on
The outline 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, or chroma key is selected as the key type.

Knob	Parameter	Adjustment	Setting values
1	Top	Top edge width	0 to 8 a)
2	Left	Left edge width	0 to 8 a)
3	Right	Right edge width	0 to 8 a)
4	Bottom	Bottom edge width	0 to 8 a)

a) In the "4H mode" and when [Fine Key] *(page 124)* is on, the setting value range is 0 to 4.

When [Outline] is selected with separate edge on, the [MORE] button lights amber. Pressing the [MORE] button to turn it green then allows you to adjust the key fill density parameter with a knob.

Knob	Parameter	Adjustment	Setting values
4	Density	Outline density	0 to 100

Setting the embossing parameters

When the [EMBOS] button is lit green, adjust the following parameters.

Knob	Parameter	Setting values
1	Width	0 to 4
2	Position	359 to 0
4	Density	0 to 100

Selecting a normal edge

When all five edge type selection buttons are off, a normal edge is selected. If one of the buttons is lit, press it, turning it off.

Softening the edge

Press the [SOFT EDGE] button, turning it on. The button lights green, and you can now adjust the softness with the knob.

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0 to 100

- For a normal edge, when [SOFT EDGE] is enabled, "Key Drop" mode turns on.
- When a luminance key or linear key is selected as the key type, and clean mode is enabled, enabling [SOFT EDGE] ends the clean mode.

Applying the zabton effects

When the [ZABTN] button is lit green, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0 to 100
2	Soft	Pattern edge softness	0 to 100

Press the [MORE] button lit amber, changing it to green, then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0 to 100
2	Saturation	Saturation	0 to 100
3	Hue	Hue	359 to 0
4	Density	Density	0 to 100

Masks

Using the main mask

In the key control block, press the [MAIN MASK] button, turning it on.
The parameter settings depend on the mask source selected as [Box] or [Pattern] in the <Mask Source> group of the Main Mask menu for the key.

When box is selected

Knob	Parameter	Adjustment	Setting values
1	Top	Top position	–100 (shown as –00) to +100
2	Left	Left position	–100 (shown as –00) to +100
3	Right	Right position	–100 (shown as –00) to +100
4	Bottom	Bottom position	–100 (shown as –00) to +100

When box is selected and the [MORE] button is lit amber, there are more settings. Press the [MORE] button, so that it changes from amber to green to make the extra setting.

Knob	Parameter	Adjustment	Setting values
1	Soft	Box softness	0 to 100

When pattern is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0 to 100
2	Soft	Edge softness	0 to 100
3	Pattern	Pattern number	1 to 24 a)

a) The pattern is the same as a standard wipe. *(See "Wipe Pattern List" (page 344).)*

Using the subsidiary mask

In the key control block, press the [SUB MASK] button, turning it on. The parameter settings depend on the mask source selected as [Wipe] or [Utility 1 Bus] in the <Mask Source> group of the Sub Mask menu for the key.

When wipe is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0 to 100
2	Soft	Edge softness	0 to 100

When utility 1 bus is selected

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for creating mask signal	+109 to –7
2	Gain	Gain	–100 (shown as –00) to +100

Applying a DME Effect to a Key

Notes

- 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.

- MVS-8000X

Applicable block	Key to which DME effects are applied	DME wipe pattern for background	Number of keys to which DME effects can be applied simultaneously
Other than M/E-4	Keys 1 to 4	No DME wipe used	2
		One-channel mode	1
		Two- or three-channel mode	0
	Keys 5 to 8	-	2 a)
M/E-4	Keys 1 to 4	No DME wipe used	2 b)
		One-channel mode	1 c)
		Two- or three-channel mode	0
	Keys 5 to 8	-	0

- 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	No DME wipe used	2
	One-channel mode	1
	Two- or three-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. (Requires a setting in setup.)
  For details, see "Setting DME and Switcher Interfaces" in Chapter 20 (Volume 2).

Assigning a DME to a key

1 In the key control block, press the delegation buttons [M/E1] and [KEY1].

2 Using the DME channel selection buttons, select the DME channel (DME1 to DME8) for applying the effect.

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

To select a DME being used by another keyer
Press [Override], turning it on, then select the DME channel.
The later selection is valid, and the button lights green.

Using two or three DME channels on one keyer

When using the DME dedicated interface, proceed as follows.

Notes

On the MVS-800X, 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 above restriction also applies if using the MVE-8000A. There is no such restriction for the MKS-7470X.

1 Select the DME for the first channel *(see the previous item, "Assigning a DME to a key"),* then select the successive channel for the second channel. For the third channel select the channel after that.

2 To select the second channel video signal, hold down the [UTIL] button in the cross-point control block, and select the signal in the Key1 row (DME external video bus).

3 To select the third channel video signal, when the selected DME is Ch3 or Ch4, select the signal on the DME utility 1 bus. When the selected DME is Ch7 or Ch8, select the signal on the DME utility 2 bus.

For details of the method of signal selection, see "Bus Selection" (page 79).

Using four DME channels on one keyer

When using the DME dedicated interface, proceed as follows.

Notes

- When the signal format is 1080P, this operation cannot be carried out.
- On the MVS-7000X, when the signal format is 1080P, the above restriction also applies if using the MVE-8000A. There is no such restriction for the MKS-7470X/7471X.

1 Select the DME channel 1 (or channel 5) for the first channel *(see "Assigning a DME to a key" (page 135)).* In the same way, select the DME channel 2 (channel 6) for the second channel, the DME channel 3 (channel 7) for the third channel, and the DME channel 4 (channel 8) for the fourth channel.

2 For the second channel video signal, select the signal on the DME external video bus.

3 To select the third channel video signal, when the selected DME is Ch3, select the signal on the DME utility 1 bus. When the selected DME is Ch7, select the signal on the DME utility 2 bus.

4 To select the fourth channel video signal, when the selected DME is Ch4, select the signal on the DME utility 2 bus. When the selected DME is Ch8, select the signal on the DME utility 1 bus.

For details of the method of signal selection, see "Bus Selection" (page 79).

When using the SDI interface

The operations to select the video signals for the third and fourth channels differ from those in the previous procedure: select the video signals on the AUX bus allocated in a Setup menu (Engineering Setup >Switcher >Device Interface >DME Setting >DME SDI Interface menu).

Notes

When using a second key in combination with a dedicated interface, select the signal to be used on the AUX bus.
You can check the DME operating status in the Status menu *(see page 225).*

Assigning the DME output signal to a monitor signal

1 Holding down the output destination specification button [MON] in the key control block, use the DME channel selection buttons to select the DME channel (DME1 to DME8) you want to use.

The selected DME output is assigned to DME MON V and DME MON K.

2 To check the DME assignment status, hold down just the [MON] button.

While it is held down, the lit color of the [DME1] to [DME8] buttons shows the key assignment status.
Lit green: Shows the DME currently being monitored.
Lit amber: Shows a DME which can be monitored.
Off: DME is not assigned.

Other Key Setting Operations

Using an external processed key

You can select and use the key processed keyer key fill and key source signals on the AUX buses.

1 Select the keyer to be allocated.

2 In the key control block, press [PROC KEY], turning it on.

The button lights amber, and on the currently selected keyer, the key fill and key source are assigned to reentry signals PROC V and PROC K.

When a DME is selected on the currently selected keyer, the key fill and key source signals to which the DME effect is applied are assigned to PROC V and PROC K.

Notes

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

Using a frame memory feed

When you press the [FM FEED] button in the key control block, it lights momentarily amber, then the key fill and key source signals processed in the currently selected keyer are assigned to frame memory sources 1 and 2.
If a DME is selected on the currently selected keyer, then the key fill and key source signals to which a DME effect is applied are assigned to frame memory sources 1 and 2.
Carrying out a frame memory feed causes the [PROC KEY] button to light amber.

Using the show key function

While the [SHOW KEY] button is held down, the key-processed key source signal appears on the specified output. (Show key mode)
Even when the [SHOW KEY] button is released, for a preset time the show key mode is maintained. You can specify the output to which the show key function is applied and set the time for which the show key mode is maintained after releasing the button in a Setup menu.

For details see "Settings for the Show Key Function" in Chapter 20 (Volume 2).

Using the auto delegation function

To couple the selection in the key delegation buttons of the independent key transition control block so that the key control block delegation selection is automatically switched, in the key control block press the [AUTO DELEG] button, turning it on.

Returning the key adjustment values to their defaults

Holding down a key type button ([LUM], [LIN], [CRK], [CVK], or [PTN]) recalls the key default values *(page 115)*.

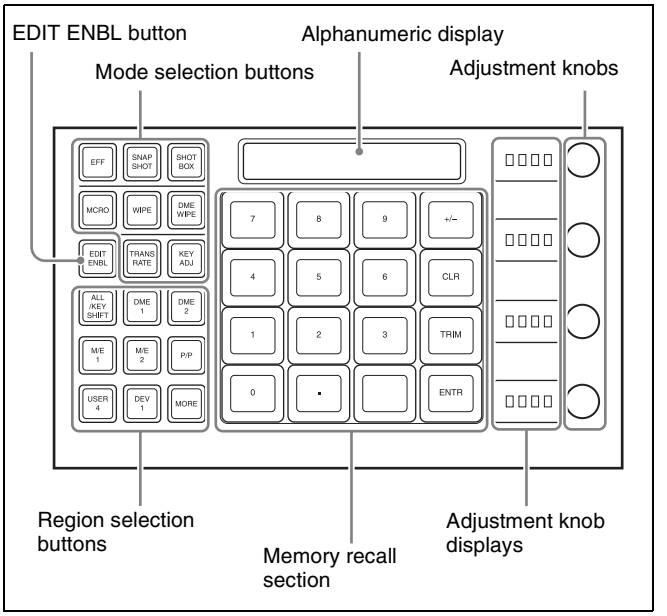
Key modify clear

When an M/E delegation button is held down, holding down a key delegation button together returns the key settings to the initial status settings.

For details of the initial status, see "Saving User-Defined Settings" in Chapter 18 (Volume 2).

Key Adjustments (Multifunction Flexi Pad Control Block)

This section describes basic key adjustment operations when using the Multifunction Flexi Pad control block.



Notes

To select [M/E 4], a previous assignment in the Setup menu is required *(see page 380)*.

Selecting the switcher bank and keyer

Before carrying out key adjustment, first select the key adjust mode, then select the switcher bank and keyer. For example, to adjust key 1 on M/E-1, proceed as follows.

1 In the Multifunction Flexi Pad control block mode selection buttons, press [KEYADJ].

2 Press the [M/E1] region selection button.

3 Press the [KEY SHIFT] button, turning it off.

4 In the memory recall section, press the [KEY1] button.

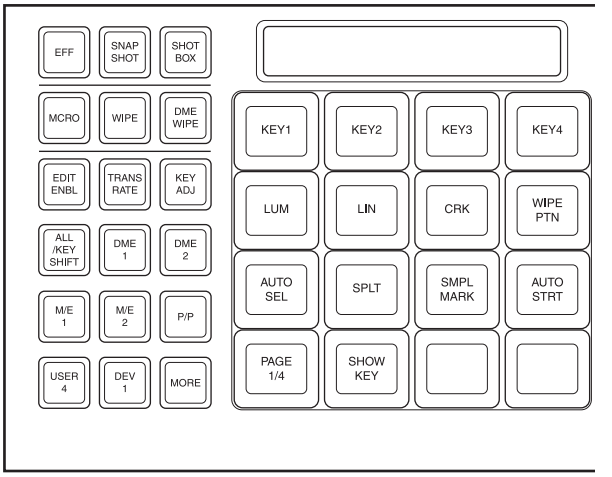
Notes

To select keys 5 to 8, in step **3** press [KEY SHIFT], turning it on, then press one of buttons [KEY5] to [KEY8] in the memory recall section to select the key.

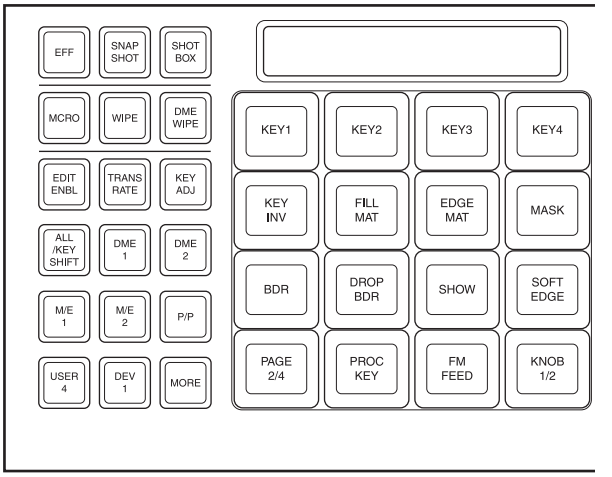
The button displays in the memory recall section now appear as shown in the following illustration.

Pressing the [PAGE 1/4] > [PAGE 2/4] > [PAGE 3/4] buttons further changes the display as follows, then pressing [PAGE 4/4] returns to the original display shown in the illustration.

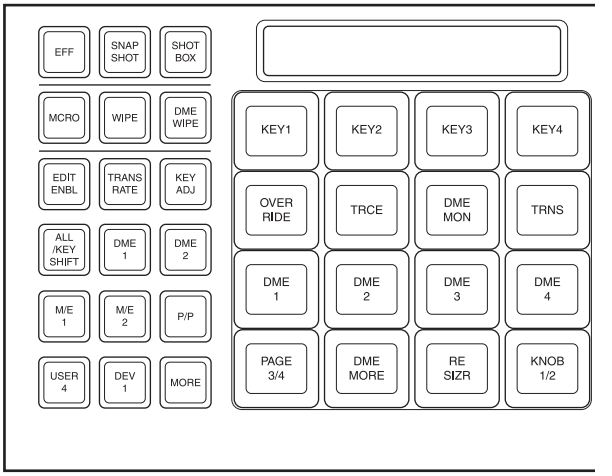
[PAGE 1/4]



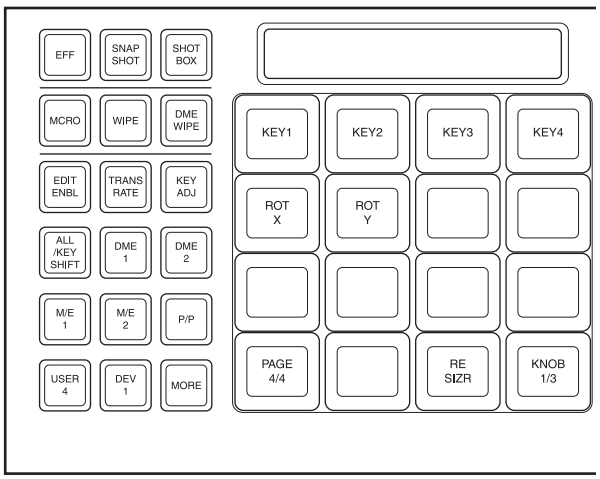
[PAGE 2/4]



[PAGE 3/4]



[PAGE 4/4]



With these buttons in the memory recall section, you can carry out the following key adjustment.

Selecting the key type

[LUM] button: Selects a luminance key.
[LIN] button: Selects a linear key.
[CRK] button: Selects a chroma key.
[WIPE PTN] button: Selects a key wipe pattern key.

Adjust the parameters for each type with the adjustment knobs. For details of the parameters, see the following sections.
Luminance key: "When the [LUM] or [LIN] button is lit green" *(page 131)*
Linear key: "When the [LUM] or [LIN] button is lit green" *(page 131)*
Chroma key: "When the [CRK] button is lit green" *(page 131)*
Key wipe pattern key: "When the [PTN] button is lit green" *(page 132)*

Selecting the key source

[AUTO SEL] button: The signal assigned as a pair with the key fill bus signal for the key row button in the cross-point control block is automatically selected.
[SPLT] button: Select a different signal manually. To make the selection, hold down this button, and press the button assigned to the signal you want as key source in the cross-point control block.
You can also use the same signal as the key fill selected on the key fill bus as key source (SELF). Press the [AUTO SEL] button and [SPLT] button simultaneously so that both are off, to select the SELF mode.

Setting auto chroma key

[SMPL MARK] button: Toggles the sample mark display on and off. When on, the monitor screen shows the foreground video and a white box sample mark.
[AUTO STRT] button: Automatically adjusts the chroma key. When the [SMPL MARK] button is off, pressing this does not carry out automatic chroma key adjustment.
You can adjust the display position and size of the sample mark with the adjustment knobs.

For details of these parameters, see "Making auto chroma key adjustments" (page 120).

Setting the show key function

[SHOW KEY] button: When this is pressed, the key source signal to which key processing has been applied is output from the specified output port (show key mode).

For details, see "Using the show key function" (page 137).

Setting the resizer function

[RE SIZR] button: Enables and disables the resizer function.

The parameters that can be adjusted with the adjustment knobs are on three pages; to access the second page or third page, press the [KNOB 1/3] or [KNOB 2/3] button.

For details of the parameters, see "Menu operations for key shrinking, magnification, rotation and movement" (page 141).

If you press this button at the same time as any of the [KEY1] to [KEY4] buttons, you can switch the trackball and joystick to the resizer setting mode.
[ROT X] button: When this is set to On, you can rotate the key around on the x-axis.
[ROT Y] button: When this is set to On, you can rotate the key around on the y-axis.

For the parameters adjustable with the adjustment knobs, see step 4 in "Setting rotation of the resizer" (page 147).

Inverting the sense of the key source

[KEY INV] button: When this is set to On, the sense of the key source is inverted.

Selecting the key fill signal

[FILL MAT] button: When this is On, the signal generated by the dedicated color matte generator is selected, and when it is Off, the signal selected on the key 1 fill bus is selected.

For parameters that can be adjusted with the adjustment knobs, see "Selecting key fill and key source" (page 117).

Selecting the key edge signal

[EDGE MAT] button: When this is On, the signal generated by the dedicated color matte generator is selected, and when it is Off, the signal selected on the utility bus is selected.

*For parameters that can be adjusted with the adjustment knobs, see step **4** in "Key Edge Modifications" (page 123).*

Selecting the mask source

[MASK] button: Selects the mask source (box generated by dedicated generator or pattern) to be selected in the Main Mask menu for each M/E bank.

The parameters that can be adjusted with the adjustment knobs are different for a box or a pattern.

The box parameters are on two pages; to access the second page, press the [KNOB1/2] button.

*For details, see step **4** in "Using the main mask" (page 126).*

Applying modifiers to the key edge

[BDR] button: Applies a border to the edge.
[DROP BDR] button: Applies a drop border to the edge.
[SHDW] button: Applies a shadow to the edge.

For parameters that can be adjusted with the adjustment knobs, see "Key Edge Modifications" (page 123).

Setting the degree of edge softening

[SOFT EDGE] button: Softens the key edge.

*For parameters that can be adjusted with the adjustment knobs, see step **7** in "Key Edge Modifications" (page 124).*

Enabling the set key to be used on the AUX bus

[PROC KEY] button: This enables the keyer key fill/key source signal to be subjected to key processing, then used as a reentry signal by selection on the AUX bus.

For details, see "Using an external processed key" (page 137).

Sending a signal subjected to key processing to frame memory

[FM FEED] button: Press this to assign the key fill/key source signal processed on the currently selected keyer to frame memory source 1 or 2.

For details, see "Using a frame memory feed" (page 137).

Using a DME currently used on another keyer

[OVER RIDE] button: When one DME channel is in use, holding down this button and pressing a DME channel button ([DME1] to [DME8]) allows you to forcibly select this channel. The button for the selected DME channel lights green.

Recalling the keyer using the DME channel

[TRCE] button: Holding down this button, press the selection button for the DME channel already assigned to another keyer or transition, to switch the keyer or transition to which the DME channel is assigned to the currently selected state.

Monitoring DME output

[DME MON] button: Holding down this button and pressing the selection button for a DME channel ([DME1] to [DME8]) allows you to monitor the signal for this channel as a reentry signal to DME MON V/K. However, it is first necessary to assign this channel on the DME to the delegation (keyer or transition) to be monitored.

Selecting the DME channel

[DME1] to [DME8] buttons: Press one of these to select the corresponding DME channel. The number of valid buttons depends on the number of DME channels in use.

[DME MORE] button: If there are more than four DME channels in use, use this to change the DME channel selection buttons displayed.

Returning the key adjustment values to their defaults

Holding down a key type button ([LUM], [LIN], [CRK], or [WIPE PTN])
recalls the key default values.

Key modify clear

When the [KEY ADJ] button is held down, holding down the region selection button for the selected region together returns all the key settings of the region to the initial status settings.

When the [KEY ADJ] button is held down, holding down the button for the selected key together returns the key settings to the initial status settings.

For details of the initial status, see "Saving User-Defined Settings" in Chapter 18 (Volume 2).

Resizer

Resizer allows you to apply DME-like effects such as image shrinking, magnification and movement, rotation as well as change of the aspect ratio, to the processed key. The following functions are available.

- Two-dimensional transformations of keys *(page 141)*
- Key rotation around on the x- or y-axis
- Resizer interpolation settings *(page 143)*
- Resizer crop/border settings *(page 144)*
- Resizer effect settings *(page 145)*
  (wide key border, drop shadow, edge enhance, mosaic, defocus, mask)

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.

Restrictions on the use of effects

There are restrictions on combined use of resizer effects themselves and that with DME wipes.

For details, see "Impossibility of simultaneous use within the same keyer" (page 147).

Relation between resizer and other effects

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 Transformations and Rotation of Keys

Notes

When the screen aspect ratio is 4:3 in HD format, when the resizer is used to shrink a video image, this is applied to the 16:9 screen including the added video on the left and right sides. Use the crop function as required to extract the 4:3 image.

Menu operations for key shrinking, magnification, rotation and movement

For example, to shrink, magnify, rotate or move key 1 of the M/E-1 bank, use the following procedure.

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

2 Adjust the following parameters with the knobs.

Parameter group [1/2]

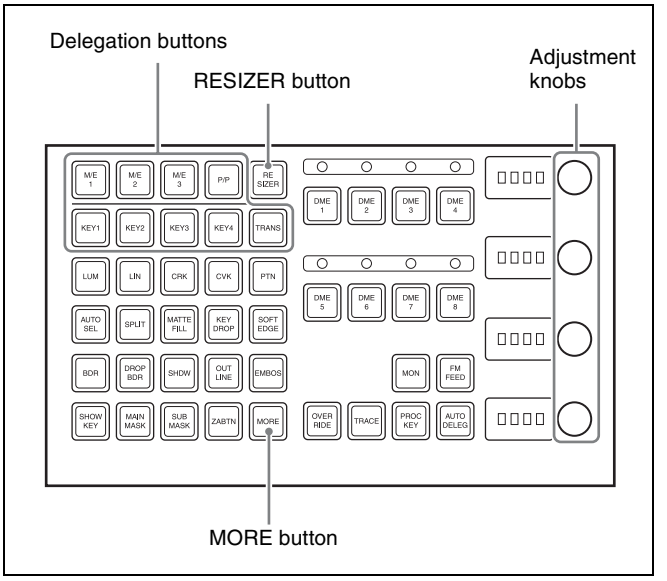
Knob	Parameter	Adjustment	Setting values	
1	Location X	Move key horizontally	HD	–99.9999 to +99.9999
			SD 4:3	–33.3333 to +33.3333
			SD 16:9	–24.9999 to +24.9999
2	Location Y	Move key vertically	HD	–99.9999 to +99.9999
			SD 4:3	–33.3333 to +33.3333
			SD 16:9	–24.9999 to +24.9999
3	Size	Magnify or shrink key	0.0000 to 99.9999	
4 a)	Rotation X	Rotate key horizontally	–99.9999 to +99.9999	
4 b)	Rotation Y	Rotate key vertically	–99.9999 + 99.9999	
5	Perspective	Change perspective	0.0000 to 1.0000	

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

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Aspect X	Change aspect ratio horizontally	0.0000 to 99.9999
2	Aspect Y	Change aspect ratio vertically	0.0000 to 99.9999
3	Aspect Ratio	Change aspect ratio horizontally and vertically at a time	0.0000 to 2.0000

Key control block operations for key shrinking, magnification, rotation and movement



1 Use the delegation buttons to select the key to which you want to apply a resizer function.

2 Press the [RESIZER] button, turning it on.

3 Adjust the following parameters with the knobs. (To switch between displaying parameter group 1/2 and 2/2, press the [MORE] button.)

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values	
1	X	Move key horizontally	HD	–99 to +99
			SD 4:3	–33 to +33
			SD 16:9	–24 to +24
2	Y	Move key vertically	HD	–99 to +99
			SD 4:3	–33 to +33
			SD 16:9	–24 to +24
3	S	Magnify or shrink key	0.0 to 99	

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	X	Change aspect ratio horizontally	0.0 to 99

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
2	Y	Change aspect ratio vertically	0.0 to 99
3	R	Change aspect ratio horizontally and vertically at a time	0.0 to 2.0

4 To specify the direction of rotation, press the [ROT X] or [ROT Y] button, turning it on.

Notes

To enable the [ROT X] and [ROT Y] buttons, it is necessary to assign functions in advance.

For details, see Chapter 19 "Assigning Functions to Key Control Block Buttons" (Volume2).

5 Turn the knobs to adjust the following parameters.

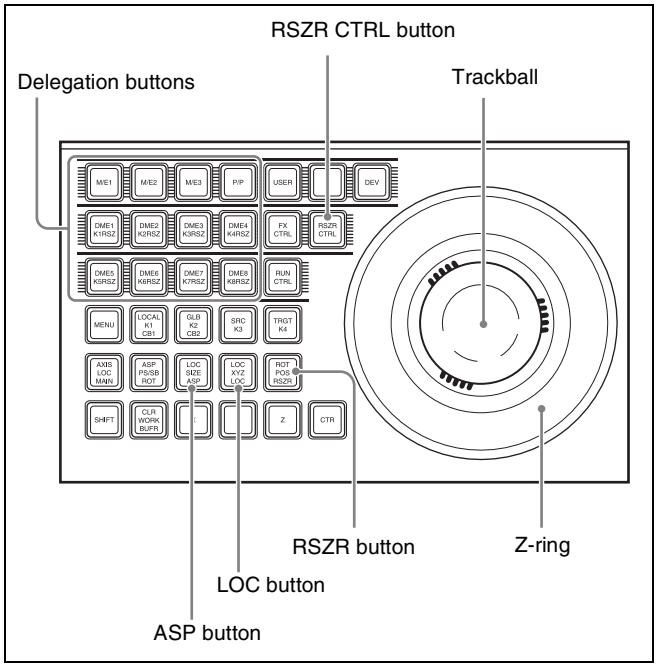
• When [ROT X] is lit

Knob	Parameter	Adjustment	Setting values
1	Rotation X	Rotate key horizontally	–99 to +99
4	Perspective	Change perspective	0 to 99

• When [ROT Y] is lit

Knob	Parameter	Adjustment	Setting values
2	Rotation Y	Rotate key vertically	–99 to +99
4	Perspective	Change perspective	0 to 99

Device control block operations for key shrinking, magnification, rotation and movement



1 Press the [RSZR CTRL] button, turning it on.

2 Press the delegation button to select the key.

3 Press the [RSZR] button, turning it on.

4
- To change the aspect ratio, turn on the [LOC SIZE(ASP)].
- To shrink, magnify, or move the key, turn on the [LOC XYZ(LOC)].
- To rotate the key, turn on the [ASP PS (ROT)] button. To specify the direction of rotation, press [X] or [Y]. To adjust perspective, press [Z].

Hold these buttons down while carrying out the operation of step **5** to enable fine adjustment (fine mode).

5 Use the trackball and joystick for the operation.

*For details of parameters, see steps **3** and **5** of "Key control block operations for key shrinking, magnification, rotation and movement" (page 142).*

Entering parameters

This operation is the same as DME three-dimensional parameter input.

For details, see "Entering Three-Dimensional Parameter Values" (page 273).

Resetting parameters

This operation is the same as DME three-dimensional parameter resetting.

For details, see "Entering Three-Dimensional Parameter Values" (page 273).

Clearing resizer effects

To clear two-dimensional transform and rotation parameters only and set the initial state

In the device control block, press the [CLR WORK BUFR] button in the operation buttons.

To clear all resizer parameters, and set the initial state

In the device control block, press the [CLR WORK BUFR] button in the operation buttons, twice in rapid succession.

For the initial state, you can select either the factory default settings or user settings.

For details of how to make this selection, see "Selecting the State After Powering On (Start Up Menu)" in Chapter 18 (Volume 2).

Resizer Interpolation Settings

For example, to make the interpolation settings for key 1 of the M/E-1 bank, use the following procedure.

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

2 Press [Resizer Process].

The Resizer Process menu appears.

3 In the <Video Field/Frame Mode> and other groups, make the interpolation settings.

This operation is the same as when making the DME interpolation settings for MVS-8000A.

For details, see Chapter 11 ""Interpolation Settings" (page 333).

However, the following points are different from the operation for MVE-8000A.
- [Interpolation Mode] can be set for any type of signal formats.
- The anti-moire filter cannot be set.

Resizer Crop/Border Settings

Making a crop setting for a key for which resizer is on

For example, to make the crop settings for key 1 of the M/E-1 bank, use the following procedure.

1. In the M/E-1 >Key1 >Processed Key menu, press [Resizer], turning it on.
2. Press [Border/Crop].

   The Border/Crop menu appears.
3. Press [Crop], turning it on.
4. Set the parameters.

   These settings are the same as those for crop of DME. For details, see "Crop Settings" (page 277).

Notes

If mosaic or defocus is enabled, and in the <Mosaic/Defocus Mode> group you select Video/Key, then the crop is disabled.

Applying a border to a key for which resizer is on

For example, to add the border for key 1 of the M/E-1 bank, use the following procedure.

1. In the M/E-1 >Key1 >Processed Key menu, press [Resizer], turning it on.
2. Press [Border/Crop].

   The Border/Crop menu appears.
3. Press [Border], turning it on.
4. Set the parameters.

   The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

SD format

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right borders	0.00 to 4.00
2	V	Simultaneously adjust width of top and bottom borders	0.00 to 3.00 (4:3) 0.00 to 2.25 (16:9)
3	All	Simultaneously adjust width of all four borders	Value of H shown
5	Density	Density of the borders	0.00 to 100.00

HD format

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right borders	0.00 to 12.00 (4:3) 0.00 to 16.00 (16:9)
2	V	Simultaneously adjust width of top and bottom borders	0.00 to 9.00
3	All	Simultaneously adjust width of all four borders	Value of H shown
5	Density	Density of the borders	0.00 to 100.00

To apply color to a border

1. In the <Border Mode> group of the Border/Crop menu, press [Flat Color].
2. Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

To soften the inner edge of a border

1. In the Border/Crop menu, press [Border Soft].
2. Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Inner Soft	Border inner softness	0.00 to 100.00

To apply a beveled light edge

1. In the <Border Mode> group of the Border/Crop menu, press [Beveled Light Edge].
2. Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Top	Top edge	–100.00 to +100.00
2	Left	Left edge	–100.00 to +100.00
3	Right	Right edge	–100.00 to +100.00
4	Bottom	Bottom edge	–100.00 to +100.00
5	All	Four edges	Value of Left shown

3 Press [Border Soft].

4 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Inner Soft	Border inner softness	0.00 to 100.00
2	Bound Soft	Border boundary softness	0.00 to 100.00

To apply a beveled color edge

1 In the <Border Mode> group of the Border/Crop menu, press [Beveled Color Edge].

2 In the <Color Adjust> group, select the edges for adjustment among the [Top], [Left], [Right], and [Bottom] edges. To select all the four edges, press [All].

3 Set the color parameters.

For details, see "To apply color to a border" (page 144)

4 Press [Border Soft].

5 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Inner Soft	Border inner softness	0.00 to 100.00
2	Bound Soft	Border boundary softness	0.00 to 100.00

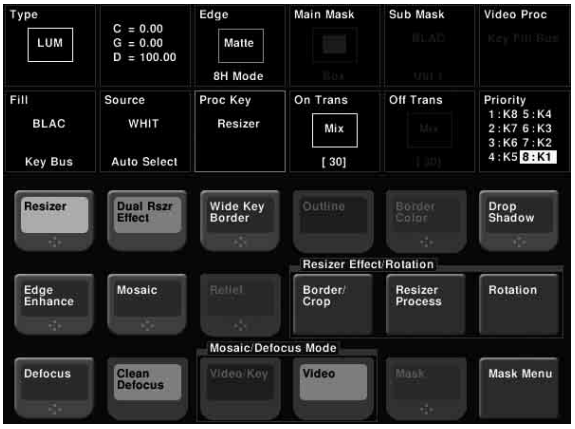
Applying Resizer Effects

For example, to apply effects to key 1 of the M/E-1 bank, use the following procedure.

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

2 Press [Enhanced Effect].

The Enhanced Effect menu appears.



Applying a wide key border

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Dual Rszr Effect], turning it on.

2 Press [Wide Key Border], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust border width of left and right edges	0.00 to 100.00
2	V	Simultaneously adjust border width of upper and lower edges	0.00 to 100.00
3	All	Simultaneously adjust border width of all four edges	Value of H shown
4	Soft [a)]	Softness of border	0.00 to 100.00
5	Density	Density of border	0.00 to 100.00

a) Shared with the drop shadow "Soft" value.

4 To add an outline, press [Outline], turning it on.

5 To adjust the border color, press [Border Color].

6 Set the color parameters.

For details, see "To apply color to a border" (page 144).

Applying a drop shadow

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Dual Rszr Effect], turning it on.

2 Press [Drop Shadow], turning it on.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

SD format

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position of shadow	–8.00 to +8.00
2	V	Vertical position of shadow	–6.00 to +6.00 (4:3) –4.50 to +4.50 (16:9)
3	Size	Shadow size	0.00 to 2.00
4	Soft [a]	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

a) Shared with the wide key border "Soft" value.

HD format

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position of shadow	–24.00 to +24.00 (4:3) –32.00 to +32.00 (16:9)
2	V	Vertical position of shadow	–18.00 to +18.00
3	Size	Shadow size	0.00 to 2.00
4	Soft [a]	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

a) Shared with the wide key border "Soft" value.

Edge enhancement

Adjusting the gain sharpens the image.

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Edge Enhance], turning it on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal gain adjustment	0.00 to 100.00
2	V	Vertical gain adjustment	0.00 to 100.00
3	All	Both horizontal and vertical adjustment	H value is displayed

Applying a mosaic

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Mosaic], turning it on.

2 Set the parameters.

This operation is the same as the DME mosaic setting. For more details, see "Mosaic Settings" (page 294).

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

Notes

If mosaic is enabled, and in the <Mosaic/Defocus Mode> group you select Video/Key, then the crop and mask are disabled.

4 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing	0.00 to 100.00
2	V	Vertical defocusing	0.00 to 100.00
3	All	Horizontal and vertical defocusing	H value shown

To make the mosaic like a relief pattern

1 With [Mosaic] on, press [Relief], turning it on.

2 In addition to the mosaic parameters, set the following parameters.

Knob	Parameter	Adjustment	Setting values
3	Gain	Relief depth of mosaic cells	0.00 to 100.00
4	Angle	Light source direction	–8.00 to +8.00

Defocusing

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Defocus], turning it on.

2 Set the parameters.

This operation is the same as the defocusing setting when using the DME with the DME dedicated interface (see page 290).

However, <Mosaic/Defocus Mode> appears in place of <Defocus Mode>.

Notes

If defocus is enabled, and in the <Mosaic/Defocus Mode> group you select Video/Key, then the crop and mask are disabled.

Applying a mask to mosaic or defocus

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Dual Rszr Effect], turning it on.

2 Press [Mask], turning it on.

This enables the mask function.
To make the mask settings, continue with steps **3** and following.

3 Press [Mask Menu].

The Mask menu appears.

4 In the <Mask Source> group, select either of [Box] and [Circle].

Box: Use a box pattern as the mask signal.
Circle: Use a circle pattern as the mask signal.

5 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows. The parameters are the same as for drop shadow.

For more details, see "Applying a drop shadow" (page 146), except that knobs 3 and 5 are as follows.

Knob	Parameter	Adjustment	Setting values
3	Size	Size	0.00 to 100.00
5	Aspect	Aspect ratio	–100.00 to +100.00

The rotation and inversion operations are the same as for a DME mask setting.

For more details, see "Mask Settings" (page 297).

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.
- If mosaic or defocus is enabled, and in the <Mosaic/Defocus Mode> group you select Video/Key, then the mask is disabled.

Restrictions on resizer effects

Restrictions on the use of effects

Of the resizer effects, using mask, drop shadow, or wide key border requires two units of hardware for the resizer function.
These are called "dual resizer effects".
In a dual resizer effect, predetermined combinations, 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 either of key 1 and key 2 has resizer set to On, 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.

Impossibility of simultaneous use within the same keyer

The following combinations of resizer effects cannot be simultaneously on.

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

Setting rotation of the resizer

Notes

Either X or Y direction must be specified for rotation. You cannot make rotation by combining both directions.
When rotating key 1 of the M/E-1 bank, for example, use the following procedure.

1 Select M/E-1 >Key1 >Processed Key menu, press [Resizer], turning it on.

2 Press [Rotation], turning it on.

The Rotation menu appears.

3 Press [X] or [Y] in the <Rotation> group to select the direction of rotation.

4 Turn the knobs to adjust the following parameters.

• When [X] is on

Knob	Parameter	Adjustment	Setting values
1	Rotation X	Rotate key horizontally	–99.0000 to +99.0000
4	Perspective	Change perspective	0.0000 to 99.9999

• When [Y] is on

Knob	Parameter	Adjustment	Setting values
2	Rotation Y	Rotate key vertically	–99.0000 to +99.0000
4	Perspective	Change perspective	0.0000 to 99.9999

Canceling Virtual Images

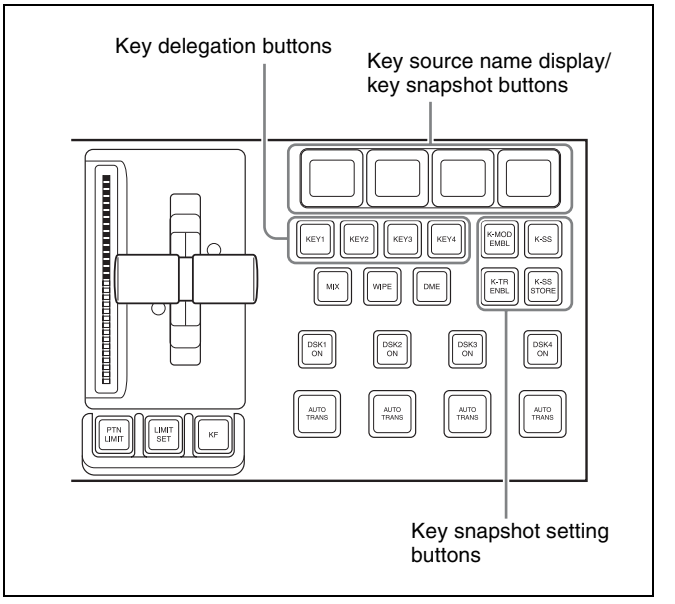
If an extreme degree of perspective is set for an image, the part of the image which is beyond the imaginary view point of view is wrapped around to show the other side of the image on the monitor screen. You can press [Wrap Around], turning it on, to make a setting not to show the virtual images.

Key Snapshots

Key settings other than the key on/off status and the key priority can all be instantaneously saved in a dedicated register, for recall when required. A key snapshot comprises three values: a cross-point button number, key memory full mode, and independent key transition, and can be called in any combination.
There are four key snapshot registers for each keyer.

Key Snapshot Operations

Key snapshot operations are carried out in the independent key transition control block, downstream key control block or Multifunction Flexi Pad control block. Each keyer is provided with four dedicated key snapshot registers.



Independent key transition control block (standard type)

Notes

To select [Key5] to [Key8] or [DSK5] to [DSK8] in the independent key transition control block or downstream key control block, a previous assignment in the Setup menu is required *(see page 381)*.

Saving a key snapshot

For example, the following procedure saves the state of the M/E-1 key 1 settings.

1 In the M/E-1 independent key transition control block, press the key delegation button [KEY1], turning it on.

2 Press the [K-SS] button, turning it on.

The system switches to key snapshot mode, and the key source name display/key snapshot buttons show the status of registers 1 to 4 for key 1.
Off: Nothing is saved in the register.
Lit orange: Settings are saved in the register.
For a register holding a snapshot, the register name is shown as up to eight characters.

3 Hold down the [K-SS STORE] button, and press the key source name display/key snapshot button corresponding to the register in which you want to save the snapshot.

The key source name display/key snapshot button which you pressed lights yellow.

Notes

If you save a key snapshot in a register for which the button is lit orange or yellow, the existing contents of the register are overwritten.

Recalling a key snapshot

For example, the following procedure recalls the state of the M/E-1 key 1 settings.

1 In the M/E-1 independent key transition control block, press the key delegation button [KEY1], turning it on.

2 Press the [K-SS] button, turning it on.

3 Set the following buttons on or off, depending on the information you want to recall.
(These buttons are not provided in the downstream key control block.)

[K-MOD ENBL] button: When this is on, the key settings and key modifiers are recalled. When this is off, they are not recalled.
[K-TR ENBL] button: When this is on, the independent key transition settings are recalled. When this is off, they are not recalled.
If both buttons are off, the key memory function is enabled and only the saved selection of key fill and key source signals is recalled.

4 Press the key source name display/key snapshot button corresponding to the register you want to recall.

The button you pressed lights yellow, and this recalls the key snapshot.
To cancel a recall carried out in the downstream key control block, press the [UNDO] button in the downstream key control block.

Key snapshot operation on the Multifunction Flexi Pad control block

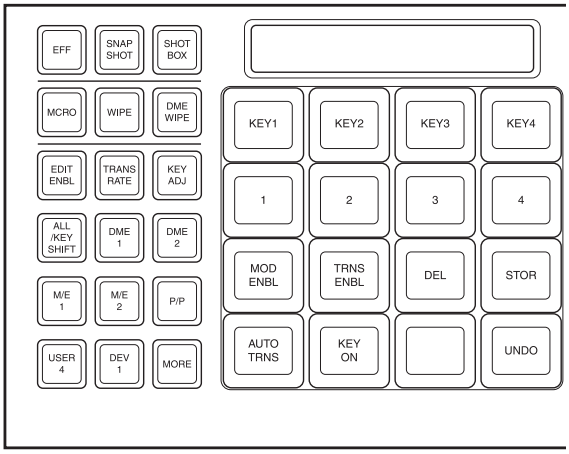
By default, the [KEY SS] key snapshot mode selection button does not appear in the Multifunction Flexi Pad control block. To carry out key snapshot saving and recall in this control block, it is first necessary in the Engineering Setup >Panel >Config >Link/Program Button >Multi Function >Mode Sel Assign menu to assign the Key Snapshot mode to a mode selection button.

To save a key snapshot

For example, to save a key snapshot for key 1 of M/E-1, select M/E1 and key1, then use the following procedure.

1 Press the [K SS] button.

The button displays in the memory recall section change as shown in the following illustration.



2 In the memory recall section, hold down the [STOR] button, and press the button (any of [1] to [4]) for the register in which you want to save the key snapshot.

To recall a key snapshot

For example, to recall a key snapshot for M/E-1 key 1 saved in register 1, with the M/E1 region and key 1 selected, proceed as follows.

1 Press the [KEY SS] button.

2 According to the information you want to recall, set the following buttons On/Off.

[MOD ENBL] button: Recall the key adjustment values and key modifier settings.
[TRNS ENBL] button: Recall independent key transition settings.
If both are Off, then key memory is enabled, and just the saved key fill and key source signal selections are recalled.

3 Press button [1] for the register you want to recall.

The [1] button lights yellow, and the key snapshot is recalled.
To cancel the recall operation, press the [UNDO] button.

To delete a key snapshot

For example, to delete a key snapshot for M/E1 key 1 saved in register 1, with the M/E1 and key 1 region selected, proceed as follows.

1 Press the [KEY SS] button.

2 Holding down the [DEL] button, press the button [1] for the register in which is saved the key snapshot you want to delete.

To carry out an auto transition execution during key snapshot operation

Press the [AUTO TRNS] button.

Instant key insertion/removal

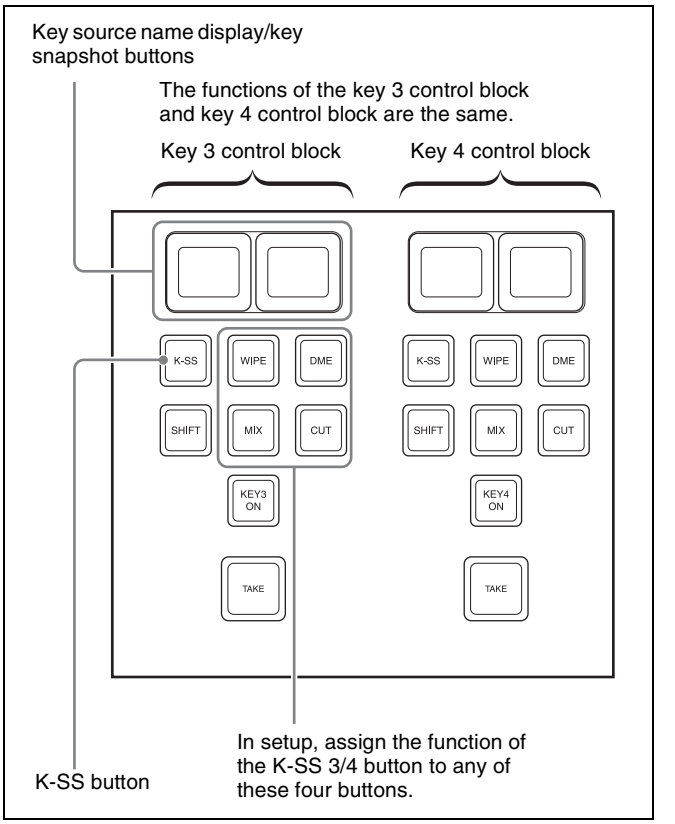
Press the [KEY ON] button.
To remove the key, while the key is inserted press the [KEY ON] button.

Key Snapshot Operations Using a Simple Transition Module

When using a simple transition module, the key snapshots hold the settings for key 3 and key 4. However, each key control block can be assigned to any key in setup.

For details, see "Assigning a Function to the Independent Key Transition Control Block (Simple Type)" in Chapter 19 (Volume 2).

You can carry out key snapshot operations in the independent key transition control block (simple type) and Flexi Pad control block (simple type).
There are four dedicated key snapshot registers for each of keys 3 and 4.



Independent key transition control block (simple type)

Saving a key snapshot

For example, to save the settings of M/E-1 key 3, use the following procedure.

1 In the M/E-1 independent key transition control block, press the [K-SS] button in the key 3 control block, turning it on.

This switches to key snapshot mode, and the key source name display/key snapshot button shows the state of registers 1 and 2 for key 3.
Pressing the [K-SS 3/4] button shows the state of registers 3 and 4 for key 3.
Off: Nothing is saved in the register.
Lit orange: Settings are saved in the register.
For a register holding a snapshot, the register name is shown as up to eight characters.

2 In the Flexi Pad control block, hold down the [SNAPSHOT] button and press the key source name display/key snapshot button corresponding to the register in which you want to save the snapshot.

The key source name display/key snapshot button which you pressed lights yellow.

Notes

If you save a key snapshot in a register for which the button is lit orange or yellow, the existing contents of the register are overwritten.

Recalling a key snapshot

For example, the following procedure recalls the state of the M/E-1 key 3 settings.

1 In the M/E-1 independent key transition control block, press the [K-SS] button in the key 3 control block, turning it on.

2 Press the key source name display/key snapshot button corresponding to the register you want to recall.

Press the [K-SS 3/4] button as required, to switch between displaying the key 3 registers 1 and 2 or registers 3 and 4.
The button you pressed lights yellow, and this recalls the key settings (excluding the key insertion state (on/off) and key priority).

Chapter 5 Wipes

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 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 *(see page 164)*.

Types of Wipe Pattern

The patterns that can be used for a wipe are divided into a number of groups, as follows. Note that only the standard wipe patterns can be used for an independent key transition.

For wipe patterns, see "Wipe Pattern List" in Appendix (Volume 1) (page 344).

Standard wipe patterns
Patterns consisting of straight lines vertically, horizontally, or diagonally, and circular patterns.

Enhanced wipes
More complex shapes such as hearts, stars, and round corners.

Rotary wipes
These patterns involve rotation of the image about a point.

Mosaic wipe pattern
This divides the image into small tiles.

Random and diamond dust wipe patterns
These patterns consist of small random tiles, or fine particles.

Basic Procedure for Wipe Settings

You carry out wipe setting operations principally using the Wipe menu for each of the M/E-1 to M/E-3 and PGM/PST banks.
This section describes the basic procedures for wipe settings, taking the M/E-1 >Wipe menu as an example.

Wipe Settings Menu

Accessing the wipe settings menu

To access the M/E-1 >Wipe menu, use either of the following operations.

- In the menu control block, select the top menu selection button [M/E 1], and press VF5 'Wipe.'

Notes

To select [M/E-4], a previous assignment in the Setup menu is required.

- In the transition control block of the M/E-1 bank, press the transition type selection button [WIPE] twice in rapid succession.

Wipe Pattern Selection

Selecting a wipe pattern by a menu operation

1 In the M/E-1 >Wipe menu, select HF1 'Main Pattern.'

The Main Pattern menu appears.

2 Select the wipe pattern group with the pattern group selection button.

Standard: standard wipes
Enhanced: enhanced wipes
Rotary: rotary wipes
Mosaic1 to Mosaic3: mosaic wipes
Random/Dust: random/diamond dust wipes
The patterns from the selected pattern group appear on the screen.

For details of wipe patterns, see "Types of Wipe Pattern" (page 152) and "Wipe Pattern List" (page 344).

3 Press the button to select the desired pattern.

4 3The parameters change according to the selected pattern, and you can adjust the pattern.

When a polygon wipe is selected (pattern number 49)

Knob	Parameter	Adjustment	Setting values
1	No	Number of points	3 to 64
2	Star Rate	Angularity of star	–100.00 to +100.00 a)

a) A value of –100.00 completely removes the star "rays," leaving a circle; at +100.00 the "rays" are at their sharpest.

When a mosaic wipe is selected (pattern numbers 200 to 203, 206 to 213, 224 to 247, 250 to 257, 260 to 269)

Knob	Parameter	Adjustment	Setting values
1	H Tile No	Number of tiles horizontally	2 to 36
2	V Tile No	Number of tiles vertically	2 to 18

When a karaoke wipe is selected (pattern numbers 220 to 223)

Knob	Parameter	Adjustment	Setting values
1	Start	Position of start tile	–100.00 to +100.00 a)
2	Row No	Number of rows of tiles	1 to 36
3	Phase	Delay for next row	–100.00 to +100.00 b)

a) At –100.00 tiles appear from the top (or left edge) of the screen; at +100.00 from the bottom (or right edge) of the screen.
b) At –100.00 all rows appear simultaneously; at +100.00 until one row of tiles is completely displayed, the next row does not start to appear.

When a random wipe is selected (pattern number 273)

Knob	Parameter	Adjustment	Setting values
1	H Size	Tile width	0.00 to 100.00
2	V Size	Tile height	0.00 to 100.00
3	Volatility	Rate of tile generation	0.00 to 100.00

When a diamond dust wipe is selected (pattern number 274)

Knob	Parameter	Adjustment	Setting values
1	H Size	Particle width	0.00 to 100.00
2	V Size	Particle height	0.00 to 100.00
3	Flash Rate	Rate of generation of particles	0.00 to 100.00

Notes

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.

For details of a pattern mix, see the next section.

For details of applying pattern modifiers, see "Setting Wipe Modifiers" (page 155).

Pattern Mix

You can create a new pattern by combining two selected patterns (main and "sub").

Notes

It is not possible to apply a pattern mix to an independent key transition.

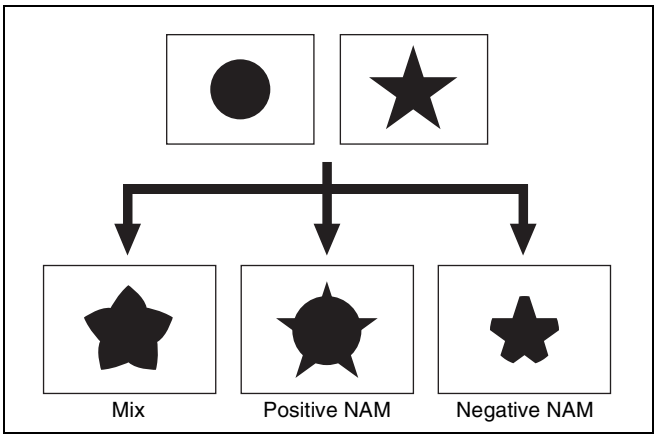
Types of pattern mix

There are four ways in which patterns can be combined in a pattern mix, as follows.

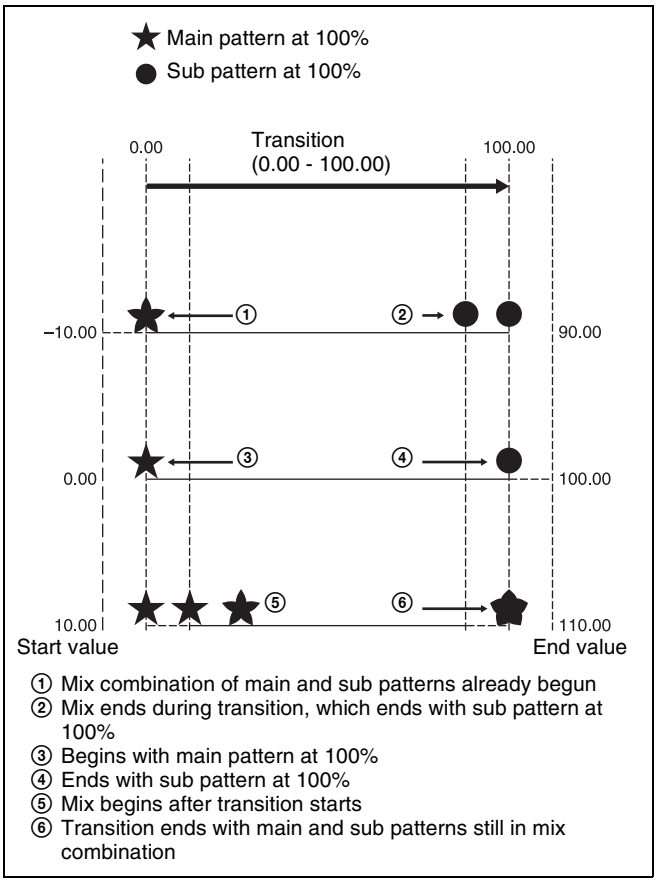
Mix: The effect of the sub pattern is applied to the main pattern, modifying the outline or nature of the main pattern.

Positive NAM (+Nam): Creates a pattern with an outline which contains all points within the outlines of either of the main pattern and the sub pattern.

Negative NAM (–Nam): Creates a pattern with an outline which contains all points within the outlines of both of the main pattern and the sub pattern.



Morphing: As the transition progresses, the pattern morphs from the main pattern, through the "mix" combination, to the sub pattern.



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

- Parameter settings
  Start: Point in the course of the transition at which the main pattern is at 100%
  End: Point in the course of the transition at which the sub pattern is at 100%
- A value of 0.00 corresponds to the beginning of the transition, and a value of 100.00 to the end of the transition.
- A negative Start value signifies that the main and sub patterns are already combined when the transition starts.
- An End value of 100.00 or more signifies that the main and sub patterns are still combined when the transition complete.
- If the Start and End values are the same, the main and sub patterns are interchanged instantaneously at the corresponding point in the transition.
- If End is less than Start, as the transition proceeds, it changes from the sub pattern to the main pattern.

Dust mix

You can apply the effect of 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 155)*.
When the pattern mix function is off, turning dust mix on results in the main pattern and the diamond dust pattern being mixed. This state is the same as a pattern mix when the diamond dust pattern is selected for the sub pattern.

Main and sub modifier link function

When carrying out a pattern mix, it is possible to link the modifier settings for the main pattern and sub pattern. There are two modes for this function.

FULL LINK (fully linked) 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 (semi-linked) mode

Only the parameter settings of the modifiers are linked. The modifier on/off settings are not linked. When the parameter values for the modifiers of the main pattern and sub pattern are different, then after this link mode is selected, changing the value of a parameter for one pattern changes the value of the parameter for the other pattern to maintain the same difference between the two.

Notes

When carrying out a wipe transition using a pattern mix, it is recommended that you set the modifier link function to FULL LINK mode.
If the link function is off, or SEMI LINK mode is selected, the desired effect may not be obtained at the start or end of the transition.

Combining two patterns

Select a main pattern in the Main Pattern menu, then use the following procedure.

1 In the M/E-1 >Wipe menu, select HF3 'Sub Pattern.'

The Sub Pattern menu appears.

2 In the same way as for the main pattern, select the sub pattern.

The patterns that can be selected for the sub pattern depend on the pattern selected for the main pattern *(see the following table)*.

Yes: Combination possible **No:** Combination not possible

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 Select HF2 'Pattern Mix.'

The Pattern Mix menu appears.

4 In the <Pattern Mix> group, select the type of pattern mix *(see page 153)*.

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

Knob	Parameter	Adjustment	Setting values
1	Mix Ratio	Proportion of sub pattern to the main pattern	0.00 to 100.00

When morphing *(see page 154)* is selected

Knob	Parameter	Adjustment	Setting values
2	Start	Point in transition at which main pattern is at 100%	–50.00 to +150.00
3	End	Point in transition at which sub pattern is at 100%	–50.00 to +150.00

6 In the <Main/Sub Link> group, make the main/sub modifier link function settings *(see page 154)*.

Full: fully linked mode
Semi: semi-linked mode

Applying the effect of a diamond dust wipe to the selected pattern (Dust mix)

1 In the Pattern Mix menu, press [Dust Mix], turning it on.

2 Set the following parameters as required.

Knob	Parameter	Adjustment	Setting values
1	Mix Ratio	Proportion of diamond dust pattern in mix	0.00 to 100.00
2	H Size	Particle width	0.00 to 100.00
3	V Size	Particle height	0.00 to 100.00
4	Flash Rate	Rate of generation of particles	0.00 to 100.00

You can also apply the dust mix function to the pattern generated by a pattern mix.

Notes

When a random/diamond dust wipe (pattern numbers 270-274) is selected, the dust mix function is not available.

Setting Wipe Modifiers

You can apply various modifiers to the wipe pattern: setting the wipe direction, pattern position, and so on. Note that the available modifiers may depend on the pattern you are using *(see page 163)*.

Main pattern and sub pattern modifiers

You can make independent settings of the modifiers for the main pattern and sub pattern.

- To set the modifiers for the main pattern, in the M/E-1 >Wipe menu, select HF5 'Main Modify,' and make the settings in the Main Modify menu.
- To set the modifiers for the sub pattern, select HF6 'Sub Modify,' and make the settings in the Sub Modify menu.

Operations in the Main Modify menu and Sub Modify menu are the same.

Independently set modifiers for the main pattern and sub pattern

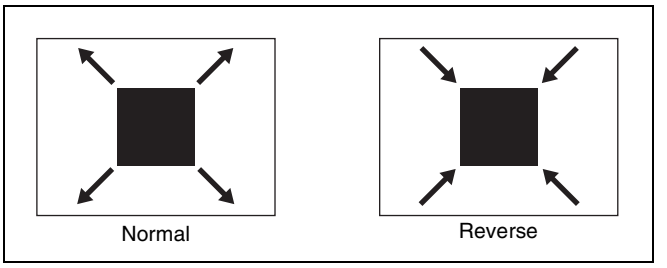
- Positioner
- Rotation
- Aspect ratio
- Pattern replication (MULTI)
- Pairing

• Modulation
• Spring
• Spiral

The following sections show examples of modifying the main pattern.

Specifying the wipe direction (Direction)

You can specify the direction of the wipe: the regular direction is referred to as “normal,” and the other direction as “reverse.” You can also select alternating directions each time the transition is completed (normal/reverse mode).



To specify the wipe direction in a menu

1 In the M/E-1 >Wipe menu, select HF4 ‘Edge/Direction.’

The Edge/Direction menu appears.

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

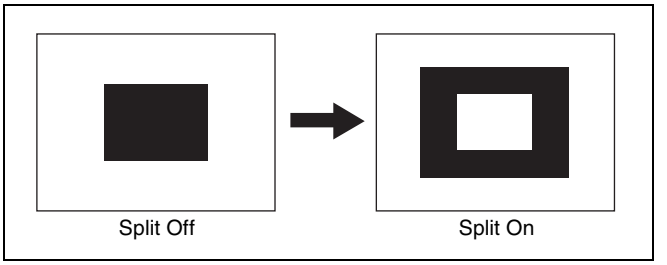
Normal: regular direction
Normal/Reverse: alternate between regular and reverse for each transition
Reverse: reverse direction to normal

To specify the wipe direction with a button in the transition control block

In the transition control block of each of the M/E-1 to M/E-3 and PGM/PST banks, press the following 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.



The parameter Split No specifies the number of splits. The parameter Spacing specifies the spacing between adjacent patterns.

1 In the M/E-1 >Wipe menu, select HF4 ‘Edge/Direction.’

The Edge/Direction menu appears.

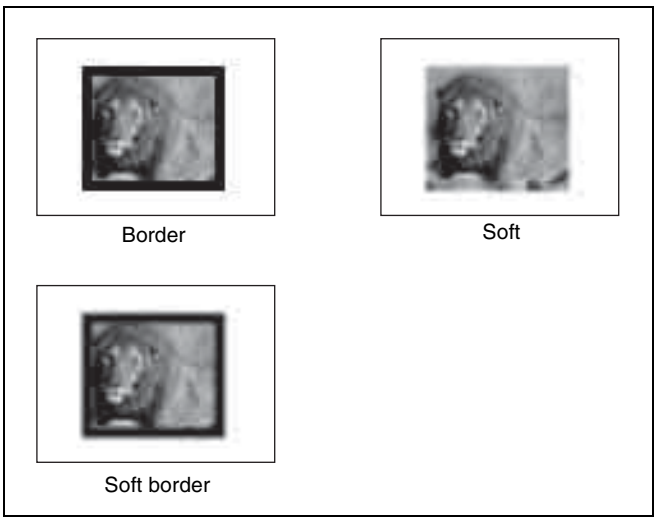
2 Press [Split], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Split No	Number of splits	1 to 4 (integer)
2	Spacing	Spacing between adjacent patterns	0.00 to 100.00

Modifying the wipe pattern edge (Edge)

You can apply a border to the pattern, soften the edges, or soften the applied border.



Border: You can adjust the border width.
Soft: You can adjust the edge softness.
Soft border: You can adjust the border width, and the softness of the inner and outer edges of the border.

When a border or soft border is selected, the signal filling the border is called edge fill. For the edge fill, you can use a matte generated by the dedicated color matte generator, or the signal selected on the utility 2 bus. A matte can include color 1 and color 2, and a combination of the two colors (a “color mix”).

1 In the M/E-1 >Wipe menu, select HF4 ‘Edge/Direction.’

The Edge/Direction menu appears.

2 In the <Edge> group, select the edge type.

Border: border
Soft: soft edge
Soft Border: soft border

3 Set the parameters according to the selection in step **2**.

When border is selected

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00

When soft edge is selected

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0.00 to 100.00

When soft border is selected

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00
2	Inner Soft	Border inner softness	0.00 to 100.00
3	Outer Soft	Border outer softness	0.00 to 100.00

4 When you selected border or soft border, select the edge fill signal in the <Edge Fill> group.

Utility 2 Bus: signal selected on the utility 2 bus
Matte: signal from the dedicated color matte generator

5 Depending on the operation in step **4**, carry out the following operation.

When 'Utility 2 Bus' is selected: Hold down the [UTIL] button in the cross-point control block, and select the signal on the background B bus. While the [UTIL] button is held down, the background B bus changes to the utility 2 bus.

Notes

To enable the [UTIL] button, its operation mode must be set to [Hold] beforehand.

For details, see "Setting the Button Operation Mode" in Chapter 19 (Volume 2).

When 'Matte' is selected: In the same Edge/Direction menu, press [Matte Adjust] to display the Matte Adjust menu, then adjust the single-color or two-color combination color matte. Select whether to use a single-color matte or a two-color combination in the <Edge Matte> group.
Flat Color: Adjust color 1 with the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

When you select [Mix Color] for a two-color combination, see the next paragraph.

Carrying out a color mix for the edge fill matte

When you selected [Matte] for the border or soft border edge fill, you can combine color 1 and color 2.
For the combination, you can use not only a normal wipe generator pattern, but also the dedicated color mix pattern.

1 In the <Edge Fill> group of the Edge/Direction menu, select [Matte], and press [Matte Adjust].

The Matte Adjust menu appears.

2 In the <Edge Matte> group, select [Mix Color], turning it on.

3 In the <Mix Pattern> group, make one of the following selections.

Wipe: Use the wipe pattern selected for the transition.
Pattern: Use the dedicated pattern.

4 Depending on the selection in step **3**, set the following parameters.

When Wipe is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

When Pattern is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00
3	Pattern	Pattern number	1 to 24 a)

a) The patterns are the same as for a standard wipe. *See "Wipe Pattern List" (page 344).*

If you selected Pattern, you can also carry out the pattern selection by pressing the [Mix Ptn Select] button in the Matte Adjust menu, to display the Mix Ptn Select menu. Select any pattern appearing in the Mix Ptn Select menu (wipe patterns 1 to 24) by pressing the appropriate button, and you can then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Soft	Edge softness	0.00 to 100.00

5 If you selected Pattern in step **4**, if required, the following modifiers can be added. After selecting a wipe mix, skip to step **6**.

When turning [Position] on and setting the pattern position

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See *page 158*.

When turning [Multi] on and using replications of the same pattern

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See *page 160*.

When turning [Aspect] on and setting the aspect ratio of the pattern

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See *page 160*.

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

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See *page 159*.

When turning [Speed] on in the <Rotation> group and rotating the pattern at a constant rate

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See *page 159*.

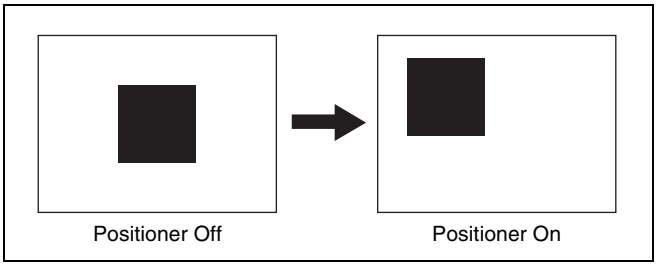
6 To adjust color 1, set [Color 1] on, and to adjust color 2 set [Color 2] on, then adjust the parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

7 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Setting the wipe position (Positioner)

When you turn on this function, you can move the wipe pattern to any position.



- The parameter H Position controls the horizontal position of the pattern.
  A negative value moves the pattern to the left, and a positive value moves the pattern to the right.
- The parameter V Position controls the vertical position of the pattern.
  A negative value moves the pattern down, and a positive value moves the pattern up.

You can set the position independently for the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

2 In the <Position> group, press [Position], turning it on, and set the pattern position.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00
2	Position V	Vertical position	–200.00 to +200.00

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 to the center through the course of a transition

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

To set the wipe position using the trackball or joystick

You can also set the wipe position using the trackball or joystick in the device control block.

1 In the device control block, press the [M/E1], [M/E2], [M/E3], [M/E4], or [P/P] button, turning it on.

Notes

The [M/E4] button requires a previous assignment in the Setup menu.

The buttons in the device control block are assigned to the wipe position setting as follows.

Table 1: Buttons and assigned settings

Button name	Setting
MAIN	Wipe position for common transition (main pattern)
SUB	Wipe position for common transition (sub pattern)

Table 2: Buttons assigned to functions

Button name	Function
POS	Toggle Position on or off.
X, Y	Fix the operating direction.
CTR	Return the pattern position to the center of the screen.

2 Press the [MAIN] button or [SUB] button, turning it on.

3 Press the [POS] button, turning Position on.

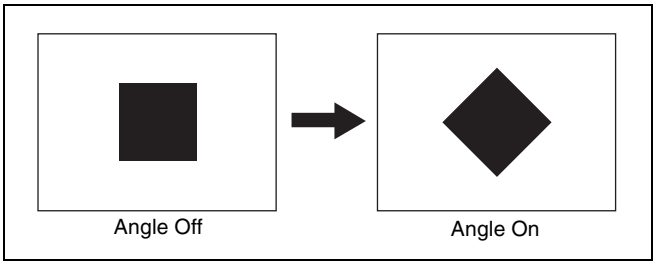
4 Move the trackball or joystick, to set the wipe position. By pressing the [X] button, turning it on, you can restrict movement to the horizontal direction, and by pressing the [Y] button, turning it on, you can restrict movement to the vertical direction.

Rotating the wipe pattern (Rotation)

You can rotate the pattern. There are three rotation modes, as follows.

Angle

This carries out a wipe with the pattern in a fixed angle.

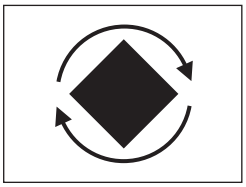


The parameter Angle determines the angle of pattern rotation.

- A value of –100.00 of the parameter Angle corresponds to one whole turn counterclockwise.
- A value of +100.00 corresponds to one whole turn clockwise.
- With a value of 0.00 there is no rotation.

Speed

Through the course of the transition the wipe pattern rotates at a fixed specified speed.

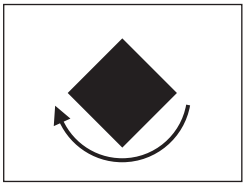


The parameter Speed determines the speed of pattern rotation.

- A value of –100.00 of the parameter Speed corresponds to one turn per second counterclockwise.
- A value of +100.00 corresponds to one turn per second clockwise.
- With a value of 0.00 the pattern is stationary.

Magnitude

Through the course of the transition the wipe pattern rotates through the specified angle.



The parameter Angle determines an angle of pattern inclination at the beginning of the transition.

- A value of –100.00 corresponds to the angle rotated one whole turn counterclockwise.
- A value of +100.00 corresponds to the angle rotated one whole turn clockwise.
- With a value of 0.00 the pattern is stationary.

The parameter Magnitude determines an angle of pattern rotation through the course of the 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.
- With a value of 0.00 the pattern is stationary.

You can apply rotation independently to the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

2 In the <Rotation> group, select the rotation type.

Angle: Incline the pattern through a fixed angle.
Speed: Rotate at a fixed rate.
Magnitude: Rotate through a particular angle during the course of the transition.

3 According to the selection in step **2**, set the following parameters.

When Angle is selected

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00

When Speed is selected

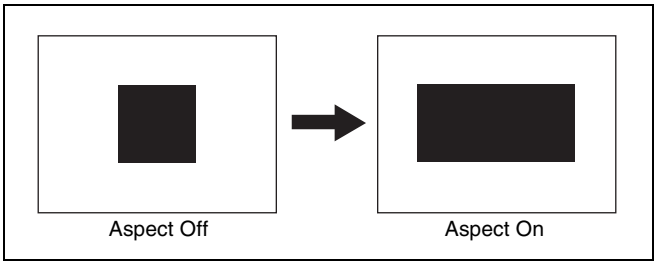
Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00

When Magnitude is selected

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation at start of transition	–100.00 to +100.00
2	Magnitude	Angle of rotation through course of transition	–200.00 to +200.00

Setting the wipe pattern aspect ratio (Aspect ratio)

You can freely change the aspect ratio of the pattern.



A negative value of the parameter Aspect stretches the pattern vertically; a positive value stretches the pattern horizontally.
You can set the aspect ratio independently for the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

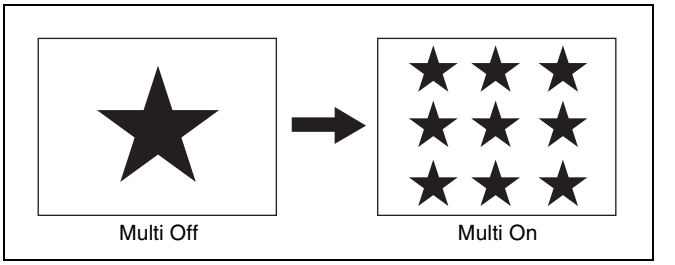
2 Press [Aspect], turning it on.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00

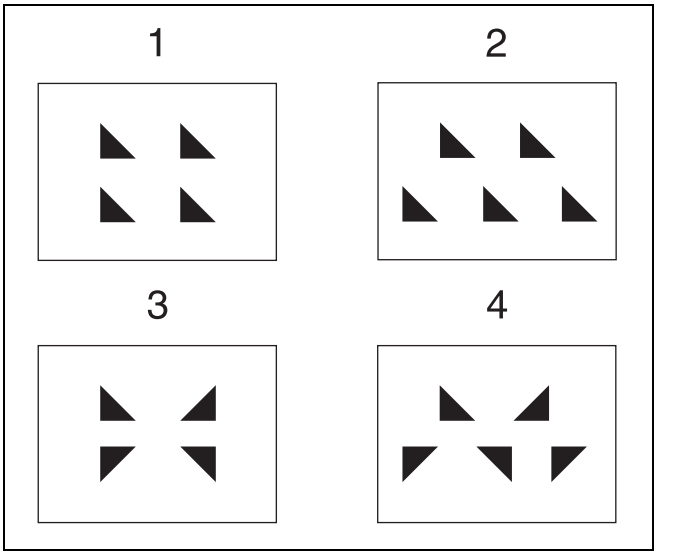
Setting the wipe pattern replication (Multi)

The same pattern can be repeated horizontally and vertically or both, up to 63 times. You can also change the orientation of alternate copies, or change the position.



- The parameter H Multi determines the number of pattern replications horizontally, and the parameter V Multi determines the number of pattern replications vertically.
- The parameter Shift determines the manner of replication.
  At a value of –100.00, the pattern of the adjacent odd-numbered column on the left lines up with the central coordinate horizontally.
  At a value of +100.00, the pattern of the adjacent odd-numbered column on the right lines up with the central coordinate horizontally.

For an independent key transition wipe, you can use the “Invert Type” parameter to select from the following four types of replication pattern.



1: All replications 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

You can set pattern replication independently for the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

2 Press the [Multi] button, turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Shift	Replication layout	–100.00 to +100.00

4 To make more adjustments, press the [Multi Adjust] button.

The Multi Adjust menu appears.

5 Make the following settings, as required.

H Invert: When this is on, alternate tiles are inverted left-to-right.

V Invert: When this is on, alternate tiles are inverted top-to-bottom.

Non-Mask: When this is on, even if the positioner function is used to move the pattern position, the pattern is always present on the screen.

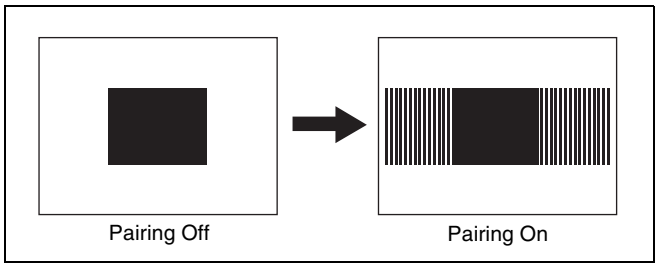
Position: By adjusting the following parameters, move the pattern position within the divisions determined in step **3**.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position of pattern	–200.00 to +200.00 a)
2	Position V	Vertical position of pattern	–200.00 to +200.00 a)

a) See *page 158*.

Making a wipe pattern like a Venetian blind (Pairing)

This slits the pattern into multiple strips in the horizontal or vertical direction, making it like a venetian blind.



- The parameter Width determines the width of the slits.
- The parameter H Offset determines the spacing in the horizontal direction.
  If a negative value is set, the even-numbered pairs of strip and slit move to the left, and the odd-numbered pairs move to the right. (The value –100.00 represents the maximum movement.)
  If a positive value is set, the even-numbered pairs of strip and slit move to the right, and the odd-numbered pairs move to the left. (The value +100.00 represents the maximum movement.)
- The parameter V Offset determines the spacing in the vertical direction.
  If a negative value is set, the even-numbered pairs of strip and slit move upward, and the odd-numbered pairs move downward. (The value –100.00 represents the maximum movement.)
  If a positive value is set, the even-numbered pairs of strip and slit move downward, and the odd-numbered pairs move upward. (The value +100.00 represents the maximum movement.)

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

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.

Knob	Parameter	Adjustment	Setting values
1	Width	Width of the slits	1 to 128 (integer)
2	H Offset	Spacing in the horizontal direction	–100.00 to +100.00
3	V Offset	Spacing in the vertical direction	–100.00 to +100.00

Applying modulation to the wipe pattern (Modulation)

The pattern signal can be modulated, giving waves on the horizontal or vertical edges, or radially.

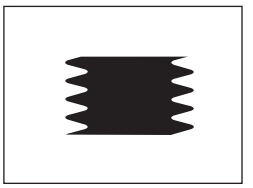
The parameter Shape determines the form of the modulation.
1: sine wave, 2: triangular wave, 3: rectangular wave

Notes

When using 1080PsF mode in an HD system, the modulation function is not available.

Horizontal modulation

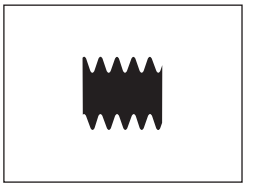
This modulates the pattern, applying waviness in the horizontal direction to edges.



The parameter Speed determines the speed of waves. A value of –100.00 generates the maximum downward speed of waves, and a value of +100.00 the maximum upward speed.

Vertical modulation

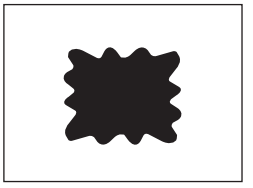
This modulates the pattern, applying waviness in the vertical direction to edges.



The parameter Speed determines the speed of waves. A value of –100.00 generates the maximum leftward speed of waves, and a value of +100.00 the maximum rightward speed.

Fringe

This modulates the pattern, applying waviness in the radial direction to edges.



The parameter Speed determines the speed of waves. A value of –100.00 generates the maximum counterclockwise speed of waves, and a value of +100.00 the maximum clockwise speed.
You can apply modulation independently to the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

2 Depending on the desired effect, in the <Modulation> group select one of the following.

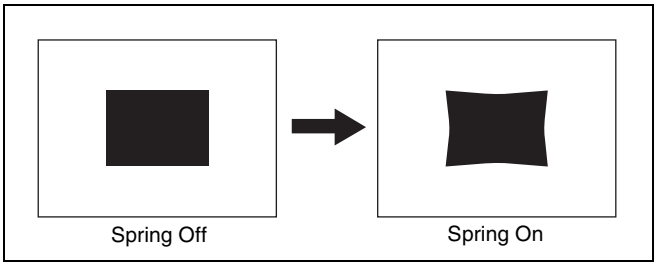
H (Horizontal modulation): Modulate the pattern, applying waviness in the horizontal direction to edges.
V (Vertical modulation): Modulate the pattern, applying waviness in the vertical direction to edges.
Fringe (Radial modulation): Modulate the pattern, applying waviness in the radial direction to edges.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Amplitude	Amplitude of modulation	0.00 to 100.00
2	Frequency	Frequency of modulation	0.00 to 100.00
3	Speed	Speed of waves	–100.00 to +100.00
4	Shape	Form of the modulation	1 to 3

Applying barrel or pincushion distortion to the edge of the wipe pattern (Spring)

As the transition progresses, the edge of the pattern is subjected to barrel or pincushion distortion.



A negative parameter value produces pincushion distortion, and a positive value produces barrel distortion. You can set the spring function independently for the main and sub patterns.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

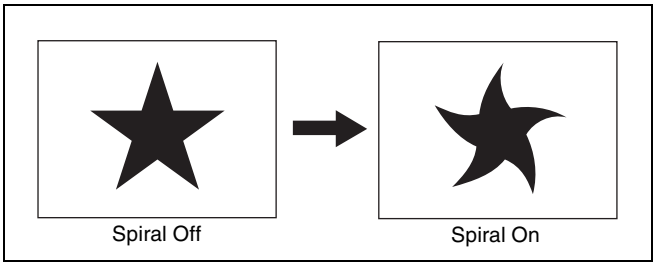
2 Press [Spring], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Gain	Degree of barrel distortion	–100.00 to +100.00

Applying a spiral effect to the wipe pattern (Spiral)

This deforms the pattern spirally.



- The parameter Magnitude determines the size and direction of the spiral.
  A value of –100.00 represents the maximum movement in the counterclockwise direction, and a value of +100.00 represents the maximum movement in the clockwise direction.
- The parameter Wave Speed determines the speed of the lateral waves.
  A value of –100.00 represents the maximum speed to the left, and a value of +100.00 represents the maximum speed to the right.

You can set the spiral function independently for the main and sub patterns.

1 In the M/E-1 >Wipe menu, select HF5 'Main Modify.'

The Main Modify menu appears.

2 Press [Spiral], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Magnitude	Size and direction of the spiral	–100.00 to +100.00
2	Wave Speed	Speed of the lateral waves	–100.00 to +100.00

Possible combinations of wipe patterns and modifiers

Yes: Can be used **No:** Cannot be used

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 ratio	Yes [d]	Yes	No	No	No
Pattern replication	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) Not patterns 1 to 16, 19, and 20
b) Not patterns 300 to 303
c) Not patterns 100 to 103, 150, 151, 516, 518, 604, and 606
d) Not patterns 1 to 8, 17, and 18
e) Not patterns 220 to 223
f) Not patterns 19 and 20
g) But patterns 21, 23 and 24 are possible
h) But patterns 21 and 23 are possible

Wipe Modify Clear

Press [Default Recall] at the lower left of the menu display, turning it on, then press VF5 'Wipe' to return the wipe settings to their initial status.

For details of the menu operation to return the wipe state to that set in initial status, see "Returning to Default State in Function Groupings" (page 75).

Wipe Settings for Independent Key Transitions

You carry out independent key transition wipe setting operations using the Wipe Adjust menu for each keyer. This section describes the independent key transition wipe settings, taking the M/E-1 >Key1 >Transition >Wipe Adjust menu as an example.

For details, see "Independent Key Transitions" (page 102).

Basic Procedure for Independent Key Transition Wipe Settings

Accessing the independent key transition wipe settings menu

As an example, to access the M/E-1 >Key1 >Transition >Wipe Adjust menu, carry out the following operations.

- In the menu control block, select the top menu selection button [M/E 1] and select VF1 'Key1' and HF6 'Transition' to display the Transition menu for key 1, then press [Wipe Adjust].
- If VF1 [Key5] is shown, press the switching button at the top of the menu, so that [Key1-4] appears, and press VF1 [Key1].

Notes

To select [M/E-4], a previous assignment in the Setup menu is required.

- In the independent key transition control block of the M/E-1 bank, press the key delegation button [KEY1], then press the independent key transition type selection button [WIPE] twice in rapid succession.

Carrying out the above operation displays the M/E-1 >Key1 >Transition >Wipe Adjust menu (which will be referred to below as simply the Key1 Wipe Adjust menu).

Selecting the independent key transition wipe pattern

You select the independent key wipe pattern from the list of patterns displayed in the menu.

Notes

In an independent key transition, you can only use the standard wipe patterns (pattern numbers 1 to 24).
To select a wipe pattern for independent key1 on the M/E-1 bank, use the following procedure.

1 In the Key1 Wipe Adjust menu, select [Pattern Select].

The Pattern Select menu appears.

2 Press the button for the desired pattern.

Setting Independent Key Transition Wipe Modifiers

Available modifiers

You can use the following modifiers with an independent key transition wipe.
Note that the available modifiers may depend on the pattern you are using.

- Direction
- Edge
- Positioner
- Rotation
- Aspect ratio
- Pattern replication

Setting the wipe direction (Direction)

In the <Direction> group of the Key1 Wipe Adjust menu, make any of the following selections.
Normal: regular direction
Normal/Reverse: alternate between regular and reverse for each transition
Reverse: reverse direction to normal

Softening the wipe pattern edge (Soft edge)

1 Press [Soft] in the Key1 Wipe Adjust menu, turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0.00 to 100.00

Setting the wipe position (Positioner)

There are two methods of setting the wipe position: using the device control block, or in a menu.

To set the wipe position using the trackball or joystick

You can also set the wipe position using the trackball or joystick in the device control block.

1 In the device control block, press the [M/E1], [M/E2], [M/E3], [M/E4], or [P/P] button, turning it on.

Notes

The [M/E4] button requires a previous assignment in the Setup menu.
The buttons in the device control block are assigned to the wipe position setting as follows.

Table 1: Buttons and assigned settings

Button name	Setting
K1 CB1	Wipe position for independent key 1 transition
K2 CB2	Wipe position for independent key 2 transition
K3	Wipe position for independent key 3 transition
K4	Wipe position for independent key 4 transition

Table 2: Buttons assigned to functions

Button name	Function
POS	Toggle Position on or off.
X, Y	Fix the operating direction.
CTR	Return the pattern position to the center of the screen.

2 Press one of the buttons in Table 1 above, to select the wipe position to which the operation applies. Multiple selection is possible.

Notes

By setting the operation mode in setup, you can also use [K1 CB1], [K2 CB2], [K3], and [K4] to select keys 5 to 8. In this case, press [SHIFT], turning it on, then press [K1 CB1], [K2 CB2], [K3], or [K4] to select one of keys 5 to 8. However, it is not possible to select more than one key.

For details of assignment for keys 5 to 8, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" in the Appendix (page 381).

3 Press the [POS] button, turning Position on.

4 Move the trackball or joystick, to set the wipe position. By pressing the [X] button, turning it on, you can restrict movement to the horizontal direction, and by pressing the [Y] button, turning it on, you can restrict movement to the vertical direction.

To set the wipe position by a menu operation

1 Press [Position] in the Key1 Wipe Adjust menu, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See *page 158.*

To move the pattern from its current position to the center through the course of a transition

Press [Auto Center] in the <Position> group, turning it on.

Rotating the wipe pattern (Rotation)

1 In the <Rotation> group of the Key1 Wipe Adjust menu, select the rotation type.

Angle: Incline the pattern through a fixed angle.
Speed: Rotate at a speed rate.
Magnitude: Rotate the pattern through a fixed angle during the course of the transition.

2 According to the selection in step **1**, set the following parameters.

When Angle is selected

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See *page 159.*

When Speed is selected

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See *page 159.*

When Magnitude is selected

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation at start of transition	–100.00 to +100.00 a)
2	Magnitude	Angle of rotation through course of transition	–200.00 to +200.00 a)

a)See *page 159.*

Setting the wipe pattern aspect ratio (Aspect ratio)

1 Press [Aspect] in the Key1 Wipe Adjust menu, turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a)See *page 160*.

Replicating the wipe pattern (Multi)

1 Press [Multi] in the Key1 Wipe Adjust menu, turning it on.

2 Set the following parameters.

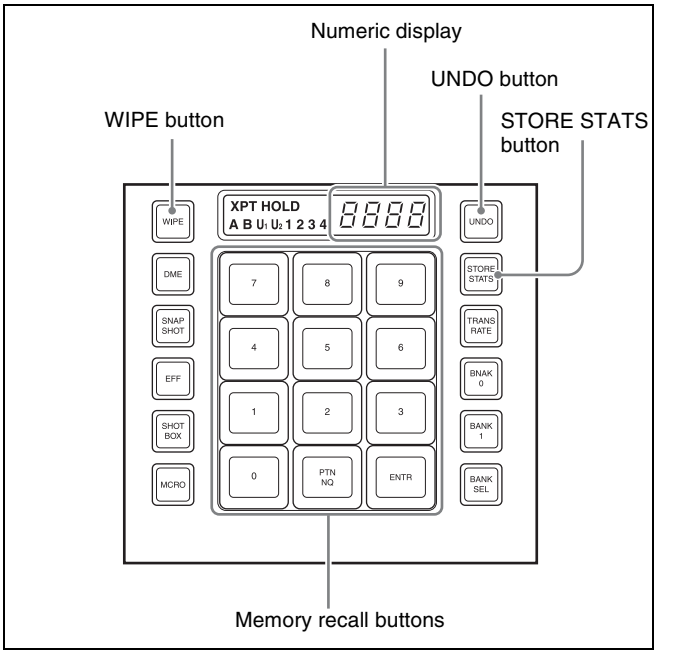
Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a)See *page 160*.

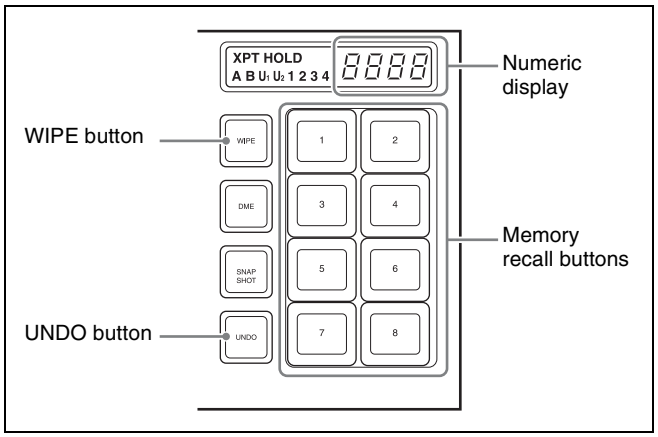
Wipe Snapshots

You can snapshot and save a wipe pattern together with the current settings of its modifiers and pattern limit in a dedicated register for recall when required.
There are 10 wipe snapshot registers on each M/E bank and the PGM/PST bank.
Use the Flexi Pad control block, the Multifunction Flexi Pad block in each switcher bank or the Menu control block to save and recall wipe snapshots.
For simple transitions *(see page 109)*, there are eight wipe snapshot registers on each M/E bank and the PGM/PST bank.

Wipe Snapshot Operations With the Flexi Pad



Flexi Pad control block (standard type)



Flexi Pad control block (simple type)

Selecting a wipe pattern in the Flexi Pad control block

To select a pattern with a standard type Flexi Pad control block, use the following procedure. (It is not possible to select a wipe pattern with a simple type Flexi Pad control block.)

1 In the M/E-1 Flexi Pad control block, press the [WIPE] button.

This switches the Flexi Pad control block to wipe snapshot mode.

2 In the memory recall section, press the [PTN NO] button.

This switches the Flexi Pad control block to wipe pattern number recall mode.

3 Use the buttons in the memory recall section to enter the pattern number consisting of up to three digits, and press the [ENTR] button.

The entry is confirmed, and now the numeric display shows the pattern number *(see page 344)*.

Saving a wipe snapshot

1 Make the wipe settings that you want to save.

Make any modifier settings required *(see page 155)*.

2 In the Flexi Pad control block, hold down the [WIPE] button, and press the memory recall button corresponding to the register in which you want to save.

Notes

- If you press a button which is lit orange or yellow, the existing contents of the register are overwritten.
- If you carry out a pattern mix, and both the main pattern and sub pattern are selected, then the memory recall button shows the main pattern.

The pattern appears on the button you pressed, which lights yellow.
The numeric display shows the number of the corresponding pattern.
It is also possible to display the register name using a Setup menu.

For details, see "Operation Settings (Operation Menu)" in Chapter 19 (Volume 2).

Meaning of the state of buttons

Off: Nothing is saved in the register.
Lit orange: Settings are saved in the register.
Lit yellow: The most recently recalled register.

Canceling the saving of a wipe snapshot

To cancel the saving of a wipe snapshot immediately after performing it, hold down the [STORE STATS] button, and press the [UNDO] button.
The [STORE STATS] button changes from amber to green.

Notes

On a simple type Flexi Pad control block, it is not possible to cancel the saving of a wipe snapshot.

Recalling a wipe snapshot

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

This switches the Flexi Pad control block to the wipe snapshot mode.

2 Press the memory recall button for the register from which you want to recall the wipe snapshot.

The button lights, and the saved wipe snapshot is recalled. At this point, the numeric display shows the pattern number or register name.

Canceling the recall of a wipe snapshot

To cancel the recall of a wipe snapshot, press the [UNDO] button.

Deleting a wipe snapshot

When the [WIPE] button is lit in the Flexi Pad control block, hold down the [STORE STATS] button and press the memory recall button for the register in which you want to delete the wipe snapshot.

The indication of the memory recall button reverts from the wipe pattern or register name to the register number.

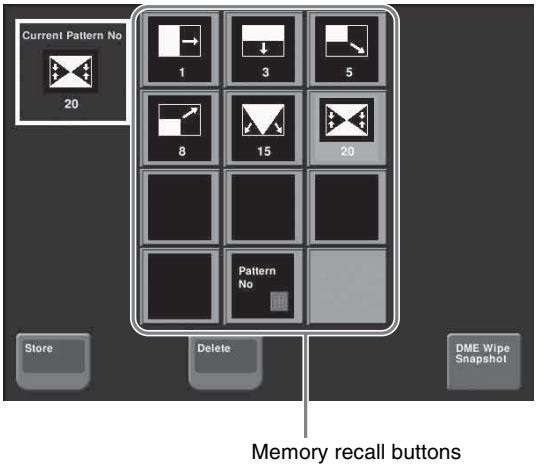
Notes

In a simple type Flexi Pad control block, it is not possible to delete a wipe snapshot.

Wipe Snapshot Operations With the Menus

Menus used

As an example, when operating on M/E-1, select M/E-1 >Wipe >Wipe Snapshot.
The Wipe Snapshot menu appears.



Button displays

In setup you can select whether the memory recall buttons show the pattern number or register name.

For details, see "Operation Settings (Operation Menu)" in Chapter 19 (Volume 2).

Saving a wipe snapshot from the menu

1. Set up the wipe you want to save.
2. In the Wipe Snapshot menu, press [Store], lighting it amber.
3. Press the memory recall button for the register in which you want to save.

Notes

- If you press a button which is already lit, this overwrites the contents of the register.
- When both the main pattern and sub pattern are selected for a pattern mix, the button in the memory recall section shows only the main pattern.

Recalling a wipe snapshot from the menu

In the Wipe Snapshot menu, press the memory recall button for the wipe snapshot you want to recall.
This recalls the wipe snapshot, and the button you pressed lights amber.
In the upper left is shown the currently recalled register name or number.

Notes

The Flexi Pad and menu settings are linked.
A setting in setup determines whether register names or pattern numbers appear.

Deleting a wipe snapshot from the menu

1. In the Wipe Snapshot menu, press [Delete].
2. Press the memory recall button for the wipe snapshot you want to delete.

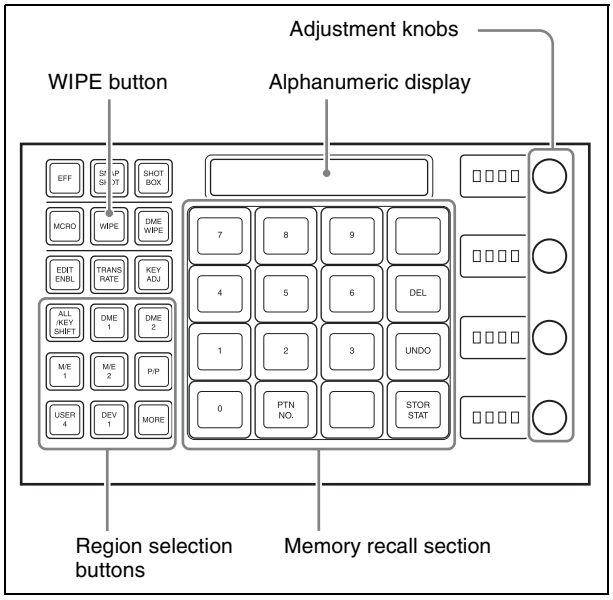
Wipe Pattern Operations in the Multifunction Flexi Pad Control Block

Recalling a Wipe Snapshot

You can recall a wipe snapshot in the Multifunction Flexi Pad control block.
To recall a wipe snapshot, use the operations shown in the following illustration.

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

This sets the Multifunction Flexi Pad control block to wipe snapshot mode, and the button indications appear as follows.



You can change the indications for buttons [0] to [9] in the memory recall section to pattern images, using the Engineering Setup >Panel >Operation >Flexi Pad Mode menu.

2 Select the region for the wipe snapshot to be recalled with the region selection buttons.

3 Press the numeric button (lit orange) in the memory recall section corresponding to the register in which the desired wipe snapshot is stored.

The button you pressed lights yellow, and this recalls the saved wipe snapshot.
At this point the numeric display shows the register name or pattern number for the pattern.

Selecting the Wipe Pattern

1 Press the [WIPE] button, and select the region with the region selection buttons.

Notes

The [M/E4] button requires a previous assignment in the Setup menu *(see page 380)*.

2 Press the [PTN NO.] button in the memory recall section.

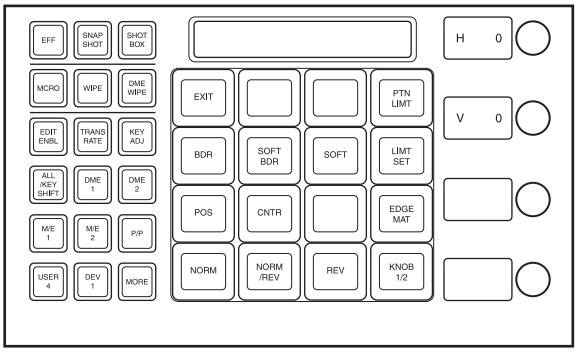
The [PTN No.] button lights green.

3 With the buttons in the memory recall section, enter the pattern number of up to three digits, and press the [ENTR] button.

This confirms the input, and the pattern number *(see page 344)* appears in the alphanumeric display.
The [PTN NO.] button lights orange, and the system returns to wipe snapshot mode.

Editing the Wipe Pattern

By pressing the [EDIT ENBL] button to switch the memory recall section to editing mode as shown in the following illustration, you can edit the selected wipe pattern with the following buttons.
To exit from the editing mode, press the [EDIT ENBL] button once more, or press the [EXIT] button.



Wipe pattern edge setting buttons

BDR (border): Applies a border to the wipe pattern.
SOFT BDR (soft border): Softens the applied border.
SOFT (soft edge): Softens the edge.
EDGE MAT (edge matte): Selects whether to fill the edge with a color matte, or insert an image from the utility bus. By default a color matte is selected.

You can adjust the parameters selected with these buttons using the control knobs, when the button is lit green.

When border is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	W	Border width	0 to 100

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	L	Luminance	0 to 100
2	S	Saturation	0 to 100
3	H	Hue	359 to 0

When soft border is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	W	Border width	0 to 100
2	I	Degree of softening of inside of border	0 to 100
3	O	Degree of softening of outside of border	0 to100

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	L	Luminance	0 to 100
2	S	Saturation	0 to 100
3	H	Hue	359 to 0

When soft edge is selected

Knob	Parameter	Adjustment	Setting values
1	S	Degree of softening of edge	0 to 100

When edge matte is selected

Knob	Parameter	Adjustment	Setting values
1	L	Luminance	0 to 100
2	S	Saturation	0 to 100
3	H	Hue	359 to 0

Buttons for positioning the wipe pattern

POS (position): Adjusts the position of the wipe pattern.

CNTR (center): Returns the wipe pattern position to the center.

When you press the [POS] button, the alphanumeric display first shows the name of the parameter, "H" or "V," and then the value of the parameter.

When the [POS] button is lit green, you can adjust the position of the wipe pattern with the control knobs.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–200 to +200
2	V	Vertical position	–200 to +200

Buttons for setting the wipe direction

NORM (normal): Sets wipe to normal (forward) direction.

NORM/REV (normal/reverse): Sets the wipe direction to alternate between normal and reverse for each transition.

REV (reverse): Sets wipe to reverse direction to normal.

Buttons for setting the wipe pattern limit

PTN LIMT (pattern limit): Enables the following settings for the pattern limit using the control knobs.

LIMT SET (limit set): If you change the pattern size with the fader lever then press this button, this sets the current size as the pattern limit.

Knob	Parameter	Adjustment	Setting values
1	P	Pattern limit range	0 [a] to +100 [b] (%)

a) At 0%, executing the transition has no effect at all.

b) At 100%, the transition can be executed with the same effect as with no pattern limit set, but when the transition completes, background buses A and B are not interchanged.

Other buttons

EXIT: Exits the editing mode, and returns the memory recall section to wipe snapshot mode.

KNOB 1/2: When the control knob adjustments are on two pages, this switches between parameter group [1/2] and parameter group [2/2].

Wipe modify clear

When the [WIPE] button is held down, holding down the region selection button for the selected region together returns all the wipe settings of the region to the initial status settings.

For details of the initial status, see "Saving User-Defined Settings" in Chapter 18 (Volume 2).

Saving, Canceling, and Deleting Edited Wipe Patterns

Saving the edited wipe pattern as a snapshot

Holding down the [WIPE] button, press the button in the memory recall section for the register in which you want to save.
The button you pressed lights yellow.
Buttons for registers in which wipe snapshots are already saved light orange.

Canceling a saved wipe snapshot

Immediately after saving, hold down the [STOR STAT] button and press the [UNDO] button.
At other times, hold down the [STOR STAT] button, and press the button for the register in which the wipe snapshot you want to cancel is saved.
Buttons for registers in which wipe snapshots are already saved light orange.

Canceling recall of a wipe snapshot

To cancel the operation of recalling a wipe snapshot, press the [UNDO] button.

Deleting the data of a saved wipe snapshot

Holding down the [DEL] button, press the button for the register in which the wipe snapshot you want to delete is saved.
The register button you pressed goes off.

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 wipe: those which can be selected for a normal transition, and those which can be selected for an independent key transition *(see page 188)*.

Notes

It is also possible to carry out a DME wipe on a key using the resizer *(see page 184)*.

Types of DME Wipe Pattern

The patterns used for a DME wipe fall into two broad classes.
Preset patterns: predetermined fixed patterns
User programmable DME patterns: patterns which you can create using keyframe effects

DME wipe execution mode and pattern numbers that can be used

There are three DME wipe execution modes, depending on the number of DME channels available: one-channel mode, two-channel mode and three-channel mode. The pattern numbers that can be used in these modes are as follows.

Execution mode	Preset pattern numbers that can be used	User programmable DME pattern numbers that can be used
One-channel mode	1000 series	1901 to 1999
Two-channel mode	2000 series	2901 to 2999
Three-channel mode	3000 series	3901 to 3999

Notes

- On the MVS-8000X, when the signal format is 1080P, the three-channel mode is not available.
- On the MVS-7000X, when the signal format is 1080P, the above restriction also applies if using the MVE-8000A. There is no such restriction for the MKS-7470X/7471X.

DME wipe pattern groups

The patterns used in DME wipes fall into the following groups.

For each group (excluding user programmable DMEs), for schematic patterns and numbers, see "DME Wipe Pattern List" in Appendix (page 348).

Pattern groups	Effects	Pattern numbers		
		One-channel mode	Two-channel mode	Three-channel mode
Slide	The new video slides in over the old video.	1001 to 1008	2601 to 2608	—
Squeeze	The new video appears squeezed over the old video, and progressively expands to cover it.	1021 to 1031	2621 to 2628	—
Split	The old video splits, and the new video appears in the gap.	1011 to 1013	—	—
Door	The new video moves like a door closing, and progressively covers the old video.	10411048	—	—
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.	1101 to 1104, 1109, 1110, 1121, 1122, 1124, 1131 to 1133, 1135	—	—
Mirror	The new video appears over the old video as a mirror effect slides in all four directions.	1355 to 1358	—	—
Sphere	The new video appears wrapped around a sphere over the old video, then returns to the original video while unwrapping.	1365	—	—
Character trail	The new video appears with a trail over the old video. Next this gradually returns to the original from the periphery.	1371, 1372	—	—
Wave	The new video appears with a wave-like effect over the old video. Next this returns to the original video as the effect reduces.	1378, 1379	—	—
Ripple	The new video appears over the old video like outwardly moving ripples.	1381	—	—
Page turn	The old video moves like a page turning, and the new video appears behind it.	1301 to 1313, 1315 to 1318, 1341 to 1345	2701 to 2713, 2715 to 2718, 2741 to 2745	—
Page roll	The new video unrolls like a scroll over the old video. This is a type of page turn.	1321 to 1333, 1335 to 1338, 1346 to 1350	2721 to 2733, 2735 to 2738, 2746 to 2750	—
Frame in-out	Completed in two transitions. In the first transition, the new video appears, then on the second transition the new video goes out and the old video returns.	1201 to 1208, 1221 to 1224	2851 to 2854, 2861 to 2864	—
Picture-in-picture	• In one-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 two-channel mode, in the first half of the transition, the old video shrinks, and the new video appears. - In the second half of the transition, the new video expands, and the old video disappears. - You can move the pattern from the current position by a relative amount. - During the transition, the signal from the utility 2 bus of the M/E bank appears as the background.	1251	2651 to 2652	—
2D trans	The new video appears over the old video, while undergoing expansion, two-dimensional rotation and translation.	1051 to 1058, 1061 to 1064, 1068	—	—
3D trans	• In one-channel mode, the new video appears over the old video, while undergoing expansion, three-dimensional rotation and translation. • In two-channel mode, the old video changes to the new video while both undergo expansion, three-dimensional rotation and translation.	1071, 1072, 1074, 1076, 1077, 1088, 1091 to 1094	2631 to 2634, 2642, 2644	—

Pattern groups	Effects	Pattern numbers		
		One-channel mode	Two-channel mode	Three-channel mode
Sparkle	The new video appears over the old video with a nonlinear effect applied, such as broken glass, explosion, or melt. Next this returns to the original video as the effect gradually reduces.	1391, 1393, 1394, 1396, 1398, 1399	—	—
Split slide	The new video appears in strip form while sliding interleaved in the opposite direction over the old video.	1384 to 1389	—	—
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%.	1701	—	—
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%.	1702	—	—
Brick	• In two-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 three-channel mode, a brick appears over the old video as the image is expanding and rotating, and switches to the new video.	—	2801 to 2804, 2811 to 2814	3601
User programmable DME	Using a DME keyframe effect created with a keyframe operation, this executes a DME wipe. *For details of creating keyframe effects, see "Creating User Programmable DME Patterns" (page 186).*	1901 to 1999	2901 to 2999	3901 to 3999

Notes

In an independent key transition, the following patterns can be used.

Execution mode	DME wipe patterns that can be used
One-channel mode	Slide, split, squeeze, door, 2D trans, 3D trans, frame in-out, page turn, page roll, mirror, sphere, character trail, wave, ripple, split slide, sparkle, user programmable DME
Two-channel mode	Page turn, page roll

DME Wipe Pattern Variation and Modifiers

You can modify the selected DME wipe pattern in the same way as an ordinary wipe pattern, as follows.

For the setting operations, see "Setting DME Wipe Modifiers" (page 178).

Direction: You can set the DME wipe direction to normal, reverse, or alternating normal/reverse *(see page 178)*, except for a key transition, which is always in normal/reverse mode. However, a key transition can only be specified when the following patterns are selected, and when other patterns are selected, this is fixed, as normal/reverse.

Patterns: 1204, 1207, 1221 to 1224

Edge: You can apply a border or soft border *(see page 178)*.

In the case of those 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 setting is on, only part of the edge applied in the effect is enabled, and that portion can be adjusted *(see page 178)*.
- When the DME wipe edge setting is off, the edge applied in the effect is enabled as is.

Positioner: You can move the DME wipe pattern or center of the effect to an arbitrary position. Using the position select function, you can also instantaneously move the pattern.

- 1031
  When this pattern number is selected, with the progress of the transition the pattern center automatically moves initially from the set position toward the center of the screen *(see page 178)*. 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
  When these pattern numbers are selected, you can

set the pattern position when the first transition completes.
- 1381, 1391, 1393, 1394, 1396
  When these pattern numbers are selected, you can set the center of the transition effect.
- 2651, 2652
  When these pattern numbers are selected, you can move the pattern for each channel, or with values relative to the current position the two channels simultaneously.
- 2801 to 2804, 2811 to 2814
  When the these pattern numbers are selected, you can set the vertical position as the brick slides in.
- 2851 to 2854, 2861 to 2864
  When these pattern numbers are selected, 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 as desired. However, this is not available for a DME wipe in the independent key transition control block.

For more details, see "Pattern Limit" (page 97).

Size: 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

You can set the size of the image.

Crop: You can crop the image. It is also possible in 16:9 mode to crop both sides, to convert the image to a 4:3 aspect ratio. For the execution of a DME wipe crop transition, you can select from the following three possibilities.
- Cut
- Last 5%
- Linear

When [Last 5%] is selected, you can set the [Release Transition] as follows.
- Last 30%
- Last 5%
- Off

Notes

When pattern numbers 1701 and 1702 are selected, crop cannot be used.

Relation Between DME Wipes and Other Effects

The relations between DME wipes and other effects are as follows.

Relation to ordinary 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, if you select a DME wipe, an available DME is automatically allocated to the DME wipe. If all of the DME channels are in use, then it is not possible to select a DME wipe.
If in a Setup menu a setting has been made for DME allocation, that Setup menu setting takes precedence.

For details, see "Setting the assignments of DME channels to use on the individual M/E banks" in Chapter 20 (Volume 2).

Relation to resizer

When resizer is enabled, it is not possible to select a 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 is used for a dual resizer effect, the other key cannot be used for a DME wipe.

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.
- In the case of the MVS-8000X, DME effects cannot be applied on keys 5 to 8 of the M/E-4 bank. There is no such restriction for the MVS-7000X.
- 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.

- MVS-8000X

Applicable block	Key to which DME effects are applied	DME wipe pattern for background	Number of keys to which DME effects can be applied simultaneously
Other than M/E-4	Keys 1 to 4	No DME wipe used	2
		One-channel mode	1
		Two- or three-channel mode	0
	Keys 5 to 8	-	2 a)
M/E-4	Keys 1 to 4	No DME wipe used	2 b)
		One-channel mode	1 c)
		Two- or three-channel mode	0
	Keys 5 to 8	-	0

- 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	No DME wipe used	2
	One-channel mode	1
	Two- or three-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 Procedure for DME Wipe Settings

You carry out DME wipe setting operations principally using the DME Wipe menu for each bank.
This section describes the basic procedures for DME wipe settings, taking the M/E-1 >DME Wipe menu as an example.

For details of independent key transition DME wipe settings, see "DME Wipe Settings for Independent Key Transitions" (page 182).

For details of resizer DME wipe, see "Resizer DME Wipe Setting" (page 184).

DME Wipe Settings Menu

Accessing the DME Wipe menu

To access the M/E-1 >DME Wipe menu, use either of the following operations.

- In the menu control block, select the top menu selection button [M/E 1], and press VF6 'DME Wipe.'

Notes

To select [M/E-4], a previous assignment in the Setup menu is required.

- In the transition control block of the M/E-1 bank, press the transition type selection button [DME] twice in rapid succession.

DME Wipe Pattern Selection

Selecting a DME wipe pattern by a menu operation

1 In the M/E-1 >DME Wipe menu, select HF1 '1ch' for one-channel mode, HF2 '2ch' for two-channel mode or HF3 '3ch' for three-channel mode.

2 Select the desired DME wipe pattern group with one of the following buttons.

- **Slide/Squeeze:** slide and squeeze
- **Split/Door:** split and door
- **Flip Tumble:** flip tumble
- **Mirror/Sphere:** mirror and sphere
- **Character Trail:** character trail

- **Wave/Ripple:** wave and ripple
- **Page Turn/Roll:** page turn and page roll
- **Frame I/O/P in P:** frame in/out and picture-in-picture
- **2D Trans/3D Trans:** 2D trans and 3D trans
- **Sparkle/Split Slide:** sparkle and split slide
- **Mosaic/Defocus:** mosaic and defocus
- **Brick:** brick
- **User Program:** user programmable DME

Selectable DME wipe pattern groups in one-channel mode: All of the above groups except for Brick.

Selectable DME wipe pattern groups in two-channel mode: Slide/Squeeze, Page Turn/Roll, Frame I/O, PinP, 3D Trans, Brick and User Program.

Selectable DME wipe pattern groups in three-channel mode: User Program and Brick.

For details of DME wipe patterns, see "Types of DME Wipe Pattern" (page 172) and "DME Wipe Pattern List" (page 348).

The patterns from the selected pattern group appear on the screen.

3 Press the button to select the desired pattern.

Notes

For a key transition, the page turn, page roll and picture-in-picture cannot be used.

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)

Knob	Parameter	Adjustment	Setting values
1	Side V Size X	Horizontal magnification	0.01 to 8.00
2	Side V Size Y	Vertical magnification	0.01 to 8.00
3	Height	Height of brick	0.01 to 100.00
4	Center X	Horizontal center position	–100.00 to +100.00 a)
5	Center Y	Vertical center position	–100.00 to +100.00 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, and 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, and 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**

Knob	Parameter	Adjustment	Setting values
5	Delay	Timing for video selected on a utility bus to appear on the screen	–100.00 to +100.00

- **Pattern numbers 2861 to 2864**

Knob	Parameter	Adjustment	Setting values
1	Rot X	Rotation about the Y axis (horizontal direction)	–100.00 to +100.00
2	Rot Y	Rotation about the X axis (vertical direction)	–100.00 to +100.00
3	Rot Z	Rotation about the Z axis	–100.00 to +100.00
5	Delay	Timing for video selected on a utility bus to appear on the screen	–100.00 to +100.00

When Brick (for three channels) is selected (pattern number 3601)

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Side V Size X	Side V horizontal magnification	0.01 to 8.00
2	Side V Size Y	Side V vertical magnification	0.01 to 8.00
3	Height	Height of brick	0.01 to 100.00 a)
4	Side V Center X	Side V horizontal center position	–100.00 to +100.00 b)
5	Side V Center Y	Side V vertical center position	–100.00 to +100.00 c)

a) Shared with knob 3 for parameter 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, and 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, and at +100.00 the center is at the top edge of the screen.

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Side H Size X	Side H horizontal magnification	0.01 to 8.00
2	Side H Size Y	Side H vertical magnification	0.01 to 8.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
3	Height	Height of brick	0.01 to 100.00 a)
4	Side H Center X	Side H horizontal center position	–100.00 to +100.00 b)
5	Side H Center Y	Side H vertical center position	–100.00 to +100.00 c)

a) Shared with knob 3 for parameter 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, and 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, and at +100.00 the center is at the top edge of the screen.

Setting DME Wipe Modifiers

You can apply various modifiers to the DME wipe pattern: setting the DME wipe direction, pattern position, and so on.

For an overview of the DME wipe modifiers, see "DME Wipe Pattern Variation and Modifiers" (page 174).

Specifying the DME wipe direction (Direction)

You can specify the DME wipe direction (normal/reverse).

To specify the DME wipe direction in a menu

1 In the M/E-1 >DME Wipe menu, select HF4 'Edge/Direction.'

The Edge/Direction menu appears.

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

Normal: regular direction
Normal/Reverse: alternate between regular and reverse for each transition
Reverse: reverse direction to normal

To specify the DME wipe direction with a button in the transition control block

In the transition control block of each of the M/E-1 to M/E-3 and PGM/PST banks, press the following direction selection buttons.
NORM: Normal
NORM/REV: Normal/Reverse
REV: Reverse

Modifying the DME wipe pattern edge

1 In the M/E-1 >DME Wipe menu, select HF4 'Edge/Direction.'

The Edge/Direction menu appears.

2 Depending on whether the selected pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channel. 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 Set the parameters according to the selection in step **3**.

When border is selected

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00
3	Luminance	Luminance	0.00 to 100.00
4	Saturation	Saturation	0.00 to 100.00
5	Hue	Hue	359.99 to 0.00

When soft border is selected

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00
2	Inner Soft	Border inner softness	0.00 to 100.00
3	Luminance	Luminance	0.00 to 100.00
4	Saturation	Saturation	0.00 to 100.00
5	Hue	Hue	359.99 to 0.00

Display indications when multiple channels are selected at the same time
The indications on the knobs show the settings of the lowest-numbered channel. When you turn the knobs to adjust the settings, this changes the settings on the other channels by the same amount.

Setting the DME wipe position (Positioner)

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 Depending on whether the DME wipe pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channel. 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.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–200.00 to +200.00
2	V	Vertical position	–200.00 to +200.00

Display indications when multiple channels are selected at the same time
The indications on the knobs show the settings of the lowest-numbered channel. When you turn the knobs to adjust the settings, this changes 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 and moving the position of the DME wipe pattern (position select)

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.
In the <Position Select> group, the one of the [Top Left], [Top Right], [Bottom Left], and [Bottom Right] buttons that is on indicates the current display position of the DME wipe pattern.

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

3 Depending on whether the DME wipe pattern is in one-channel mode or two-channel mode, proceed as follows.

In one-channel mode: press [1st Ch], turning it on.
In two-channel mode: from the <Ch Select> group, select the corresponding channel. You can select more than one channel at the same time.

4 To move the position of the DME wipe pattern, press the button where you want to move to, turning it on.

The DME wipe pattern displayed on the screen moves to the position of the specified button.

Setting relative positions to move the DME wipe pattern

In two-channel mode, use the following procedure.

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 In the <Ch Select> group, select the target channels.

3 Press [Position] in the <Position> group, turning it on.

4 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
4	Relative H	Relative movement in the horizontal direction	–400.00 to +400.00
5	Relative V	Relative movement in the vertical direction	–400.00 to +400.00

For details of the method of DME wipe pattern selection, see "DME Wipe Pattern Selection" (page 176)).

Setting the DME wipe pattern size (Size)

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 Depending on whether the selected pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channel. You can select more than one channel at the same time.

3 Press [Size], turning it on.

4 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Set size of effect	0.00 to 200.00 [a)]

a) The effect size when [Size] is off is taken as 100.00%.

Display indications when multiple channels are selected at the same time
The indications on the knobs show the settings of the lowest-numbered channel. When you turn the knobs to adjust the settings, this changes the settings on the other channels by the same amount.

Adjusting the DME wipe pattern cropping

Notes

When pattern numbers 1701 and 1702 are selected, crop cannot be used.

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 Depending on whether the selected pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channel. You can select more than one channel at the same time. Some patterns need no selection which is fixed in the <Ch Select> group.

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

4 Set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Crop the left and right of the image	Left value shown
2	V	Crop the top and bottom of the image	Top value shown
3	All	Crop the top, bottom, left, and right of the image	Left value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Crop the top of the image	–100.00 to +100.00
2	Left	Crop the left of the image	–100.00 to +100.00
3	Right	Crop the right of the image	–100.00 to +100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
4	Bottom	Crop the bottom of the image	–100.00 to +100.00

Display indications when multiple channels are selected at the same time
The indications on the knobs show the settings of the lowest-numbered channel. When you turn the knobs to adjust the settings, this changes the settings on the other channels by the same amount.

In 16:9 mode, to crop to 4:3 aspect ratio

In the <Crop Mode> group, press [4:3 Crop], turning it on.

To set the action when a DME wipe crop transition is executed

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 Depending on whether the selected pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: in the <Ch Select> group, press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channels. You can select more than one channel at the same time.

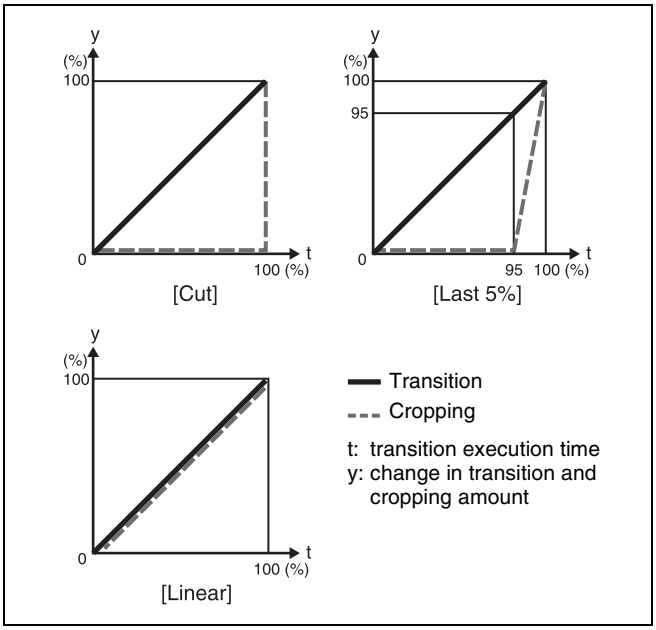
3 In the <Crop Mode> group, press [Crop] or [4:3 Crop] (to crop from 16:9 to 4:3 aspect ratio), turning it on.

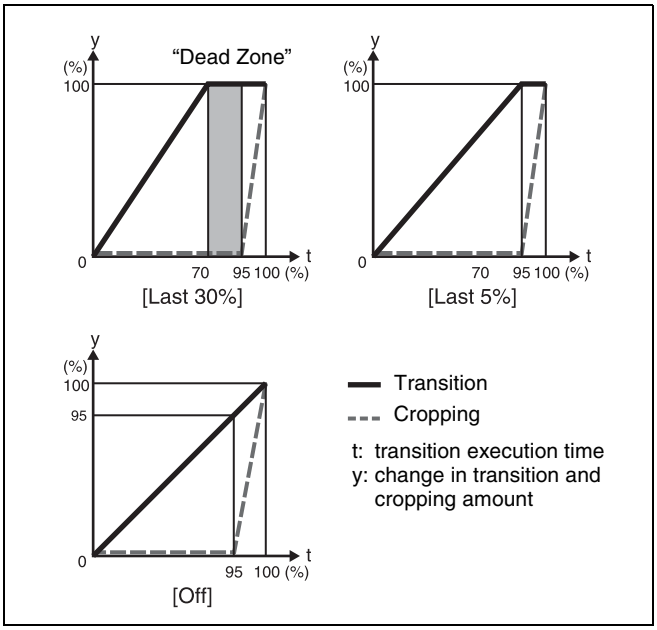
4 In the <Crop Mode> group, press [Remove From Begin].

The Remove From Begin menu 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 through the whole course of the transition (enlarges).





Setting 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 In the M/E 1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

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

The Remove From Begin menu 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 VF6 'DME Wipe' to return the DME wipe settings to their initial status.

For details of the menu operation to return the DME wipe state to that set in initial status, see "Returning to Default State in Function Groupings" (page 75).

DME Wipe Settings for Independent Key Transitions

You carry out independent key transition DME wipe setting operations using the DME Wipe Adjust menu for each keyer.

For an overview of independent key transitions, see page 102.

This section describes the independent key transition DME wipe settings, taking the M/E-1 >Key1 >Transition >DME Wipe Adjust menu as an example.

Basic Procedure for Independent Key Transition DME Wipe Settings

Accessing the independent key transition DME wipe settings menu

As an example, to access the M/E-1 >Key1 >Transition >DME Wipe Adjust menu, carry out the following operation.

- In the menu control block, select the top menu selection button [M/E 1], and select VF1 'Key1' and HF6 'Transition' to display the Transition menu for key 1. Next, press [DME Wipe Adjust].
  If VF1 [Key5] is shown, press the switching button at the top of the menu, so that [Key1-4] appears, and press VF1 [Key1].

Notes

To select [M/E-4], a previous assignment in the Setup menu is required.

- Press the key delegation button [Key1] in the independent key transition control block of the M/E-1 bank, then press the independent key transition type [DME] twice in quick succession.

Carrying out the above operation displays the M/E-1 >Key1 >Transition >DME Wipe Adjust menu (which will be referred to below as simply the Key1 DME Wipe Adjust menu).

Selecting the independent key transition DME wipe pattern

You select the independent key DME wipe pattern from the list of patterns displayed in the menu.

To select a DME wipe pattern for independent key1 on the M/E-1 bank, use the following procedure.

1 In the <Pattern Select> group of the Key1 DME Wipe Adjust menu, press [1ch] for one-channel mode or [2ch] for two-channel mode.

The Pattern Select menu appears.

2 Select the desired DME wipe pattern group with one of the following buttons.

(In two-channel mode, only Page Turn and Page Roll are selectable.)
- **Slide/Squeeze:** slide and squeeze
- **Split/Door:** split and door
- **Mirror/Sphere:** mirror and sphere
- **Character Trail:** character trail
- **Wave/Ripple:** wave and ripple
- **Page Turn/Roll:** page turn and page roll
- **Frame I/O:** frame in/out
- **2D Trans/3D Trans:** 2D Trans and 3D Trans
- **Sparkle/Split Slide:** sparkle and split slide
- **User Program:** user programmable DME

For details of DME wipe patterns, see "Types of DME Wipe Pattern" (page 172) and "DME Wipe Pattern List" (page 348).

3 Press the button to select the desired pattern.

Setting Independent Key Transition DME Wipe Modifiers

You can add modifiers such as pattern position and size for an independent key transition DME wipe.

For introductory information, see "Setting the DME wipe position (Positioner)" (page 178) and "Setting the DME wipe pattern size (Size)" (page 179).

Setting the DME wipe position (Positioner)

For applicable pattern numbers, see page 174.

1 In the <Position> group of the Key1 DME Wipe Adjust menu, press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–200.00 to +200.00
2	V	Vertical position	–200.00 to +200.00

To return the DME wipe pattern position to the center of the screen

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

Setting the DME wipe pattern size (Size)

For applicable pattern numbers, see page 175.

1 In the Key 1 DME Wipe Adjust menu, press [Size], turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Size	Set size of effect	0.00 to 200.00 a)

a) The effect size when [Size] is off is taken as 100.00%.

Cropping a key DME wipe

1 In the <Crop Mode> group of the Key1 DME Wipe Adjust menu, press [Crop], turning it on.

2 Set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Crop the left and right of the image	Left value shown
2	V	Crop the top and bottom of the image	Top value shown
3	All	Crop the top, bottom, left, and right of the image	Left value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Cropping of the top of the image	–100.00 to +100.00
2	Left	Cropping of the left of the image	–100.00 to +100.00
3	Right	Cropping of the right of the image	–100.00 to +100.00
4	Bottom	Cropping of the bottom of the image	–100.00 to +100.00

To crop to 4:3 in 16:9 mode

In the <Crop Mode> group, press [4:3 Crop], turning it on.

To set the operation for DME wipe crop transition execution

1 In the <Crop Mode> group of the Key1 DME Wipe Adjust menu, press [Crop], turning it on.

2 In the <Crop Mode> group, press [Crop] or [4:3 Crop] (to crop to 4:3 in 16:9 mode), turning it on.

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

The Remove From Begin menu appears.

*For subsequent operations, see step **5** of "To set the action when a DME wipe crop transition is executed" (page 180).*

To set the timing of transition completion

1 In the <Crop Mode> group of the Key1 DME Wipe Adjust menu, press [Crop], turning it on.

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

For subsequent operations, see "Setting the timing of transition completion" (page 181).

Applying a border to a key DME wipe

In the <Edge> group of the Key1 DME Wipe Adjust menu, press [Border], turning it on.

*For subsequent operations, use the same process as in step **4** of "Modifying the DME wipe pattern edge" (page 178).*

Resizer DME Wipe Setting

You can carry out a DME wipe on a key using the resizer.

Notes

When the screen aspect ratio is 4:3 in HD format, when the resizer DME wipe is used to shrink a video image, this is applied to the 16:9 screen including the added video on the left and right sides. Use the crop function as required to extract the 4:3 image.

DME wipe patterns available for resizer DME wipe

You can use the following patterns of the DME wipe pattern one-channel mode that can be used in a resizer DME wipe. (7000-series numbers)

- Slide (pattern numbers: 7001 to 7008)
- Squeeze (pattern numbers: 7021 to 7031)
- Frame in-out (pattern numbers: 7201 to 7208, 7221 to 7224)

Relation between resizer DME wipes and other effects

The following relations hold between a resizer DME wipe and other effects.

Relation to processed keys

It is not possible to select a resizer DME wipe for a key with processed key enabled.

Relation to resizer

It is not possible to use a resizer DME wipe for a key with resizer enabled.

It is not possible to use a resizer DME wipe for a key forming a pair with a key with the dual resizer effect enabled. The key combinations forming pairs are keys 1 and 2, keys 3 and 4, key 5 and key 6, and key 7 and key 8. For example, when a dual resizer effect is enabled for key 1, it is not possible to use a resizer DME wipe on key 2.

Making resizer DME wipe settings

1 In the <Pattern Select> group of the Key1 DME Wipe Adjust menu, press [1ch].

The 1ch Pattern Select menu appears.

2 Select [Resizer Slide/Squeeze] or [Resizer Frame I/O].

The patterns of the selected group appear.
The wipe patterns that can be used for a resizer DME wipe are as follows.

- **Slide** (pattern numbers: 7001 to 7008)
- **Squeeze** (pattern numbers: 7021 to 7031)
- **Frame in-out** (pattern numbers: 7201 to 7208, 7221 to 7224)

3 Press the desired pattern to select it.

For more about resizer DME wipe modifiers, see "Setting Independent Key Transition DME Wipe Modifiers" (page 182).

DME Wipe Snapshots

You can snapshot and save a DME wipe pattern together with the current settings of its modifiers and pattern limit in a dedicated register for recall when required.
There are 10 DME wipe snapshot registers for each of the M/E and P/P banks.
To save and recall these registers, use the Flexi Pad control block, the Multifunction Flexi Pad block in each switcher bank or the Menu control block.
In the case of a simple transition system, there are eight DME wipe snapshot registers for each switcher bank.

DME Wipe Snapshot Operations With the Flexi Pad

You can save, recall and delete DME wipe snapshots using the procedures similar to the procedures for wipe snapshot operations. In DME wipe snapshot operations, use the [DME] button instead of the [WIPE] button used in wipe snapshot operations.

Selecting a DME wipe pattern in the Flexi Pad control block

In the standard type Flexi Pad control block, enter a four-digit pattern number, using the [DME] button *(see page 167)*.

Notes

- You cannot select a DME wipe pattern in the simple type Flexi Pad control block.
- A button in the memory recall section in which a DME wipe snapshot is saved shows the pattern, and lights yellow.
  For a user-programmable DME, the register number *(see page 186)* appears.
  Depending on the setting of the Setup menu, you can also display a register name.
  For details, see "Operation Settings (Operation Menu)" in Chapter 19 (Volume 2).
- In a simple type Flexi Pad control block, it is not possible to delete a DME wipe snapshot.
  For details of the operating procedures, see "Wipe Snapshots" (page 166).

DME Snapshot Operations With the Menus

In the same way as for wipe snapshots, you can save, recall, and delete DME snapshots.

For details of the operating procedures, see "Wipe Snapshot Operations With the Menus" (page 168).

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 system.
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 pattern, specify the register number that corresponds to the pattern number as shown in the following table.

Execution mode	Register number	Pattern number
One-channel mode	101 to 199	1901 to 1999
Two-channel mode	201 to 299	2901 to 2999
Three-channel mode	301 to 399	3901 to 3999

For details of registers and keyframe effects, see Chapter 13 "Keyframe Effects" (Volume 2), respectively.

Notes

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

Keyframe effects in the global channel

When the effect with the same number as the reference channel is present on the DME global (GLBL) 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.

For details of the operating procedures, see "Transition Mode Settings for User Programmable DME" in Chapter 13 (Volume 2).

The following transition modes are available.

Channels	Transition mode	Effect group
One-channel mode	Single transition mode	Slide, Split, Door, Page turn, Page 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
Two-channel mode	Dual transition mode	Slide, Squeeze, 3D Trans
	Two-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 172).

Notes

For the following group of effects available in two-channel mode, no user programmable DME wipe patterns can be created.

Page turn, Page roll, Frame in-out, 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 (one-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, select [Single].

Notes on flip tumble (one-channel mode)

- Create the first keyframe image at full size. In the <Back> group of the DME >Input/Output >Video/Key menu, depending on the direction of the rotation you want during the transition, press [H Invert] or [V Invert], turning it on.

- 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, select [Flip Tumble].

Notes on frame in-out (one-channel mode)

Create a minimum of three keyframes.

- 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 keyframe 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, select [FRAME I/O].

Notes on Frame in-out H (one-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 time, press the [PAUSE] button in the keyframe 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, select [FRAME I/O H].

Notes on frame in-out V (one-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 time, press the [PAUSE] button in the keyframe 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, select [FRAME I/O V].

Notes on picture-in-picture (one-channel mode)

Create a minimum of three keyframes.

- 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 keyframe 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, select [P In P].

Notes on compress (one-channel mode)

Create a minimum of three keyframe points.

- Create the first keyframe with the image at full size.
- In the state at completion of the first transition, create the image to be visible within the screen. At this time, press the [PAUSE] button in the keyframe control block, turning it on, to set a pause for the keyframe.
- For the last keyframe, once again set the image size to full size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [Compress].

Notes on dual transition mode (two-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, select [Dual].

Notes on picture-in-picture (two-channel mode)

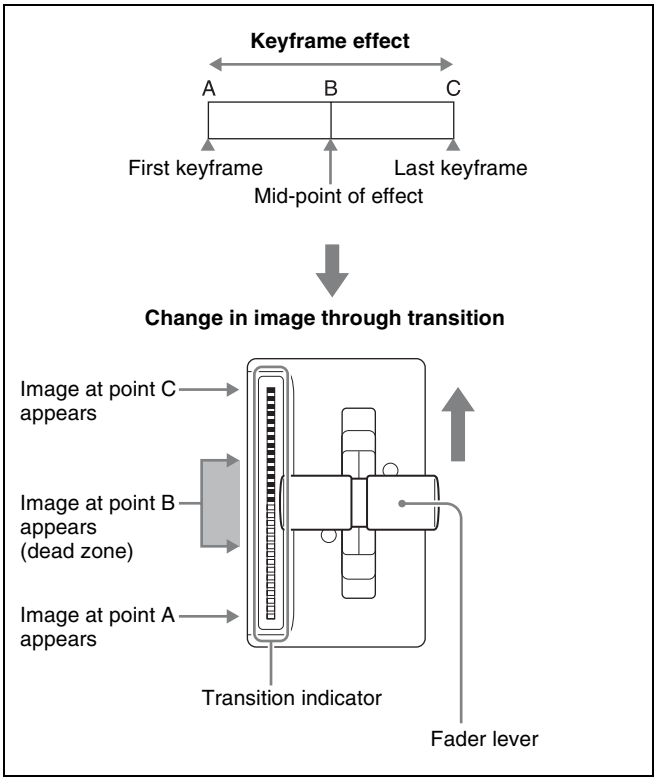
Create a minimum of three keyframes.

- 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 to Ch4 >Combiner menu, when setting the priority of channel 1 and channel 2, set the channel 1 priority higher.
- In the intermediate part of the transition, create the two images so that both are visible within the screen. In the Global Effect >Ch1 to Ch4 >Combiner menu, when setting the priority of channel 1 and channel 2, set the channel 2 priority higher.

  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 this “dead zone” corresponds to the central one-third of the range of the transition indicator. This also applies to an auto transition.



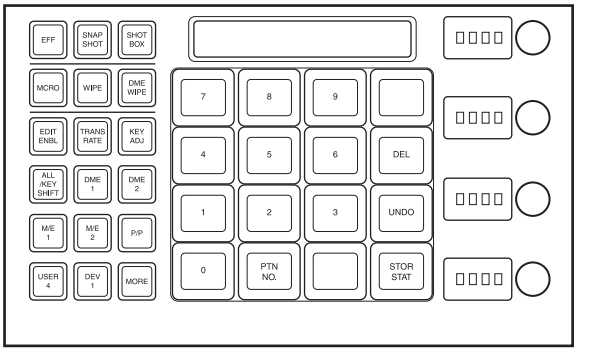
- Create the last keyframe for each channel as follows.
  - **Channel 1:** since the priority is low, it will not be visible on the screen, so no particular restrictions apply.
  - **Channel 2:** create the image full-size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [P In P].

DME Wipe Pattern Operations in the Multifunction Flexi Pad Control Block

Recalling a DME Wipe Snapshot

The operation of recalling a DME wipe snapshot in the Multifunction Flexi Pad control block is the same as the operation of recalling a wipe snapshot, except for pressing the [DME WIPE] button to select DME wipe snapshot mode *(see page 169)*.

You can change the indications for buttons [0] to [9] in the memory recall section to pattern images, using the Engineering Setup >Panel >Operation >Flexi Pad Mode menu.



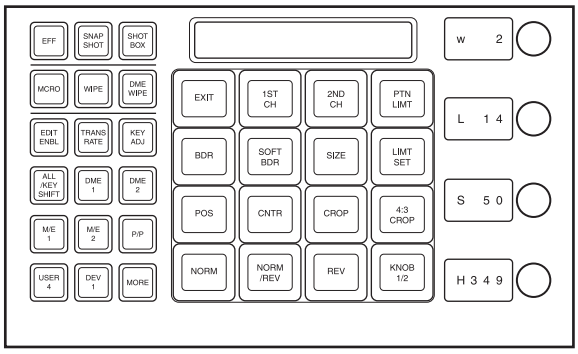
Selecting the DME Wipe Pattern

The operation of selecting the DME wipe pattern in the Multifunction Flexi Pad control block is the same as the operation of selecting a wipe pattern, except for pressing the [DME WIPE] button to select DME wipe snapshot mode *(see page 169)*.

Note, however, that the pattern numbers for DME wipe patterns have four digits *(see page 348)*.

Editing the DME Wipe Pattern

By pressing the [EDIT ENBL] button to switch the memory recall section to editing mode as shown in the following illustration, you can edit the selected DME wipe pattern with the following buttons.
To exit from the editing mode, press the [EDIT ENBL] button once more, or press the [EXIT] button.



Note that the operation of the following buttons is the same as when editing a wipe pattern.

- [EXIT] button
- [PTN LIMT], [LIMT SET] buttons
- [NORM], [NORM/REV], [REV] buttons
- [KNOB 1/2] button

For the method of operation of these buttons, see "Editing the Wipe Pattern" (page 169).

Channel selection buttons

1ST CH (channel 1): Selects channel 1.
2ND CH (channel 2): Selects channel 2.
You can also select two channels by pressing the buttons simultaneously.

DME wipe pattern edge setting buttons

BDR (border): Applies a border to the DME wipe pattern.
SOFT BDR (soft border): Softens the applied border.
You can adjust the parameters selected with these buttons using the control knobs, when the button is lit green.

- **When border is selected**

Knob	Parameter	Adjustment	Setting values
1	W	Border width	0 to 100
2	L	Luminance	0 to 100
3	S	Saturation	0 to 100
4	H	Hue	0 to 359

- **When soft border is selected**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	W	Border width	0 to 100
2	I	Degree of softening of inside of border	0 to 100

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	L	Luminance	0 to 100
2	S	Saturation	0 to 100
3	H	Hue	0 to 359

Buttons for positioning the DME wipe pattern

POS (position): Adjusts the position of the DME wipe pattern.
CNTR (center): Returns the DME wipe pattern position to the center.
When you press the [POS] button, the alphanumeric display first shows the name of the parameter, "H" or "V," and then the value of the parameter.
When the [POS] button is lit green, you can adjust the position of the pattern with the control knobs.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–200 to +200
2	V	Vertical position	–200 to +200
3	H (R)	Relative horizontal movement	–400 to +400
4	V (R)	Relative vertical movement	–400 to +400

Buttons for setting DME wipe pattern cropping

CROP: Adjusts the DME wipe pattern cropping.
4:3 CROP: Crops a 16:9 image to 4:3.
When the [CROP] button is lit green, you can set the cropping ratio of the DME wipe pattern, with the control knobs.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Cropping ratio of the image from left and right sides	–100 to +100
2	V	Cropping ratio of the image from top and bottom sides	–100 to +100
3	A	Cropping ratio of the image from all four sides	–100 to +100

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	T	Cropping ratio of the image from the top	–100 to +100
2	L	Cropping ratio of the image from the left	–100 to +100
3	R	Cropping ratio of the image from the right	–100 to +100
4	B	Cropping ratio of the image from the bottom	–100 to +100

Button for specifying effect size

SIZE: Specifies the effect size. When the [SIZE] button is lit green, you can specify the effect size, with the control knobs.

Knob	Parameter	Adjustment	Setting values
1	S	Effect sizes	0 to 200 [a)]

a) The effect size when [Size] is off is taken as 100.00.

DME wipe modify clear

With the [DME WIPE] button held down, pressing and holding down the region selection button for the selected region returns the DME wipe settings to their initial status.

For details of the initial status, see "Saving User-Defined Settings" in Chapter 18 (Volume 2).

Saving, Canceling, and Deleting DME Wipe Snapshots

The operations of saving, canceling, and deleting a DME wipe pattern snapshot you have created are the same as the operations of saving, canceling, and deleting a wipe snapshot *(see page 171)*.

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).

Frame 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. (Of the two, one is reserved for storing frame memory clips.)

HD system:
(Without ancillary data)

Video format	Memory capacity
1080i/50	Approx. 1000 frames
1080i/59.94	
1080PsF/23.976	
1080PsF/24	
1080PsF/25	
1080PsF/29.97	
1080PsF/50	Approx. 2300 frames
1080P/30	
720P/50	Approx. 2300 frames
720P/59.94	

(With ancillary data)

Video format	Memory capacity
1080i/50	Approx. 700 frames
1080i/59.94	Approx. 800 frames
1080i/60	
1080PsF/23.976	Approx. 600 frames
1080PsF/24	
1080PsF/25	Approx. 700 frames
1080PsF/29.97	Approx. 800 frames
1080PsF/30	
720P/50	Approx. 1400 frames
720P/59.94	Approx. 1700 frames

SD system:
(Without ancillary data)

Video format	Memory capacity
480i/59.94	Approx. 5600 frames
576i/50	Approx. 4800 frames

(With ancillary data)

Video format	Memory capacity
480i/59.94	Approx. 4700 frames
576i/50	Approx. 3900 frames

For details of operating procedures, see "Still Image Operations" (page 193).

Types of image and terminology used

The following types of image are handled in frame memory.

Freeze image: An input image that has been frozen, but not saved 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, which appears as a movie on playback. In this manual this 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 simply referred to as an "image."

About extended clips

Of the two memory blocks for saving a clip, the clip saved in the one which is not combined with a still image is called an "extended clip."

However, when the signal format is 1080P, since both a still image and a clip are saved in both memory blocks, there is no extended clip.

Use of frame memory

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.

Notes

However, 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: the frame memory source bus 1 and the frame memory source bus 2.
These input buses are used by allocation to one of the pairs of output, FM1&2, FM3&4, FM5&6, and FM7&8. You can freeze a frame in each channel separately, or freeze in the two channels simultaneously.
The source buses allocated to FM1 to FM8 are as follows.

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

Pair mode

By enabling the pair mode, you can link FM1 and FM2, FM3 and FM4, FM5 and FM6, and FM7 and FM8. For example, when a freeze or image processing is carried out on FM1, the same operation is carried out on FM2. The same applies to the other pairs. 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 210)* 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 210)* to split a pair file.

Operation modes

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

Frame memory folders

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

Notes

- When the system is powered off, the folder names are deleted. The folder names need to be saved 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 Operations

The frame memory functions provides the following still image file functions.

- Capturing and Saving an Input Image *(page 196)*
- Recalling Still Images *(page 198)*
- Image Output *(page 199)*
- Continuously Capturing Still Images (Record) *(page 200)*
- Recalling a Continuous Sequence of Still Images (Animation) *(page 200)*

Notes

During playback of a frame memory clip of the pair assigned to either of the target FM selection buttons *(see page 204)*, frame memory operations may not be performed properly. Carry out frame memory operations after stopping clip playback.

Preparations

Allocating 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 allocated to a cross-point button. Carry out this allocation in the Setup menu.

Notes

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

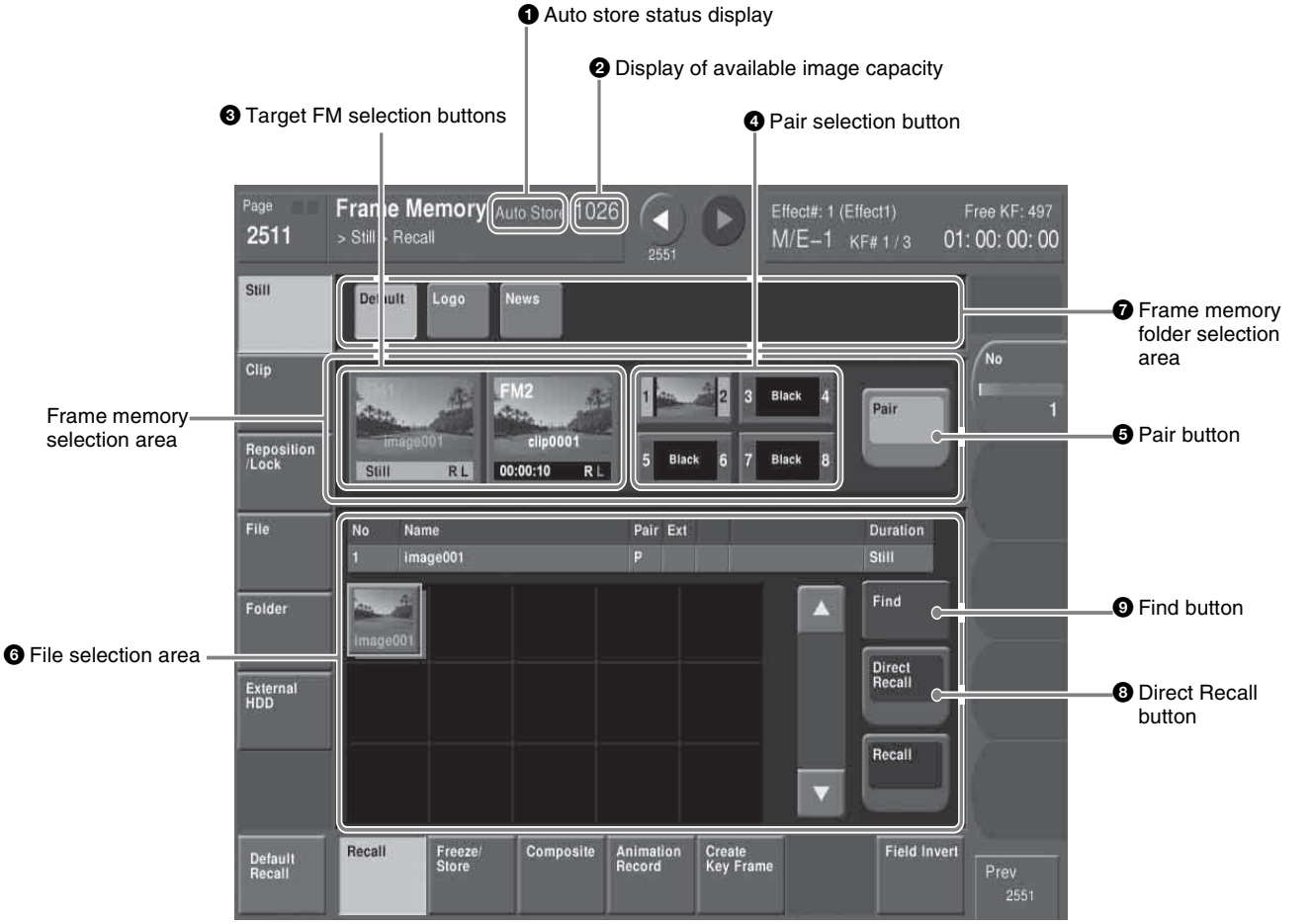
Accessing the Frame Memory menu

Most frame memory operations are carried out using the Frame Memory menu.
To access the Frame Memory menu, use either of the following procedures.

- In the menu control block, select the top menu selection button [FRAME MEM].
- Press the cross-point button to which the frame memory output is allocated twice in rapid succession.

Interpreting the Frame Memory Menu

The menu screen consists of the following principal parts. The frame memory selection area display is the same for all except the Pattern Adjust/Pattern Select/Field Invert/ File (excluding Pair Recombination menu)/Folder/ External Device menus.



Frame Memory menu

❶ Auto store status display

Depending on the setup settings, this appears when the auto store function is enabled.

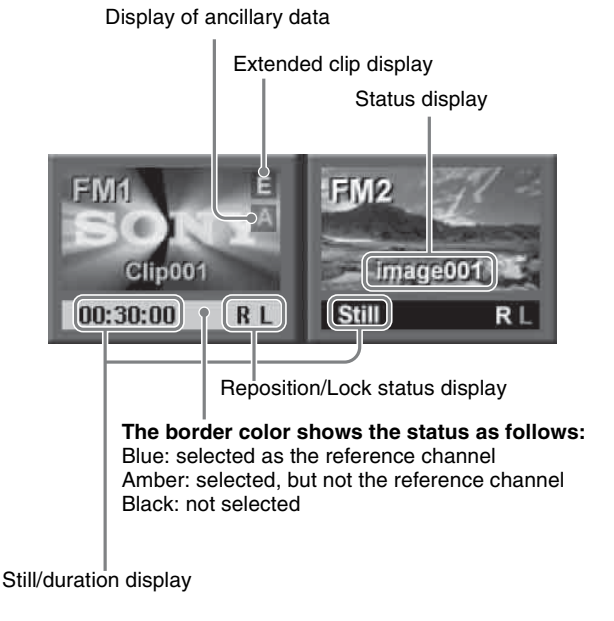
❷ Display of available image capacity

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 extended clips.

Notes

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

❸ Target FM selection buttons



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

Status display
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 (record)

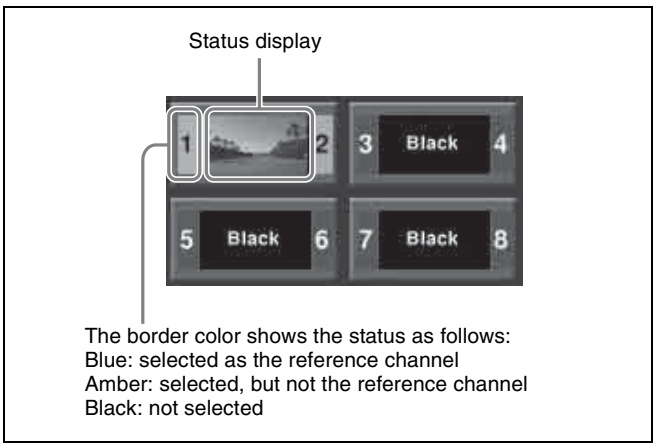
Still/duration display
When a still image is selected, "Still" is shown. When a clip is selected, a duration indication such as "00:00:10" is shown.

Reposition/Lock status display
This shows "R" when the reposition function *(see page 199)* is on, and shows "L" when the lock function *(see page 199)* is on.

Extended clip display
For an extended clip, an "E" appears.

Ancillary data-attached clip display
For an ancillary data attached clip, an "A" appears.

❹ Pair selection button
Select the pair to be displayed in the target FM selection buttons.
(in the following figure, the pair of FM1 and FM2 is selected.)

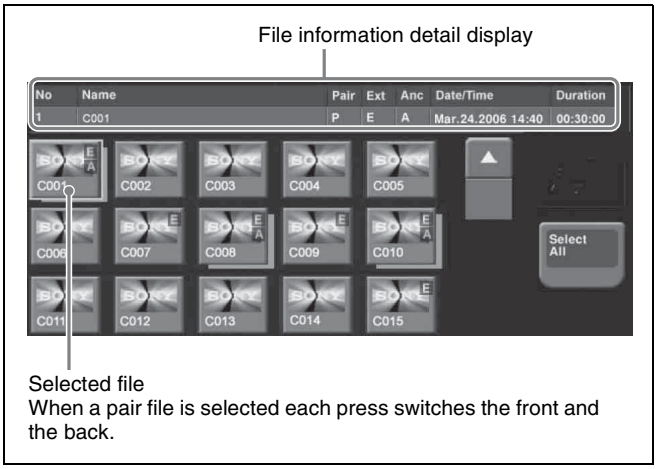


The following information appears on the button.

Status display
For a pair, shows the status for the reference.
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 (record)

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

❻ 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 files are displayed as gray buttons and clip files are displayed as yellow buttons.
Single files and pair files: Single files are displayed with shadow and pair files are displayed with no shadow.
Selected file: Pale blue border. When more than one file is selected, only the first is pale blue, and the remainders are amber. If the pair file was selected, each press switches the front and the back.

File information detail display
For the selected file, this shows the file name, "P" if a pair file, "E" if an extended clip, "A" if an ancillary data attached clip, and the duration.

❼ Frame memory folder selection area
Select the frame memory folder to be displayed.

❽ Direct Recall button
Toggle on and off the direct recall mode in which pressing a thumbnail immediately recalls the file.

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

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 bus 1 or 2 for the input image, select the signal as described below.

Selecting the signal on a frame memory source bus

As an example, to select a signal on frame memory source bus 1, use the following procedure.

1 In the auxiliary bus control block, press the AUX delegation button to which frame memory source bus 1 is allocated, turning it on.

For allocation of buses to the AUX delegation buttons, see "Assigning a Bus to an AUX Delegation Button" in Chapter 19 (Volume 2).

On a CCP-6224/6324 control panel, you switch the cross-point control block for use as an AUX bus control block.

2 In the auxiliary bus control block cross-point buttons, select the signal to be used for the input image.

To select a signal with a key or DME effect applied on the frame memory source bus

In the key control block, press the [FM FEED] button, turning it on.
This automatically assigns the key fill and key source signals being keyed by the currently selected keyer to frame memory source buses 1 and 2.
When DME is selected on the keyer, the key fill and key source signals to which a DME effect is applied are assigned.

Selecting Outputs and Target Frame Memory

Selecting outputs (FM) and target frame memory

The following description applies to the case of settings for FM1&2, but the procedures are similar for the other cases.

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

The current status of frame memory appears. *(See page 193.)*

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

This assigns the signals to FM1 and FM2.
To the right of the target FM selection buttons, the FM1 and FM2 output status appears *(see page 194)*.

3 If required, press [Pair], to select the FM operation mode (pair mode).

On: Operate on FM1 (3, 5, 7) and FM2 (4, 6, 8) as a pair.
Off: Operate on FM1 (3, 5, 7) and FM2 (4, 6, 8) individually.

For more details, see "Pair mode" (page 192).

Notes

In the Pair Recombination menu, the [Pair] operation is not possible.

4 Press the target FM selection button [FM1] or [FM2] *(see page 194)* to select the FM operations apply to.

When [Pair] is On: Whichever of FM1 and FM2 you press, the pair is selected.
When [Pair] is Off: One of the targets must be selected. However, in the Clip >Play menu you can also select both FM1 and FM2.

Selecting a frame memory folder

Press a button in the frame memory folder selection area *(see page 195)*.
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

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

Notes

When the system is powered off, any freeze images written to temporary memory are lost.

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 In the Frame Memory menu, select VF1 'Still' and HF2 'Freeze/Store.'

The Freeze/Store menu appears.

2 Select the target frame memory.

For the procedure, see "Selecting outputs (FM) and target frame memory" (page 196).

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

4 Press a button in the frame memory folder selection area, to select the folder to hold the freeze image *(see page 196)*.

Notes

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

5 Press [Freeze Enable], turning it on.

The signals of frame memory source buses 1 and 2 are assigned to the pair of FMs selected in step **2**, a freeze is now possible.

6 If necessary, make the video process settings *(see page 197)* or mask settings *(see page 198)* for application to the selected signal.

7 In the state in which you want to freeze, press one of the following in the <Freeze> group, to write the freeze image to temporary memory.

Frame: Freeze one frame.
Field: Freeze one field.
Off: Release the freeze, and delete the recorded freeze image.
After carrying out the freeze, to return to the state immediately before the freeze, press [Undo] in the <Freeze> group.

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, unless the auto store function has been enabled in setup. With the auto store function enabled, 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/23.976, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Saving a freeze image (Store)

You can save an image in temporary memory which has been placed with the freeze function as a file in memory. You can save a single image in a single file and 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.

To save a captured still image in a file, use the following procedure in the Still >Freeze/Store menu.

1 Press [Store].

The keyboard window *(see page 72)* appears.

2 In the keyboard window, enter the file name.

Notes

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 In the keyboard window, press the [Enter] button.

This saves the still image file in memory.
The destination folder is the folder selected in step **4** of "Freezing an image and writing it to memory."
If the entered folder name already exists, a message to confirm overwriting appears.
When the system is powered off, the file saved in memory is erased.

To carry out a freeze and store simultaneously (Freeze and Store)
Press [Freeze & Store], turning it on.
In this state, if you press [Frame] or [Field], this carries out a freeze, and simultaneously stores in a still image file.

Setting video processing

To set video processing for the signal selected on a frame memory source bus, use the following procedure in the Still >Freeze/Store menu.

1 In the <Video Process> group, press [Video Process], turning it on.

2 Use the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Overall gain of the video signal	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Y signal black level	–7.31 to +109.59

To return the settings to the default values, press [Unity] in the <Video Process> group.

Notes

When a pair setting is active, it is coupled to the video process on/off setting, but the above parameter settings are only valid for frame memory source bus 1. The pair setting cannot be used to set the frame memory source bus 2. If you want to set video process for frame memory source bus 1 only with the pair setting when old settings for frame memory source bus 2 remain, return the frame memory source bus 2 settings to their default values. When setting video process for the frame memory source bus 2, disable the pair setting.

Setting a mask

Masks can be set separately for frame memory source buses 1 and 2. To apply a mask to the signal selected on frame memory source bus 1, for example, use the following procedure in the Still >Freeze/Store menu.

1 Press [Box Mask], turning it on.

2 Use the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Top	Top position	–100.00 to +100.00
2	Left	Left position	–100.00 to +100.00
3	Right	Right position	–100.00 to +100.00
4	Bottom	Bottom position	–100.00 to +100.00

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

Recalling Still Images

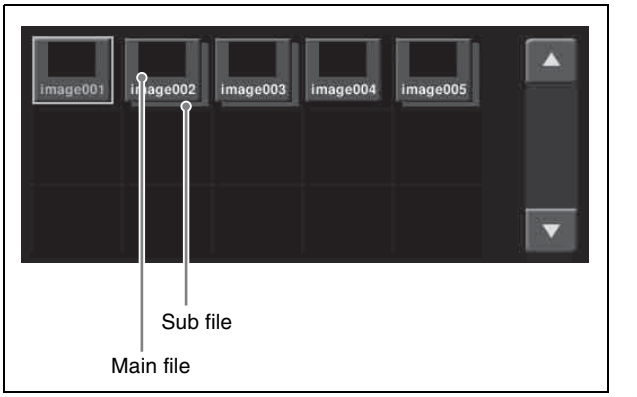
You can recall an image file saved in memory, and allocate to any of the FM1 to FM8 outputs.

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 In the Frame Memory menu, select VF1 ‘Still’ and HF1 ‘Recall.’

The Recall menu appears.
- When [Pair] is on, only pair files (pairs of main file and sub file) are displayed.
- When [Pair] is off, both single files and pair files appear (see following figure).



2 In the frame memory selection area, select the FM to be assigned. *(See page 196)*.

3 If [Direct Recall] is on, press and turn it off.

4 Select the desired folder in the folder selection area. 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 Using the arrow keys or turning the knob, scroll the file thumbnail display.

Knob	Parameter	Adjustment	Setting values
1	Scroll	Thumbnail display scrolling	1 and upwards

6 Press the thumbnail of the still image you want to recall.

7 Press [Recall].

This recalls the still image file, which is assigned to the FM you selected in step **2**.

To recall in direct recall mode

Direct recall means that pressing a thumbnail immediately recalls the file.
In this mode, only the front thumbnail file is recalled.

1 In step **7** above, instead of pressing [Recall], press [Direct Recall].

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

To display the subsidiary file in front

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

To search by file name

1 Press the [Find] button.

The Find window appears.

2 Press [Find].

A keyboard window appears.

3 Enter the string you want to search for, and press [Enter].

This starts the search, and the indicator lights.
When the search ends, the files found are selected.

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

5 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)

For up to two channels of FM1 to FM8 (one from FM1, FM3, FM5 and FM7 and the other from FM2, FM4, FM6 and FM8), you can move the output image with respect to the screen. The area of the screen around the image that has been moved is filled with black. There are two ways of carrying out this repositioning.

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

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

Notes

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

1 In the Frame Memory menu, select VF3 ‘Reposition/Lock’ and HF1 ‘Reposition.’

The Reposition menu appears. In this menu, you can also enable the V/K mode *(see page 197)*.

2 In the frame memory selection area, select the FM output *(see page 196)*.

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

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

4 With the knobs, adjust the parameters to move the image.

Knob	Parameter	Adjustment	Setting values
1	Position H	Move in horizontal direction	–200.00 to +200.00 a)
2	Position V	Move in vertical direction	–200.00 to +200.00 a)

a) See *page 158*.

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

5 To return the image moved by the reposition function to the center position, in the <Reposition> group press [Center].

Fixing the output image selection (lock function)

For the output of each of FM1 to FM8, this fixes the image at the current output. When this lock is enabled, even if the output is recalled in a snapshot or keyframe, the images output to FM1 to FM8 are preserved.

Notes

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

1 In the Frame Memory menu, select VF3 ‘Reposition/Lock’ and HF2 ‘Lock.’

The Lock menu appears.

2 In the frame memory selection area, select the FM output. *(See page 196.)*

3 Press [Lock], turning it on.

This fixes the currently selected frame memory output image.
To release the lock, set [Lock] to 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 name of each image recorded in this way consists of a first character string followed by a second string.

First character string: A common part of name assigned to all the still images captured in one record operation. This string includes a maximum of four characters, which can be specified using a menu before carrying out the capture. The first string is automatically used as the clip name when the images are treated as a frame memory clip.

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

Notes

When using the record function to continuously capture frames, it is not possible to use the mask function.

Continuously freezing input images and writing to memory

1 In the Frame Memory menu, select VF1 ‘Still’ and HF4 ‘Animation Record.’

The Animation Record menu appears.

2 Select the desired frame memory *(see page 196)*.

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

4 Press a button in the frame memory folder selection area, to select the folder to hold the freeze image *(see page 196)*.

Notes

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

5 Press [Record Enable], turning it on.

The signals of frame memory source buses 1 and 2 are assigned to the pair of FMs selected in step **2**, the recording function is now possible.

6 Input the file name if required.

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

7 Set the recording time if required.

Pressing [Duration] displays the numeric keypad window, in which you can enter the recording time in the form of timecode.
If you set the recording time to zero, this uses all frame memory in which storing is possible for recording.

8 If required, set video processing for the selected signal *(see page 197)*.

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 as keyframes to create an effect. By executing this effect you can recall the continuous sequence (animation).

Notes

- For example, to create an effect using FM1, FM1 must be assigned to a user region.

• To execute the effect, you must assign the user region to which FM1 is assigned to a region selection button in the numeric keypad control block and the Multifunction Flexi Pad control block.
For details of assigning to region selection buttons, see Chapter 19 "Control Panel Setup (Panel)" (Volume 2).

In the Frame Memory menu, effect creation follows the image file names. Of the eight characters in the file names, if files have the same characters except for the last three characters they are treated as an image file group, and the effect is created with the last three (numeric) characters in sequence.

Notes

When creating the effect in pair mode *(see page 192)*, the files used must be main files and sub files with the same last three (numeric) characters in the file name.

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.

Notes

With the 720P format or 1080P format, you can continuously recall images using the frame memory in units of two frames only.

Creating an effect with still image files as a keyframe

1 In the Frame Memory menu, select VF1 'Still' and HF5 'Create Key Frame.'

The Create Key Frame menu appears.
- A thumbnail appears for each group of files having the same characters, except for the last three characters, in the file name.
- When [Pair] is on, only pair files (each pair comprising a main file and a sub file) appear.
- When [Pair] is off, both single files and pair files all appear.

2 In the frame memory selection area, select the frame memory to be assigned *(see page 196)*.

3 Select the desired folder in the folder selection area. 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 Turn the knob to select the register number in the user region.

Knob	Parameter	Adjustment	Setting values
5	Register	Effect register number	1 to 99

Notes

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

*For details, see step **3** of "Recalling a Register" in Chapter 13 (Volume 2).*

5 Use the arrow keys or turn the knobs to scroll the thumbnail display of the files.

Knob	Parameter	Adjustment	Setting values
1	Scroll	Thumbnail display scrolling	1 and upwards

6 Select the thumbnail of the files to be used for the keyframe.

7 If necessary, turn the knob to check the animation effect in the thumbnail display.

Knob	Parameter	Adjustment	Setting values
3	Viewer	Animate thumbnail display of files	00:00:00 and upwards

8 Using the region selection buttons in the numeric keypad control block or the Multifunction Flexi Pad control block, select one of the regions (User1 to User8) to which the frame memory output signals have been assigned.

9 Carry out either of the following.

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

A confirmation message for creating the effect appears.
If there is an inappropriate condition for creating the effect, an error message appears.

For details of error messages, see "Error Messages" in the Appendix (Volume 2).

10 Press [OK].

This creates the effect in the selected user region register.

To cancel creating the effect
Press [Cancel].

Notes

- The effect is built with the selected files, in increasing order of the last three characters of the file name. 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

Run the effect created by the foregoing procedure.
The procedure for doing this is the same as for any other effect.

For details, see "Executing Effects" in Chapter 13 (Volume 2).

Frame Memory Clip Function

What is a "frame memory clip"?

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 200)*.

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

For details, see "Saving a Frame Memory Clip With Ancillary Data" in Chapter 18 (Volume 2).

Notes

- With this setting, 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 any 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," and can be saved to an external storage device such as a hard disk or memory card, and recalled. However, the ancillary data can only be saved or recalled;

- 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(d):
  In this state the ancillary data is not played. This is the status when the [Ancillary Enable] button in the Frame Memory >Clip menu is set to Off.
- Enable(d):
  In this state, ancillary data is present, and can be played

back. This is the status when the [Ancillary Enable] button in the Frame Memory >Clip menu is set to On. This is the status after a clip recording operation.

This status information is saved in a file, and is followed when the file is recalled.

Frame memory clip settings

For frame memory clips, you can make the following settings using a menu or device control block (trackball/search dial/joystick).

- Start point
- Stop point
- Loop On/Off

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

Frame Memory Clip Operations

Notes

During playback of a frame memory clip of the pair assigned to either of the target FM selection buttons *(see page 204)*, frame memory operations may not be performed properly.

Carry out frame memory operations after stopping clip playback.

Preparations for Operation

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

For details, see "Preparations" (page 193) and "Selecting Outputs and Target Frame Memory" (page 196).

Recalling Clips

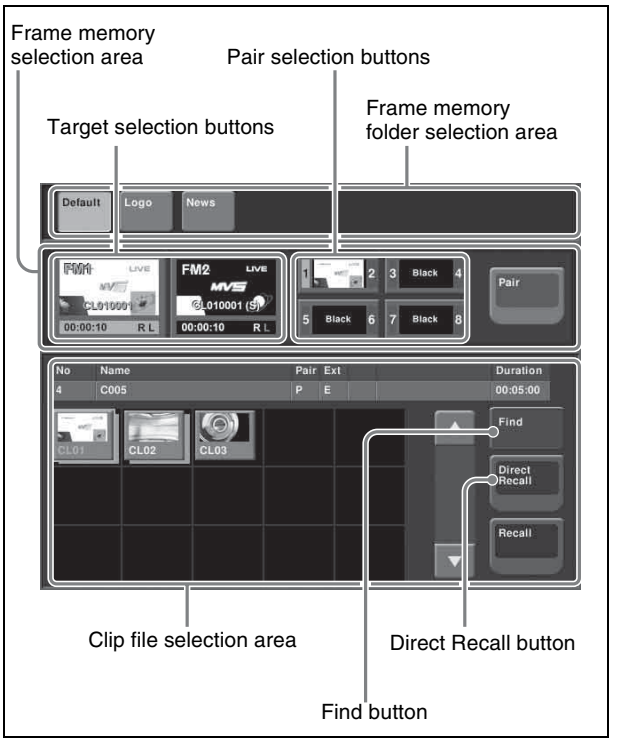
Recalling a clip

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

1 In the Frame Memory menu, select VF2 'Clip' and HF1 'Recall.'

The Recall menu appears. *(See following figure)*

- When [Pair] is set to On, only pair files (sets of main file and sub file) are shown.
- When [Pair] is set to Off, both of single files and pair files are shown.



2 In the frame memory selection area, select an assigned target FM. *(See page 196).*

3 If [Direct Recall] is on, press the button, turning it off.

4 In the frame memory folder selection area, select the desired folder.
By pressing [More] to switch the displays, you can select from a maximum of 12 folders.

5 Using the arrow keys or turning the knob, scroll the file thumbnail display.

Knob	Parameter	Adjustment	Setting values
1	Scroll	Thumbnail display scrolling	1 and upwards

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

7 Press [Recall].

This recalls the clip file, which is assigned to the FM you selected in step **2**.
In pair mode, if a clip is selected, the main file is output to FM1, and the sub file to FM2. In single mode, when only one of FM1 and FM2 is selected, the front file on the thumbnail is output.

To recall in direct recall mode

Direct recall means that pressing a thumbnail immediately recalls the file.
In this mode, only the front thumbnail file is recalled.

1 In step **7** above, instead of pressing [Recall], press [Direct Recall].

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

To display the subsidiary file in front

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

To search the clip file by file name

Press the [Find] button *(see page 199)*.

Clip Playback

You can play a recalled clip by a menu operation or by using the device control block.

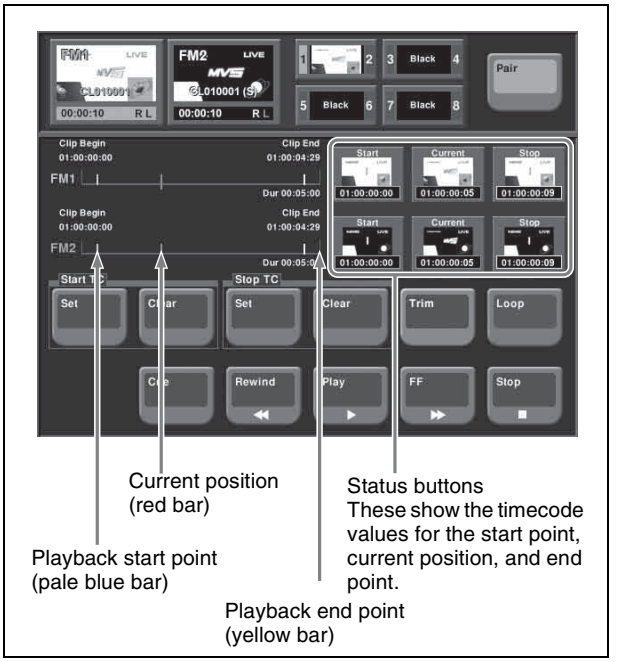
Notes

With a pair file recalled, it is possible to set [Pair] to Off and carry out a single file operation, but if you then set [Pair] to On again, the output of frame memory may be black. In such cases it is necessary to recall the pair file once more.

Playing a clip using the menu

1 In the Frame Memory menu, select VF2 ‘Clip’ and HF2 ‘Play.’

The Play menu appears. The status of the clip shown in the current target FM selection buttons appears here.



2 When [Pair] is Off, press a target FM selection button to select the target.

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

4 To start playback, press [Play]. During playback, to stop, 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, in the <Start TC> group, press [Set]. To set a different position, press the [Start] status button, and enter a timecode value from the numeric keypad window.

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

To change the current position
To change the current position, press the [Current] status button, and enter a timecode value from 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].

A confirmation message appears.

3 Press [Yes].

Using the device control block (search dial) to play back clips

Notes

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

1 With the device selection buttons, select the frame memory clip to be played (FM1 CLIP to FM8 CLIP).

If the pair mode is on, both main and subsidiary FMs light.

2 Press the [PLAY] button, turning it on.

To stop playback, press [STOP] or any of the [SHTL], [JOG], [CUE], [REW], [FF], and [ALL STOP] buttons.

For details of the buttons in the device control block (search dial), see "Device Control Block (Search Dial)" (page 39).

To specify the playback start point
To make the current position the playback start point, press the [START TC] button. To set a different position, press the [SET START TC] button, then enter the timecode from the numeric keypad control block.

To specify the duration
Press the [SET DUR] button, and enter a timecode from the numeric keypad control block. If the playback start point is already set, this automatically sets the playback stop point. If the playback stop point is already set, this automatically sets the playback start point. (The duration setting is not displayed in the device control block.)

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 set to any position, press the [SET STOP TC] button, and enter a timecode from the numeric keypad control block.

To carry out the variable speed playback
Use the search dial.

For details on using the search dial, see "Controlling the Tape/Disk Transport" in Chapter 12 (Volume 2).

To apply a loop to a frame memory clip
Press the [LOOP] button.

Using the device control block (trackball) or device control block (joystick) to play back clips

Notes

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

1 Press the [DEV] button in the region selection buttons, and select the frame memory clip for playback (FM1 CLIP to FM8 CLIP).

If the pair mode is on, both main and subsidiary FMs light.

2 Press the [PLAY] button, turning it on.

To stop playback, press [STOP] or any of the [SHTL], [JOG], [CUE], [REW], [FF], and [ALL STOP] buttons.

For details of the buttons in the device control block (trackball) or device control block (joystick), see "Device Control Block (Trackball)" (page 35).

For details of the playback start point, stop point, and duration settings, see the previous item, "Using the device control block (search dial) to play back clips" (page 205).

To carry out the variable speed playback

Press any of the [SHTL], [JOG], and [VAR] buttons, then turn the Z-ring or move the joystick. The image changes in the forward direction when you turn the Z-ring clockwise, and in the reverse direction when you turn it counterclockwise. Move the joystick to the right for the forward direction and to the left for the reverse direction.

When you pressed the [JOG] button: Playback is at a speed corresponding to the turning speed of the Z-ring or the movement speed of the joystick.

When you pressed the [SHTL] button: Playback is at a speed corresponding to the rotation angle of the Z-ring or amount of movement of the joystick.

When you pressed the [VAR] button: Playback is at a speed corresponding to the rotation angle of the Z-ring or amount of movement of the joystick, in the range –1 to +3 times normal speed.

Clip Creation

You save a movie as a clip.

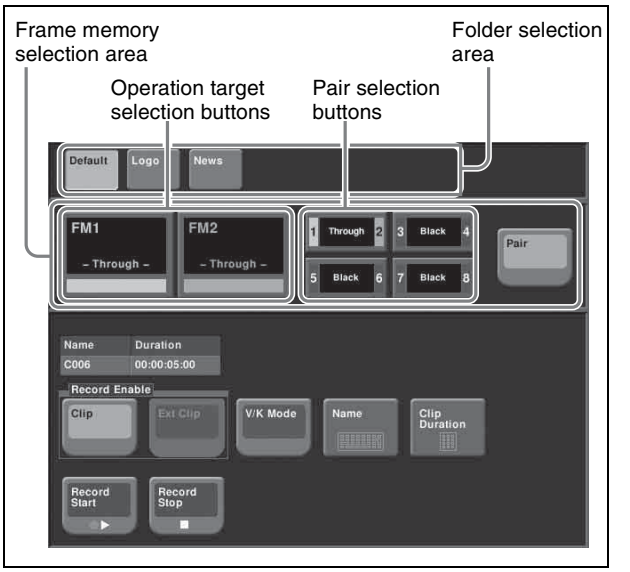
Notes

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

Using the menu to record clips

1 In the Frame Memory menu, select VF2 'Clip' and HF3 'Record.'

The Record menu appears.



2 With [Pair] off, press the operation target selection button, to select the operation target.

3 In the folder selection area, select the folder containing the clip to be recorded.

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

- To record a normal clip, press [Clip].
- To record an extended clip, press [Ext Clip].

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

A keyboard window appears.

6 Enter the clip name, and press Enter.

7 To start recording, press [Record Start].

8 To end recording, press [Record Stop].

To set the clip duration

1 Press [Clip Duration].

A numeric keypad window appears.

2 Enter a timecode value or number of frames, and press Enter.

Creating and Handling Frame Memory Folders

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

Creating a new folder

1 In the Frame Memory menu, select VF5 'Folder.'

The Folder menu appears. The status area shows a list of the current folder settings.

2 Select [New].

A keyboard window appears.

3 Enter the folder name, and press Enter.

Changing the folder name

1 In the Frame Memory >Folder menu, select the folder with the arrow keys or by turning the knobs.

Knob	Parameter	Adjustment	Setting values
1	No.	Folder selection	1 to 12
2	Num	Number of files to select consecutively from selected file	1 to 12

2 Press [Rename].

A keyboard window appears.

3 Enter the new folder name, and press Enter.

Notes

The following names cannot be used for folders:
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

This changes the folder name.

Deleting a folder

1 In the Frame Memory >Folder menu, select the folder with the arrow keys or by turning the knobs.

Knob	Parameter	Adjustment	Setting values
1	No.	Folder selection	1 to 12
2	Num	Number of files to select consecutively from selected file	1 to 12

To select all folders, select [All].

2 Press [Delete].

A confirmation message appears.

3 To carry out the deletion select [Yes], and to cancel the deletion select [No].

Notes

It is not possible to delete the default folder (named "Default").

Clip Output

As for still image operation, you can use the reposition and lock functions.

For details of the operation, see "Image Output" (page 199).

Recording and Playback of Ancillary Data

Preparations

To record ancillary data, it is first necessary in the Setup menu to select "save with ancillary data" as the frame memory saving mode.

For details, see "Saving a Frame Memory Clip With Ancillary Data" in Chapter 18 (Volume 2).

Recording ancillary data

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

For details of the operating sequence, see "Clip Creation" (page 206).

To check ancillary data during recording

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

For the method of setting the signal output to through mode, see "Signal Output Settings (Output Menu)" in Chapter 20 (Volume 2).

Notes

For [Freeze Enable] or [Record Enable], in the <Record Enable> group, pressing [Clip] or [Ext Clip] to turn them on or off may result in noise. Also, with these buttons in the On state, selecting the signal on the frame memory source bus may result in noise.

Playing back ancillary data

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

For the subsequent playback operation, see "Clip Playback" (page 204).

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.
  For the method of setting through mode, see "Signal Output Settings (Output Menu)" in Chapter 20 (Volume 2).
- When the reposition function is on, ancillary data cannot be played back.
- Switching reposition function between on and off may cause noise.
- Only the AUX bus and edit preview bus can output ancillary data.
- For loop playback of clips in the following video formats, the loop playback range must be at least 5 frames, and set to a multiple of 5 frames.
  - 480i/59.94
  - 720P/59.94
  - 1080i/59.94
  - 1080PsF/29.97
- Recalling operations of still images or clips can cause noise.
- Carrying out file operations on a frame memory clip may result in the ancillary data being discontinuous, or in noise occurring. However, if the first or last frame of the clip is deleted, noise will not occur.
- The audio sampling frequency is always 48 kHz.
- In the case of 480i or 59.94, noise may occur at the beginning of playing back a clip. This can be avoided by making the first nine or more frames of the clip soundless.
- When you play back the recorded embedded audio, depending on the device to be used, noises are produced at the playback start point and end point. For details of devices that are used for playback, contact your Sony service or sales representative.

1 In the Frame Memory menu, select VF2 "Clip", HF5 "Ancillary Enable."

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

3 Set the [Ancillary Enable] button to On.

Clip Transition Operations

A frame memory clip (movie) is played back, linked to a transition using a mix (dissolve) or wipe.
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 including a clip transition during executing another clip transition, the follow-on transition does not operate properly. Be sure to complete the transition before recalling a snapshot.

Notes

When a clip transition is selected as the transition type, if one of the wipe direction selection buttons in the transition control block is lit, it indicates the direction of clip playback.

Setting a clip transition

The following example describes the case of a clip transition using FM 1&2 Clip on the M/E-1 bank.

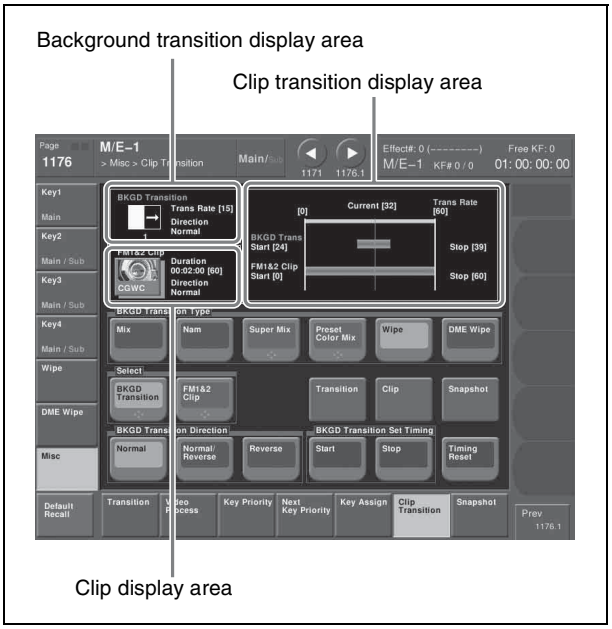
Notes

To use a clip transition effectively, the image from the frame memory clip being played back during the clip transition should be seen in the M/E-1 program output. For example, inserting a key using frame memory output 1 and frame memory output 2.

1 Display the M/E-1 >Misc >Transition menu, and in the <Transition Type> group select "FM1&2 Clip."

2 Press [Clip Transition].

The Clip Transition menu appears.



3 Press the [Clip] button.

The status area shows a list of clips.

4 Select the clip to use in the clip transition.

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

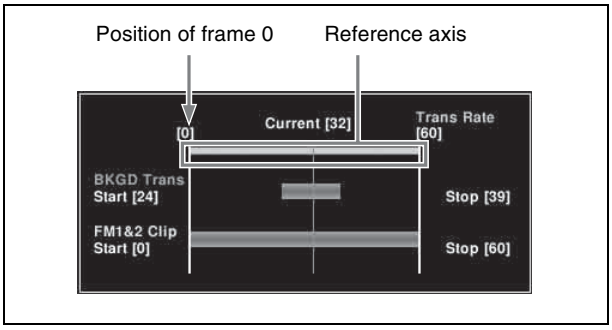
Notes

For details of the background transition selected here, see the various adjustments in the M/E-1 >Misc >Transition menu.

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 in the <BKGD Transition Set Timing> group press [Start].
- Turn knob 1 to set the number of frames. (The left end of the reference axis *(see following figure)* is the position of 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 in the <BKGD Transition Set Timing> group press [Stop].
- Turn knob 2 to set the number of frames.

9 If Wipe or DME Wipe is selected in the <BKGD Transition Type> group, in the <BKGD Transition Direction> group, select the background transition direction.

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 in the <Clip Transition Set Timing> group press [Start].
- Turn knob 1 to set the number of frames. (The left end of the reference axis *(see previous figure)* is the position of frame 0.)

Notes

It is not possible to set the 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 *(page 210)*
- Moving Files *(page 210)*
- Deleting Files *(page 211)*
- Renaming Files *(page 211)*

Notes

During playback of a frame memory clip of the pair assigned to either of the target FM selection buttons *(see page 204)*, frame memory operations may not be performed properly. Carry out frame memory operations after stopping clip playback.

Pair File Processing

You can create a pair file from two single files. In the reverse direction, you can split a pair file into two single files.

Couple: You can create a pair file from two single still image files or clip files.

Separate: You can also separate a pair file into two single still image files or clip files.

Creating a pair file from two single files

Notes

Carrying out the following operation automatically switches [Pair] to On.

The following description applies to the case of FM1&2, but the procedures are similar for the other cases.

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

2 In the Frame Memory menu, select VF4 'File' and HF1 'Pair Recombination.'

The Pair Recombination menu appears.

3 Press [Couple].

Splitting a pair file into two single files

Notes

Carrying out the following operation automatically switches [Pair] to Off.

The following description applies to the case of FM1and FM2, but the procedures are similar for the other cases.

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

2 Select the folder in which the file to be moved is stored.

3 In the Frame Memory menu, select VF4 'File' and HF1 'Pair Recombination.'

The Pair Recombination menu appears.

4 Press [Separate].

Moving Files

1 In the Frame Memory menu, select VF4 'File' and HF4 'Move.'

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

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

3 Using any of the following methods, select the file to be moved.

- Press the arrow keys to scroll the display.
- Press directly on the thumbnail in the status area.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	No	File selection	1 and upwards
2	Num	Selection of number of files in sequence	1 and upwards

4 Select the destination folder and file.

5 Press [Move].

6 To confirm the move press [Yes], and to cancel press [No].

Deleting Files

1 In the Frame Memory menu, select VF4 ‘File’ and HF5 ‘Delete.’

The Delete menu appears. In the status area, whether pair mode is on or off, all of the saved files appear as thumbnails.

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

3 Using either of the following methods, select the file to be deleted. If necessary, press the arrow keys to scroll the display.

- Press directly on the thumbnail in the status area.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	No	File selection	1 and upwards
2	Num	Selection of number of files in sequence	1 and upwards

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

4 If necessary, turn the knob to check the contents of the frame memory clip through the thumbnail display.

Knob	Parameter	Adjustment	Setting values
3	Viewer	For a movie, the current frame position. For a still image, no effect.	00:00:00 and upwards

5 Press [Delete].

A message for confirming the deletion appears.

6 To confirm the deletion press [Yes], and to cancel press [No].

Renaming Files

1 In the Frame Memory menu, select VF4 ‘File’ and HF6 ‘Rename’

The Rename menu appears. In the status area, whether pair mode is on or off, all of the saved files appear as thumbnails.

2 Using either of the following methods, select the file to be renamed. If necessary, press the arrow keys to scroll the display.

- Press directly on the thumbnail in the status area.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	No	File selection	1 and upwards

3 If necessary, turn the knob check the contents of the frame memory clip through the thumbnail display.

Knob	Parameter	Adjustment	Setting values
3	Viewer	For a movie, the current frame position. For a still image, no effect.	00:00:00 and upwards

4 Press [Rename].

A keyboard window appears.

5 Enter the new name, then press [Enter] in the keyboard window.

Notes

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

External Hard Disk Drive Access

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

Notes

- Only one hard disk drive can be connected to a single switcher processor.
- While the hard disk 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.
- During playback of a frame memory clip of the pair assigned to either of the target FM selection buttons *(see page 204)*, frame memory operations may not be performed properly. Carry out frame memory operations after stopping clip playback.
- When the signal format is 1080P, this function cannot be used.

Consult your Sony service representative or sales representative about the hard disk drives that can be connected.

Hard Disk Formatting

When you connect a hard disk drive for the first time, it is necessary to format the hard disk. This partitions the disk, creating 15 logical areas (FMHDD1 to FMHDD15).

1 In the Frame Memory menu, select VF6 'External Device' and HF1 'Ext HDD Format.'

The Ext HDD Format menu appears.

To get the hard disk drive information
In the button area press [Refresh Status].
The Device item shows the product information for the hard disk drive.

2 Press [Format].

A popup window for confirming formatting appears.

Notes

Carrying out formatting erases any existing data on the hard disk.

3 Press [Yes].

This starts the hard disk formatting. A progress bar and numerical indication appear to show the progress of the operation.
When the operation is completed, a popup window reading "Success!!" appears.

4 Press [OK].

Saving Files

You can save all of the files from frame memory to the external hard disk drive.

Notes

Before carrying out this operation for the first time, it is necessary to format the hard disk *(see previous item, "Hard Disk Formatting")*.

1 In the Frame Memory menu, select VF6 'External Device' and HF2 'Ext HDD Backup/Restore.'

The Ext HDD Backup/Restore menu appears.
For each partition, a list of the directory names and number of files appears.

To get the hard disk drive information
Press [Refresh Status].
The Device item shows the product information for the hard disk drive, and the names of directories.

2 Using any of the following methods, select a logical drive (FMHDD1 to FMHDD15).

- Press directly on the list to select.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Partition	Partition selection	1 to 15

3 In the <Backup> group, do either of the following.

- To replace the existing data, press [Replace].
- To save in addition to the existing data, press [Append].

A popup window for confirming file saving appears.

Notes

When you execute [Replace], all of the saved files in the logical drive is erased immediately before the saving operations.

4 Press [Yes].

This starts the file saving operation. If there is no directory, a directory is automatically created, and the files are saved within it. A progress bar and numerical indication appear to show the progress of the operation.
When the operation is completed, a popup window reading “Completed.” appears.

5 Press [OK].

To rename a directory

Select a directory in the list, and in the button area press [Rename].
In the keyboard window that appears, enter the new directory name, and press [Enter]. The name of a directory is limited to eight characters.

Notes

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

Recalling Files

You can recall all of the saved files on the hard disk drive into frame memory.

1 Carry out steps **1** and **2** of the procedure *“Saving Files” (page 212)*.

Notes

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

2 In the <Restore> group, do either of the following.

- To replace the existing data with the recalled data, press [Replace].
- To add the recalled data to the existing data, press [Append].

A popup window for confirming file recall appears.

Notes

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

3 Press [Yes].

This starts the file recall operation. A progress bar and numerical indication appear to show the progress of the operation.
When the operation is completed, a popup window reading “Completed.” appears.

4 Press [OK].

Managing Images Using a DDR/VTR

Using a DDR/VTR for 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 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 this 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.

High-speed recording of backup data to DDR or VTR

Notes

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

1 In the Frame Memory menu, select VF6 'External Device,' and HF4 'Backup to DDR/VTR.'

The Backup to DDR/VTR menu appears.

2 To save with ancillary data, output the frame memory output signal to the AUX bus.

3 In the <Backup Enable> group, select either 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].

The message "Preparing now..." is displayed in a popup window, and it changes to a confirmation message when the preparation is complete.

5 Start recording at the external device, and immediately after that press [Yes].

This starts the backup, and when completed a message appears.

6 Stop the recording at the external device, and press the [OK] button.

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

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

For details, see "Overview of File Operations" in Chapter 17 (Volume 2).

Restoring backup data from DDR or VTR

Notes

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

1 In the Frame Memory menu, select VF6 'External Device' and HF5 'Restore from DDR/VTR.'

The Restore from DDR/VTR menu appears.

2 Press [File >File Name Data], to read the file list from the File Name Data menu.

For details, see "Overview of File Operations" in Chapter 17 (Volume 2).

3 To restore the ancillary data, select any of FM1, FM3, and FM5.

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

Replace: Replace the existing frame memory data with the recalled data.
Append: Add to the existing frame memory data.

Notes

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

6 Press [Restore Start].

A confirmation popup window appears.

7 Start playback at the external device, and immediately after that press [Yes].

Notes

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

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

8 Stop the playback at the external device, and press the [OK] button.

Extracting Images from Video Tape

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

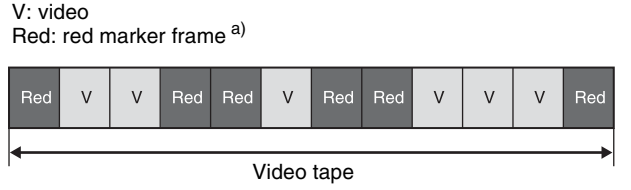
Notes

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

Relation between recorded state of video tape and files after extraction

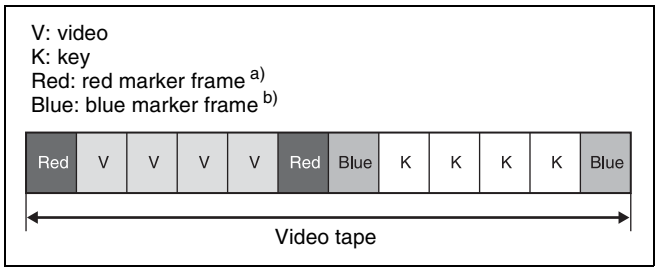
The extraction is carried out according to the following rules.

Example 1: When only video signal clips and a still image 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 case above two clip files (main files) are extracted, and one still image file.

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 case above, one clip file (pair file) is extracted.

a) A red marker frame is a monochrome frame with the RGB signal levels respectively 100%, 0%, 0%.
b) A blue marker frame is a monochrome frame with the RGB signal levels respectively 0%, 0%, 100%.

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 menu <Record Enable> group when the video tape content is recorded as a clip.
- For image extraction as still images, [Clip] must be selected in the Record menu <Record Enable> group when the video tape content is recorded as a clip.

1 In the Frame Memory >Clip >Record menu, record the tape image as a clip *(see page 206)*.

2 In the Frame Memory menu, select VF4 ‘File’ and HF2 ‘Auto Extraction.’

The Auto Extraction menu appears.

3 Select a clip (single file) recorded from the tape.

4 Press [Extraction Start].

A confirmation popup window appears.

5 Press [Yes].

This starts the extraction, analyzes the currently selected single clip, and automatically extracts a movie (Clip) or still image (Still). When there is key data, a pair file is created.

To check the details of the images (still image/clip)

Use the following knob operations.

Knob	Parameter	Adjustment	Setting values
1	No.	File number	1 to maximum
3	Viewer	Timecode for selected image	00:00:00 to maximum

Color Backgrounds, Copy and Swap, and Other Settings

Chapter 8

Color Background

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 combinations (“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 in the menu system as “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 the settings menu for color background 1 as an example.

Color Background Settings Menu

Accessing the Color Bkgd1 menu

Use either of the following operations.

- In the menu control block, select the top menu selection button [COLOR BKGD], and press VF1 ‘Color Bkgd1.’
- Press a cross-point button assigned to color background 1 twice in rapid succession.

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 1 menu, press [Flat Color], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

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 Bkgd1 menu, press [Mix Color], turning it on.

2 Set the following parameters as required.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Degree of softening of edge	0.00 to 100.00
5	Pattern	Pattern number	1 to 24 a)

a) The patterns are the same as for a standard wipe. *See “Wipe Pattern List” (page 344).*

You can also carry out the pattern selection by pressing the [Mix Ptn Select] button, to display the Mix Ptn Select menu. Select any pattern appearing in

the Mix Ptn Select menu (standard wipe patterns 1 to 24), and you can then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

3 To adjust color 1, set [Color 1] on, and to adjust color 2 set [Color 2] on, then adjust the parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

4 If required, set the pattern modifiers.

When turning [Position] on and setting the pattern position

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See *page 158*.

When turning [Multi] on and using replications of the same pattern

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See *page 160*.

When turning [Aspect] on and setting the aspect ratio of the pattern

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See *page 160*.

When turning [Pairing] on and making a wipe pattern like a Venetian blind

Knob	Parameter	Adjustment	Setting values
1	Width	Width of the slits	1 to 128 (integer)

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

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See *page 159*.

When turning [Speed] on in the <Rotation> group and rotating the pattern at a constant rate

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See *page 159*.

When selecting H (horizontal) or V (vertical) in the <Modulation> group and applying waviness to the pattern

(The modulation is always a sine wave.)

Notes

When using 1080PsF mode in an HD system, the modulation function is not available.

Knob	Parameter	Adjustment	Setting values
1	Amplitude	Amplitude of modulation	0.00 to 100.00
2	Frequency	Frequency of modulation	0.00 to 100.00
3	Speed	Speed of waves	–100.00 to +100.00 a)

a) See *"Applying modulation to the wipe pattern (Modulation)" (page 161)*.

5 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Copy and Swap

Overview of Copy and Swap

You can copy or swap the settings among the switcher banks or between keyers.
The following settings can be copied or swapped.

- Overall settings for the M/E-1 to M/E-4, and PGM/PST banks
- Keyer settings
- Wipe settings in a transition control block
- Wipe settings in an independent key transition control block
- DME wipe settings in a transition control block
- DME wipe settings in an independent key transition control block
- Matte data (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 carry out copy operations with a simple button operation. Swap operations, and copy operations on DME data can only be done with a menu operation.

M/E copy and M/E swap

You can copy and swap the overall bank settings among the M/E-1 to M/E-4, and PGM/PST banks.

Target bank	Target data
M/E-1 M/E-2 M/E-3 M/E-4 PGM/ PST	Bank settings excluding the following data items: • Setup data • Flexi Pad settings • Snapshots • Keyframe effects • Key snapshots • Key memory

Notes

If a DME is being used on the 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 carry out copy and swap operations among the keyers listed in the following table.

Target bank	Target keyer	Target data
M/E-1 M/E-2 M/E-3 M/E-4	Keys 1 to 8	Key settings excluding the following data items: • Setup data • Key snapshots • Key memory
PGM/ PST	Downstream keys 1 to 8	

Notes

If a DME is being used on the source keyer for a copy or either keyer for a swap, 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 the wipe settings among the banks listed in the following table.

Target bank	Target data
M/E-1 M/E-2 M/E-3 M/E-4 PGM/ PST	Wipe settings. It is not, however, possible to carry out copy or swap involving independent key transition wipe settings.

Wipe copy and wipe swap in the independent key transition control block

You can copy and swap the wipe settings among the keyers listed in the following table.

Target bank	Target keyer	Target data
M/E-1 M/E-2 M/E-3 M/E-4	Keys 1 to 8	Wipe settings in the independent key transition control block.
PGM/ PST	Downstream keys 1 to 8	

DME wipe copy and DME wipe swap

You can copy and swap the DME wipe settings among the banks listed in the following table.

Target bank	Target data
M/E-1 M/E-2 M/E-3 M/E-4 PGM/ PST	DME wipe settings. It is not, however, possible to carry out copy or swap involving independent key transition DME wipe settings.

DME wipe copy and DME wipe swap in the independent key transition control block

You can copy and swap the DME wipe settings among the keyers listed in the following table.

Target bank	Target keyer	Target data
M/E-1 M/E-2 M/E-3 M/E-4	Keys 1 to 8 But excluding keys 5 to 8 on M/E-4 In the MVS-8000X	DME wipe settings in the independent key transition control block.
PGM/PST	Downstream keys 1 to 8	

Matte data copy and swap

You can copy or swap the matte data among the color generators listed in the following table.

Target bank	Target keyer and data	
M/E-1 M/E-2 M/E-3 M/E-4 PGM/PST	• Keys 1 to 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 the color data among the color generators listed in the following table.

Target bank	Target keyer and data	
M/E-1 M/E-2 M/E-3 M/E-4 PGM/PST	• Keys 1 to 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 (other than DME ch4 and DME ch8) • Trail	

DME channel copy and swap

You can copy and swap the channel data among DME channels 1 to 4 or DME channels 5 to 8.
It is not possible to copy or swap the channel data between DME channels 1 to 4 and DME channels 5 to 8.

Notes

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 above restriction also applies if using the MVE-8000A. There is no such restriction for the MKS-7470X/7471X.

Copying format converter data

You can copy data from one format converter input to another or from one output to another.

Notes

The copy source and destination data must be in the same signal format.

Copy and Swap Operations

Copy and Swap Menu Operations

In the menu operation section top menu selection buttons, press the [Copy/Swap] button, then press VF1 ‘Copy/Swap.’ The Copy/Swap menu appears.
Here a copy/swap operation on wipe data is described by way of example, using the Copy/Swap >Wipe menu, but the same general procedure applies to all of the following menus.
- 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 by DME channels
- Format Converter: Copying format converter data

For an overview of the concepts involved, see “Copy and Swap” (page 219). For details of color corrector copy and swap, see “Copy and Swap Operations” (page 229).

Examples of Copy and Swap Operations by a Menu Operation

As an example, to copy or swap wipe data, use the following procedure.

1 In the Copy/Swap menu, select HF3 'Wipe.'

The Copy/Swap >Wipe menu appears.
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 either of the following.

Wipe: The operation applies to wipes in the transition control block.
Key Wipe: The operation applies to wipes in the independent key transition control block.

3 Using any of the following methods, select the data to be copied or swapped.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs to make the setting.

Knob	Parameter	Adjustment	Setting values
1	Left No	Select data for copy/swap source	1 to 5 a) 1 to 40 b)
2	Right No	Select data for copy/swap destination	1 to 5 a) 1 to 40 b)

a) Transition control block wipe data
b) Independent key transition control block wipe data

For details of the data affected, see "Copy and Swap" (page 219).

4 To copy, press [Copy], and to swap, press [Swap].

To undo a copy or swap

Press [Undo], to return to the state before the copy or swap was carried out.

Copy by Button Operation

You can carry out the following copy operations by a simple button operation.

- M/E copy
- Keyer copy
- Wipe copy
- DME wipe copy

Notes

On the CCP-6224/6324, it is not possible to carry out a copy by button operation.

Basic button operation

The basic button operation is to hold down the copy source button, then press the destination button.
You can undo the last operation using [Undo] in the menu *(see page 221).*

M/E copy button operation

In the Flexi Pad control block of each M/E bank, use the [SNAPSHOT] button.

To copy from M/E-1 to M/E-2

In the M/E-1 Flexi Pad control block, hold down the [SNAPSHOT] button, then press the [SNAPSHOT] button in the M/E-2 Flexi Pad control block.

Keyer copy button operation

To specify the copy source, use the key delegation buttons in the key control block, and to specify the copy destination, use the key delegation buttons in the independent key transition control block.

To copy from M/E-1 key 1 to M/E-2 key 2

In the key control block M/E delegation buttons, press [M/E1], turning it on, then hold down the [KEY1] button, and in the M/E-2 independent key transition control block, press the [KEY2] button.

Wipe copy button operation

Use the [WIPE] button in the Flexi Pad control block of each M/E bank.

To copy the M/E-1 wipe to the M/E-2 wipe

In the M/E-1 Flexi Pad control block, hold down the [WIPE] button, then press the [WIPE] button in the M/E-2 Flexi Pad control block.

DME wipe copy button operation

Use the [DME] button in the Flexi Pad control block of each M/E bank.

To copy the M/E-1 DME wipe to the M/E-2 DME wipe

In the M/E-1 Flexi Pad control block, hold down the [DME] button, then press the [DME] button in the M/E-2 Flexi Pad control block.

Misc Menu Operations

In the Misc menu, you can carry out the following operations.

- Enabling and disabling operation from an external device, System Manager, or an editing keyboard.
- Enabling and disabling side flags on the background bus of each of the M/E-1 to M/E-4 and PGM/PST banks. *For the side flag function, see "Side Flags" (page 238).*
- Switching the safe title function on or off for each switcher output.
- Displaying the transition rate, independent key transition rate, and fade-to-black transition rate for each of the M/E and PGM/PST banks, and changing the settings.

Port Settings for Control From an External Device

Enabling or disabling control from an external device

1 In the menu control block, press the top menu selection button [MISC], then select VF1 'Enable' and HF1 'Port Enable.'

The Misc >Enable >Port Enable menu appears with the status area showing the settings of the following ports.

- 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)

When the signal format is 1080P, you can also make settings for DME3/DME4.

2 In the <Switcher> or <DME> group, press on the name of the port for which you want to disable control from an external device, turning it off.
To re-enable control for the port, press on its name once more.

Notes

For the AUX bus operation from the Remote 1 to Remote 4 ports of the switcher, the setting (Enable/Disable/Manual) in the Setup menu takes precedence. Only when the setting is "Manual," the settings made in the Port Enable menu apply.

For details, see "Interfacing With External Devices (Device Interface Menu)" in Chapter 19 (Volume 2).

DME override

1 In the menu control block, press the top menu selection button [MISC], then select VF1 'Enable' and HF1 'Port Enable.'

The Misc >Enable >Port Enable menu appears.

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.

Notes

If effects using the same DME channel are selected simultaneously in two or more regions, the DME is selected with the order of precedence P/P >M/E1 >M/E2 >M/E3 >M/E4.

Enabling or disabling control from System Manager

By installing the BZPS-8000 System Management Software (System Manager), you can use a computer connected on a network for management of some switcher data and control operations.
To enable or disable this function, use the following procedure.

1 In the menu control block, press the top menu selection button [MISC], then select VF1 'Enable' and HF1 'Port Enable.'

The Misc >Enable >Port Enable menu appears.

2 Press [System Manager].

Each time you press the button toggles between enable and disable.

Editing Keyboard Settings

Notes

The following operations are only possible when a license for the BZS-8050 Editing Control Software is activated.

For details of license registration, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 2).

Enabling or disabling control from the editing keyboard

1 In the menu control block, press the top menu selection button [MISC], then select VF1 'Enable' and HF2 'Plug-In Editor.'

The Misc >Enable >Plug-In Editor menu appears.

2 In the <Control From Plug-In Editor> group, press [Editor Enable].

Each time you press the button toggles between enable and disable.

To enable control of the preview bus only

When control from the editing keyboard is disabled (when [Editor Enable] is set to Disable), to enable control of the preview bus only, press [PVW Bus Enable] in the <Control From Plug-In Editor> group.

Safe Title Settings

Switching the safe title function on or off

1 In the menu control block, press the top menu selection button [MISC] and select VF2 'Safe Title.'

The Misc >Safe Title menu appears.

2 Using any of the following methods, select the signal to which the settings apply.

- Directly press the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob to make the setting.

Knob	Parameter	Adjustment	Setting values
1	Output	Signal to which the settings apply	1 to 48

Notes

- It is not possible to change the setting for the output for which the safe title is set off in a Setup menu.
- The safe title function cannot be used for output signals for which through mode is set to Enable in a Setup menu.

For more information about the Setup menu settings referred to above, see "Signal Input Settings (Input Menu)" and "Signal Output Settings (Output Menu)" in Chapter 20 (Volume 2).

3 Press [Safe Title] to set it on or off.

Displaying a List of Transition Rates and Changing the Settings

In the Transition menu, for each bank you can display a list of the M/E (or PGM/PST) transition rates and independent key (or DSK) transition rates, and change the settings. These settings are linked to the other transition rate setting operations.
You can also display and set the fade-to-black transition rate.

Displaying the Transition menu

In the menu control block, press the top menu selection button [MISC], then select VF3 'Transition.'
The Misc >Transition menu appears.

About the Transition menu display

The display of the independent key transition rate in the Misc >Transition menu depends on the selection in the <Key Transition> group of the Engineering Setup >Switcher >Transition menu for each of the M/E and PGM/PST banks.

When [Same] (On direction and Off direction settings the same) is selected in the <Key Transition> group: Only "Key" (or "DSK" in the PGM/PST bank) appears.

When [Independ] (On direction and Off direction settings independent) is selected in the <Key Transition> group: "Key(On)" and "Key(Off)" each appear. In the case of the PGM/PST bank, "DSK(On)" and "DSK(Off)" appear.

For details, see "Settings Relating to Video Switching (Transition Menu)" in Chapter 20 (Volume 2).

Setting the transition rate in the Transition menu

To set the M/E transition rate

For example, to make the settings for the M/E-1 bank, use the following procedure.

1 Press in the list in the status area of the Misc >Transition menu, to select M/E-1.

2 In the <Transition Rate> group, press [Transition].

3 Turn the knob to set the number of frames.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition rate	0 to 999 (frames)

Notes

When a clip transition is selected as the transition type, it is not possible to change the transition rate in this menu.

To set the independent key transition rate

By way of example, the following is the procedure for settings of keys 1 to 4 in the M/E-1 block.

1. Press in the list in the status area of the Misc >Transition menu, to 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. Turn the knobs to set the number of frames.

Knob	Parameter	Adjustment	Setting values
1	Key1 Trans Rate	Key 1 transition rate	0 to 999 (frames)
2	Key2 Trans Rate	Key 2 transition rate	0 to 999 (frames)
3	Key3 Trans Rate	Key 3 transition rate	0 to 999 (frames)
4	Key4 Trans Rate	Key 4 transition rate	0 to 999 (frames)

To set the fade-to-black transition rate in the Transition menu

1. In the Misc >Transition menu, press [FTB].
2. Turn the knob to set the number of frames.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition rate	0 to 999 (frames)

AUX Menu Operations

AUX Bus Settings

Making video process settings for an AUX bus

1. In the Aux >Aux Bus menu, using any of the following methods, select the AUX bus to which the settings apply.
   - Directly press the list in the status area.
   - Press the arrow keys to scroll the reverse video cursor.
   - Turn the knob to make the setting.

Knob	Parameter	Adjustment	Setting values
1	AUX Bus	AUX bus selection	1 to 48

2. Press [Video Process], turning it on.
3. Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Luminance signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–7.31 to +109.59

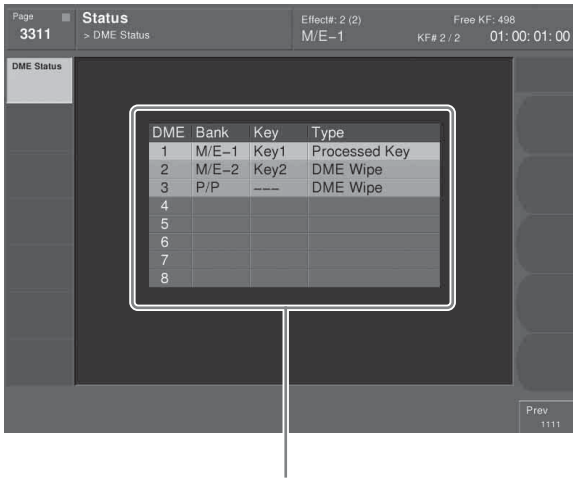
To return adjustment values to their defaults, press [Unity].

Status Menu

The Status menu shows the following information.
- Operating status of the DME

Viewing the DME operating status

To view the DME operating status, press the top menu selection button [STATS] in the menu control block. This selects VF1 ‘DME Status’ and the Status menu appears.



DME status display

For each DME channel, you can see how the DME is being used in the corresponding operation block.
The display background color also indicates the following differences in the way in which a DME is being used.

Blue: The DME is currently being used in other than the final program output.

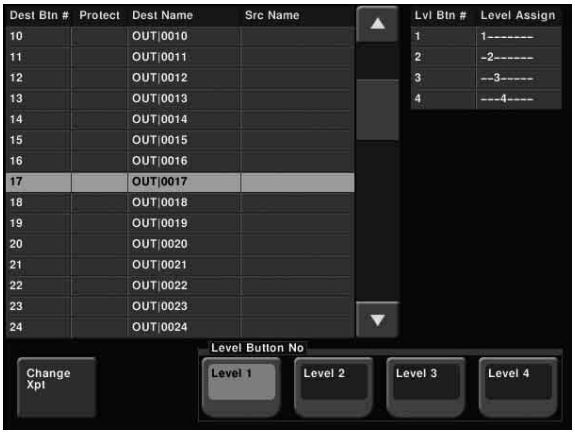
Red: The DME is currently being used in the final program output.

Router Control Menu Operations

Using the Router >Router Control >Router Control menu, you can carry out router switching operations.

Checking the List of Inputs for Each Destination

You can check the list of signals currently input for each destination.
In the menu control block, press the top menu selection button [RTR], then select VF1 ‘Router Control’ and HF1 ‘Router Control.’
The following menu appears, and the left side of the status area shows a list for destination assignments.



If in the Assign >RTR Mode Setting menu, [Inhibit] is set to On for a destination, the corresponding line appears in gray. Also, if [PROT] (protect) is set to ON for a source, using a BKSR3xxx or R1xxx series Router remote control, a padlock icon appears.
The right side of the status area shows the level assignment status to the Level 1 to Level 4 buttons.

Selecting the level

In the <Level Button No> group at the lower right in the above illustration, press the selected level for switching.

Switching the Source for Each Destination

You can switch the source for each destination with a menu operation.
For the assignment of destinations and sources to buttons, use the Setup >Panel >Aux Assign >RTR Mode Setting menu.

For details, see "Using the Auxiliary Bus Control Block for Router Control" in Chapter 19 (Volume 2).

1 Press [Change Xpt].

The Router >Router Control >Router Control >Change Xpt menu appears.
Destination Select buttons appear in groups of 16.
Source Select buttons appear by group (maximum 24 buttons).

2 Press one of the Destination Select buttons, to select the destination for which you want to switch the source.

To change the group
Press one of the [1-16], [17-32], [33-48], and [49-64] buttons.

3 Press one of the Source Select buttons, to select the source you want to switch.

To change the group
Press one of the [1-24], [25-48], ... [97-120], and [121-128] buttons.

Video Process

The term "video process" is applied to adjustments to the luminance and hue of the input video signal.
There are two types of adjustment, depending on the application:
- Adjustment of an individual input signal
- Image effects on a particular bus

Notes

These types of adjustment may be carried out independently. However, since they are implemented by the same hardware, if the same signal is subjected to processing twice, there may be limitations on the range of effects obtained in the final result.

Video Process Adjustments for Each Input Signal

For each signal input to the switcher, you can set video process on or off and set the parameters (Video Gain, Y Gain, C Gain, Hue Delay, and Black Level) in the Setup menu.

For details of the settings, see "Signal Input Settings" in Chapter 20 (Volume 2).

Video Process Adjustments on a Particular Bus

Buses to which the adjustments apply

For each of the following buses, you can switch video process adjustments on or off, and adjust the parameters.
- Following buses in the M/E-1 to M/E-4, and PGM/PST banks
  - Key fill buses for keys 1 to 8
  - Background A and background B buses
  - Utility 1 and utility 2 buses
- Frame memory source 1 and frame memory source 2 buses
- Aux 1 to 48 buses

These settings also apply to keyframes and snapshots.

Making the adjustments

Adjust VIDEO GAIN, Y GAIN, BLACK LEVEL, C GAIN, and HUE DELAY in the following menus.

Applicable bus		Menu used for operation	See page
M/E-1 to M/E-4 banks	Key fill buses for keys 1 to 8	M/E-1 to M/E-4 menus	*page 130*
	Background A and B buses	Video Process menu	*page 227*
	Utility 1 and 2 buses		
PGM/PST bank	Key fill buses for DSK1 to DSK8	PGM/PST menu	*page 130*
	Background A and B buses	Video Process menu	*page 227*
	Utility 1 and 2 buses		
Frame memory source 1 and 2 buses		Frame Memory menu	*page 197*
Aux 1 to 48 buses		AUX menu	*page 224*

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 for the signals. The video process on/off 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 switching video process memory on, 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, BLACK LEVEL, C GAIN, HUE DELAY

Switch the video process memory on or off in the Setup menu.

For details of setting operations, see "Settings Relating to Keys, Wipes, Frame Memory and Color Correction (Key/Wipe/FM/CCR Menu)" in Chapter 20 (Volume 2).

Video Process Settings

This section describes operations on the M/E-1 to M/E-4, and PGM/PST background A and B buses, and utility buses 1 and 2.
For these operations, use the Misc >Video Process menu in the respective operating bank.

For video process settings on other buses, see the following.

- *Settings for a particular input signal: "Signal input settings" in Chapter 20 (Volume 2)*
- *Key fill bus settings: "Video Processing" (page 130)*
- *Settings for frame memory source buses 1 and 2: "Setting video processing" (page 197)*
- *Settings for Aux 1 to 48 buses: "Making video process settings for an AUX bus" (page 224)*
- *Overview of video process: "Video Process" (page 226)*

This section describes an example on the background A bus of the M/E-1 bank.
For the background B bus or utility bus 1 or 2, make the adjustment with a similar procedure.

Making video process settings for each bus

1 In the menu control block, press the top menu selection button [M/E1] and select VF7 'Misc' and HF2 'Video Process.'

2 In the <Bkgd-A> group, press [Video Process], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Luminance signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–7.31 to +109.59

To return the parameter settings to the defaults, press [Unity] in the <Bkgd-A> group.

Color Corrector

Chapter 9

Preparations

The color corrector enables video signal color correction (black balance/white balance adjustment, gamma correction, knee correction, etc.).

Notes

To use the color corrector, the BZS-8420X (for MVS-8000X) or the BZS-7420X (for the MVS-7000X) Color Corrector Software. To use the software, you are required to input an install key.

For the method of inputting an install key, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 2).

Restrictions on color corrector and M/E combination

Signal format	When the color corrector output is selected		When the color corrector output is not selected
	3M/E system	4M/E system/ 5M/E system	4M/E system/ 5M/E system
Other than 720P	–	Re-entry signal selection on a key bus or the utility 1 bus cannot be performed over a cascade of two or more M/E blocks. (Restriction 2)	–
720P	Re-entry signal selection on a key bus or the utility 1 bus cannot be performed over a cascade of two or more M/E blocks. (Restriction 2)	Re-entry signal selection on a key bus or the utility 1 bus cannot be performed. (Restriction 1)	Re-entry signal selection on a key bus or the utility 1 bus cannot be performed over a cascade of three or more M/E blocks. (Restriction 2)

Example of restriction 2: When M/E-1 is selected on the M/E-2 background A bus (or background B bus, key bus, or utility 1 or 2 bus), then M/E-2 cannot be selected on the M/E-3 key bus or the utility 1 bus.

Assigning the color corrector input buses to AUX delegation buttons

There are two inputs for capturing material to the color corrector: the CCR1 bus and the CCR2 bus.

For details of the input assignment operation, see "Auxiliary Bus Control Block Settings (Aux Assign Menu)" in Chapter 19 (Volume 2).

Selecting the color correction input signal

After assigning CCR1 and CCR2 to AUX buses, use the following procedure.

1 Press the AUX delegation buttons assigned to CCR1 (or CCR2).

2 In the cross-point button row, select the signal to which you want to apply color correction.

Notes

The signals that can be selected on the CCR1 and CCR2 buses are primary inputs, premium inputs, format converter inputs and frame memory outputs (FM1 to FM8) only.
However you can make all the internal signals of the switcher selectable by a setting in the Setup menu.

For details, see "Selecting the Bank to Make the Settings" in Chapter 20 (Volume 2).

Selecting the color corrector output signal

By assigning the signal output from the color corrector to a cross-point button, you can make that signal available on that button.

For details of the assignment process, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 2).

Accessing the CCR menu

For color correction operations, use the CCR menu.
To access the CCR menu, in the menu control block, press the top menu selection button [CCR].
The following description uses CCR1 as an example. To apply color correction to CCR2, replace VF1 'CCR1' by VF2 'CCR2,' and follow the same procedure.

Overall Color Corrector Operations

Enabling Color Corrector

To enable the functions of color corrector 1, for example, use the following procedure.

1 In the CCR menu, press VF1 'CCR1' and any HF.

2 In the <CCR> group, press [CCR], turning it on.

Returning all color corrector settings to their defaults

1 In the <CCR> group, press [Unity].

A confirmation message appears.

2 Press [Yes].

This returns all color corrector settings to their defaults, whether [CCR] is on or off.

Copy and Swap Operations

Copying color corrector data

1 In the CCR menu, press VF5 'Copy/Swap.'

The Copy/Swap menu appears.
The status area shows a copy source list on the left and a copy destination list on the right.

2 Using any of the following methods, select the copy source data and copy destination data.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Left No	Select copy source data	1 or 2
2	Right No	Select copy destination data	1 or 2

3 Press [Copy].

This carries out the copy.

Swapping color corrector data

Refer to the procedure described in the previous item "Copying color corrector data." In step **3**, press [Swap] instead of [Copy].

To undo copy or swap

In the Copy/Swap menu, press [Undo].
The state before carrying out the copy or swap is restored.

Color Corrector Functions

This section describes the color corrector functions.
For each of the following operations, it is possible to copy or swap data between two color correctors (CCR1 and CCR2).

Input Video Processing Operations

Carry out the following corrections to a YUV signal before conversion to an RGB signal.

- Overall gain adjustment of the video signal
- Gain adjustment of the Y signal
- Gain adjustment of the C signal
- Hue delay
- Black level adjustment

To apply input video processing effects, use the following procedure.

1 In the CCR menu, press VF1 'CCR1' and HF1 'Input Process.'

The Input Process menu appears.

2 In the <Input Process> group, press [Input Process], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–116.90 to +116.90

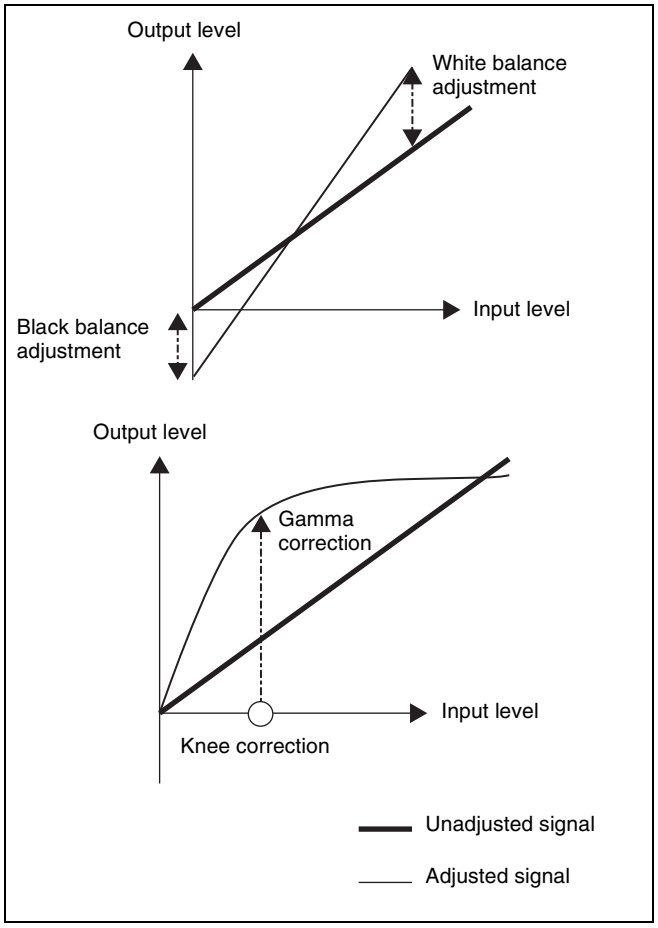
To return the parameters to their default settings

Press [Unity] in the <Input Process> group.

Primary Color Correction Operations

Carry out the following corrections to each of the R, G, and B signals.

Black balance adjustment: setting the output level for a 0% level input signal.
White balance adjustment: setting the output level for a 100% level input signal.
Gamma correction: adjusting the curvature of the gamma curve.
Knee correction: adjusting the position of the maximum point of the gamma curve.



It is also possible to mask part of the region to be corrected.

Applying primary color correction

1 In the CCR menu, press VF1 'CCR1' and HF2 'Primary CCR.'

The Primary CCR menu appears.

2 In the <Primary CCR> group, press [Primary CCR], turning it on.

3 In the <Primary CCR Adjust> group, select the setting item.

Black: black balance adjustment
White: white balance adjustment
Gamma: gamma correction
Knee: knee correction

4 Depending on the selection in step **3**, adjust the following parameters.

When Black or Gamma is selected

Knob	Parameter	Adjustment	Setting values
1	Red	Red signal adjustment	–100.00 to +100.00
2	Green	Green signal adjustment	–100.00 to +100.00
3	Blue	Blue signal adjustment	–100.00 to +100.00
4	All	Simultaneous RGB adjustment	Red value is shown

When White is selected

Knob	Parameter	Adjustment	Setting values
1	Red	Red signal adjustment	0.00 to 200.00
2	Green	Green signal adjustment	0.00 to 200.00
3	Blue	Blue signal adjustment	0.00 to 200.00
4	All	Simultaneous RGB adjustment	Red value is shown

When Knee is selected

Knob	Parameter	Adjustment	Setting values
1	Red	Red signal adjustment	20.00 to 75.00
2	Green	Green signal gain	20.00 to 75.00
3	Blue	Blue signal gain	20.00 to 75.00
4	All	Simultaneous RGB adjustment	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

Here the procedure for mask 1 operation is described by way of example. You can carry out mask 2 operation in a similar way.

1 In the Primary CCR menu, press [Mask1].

2 In the < Primary/Secondary Mask > group, press [Mask1], turning it on.

Notes

When [Mask 2] is selected in the Secondary CCR menu, linked to this setting it automatically changes from [Mask 2] to [Mask 1].

3 Press [Mask1 Adjust].

The Mask1 Adjust menu 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**, adjust the following parameters.

When Box is selected

Knob	Parameter	Adjustment	Setting values
1	Top	Top position	–100.00 to +100.00
2	Left	Left position	–100.00 to +100.00
3	Right	Right position	–100.00 to +100.00
4	Bottom	Bottom position	–100.00 to +100.00
5	Soft	Degree of softness of box	0.00 to 100.00

When Pattern is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Degree of softness of pattern edge	0.00 to 100.00
5	Pattern	Pattern number	1 to 24

For the pattern selection, you can also press [Mask Ptn Select] in the Mask1 Adjust menu, then use the Mask Ptn Select menu.
Press any of the displayed patterns (standard wipe patterns 1 to 24) to select it, then you can adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Degree of softness of pattern edge	0.00 to 100.00

6 When selecting the pattern as a mask source, set the pattern modifiers as required.

When turning [Position] on and setting the pattern position

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See “Setting the wipe position (Positioner)” (page 158).

When turning [Multi] on and replicating the same pattern

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See “Setting the wipe pattern replication (Multi)” (page 160).

When turning [Aspect] on and setting the aspect ratio of the pattern

Knob	Parameter	Adjustment	Setting values
1	Aspect	aspect ratio	–100.00 to +100.00 a)

a) See “Setting the wipe pattern aspect ratio (Aspect ratio)” (page 160).

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

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See “Angle” (page 159).

When turning [Speed] on in the <Rotation> group and rotating the pattern at a fixed rate

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See “Speed” (page 159).

7 To invert the mask source, return to the Primary CCR menu and press [Pri/Sec Mask Invrt], turning it on.

Notes

The mask function is common to the primary color correction, secondary color correction, and spot color adjustment functions.

Secondary Color Correction Operations

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 mask a part of the region to be corrected.

Applying secondary color correction

1 In the CCR menu, press VF1 ‘CCR1’ and HF3 ‘Secondary CCR.’

The Secondary CCR menu appears.

2 In the <Secondary CCR> group, press [Secondary CCR], turning it on.

3 In the <Secondary CCR Adjust> group, select the color for which you want to make the setting.

4 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	–100.00 to +100.00
2	Saturation	Saturation	0.00 to 200.00
3	Hue Delay	Hue delay	–180.00 to +180.00

To return the parameter settings to their default values

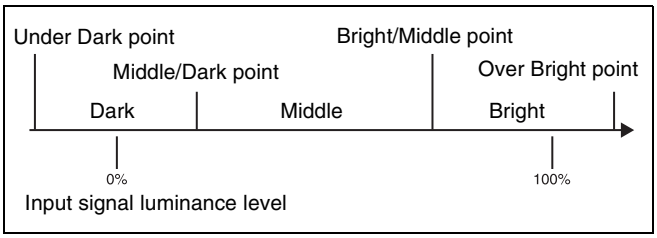
In the <Secondary CCR> group press [Unity].

Masking a part of the secondary color correction

Set [Mask] to On in the Secondary CCR menu, then carry out the same operation as described under *“Masking a part of the primary color correction” (page 231)*.

Luminance Processing Operations

After converting a signal to which RGB color correction has been applied to a YUV signal, divide the luminance levels into three regions, referred to as Dark, Middle, and Bright, and apply video signal adjustments to these regions.



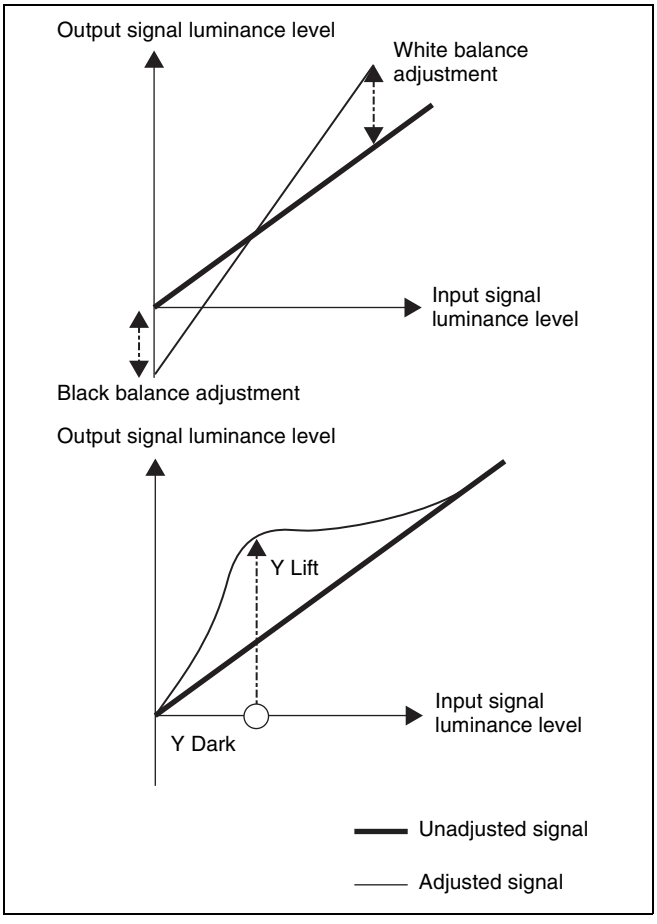
There are three modes for luminance processing, as follows.

Tint mode: adding a specified color to the original video signal.

Color Modify mode: adjusting the original video signal.

Y Modify mode: adjusting the output levels of the input luminance signal.

- White balance adjustment: setting the output level for an input luminance signal at the 100% level.
- Black balance adjustment: setting the output level for an input luminance signal at the 0% level.
- Y lift correction: adjusting the curvature of the curve.
- Y dark correction: adjusting the position of the maximum point of the curve.



It is also possible to mask part of the region to be corrected.

Applying luminance processing

1 In the CCR menu, press VF1 ‘CCR1’ and HF5 ‘Luminance Process.’

The Luminance Process menu appears.

2 In the <Luminance Process> group, press [Luminance Process], turning it on.

3 In the <Mode> group, specify the adjustment mode.

Tint: add a specified color to the original video signal.
Color Modify: adjust the original video signal.
Y Modify: adjust the output levels of the input luminance signal.
When tint mode or color modify mode is selected, skip to step **4**.
When Y modify mode is selected, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	White	White balance adjustment	0.00 to 200.00
2	Black	Black balance adjustment	–100.00 to +100.00
3	Y Lift	Curvature of curve	–100.00 to +100.00
4	Y Dark	Position of maximum point of curve	–7.31 to +109.59

4 In the <Bound> group, make the settings for the three regions (Dark, Middle, and Bright).

[Level] parameters: set the boundaries of the three regions.

Knob	Parameter	Adjustment	Setting values
1	Over B Level	Luminance level of the Over Bright point	50.00 to 150.00
2	Mid B Level	Luminance level of the Bright/Middle point	10.00 to 120.00
3	Dark Mid Level	Luminance level of the Middle/Dark point	–20.00 to +90.00
4	Under D Level	Luminance level of the Under Dark point	–50.00 to +50.00

[Soft] parameters: set the degree of boundary softness of the three regions.

Knob	Parameter	Adjustment	Setting values
1	Over B Soft	Degree of softness at Over Bright point	15.00 to 70.00
2	Mid B Soft	Degree of softness at Bright/Middle point	15.00 to 42.50
3	Dark Mid Soft	Degree of softness at Middle/Dark point	15.00 to 42.50
4	Under D Soft	Degree of softness at Under Dark point	15.00 to 70.00

5 In the <Luminance Process Adjust> group, press [Dark], [Mid], or [Bright], and adjust the following parameters for the three regions.

In tint mode

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	–100.00 to +100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

In color modify mode

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	–100.00 to +100.00
2	C Gain	Chrominance signal gain	0.00 to 200.00
3	Hue Delay	Hue delay	–180.00 to +180.00

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 for the region other than the region whose color you have changed, you can make the following corrections.

- Video signal overall gain adjustment
- Y signal gain adjustment
- Y signal offset adjustment
- C signal gain adjustment
- C signal hue adjustment

Adjusting the color of the specified region (key)

1 In the CCR menu, press VF1 ‘CCR1’ and HF6 ‘Spot CCR/Output.’

The Spot CCR/Output menu appears.

2 In the <Spot CCR> group, press [Spot CCR], turning it on.

3 In the <Auto> group, press [Sample Mark], turning it on.

Notes

When [Sample Mark] is on, the effects of color adjustment outside the region of spot color adjustment *(see page 235)* and output video processing *(see page 236)* are temporarily disabled.
Turning [Sample Mark] off restores the former state.

4 Adjust the parameters so that the color you want to change is included within the sample mark.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–100.00 to +100.00
2	Position V	Vertical position	–100.00 to +100.00
3	Size	Size	1.00 to 100.00

5 In the <Auto> group, press [Auto Start], to adjust the key automatically.

Notes

This automatic adjustment does not carry out key gain adjustment. If required, adjust the key gain as shown in step **6**.

6 Press [Key Adjust], and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	–7.31 to +109.59
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00
4	Gain	Key gain	–100.00 to +100.00

7 Press [Window], turning it on, to adjust the key detection range for spot color adjustment.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	0.00 to 100.00

8 In the <Spot CCR> group, press [Spot CCR] to display the parameters, and adjust the replacement color.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

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

Masking a part of the spot color adjustment

Set [Mask] to On in the Spot CCR/Output menu, then carry out the same procedure as in *“Masking a part of the primary color correction” (page 231)*.

Adjusting the color outside the spot color adjustment region

1 In the Spot CCR/Output menu, press [Outer Out Proc] in the <Outer Out Proc> group, turning it on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–116.90 to +116.90

To return the parameters to their default settings
In the <Outer Out Proc> group, press [Unity].

Output Video Processing Operations

Carry out the following corrections are available on the YUV signal.
- Video signal overall gain adjustment
- Y signal gain adjustment
- Y signal offset adjustment
- C signal gain adjustment
- C signal hue adjustment

Applying output video processing effects

1 In the CCR menu, press VF1 ‘CCR1’ and HF6 ‘Spot CCR/Output.’

The Spot CCR/Output menu appears.

2 In the <Output Process> group, press [Output Process], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–116.90 to +116.90

To return the parameters to their default settings

In the <Output Process> group, press [Unity].

YUV Clip Operations

For each of the luminance and color difference signals, the following processing is available.

White clip: setting the maximum level of the luminance signal.

Dark clip: setting the minimum level of the luminance signal.

Positive clip: setting the maximum amplitude in the positive direction of the color difference signal.

Negative clip: setting the maximum amplitude in the negative direction of the color difference signal.

Applying YUV clip processing

1 In the CCR menu, press VF1 ‘CCR1’ and HF7 ‘YUV Clip/RGB Clip.’

The YUV Clip/RGB Clip menu appears.

2 In the <YUV Clip> group, press [YUV Clip], turning it on.

3 In the <YUV Clip Adjust> group, select the target for adjustment.

Luminance: settings for the luminance signal.
Chroma: settings for the color difference signal.

4 Depending on the selection in step **3**, adjust the following parameters.

When Luminance is selected

Knob	Parameter	Adjustment	Setting values
1	White Clip	White clip adjustment	–6.85 to +109.13
2	Dark Clip	Dark clip adjustment	–6.85 to +109.13

When Chroma is selected

Knob	Parameter	Adjustment	Setting values
1	U Posi Clip	Positive clip adjustment for U signal	–113.39 to +113.39
2	U Nega Clip	Negative clip adjustment for U signal	–113.39 to +113.39
3	V Posi Clip	Positive clip adjustment for V signal	–113.39 to +113.39
4	V Nega Clip	Negative clip adjustment for V signal	–113.39 to +113.39

To return the parameters to their default settings

In the <YUV Clip> group, press [Unity].

RGB Clip Operations

For each of the R, G, and B signals, you can make dark clip and white clip adjustments.

Making RGB clip adjustments

1 In the CCR menu, press VF1 ‘CCR1’ and HF7 ‘YUV Clip/RGB Clip.’

The YUV Clip/RGB Clip menu appears.

2 In the <RGB Clip> group, press [RGB Clip], turning it on.

3 In the <RGB Clip Adjust> group, select the item you want to adjust.

Dark: dark clip adjustment
White: white clip adjustment

4 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Red	Red signal adjustment	–50.00 to +149.99 a) –49.99 to +150.00 b)
2	Green	Green signal adjustment	–50.00 to +149.99 a) –49.99 to +150.00 b)
3	Blue	Blue signal adjustment	–50.00 to +149.99 a) –49.99 to +150.00 b)

Knob	Parameter	Adjustment	Setting values
4	All	Simultaneous RGB adjustment	Red value is shown

a) When Dark is selected
b) When White is selected

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, when these areas are filled with a separate image selected from the utility 1 bus.
You can adjust the width of the side flag area.

Side Flag Settings

Input source aspect ratio, auto side flags, and auto crop settings

Aspect ratio 4:3 setting
Set the input signal to aspect ratio 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 area
You can set the left and right sides separately.

For the operation for the above setting, see “Settings for Switcher Configuration (Config Menu)” in Chapter 20 (Volume 2).

Enabling and disabling side flags with a menu operation

You can enable or disable side flags for the backgrounds (A and B) of each of the M/E and PGM/PST banks.

As an example, to enable side flags for background B row on the M/E-1 bank, use the following procedure.

1 In the menu control block, press the top menu selection button [MISC], then select VF1 ‘Enable’ and HF3 ‘Side Flags.’

The Misc >Enable >Side Flags menu appears.
The status area shows the buttons for Bkgd A and Bkgd B for each of the M/E-1 to M/E-4, and PGM/PST (P/P) banks.

2 In the <M/E-1 Side Flags> group, press [Bkgd B].

Each time you press the button toggles between Enable and Disable.

To display a menu for the aspect ratio 4:3, auto side flags, and auto crop settings
In the Misc >Enable >Side Flags menu, press [Setup >SWER >Side Flags].

To display a menu for assigning the side flags on/off function to a cross-point button
In the Misc >Enable >Side Flags menu, press [Side Flags Button Assign].

Enabling and disabling side flags with a button operation

For example, to enable side flags for the background B row of the M/E-1 bank, use the following procedure.

1 First, in the Setup menu assign the rightmost cross-point button to the [SIDE FLAG] button.

For details of the assignment operation, see “Assigning a Cross-Point Button to Enable/Disable Side Flags” in Chapter 19 (Volume 2).

2 Press the [SIDE FLAG] button at the right end of the background B row of the M/E-1 bank.

The button you pressed lights amber, and this enables the side flags.

Notes

- The operations of enabling or disabling the side flags by menu operation and by control panel button operation are linked.
- When the auto side flags are on, selecting a 4:3 video material automatically lights the [SIDE FLAG] button, 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 lights once again, enabling the side flags.

Creating an image with side flags

For example, to create an image with side flags in the background B row of the M/E-1 bank, use the following procedure.

1 In the M/E-1 bank cross-point control block, hold down the [UTIL] button, and in the background A row select the signal (utility bus 1 signal) you want to insert in the side flag areas.

2 In the background B row, press the cross-point button corresponding to the 4:3 video material.

At this point, if auto side flags are on, this automatically adds side flags to the 4:3 video material.

For details, see "Settings for Switcher Configuration (Config Menu)" in Chapter 20 (Volume 2).

3 Use either of the following methods to turn the side flags on.

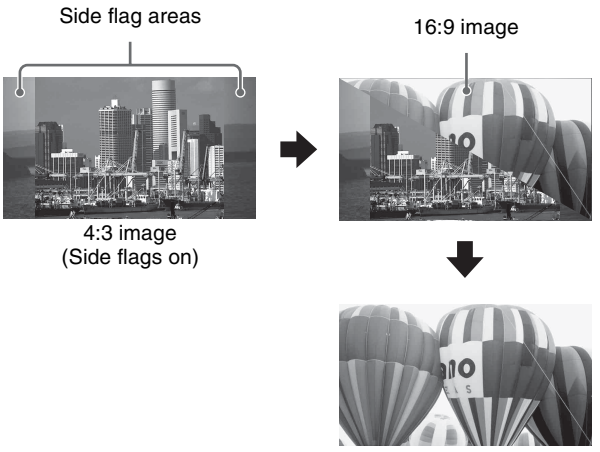
- Use the Misc >Enable >Side Flags menu. *(See page 238).*
- Use a cross-point button operation. *(See previous item.)*

This adds side flags to the 4:3 video material.

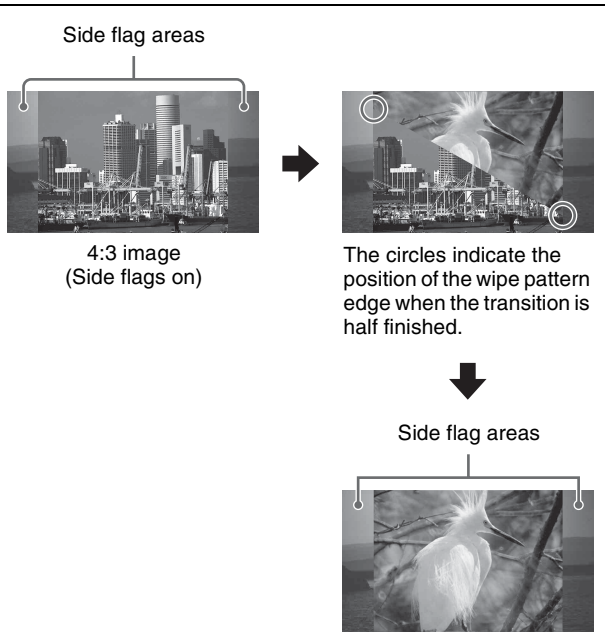
Wipe Action on Images with Side Flags

When a wipe is carried out on an image with side flags, all wipe patterns can be used.
The following illustration shows the action in a wipe.

Wipe from a 4:3 image to a 16:9 image



Wipe from a 4:3 image to another 4:3 image (when side flags are on for both images)



DME Wipe Action for an Image with Side Flags

When a DME wipe is carried out on an image with side flags, all wipe patterns can be used.
Depending on the setting (On/Off) of [Auto Crop] in the Engineering Setup >Switcher >Config menu, the appearance of the 4:3 image changes.

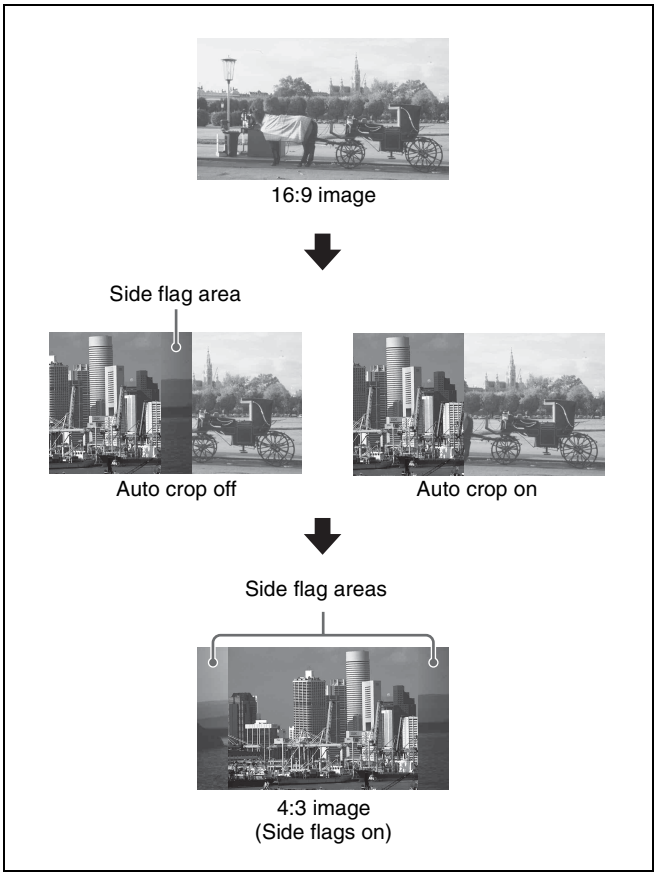
Notes

- When using the DME through SDI interface with [Auto Crop] being off, side flags are not added to the new image during DME wipe.
- For signals with the following DME wipe pattern selected on the DME external video bus (gray part shown in the pattern illustration), side flags are not applied when auto side flags are set to Off.
  - Two-channel page turn
  - Two-channel page roll
  - Two-channel frame in-out
  - Two-channel brick
  - Three-channel brick

The following illustration shows the action in a DME wipe.

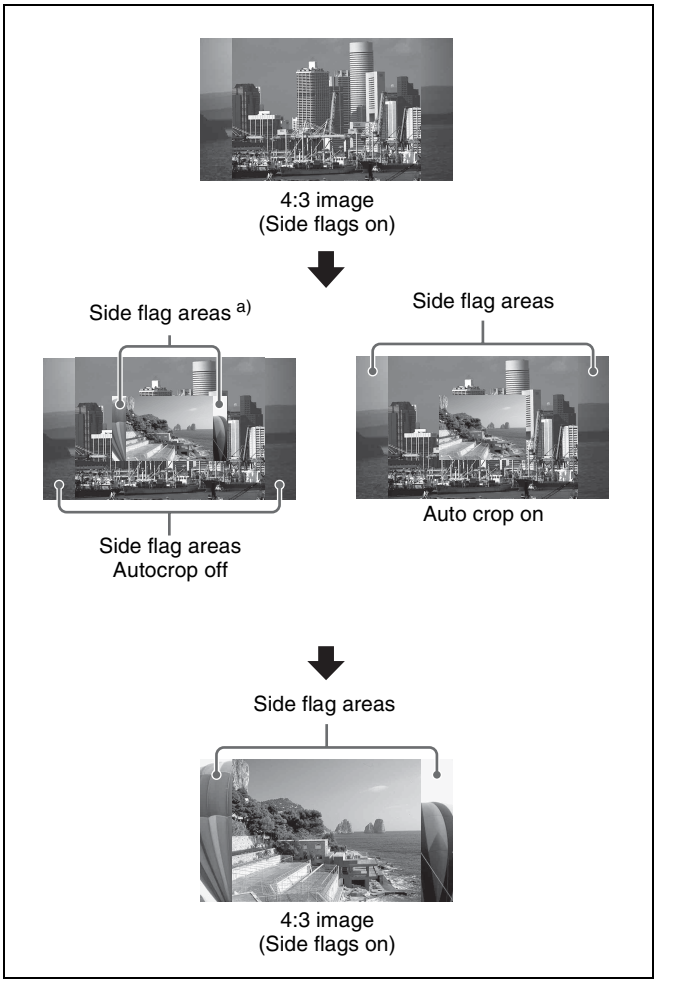
DME wipe from a 4:3 image to a 16:9 image

Wipe action using slide (No. 1001)



DME wipe from a 4:3 image to another 4:3 image (when side flags are on for both images)

Wipe action using squeeze (No. 1031)



a) When using the DME through SDI interface, side flags are not added during a DME wipe.

Multi Program 2

Overview

What is Multi Program 2?

By operating the switcher in Multi Program 2 mode, a single switcher mix/effects bank can be used to create two separate video outputs, referred to as "main" and "sub." You can set backgrounds, keys, and transitions for each of main and sub. Keys 2 to 8, however, are common to main and sub.

Notes

To enable this function requires the BZS-8200X (for the MVS-8000X) or BZS-7200X (for the MVS-7000X) Multi Program 2 software.

Using the software

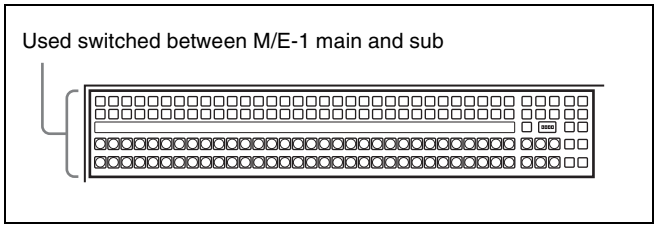
To use the Multi Program 2 software, you are required to enter an install key which validates the software. (If the software has been factory installed, the install key is not required.)
For the method of obtaining an install key, contact your Sony representative.
To obtain a key, you may be required to submit the unique device ID of the switcher you are using. You can check the unique device ID in the Install menu of the switcher.

For details of the operation, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 2).

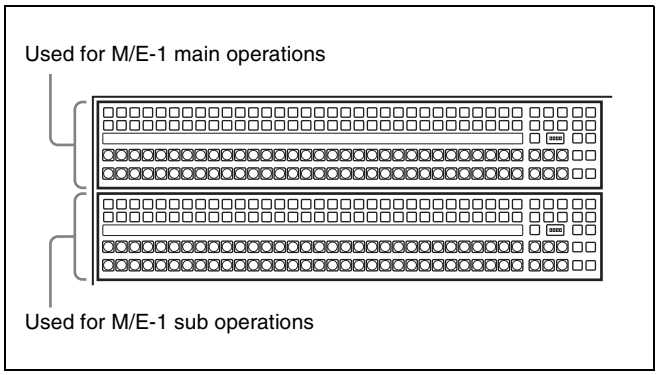
Assigning main and/or sub to switcher banks

For Multi Program 2 operations, a single switcher bank may be shared, and switched 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 main dedicated" and "M/E-1 sub dedicated"



Video creation operations in Multi Program 2 mode

For each of main and sub, there are differences from the operations in standard mode.

For details, see "Differences between Multi Program 2 Mode and Standard Mode" (page 246).

Sequence of Operations in Multi Program 2

Basic operation sequence

Enter the BZS-8200X or BZS-7200X install key (first time only)
↓
Set Multi Program 2 operating mode for each switcher bank
↓
Assign output signals, and set the background configuration, key configuration, and key preview configuration
↓
For each switcher bank, make a main/sub assignment (one of main dedicated, sub dedicated, and main and sub shared)
↓
For a switcher bank assigned to main and sub shared, assign the [MAIN] and [SUB] delegation buttons
↓
Create the main and sub images
↓
Execute the transition

Optional operations

- Making cross-point settings
- Enabling DME wipe operations for sub
- Inhibiting utility 2 bus signal selection
- Including Multi Program 2 data in keyframes and snapshots
- Changing the key assignment for each output

- Assigning sub preview output to preview selection buttons in the fade-to-black control block
- Changing the matrix size to Standard
- Making settings for keyframe timeline operation

Basic Operations (Required)

Entering the install key of the software (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, select the switcher (SWRx), and press [License].

The License menu appears.

2 In the License menu, enter the install key.

For details of the operation, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 2).

3 Shut down the menus *(see page 70).*

4 Power the switcher and SCU off and on again.

Setting the operating mode for each switcher bank

To set a desired switcher bank to Multi Program 2 mode, use the following procedure.

1 Display the Engineering Setup >Switcher >Config menu.

2 Select the switcher bank from M/E-1 to M/E-4, and P/P.

3 In the <M/E Config> group, select [Multi Program2].

4 Repeat steps **2** and **3** as required, to set the operating mode for all desired switcher banks.

Assigning output signals for Multi Program 2 mode

To assign signals to outputs

Use the Engineering Setup >Switcher >Config >M/E Output Assign menu.
The difference from standard mode is that OUT1 is fixed, set to PGM1 (main program), and OUT6 is fixed, set to PGM2 (sub program), and that for the OUT2 to OUT5 signals you can assign any signal selected from the following.

PGM1, PGM2, PGM3, PGM4, PVW1, PVW2, K-PVW1, K-PVW2, CLEAN, SUB CLEAN

Notes

Each of main and sub can 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 "Selecting the System Operation Mode" in Chapter 18 (Volume 2).

To set the background and key configuration

Use the Engineering Setup >Switcher >Config >PGM Config menu.
The following are the differences from standard mode.
Background configuration: Consists of the following combinations.
- For main: Clean, Bkgd A, Bkgd B
- For sub: Sub Clean, Utility 2, Utility 3

Key configuration: Key1 can be set to "Enable" only when the background is Clean, Bkgd A, or Bkgd B.

For details, see "Setting the Operation Mode" in Chapter 20 (Volume 2).

To set the key preview configuration

Use the Engineering Setup >Switcher >Config >K-PVW Config menu.
The following are the differences from standard mode.
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 Operation Mode" in Chapter 20 (Volume 2).

To assign sub outputs to output ports

Use the Engineering Setup >Switcher >Output >Output Assign menu.
You can assign a sub output signal to a switcher output port number.

For details, see "Assigning Output Signals" in Chapter 20 (Volume 2).

Assigning main and/or sub to switcher banks

For each switcher bank for which Multi Program 2 mode is selected, set whether this is main dedicated, sub dedicated, or main and sub shared.

To assign main and sub to a single switcher bank

1 In the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu, select the switcher bank.

2 In the <Main/Sub Assign> group, select [Main&Sub].

Main: use for main operations.
Sub: use for sub operations.
Main&Sub: use for both main and sub operations. When "Main&Sub" is selected, it is necessary to assign [MAIN] and [SUB] delegation buttons to the control panel buttons.

To assign main and sub to two consecutive switcher banks

For example, to assign the first row (first switcher bank) to M/E-1 main, and the second row (second switcher bank) to M/E-1 sub, use the following procedure.

1 In the status area of the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu, select 1st Row (M/E-1), then press [Main] in the <Main/Sub Assign> group.

2 Press [Dual M/E Assign] to assign M/E to two banks.

In this state, both 1st Row and 2nd Row are set to main.

3 Set 2nd Row to [Sub].

This cancels the shift/non-shift assignment for dual M/E in standard mode.

Notes

It is not possible to assign the combinations of Main with Main&Sub, or Sub with Main&Sub.

Assigning the [MAIN] and [SUB] delegation buttons to buttons on the control panel

To assign the Main/Sub switching function to buttons in the transition control block

This applies to the standard type and compact type transition control block, and the CCP-6224/6324 control panel.

For details of the CCP-6224 2M/E control panel, see page 125, and for the details of the CCP-6324 3M/E control panel, see page 61.

For details of the transition control block, .

1 In the Engineering Setup >Panel >Config menu, press [Program Button].

The Program Button menu appears.

2 Press [Transition Module1].

The Transition Module1 menu appears.

3 Select the switcher bank in the <Bank Select> group.

The buttons in the transition control block on the left appear in the currently assigned state.

4 Press the button whose assignment you wish to change.

The button you press appears in reverse video.

5 From the list on the right, select [MAIN], and press [Set].

The indication on the button changes according to the selection.

6 Repeat Step **4** and **5** to assign [SUB].

To assign to macro buttons in the cross-point control block

For details of the cross-point control block, see page 22.

1 In the Engineering Setup >Panel >Config menu, press [Program Button].

The Program Button menu appears.

2 Press [Xpt Module].

The Xpt Module menu appears.

3 Select the switcher bank, then in the <PRE MCRO/POST MCRO> group, press [Main Sub].

You can now use the [PRE MCRO] button as [MAIN], and the [POST MCRO] button as [SUB].

To assign macro operations to different buttons

If in the above operation you assigned a Multi Program 2 function to the macro buttons, you can assign the PRE MCRO and POST MCRO functions to different buttons.

For details, see "Assigning Functions to User Preference Buttons" or "Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block" in Chapter 19 (Volume 2).

Examples of Operations in the Multi Program 2 Mode (When Sharing a Switcher Bank)

To create video on the M/E or PGM/PST bank assigned to both main and sub operations, use the following procedure.

1. Press the [MAIN] button, turning it on, and turning off the [SUB] button.
2. With the normal operations, create the main video.
3. Press the [SUB] button, turning it on, and turning off the [MAIN] button.

   Now you can create the sub video.
4. Create the sub video.

   The basic method of operation is the same as for the main video, except that the utility 2 bus signal is assigned to background A, and the utility 3 bus signal is assigned to background B.
   For sub, only keys 2 to 8 can be used, and for wipes, standard wipe patterns only. There are also other differences in operation from standard mode.

   For details, see "Differences between Multi Program 2 Mode and Standard Mode" (page 246) and "Restrictions on Using Multi Program 2 Mode" (page 247).
5. Press the [MAIN] and [SUB] buttons simultaneously, turning them on.

   If both buttons are lit, the control panel shows the status of main.
6. Carry out the transition.

   Both main and sub video images are switched.

Optional Operations

Making cross-point settings

Cross-point assign tables can be set not only for main output but also for sub output.
You can set cross-point assign tables for the following banks.

M/E-1 SUB to M/E-4 SUB
P/P SUB

The table actually used is that for which the control panel delegation button is lit.

For details, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 2).

Enabling DME wipe operations for sub

By factory default, DME wipe operations are inhibited for sub background. To enable them, in the Engineering Setup >Switcher >Config menu, set [DME Wipe Sub Enable] to On.
This setting applies to the whole control panel (all M/E banks and PGM/PST bank).

Notes

If a DME wipe for sub is recalled 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 for sub.
This setting applies to the whole control panel (all M/E banks and PGM/PST bank).
In the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu, set [Util2 Inhibit] to On.
This inhibits operations of selecting from the background B row while holding down the [UTIL] button in the cross-point control block.

Inhibiting key operations for main or sub keyer

In the Engineering Setup >Panel >Config >Operation Inhibit >M/E Operation Inhibit menu, you can make settings to inhibit key operations on each of the main and sub keyers independently.

For details, see "Inhibiting Utility 2 Bus and Key Operations" in Chapter 19 (Volume 2).

Including Multi Program 2 data in recall operations of keyframes and snapshots

In the Engineering Setup >Switcher >Config menu, set [Recall M/E Config] to On.
When a keyframe or snapshot is stored or recalled, the following data is included.

M/E Config, PGM Config, M/E Output Assign, and Key PVW Config

For details of the above data, see "Setting the operating mode for each switcher bank" (page 242) and "Assigning output signals for Multi Program 2 mode" (page 242).

This setting applies to the whole control panel (all M/E banks and PGM/PST bank).

Notes

M/E Config data is saved, even when this setting is Off.

Changing the key assignment for each output (Misc menu)

In Multi Program 2 mode you can change the key assignments independently.
The following describes an example using M/E-1, but the operation is the same for other banks.

Notes

- This setting is linked to the setting in the Engineering Setup >Switcher > Config >PGM Config menu.
- It is not possible to make this setting while the above PGM Config menu is locked, or [Recall M/E Config] *(see previous item)* is set to Off.

1 In the M/E-1 menu, select first VF7 'Misc,' then HF5 'Key Assign.'

The Key Assign menu appears, and the current key assignment is shown in the status area.

2 Change the setting in "Key Enable" as required.

Keys recalled in a snapshot recall

If a snapshot is recalled independently on main or sub, this only retrieves the settings for the key assigned to the recalled side. For example, if key 1 and key 2 are assigned on main, and key 3 and key 4 are assigned on sub, then if you recall a snapshot on main, this only retrieves the settings for key 1 and key 2, and the state of key 3 and key 4 assigned on sub is not affected.

Assigning sub preview output to preview selection buttons

You can assign the sub preview output to a preview selection button in the fade-to-black control block or downstream key/fade-to-black control block.

For details, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 2).

When the Multi Program 2 license is valid, by assigning the "Shift" function to a button, you can assign two preview outputs, "Shift" and "Unshift" to a single button. To use the shift output, always assign "Shift" to some button.

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, in the <Matrix Size> group of the Engineering Setup >Router/Tally >Router menu, select other than [128 × 128].

For details, see "Assigning Switcher Inputs and Outputs to S-Bus Space" in Chapter 23 (Volume 2).

As for the bus number of the utility 3 bus, a DME Key bus number is used as follows.

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 timeline-related keyframe operations

To assign sub regions to the region selection buttons in the numeric keypad control block

In the Engineering Setup >Panel >Config >10 Key Region Assign menu, assign regions to the region selection buttons in the numeric keypad control block.

For details, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 2).

To make region and reference region selections using a menu

During snapshot or keyframe operations, you can select a region (including sub) in the Key Frame >Region Select menu. This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

For details, see "Specifying the Region and Edit Points" in Chapter 13 (Volume 2).

To assign regions shown in the Timeline menu

You can select how regions assigned to region selection buttons appear in the Key Frame >Timeline menu.

For details, see "Settings in the Timeline Menu" in Chapter 13 (Volume 2).

Enabling re-entry between the main and sub sides of the same M/E bank

In the Engineering Setup >Switcher >Config menu, set [MP2 Free Re-Entry] to On.

Notes

- Re-entry adds a 1H delay to the video. Nested re-entry may lead to problems in the video.
- A maximum of ten re-entry stages are possible, with the final output having a delay of 5H.
- 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 the through mode is set, the ancillary data does not pass through.
- For example, it is possible to select the re-entry of M/E-1 main on M/E-1 main.

Restrictions on mutual re-entry when using Multi Program 2

The snapshot function is affected by this re-entry function. When the [MP2 Free Re-Entry] button is On, and any of the switcher banks are in Multi Program 2 mode, then the following restrictions apply.

If you save and recall snapshots simultaneously with more than one region specified, the recorded state is played back in the order of precedence of regions (M/E-1 >M/E-2 >M/E-3 >P/P). Therefore, if you save and recall snapshots with more than one region specified, the cross-point settings may not be recalled correctly.

To recall the snapshots correctly, press the cross-point button before recalling the snapshots, to select a signal other than the re-entry signal, then recall the snapshots.

Functions Added in Multi Program 2 Mode

- You can set video processing for the utility 3 bus signal.
- In the control panel and DCU GPI input settings and switcher GPI link settings, the actions that can be selected now also include “Sub Cut” and “Sub Auto Trans.”
- A switcher GPI link can now be set also for the utility 3 bus.
- To the macro event configuration parameters and macro attachment settings, “Main & Sub” and “Sub” have been added.
- For cross-point button link settings, M/E-1 to M/E-4, and P/P “Sub Program,” “Sub Preset,” and “Sub Trans PGM” have been added to the link source bus.
- Snapshot attributes can now be set independently for main and sub.
- There are additional menus for sub which can be recalled by pressing a button twice.
- You can set [MP2 Auto Correct] to On or Off in the Effect menu or Snapshot menu. When this is set to On, for example, copy destination and source data is automatically recognized as main or sub, and the data interchanged.
- When the key adjustment mode is selected on the Multifunction Flexi Pad (or when the KEY ADJ button is lit), if you select the region selection button to which [M/E-x Sub] is assigned, the [TRNS] button operates as a button for the sub region.
- You can assign [SUB TRANS] to the key control block. This button functions as a [TRNS] button for the sub region.

Differences between Multi Program 2 Mode and Standard Mode

The differences from operation in standard mode are as follows.

Item		Main	Sub
Keys [a)]		Keys 1 to 8 can be used	Keys 2 to 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 • Replication can be selected from four patterns
Wipes (key)		Same as wipes (background) for sub	
DME wipes	Use	Can be used	Cannot be used (Can be used, with a setting change)
	Patterns for 1 channel	For a dedicated interface, each of main and sub can be used. For the 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

Item		Main	Sub
Transitions	Key priority	Cannot be used	
	Transition preview	Cannot be used	
	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	Cannot be used
Operation setting for switcher GPI inputs and outputs		Same as standard mode	Cannot be used

a) Keys 2 to 8 are common to main and sub.

Notes

- Allow a transition to complete before carrying out main and sub delegation switching.
- The sub 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.

Restrictions on Using Multi Program 2 Mode

- The following functions are not available for sub:
  - Data copy and swap
  - Default recall (except for parametric recall)
  - [AUTO] button function *(see page 58)*
- Re-entry is limited to five levels. Re-entry is not possible for main and sub of the same M/E.
  However, this restriction can be removed.
  For details, see "Enabling re-entry between the main and sub sides of the same M/E bank" (page 245).
- 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 [MCRO ATTCH ENBL] 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 for the following common to main and sub the main settings are reflected.
  - Key
  - 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-4 Main BKGD A/B buses
  - M/E-1 to M/E-4 Sub BKGD A/B buses (UTIL-2, UTIL-3 buses)
  - P/P Main PGM/PST bus
  - P/P Sub PGM/PST buses (UTIL-2, UTIL-3 buses)
- When a master snapshot or master timeline is executed with a key being 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 keys 2 to 4 are shared between main and sub, when the main and sub fader lever positions are different, if 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).
- When the signal format is 1080P, snapshots, wipe snapshots, and effects created using a wipe for sub, do not function correctly with a signal format other than 1080P. Similarly, those created with other than the 1080 signal format, do not function correctly with a signal format of 1080P.

3D Support

Overview

Installing the following software enables video creation in 3D mode.

- BZS-8560X (for MVS-8000X) or BZS-7560X (for MVS-7000X) as the switcher upgrade software
- BZDM-8560 (for MVE-8000A/MVE-9000) or BZS-7561X (for MKS-7470X/7471X) as the DME upgrade software

Notes

- On the MVS-8000X, the M/E-4 bank is not used for 3D mode.
- On the MVS-7000X, the M/E configuration in 3D mode will be the same as that in 2M/E mode *(see page 254)*.
- The following signal formats support 3D.
  1080i/50, 1080i/59.94, 720P/50, 720P/59.94
- For details of the board configurations required for 3D mode, consult your Sony representative.

Using the software

To use the switcher upgrade software and DME upgrade software, you need to enter an install key to enable the software. (It is not necessary to enter an install key if the software was factory-installed.)

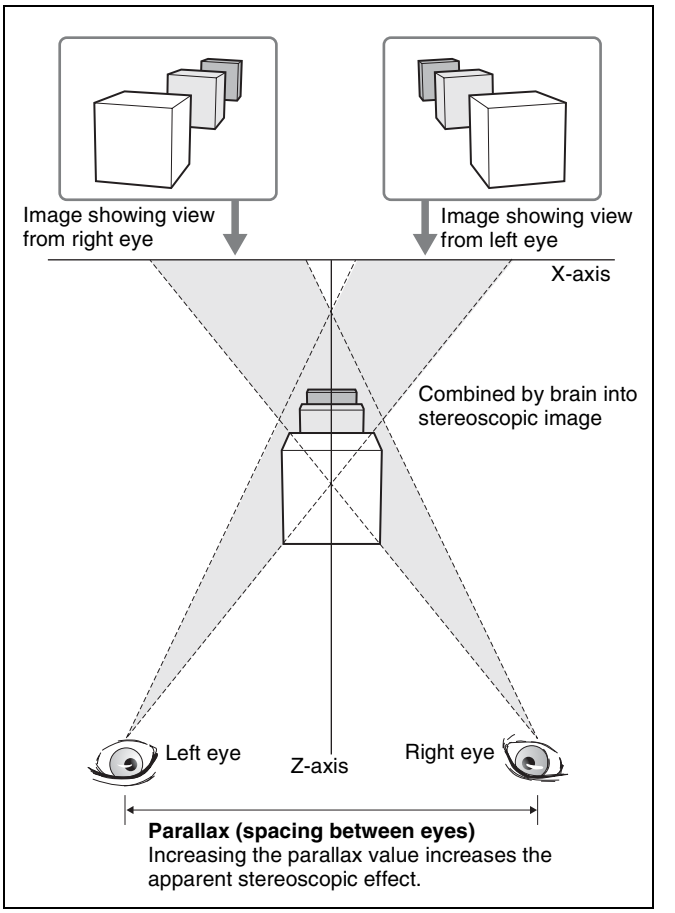
Ask your Sony representative about entering the install key.

At this time, the unique device ID may be required.
You can check the unique device ID in the Install menu of the switcher and DME.

For details of this operation, see "Installation and Device Setup (Install/Unit Config menu)" in Chapter 18 (Volume 2).

How the 3D display works

In 3D mode, two different images, for the left eye and the right eye, are displayed simultaneously, to be combined by the brain into a stereoscopic image.
Therefore, switcher and DME hardware is duplicated, with input signals for the left eye and right eye. *(See the following figure.)*



Preparations

Switching the system to 3D mode

Notes

It is only possible to switch to 3D mode when the system signal format is set to one of the following.
1080i/50, 1080i/59.94, 720P/50, 720P/59.94

1. Display the Engineering Setup >System >Format menu.
2. Press [3D Mode], turning it on.

   A popup window appears, with a message.
3. Check the message, and select [Yes].

Input primary numbers for left and right signals

For the signals used in 3D mode for the left eye view and right eye view (referred to simply as left and right signals), select a combination of primary input numbers from two types (signals in the same slot and signals in different slots).

For some signals, such as titles, the same signal is used for both left and right.

Specify whether to use a combination of left and right signals in the same slot or different slots

1 Display the Engineering Setup >System > Install/Unit Config > Unit Config menu.

2 In <3D Connector Pair> group, select either of the following.

1-2 Mode: Specify a pair of left and right signals in the same slot.
1-21Mode: Specify a pair of left and right signals in different slots.

3 Press [Execute].

Combinations of left and right signals (Input terminals)

The following combinations of left and right signals are available depending on whether to use the signals in the same slot or different slots.

If [1-2 Mode] is selected on MVS-8000X

Right signals	Left signals
Slot 5	
PRIMARY INPUTS 1	PRIMARY INPUTS 2
PRIMARY INPUTS 3	PRIMARY INPUTS 4
:	:
PRIMARY INPUTS 19	PRIMARY INPUTS 20
Slot 6	
PRIMARY INPUTS 21	PRIMARY INPUTS 22
PRIMARY INPUTS 23	PRIMARY INPUTS 24
:	:
PRIMARY INPUTS 39	PRIMARY INPUTS 40
Slot 7	
PRIMARY INPUTS 41	PRIMARY INPUTS 42
PRIMARY INPUTS 43	PRIMARY INPUTS 44
:	:
PRIMARY INPUTS 59	PRIMARY INPUTS 60
Slot 8	
PRIMARY INPUTS 61	PRIMARY INPUTS 62
PRIMARY INPUTS 63	PRIMARY INPUTS 64
:	:
PRIMARY INPUTS 79	PRIMARY INPUTS 80
Slot 9	
PRIMARY INPUTS 81	PRIMARY INPUTS 82
PRIMARY INPUTS 83	PRIMARY INPUTS 84
:	:
PRIMARY INPUTS 99	PRIMARY INPUTS 100
Slot 10	
PRIMARY INPUTS 101	PRIMARY INPUTS 102
PRIMARY INPUTS 103	PRIMARY INPUTS 104
:	:
PRIMARY INPUTS 119	PRIMARY INPUTS 120
Slot 11	
PRIMARY INPUTS 121	PRIMARY INPUTS 122
PRIMARY INPUTS 123	PRIMARY INPUTS 124
:	:
PRIMARY INPUTS 139	PRIMARY INPUTS 140
Slot 12	
PRIMARY INPUTS 141	PRIMARY INPUTS 142
PRIMARY INPUTS 143	PRIMARY INPUTS 144
Slot 13	
PREMIUM INPUTS 1	PREMIUM INPUTS 2
PREMIUM INPUTS 3	PREMIUM INPUTS 4
:	:
PREMIUM INPUTS 19	PREMIUM INPUTS 20

If [1-21 Mode] is selected on MVS-8000X

Right signals	Left signals
Slot 5	**Slot 6**
PRIMARY INPUTS 1	PRIMARY INPUTS 21
PRIMARY INPUTS 2	PRIMARY INPUTS 22
:	:
PRIMARY INPUTS 20	PRIMARY INPUTS 40
Slot 7	**Slot 8**
PRIMARY INPUTS 41	PRIMARY INPUTS 61
PRIMARY INPUTS 42	PRIMARY INPUTS 62
:	:
PRIMARY INPUTS 60	PRIMARY INPUTS 80
Slot 9	**Slot 10**
PRIMARY INPUTS 81	PRIMARY INPUTS 101
PRIMARY INPUTS 82	PRIMARY INPUTS 102
:	:
PRIMARY INPUTS 100	PRIMARY INPUTS 120
Slot 11	
PRIMARY INPUTS 121	PRIMARY INPUTS 122
PRIMARY INPUTS 123	PRIMARY INPUTS 124
:	:
PRIMARY INPUTS 139	PRIMARY INPUTS 140
Slot 12	
PRIMARY INPUTS 141	PRIMARY INPUTS 142
PRIMARY INPUTS 143	PRIMARY INPUTS 144

Right signals	Left signals
Slot 13	
PREMIUM INPUTS 1	PREMIUM INPUTS 2
PREMIUM INPUTS 3	PREMIUM INPUTS 4
:	:
PREMIUM INPUTS 19	PREMIUM INPUTS 20

If [1-2 Mode] is selected on MVS-7000X

Right signals	Left signals
Slot 5	
PRIMARY INPUTS 1	PRIMARY INPUTS 2
PRIMARY INPUTS 3	PRIMARY INPUTS 4
:	:
PRIMARY INPUTS 19	PRIMARY INPUTS 20
Slot 6	
PRIMARY INPUTS 21	PRIMARY INPUTS 22
PRIMARY INPUTS 23	PRIMARY INPUTS 24
:	:
PRIMARY INPUTS 39	PRIMARY INPUTS 40
Slot 7	
PRIMARY INPUTS 41	PRIMARY INPUTS 42
PRIMARY INPUTS 43	PRIMARY INPUTS 44
:	:
PRIMARY INPUTS 59	PRIMARY INPUTS 60
Slot 8	
PRIMARY INPUTS 61	PRIMARY INPUTS 62
PRIMARY INPUTS 63	PRIMARY INPUTS 64
:	:
PRIMARY INPUTS 79	PRIMARY INPUTS 80

If [1-21 Mode] is selected on MVS-7000X

Right signals	Left signals
Slot 5	**Slot 6**
PRIMARY INPUTS 1	PRIMARY INPUTS 21
PRIMARY INPUTS 2	PRIMARY INPUTS 22
:	:
PRIMARY INPUTS 20	PRIMARY INPUTS 40
Slot 7	**Slot 8**
PRIMARY INPUTS 41	PRIMARY INPUTS 61
PRIMARY INPUTS 42	PRIMARY INPUTS 62
:	:
PRIMARY INPUTS 60	PRIMARY INPUTS 80

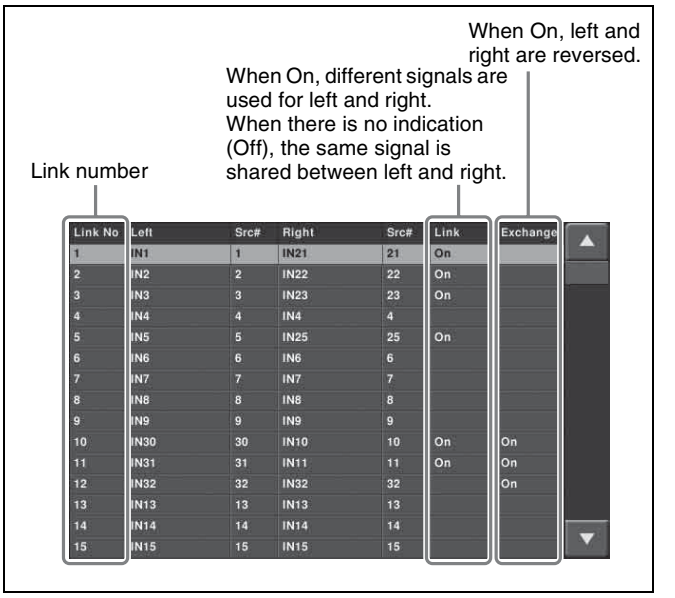
Setting input signals for 3D mode

For each primary input, to select whether separate left and right signals are used, or the same signal is shared between left and right, use the following procedure.

1 Display the Engineering Setup >Switcher > Config >3D Config menu.

2 Press [Input Link].

The Input Link menu appears.



3 Using any of the following methods, select the link number to operate on.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Link No	Link number	1 to upwards
3	Num	Select the number of consecutive numbers from the selected link number	1 to upwards

4 Press [3D Input Link], and set the link to either of the following.

- To use separate left and right signals, set to On.
- To use the same signal shared between left and right, set to Off (no indication).

Notes

When this is set to “Off,” one signal of the predetermined pair cannot be used.
For example, for IN1 and IN21, IN21 cannot be used, and is grayed out in the list.

5 Repeat steps **3** and **4**, to set all of the primary inputs in 3D mode.

Using pairs of primary input numbers reversed right-to-left

Press [L/R Input Exchange], setting it to On, to swap the left and right signals, and reverse the indications in the list. For example, when the left signal is IN1, and the right signal is IN21, this assigns IN21 to the left signal and IN1 to the right signal.

Notes

When [3D Input Link] is off and [L/R Input Exchange] is set to On, then the other input of the pair can be used. For example, when using IN1 shared between left and right, you can also use IN21 shared between left and right, and IN21 also appears in the list.

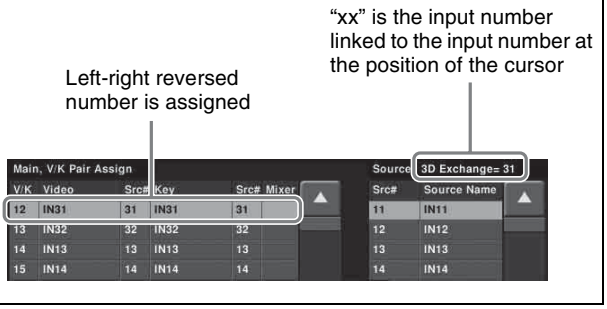
To assign inputs with the primary input numbers reversed left-to-right to cross-points

1 In the Input Link menu, set [L/R Input Exchange] to On, then display the Engineering Setup >Panel >Xpt Assign >Main, V/K Pair Assign menu.

In the Source field, "3D Exchange=xx" appears ("xx" is the input number linked to the input number at the position of the cursor).
In the example of the following figure, for IN11 "3D Exchange=31" appears.

2 Press [Set].

This sets IN31 in place of IN11.



Combinations of left and right signals (output connectors)

The left and right signals are combined for the slots as follows.

If [1-2 Mode] is selected on MVS-8000X

Right signals	Left signals
Slot 13	
OUTPUTS 1	OUTPUTS 2
OUTPUTS 3	OUTPUTS 4
:	:
OUTPUTS 19	OUTPUTS 20
OUTPUTS 25	OUTPUTS 26
OUTPUTS 27	OUTPUTS 28
:	:
OUTPUTS 43	OUTPUTS 44
Slot 14	
MSD1	MSD2
OUTPUTS 21	OUTPUTS 22
OUTPUTS 23	OUTPUTS 24
OUTPUTS 45	OUTPUTS 46
OUTPUTS 47	OUTPUTS 48

If [1-21 Mode] is selected on MVS-8000X

Right signals	Left signals
Slot 13	**Slot 14**
OUTPUTS 1	OUTPUTS 25
OUTPUTS 2	OUTPUTS 26
:	:
OUTPUTS 20	OUTPUTS 44
Slot 15	
MSD1	MSD2
OUTPUTS 21	OUTPUTS 22
OUTPUTS 23	OUTPUTS 24
OUTPUTS 45	OUTPUTS 46
OUTPUTS 47	OUTPUTS 48

If [1-2 Mode] is selected on MVS-7000X

Right signals	Left signals
Slot 9	
OUTPUTS 1	OUTPUTS 2
OUTPUTS 3	OUTPUTS 4
:	:
OUTPUTS 19	OUTPUTS 20
Slot 10	
OUTPUTS 25	OUTPUTS 26
OUTPUTS 27	OUTPUTS 28
:	:
OUTPUTS 43	OUTPUTS 44
Slot 11	
MSD1	MSD2
OUTPUTS 21	OUTPUTS 22
OUTPUTS 23	OUTPUTS 24
OUTPUTS 45	OUTPUTS 46
OUTPUTS 47	OUTPUTS 48

If [1-21 Mode] is selected on MVS-7000X

Right signals	Left signals
Slot 9	**Slot 10**
OUTPUTS 1	OUTPUTS 25
OUTPUTS 2	OUTPUTS 26
:	:
OUTPUTS 20	OUTPUTS 44
Slot 11	
MSD1	MSD2
OUTPUTS 21	OUTPUTS 22
OUTPUTS 23	OUTPUTS 24
OUTPUTS 45	OUTPUTS 46
OUTPUTS 47	OUTPUTS 48

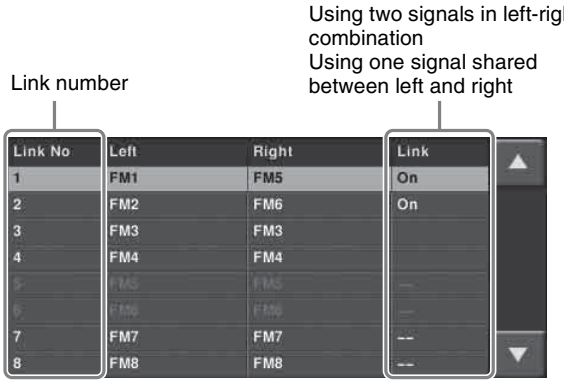
Setting frame memory outputs for 3D mode

Select whether to use frame memory outputs 1 to 8 in combinations of left and right signals for 3D mode. The left and right combinations are fixed, as 1 and 5, 2 and 6, 3 and 7, and 4 and 8.

1 Display the Engineering Setup >Switcher >Config >3D Config menu.

2 Press [FM Output Link].

The FM Output Link menu appears.



3 Using any of the following methods, select the link number.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Link No	Link number	1 to 8
3	Num	Select the number of consecutive numbers from the selected link number	1 to 8

4 Press [FM Link], and set the link to either of the following.

- To use the frame memory outputs in left and right combinations, set to On.
- To use the same frame memory output for left and right, set to Off (no indication).

Notes

When [FM Link] is On, frame memory output does not include ancillary data for the right image.

5 Repeat steps **3** and **4**, to set all of the frame memory outputs for 3D mode.

Functions for which left and right frame memory outputs are coupled when [FM Link] is On

Pair mode On/Off, clip playback, clip transition [1)], clip transition snapshot

Carry out operations other than the above separately for left and right.

1) When [FM Link] is On, a clip for the right frame memory to be used in the clip transition cannot be selected in the following menus.
- M/E-1 >Misc >Transition >Clip Transition >Clip menu
- M/E-2 >Misc >Transition >Clip Transition >Clip menu
- P/P >Misc >Transition > Clip Transition > Clip menu
- The selection must be made in the Frame Memory >Clip >Recall menu

Switching the type of DME output signal (video/key) assigned to a monitor signal

The function for switching the signal type of the monitor output (one channel) to video or key is assigned to one of the Prefs buttons of the Menu control block or one of the buttons of the Utility/Shotbox control block (DME MON KEY command).

For details of the assignment, see "Settings Button Assignment (Prefs/Utility Menu)" in Chapter 19 (Volume 2).

To switch the signal type of DME output (video/key) assigned to a monitor signal

Press the DME MON KEY command assigned button and turn it on to assign DME key output to a monitor signal. Then press the button and turn it off to assign DME video output to a monitor signal. For selection of the DME channels to be assigned to a monitor signal.

For details, see "Assigning a DME output signal as a monitor signal" (page 129).

Selecting the signal output from a DME monitor output connector

1 Display the Engineering Setup >DME >Output >Monitor Output menu.

2 Press [DME1] or [DME2] to select the DME to operate on.

3 On the left, select MONI OUT#1 or MONI OUT#2.

4 On the right, select the signal.

You can select any of Ch1 Video, Ch1 Key, Ch2 Video, and Ch2 Key.

5 Press [Set].

This assigns the signal.

Restrictions in 3D Mode

In 3D mode, the following restrictions apply, because the switcher and DME hardware is operating in tandem (link A and link B).

Restrictions	Details
Functions that cannot be used in the switcher	• 73 or more signal inputs (MVS-8000X) or 41 or more signal inputs (MVS-7000X) • 11 or more premium input signals (MVS-8000X only) • 25 or more signal outputs • Monitor buses 2/4/6/8 • M/E-2 bank a) • M/E-3 bank • Key 5 to Key 8 b) • DME utility buses 1, 2 • Color corrector 2 • Format converter • Functions of the “Logical M/E Assign” in the Engineering Setup >Switcher >Config menu.
Functions that cannot be used on the DME	• DME channels 3, 4, 7, 8 • DME monitor output numbers 3 and 4 • Editor ports 3 and 4 when the editor port operation mode is set to “Independent”
Other restrictions	• Auto chroma keying is carried out on the left image. • Tallies are generated based on the left signal in the PGM/PST bank.

a) In MVS-8000X
b) In MVS-7000X

Video Creation in 3D Mode

Adjusting the parallax using the DME

By adjusting the parallax *(see page 248)*, you can control the degree of depth perception.

1 Display the Global Effect >Ch1 to Ch4 >3D Mode menu.

2 To adjust the parallax, press [Parallax].

3 Turn the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	1ch Parallax	Adjust the parallax for channel 1	0.00 to 8.00
2	2ch Parallax	Adjust the parallax for channel 2	0.00 to 8.00

Notes

If the position of an image in three-dimensional space is in the plane of the monitor screen, adjusting the parallax does not change the 3D effect. In this case, adjust the parameters in the local coordinate space so that the image is either in front of or behind the plane of the screen before adjusting the parallax.

4 To adjust the perspective without changing a size or shape, press [Disparity].

5 Turn the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	1ch Disparity	Adjust the degree of depth perception for channel 1	–8.00 to 8.00
2	2ch Disparity	Adjust the degree of depth perception for channel 2	–8.00 to 8.00

M/E Configuration Switching

On the MVS-7000X, a single mix/effect board MKS-7210X can be shared among a number of M/E banks. Using this function, you can select the M/E configuration of the whole switcher from the following.

Board	Number of assigned M/Es	Number of keys available on a single M/E	
Board 1	1	8	
	2	4	
	3	M/E-1, M/E-2	Select from 0 to 4
		PGM/PST	4
	4	Select from 0 to 4	
Board 2	1	8	
	2	4	
Board 3	1	8	
	2	4	

In this manual, using a single MKS-7210X board is referred to as 1M/E mode, 2M/E mode, 3M/E mode, or 4M/E mode depending on the maximum number of M/Es on which the board is used.

Notes

- A maximum of five M/Es can be used on a single switcher.
- When the signal format is 1080P, each MKS-7210X board can only be used on a single 1M/E and the number of available keys is 4.
- In 2M/E mode, DME selection on a single M/E is as follows.
  - Two places when the dedicated interface is used.
  - One place when the SDI interface is used.

Setting the number of M/Es for each board

Use the following procedure.

1 Display the Engineering Setup >System > Install/Unit Config >M/E Split menu.

2 In <M/E Split (1st Board)> group, select any of [1ME], [2ME], [3ME], and [4ME].

3 In each of the <M/E Split (2nd Board)> to <M/E Split (3rd Board)> groups, select [1ME] or [2ME].

4 Press [Execute].

Assigning Keys for 3M/E Mode or 4M/E Mode

You can assign keys for 3M/E mode or 4M/E mode selected in the M/E Split menu.

1 Display the Engineering Setup >Switcher > Config >Key Config menu.

2 Assign keys to M/E-1 and M/E-2.

Select any of the following in the <Key Assign (M/E-1, M/E-2)> group.

0Key (ME1) 4Key(ME2): Assign no key to M/E-1 and four keys to M/E-2.

1Key(ME1) 3Key(ME2): Assign one key to M/E-1 and three keys to M/E-2.

2Key(ME1) 2Key(ME2): Assign two keys each to M/E-1 and M/E-2.

3Key(ME1) 1Key(ME2): Assign three keys to M/E-1 and one key to M/E-2.

4Key(ME1) 0Key(ME2): Assign four keys to M/E-1 and no key to M/E-2.

3 Assign keys to M/E-3 and P/P.

Select the key assignment method in the <Key Assign (M/E-3, P/P)> group in the same way as step **2** above.

Restrictions in 3M/E Mode and 4M/E Mode

In 3M/E mode and 4M/E mode, the following restrictions apply.

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.
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 can be used. • Dust mix cannot be used.	M/E-2, M/E-3	• Random/diamond dust wipes can be used. • Dust mix cannot be used.
Wipe border	M/E-2	Wipe border colors are single-color only.	M/E-2, M/E-3	Wipe border colors are single-color only.
M/E outputs	M/E-1, M/E-2	Out5 and Out6 cannot be used.	All M/Es and P/P	Out5 and Out6 cannot be used.
Signal selection	M/E-1, M/E-2	PROC V and PROC K signals cannot be selected with any cross-point button.	All M/Es and P/P	PROC V and PROC K signals cannot be selected with any cross-point button.
Utility bus	M/E-1	Since only one utility bus is available, utility 1 bus is used instead of utility 2 bus in the following functions. a) • 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 in the following functions. • Wipe border • Preset color mix • Backgrounds of DME wipes
	M/E-2	Since only one utility bus is available, you cannot select the following functions. • Key border • Sub mask • Preset color mix • Wipe border	M/E-2, M/E-3	Since only one utility bus is available, you cannot select the following functions. • Key border • Sub mask • Preset color mix • Wipe border
	M/E-2	If you select a DME wipe which uses a utility bus for a background image, a color matte signal is used instead of a utility bus signal.	M/E-2, M/E-3	If you select a DME wipe which uses a utility bus for a background image, 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.
DME	All M/Es and P/P	For PGM/PST, the same restrictions as those for 2M/E apply. For M/E1 and M/E-2, the same restrictions as those for 4M/E mode apply.	All M/Es and P/P	• For the dedicated interface, DME can be used in only one place for each M/E. • For the SDI interface, DME wipes and processed keys cannot be used. • Only one-channel mode patterns can be selected for DME wipes.

a) No restriction is applied to P/P. Thus, both utility buses 1 and 2 can be used for P/P.

DME Operations

Chapter 11

DME

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. DME is the general name for all of these 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.
Functions that can be used differ with the models of DME.

For details, see"Functional Differences With Models of DME" (page 394).

Three-Dimensional Transformations

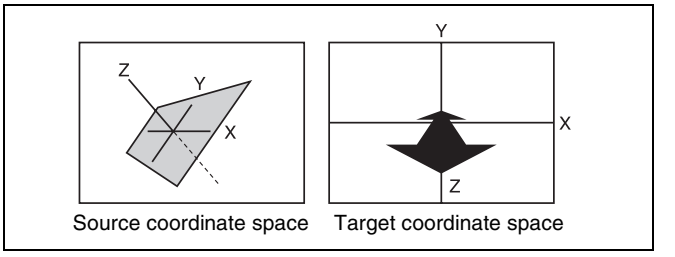
Transformation is the process of placing a video image in a three-dimensional DME coordinate space and subjecting it to manipulations such as movement, rotation, magnification or shrinking.

Three-dimensional coordinate space

Source coordinate space and target coordinate space

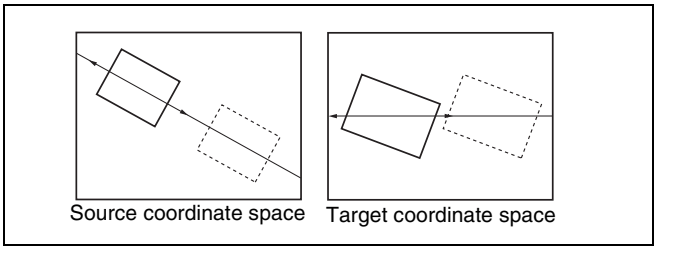
Images are placed in one of two types of coordinate space: source coordinate space and target coordinate space.

- The source coordinate space is a three-dimensional coordinate space with reference to the image itself. The x- and y-axes are defined parallel to 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.
- The target coordinate space is a three-dimensional coordinate space with reference to the output monitor screen. The x- and y-axes are defined parallel 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 move even if the image moves.



Source coordinate space and target coordinate space

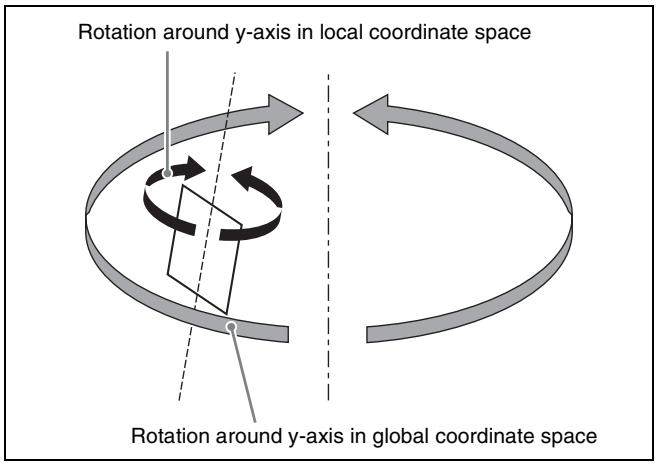
For example, as shown in the following figure, the image moves in a different direction when you move it along the x-axis of the source coordinate space and along the x-axis of the target coordinate space.



Movement along the x-axes of the source coordinate space and target coordinate space

Local coordinate space and global coordinate space

The coordinates of an individual DME channel are called its local coordinate space. The coordinates common to all channels are called the global coordinate space.
By switching from local to global coordinate space, you can add new movement to the movement of images in individual channels, and also apply transformation effects to multiple channels that have been combined by Global effects *(see page 336).*



Local coordinate space and global coordinate space

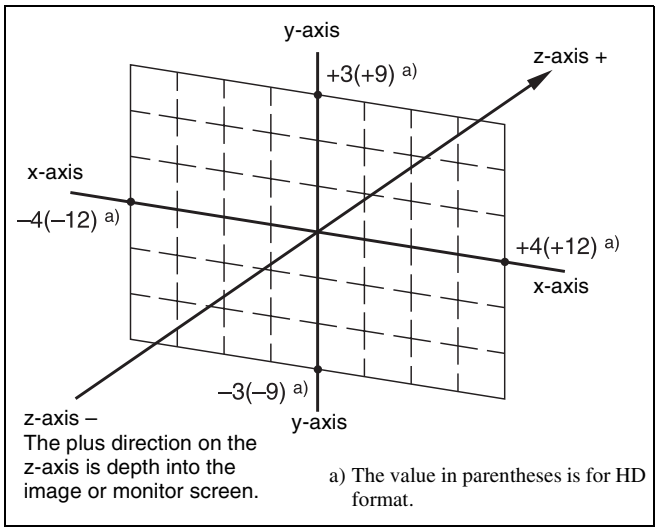
Three-dimensional parameters

Three-dimensional parameters are x, y, and z values which define the position of an image, its axis of rotation, the position of an imaginary point of view on the image, and so on.

The standard values of parameters are as follows, depending on the aspect ratio of your monitor (4:3 or 16:9).

Values for 4:3 mode

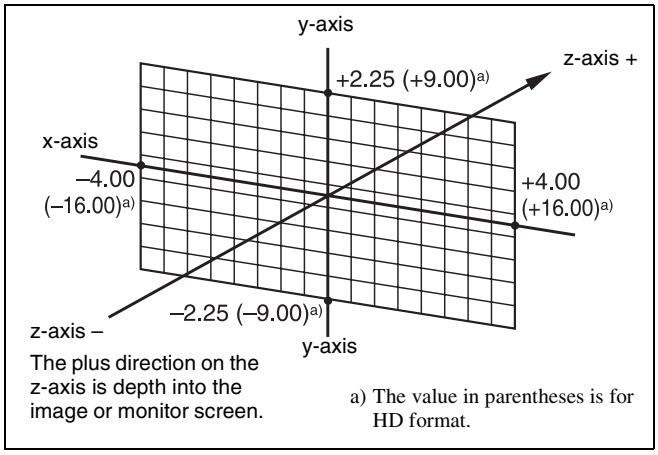
- **Origin at center of image (source coordinate space) or center of monitor (target coordinate space)**
  x = 0.00, y = 0.00, z = 0.00
- **Upper right corner of image or monitor**
  When using SD format signals: x = 4.00, y = 3.00, z = 0.00
  When using HD format signals: x = 12.00, y = 9.00, z = 0.00
- **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



Values for x-, y-, and z-axes (4:3 mode)

Values for 16:9 mode

- **Origin at center of image (source coordinate space) or center of monitor (target coordinate 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



Values for x-, y- and z-axes (16:9 mode)

Limits of three-dimensional parameters

The following table shows the limits of three-dimensional transformation parameters.

The three-dimensional parameters of an image change when you use the trackball or Z-ring to execute a transformation. You can also execute a transformation by entering parameter values from the numeric keypad control block.

Operation mode	Limits of three-dimensional transformation parameters		
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
Rotation, Spin	–999.9999 to +999.9999		
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
Location Size	0.0000 to +999.9999		
Aspect	0.0000 to +2.0000		
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
Perspective (z)	0.0000 to 999.9999		
Skew	–9.9999 to +9.9999		

Detents

The system defines points called detents at regular intervals on the three-dimensional space. Pressing the [CTR] button *(see page 271)* in the device control block sets the current three-dimensional parameter values to the closest detent points.
The following table shows the interval between successive detents for each transformation operation mode *(see page 258)*.

Operation mode	Detent interval
Location XYZ	1.0000
Rotation, Spin	0.2500
Axis Location	1.0000
Location Size	0.2500
Aspect	1.0000 a)
Perspective (x, y) Perspective (z)	1.0000 1.0000 a)
Skew	0.1000

a) When a value is smaller than 1, 1/Aspect or 1/Perspective (z) is adjusted to an integral value.

Three-dimensional parameter default values

Each of the transformation operation modes has default values for three-dimensional parameters. If required, you can return the current value to the defaults by pressing the [CTR] *(see page 271)* button in the device control block twice in rapid succession.
The following table shows the default parameter values for each transformation operation mode.

Operation mode	Default value
Location XYZ	0.0000
Rotation, Spin	0.0000
Axis Location	0.0000
Location Size	1.0000
Aspect	1.0000
Perspective (x, y) Perspective (z)	0.0000 1.0000
Skew	0.0000

Resetting of parameter values set in the source coordinate space

In some transformation operation modes, if you switch to the target coordinate space after setting up a three-dimensional transformation in the source coordinate space, the setting values in the source coordinate space (three-dimensional parameter values) are converted to values in the target coordinate space (source/target conversion). Once a conversion has taken place, the original source coordinate space parameters do not return to their original values when you switch back to the source coordinate space. They are reset to zeros.
Source/target conversion occurs in the following operation modes:
- Location XYZ
- Rotation

Transformation Operation Modes

The following operation modes are available for three-dimensional DME transformations. These operations are carried out in the device control block (trackball or joystick). (*For details, see "Three-Dimensional Transformation Operations" (page 270).)*

Location XYZ

Moves the image on the x-axis, y-axis, or z-axis. The direction of movement differs depending on whether you are manipulating the image in the source coordinate space or the target coordinate space.

Image movement in the source coordinate space

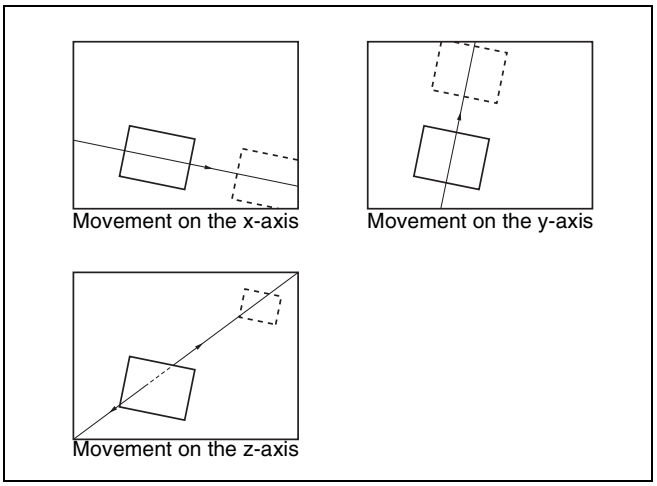
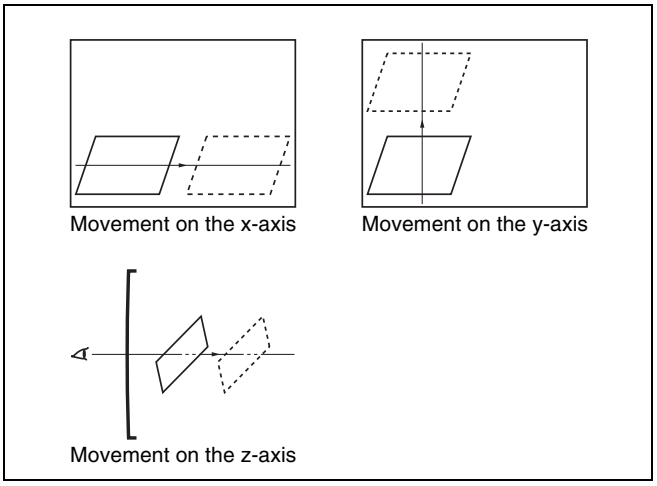


Image movement in the target coordinate space



Rotation

Rotates the image on the x-axis, y-axis, or z-axis. The type of rotation differs depending on whether you are manipulating the image in the source coordinate space or the target coordinate space.

Image rotation in the source coordinate space

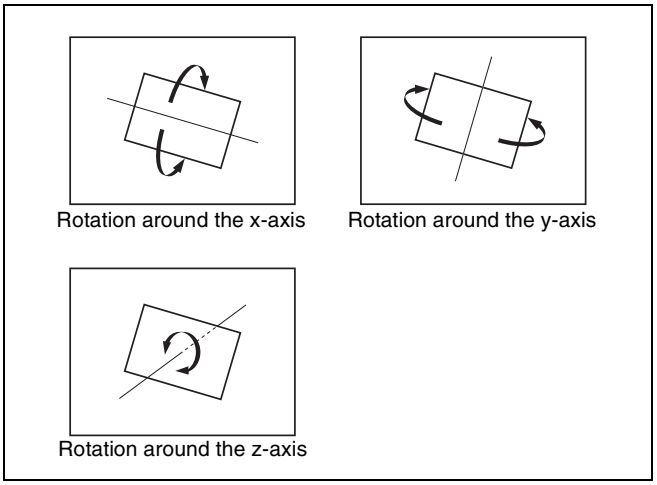
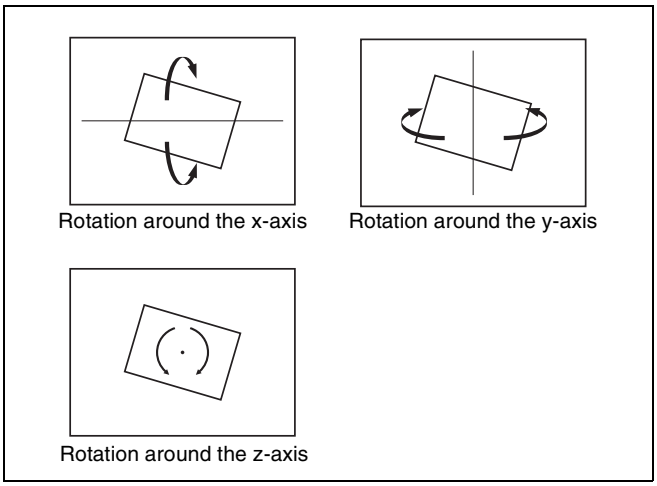


Image rotation in the target coordinate space



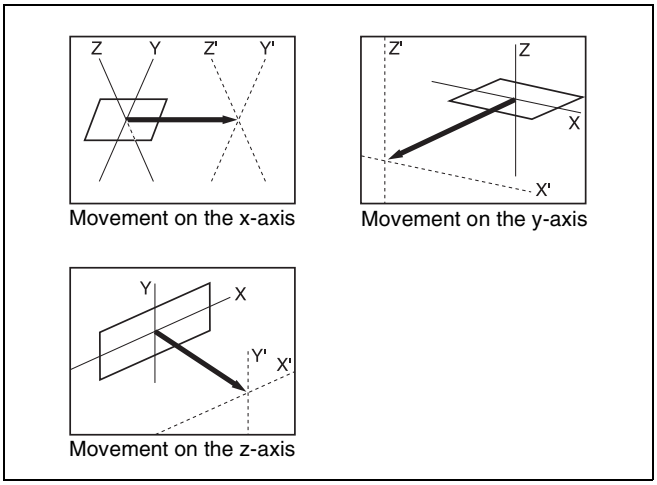
Spin

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 you are manipulating the image in the source coordinate space or the target coordinate space. (The way the image rotates around an axis is the same as in Rotation mode.)

Axis Location

Moves an axis of rotation in the source coordinate space.

Axis movement



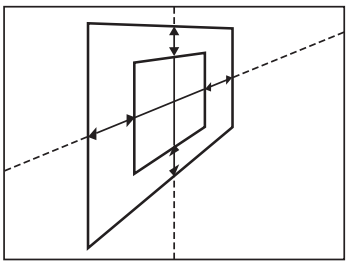
Location Size

Changes the size of the whole image.

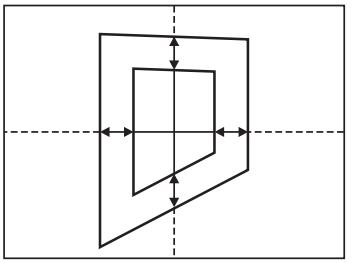
- Because shrinking and magnification of the image in the source coordinate space is done in three-dimensional space, magnifying the image emphasizes the sense of perspective.

- Because shrinking and magnification of the image in the target coordinate space is a conversion of the two-dimensional image displayed on the monitor, shrinking and magnification does not change the shape of the image.

Magnification and shrinking in the source coordinate space

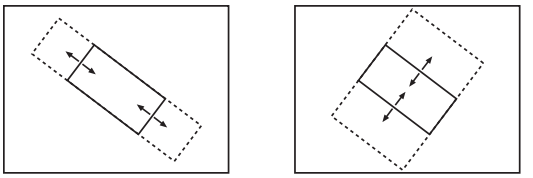


Magnification and shrinking in the target coordinate space



Aspect

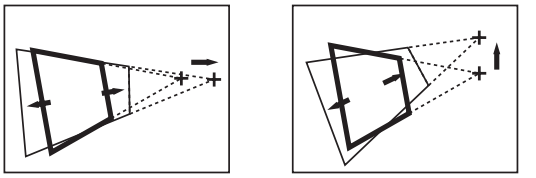
In the source coordinate space, changes the aspect ratio in the x-axis direction and y-axis direction, either independently or simultaneously.

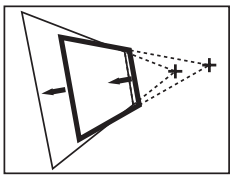


Perspective

In the target coordinate space, changes the perspective on the image by changing an imaginary view point, without changing the position of the image.

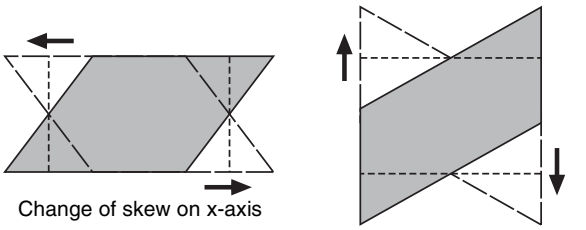
The x-axis and y-axis values define the position of the view point. The z-axis value defines its distance from the image.





Skew

In the source coordinate space, change the skew of the image on the x-axis or y-axis.



Graphics Display

Graphics display is a function that allows you to display wire frames, coordinate axes and a grid over the current DME image, to make it easier to create effects in three-dimensional coordinate space.
Graphics displayed by this function can also be output to the monitor output connector.
To make graphics display settings, use the DME menu. (*For details, see "Graphics Display Operation" (page 274).)*
You can display the following kinds of graphics.

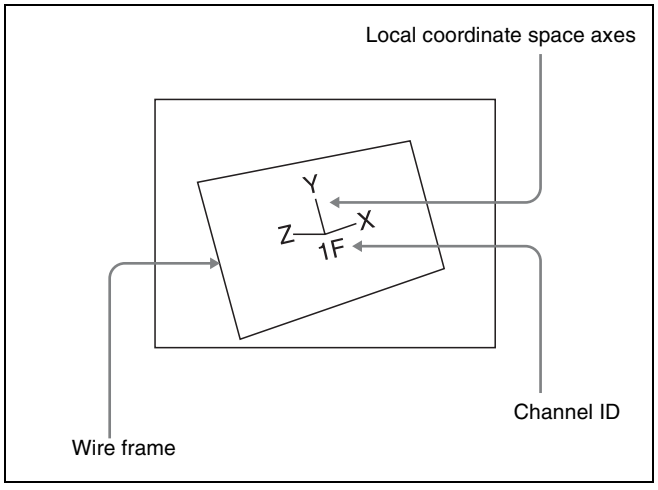
Wire frames

A wire frame displays an image enclosed in a frames, so that you can check the position and size of the image. If there is a shadow *(see page 342),* a frame is shown for the shadow as well.

Coordinate axes
This is a three-dimensional display of coordinates in local or global coordinate space. You can check the origin of the axes and the directions of the x-, y-, and z-axes.

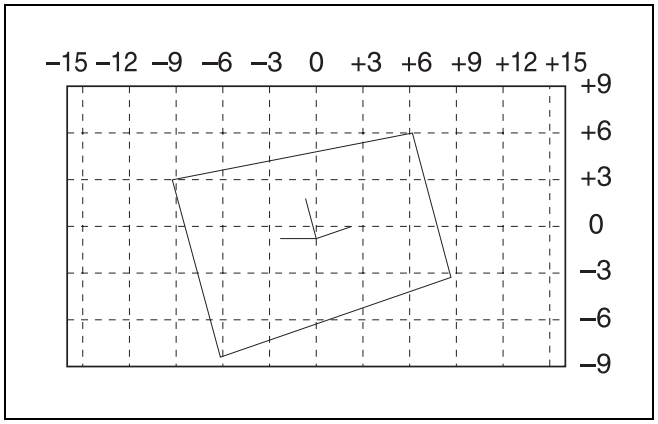
Channel ID
This displays the channel number so that you can check which channel you are using, a useful feature when you are working with multiple channels.
Channel IDs are displayed differently in local and global coordinate space.

- In local coordinate 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 coordinate space.
- In global coordinate space, the channel number is displayed along with "G" to indicate global. For example, "G2" means channel 2 in global coordinate space.



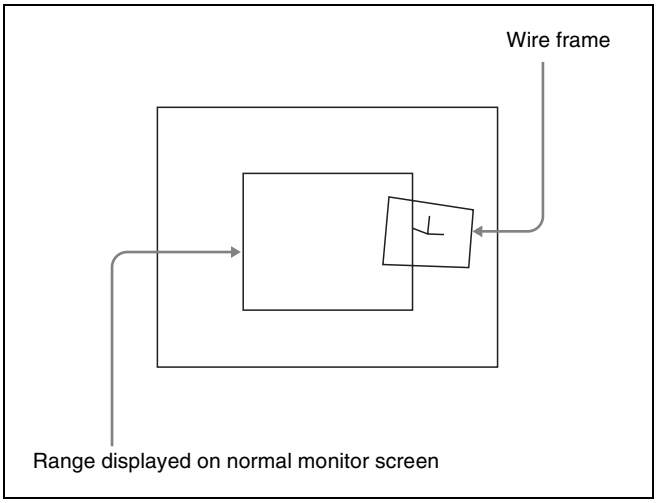
Wire frame, local coordinate space axes, and channel ID

Grid
This is a grid pattern representing the whole of the monitor screen. The grid makes it easy to set the position of an image in two-dimensional coordinates.



Grid (16:9 mode)

Shrinking the graphics display
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.



To automatically erase the graphic display
Turn Auto Erase on. The graphic display is erased automatically whenever a keyframe is executed. It is displayed again after the keyframe ends, after the time set in Recovery Time.

Flex Shadow center axis
When using the Flex Shadow function *(see page 283)*, turn Flex Shadow Axis on to display the Flex Shadow center axis. This is an effective aid in making settings for this function.

Notes

The Flex Shadow center axis function is not supported on the MVE-8000A.

Three-Dimensional Parameter Display

You can display a three-dimensional parameter list for the currently controlled image. When more than one DME channel is selected, the status of the reference channel is displayed.

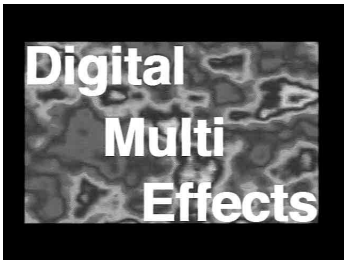
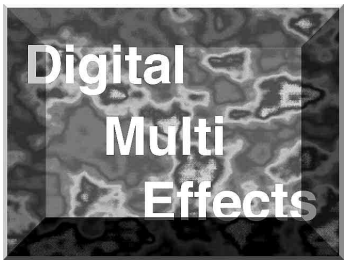
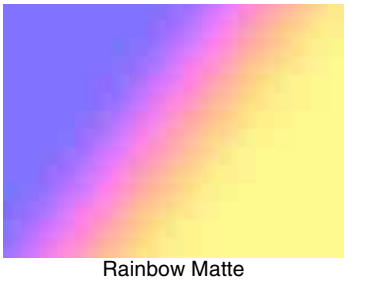
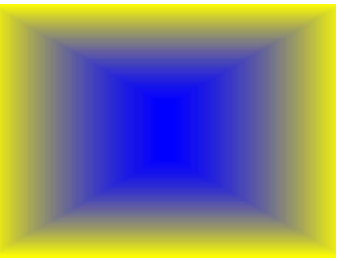
For the method of displaying a parameter list and an example display, see "Viewing the three-dimensional parameter details" (page 273).

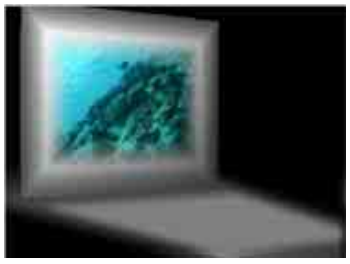
Special Effects

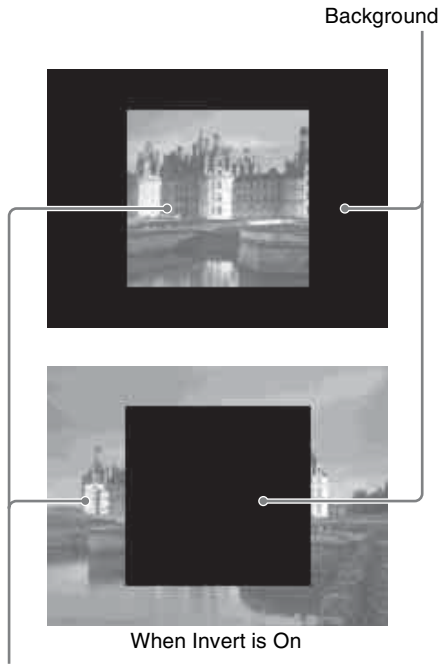
You can use DME to add a variety of special effects. The special effects shown below can be applied.

Functions that can be used differ with the models of DME. For details, see "Functional Differences With Models of DME" (page 394).

Edge effects

Name	Effect/Image
Border *(See page 276.)*	Adds a border to the image frame. You can adjust the width (or thickness) of the border, its color, and the softness of the border edges.
Crop *(See page 277.)*	Crops away the edges of the 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 278.)*	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. Color  Lights
Key Border *(See page 279.)*	Adds borders to keys or gives a key consisting of an outline only.
Art Edge *(See page 279.)*	Adds edges to the inner and outer side of the input image. The following items can be set. • Art edge width and position • Separate softening of the art edge inner and outer sides • Color of art edges **Examples of Art Edge source** Gradation Matte  Rainbow Matte  Radial Gradation

Name	Effect/Image
Art Edge *(See page 279.)*	 Radial Rainbow Examples of Art Edge source [Rainbow Matte]
Flex Shadow *(See page 283.)*	Allows a shadow to be added to the image using only one DME channel. The following settings can be made for the shadow. • The signal to use for the shadow - External: Generate shadow using input key signal. - Internal: Generate shadow using an internally generated, full-size DME key signal. • Shadow shrinking and magnification • Shadow position • Shadow color and density • Center axis of deformation • Shadow slant and perspective Flex Shadow Source = External  Flex Shadow Source = Internal

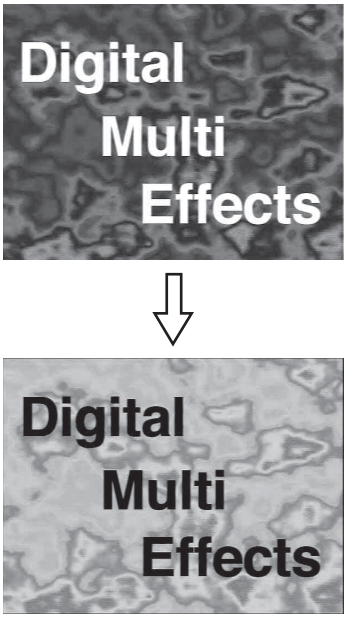
Name	Effect/Image
Wipe Crop *(See page 287.)*	Crops the video image to be visible inside or outside a wipe pattern. 

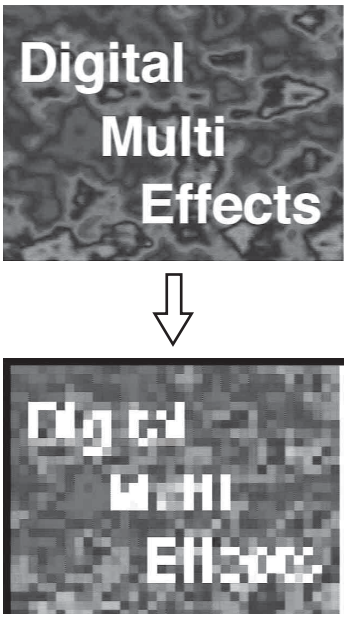
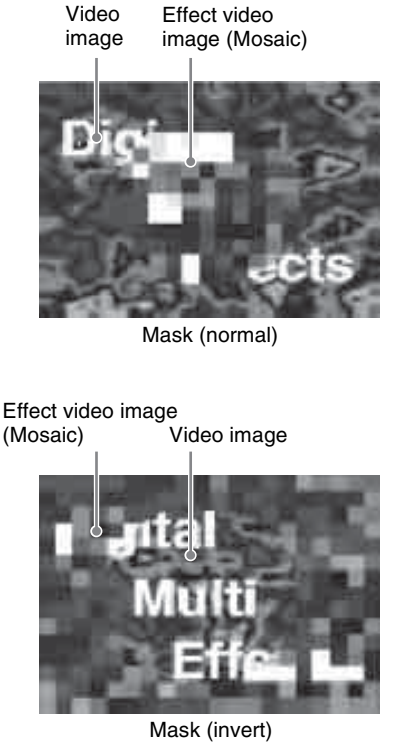
Effects for entire image

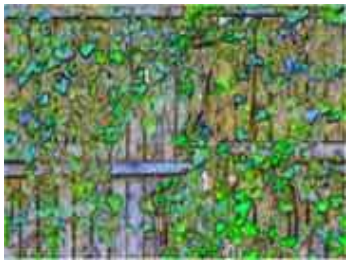
Name	Effect/Image
Defocus *(See page 290.)*	Defocuses the whole image. The degree of defocusing can be set simultaneously or separately for video and key signals. (However, when the DME dedicated interface is used, the degree of defocusing can be set for video signals only.) You can also cancel the black level leaking that occurs at the edge of the screen when the Defocus effect is used.
Blur *(See page 291.)*	Applies a rounded blurring to the whole image.

Name	Effect/Image
Multi Move *(See page 292.)*	Shrinks the image and lines up a number of copies vertically and horizontally. You can specify the center point of the shrinking, the shrinking ratio, and the aspect ratio of the image screen.

Effects for video image

Name	Effect/Image
Sepia *(See page 293.)*	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 293.)*	Converts the image into a monochrome image.
Posterization *(See page 293.)*	Coarsens the luminance gradations of the image, for a paintinglike effect.
Solarization *(See page 293.)*	Coarsens the chroma gradations of the image, for a paintinglike effect.
Nega *(See page 294.)*	Reverses the luminance or chroma of the image. 
Contrast *(See page 294.)*	Changes the contrast of the luminance and chroma of the image.

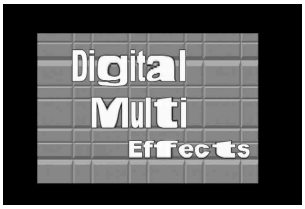
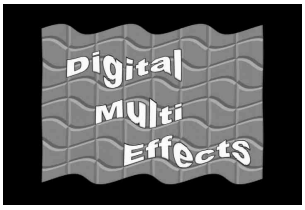
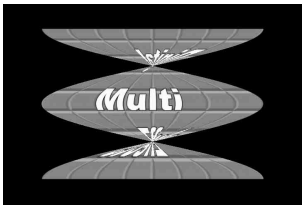
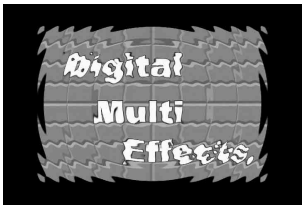
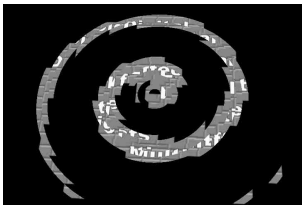
Name	Effect/Image
Mosaic *(See page 294.)*	Divides the image into small tiles so that it looks like a mosaic. You can specify the size and aspect ratio of the tiles. 
Mask *(See page 297.)*	Masks part of the picture, so that special effects are applied only inside a selected pattern. 

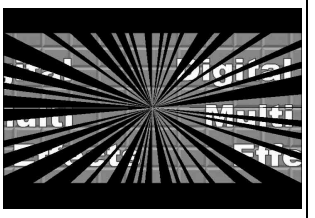
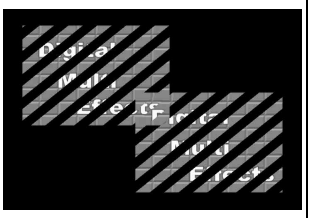
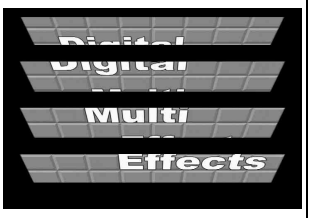
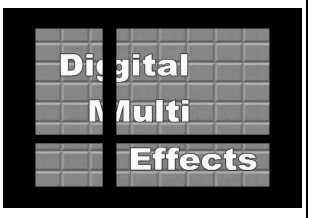
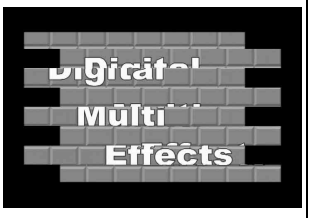
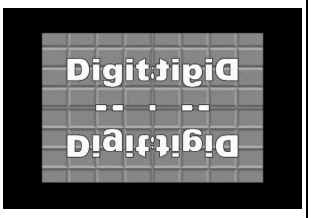
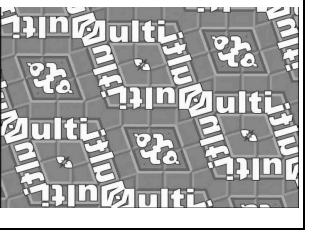
Name	Effect/Image
Sketch *(See page 294.)*	Provides a sketch-like effect based on the outlines of the image, using different touches such as sketch, edge color, drawing, relief, and sharp.  Sketch
Metal *(See page 296.)*	Provides a metallic gloss like that from gold, silver, or a rainbow colored surface. A metallic gloss can also be given to a freely selected color.
Dim and Fade *(See page 296.)*	The Dim effect makes the image darker as it recedes into the distance. The Fade effect makes the image fade into the background as it recedes into the distance. Fade
Glow *(See page 297.)*	Softens the edges of highlights, giving an effect like being struck by a soft light.

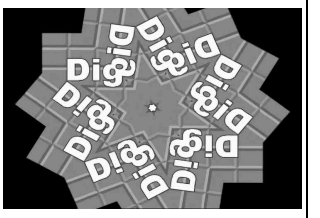
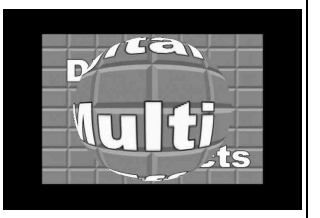
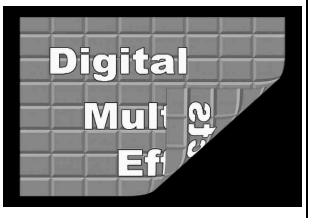
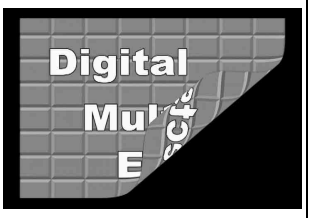
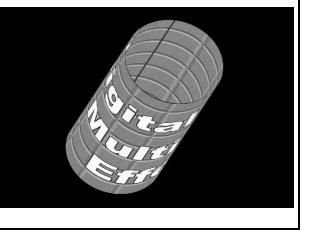
Freeze effects

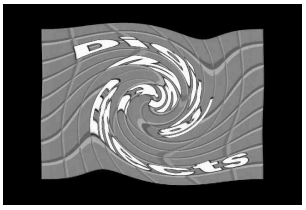
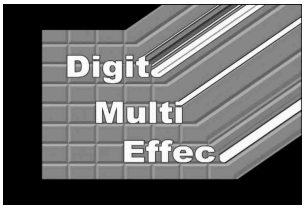
Freezes the input video. The video can also be frozen at a specified interval *(see page 299)*.

Nonlinear effects

Name	Effect/Image
Wave *(See page 300.)*	Produces a wave-like effect in the image.
Mosaic Glass *(See page 302.)*	Makes the image rougher and finer at a specified interval. 
Flag *(See page 302.)*	Applies an effect like a flag waving in the wind. 
Twist *(See page 302.)*	Twists the image. 
Ripple *(See page 303.)*	Applies an effect like ripples moving across the image. 
Rings *(See page 306.)*	Partitions the image into rings that rotate while moving in the same direction. 

Name	Effect/Image
Broken Glass *(See page 306.)*	Partitions the image like broken glass, with shards flying outward. 
Flying Bar *(See page 307.)*	Divides the image into bars which peel off in two blocks as they move. 
Blind *(See page 307.)*	Divides the image into bars or wedges, with blocks rotating like the slats of venetian blinds. 
Split *(See page 308.)*	Splits the image upper and lower, left and right. 
Split Slide *(See page 308.)*	Divides the image into bars which slide alternately in reverse directions. 
Mirror *(See page 309.)*	Partitions the image vertically and horizontally, creating an image like a reflection in a mirror. 
Multi Mirror *(See page 309.)*	Divides the image into originals and reflections, lining them up vertically and horizontally. 

Name	Effect/Image
Kaleidoscope *(See page 310.)*	Creates an image like a view into a kaleido-scope. 
Lens *(See page 310.)*	Creates an image like a view through a lens. 
Circle *(See page 311.)*	Makes a circle with the image.
Panorama *(See page 311.)*	Curves the upper and lower edges of the image to emphasize the sense of perspective.
Page Turn *(See page 311.)*	Turns the image like a turning page. 
Roll *(See page 312.)*	Rolls the image up. 
Cylinder *(See page 312.)*	Winds the whole image onto a cylinder. 

Name	Effect/Image
Sphere *(See page 313.)*	Winds the whole image onto a sphere.
Explosion *(See page 313.)*	Divides the image into fragments which expand as they fly out.
Swirl *(See page 313.)*	Swirls the image. 
Melt *(See page 314.)*	Melts the image away from a specified part.
Character Trail *(See page 315.)*	Extends the edge of the image like a trail. 

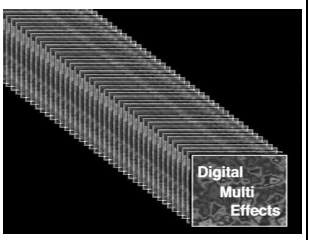
Corner Pinning effect

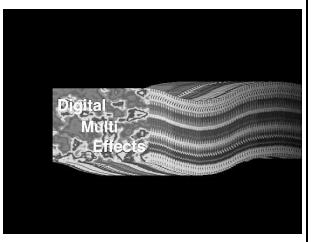
Name	Effect/Image
Corner Pinning *(See page 334.)*	Provides the effect of inserting the foreground in the background, allowing the four corners to be positioned freely, so that the image fills the quadrilateral outlined by the corners. Background Foreground (in cropped state) Corner Pinning (when Crop Link is on)

Lighting effects

Name	Effect/Image
Lighting *(See page 316.)*	Provides the effect of light striking the image. Normal Specular Mat
Spotlighting *(See page 323.)*	Creates the effect of a spotlight striking the surface of the image.

Recursive effects

Name	Effect/Image
Trail *(See page 318.)*	Recursively freezes the input video at regular intervals so that a trail of afterimages is created. You can make the afterimages stardust trails. 

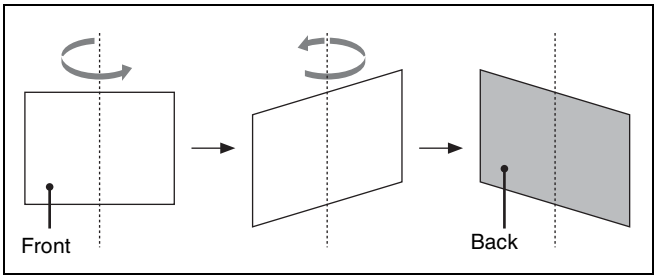
Name	Effect/Image
Motion Decay *(See page 320.)*	Blurs the motion of a moving video by creating afterimages of the moving video. You can make the afterimages stardust trails.
Keyframe Strobe *(See page 321.)*	Freezes the video each time the effect passes a keyframe. You can make the afterimages stardust trails.
Wind *(See page 322.)*	Strobes the image at regular intervals, and moves the frozen image in a fixed direction, leaving an afterimage. 

Background color

Adds a color or inputs an external signal to the background of the image *(see page 331)*.

Separate sides (effects for front and back sides)

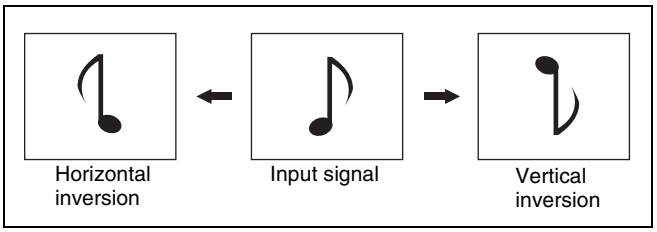
Applies separate video signals and key signals to the front and back of the image *(see page 331)*.



Front and back sides

Signal inversion (Invert effect)

Inverts the input video signal and/or key signal horizontally or vertically. You can make separate settings for the front and back *(see page 332)*.



Inversion of input signal

Key density adjustment

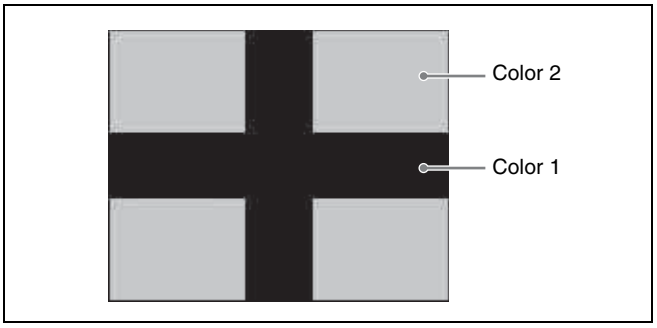
Adjusts the key density for the key signal input to the DME *(see page 333)*.

Key source selection

Selects 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 *(see page 268 or page 333)*.

Color mix setting

This is a combination of two colors with a pattern generator. This color mix signal can be used to fill parts such as a background or border *(see page 289)*.



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

Devices for DME Support

The following boards and processors provide DME support.

The available functions depend on the type of DME being used. For details, see "Functional Differences With Models of DME" in Appendix (page 394).

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: the dedicated interface and the SDI interface.

For details, see "Setting the Interface Between the DME and the Switcher" in Chapter 20 (Volume 2).

The use of the SDI interface requires an MKS-8110X 20-input board and an MKS-7171X DME output connector board. When using the SDI interface, the following operations are different from using the dedicated interface.

- Setting the input signals from the switcher to the MKS-7470X/7471X (AUX bus outputs), and signals returned to the switcher (reentry inputs).
  For details, see "Setting the AUX Bus Output and Reentry Input" in Chapter 20 (Volume 2).
- Selecting the combiner channels not in the key control block, but in the Global Effect menu.
  For details, see "Procedure for combine operation when using an SDI interface" (page 338)

MVE-8000A Multi Format DME Processor

The MVE-8000A is a "Digital Multi Effects" 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: the dedicated interface and the SDI interface.

Notes

When using the SDI interface, the following operations are different from using the dedicated interface.

For details, see "Setting the Interface Between the DME and the Switcher" in Chapter 20 (Volume 2).

- Setting the input signals from the switcher to the MVE-8000A (AUX bus outputs), and signals returned to the switcher (reentry inputs). However, "Ext In" cannot be set for the DME channel.
  For details, see "Setting the AUX Bus Output and Reentry Input" in Chapter 20 (Volume 2).
- Selecting the combiner channels not in the key control block, but in the Global Effect menu *(see page 337)*.

MVE-9000 Multi Format DME Processor

The MVE-9000 is a "Digital Multi Effects" with multi-format support.
For the MVE-9000, an optional MKE-9021A 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: the dedicated interface and the SDI interface.

For details, see "Setting the Interface Between the DME and the Switcher" in Chapter 20 (Volume 2).

Notes

When using the SDI interface, the following operations are different from when using the dedicated interface.

- Setting the input signals from the switcher to the MVE-9000 (AUX bus outputs), and signals returned to the switcher (reentry inputs).
  For details, see "Setting the AUX Bus Output and Reentry Input" in Chapter 20 (Volume 2).
- Selecting the combiner channels not in the key control block, but in the Global Effect menu *(see page 337)*.

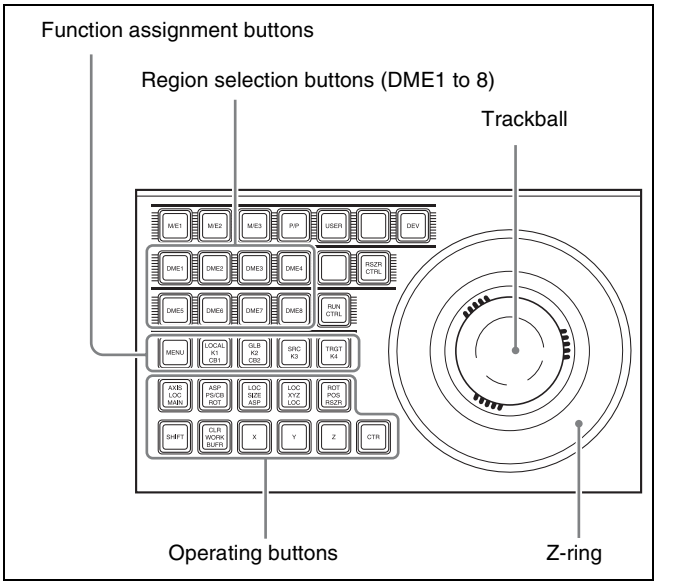
Three-Dimensional Transformation Operations

Use the device control block to carry out three-dimensional DME transformations.

For details of three-dimensional DME coordinate space, see "Three-Dimensional Transformations" (page 256).

Basic Operations

This section explains how to use the device control block (trackball) to carry out three-dimensional transformations.



Device control block (trackball)

Buttons used when the three-dimensional transform operation mode is enabled

LOCAL: Enable operations in the DME local coordinate space.

GLB (global): Enable operations in the DME global coordinate space.
The [LOCAL] and [GLB] buttons can be selected at the same time.

SRC (source): Enable operations in the DME source coordinate space.

TRGT (target): Enable operations in the DME target coordinate space.
The [SRC] and [TRGT] buttons cannot be selected at the same time. When these buttons are held down, trackball and Z-ring operation is switched to a finer control. (fine mode)

AXIS LOC (location): When this button is lit, the trackball moves the rotational axis of the image in the x-axis and y-axis directions, and the Z-ring moves the axis in the z-axis direction.

ASP PERS (aspect/perspective): When the [SRC] button is lit, pressing this button enables the trackball to control the x-axis and y-axis directions independently, and the Z-ring controls the x-axis and y-axis directions together, to vary the aspect ratio. 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, pressing this button enables the trackball to control the perspective of the image in the x-axis and y-axis directions.

The Z-ring controls the distance to the viewpoint.

LOC (location) SIZE: When this button is lit, the Z-ring controls the image size.

The trackball moves the image in the x-axis and y-axis directions.

LOC (location) XYZ: When this button is lit, the trackball moves the image in the x-axis and y-axis directions, and the Z-ring moves the image in the z-axis direction.

SHIFT: While holding down this button, pressing the [ASP PERS] button or [ROT] button switches to the shifted version of the corresponding function.

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): When this button is lit, the trackball rotates the image about the x- and y-axes, and the Z-ring rotates the image about the z-axis.

Pressing this while holding down the [SHIFT] button enables rotation of the image in the "Spin" mode. The trackball and Z-ring operate in the same manner.

X, Y, Z: These restrict which axes the trackball and Z-ring can control. You can select more than one.

When one of these buttons is selected, you can enter the parameter value for the corresponding axis using the numeric keypad control block.

CTR (center): Pressing this button changes the values of the three-dimensional parameters currently controlled by the trackball and Z-ring to the closest detent values. Pressing twice in rapid succession returns the parameter values to their defaults.

Transforming an image in three-dimensional coordinate space

1 With the region selection buttons, select the target channel of the operation.

You can press several of the buttons simultaneously to select several channels. In this case, the button that you pressed first lights in green, while buttons pressed subsequently light in amber.

2 With the function assignment buttons, select the three-dimensional coordinate space in which to perform the transformation.

LOCAL button: Selects local coordinate space.

GLB button: Selects global coordinate space. You can select this button and the [LOCAL] button simultaneously.

SRC button: Selects the source coordinate space.

TRGT button: Selects the target coordinate space.

([SRC] and [TRGT] cannot be selected at the same time.)

3 Press the button for the operation you want to do, turning it on, to select the transformation mode.

The trackball and Z-ring are assigned to the selected three-dimensional coordinate space transformation mode.

To move the image: Press the [LOC XYZ] button, turning it on.

You can move the image on the x- and y-axes with the trackball and move it on the z-axis with the Z-ring. Pressing the [LOC SIZE] button instead of the [LOC XYZ] button, turning it on, makes it possible to move the image on the x- and y-axes.

To rotate the image: Press the [ROT] button, turning it on.

You can rotate the image on the x- and y-axes with the trackball and rotate it on the z-axis with the Z-ring.

To rotate the image in Spin mode, press the [ROT] button, turning it on, while holding down the [SHIFT] button. You can operate in the same way with the trackball and Z-ring.

To move an axis of rotation: With the [SRC] button selected in step **2**, 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 with the trackball, and on the z-axis with the Z-ring.

To magnify or shrink the image: Press the [LOC SIZE] button, turning it on.

You can magnify and shrink the image with 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 **2**, press the [ASP PERS] button, turning it on.

You can change the aspect ratio independently on the x- and y-axes with the trackball, and change it simultaneously on both the x- and y-axes with the Z-ring.

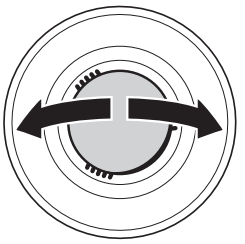
To change the perspective on the image: With the [TRGT] button selected in step **2**, press the [ASP

PERS] button, turning it on.
You can change the perspective of the image on the x- and y-axes with the trackball, and change the distance to the view point with the Z-ring.

To change the skew of the image: With the [SRC] button selected in step **2**, press the [ASP PERS] button, turning it on, while holding down the [SHIFT] button.
You can change the skew of the image along the x- and y-axes with the trackball.

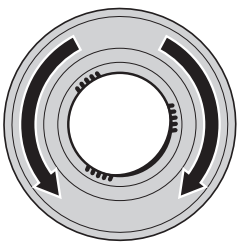
4 Depending on the axis of the change, operate the trackball and Z-ring as follows.

- 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, when you have pressed the [LOC XYZ] button to move the image, z-axis parameters increase as you rotate counterclockwise, and decrease as you rotate clockwise.



To reduce the rate of change of the parameters (fine mode)
Carry out the trackball or Z-ring operations while holding down the [SRC] or [TRGT] button.

5 To restrict the change in the transformation 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	Usable coordinate space	Trackball x-direction	Trackball y-direction	Z-ring
LOC XYZ	Source, target	Move image on x-axis	Move image on y-axis	Move image on z-axis
ROT	Source, target	Rotate image on y-axis	Rotate image on x-axis	Rotate image on z-axis
SHIFT+ ROT	Source, target	Rotate image on y-axis (Spin mode)	Rotate image on x-axis (Spin mode)	Rotate image on z-axis (Spin mode)
AXIS LOC	Source	Move x-axis of rotation	Move y-axis of rotation	Move z-axis of rotation
LOC SIZE	Source, target	Move image on x-axis	Move image on y-axis	Magnify and shrink image
ASP PERS	Source	Change aspect ratio on x-axis	Change aspect ratio on y-axis	Change aspect ratio on x- and y-axes simultaneously
	Target	Shift view point on x-axis	Shift view point on y-axis	Change distance from view point to image
SHIFT+ ASP PERS	Source	Change skew on x-axis	Change skew on y-axis	Change aspect ratio on x- and y-axes simultaneously

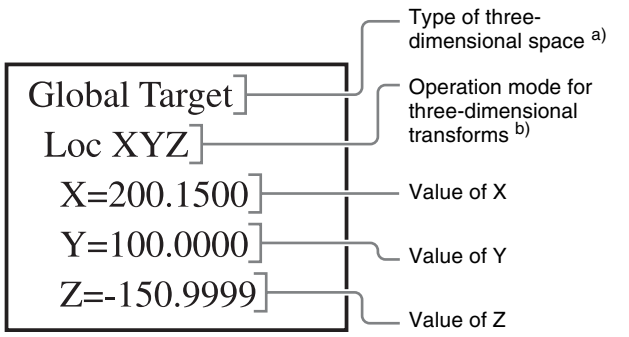
Three-Dimensional Parameter Display

You can check the values of the three-dimensional parameters in the DME menu.

Displaying the three-dimensional parameters in the DME menu

In the menu control block, select the top menu selection button [DME].
The DME menu appears. The status area 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.

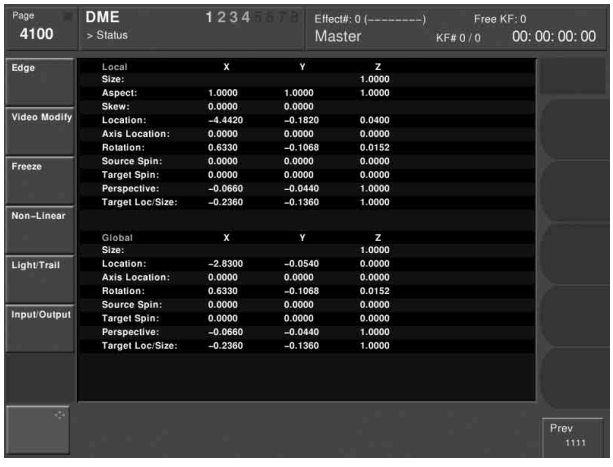


a) This shows one of Local Target, Local Source, Global Target, and Global Source.
b) This shows one of Loc XYZ, Loc Size, Rot, Spin, Axis Loc, Skew, Asp, and Pers.

Example three-dimensional parameter display (DME menu)

Viewing the three-dimensional parameter details

In the DME menu, press the menu title button (the [DME] in the upper left part of the screen).
The Status menu appears. This menu shows the three-dimensional parameters for the DME reference channel currently selected in the device control block.



Example three-dimensional parameter details

Entering Three-Dimensional Parameter Values

In addition to setting three-dimensional parameter values with the trackball and Z-ring, you can enter them 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 numeric keypad control block enters a mode in which you can enter parameters for the selected axis.

2 Enter a parameter value with the numeric keypad.

The number of significant digits after a decimal point is 4.

3 Press the [ENTER] button.

The parameter value is changed, and the image changes.

To enter difference values

You can enter difference values by pressing the [+/–] button, entering the difference from the current value, and pressing the [TRIM] button to confirm. The [+/–] button toggles between "+" (plus) and "–" (minus) each time it is pressed.

Resetting three-dimensional parameter values

Pressing the [CTR] button in the device control block sets the current three-dimensional parameter values to the closest detent points *(page 258)*.
To reset three-dimensional parameter values to the defaults *(page 258)* for the current transformation operation mode, press the [CTR] button twice in rapid succession.

Clearing the working buffer

The working buffer is memory that holds the instantaneous state of an effect. To clear (initialize) only the three-dimensional transform parameters in the working buffer, press the [CLR WORK BUFR] button in the device control block.
To clear all of the parameters in the working buffer and initialize the DME system, press the [CLR WORK BUFR] button twice in rapid succession. It is necessary to do this for both the local coordinate space and global coordinate space.

As the initial DME state, you can specify whether to use the factory default settings or user settings in the Setup menu.

For details see "Selecting the State After Powering On (Start Up Menu)" in Chapter 18 (Volume 2).

Graphics Display Operation

Use the DME menu to make graphics display settings. You can make separate settings for separate channels. To select a target DME channel, use the device control block.

For the types of graphics displayed, see "Graphics Display" (page 260).

Displaying graphics

1 In the menu control block, select the top menu selection button [DME].

The DME menu appears.

2 Select VF6 'Input/Output' and HF4 'Graphic.'

The Graphic menu appears.

3 Turn [Graphic] on.

The system enters graphics display mode, enabling graphics to be displayed in the monitor screen.

4 Turn on the buttons of the graphics you want to show.

To show axes: Turn [Axis] on.
To show axis names: Turn [Axis Name] on.
To show the channel ID: Turn [Ch ID] on.
To show a wire frame: Turn [Wire Frame] on.
To show the grid: Turn [Grid] on.
To show the flex shadow axis: Turn [Flex Shadow Axis] on.
The selected graphics appear in the monitor screen.

Notes

The flex shadow axis function is not supported on the MVE-8000A.

5 If you want to shrink the graphics display to show the range not displayed on a normal monitor, turn [Scale] on and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Scale	Degree to which the graphics display is shrunk	0.00 to 100.00

As the value of the setting grows, the monitor shrinks further toward the center point.

6 To automatically erase the graphic display while the keyframes are executing, press [Auto Erase], turning it on, and then set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Recover Time	Time until graphic display appears again after keyframe execution	0 to 300 (frames)

Outputting graphics to the monitor output connector

In the Graphic menu, press [Monitor Out] to turn it on. Graphics are displayed on the device connected to the monitor output connector.

Canceling Virtual Images

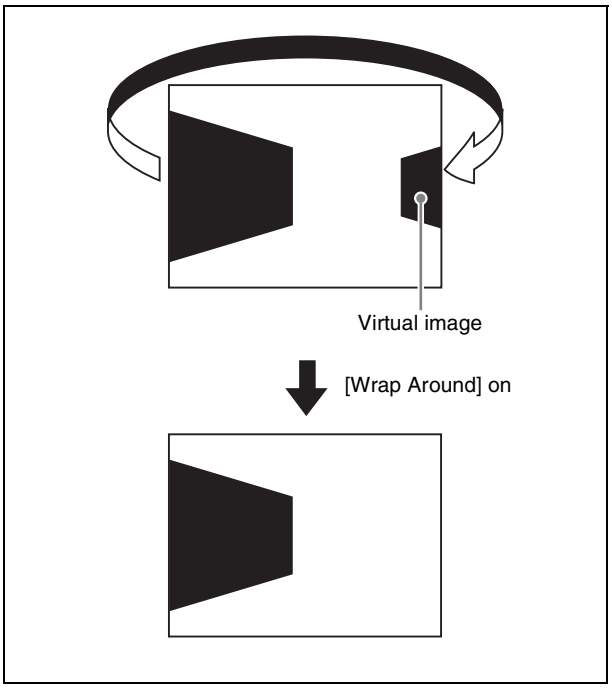
When a transformation is executed with an extreme degree of perspective, the part of the image which is beyond the imaginary view point can wrap around and show on the other side. The wrapped-around portion is referred to as a virtual image.
Using the DME menu, you can make a setting not to show the virtual images.

Canceling virtual images

1 In the DME menu, select VF6 'Input/Output' and HF2 'Video/Key.'

The Video/Key menu appears.

2 Press [Wrap Around], turning it on.



Applying Special Effects (Operations Common to Special Effects)

In this section, explanations of the operating procedures for individual special effects begin with selections from the DME menu. The following are common operations that you must do prior to selecting from the DME menu.

1. In the device control block, select the target DME channel.
2. In the menu control block, select the top menu selection button [DME].

   The DME menu appears.

Applying Special Effects (Edge Effects)

Border Settings

Adding a border

1 In the DME menu, select VF1 'Edge' and HF1 'Border/Crop.'

The Border/Crop menu appears.

2 Press [Border], turning it on.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Border width on left and right sides	Left value shown
2	V	Border width on top and bottom sides	Top value shown
3	All	Border width on all sides	Left value shown
5	Density	Border density	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Border width on top side	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
2	Left	Border width on left side	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
3	Right	Border width on right side	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
4	Bottom	Border width on bottom side	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
5	Density	Border density	0.00 to 100.00

16:9 mode

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Border width on left and right sides	Left value shown
2	V	Border width on top and bottom sides	Top value shown
3	All	Border width on all sides	Left value shown
5	Density	Border density	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Border width on top side	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
2	Left	Border width on left side	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
3	Right	Border width on right side	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
4	Bottom	Border width on bottom side	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
5	Density	Border density	0.00 to 100.00

Setting the border color

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], turning it on, and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

When the MVE-9000 or MKS-7470X/7471X is used

Use the buttons in the <Border Fill> group to select the signal to insert in the border.

Flat Color: single color

Mix Color: mix color signal set in the Color Mix menu *(see page 289)*

Ext Video: an external video signal input to the Ext IN connector

If Flat Color is selected, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

If Mix Color or Ext Video selected, the border color changes according to the mix color signal or external video signal.

Softening the border edges

Press [Border Soft], turning it on, and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Soft	Softness of inner side of border	0.00 to 100.00

Crop Settings

Cropping the image

1 In the DME menu, select VF1 'Edge' and HF1 'Border/Crop.'

The Border/Crop menu appears.

2 Press [Crop], turning it on.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Crop positions on left and right sides	Left value shown
2	V	Crop positions on top and bottom sides	Top value shown
3	All	Crop positions on all sides	Left value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Crop position on top side	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
2	Left	Crop position on left side	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
3	Right	Crop position on right side	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
4	Bottom	Crop position on bottom side	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)

16:9 mode

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Crop positions on left and right sides	Left value shown
2	V	Crop positions on top and bottom sides	Top value shown
3	All	Crop positions on all sides	Left value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Crop position on top side	–2.25 to +2.25 (SD) –9.00 to +9.00 (HD)
2	Left	Crop position on left side	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
3	Right	Crop position on right side	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
4	Bottom	Crop position on bottom side	–2.25 to +2.25 (SD) –9.00 to +9.00 (HD)

Signs of numeric settings

For H, V, and All settings, the sign (+/–) of the setting need not be considered. For example, in the case of an H setting, the value for Left is automatically regarded as a negative value, and the value for Right as a positive value, to display the image.
The following is an example of these settings.

Parameter	Entered value	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.

Knob	Parameter	Adjustment	Setting values
1	Soft	Softness of edges	0.00 to 100.00

Notes

Edges cannot be softened when the Crop effect is disabled.

To specify whether to invert the crop area when inverting the video image

In the <Invert/Crop Process> group, select either 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 is Crop > Invert.

Invert –> Crop: Set an axis of symmetry at the center of the input video, and invert only the desired area of video horizontally and vertically around that axis of symmetry. The order of effect application is Invert > Crop.

Beveled Edge Settings

Applying a beveled edge

1 In the DME menu, select VF1 'Edge' and HF2 'Beveled Edge.'

The Beveled Edge menu appears.

2 Press [Beveled Edge], turning it on.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right edges	0.00 to 4.00 (SD) 0.00 to 12.00 (HD)
2	V	Simultaneously adjust width of top and bottom edges	0.00 to 3.00 (SD) 0.00 to 9.00 (HD)
3	All	Simultaneously adjust width of all four edges	Value of H shown

16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right edges	0.00 to 4.00 (SD) 0.00 to 16.00 (HD)
2	V	Simultaneously adjust width of top and bottom edges	0.00 to 2.25 (SD) 0.00 to 9.00 (HD)
3	All	Simultaneously adjust width of all four edges	Value of H shown

4 In the <Edge Mode> group, select the type of edge.

Light: effect of light striking the edge

Knob	Parameter	Adjustment	Setting values
1	Top	Adjust luminance of top edge	–100.00 to +100.00
2	Left	Adjust luminance of left edge	–100.00 to +100.00
3	Right	Adjust luminance of right edge	–100.00 to +100.00
4	Bottom	Adjust luminance of bottom edge	–100.00 to +100.00
5	All	Simultaneously adjust luminance of all four edges	Value of Left shown

Color: colored edges. When this is selected, set the following parameters in the <Color Adjust> group.

- **To set the density**

Knob	Parameter	Adjustment	Setting values
1	Density	Adjust the color density	0.00 to 100.00

- **To set the colors for each edge (Top, Left, Right, Bottom, All)**

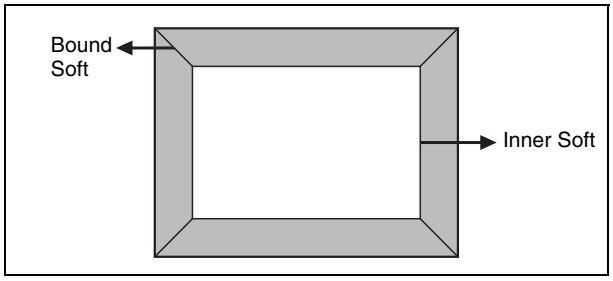
Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00 [a)]

Knob	Parameter	Adjustment	Setting values
2	Saturation	Saturation	0.00 to 100.00 a)
3	Hue	Hue	359.99 to 0.00 a)

a) For the All adjustment, the value for Left is shown.

5 To soften the inside of the edges and the boundaries between adjacent edges, turn on [Edge Soft], and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Inner Soft	Softness of the inside of edges	0.00 to 100.00
2	Bound Soft	Softness of the edge boundaries	0.00 to 100.00



Key Border Settings

Notes

The Key Border function is not supported on the MVE-8000A.

Applying key borders

1 In the DME menu, select VF1 ‘Edge’ and HF3 ‘Key Border.’

The Key Border menu appears.

2 Press [Key Border], turning it on.

Notes

The key border function and Glow function *(see page 297)* cannot be turned on at the same time. Only the one most recently turned on is effective.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right key borders	0.00 to 100.00
2	V	Simultaneously adjust width of top and bottom key borders	0.00 to 100.00
3	All	Simultaneously adjust width of all four key borders	Value of H shown
4	Soft	Softness of the key borders	0.00 to 100.00
5	Density	Density of the key borders	0.00 to 100.00

4 To set the key border color, press [Flat Color] and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

To select an outline only key

Press [Outline], turning it on.

Art Edge Settings

Notes

The Art Edge function is not supported on the MVE-8000A.

Applying art edges

1 In the DME menu, select VF1 ‘Edge’ and HF4 ‘Art Edge.’

The Art Edge menu appears.

2 Press [Art Edge], turning it on.

Notes

The Defocus, Blur, Key Border, and Glow effects cannot be applied to the Art Edge sections.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right edges	Value of Left shown
2	V	Simultaneously adjust width of top and bottom edges	Value of Top shown
3	All	Simultaneously adjust width of all four edges	Value of Left shown
5	Density	Density of edges	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Width of top edge	0.00 to 6.00 (SD) 0.00 to 18.00 (HD)
2	Left	Width of left edge	0.00 to 8.00 (SD) 0.00 to 24.00 (HD)
3	Right	Width of right edge	0.00 to 8.00 (SD) 0.00 to 24.00 (HD)
4	Bottom	Width of bottom edge	0.00 to 6.00 (SD) 0.00 to 18.00 (HD)
5	Density	Density of edges	0.00 to 100.00

16:9 mode

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right edges	Value of Left shown
2	V	Simultaneously adjust width of top and bottom edges	Value of Top shown
3	All	Simultaneously adjust width of all four edges	Value of Left shown
5	Density	Density of edges	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Width of top edge	0.00 to 4.50 (SD) 0.00 to 18.00 (HD)
2	Left	Width of left edge	0.00 to 8.00 (SD) 0.00 to 32.00 (HD)
3	Right	Width of right edge	0.00 to 8.00 (SD) 0.00 to 32.00 (HD)
4	Bottom	Width of bottom edge	0.00 to 6.00 (SD) 0.00 to 18.00 (HD)
5	Density	Density of edges	0.00 to 100.00

Adjusting the position of art edges

1 In the Art Edge menu, press [Edge Position], turning it on.

2 Adjust the following parameters.

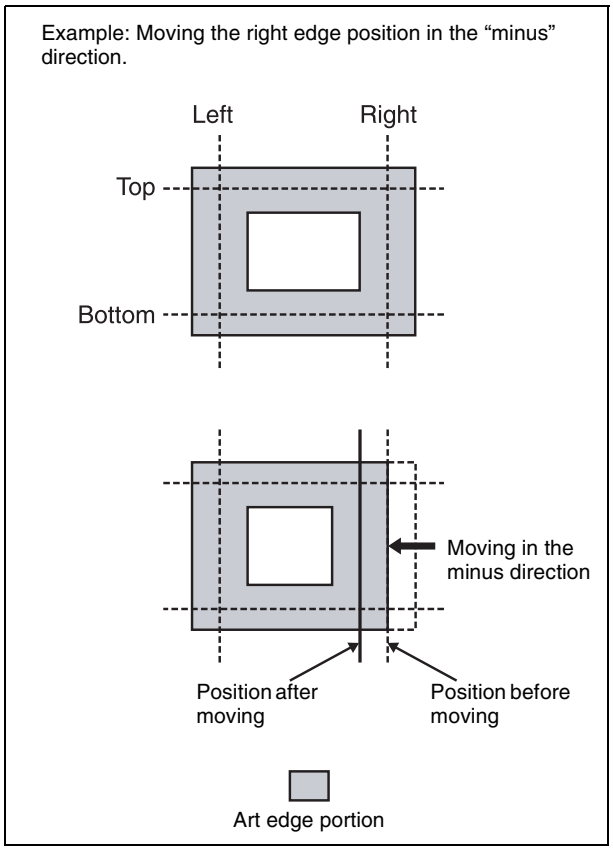
The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top edge	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
2	Left	Position of left edge	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
3	Right	Position of right edge	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
4	Bottom	Position of bottom edge	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
5	All	Adjust the position of all four edges	Value of H shown

16:9 mode

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top edge	–2.25 to +2.25 (SD) –9.00 to +9.00 (HD)
2	Left	Position of left edge	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
3	Right	Position of right edge	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
4	Bottom	Position of bottom edge	–2.25 to +2.25 (SD) –9.00 to +9.00 (HD)
5	All	Adjust the position of all four edges	Value of H shown



Softening the inner and outer sides of art edges

1 In the Art Edge menu, press [Soft], turning it on.

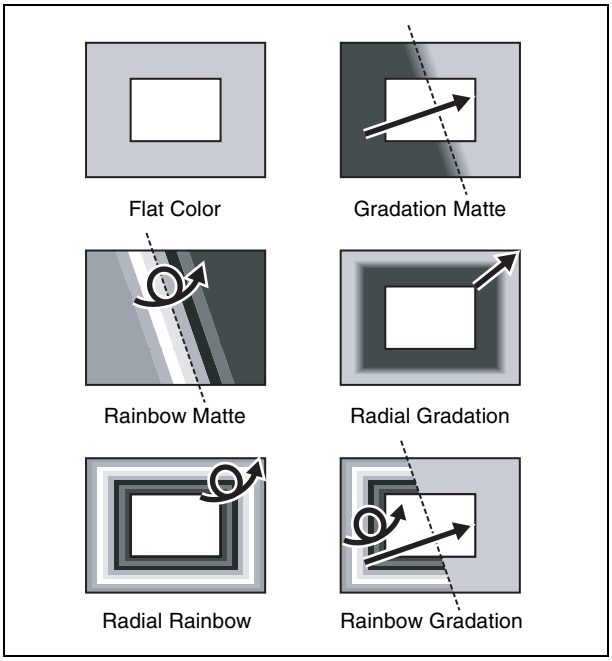
2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Inner H	Simultaneously adjust softness of left and right inner edges	0.00 to 100.00
2	Inner V	Simultaneously adjust softness of top and bottom inner edges	0.00 to 100.00
3	Outer H	Simultaneously adjust softness of left and right outer edges	0.00 to 100.00
4	Outer V	Simultaneously adjust softness of top and bottom outer edges	0.00 to 100.00
5	All	Simultaneously adjust softness of all inner and outer edges.	Value of Outer H shown

Setting the way in which art edge colors change

1 In the <Art Edge Source> group of the Art Edge menu, select the color pattern to apply to the art edges.

Flat Color: Uses Color 1 *(see page 283)* as a flat color.
Gradation Matte: Color 1 changes to Color 2 *(see page 283)* at the border lines *(see step **2** (page 281))*.
Rainbow Matte: The color set as Color 1 changes hue into color 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 changes into Color 2 on the outer side, according to the shape of the art edge.
Rainbow Gradation: Color 3 *(see “Color 3 settings” (page 283))* overwrites Radial Rainbow, giving a gradation effect.



2 When you select other than [Flat Color], set the gradation border lines for the selected pattern.

Border line parameters for Gradation Matte and Rainbow Matte
The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of gradation border in horizontal direction	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	V	Position of gradation border in vertical direction	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
3	Soft	Softness of gradation border region	0.00 to 100.00

16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of gradation border in horizontal direction	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	V	Position of gradation border in vertical direction	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
3	Soft	Softness of gradation border region	0.00 to 100.00

Radial Gradation and Radial Rainbow parameters

Knob	Parameter	Adjustment	Setting values
3	Soft	Softness of gradation border region	0.00 to 100.00

Rainbow Gradation parameters

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of gradation border in horizontal direction	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	V	Position of gradation border in vertical direction	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
3	RBW Soft	Softness of rainbow border region	0.00 to 100.00
4	GRD Soft	Softness of gradation border region	0.00 to 100.00

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of gradation border in horizontal direction	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	V	Position of gradation border in vertical direction	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
3	RBW Soft	Softness of rainbow border region	0.00 to 100.00
4	GRD Soft	Softness of gradation border region	0.00 to 100.00

3 When Gradation Matte or Rainbow Matte is selected, set modifiers as required.

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

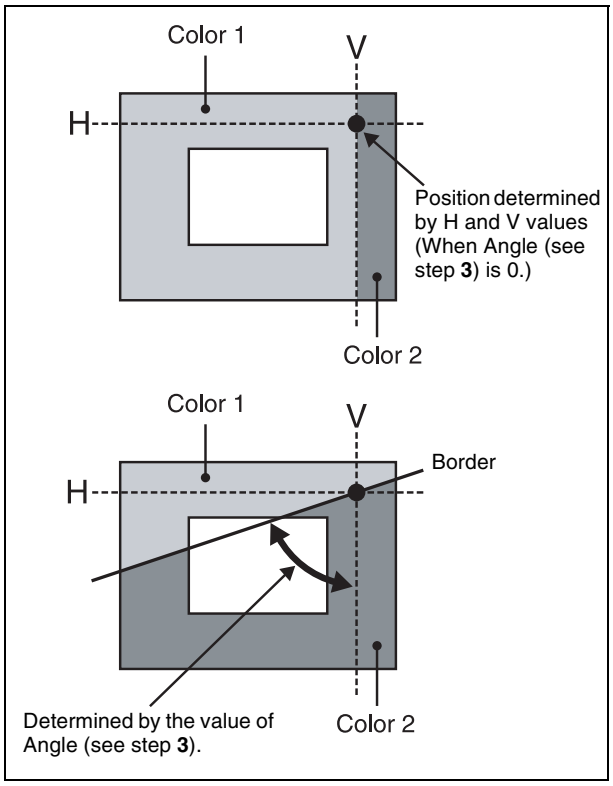
Knob	Parameter	Adjustment	Setting values
1	Angle	Rotation angle of pattern	–8.00 to +8.00 [a]

a) –1.00 is one rotation in counterclockwise direction. +1.00 is one rotation in clockwise direction. 0.00 is no rotation.

When turning [Speed] on in the <Rotation> group and rotating the pattern at a specified speed

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation speed of pattern	–100.00 to +100.00 [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 no rotation.



Setting art edge colors

1 In the Art Edge menu, turn on the button (Color 1 to Color 3) for the color for which you want to make settings in the <Color Adjust> group.

2 Adjust the following parameters.

Color 1 settings

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Color 2 settings

Notes

Color 2 cannot be set when [Flat Color] is selected in the <Art Edge Source> group.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue Offset	Hue range	–540.0 to +540.0

Color 3 settings

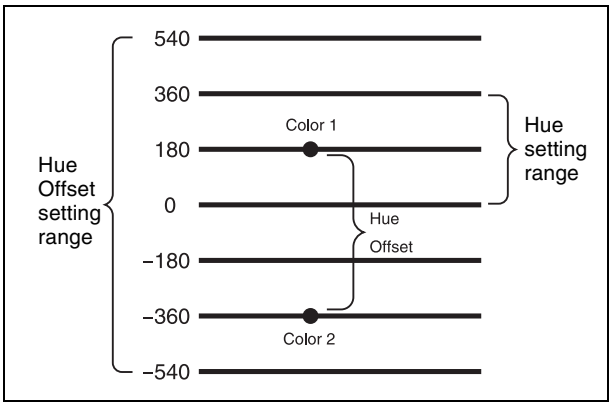
Notes

Color 3 can be set only when [Rainbow Gradation] is selected in the <Art Edge Source> group.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue Offset	Hue range	–540.0 to +540.0

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 relationship is as shown below, with the hue changing within the Hue Offset range of Color 1 and Color 2.



Rounding art edge corners

Press [Round Corner], turning it on.
The art edge corners on the inner and outer sides are rounded.

Notes

This function is available only when [Soft] is on.

Flex Shadow Settings

Notes

- The Flex Shadow function is not supported on the MVE-8000A.
- On the MKS-7470X/7471X, the Flex Shadow function can be used except for the following.
  - [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 331)*, flex shadow, trail *(see page 318)*, and wind *(see page 322)* effects.
  If you select "Mix Color" or "Ext Video" in one of these settings, a selection of "Mix Color" or "Ext Video" in any of the other effects is disabled, and "Flat Color" is selected in its place.
- When executing combining four channels of DME images, "Mix Color" and "Ext Video" in the flex shadow and background effects cannot be selected.

Applying a flex shadow

1 In the DME menu, select VF1 'Edge' and HF5 'Flex Shadow.'

The Flex Shadow menu appears.

2 Press [Flex Shadow], turning it on.

Notes

The Flex shadow function cannot be enabled when the following functions are enabled.
- Any nonlinear effect
- Brick
- Shadow

3 Adjust the following parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Move shadow horizontally	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	V	Move shadow vertically	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
3	Size All	Enlarge or shrink horizontally and vertically	Value of Size H *(see page 284)* shown
4	Soft [a]	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

a) The Soft parameter is valid only when [Internal] is selected in the <Flex Shadow Source> group.

16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Move shadow horizontally	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	V	Move shadow vertically	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
3	Size All	Enlarge or shrink horizontally and vertically	Value of Size H *(see page 284)* shown
4	Soft [a]	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

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 the shadow using an input signal.
Internal: Generate the shadow using a full-size key signal.

5 In the <Flex Shadow Fill> group, select the signal to insert in the flex shadow.

Flat Color: single color
Mix Color: mix color signal set in the Color Mix menu *(see page 289)*
Ext Video: an external video signal input to the Ext IN connector

6 Only if Flat Color is selected in step **5**, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Adjusting the size of the flex shadow

1 In the Flex Shadow menu, press [Size], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size H	Enlarge or shrink horizontally	0.00 to 2.00
2	Size V	Enlarge or shrink vertically	0.00 to 2.00
3	Size All	Enlarge or shrink horizontally and vertically	Value of Size H shown
4	Soft [a]	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

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, press [Axis Loc], turning it on.

2 Adjust the following parameters.

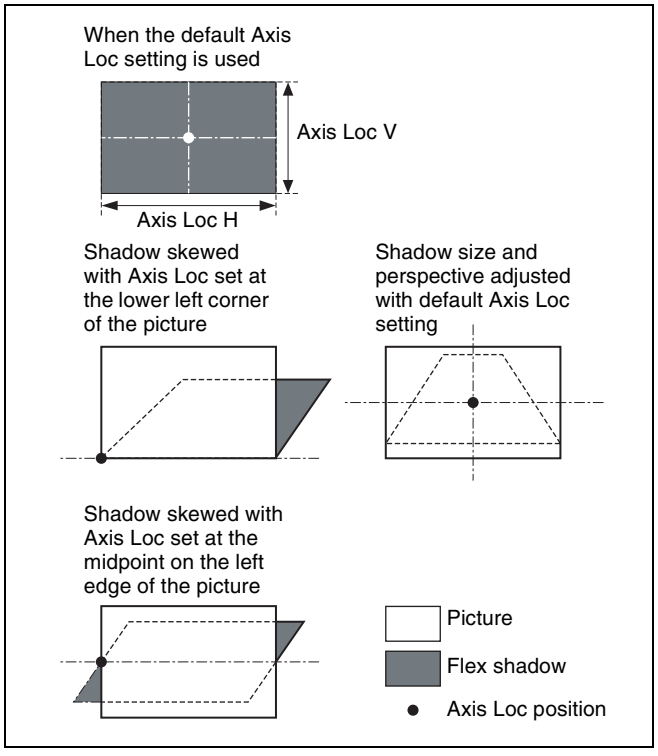
The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Axis Loc H	Move the shadow center axis horizontally	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	Axis Loc V	Move the shadow center axis vertically	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)

16:9 mode

Knob	Parameter	Adjustment	Setting values
1	Axis Loc H	Move the shadow center axis horizontally	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	Axis Loc V	Move the shadow center axis vertically	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)



The flex shadow central axis appears when the [Flex Shadow Axis] function is enabled in the Graphic menu.

For details, see "Graphics Display Operation" (page 274).

Skewing the flex shadow

1 In the Flex Shadow menu, press [Skew], turning it on.

2 Adjust the following parameters.

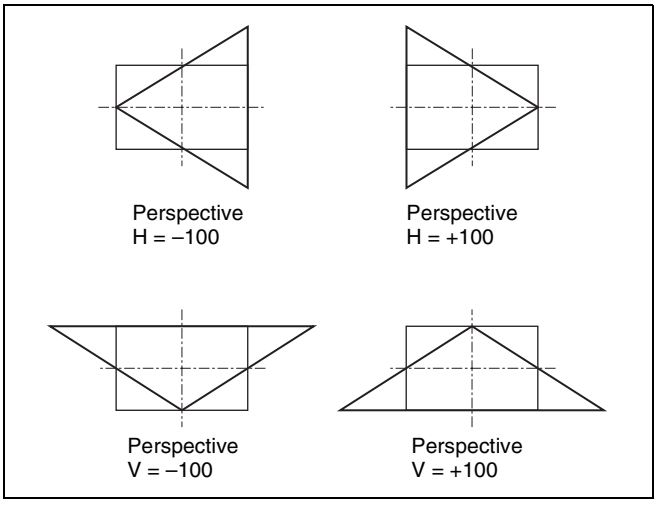
Knob	Parameter	Adjustment	Setting values
1	Skew H	Skew horizontally	–100.00 to +100.00
2	Skew V	Skew vertically	–100.00 to +100.00

Adding perspective to the flex shadow

1 In the Flex Shadow menu, press [Perspective], turning it on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Perspective H	Add horizontal perspective	–100.00 to +100.00
2	Perspective V	Add vertical perspective	–100.00 to +100.00

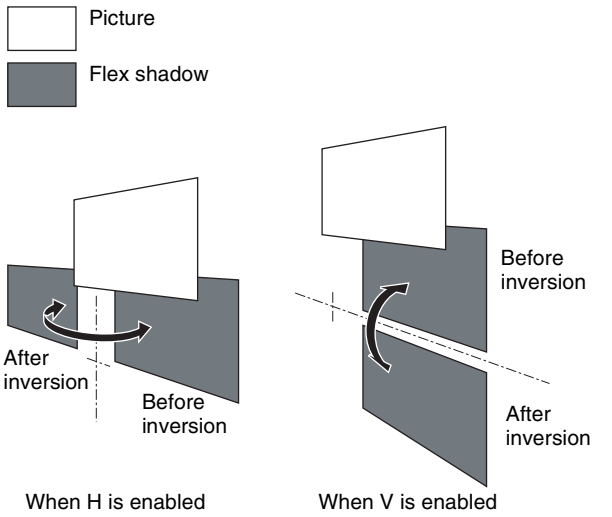


Inverting the flex shadow

In the <Invert> group of the Flex Shadow menu, select the direction to invert the shadow.

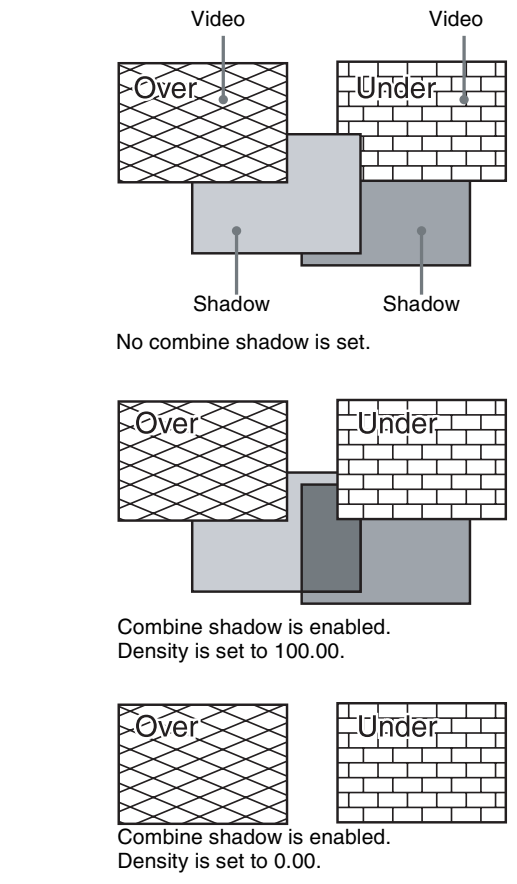
H: Invert the shadow in the horizontal direction. The inversion is applied around the axis of the knob 2 parameter Axis Loc V set with [Axis Loc].

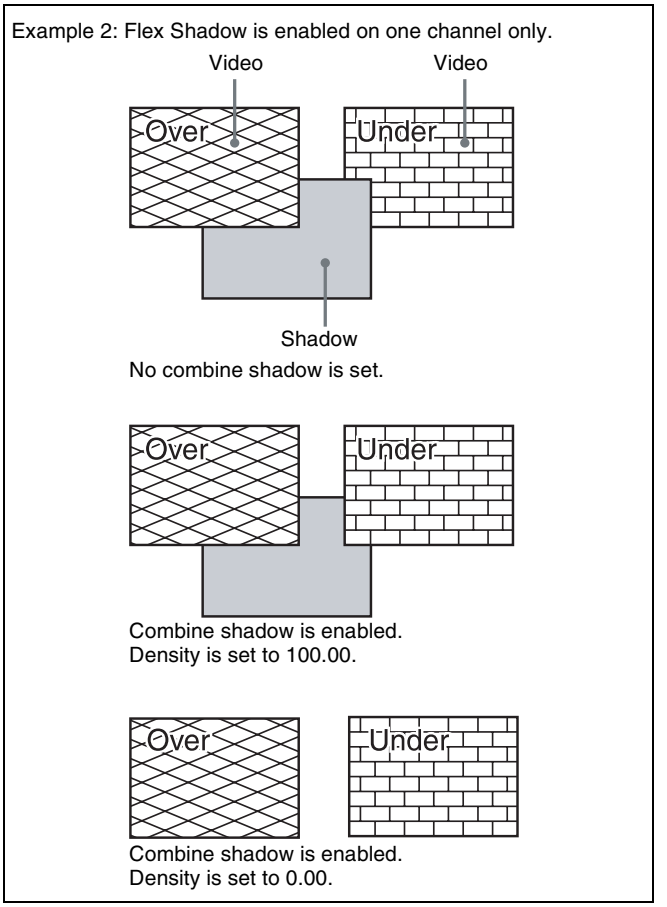
V: Invert the shadow in the vertical direction. The inversion is applied around the axis of the knob 1 parameter Axis Loc H set with [Axis Loc].



Setting a combine shadow

When there are several images, adds a flex shadow in the depth of an image or overlays multiple flex shadows.





1 In the Flex Shadow menu, press [Combine Shadow], turning it on.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Density	Density of combine shadow	0.00 to 100.00

Notes

- The Combine Shadow effect is applied to all shadows, not only the sections where shadows overlap.
- Combine Shadow is enabled when the Flex Shadow effect and the global effect Combiner are enabled. In this state, Combine Shadow remains enabled even if the global effect is disabled.
- In Combine Shadow, the settings for the channel with the lowest number among the channels being combined are enabled.

Flex shadow creation example

The flow of flex pattern creation will be explained using the following pattern as an example.

1 Press [Flex Shadow], turning it on.

2 In the <Flex Shadow> group, select [External].

3 Turn [Axis Loc] on and use knob 2 to set the Axis Loc V parameter so that the center of the flex shadow deformation is at the bottom of the picture.
(For HD format and 16:9 mode: Axis Loc V = –9.00)

The following steps will be easier if you display the flex shadow axis graphic by pressing [Flex Shadow Axis] in the Graphic menu.

4 Press [V] in the <Invert> group, turning it on, to invert the flex shadow vertically.

5 Turn [Size] on and use knob 2 to set the Size V parameter so that the shadow extends vertically.
(For HD format and 16:9 mode: Size V = 1.50)

6 Press [Skew], turning it on, and use knob 1 to set the Skew H parameter so that the parallel lines appear to emerge from the depth at the right.
(For HD format and 16:9 mode: Skew H = –50.00)

Wipe Crop Settings

Notes

- The wipe crop function is not supported on the MVE-8000A.
- When wipe crop is on, any mask that was on is turned off.
- When brick is on, wipe crop cannot be turned on. To turn wipe crop on, it is first necessary to turn brick off.
- In the <Shaped Video> group of the Video/Key menu, when [Output] is off, unless you set [Bkgd] in the HF1 'Bkgd' menu to on, the wipe crop effect will not function.

Applying the wipe crop effect

To select the pattern

1 In the DME menu, select VF1 'Edge' and HF6 'Wipe Crop.'

The Wipe Crop menu appears.

2 Press [Wipe Crop], turning it on.

3 Press [Pattern Select].

The Pattern Select menu appears.

4 From the displayed patterns (standard wipe patterns 1 to 24 and 304), press any pattern to select it.

In this state, you can use the knobs to adjust the size of the pattern. *(For details of parameters, see the next item.)*

To set the pattern size and position

1 In the Wipe Crop menu, press [Position/Size].

2 Set the following parameters.

The setting range for the parameters depends on the signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

For SD format

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–8.00 to +8.00
2	V	Vertical position	–6.00 to +6.00 a) –4.50 to +4.50 b)
3	Size	Pattern size	0.00 to 100.00
5	Pattern	Pattern number	1 to 24, 304

a) For 4:3 mode
b) For 16:9 mode

Notes

When pattern number 304 is selected, the effect of settings in the <Edge> group varies with the Size setting.

For HD format

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–24.00 to +24.00 a) –32.00 to +32.00 b)
2	V	Vertical position	–18.00 to +18.00
3	Size	Pattern size	0.00 to 100.00
5	Pattern	Pattern number	1 to 24, 304

a) For 4:3 mode
b) For 16:9 mode

Notes

When pattern number 304 is selected, the effect of settings in the <Edge> group varies with the Size setting.

To invert the regions of the cropping

In the Wipe Crop menu, press [Invert], turning it on.

Setting the aspect ratio of the wipe crop pattern (Aspect)

1 In the Wipe Crop menu, press [Aspect], turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) When set to a negative value, the image is stretched vertically, to become taller.
When set to a positive value, the image is stretched horizontally, to become wider.

Rotating the wipe crop pattern (Rotation)

1 In the <Rotation> group of the Wipe Crop menu, select one of the following.

Angle: Incline the pattern through a fixed angle.
Speed: Rotate the pattern at a fixed speed.

2 Depending on the selection in step **1**, set the following parameter.

When Angle is selected

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–8.00 to +8.00 a)

a) –1.00 represents a whole turn counterclockwise, and +1.00 represents a whole turn clockwise. 0.00 is the original state.

When Speed is selected

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) –100.00 represents a speed of four whole turns counterclockwise per second, and +100.00 represents a speed of four whole turns clockwise per second. 0.00 is the stationary state.

Applying modulation to the wipe crop pattern (Modulation)

1 In the <Modulation> group of the Wipe Crop menu, select one of the following.

H (horizontal modulation): Modulate the pattern to apply waving in the horizontal direction.
V (vertical modulation): Modulate the pattern to apply waving in the vertical direction.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Amplitude	Amplitude of modulation	0.00 to 100.00
2	Frequency	Frequency of modulation	0.00 to 100.00
3	Speed	Speed of waves	–100.00 to +100.00

Replicating the wipe crop pattern (Multiplication)

1 In the Wipe Crop menu, press [Multi], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See the replication patterns (page 160).

Modifying the wipe crop pattern 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, 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

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00

When Soft is selected

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0.00 to 100.00

When Soft Border is selected

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00
2	Inner Soft	Border inner softness	0.00 to 100.00
3	Outer Soft	Border outer softness	0.00 to 100.00

Selecting the signal or color to be inserted in the wipe crop border

When you are applying a border or soft border to the wipe crop, you can select the signal or color to be inserted in the border.

1 In the <Border Fill> group of the Wipe Crop menu, select one of the following.

Flat Color: flat color
Mix Color: a mix color signal combining color 1 and color 2 *(see the next section, "Color Mix Settings")*
Ext Video: an external video signal input to the Ext IN connector

2 When Flat Color is selected in step **1** only, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Color Mix Settings

Notes

The color mix function is not supported on the MVE-8000A.

Creating a color combination pattern

To select the pattern

1 In the DME menu, select VF1 'Edge' and HF7 'Color Mix.'

The Color Mix menu appears.

2 Press [Mix Pattern Select].

The Mix Pattern Select menu appears.

3 Press any of the displayed patterns (standard wipe patterns 1 to 24) to select it.

In this state, you can adjust the pattern size and border softness with the knobs.

(For details of the parameters, see the next item.)

To set the pattern size and position

1 In the Color Mix menu, press [Position/Size].

2 Set the following parameters.

The setting range for the parameters depends on the system selected signal format (SD/HD) and aspect ratio (4:3/16:9), as follows.

For SD format

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–8.00 to +8.00
2	V	Vertical position	–6.00 to +6.00 a) –4.50 to +4.50 b)
3	Size	Pattern size	0.00 to 100.00
4	Soft	Softness of the pattern	0.00 to 100.00
5	Pattern	Pattern number	1 to 24

a) For 4:3 mode
b) For 16:9 mode

For HD format

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–24.00 to +24.00 a) –32.00 to +32.00 b)
2	V	Vertical position	–18.00 to +18.00
3	Size	Pattern size	0.00 to 100.00
4	Soft	Softness of the pattern	0.00 to 100.00
5	Pattern	Pattern number	1 to 24

a) For 4:3 mode
b) For 16:9 mode

To invert the regions of the two colors

In the Color Mix menu, press [Color Invert], turning it on.

Adjusting the color 1 and color 2

1 In the Color Mix menu, to adjust color 1 press [Color1], and to adjust color 2 press [Color2].

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Modifying the color combination pattern

See the following pages.

- *"Setting the aspect ratio of the wipe crop pattern (Aspect)" (page 288)*
- *"Replicating the wipe crop pattern (Multiplication)" (page 288)*
- *"Rotating the wipe crop pattern (Rotation)" (page 288)*
- *"Applying modulation to the wipe crop pattern (Modulation)" (page 288)*

Applying Special Effects (Effects on the Overall Video Signal)

Defocus Settings

Applying the Defocus effect

1 In the DME menu, select VF2 'Video Modify' and HF1 'Defocus/Blur.'

The Defocus/Blur menu appears.

2 Press [Defocus], turning it on.

Notes

On the MVE-8000A, the Defocus and Glow effects cannot be enabled at the same time. The effect which was turned on most recently 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

Notes

"Key" can be selected only when the DME is connected through an SDI interface.

4 Set the parameters.

When Video/Key is selected (with DME dedicated interface)

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing of video and key signals	0.00 to 100.00
2	V	Vertical defocusing of video and key signals	0.00 to 100.00
3	All	Horizontal and vertical defocusing of video and key signals	H value shown

When Video/Key is selected (with SDI-interfaced DME)

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	V/K H	Horizontal defocusing of video and key signals	Video H value shown
2	V/K V	Vertical defocusing of video and key signals	Video V value shown
3	V/K All	Horizontal and vertical defocusing of video and key signals	Video H value shown
4	Video All	Horizontal and vertical defocusing of video signal	Video H value shown
5	Key All	Horizontal and vertical defocusing of key signal	Key H value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Settings values
1	Video H	Horizontal defocusing of video signal	0.00 to 100.00
2	Video V	Vertical defocusing of video signal	0.00 to 100.00
3	Key H	Horizontal defocusing of key signal	0.00 to 100.00
4	Key V	Vertical defocusing of key signal	0.00 to 100.00

When Video is selected

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing of video signal	0.00 to 100.00
2	V	Vertical defocusing of video signal	0.00 to 100.00
3	All	Horizontal and vertical defocusing of video signal	H value shown

When Key is selected (with SDI-interfaced DME)

Knob	Parameter	Adjustment	Settings values
1	H	Horizontal defocusing of key signal	0.00 to 100.00
2	V	Vertical defocusing of key signal	0.00 to 100.00
3	All	Horizontal and vertical defocusing of key signal	H value shown

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.

Masking the Defocus effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers *(see page 297)*.

Blur Settings

Applying the Blur effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF1 ‘Defocus/Blur.’

The Defocus/Blur menu appears.

2 Press [Blur], turning it on.

Notes

On the MVE-8000A, the Glow and Blur effects cannot be enabled at the same time. The effect which was turned on most recently is enabled.

3 When the DME is connected through 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 parameters.

When the DME dedicated interface is used

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing of video and key signals	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	V	Vertical defocusing of video and key signals	0.00 to 100.00
3	All	Horizontal and vertical defocusing of video and key signals	H value shown

When Video/Key is selected (with SDI-interfaced DME)

Parameter group [1/2]

Knob	Parameter	Adjustment	Settings values
1	V/K H	Horizontal defocusing of video and key signals	Video H value shown
2	V/K V	Vertical defocusing of video and key signals	Video V value shown
3	V/K All	Horizontal and vertical defocusing of video and key signals	Video H value shown
4	Video All	Horizontal and vertical defocusing of video signal	Video H value shown
5	Key All	Horizontal and vertical defocusing of key signal	Key H value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Settings values
1	Video H	Horizontal defocusing of video signal	0.00 to 100.00
2	Video V	Vertical defocusing of video signal	0.00 to 100.00
3	Key H	Horizontal defocusing of key signal	0.00 to 100.00
4	Key V	Vertical defocusing of key signal	0.00 to 100.00

When video is selected (with SDI-interfaced DME)

Knob	Parameter	Adjustment	Settings values
1	H	Horizontal defocusing of video signal	0.00 to 100.00
2	V	Vertical defocusing of video signal	0.00 to 100.00
3	All	Horizontal and vertical defocusing of video signal	H value shown

When Key is selected (with SDI-interfaced DME)

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing of key signal	0.00 to 100.00
2	V	Vertical defocusing of key signal	0.00 to 100.00
3	All	Horizontal and vertical defocusing of key signal	H value shown

Masking the Blur effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers *(see page 297)*.

Multi Move Settings

Applying the Multi Move effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF2 ‘Multi Move.’

The Multi Move menu appears.

2 Press [Multi Move], turning it on.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Center X	x-value of shrinking center point	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
2	Center Y	y-value of shrinking center point	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
3	Size	Shrinking ratio	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
4	Aspect	Aspect ratio of shrunken images	–100.00 to +100.00 a)

a) Specify minus values to stretch the image in the vertical direction, and plus values to stretch the image in the horizontal direction.

16:9 mode

Knob	Parameter	Adjustment	Setting values
1	Center X	x-value of shrinking center point	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
2	Center Y	y-value of shrinking center point	–2.25 to +2.25(SD) –9.00 to +9.00 (HD)
3	Size	Shrinking ratio	0.00 to 100.00
4	Aspect	Aspect ratio of shrunken images	–100.00 to +100.00 a)

a) Specify minus values to stretch the image in the vertical direction, and plus values to stretch the image in the horizontal direction.

Sepia Settings

Applying the Sepia effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’

The Color Modify menu appears.

2 Press [Sepia], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Mix Y	Y signal mix amount	0.00 to 100.00
2	Mix C	Chroma signal mix amount	0.00 to 100.00
3	Mix All	Y signal and chroma signal mix amount	Mix Y value shown

4 To set the color of the sepia image, press [Sepia Color], turning it on, and adjust the parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Masking the Sepia effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers *(see page 297)*.

Mono Settings

Applying the Mono effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’

The Color Modify menu appears.

2 Press [Mono], turning it on.

Masking the Mono effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers *(see page 297)*.

Posterization and Solarization Settings

You can specify the degree of luminance coarsening.
You can specify the degree of chroma coarsening.

Applying the Posterization or Solarization effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’

The Color Modify menu appears.

2 Press [Poster/Solar], turning it on.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Poster	Coarseness of luminance gradations (Posterization parameter)	0.00 to 100.00
2	Solar	Coarseness of chroma gradations (Solarization parameter)	0.00 to 100.00

Masking the Posterization or Solarization effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers *(see page 297)*.

Nega Settings

Applying the Nega effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’

The Color Modify menu appears.

2 Press [Nega Y] or [Nega C], turning it on, or press both buttons, turning them on.

Nega Y: Reverse the luminance.
Nega C: Reverse the chroma.

Masking the Nega effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers *(see page 297)*.

Contrast Settings

Applying the Contrast effect

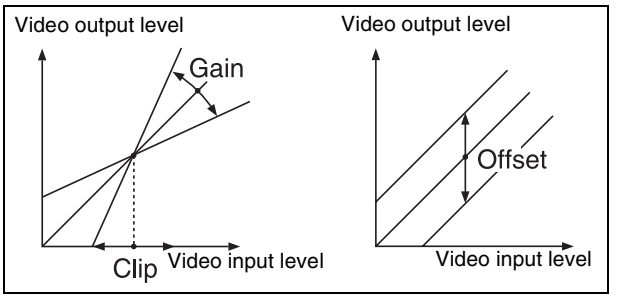
1 In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’

The Color Modify menu appears.

2 Press [Contrast], turning it on.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Y Clip	Luminance clip level	+109.59 to –7.31
2	Y Gain	Luminance contrast gradient	–100.00 to +100.00
3	Y Offset	Luminance offset level increment	–100.00 to +100.00
4	C Gain	Chroma contrast gradient	–100.00 to +100.00



Clip, Gain, Offset

Masking the Contrast effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers *(see page 297)*.

Mosaic Settings

Applying the Mosaic effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF4 ‘Mosaic.’

The Mosaic menu appears.

2 Press [Mosaic], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Size of tiles	0.00 to 100.00
2	Aspect	Aspect ratio of tiles	–100.00 to +100.00 a)

a) Specify minus values to stretch the tiles in the vertical direction, and plus values to stretch the tiles in the horizontal direction.

Masking the Mosaic effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers *(see page 297)*.

Sketch Settings

Applying the Sketch effect

1 In the DME menu, select VF7 ‘Enhanced Video Modify’ and HF1 ‘Sketch.’

The Sketch menu appears.

2 Press [Sketch], turning it on.

3 Select the method for applying outlines in the <Sketch Mode> group.

Sketch: Apply an effect like a sketch.
Edge Color: Enhance the outlines.
Draw: Apply an effect like a line drawing.
Relief: Apply a bas-relief effect.
Sharp: Increase the apparent sharpness.

4 Set the following parameters, according to the method selected in step **3**.

When Sketch is selected

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount for Sketch video and input video	0.00 to 100.00 a)
2	Clip	Reference level for outline extraction	–100.00 to +100.00 b)
3	Gain	Image gain for outline extraction	–100.00 to +100.00
4	C Gain	Chroma gain of input video	–100.00 to +100.00

a) 100.00 gives an image completely transformed by the Sketch effect. 0.00 is the original input image.
b) The larger the Clip value, the narrower the outline width.

When Edge Color is selected

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount for Edge Color video and input video	0.00 to 100.00 a)
2	Clip	Reference level for outline extraction	–100.00 to +100.00 b)

a) 100.00 gives an image completely transformed by the Sketch effect. 0.00 is the original input image.
b) The larger the Clip value, the narrower the outline width.

When Draw is selected

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount for Draw video and input video	0.00 to 100.00 a)
2	Clip	Reference level for outline extraction	–100.00 to +100.00 b)
3	Gain	Image gain for outline extraction	–100.00 to +100.00

a) 100.00 gives an image completely transformed by the Sketch effect. 0.00 is the original input image.
b) The larger the Clip value, the narrower the outline width.

When Relief is selected

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount for Relief video and input video	0.00 to 100.00 a)
2	Offset	Relief luminance level	–100.00 to +100.00
3	Gain	Image gain for outline extraction	–100.00 to +100.00
4	Angle	Direction of relief image light source	–8.00 to +8.00

a) 100.00 gives an image completely transformed by the Sketch effect. 0.00 is the original input image.

When Sharp is selected

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust the left and right resolution	0.00 to 100.00
2	V	Simultaneously adjust the top and bottom resolution	0.00 to 100.00
3	All	Simultaneously adjust the resolution of all four sides	0.00 to 100.00
5	Coring	Minimum value of edge to emphasize	0.00 to 100.00

5 If you selected other than Sharp in step **3**, depending on the necessity, proceed as follows.

To adjust the outline color for Edge Color or Draw
Turn [Edge Matte] on and set the following parameters to set the outline color.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

To set the color of the sections other than the outlines for Draw

Press [Matte], turning it on, and adjust the following parameters to set the color of the sections other than the outlines.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

To select the signal to mix with the relief pattern for Relief

In the <Chroma Type> group, select the signal to mix with the relief pattern.

Matte: Select a single color. The following parameters can be adjusted.

Knob	Parameter	Adjustment	Setting values
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

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.

Masking the Sketch effect with a selected pattern

Press [Mask] to display the Mask menu and set the type of pattern and modifiers *(see page 297)*.

Metal Settings

Applying the Metal effect

1 In the DME menu, select VF7 ‘Enhanced Video Modify’ and HF2 ‘Metal.’

The Metal menu appears.

2 Press [Metal], turning it on.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Mix Ratio	Mix amount for Metal video and input video	0.00 to 100.00
2	Y Clip	Clip level of input signal Y level	0.00 to 100.00
3	Y Gain	Amount of gain for clip adjusted input signal Y level	–100.00 to +100.00
4	Y Offset	Offset added to clip and gain adjusted input Y signal	0.00 to 100.00

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 by adjusting the following parameters.

Knob	Parameter	Adjustment	Setting values
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Masking the Metal effect with a selected pattern

Press [Mask] to display the Mask menu and set the type of pattern and modifiers *(see page 297)*.

Dim and Fade Settings

Notes

The Dim and Fade functions are not supported on the MVE-8000A.

Applying the Dim effect

1 In the DME menu, select VF7 ‘Enhanced Video Modify’ and HF3 ‘Dim & Fade.’

The Dim & Fade menu appears.

2 Press [Dim], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Start	Point where dimming starts (dim start point)	–100.00 to +100.00

Knob	Parameter	Adjustment	Setting values
2	Gain	Degree of dimming	0.00 to 100.00

4 Press [Flat Color] and set the parameters for the color of the depths of the picture.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Applying the Fade effect

1 In the DME menu, select VF7 'Enhanced Video Modify' and HF3 'Dim & Fade.'

The Dim & Fade menu appears.

2 Press [Fade], turning it on.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Start	Point where fading starts (fade start point)	–100.00 to +100.00
2	Gain	Degree of fading	0.00 to 100.00

Glow Settings

Applying the Glow effect

1 In the DME menu, select VF7 'Enhanced Video Modify' and HF4 'Glow.'

The Glow menu appears.

2 Press [Glow], turning it on.

Notes

- On the MVE-9000 and MVS-7470X/7471X, the key border function and Glow function cannot be turned on at the same time. The function most recently turned on is effective.
- On the MVE-8000A, the Defocus and Glow effects or the Blur and Glow effects cannot be turned on at the same time. The effect most recently turned on is effective.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for highlight detection	0.00 to 100.00
2	Gain	Amount of gain for highlights	–100.00 to +100.00
3	Soft	Softness	0.00 to 100.00

4 Press [Matte] and set the glow color.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Inverting the highlight areas

Press [Glow Invert], turning it on.
The highlight and non-highlight areas are inverted.

Masking the Glow effect with a selected pattern

Press [Mask] to display the Mask menu and set the type of pattern and modifiers *(see page 297)*.

Notes

When the signal format is 1080P (3G) on the MKS-7470X/7471X, masking will cause the edges to get blurred.

Mask Settings

Applying masks

1 In the DME menu, select VF2 'Video Modify' and HF7 'Mask.'

The Mask menu appears.

2 In the <Mask> group, press the button for the group of the effect to which you want to apply the mask, turning it on.

Effect Gp 1: Posterization, Solarization, Nega, Sepia, Mono, Contrast, Mosaic, Sketch, Metal
Effect Gp 2: Defocus, Blur, Glow

Notes

On the MVE-8000A, Effect Gp 1 and Effect Gp 2 cannot be turned on at the same time.

3 Press [Position/Size].

4 Set the mask source parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	V	Vertical position	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
3	Size	Size of mask	0.00 to 100.00
4	Soft	Softness of mask	0.00 to 100.00
5	Pattern	Pattern number	21, 24, 304 a)

a) This setting value is not supported on the MVE-8000A.

16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	V	Vertical position	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
3	Size	Size of mask	0.00 to 100.00
4	Soft	Softness of mask	0.00 to 100.00
5	Pattern	Pattern number	21, 24, 304 a)

a) This setting value is not supported on the MVE-8000A.

5 To invert the mask source, press [Invert], turning it on.

6 As required, set the modifiers for the mask pattern.

When turning [Aspect] on and adjusting the pattern aspect ratio

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 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 turning [Angle] on in the <Rotation> group and slanting the pattern

Knob	Parameter	Adjustment	Setting values
1	Angle	Rotation angle of pattern	–8.00 to +8.00 a)

a) –1.00 is one rotation in counterclockwise direction. +1.00 is one rotation in clockwise direction. 0.00 is no rotation.

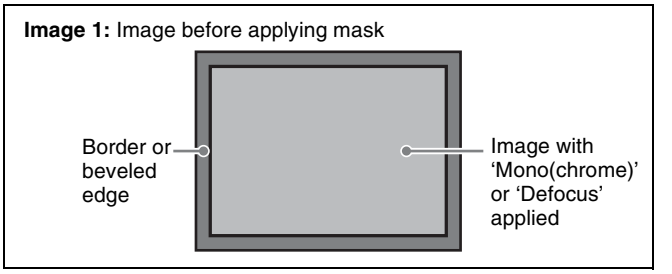
When turning [Speed] on in the <Rotation> group and rotating the pattern at a specified speed

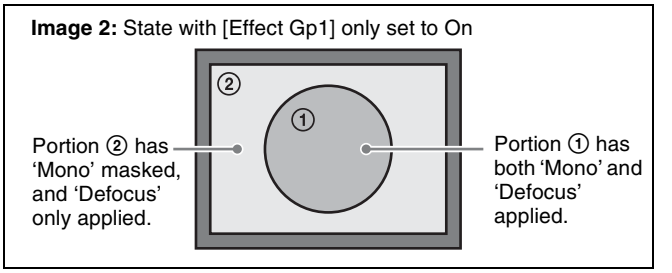
Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation speed of pattern	–100.00 to +100.00 a)

a) –100.00 is four rotations per second in counterclockwise direction. +100.00 is four rotations per second in clockwise direction. 0.00 is no rotation.

Notes on applying a mask effect with a DME (only when using the MKS-7470X/7471X or MVE-9000)

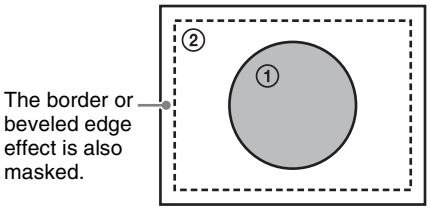
In the <Mask> group of the DME >Video Modify >Mask menu, if [Effect Gp1] and [Effect Gp2] are simultaneously set to On, then the border or beveled edge is also masked. The following explains this with the example of using a circular mask pattern.





In the state corresponding to image 2, if you switch [Effect Gp2] to On, 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] set to On



Freeze Settings

Freezes the input video. The following types are available:

Hard Freeze: Freezes the input video at an arbitrary timing.

Time Strobe: Freezes the input video at specified intervals for a specified length.

Film: Slows the apparent frame rate, for an effect like film. You can specify the ratio of advancement.

For Hard Freeze and Time Strobe, you can select the first field or the frame as the freeze timing.

Notes

When 720P or 1080P signal format is used, the Film mode cannot be selected.

To apply a Freeze effect, start by displaying the Freeze menu. In the DME menu, select VF3 ‘Freeze’ and HF1 ‘Freeze.’

Applying the Hard Freeze effect

1 In the <Freeze Timing> group, select the signal freeze timing.

Frame: Freeze one frame of signal.
Field 1: Freeze the first field of signal.

2 In the <Freeze> group, press [Hard Freeze], turning it on.

Applying the Time Strobe effect

1 In the <Freeze Timing> group, select the signal freeze timing.

Frame: Freeze one frame of signal.
Field 1: Freeze the first field of signal.

Notes

The freeze timing setting is not required when the following signal formats are being used.

1080P/50, 1080P/59.94, 1080PsF/23.976, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

2 In the <Freeze> group, press [Time Strobe], turning it on.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Duration	Freeze interval	1 to 255 (frames)
2	Live	Ratio of live video inserted between freeze images	0.00 to 100.00

Applying the Film effect

Notes

When 720P or 1080P signal format is used, the Film mode cannot be selected.

1 In the <Freeze> group, press [Film], turning it on.

2 Set the parameter.

Knob	Parameter	Adjustment	Setting values
1	Film	Ratio of frame advance	0.00 to 100.00

Applying Special Effects (Nonlinear Effect Settings)

You can add a variety of effects, including effects that change the shape of the image as a whole.

1 In the DME menu, select VF4 'Non Linear/Corner Pin' and HF1 'Non Linear.'

A menu for selecting the various effects appears.

2 Display the menu for the effect that you want to apply by pressing its button.

3 Make the settings for the selected effect.

Notes

- It is not possible to apply two or more nonlinear effects at the same time. Turning any nonlinear effect on automatically turns all other nonlinear effects off.
- The Flex Shadow function cannot be enabled when any of the nonlinear effects Page Turn, Roll, Cylinder, and Sphere is enabled.
- However, the Flex Shadow function is not supported on the MVE-8000A.

To turn an effect off

In the setting menu, press the button for the effect name, turning it off, or in the Type menu press [OFF] in the lower right part of the window.

Wave Settings

There are two modes: H&V and Size. You can set the size and frequency of the waves, the wave form, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

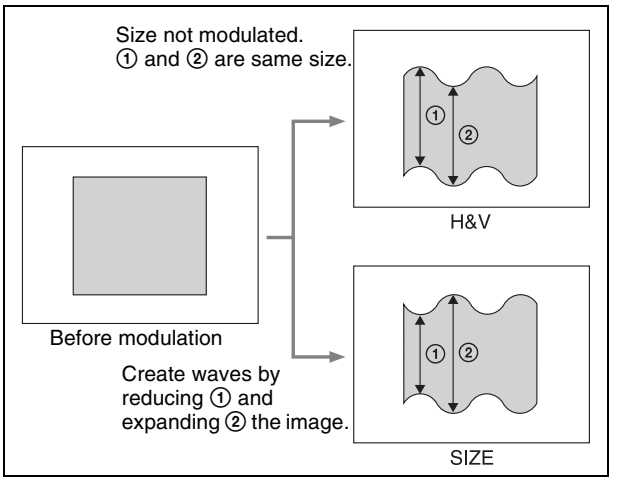
To apply the Wave effect

With the Wave menu displayed, use the following procedure.

1 In the <Mode> group, 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 mode.

When H&V is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Amp H	Amplitude of waves in horizontal direction	0.00 to 100.00
2	Freq H	Frequency of waves in horizontal direction	0.00 to 100.00
3	Offset H [a]	Horizontal direction in which to offset wave phase and amount of movement	–16.00 to +16.00 [c] –64.00 to +64.00 [d]
4	Speed H [b]	Horizontal direction and speed of waves	–100.00 to +100.00
5	Slant	Slant of waves	–8.000 to +8.000

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Amp V	Amplitude of waves in vertical direction	0.00 to 100.00
2	Freq V	Frequency of waves in vertical direction	0.00 to 100.00

Parameter group [2/2]

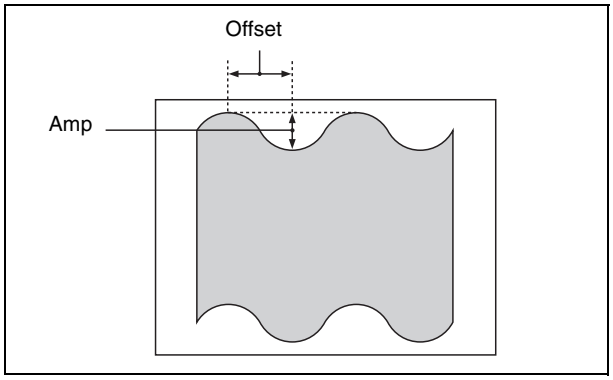
Knob	Parameter	Adjustment	Setting values
3	Offset V [a]	Vertical direction in which to offset wave phase and amount of movement	–16.00 to +16.00 [c] –64.00 to +64.00 [d]
4	Speed V [b]	Vertical direction and speed of waves	–100.00 to +100.00
5	Slant	Slant of waves	–8.000 to +8.000

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

When Size is selected

Knob	Parameter	Adjustment	Setting values
1	Amp H	Amplitude of waves	0.00 to 100.00
2	Freq H	Frequency of waves	0.00 to 100.00
3	Offset H [a]	Direction in which to offset wave phase and amount of movement	–16.00 to +16.00 [c] –64.00 to +64.00 [d]
4	Speed H [b]	Direction and speed of waves	–100.00 to +100.00
5	Slant	Slant of waves	–8.000 to +8.000

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9



To stop the waves

Press [Lock], turning it on.
With each press, the waves alternately stop and start moving again.

To select the waveform

Press [Form] and set the following parameters.

When H&V mode is selected

Knob	Parameter	Adjustment	Setting values
1	Form H	Waveform in horizontal direction	1 to 6 [a]
2	Form V	Waveform in vertical direction	1 to 6 [a]

When Size mode is selected

Knob	Parameter	Adjustment	Setting values
1	Form H	Waveform	1 to 6 [a]

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabola wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave
5 (CIRCLE): Circular wave
6 (CUBIC): Cubic wave

To randomize the modulated waveform

1 Press [Random], turning it on.

2 Set the following parameters.

When H&V mode is selected

Knob	Parameter	Adjustment	Setting values
1	Random H	Degree of randomness in horizontal waveform modulation	0.00 to 100.00
2	Random V	Degree of randomness in vertical waveform modulation	0.00 to 100.00
3	Random All	Degree of randomness in both vertical and horizontal directions	Random H value shown

When Size mode is selected

Knob	Parameter	Adjustment	Setting values
1	Random H	Degree of randomness in waveform modulation	0.00 to 100.00

To limit the wave range

1 Press [Range], turning it on.

2 Set the following parameters.

When H&V mode is selected

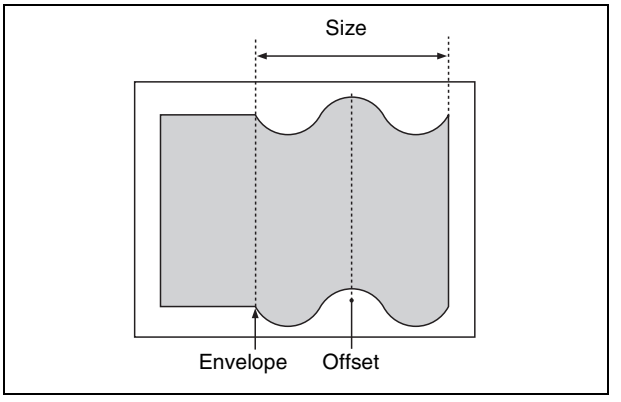
Knob	Parameter	Adjustment	Setting values
1	Size H	Amount of horizontal wave modulation	0.00 to 100.00
2	Offset H	Center point of horizontal modulation range	–8.000 to +8.000 a) –32.000 to +32.000 b)
3	Size V	Amount of vertical wave modulation	0.00 to 100.00
4	Offset V	Center point of vertical modulation range	–8.000 to +8.000 a) –32.000 to +32.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

When Size mode is selected

Knob	Parameter	Adjustment	Setting values
1	Size H	Amount of wave modulation	0.00 to 100.00
2	Offset H	Center point of modulation range	–8.000 to +8.000 a) –32.000 to +32.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9



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 mode is selected

Knob	Parameter	Adjustment	Setting values
1	Envelope H	Smoothness of envelope in horizontal direction	0.00 to 100.00
2	Envelope V	Smoothness of envelope in vertical direction	0.00 to 100.00

When Size mode is selected

Knob	Parameter	Adjustment	Setting values
1	Envelope H	Smoothness of envelope	0.00 to 100.00

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 wave form, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

To apply the Mosaic Glass effect

Display the Mosaic Glass menu.
The items displayed in the Mosaic Glass menu and the functions of the knobs are the same as for the Wave menu *(see page 300)*.

Flag Settings

There are two modes: H&V and Size. You can set the size and frequency of waves in the image, the wave form, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

To apply the Flag effect

Display the Flag menu.
The items displayed in the Flag menu and the functions of the knobs are the same as for the Wave menu *(see page 300)*.

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 wave form, the amount of wave movement, and other parameters.

To apply the Twist effect

With the Twist menu displayed, set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Amp V	Amplitude of twist in vertical direction	0.00 to 100.00
2	Freq V	Frequency of twist in vertical direction	0.00 to 100.00
3	Offset V [a]	Amount of movement in twist phase in the vertical direction	–16.00 to +16.00 [c] –64.00 to +64.00 [d]
4	Speed V [b]	Speed and direction of twist movement in vertical direction	–100.00 to +100.00
5	Slant	Slant of twist	–8.000 to +8.000

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Amp H	Amplitude of twist in horizontal direction	0.00 to 100.00
3	Offset H [a]	Amount of movement in twist phase in the horizontal direction	–100.00 to +100.00
5	Slant	Slant of twist	–8.000 to +8.000

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

To stop the waves

Press [Lock], turning it on.
With each press, the waves alternately stop and start moving again.

To select the waveform

Press [Form] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Form H	Waveform in horizontal direction	1 to 6 [a]
2	Form V	Waveform in vertical direction	1 to 6 [a]

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabola wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave
5 (CIRCLE): Circular wave
6 (CUBIC): Cubic wave

Ripple Settings

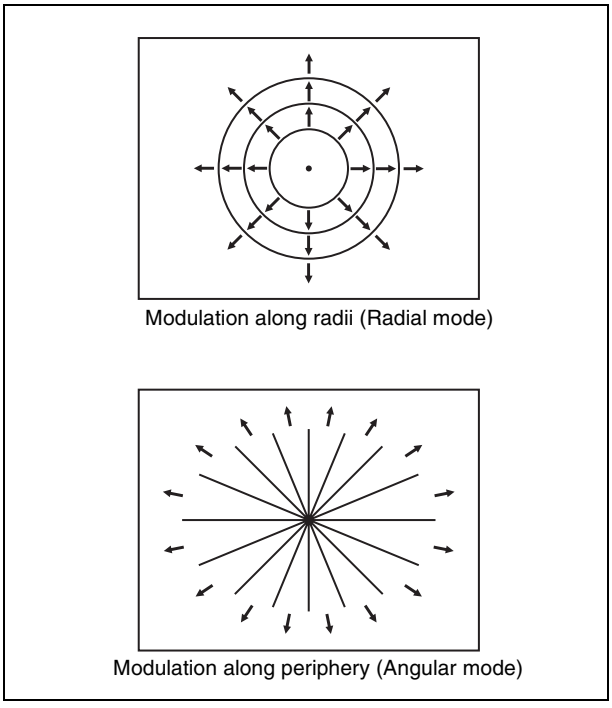
There are four modes: Radial, Angular, Both, and Shape. The direction of modulation differs depending on the mode. You can set the size and frequency of the ripples, their direction and speed, their center point, and other parameters. In Shape mode, you can select ripple shapes other than circles (stars, etc.).

To apply the Ripple effect

With the Ripple menu displayed, use the following procedure.

1 In the <Mode> group, 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: Both Radial and Angular ripples are applied.
Shape: The ripples can have shapes such as stars or hearts in addition to circles.



Modulation modes and directions

2 Set the following parameters, depending on the selected modulation mode.

When Radial mode is selected

Knob	Parameter	Adjustment	Setting values
1	Amp R	Ripple amplitude along radius	0.00 to 100.00
2	Freq R	Ripple frequency along radius	0.00 to 100.00
3	Offset R [a]	Direction along radius in which to offset ripple phase and amount of movement	–8.000 to +8.000 [c] –32.000 to +32.000 [d]
4	Speed R [b]	Ripple direction along radius and speed	–100.00 to +100.00
5	Amp A	Ripple amplitude along periphery	0.00 to 100.00

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

When Angular mode is selected

Knob	Parameter	Adjustment	Setting values
1	Amp A	Ripple amplitude along periphery	0.00 to 100.00
2	Freq A	Ripple frequency along periphery	0.00 to 100.00
3	Offset A [a]	Direction along periphery in which to offset ripple phase and amount of movement	–8.000 to +8.000
4	Speed A [b]	Ripple direction along periphery and speed	–100.00 to +100.00
5	Amp R	Ripple amplitude along radius	0.00 to 100.00

a) Set when Lock is on.
b) Set when Lock is off.

When Both mode is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Amp R	Ripple amplitude along radius	0.00 to 100.00
2	Freq R	Ripple frequency along radius	0.00 to 100.00
3	Offset R [a]	Direction along radius in which to offset ripple phase and amount of movement	–8.000 to +8.000 [c] –32.000 to +32.000 [d]
4	Speed R [b]	Ripple direction along radius and speed	–100.00 to +100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Amp A	Ripple amplitude along periphery	0.00 to 100.00
2	Freq A	Ripple frequency along periphery	0.00 to 100.00
3	Offset A [a]	Direction along periphery in which to offset ripple phase and amount of movement	–8.000 to +8.000
4	Speed A [b]	Ripple direction along periphery and speed	–100.00 to +100.00

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

When Shape mode is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Amp R	Ripple amplitude	0.00 to 100.00
2	Freq R	Ripple frequency	0.00 to 100.00

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
3	Offset R [a]	Direction in which to offset ripple phase and amount of movement	–8.000 to +8.000 [c] –32.000 to +32.000 [d]
4	Speed R [b]	Ripple direction and speed	–100.00 to +100.00
5	Shape	Ripple shape	1 to 4 [e]

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Aspect	Ripple aspect ratio	–100.00 to +100.00
2	Angle	Ripple angle	–8.000 to +8.000

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9
e) 1 (Circle): Circle
2 (Rectangle): Rectangle
3 (Star): Star
4 (Heart): Heart

To limit the direction in which modulation is applied

By pressing [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 point

1 Press [Position], turning it on.

2 Set the following parameters, depending on the selected modulation mode.

When Shape is selected

Knob	Parameter	Adjustment	Setting values
1	H	Ripple center point in horizontal direction	–5.000 to +5.000 [a] –20.000 to +20.000 [b]
2	V	Ripple center point in vertical direction	–3.000 to +3.000 [a] –12.000 to +12.000 [b]

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

When other than Shape is selected

Knob	Parameter	Adjustment	Setting values
1	H	Ripple center point in horizontal direction	–8.000 to +8.000 [a] –32.000 to +32.000 [b]
2	V	Ripple center point in vertical direction	–6.000 to +6.000 [a] –18.000 to +18.000 [b]

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To limit the ripple range

1 Press [Range], turning it on.

2 Set the following parameters.

When Radial or Shape mode is selected

Knob	Parameter	Adjustment	Setting values
1	Size R	Amount of ripple modulation along radius	0.00 to 100.00
2	Offset R	Center of modulation range along radius	–8.000 to +8.000 [a] –32.000 to +32.000 [b]

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

When Angular mode is selected

Knob	Parameter	Adjustment	Setting values
1	Size A	Amount of ripple modulation along periphery	0.00 to 100.00
2	Offset A	Center of modulation range along periphery	–8.000 to +8.000

When Both mode is selected

Knob	Parameter	Adjustment	Setting values
1	Size R	Amount of ripple modulation along radius	0.00 to 100.00
2	Offset R	Center of modulation range along radius	–8.000 to +8.000 [a] –32.000 to +32.000 [b]

Knob	Parameter	Adjustment	Setting values
3	Size A	Amount of ripple modulation along periphery	0.00 to 100.00
4	Offset A	Center of modulation range along periphery	–8.000 to +8.000

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To reverse the ripple range

When modulation mode is Radial, Both, or Shape: Press [Range Rev R], turning it on.

When modulation mode is Both or Angular: Press [Range Rev A], turning it on.

Other settings

You can turn [Lock], [Form], [Random], and [Range Envelope] on to do the following.

- Stop the waves
- Select the wave shape
- Randomize the waveform
- Smooth the range envelope when the wave range is limited

For Lock, Form, Random, and Range Envelope functions, see "Wave Settings" (page 300).

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

With the Rings menu displayed, use the following procedure.

1 To make transition settings, press [Transition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.000 to 100.000
2	Random	Degree of randomness in distance moved by each block	0.000 to 100.000
3	Spiral	Amount of movement toward periphery accompanying transition	–1.000 to +1.000

2 To set the partition method, press [Partition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Width	Width of partition	0.000 to 100.000
2	Random	Degree of randomness in partition width	0.000 to 100.000
3	Angle	Starting angle of effect	–8.000 to +8.000

3 To set the ring center position, press [Position] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal center position	–5.000 to +5.000 a) –20.000 to +20.000 b)
2	V	Vertical center position	–4.000 to +4.000 a) –16.000 to +16.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

4 To partition into pixels, press [Pixel], turning it on, and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears around periphery	0.00 to 100.00
2	Random	Degree of jaggies at block edges	0.00 to 100.00

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

Display the Broken Glass menu.
The functions of the knobs in the Broken Glass menu are the same as those of the Rings menu *(see page 306)*, with the exception of [Direction].

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

With the Flying Bars menu displayed, use the following procedure.

1 To make transition settings, press [Transition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.000 to 100.000
2	Random	Degree of randomness in distance moved by each block	–100.000 to +100.000
3	Angle	Direction of movement	–8.000 to +8.000

2 To set the partition method, press [Partition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Width	Width of partition	0.000 to 100.000
2	Random	Degree of randomness in partition width	0.000 to 100.000
3	Angle	Partition angle	–8.000 to +8.000

Blind Settings

There are two modes: Bar and Wedge. 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.

To apply the Blind effect

With the Blind menu displayed, use the following procedure.

1 In the <Mode> group, select [Bar] or [Wedge].

2 To make transition settings, press [Transition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Rotation	Number of rotations of the blocks	–8.000 to +8.000
2	Perspective	Degree of randomness in distance moved by each block	0.000 to 100.000

3 To set the partition method, press [Partition] and set the following parameters.

When Bar was selected in step 1

Knob	Parameter	Adjustment	Setting values
1	Width	Width of partition	0.000 to 100.000
2	Offset	Degree of randomness in partition width	–5.000 to +5.000 a) –20.000 to 20.000 b)
3	Angle	Starting angle of effect	–8.000 to +8.000

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

When Wedge was selected in step 1

Knob	Parameter	Adjustment	Setting values
4	No	Width of blocks	0.000 to 100.000
5	Phase	Partition position	–8.000 to +8.000

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.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal center position	–8.000 to +8.000 a) –32.000 to +32.000 b)
2	V	Vertical center position	–6.000 to +6.000 a) –18.000 to +18.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Split Settings

You can set the degree to which the image is split, the split positions, and other parameters.

To apply the Split effect

With the Split menu displayed, use the following procedure.

1 In the <Mode> group, select the split method.

Single: Leave gaps between splits.
Double: Fill gaps between splits with the same image.

2 Set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Transition H	Degree of left and right separation	–100.00 to +100.000
2	Transition V	Degree of top and bottom separation	–100.00 to +100.000

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Amount of movement of top	–100.00 to +100.000
2	Left	Amount of movement of left	–100.00 to +100.000
3	Right	Amount of movement of right	–100.00 to +100.000
4	Bottom	Amount of movement of bottom	–100.00 to +100.000

To set the split position

1 Press [Position].

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Degree of left and right separation	–4.000 to +4.000 a) –16.000 to +16.000 b)
2	V	Degree of top and bottom separation	–3.000 to +3.000 a) –12.000 to +12.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

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.

To apply the Split Slide effect

With the Split Slide menu displayed, set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Transition H	Degree of transition in horizontal direction	–100.00 to +100.000
2	Random H	Degree of randomness in distance moved by blocks in horizontal direction	0.00 to 100.00
3	Skew H	Degree of skew in horizontal direction	0.00 to 100.00
4	Width H	Horizontal width of partition	0.00 to 100.00
5	Angle	Angle of partition line	–8.000 to +8.000

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Transition V	Degree of transition in vertical direction	–100.00 to +100.000
2	Random V	Degree of randomness in distance moved by blocks in vertical direction	0.00 to 100.00
3	Skew V	Degree of skew in vertical direction	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
4	Width V	Vertical width of partition	0.00 to 100.00
5	Angle	Angle of partition line	–8.000 to +8.000

To set the partition position

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal partition position	–5.000 to +5.000 a) –20.000 to +20.000 b)
2	V	Vertical partition position	–5.000 to +5.000 a) –20.000 to +20.000 b)

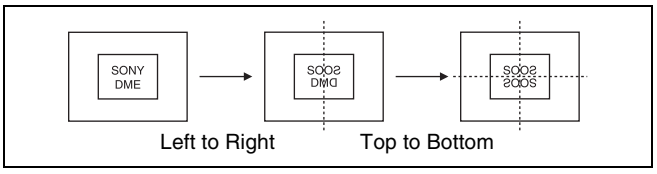
a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Mirror Settings

You can choose to reflect 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 original and reflections.

To apply the Mirror effect

With the Mirror menu displayed, press [Left to Right], [Right to Left], [Top to Bottom], or [Bottom to Top] to set the reflection method (multiple selections possible).
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 original and reflection

1 Press [Position].

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal border position	–8.000 to +8.000 a) –32.000 to +32.000 b)
2	V	Vertical border position	–6.000 to +6.000 a) –24.000 to +24.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

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.

To apply the Multi Mirror effect

With the Multi Mirror menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Interval H	Horizontal distance between mirrors (original width)	0.000 to 10.000 a) 0.000 to 40.000 b)
2	Offset H	Amount of horizontal offset of image with mirrors fixed	–4.000 to +4.000 a) –16.000 to +16.000 b)
3	Interval V	Vertical distance between mirrors (original width)	0.000 to 10.000 a) 0.000 to 40.000 b)
4	Offset V	Amount of vertical offset of image with mirrors fixed	–4.000 to +4.000 a) –16.000 to +16.000 b)
5	Angle	Mirror angle	–8.000 to +8.000

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To set the center position of original image

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal original image center position	–4.000 to +4.000 a) –16.000 to +16.000 b)

Knob	Parameter	Adjustment	Setting values
2	V	Vertical original image center position	–4.000 to +4.000 [a] –16.000 to +16.000 [b]

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

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.

To apply the Kaleidoscope effect

With the Kaleidoscope menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Number	Number of blocks	0.00 to 100.00
2	Phase	Angle of partition reference point	–8.000 to +8.000
3	Offset H	Amount of horizontal offset	–4.000 to +4.000 [a] –16.000 to +16.000 [b]
4	Offset V	Amount of vertical offset	–3.000 to +3.000 [a] –12.000 to +12.000 [b]

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To reflect the kaleidoscope image as if in a mirror

1 To reflect in the horizontal direction, press [Mirror H], turning it on.

2 To reflect in the vertical direction, press [Mirror V], turning it on.

To set the reflection position

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal reflection position	0.000 to 4.000 [a] 0.000 to 16.000 [b]
2	V	Vertical reflection position	0.000 to 3.000 [a] 0.000 to 12.000 [b]

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

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 curve ratio, 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.

To apply the Lens effect

With the Lens menu displayed, use the following procedure.

1 In the <Mode> group, select the lens shape.

- **Circle**
- **Rectangle**
- **Star**
- **Heart**
- **Bar**
- **Cross**

2 Depending on the selected lens shape, set the following parameters.

When Circle, Rectangle, Star, or Heart is selected

Knob	Parameter	Adjustment	Setting values
1	Magnify H	Magnification ratio	–100.00 to +100.00
2	Curve H	Curve ratio	–100.00 to +100.00
3	Size H	Size	0.00 to 100.00
4	Angle	Slant angle	–8.000 to +8.000
5	Aspect	Aspect ratio	–100.00 to +100.00

When Bar is selected

Knob	Parameter	Adjustment	Setting values
1	Magnify H	Magnification ratio	–100.00 to +100.00
2	Curve H	Curve ratio	–100.00 to +100.00
3	Size H	Size	0.00 to 100.00
4	Angle	Slant angle	–8.000 to +8.000

When Cross is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Magnify H	Horizontal magnification ratio	–100.00 to +100.00
2	Curve H	Horizontal curve ratio	–100.00 to +100.00

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
3	Size H	Horizontal size	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Magnify V	Vertical magnification ratio	–100.00 to +100.00
2	Curve V	Vertical curve ratio	–100.00 to +100.00
3	Size V	Vertical size	0.00 to 100.00

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], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal lens center position	–5.000 to +5.000 a) –20.000 to +20.000 b)
2	V	Vertical lens center position	–4.000 to +4.000 a) –16.000 to +16.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Circle Settings

You can set the size of the circle, and make the axis of modulation vertical.

To apply the Circle effect

With the Circle menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Radius	Size of circle	0.00 to 100.00

To make the axis of modulation vertical

Press [Mod V], turning it on.
The axis of modulation when converting to the circle becomes vertical.

Panorama Settings

You can set the horizontal and vertical curve ratio, and the curve center position.

To apply the Panorama effect

With the Panorama menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Curve H	Horizontal curve ratio	–100.00 to +100.00
2	Curve V	Vertical curve ratio	–100.00 to +100.00
3	Position H	Horizontal curve center position	–4.000 to +4.000 a) –16.000 to +16.000 b)
4	Position V	Vertical curve center position	–3.000 to +3.000 a) –12.000 to +12.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

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.

To apply the Page Turn effect

With the Page Turn menu displayed, use the following procedure.

1 In the <Split Mode> group, select the split mode.

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 Press [Page Turn], then set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Radius	Radius of turn part	0.00 to 100.00
2	Offset	Amount of turn	–100.00 to +100.00

Knob	Parameter	Adjustment	Setting values
3	Angle	Angle of turn	–0.250 to +0.000 a) –0.250 to +0.250 b) –0.500 to +0.000 c) –8.000 to +8.000 d)

a) When split mode is H&V
b) When split mode is H
c) When split mode is V
d) When split mode is off

To set the input signal of the back page

1 In the <Back Video> group, select the signal input into the back page.

Self: Use the same signal as the front page.
Flat: Use a flat color.
Hue Rotation: Gradually vary the hue.
2nd Ch: Use the 2nd channel video signal.
To select "2nd Ch," it is first necessary to select the second DME on the keyer using DME.

2 Adjust the following parameters, according to the selected input signal.

When Flat is selected

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

When Hue Rotation is selected

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Speed	Speed at which hue changes	–12.00 to +12.00

Notes

When using a page turn 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 restrictions as above apply to all signal formats.

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.

To apply the Roll effect

Display the Roll menu.
The knobs in the Roll menu have the same functions as those in the Page Turn menu *(see page 311)*.

Notes

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 restrictions as above apply to all signal formats.

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.

To apply the Cylinder effect

With the Cylinder menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Radius	Degree to which image is wound onto the cylinder	0.00 to 100.00
2	Min R	Radius of the cylinder	0.00 to 100.00
3	Offset	Horizontal position of the image wound onto cylinder	–100.00 to +100.00

The procedure for selecting the input signal in the <Back Video> group is the same as for the Page Turn menu *(see page 311)*.

Notes

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 restrictions as above apply to all signal formats.

Sphere Settings

You can set the degree of winding onto the sphere, the radius, the horizontal position of the wound image, and front and back side output for the image.

Notes

You cannot monitor the part of a rotating sphere that corresponds to its axis on the monitor screen.

To apply the Sphere effect

Display the Sphere menu.
The knobs in the Sphere menu have the same functions as those in the Cylinder menu *"Cylinder Settings" (page 312)*.

Notes

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 restrictions as above apply to all signal formats.

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.

To apply the Explosion effect

With the Explosion menu displayed, use the following procedure.

1 In the <Mode> group, select the explosion pattern.

- **Circle**
- **Rectangle**
- **Star**
- **Heart**
- **Ellipse**

2 Set the following parameters.

When Circle was selected in step 1

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.00 to 100.00
2	Curve	Degree to which image periphery expands	0.00 to 100.00
3	Spiral	Degree of curvature of transition path	–100.00 to +100.00

When Rectangle, Star, Heart, or Ellipse was selected in step 1

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.00 to 100.00
2	Curve	Degree to which image periphery expands	0.00 to 100.00
3	Aspect	Aspect ratio of waveform	–100.00 to +100.00
4	Angle	Slant of waveform	–8.000 to +8.000

To make the fragments stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears	0.00 to 100.00
2	Random	Degree of randomness in flying out fragment positions	0.00 to 100.00

To set the explosion center point

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Center point in horizontal direction	–5.000 to +5.000 a) –20.000 to +20.000 b)
2	V	Center point in vertical direction	–4.000 to +4.000 a) –16.000 to +16.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Swirl Settings

You can set the amount of swirl, the swirl region, the amount of rotation, and the swirl center position.

To apply the Swirl effect

With the Swirl menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Swirl amount	0.00 to 100.00
2	Center	Amount of rotation in center of swirl	–8.000 to +8.000
3	Outer	Amount of rotation outside of Area	–8.000 to +8.000
4	Area	Region of swirl	0.00 to 100.00

To make the tip of the swirl stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears	0.00 to 100.00
2	Random	Trail type and amount of stardust	0.00 to 100.00

To set the center position of the swirl

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal center position of swirl	–8.000 to +8.000 [a] –32.000 to +32.000 [b]
2	V	Vertical center position of swirl	–6.000 to +6.000 [a] –18.000 to +18.000 [b]

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Melt Settings

You can set the degree of transition, the degree of extension in the image, the jaggedness of the melting sections, and the amplitude, frequency, amount of movement, and speed of the melting sections. You can also set the slant of the borders, the shape of the sections that begin to melt, and other parameters.

To apply the Melt effect

With the Melt menu displayed, use the following procedure.

1 In the <Direction> group, select the direction in which the image melts away.

Up: Melting occurs upward.
Down: Melting occurs downward.

2 To make transition settings, press [Transition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.00 to 100.00
2	Curve	Degree to which image stretches	0.00 to 100.00
3	Random	Degree of jaggies at melted part	0.00 to 100.00

3 To make wave settings for melting part, press [Border] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Amp	Amplitude of waves	0.00 to 100.00
2	Freq	Frequency of waves	0.00 to 100.00
3	Offset [a]	Amount of wave phase offset	–16.000 to +16.000 [c] –64.000 to +64.000 [d]
4	Speed [b]	Direction and speed of waves	–100.00 to +100.00
5	Slant	Slant of border	–100.00 to +100.00

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

To stop the waves in the melting part

Press [Lock], turning it on.
With each press, the waves alternately stop and start moving again.

To select the shape of the part beginning to melt

Press [Form] and set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Form	Waveform	1 to 8 [a]

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabola wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave

5 (CIRCLE): Circular wave
6 (CUBIC): Cubic wave
7 (MELT1): Melting wave 1
8 (MELT2): Melting wave 2

To make the melting part stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears	0.00 to 100.00
2	Random	Degree to which pixel positions become more randomized further from the center	0.00 to 100.00

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.

To apply the Character Trail effect

With the Character Trail menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Position where effect starts	–8.000 to +8.000 a) –32.000 to +32.000 b)
2	Expand	Degree of expansion	0.00 to 100.00
3	Trans Angle	Angle of slanting in effect region	–8.000 to +8.000
4	Trail Angle	Direction of trail	–100.00 to +100.00

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To make the tip of the swirl stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears	0.00 to 100.00
2	Random	Trail type and amount of stardust	0.00 to 100.00

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: An effect like light striking a surface with metallic reflections.

Mat: An effect like light striking paper, cloth, or another diffusively reflective surface.

Notes

The function for setting the bar mode of the lighting area is not supported on the MVE-8000A.

Applying the Lighting effect

1 In the DME menu, select VF5 ‘Light/Trail’ and HF1 ‘Lighting.’

The Lighting menu appears.

2 Press [Lighting], turning it on.

3 In the <Light Pattern> group, select the lighting pattern Plane, Bar or Preset.

4 Set the parameters.

The parameters differ as follows, depending on the selected lighting pattern.

When Plane is selected

Knob	Parameter	Adjustment	Setting values
1	Light	Intensity of light in highlight area	0.00 to 100.00
5	Total Ambient	Brightness of whole image	0.00 to 100.00 a)

a) You can make the Lighting effect more effective by adjusting [Total Ambient] to lower the brightness of the entire image. This setting is used both by this effect and by the Spotlighting effect.

Notes

The Total Ambient parameter is not supported on the MVE-8000A.

When Bar is selected

Knob	Parameter	Adjustment	Setting values
1	Light	Intensity of light in highlight area	0.00 to 100.00
2	Ambient	Intensity of light in ambient area	0.00 to 100.00
5	Total Ambient	Brightness of whole image	0.00 to 100.00 a)

a) You can make the Lighting effect more effective by adjusting [Total Ambient] to lower the brightness of the entire image. This setting is used both by this effect and by the Spotlighting effect.

Notes

The Total Ambient parameter is not supported on the MVE-8000A.

When Preset is selected

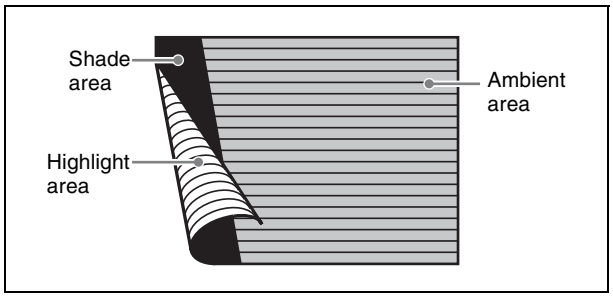
Knob	Parameter	Adjustment	Setting values
1	Light	Intensity of light in highlight area	0.00 to 100.00
2	Ambient	Intensity of light in ambient area	0.00 to 100.00
3	Shade	Intensity of light in shade area	0.00 to 100.00 a)
5	Total Ambient	Brightness of whole image	0.00 to 100.00 b)

a) Setting is available when nonlinear effect page turn, roll, cylinder, or sphere is selected.

b) You can make the Lighting effect more effective by adjusting [Total Ambient] to lower the brightness of the entire image. This setting is used both by this effect and by the Spotlighting effect.

Notes

The Total Ambient parameter is not supported on the MVE-8000A.



The three regions for which the light intensity can be set

Setting the bar shape of the highlight area

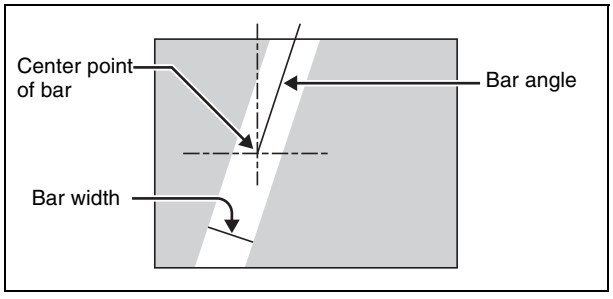
When you select [Bar] or [Preset] in step **3** of "Applying the Lighting effect" *(page 316)*, use the following procedure to set the shape of the bar.

1 Turn [Light Modify] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	X	X-value of bar center point	–8.00 to +8.00 a) b) –24.00 to +24.00 c) –32.00 to +32.00 d)
2	Y	Y-value of bar center point	–6.00 to +6.00 a) –4.50 to +4.50 b) –18.00 to +18.00 c) d)
3	Angle e)	Angle of bar	–8.00 to +8.00
4	Width	Width of bar	0.00 to 100.00
5	Soft	Softness of edges	0.00 to 100.00

a) For SD 4:3
b) For SD 16:9
c) For HD 4:3
d) For HD 16:9
e) There are some nonlinear effects for which Angle cannot be used.



Bar shape parameters

Setting the color of the light in the highlight area

1 Turn [Light Color] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Setting the bar shape of the shade area

When you select [Preset] in step **3** of "Applying the Lighting effect" *(see page 316),* use the following procedure to set the bar shape of the shade area.

1 Turn [Shade Modify] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	X	X-value of bar center point	–8.00 to +8.00 a) –24.00 to +24.00 b) –32.00 to +32.00 c)
4	Width	Width of bar	0.00 to 100.00
5	Soft	Softness of edges	0.00 to 100.00

a) For SD 4:3 and SD 16:9
b) For HD 4:3
c) For HD 16:9

Setting the color of the shade in the shade area

1 Turn [Shade Color] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Setting the bar mode of the highlight area

When you select [Bar] in step **3** of "Applying the Lighting effect" *(page 316)*, use the following procedure to set the bar mode of the highlight area.

Notes

The bar mode of the highlight area is not supported on the MVE-8000A.

1 Select the mode in the <Bar Light Mode> group.

Normal: Emphasizes the bar highlight area.
Specular: An effect like light striking a surface with metallic reflections.

Mat: An effect like light striking paper, cloth, or another diffusively reflective surface.

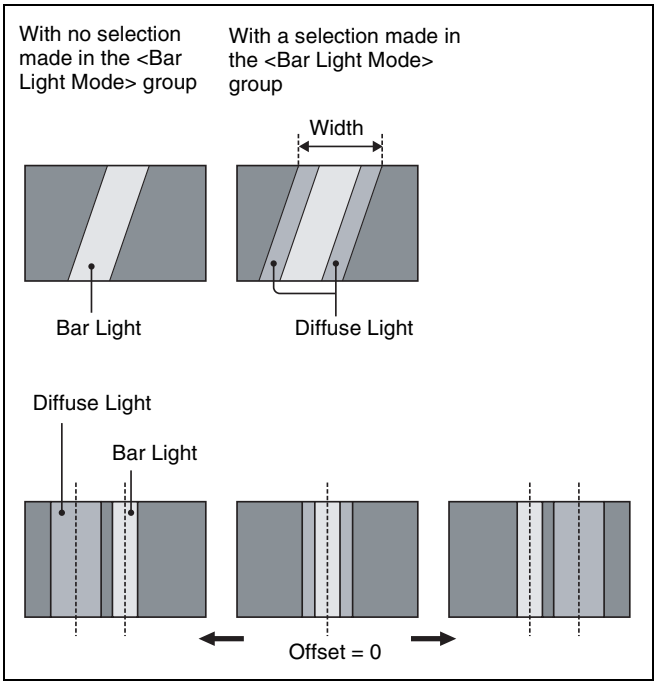
2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Intensity	Intensity of diffuse light area	0.00 to 100.00
2	Offset	Offset of center of diffuse light area	–4.00 to +4.00 a) –12.00 to +12.00 b) –16.00 to +16.00 c)
3	Width	Width of diffuse light area	0.00 to 100.00
4	Soft	Softness of diffuse light area	0.00 to 100.00

a) For SD 4:3 and SD 16:9
b) For HD 4:3
c) For HD 16:9

3 When you select Normal or Mat in step **1**, press [Bar Diffuse Color], turning it on, and adjust the following parameters to set the color of the diffuse light area.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00



Trail Settings

Notes

- Of the three effects of trail, motion decay and keyframe strobe, only one can be on at a time. When one of them is on, turning another of them on automatically turns off the one that has been on.
- Turning Trail on when Motion Decay *(see page 320)*, Keyframe Strobe *(see page 321)* or Wind *(see page 322)* is on turns it off automatically.

Applying the Trail effect

1 In the DME menu, select VF5 ‘Light/Trail’ and HF2 ‘Trail.’

The Trail menu appears.

2 Press [Trail], turning it on.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Decay	Degree to which the trail is left	0.00 to 100.00 a)
2	Interval	Freeze interval	1 to 255 (frames)
3	Live	Proportion of the interval between two successive freeze images for which the video is run	0.00 to 100.00

a) 0.00 is no trail. At 100.00, the trail does not disappear.

4 To erase the trail, press [Trail Eraser], turning it on.

Switching the priority between the current image and trail superimposed

In the <Priority> group, select the method of superimposition.
Over: Current image is on top.
Under: Trail is on top.

Selecting the source to create a trail

In the <Trail Source> group, select the source to create a trail.

Notes

- "Rainbow," "Mix Color," and "Ext Video" are not supported on the MVE-8000A.
- "Mix Color" or "Ext Video" can only be applied to one of the background *(see page 331)*, flex shadow *(see page 283)*, trail, and wind *(see page 322)* effects.
  If you select "Mix Color" or "Ext Video" in one of these settings, a selection of "Mix Color" or "Ext Video" in any of the other effects is disabled, and "Flat Color" is selected in its place.
- When executing combining four channels of DME images, "Mix Color" and "Ext Video" in the flex shadow and background effects cannot be selected.

Freeze Video: Use freeze images of the input video as source of the trail.

Flat Color: Use a flat color matte as source of the trail. You can set the following parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

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 with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue Speed	Speed at which the hue changes	–12.00 to +12.00

Mix Color: Insert a mix color signal set in the Color Mix menu *(see page 289)* in the afterimage portion.

Ext Video: Insert the 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.

For details of the Rainbow parameters, see the "Hue Rotate" item above.

Erasing the afterimages that remain in memory whenever a keyframe is passed

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, select the timing for freezing a trail.
Frame: freeze in frame units.
Field: freeze in field units.

Notes

The freeze timing setting is not required when the following signal formats are being used.
Signal formats: 1080P/50, 1080P/59.94, 1080PsF/23.976,1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Defocusing the afterimage portion (Defocus)

Notes

The function to defocus the trail afterimage portion is not supported on the MVE-8000A.

1 Press [Defocus], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Defocus V	Defocusing of the video signal	0.00 to 100.00
2	Defocus K	Defocusing of the key signal	0.00 to 100.00

Applying stardust to the afterimage portion

The afterimage portion becomes stardust, and gradually disappears.

1 Press the [DUST] button, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Trail Dust	Amount of the afterimage disappearing as stardust [a)]	0.00 to 100.00
2	Dust Soft	Timing with which stardust disappears	0.00 to 100.00
3	Dust Size	Size of stardust	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
4	Dust Aspect	Aspect ratio of stardust	–100.00 to +100.00

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.

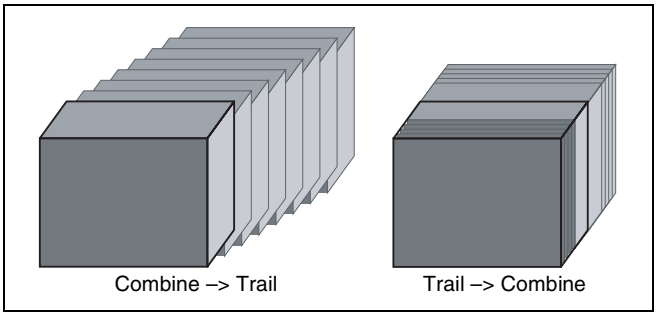
Notes

- 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.

Select one of the following in the <Combine Process> group.

Combine –> Trail: Add the Trail effect after the combine. As the trail parameters, the 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

Notes

When you turn on motion decay, if the Trail, Keyframe Strobe or Wind effect is on, it automatically goes off.

Blurring image motion

1 In the DME menu, select VF5 ‘Light/Trail’ and HF3 ‘Motion Decay.’

The Motion Decay menu appears.

2 Press [Motion Decay], turning it on.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Video Decay	Degree of blurring of the video signal	0.00 to 100.00 a)

a) At the setting 0.00, there is no afterimage. At a setting of 100.00, the afterimage does not decay.

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 lighter of the live image and afterimage.

5 To erase the afterimage, press [Decay Eraser], turning it on.

Erasing the afterimages that remain in memory whenever a keyframe is passed

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, select the timing for motion decay freezing.
Frame: freeze in frame units.
Field: freeze in field units.

Notes

The freeze timing setting is not required when the following signal formats are being used.
1080P/50, 1080P/59.94, 1080PsF/23.976, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Applying stardust to the afterimage portion

The afterimage portion becomes stardust, and gradually disappears.

1 Press the [DUST] button, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Decay Dust	Amount of the afterimage disappearing as stardust a)	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Dust Soft	Timing with which stardust disappears	0.00 to 100.00
3	Dust Size	Size of stardust	0.00 to 100.00
4	Dust Aspect	Aspect ratio of stardust	–100.00 to +100.00

a) The way in which the afterimage disappears is affected by both the Video Decay and Decay Dust parameter adjustments for the motion decay.

Keyframe Strobe Settings

Notes

When you turn on keyframe strobe, if the Trail, Motion Decay or Wind effect is on, it automatically goes off.

For details, see "Note" in the section "Trail."

Leaving a trail of afterimages of the image

1 In the DME menu, select VF5 'Light/Trail' and HF4 'KF Strobe.'

The KF Strobe menu appears.

2 Press [KF Strobe], turning it on.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Decay	Degree of blurring of the video signal	0.00 to 100.00 a)

a) At the setting 0.00, there is no afterimage. At a setting of 100.00, the afterimage does not decay.

4 To erase the afterimage, press [KF Strobe Eraser], turning it on.

Selecting the overlay priority for movie and still images (video freeze image)

In the <Priority> group, 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; adjust the following parameter with the knob.

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount of the still image with respect to the movie	0.00 to 100.00 a)

a) The 0.00 setting is the same as Over, and the 100.00 is the same as Under.

Selecting the freeze timing

In the <KF Freeze Timing> group, select the timing for freezing the keyframe strobe.

Frame: freeze in frame units.

Field: freeze in field units.

Notes

The freeze timing setting is not required when the following signal formats are being used.

1080P/50, 1080P/59.94, 1080PsF/23.976, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Erasing the afterimages that remain in memory whenever a keyframe is passed

Press [KF Strobe Eraser], turning it on.

When the effect passes a keyframe, the afterimage is erased before writing a new afterimage.

Applying stardust to the afterimage portion

The afterimage portion becomes stardust, and gradually disappears.

1 Press the [DUST] button, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	KF Strobe Dust	Amount of the afterimage disappearing as stardust a)	0.00 to 100.00
2	Dust Soft	Timing with which stardust disappears	0.00 to 100.00
3	Dust Size	Size of stardust	0.00 to 100.00
4	Dust Aspect	Aspect ratio of stardust	–100.00 to +100.00

a) The way in which the afterimage disappears is affected by both the Decay and KF Strobe Dust parameter adjustments for the keyframe strobe.

Disabling the keyframe strobe afterimage

Press [KF Strobe Disable], turning it on.
If you turn this function on 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.

Select one of the following in the <Combine Process> group.

Combine –> KF STRB: Add the Keyframe Strobe effect after the combine.
As parameters, the 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.
- When wind is turned on, any of the following effects that are on are turned off.
  - Trail
  - Motion decay
  - Keyframe strobe

Applying the wind effect

1 In the DME menu, select VF5 'Light/Trail' and HF5 'Wind.'

The Wind menu appears.

2 Press [Wind], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Decay	Amount of afterimage displayed	0.00 to 100.00 a)
2	Shift H	Extension in the horizontal direction	–100.00 to +100.00
3	Shift V	Extension in the vertical direction	–100.00 to +100.00

a) 0.00 represents no afterimage, and 100.00 represents no decay in the afterimage.

4 To erase the afterimages, press [Wind Eraser], turning it on.

Selecting the signal for the afterimage portion

In the <Wind Source> group, select the image to fill the afterimage portion.

Notes

- "Mix Color" or "Ext Video" can only be applied to one of the background *(see page 331)*, flex shadow *(see page 283)*, trail *(see page 318)*, and wind effects.
  If you select "Mix Color" or "Ext Video" in the wind settings, a selection of "Mix Color" or "Ext Video" in any of the other effects is disabled, and "Flat Color" is selected in its place.
- When executing combining four channels of DME images, "Mix Color" and "Ext Video" cannot be selected.

Freeze Video: Freeze the input image to use as the afterimage.

Flat Color: Use a single color matte for the afterimage; you can set the following parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Hue Rotate: Use a single color matte with the hue changing for each frame as the afterimage; you can set the following parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue Speed	Rate at which hue changes	–12.00 to +12.00

Mix Color: Insert a mix color signal *(see page 289)* in the afterimage portion.

Ext Video: Insert the 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.

For details of the Rainbow parameters, see the "Hue Rotate" item above.

Applying modulation to the afterimage portion (Modulation)

1 In the Wind menu, press [Modulation], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Amp H	Horizontal amplitude of the wave	0.00 to 100.00
2	Freq H	Horizontal frequency of the wave	–100.00 to +100.00
3	Amp V	Vertical amplitude of the wave	0.00 to 100.00
4	Freq V	Vertical frequency of the wave	–100.00 to +100.00

For details of Priority, Wind Freeze Timing, Wind Eraser, Defocus, Dust, and Combine Process in the Wind menu, see "Trail Settings" (page 318).

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 is enabled, the settings of the smallest-numbered channel selected for the Combiner are used.

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 bumpiness 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 393)*.

Non Linear: Spotlighting effect is applied to an area to which a DME nonlinear effect is applied.

Notes

The BZDM-9050 is required to enable Texture and Non Linear settings on the MVE-9000.

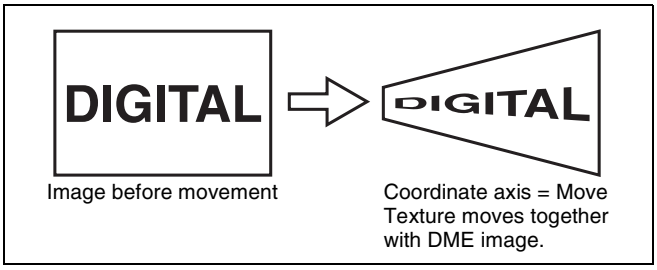
Test sphere function

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. You can easily check the position and direction of the light source by viewing the test sphere *(see page 325)*.

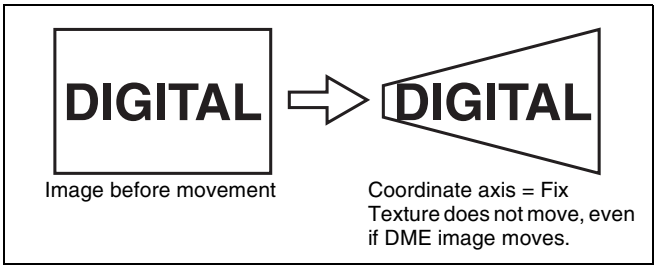
Coordinate axis on surface of image

Specify where to apply the texture or test sphere on the image surface.

Move: The texture moves together with the DME image.



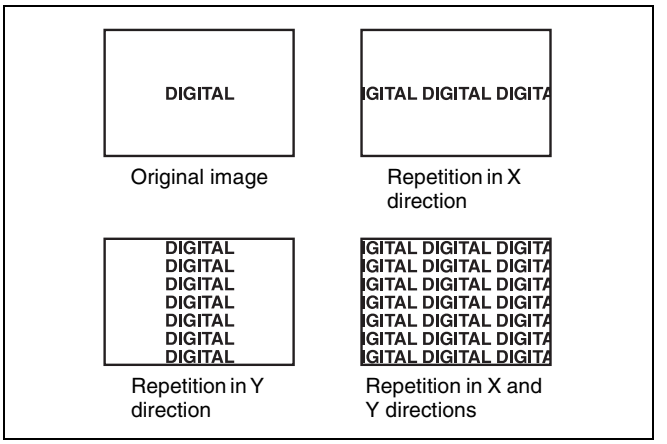
Fix: The texture does not move, even if the DME image moves.



Texture deformations

You can change the texture pattern, position, and size, and use the repetition function.

The following figure shows examples of a texture pattern repeated in the X and Y directions.



Setting lights

Light source types

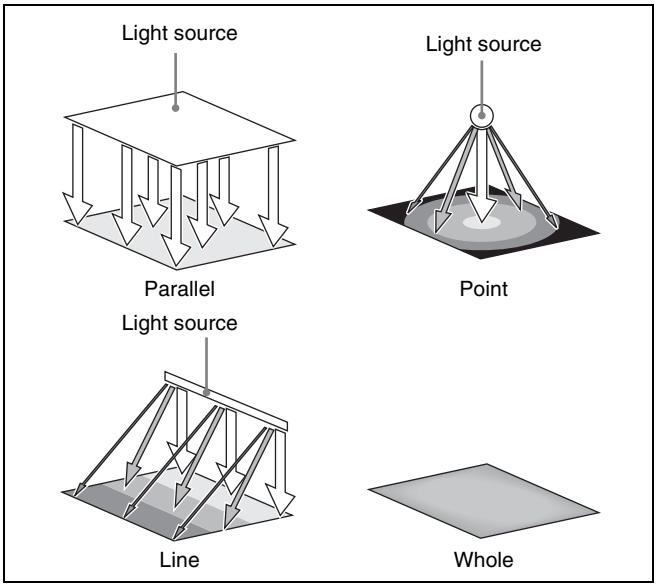
The following type of light sources are available (*see figure*).

Parallel: Parallel light source

Point: Point light source. As the light source is placed further away, the illuminated range becomes wider and the light become weaker.

Line: Line light source

Whole: Non-directional light source which illuminates the whole image.

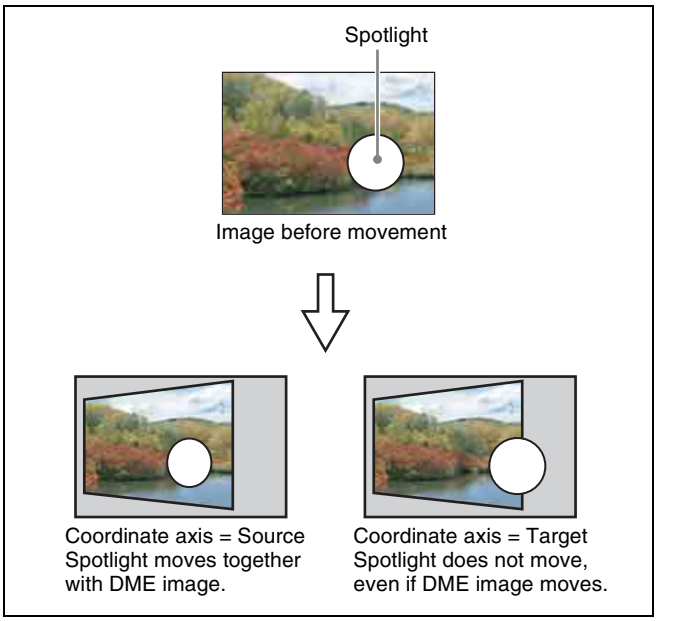


Linking and unlinking image and spotlight

The spotlight can move together with a DME image, or be fixed in place.

Source: Place the light source in source coordinate space. The spotlight is linked and moves when the image moves.

Target: Place the light source in target coordinate space. The spotlight does not move, even when the image moves.



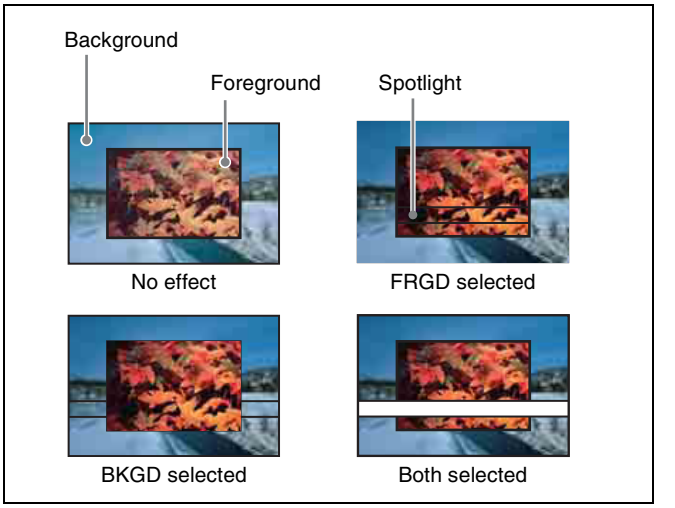
Selecting the lighted area

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 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 image surface effect and want a flat effect for one light source only.

Light shape

Creates the light shape.

- Select the shape pattern
  For shape patterns, see "Shape Patterns" (page 393).
- Set the size, degree of deformation, softness, and rotation.

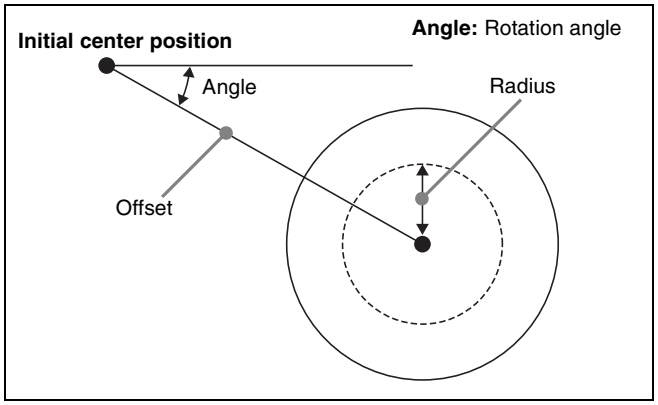
Ring settings

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 an Offset is set, the rotation angle of the ring around the initial center position.



Fill blending modes

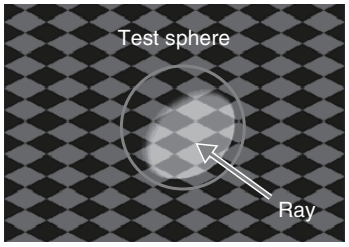
Specifies the way in which the light is blended with the image.

Mix: Light as if reflected from a mirror. The light can be given a color.

Multiply: Light as if reflected from a dull surface (diffuse reflection).

Relation between test spheres and parallel rays

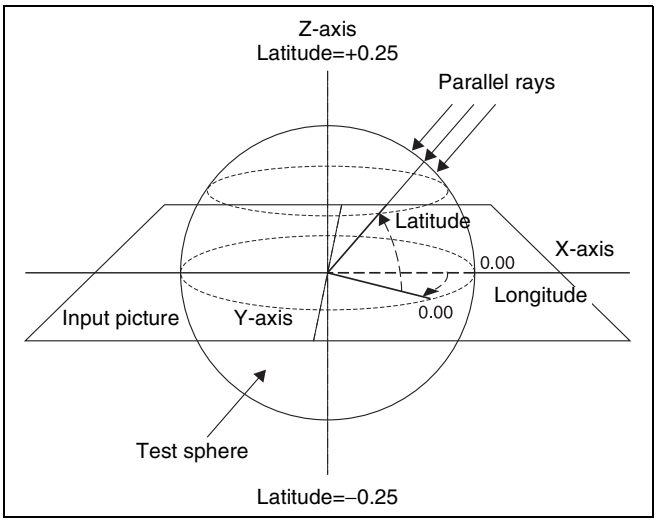
The following figure shows an example of the effect of parallel rays on a test sphere.



The direction of a ray 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 relationships 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.

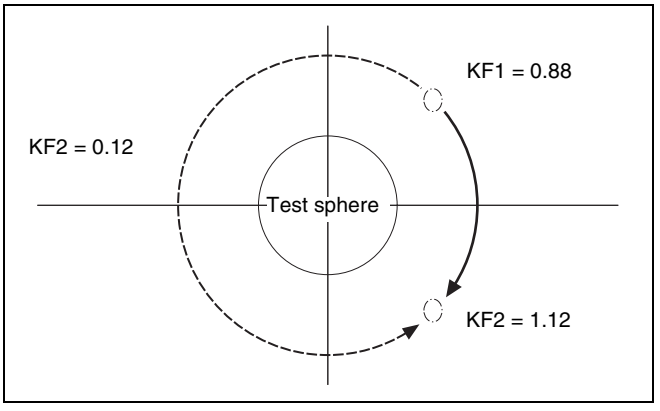
The following relationships apply in the example shown in the figure.

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°).



Keyframe trajectory

Setting the surface where light strikes the image

1 In the DME menu, select VF5 'Light/Trail' and HF6 'Spot Lighting.'

The Spot Lighting menu appears.

2 Press [Spot Lighting], turning it on.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Total Ambient	Brightness of whole image	0.00 to 100.00

- Lowering the brightness of the image makes Spotlighting more effective.
- The Total Ambient setting is shared with the Lighting function.

4 In the <Surface Select> group, select the state of the surface struck by the light.

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.
Non Linear: The 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 "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 2).*
- The Spotlighting Non Linear setting is effective for the following nonlinear effects. For any other nonlinear effect, the result of selecting the Non Linear setting is the same as selecting Flat.
  Wave, Mosaic Glass, Flag, Ripple, Lens, Panorama, Page Turn, Roll.

5 If you selected Texture or Non Linear in step **4**, set the following parameters.

Parameters when you selected Texture

• SD format

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–8.00 to +8.00 a)
2	Y	Movement in Y-axis direction	–6.00 to +6.00 b)
3	Size X	Image size in X-axis direction	0.50 to 16.00
4	Size Y	Image size in Y-axis direction	0.50 to 16.00
5	Amp	Emphasize bumps and depressions	–100.00 to +100.00 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.

• HD format

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–32.00 to +32.00 a)
2	Y	Movement in Y-axis direction	–24.00 to +24.00 b)
3	Size X	Image size in X-axis direction	0.50 to 16.00
4	Size Y	Image size in Y-axis direction	0.50 to 16.00
5	Amp	Emphasize bumps and depressions	–100.00 to +100.00 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.

Parameters when you selected Non Linear

Knob	Parameter	Adjustment	Setting values
5	Amp	Distance of light	–100.00 to +100.00 a)

a) Light appears from Z direction. At –100.00 the light goes deepest, at +100.00 the whole image is lit like a flat effect.

6 If you selected Texture in step **4**, select the pattern as explained in the next section "To select a texture pattern."

7 If you selected Texture 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 the difference between these application methods, see "Coordinate axis on surface of image" (page 323).

Notes

If Non Linear is selected in the <Surface Select> group, Fix is disabled. Behavior is the same as Move.

To select a texture pattern

1 In the Spot Lighting menu, press [Texture Ptn Select].

The Texture Ptn Select menu appears.
Two lists appear in the status area. The list on the left displays the number and name of the currently selected texture. The list on the right is for selecting a texture.

2 In the <Texture Pattern> group, press [User] or [Factory] to select the texture pattern list.

[User]: List of texture patterns created by the user. *See "Adding User Texture Patterns" in Chapter 18 (Volume 2).*
[Factory]: List of texture patterns stored in the system when shipped from the factory.

3 Do one of the following to select a texture.

- Press directly on the list on the right of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Texture No	Texture	1 to 30 a) 101 and upwards b)

a) When Factory is selected
b) When User is selected. The setting value range depends on the number of texture patterns installed.

4 Press [Set].

The texture selected in step **2** appears in the list on the left of the status area.

To set a test sphere

1 In the Spot Lighting menu, press [Test Sphere], turning it on.

A test sphere effect appears on the image surface.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
5	Amp	Distance of light	–100.00 to +100.00 a)

a) Light appears from Z direction. At –100.00 the light goes deepest, at +100.00 the whole image is lit like a flat effect.

For details of the relationship of test spheres and light sources, see "Relation between test spheres and parallel rays" (page 325).

Setting light sources

Up to three light sources (Light 1 to Light 3) for Spotlighting can be set by menus.

Light source menu

The following three light source menus are available.

Light source	Menu
Light 1	DME >Light/Trail >Spot Lighting >Light 1
Light 2	DME >Light/Trail >Spot Lighting >Light 2
Light 3	DME >Light/Trail >Spot Lighting >Light 3

Notes

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 "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 2).

To set light source data

The following example shows how to set light source data with the Light 1 menu.
If you use multiple light sources, use the same procedure for all light sources.

1 In the <Spot Lighting Adjust> group of the Spot Lighting menu, press [Light 1].

The Light 1 menu appears.

2 Press [Light 1], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Total Ambient	Brightness of whole image	0.00 to 100.00
2	Intensity	Intensity (brightness) of the light source	0.00 to 100.00
3	Soft	Softness of the lighted area	0.00 to 100.00

- Lowering the brightness of the image makes Spotlighting more effective.
- The Total Ambient setting is shared with the Lighting function.

4 In the <Spot Mode> group, select the type of light source *(see page 324)*.

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 (no settings).

5 According to the selected light source type, set the following parameters.

When you selected Parallel

Knob	Parameter	Adjustment	Setting values
1	Longitude	Longitude	–8.00 to +8.00 a)
2	Latitude	Latitude	–8.00 to +8.00

a) Minus moves counterclockwise, plus moves clockwise.

When you selected Point

• SD format

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–6.00 to +6.00 a)
2	Y	Movement in Y-axis direction	–6.00 to +6.00 b)
3	Z	Movement in Z-axis direction	–6.00 to +6.00 c)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Minus moves forward, plus moves deeper.

• HD format

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–24.00 to +24.00 a)
2	Y	Movement in Y-axis direction	–24.00 to +24.00 b)
3	Z	Movement in Z-axis direction	–24.00 to +24.00 c)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Minus moves forward, plus moves deeper.

When you selected Line

• SD format

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–6.00 to +6.00 a)
2	Y	Movement in Y-axis direction	–6.00 to +6.00 b)
3	Z	Movement in Z-axis direction	–6.00 to +6.00 c)
4	Longitude	Longitude	–8.00 to +8.00 d)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Minus moves forward, plus moves deeper.
d) Minus moves counterclockwise, plus moves clockwise.

• HD format

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–24.00 to +24.00 a)
2	Y	Movement in Y-axis direction	–24.00 to +24.00 b)
3	Z	Movement in Z-axis direction	–24.00 to +24.00 c)
4	Longitude	Longitude	–8.00 to +8.00 d)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Minus moves forward, plus moves deeper.
d) Minus moves counterclockwise, plus moves clockwise.

6 In the <Axis Select> group, select the coordinate space in which to place the light source.

Source: Place the light source in the source coordinate space. The spotlight moves when the image moves.
Target: Place the light source in the target coordinate space. The spotlight does not move, even when the image moves.

For details of the coordinate space in which to place the light source, see "Linking and unlinking image and spotlight" (page 324).

To set a test sphere

1 In the Light 1 menu, press [Test Sphere], turning it on.

A test sphere effect appears on the surface of the image.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
5	Amp	Distance of light	–100.00 to +100.00 a)

a) Light appears from Z direction. At –100.00 the light goes deepest, at +100.00 the whole image is lit like a flat effect.

To select the lighted area

In the <Area Select> group, select one of the following.
FRGD: The light strikes the image foreground.
BKGD: The light strikes the image background.
Both: The light strikes both foreground and background.

For more information about the lighted area, see "Selecting the lighted area" (page 324).

Notes

• If you select [Multiply] in the <Fill Blending Mode> group of the Light Color Adjust menu *(see page 330)*,

the light effect is not applied to the background, even if you select BKGD or Both.

- If the setting of [Brilliancy] in the <Fill Source> group of the Light Color Adjust menu *(see page 330)* is 100.00, the light effect is not applied to the background, even if you select BKGD or Both.
- When the global effect Combiner is set to Mix or Depth, the light effect is not applied to the background, even if you select BKGD or Both.

To select Surface Flat

Press [Surface Flat], turning it on.
If you have selected anything other than Flat in the <Surface Select> group of the Spot Lighting menu, the part corresponding only to the surface being struck by the currently set light from the light source is shown in the same way as if Flat had been selected.

To set the shape of the light

1 Press [Shape], turning it on.

2 Set the following parameters.

SD format

Knob	Parameter	Adjustment	Setting values
1	Shape Ptn	Shape pattern	1 to 2 a)
2	Size	Shape size	0.00 to 6.00
3	Deform	Amount of shape deformation	0.00 to 100.00 b)
4	Soft	Softness of shape pattern	0.00 to 100.00
5	Angle	Angle of shape pattern rotation	–8.00 to +8.00 c)

a) For more information about the shape patterns, see "Shape Patterns" *(page 393)* in the Appendix.
b) 0 is a round shape, and 100 is the shape itself. 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.

HD format

Knob	Parameter	Adjustment	Setting values
1	Shape Ptn	Shape pattern	1 to 2 a)
2	Size	Shape size	0.00 to 24.00
3	Deform	Amount of shape deformation	0.00 to 100.00 b)
4	Soft	Softness of shape pattern	0.00 to 100.00
5	Angle	Angle of shape pattern rotation	–8.00 to +8.00 c)

a) For more information about the shape patterns, see "Shape Patterns" *(page 393)* in the Appendix.
b) 0 is a round shape, and 100 is the shape itself. 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 Press [Shape Speed], turning it on.

The display on knob 5 that was visible when [Shape] was selected changes.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
5	Speed	Rotation direction and speed	–100.00 to +100.00 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

Notes

If you select Parallel or Whole *(see page 327)* in the <Spot Mode> group and shaping is disabled, the Ring parameter cannot be set.

1 Press [Ring], turning it on.

2 Set the following parameter.

SD format

Knob	Parameter	Adjustment	Setting values
1	Offset	Offset from center position (radius)	–6.00 to +6.00
2	Radius	Radius of ring	0.00 to 6.00
3	Angle	Rotation angle of ring	–8.00 to +8.00 a)

a) −1.00 is one rotation in the counterclockwise direction and +1.00 is one rotation in the clockwise direction.

Notes

There is no Radius setting when Line is selected in the <Spot Mode> group.

HD format

Knob	Parameter	Adjustment	Setting values
1	Offset	Offset from center position (radius)	–24.00 to +24.00
2	Radius	Radius of ring	0.00 to 6.00
3	Angle	Rotation angle of ring	–8.00 to +8.00 a)

a) −1.00 is one rotation in the counterclockwise direction and +1.00 is one rotation in the clockwise direction.

Notes

There is no Radius setting when Line is selected in the <Spot Mode> group.

To rotate the ring

1 Press [Ring Speed], turning it on.

The display on knob 3 that was visible when [Ring] was selected changes.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
3	Speed	Rotation speed and direction	−100.00 to +100.00 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 lighted area

Press [Light Invert], turning it on.

To add color to the light source

1 In the Light 1 menu, press [Light Color Adjust].

The Light Color Adjust menu appears.

2 In the <Fill Blending Mode> group, select how the light and image should be blended.

Mix: Light as if reflected from a mirror.
Multiply: Light as if reflected from a dull surface (diffuse reflection).

3 If you selected Mix, select the fill color in the <Fill Source> group.

Flat Color: A monochrome matte.
Hue Rotation: Color matte with a color that gradually varies.

4 According to the selection, set the following parameters.

When you selected Flat Color

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00
4	Brilliancy	Brilliance of surface struck by light	0.00 to 100.00 a)

a) 100.00: The image beneath the light shines through.

When you selected Hue Rotation

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Speed	Speed at which hue changes	−12.00 to +12.00 a)
4	Brilliancy	Brilliance of surface struck by light	0.00 to 100.00 b)

a) −12.00 is a 360-degree rotation every second in the counterclockwise direction. +12.00 is a 360-degree rotation every second in the clockwise direction.
b) 100.00: The image beneath the light shines through.

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, press [Copy/Swap].

The Copy/Swap menu appears.
Two lists appear in the status area. The list on the left shows the copy or swap sources, and the list on the right shows the copy or swap destinations.

2 Do one of the following to select the target data.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Left No	Copy or swap source data	1 to 3
2	Right No	Copy or swap destination data	1 to 3

3 Press [Copy] to copy, or [Swap] to swap.

To undo a copy or swap

Press [Undo]. Settings are returned to their values before the copy or swap.

Applying Special Effects (Other Effects)

Background Settings

Adds a color or inputs an external signal to the background of the image.

Notes

Signal selection for this purpose is not supported on the MVE-8000A.

Applying the Background effect

1 In the DME menu, select VF6 'Input/Output' and HF1 'Bkgd.'

The Bkgd menu appears.

2 Press [Bkgd], turning it on.

The Background effect is enabled. Only if Flat Color is selected in the <Bkgd Fill> group, you can adjust the parameters with the knobs.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Selecting the signal to insert in the background

When using the MVE-9000, you can select the signal to insert in the background.
With [Bkgd] set on, use the following procedure.

1 In the <Bkgd Fill> group, select one of the following.

Flat Color: single color
Mix Color: mix color signal set in the Color Mix menu *(see page 289)*
Ext Video: an external video signal input to the Ext IN connector

Notes

- "Mix Color" or "Ext Video" can only be applied to one of the background, flex shadow *(see page 283)*, trail *(see page 318)*, and wind *(see page 322)* effects. If you select "Mix Color" or "Ext Video" in one of these settings, a selection of "Mix Color" or "Ext Video" in any of the other effects is disabled, and "Flat Color" is selected in its place.
- When executing combining four channels of DME images, "Mix Color" and "Ext Video" cannot be selected.

2 Only if Flat Color is selected in step **1**, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Separate Sides Settings

Applies separate video signals and key signals to the front and back of the image.

Applying the Separate Sides effect

1 In the DME menu, select VF6 'Input/Output' and HF2 'Video/Key.'

The Video/Key menu appears.

2 Press [Separate Side], turning it on.

The Separate Sides effect 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 with 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, specifies whether to handle input video from the switcher as shaped video (key processed 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, then the shaped video function is enabled.
- When using the dedicated interface or SDI interface, with [PROC KEY] selected in the output destination buttons, since the input video signal to the first channel is always set to the key processed signal on the switcher, the shaped video setting is always on. For the second and

third channel signals, this will be turned off. For the output video, this is always on.

Switching shaped video on or off

1 In the DME menu, select VF6 'Input/Output' and HF2 'Video/Key.'

The Video/Key menu appears.

2 In the <Shaped Video> group, press each of the following buttons to switch it on or off.

Front Input: When this is on, the front image of the input video signal is treated as shaped video.
Back Input: When this is on, the back image of the input video signal is treated as shaped video.
Output: When this is on, the output video signal is treated as shaped video.

About on and off for shaped video input (Front Input/Back Input)

Switch shaped video on and off according to the input video signals.
For example, switch the shaped video input on when the input signal is a key processed image such as computer graphics.
Switch the shaped video input off when the input signal is not key processed, for example when a video signal taken with a camera is cut out with a title or other key signal.

About on and off for shaped video output

Switch the shaped video output on and off to match the on and off state of the switcher clean video mode.
Also, when the shaped video output is on, it is recommended that the switcher key type be set to linear key.

About the relationship between shaped video output and effects

When the shaped video output is off, the video signal before key processing is output. According to the selected effect, the following states may result.
(a) The output video signal is affected by the key signal.
(b) When key processing is done, a different image may appear in the parts which are removed.
(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) When key processing is done, a different image may appear in the parts which are removed

The following states result, depending on the selected effect.
Removal with the key can be checked by turning the background on.

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 knob (Decay), but the afterimage portion of the video signal does not disappear until Trail Eraser (KF Strobe Eraser) is turned on or the effect is turned off.
Lighting: The Lighting effect is applied to the whole picture.
Spotlighting: If 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 turning the background on.

Crop: The Copy 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 data. The video signal does not change.
Key Density: The key signal density changes. The video signal does not change.

Invert Settings

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 In the DME menu, select VF6 'Input/Output' and HF2 'Video/Key.'

The Video/Key menu appears.

2 In the <Front> group (to invert front signals) or the <Back> (to invert back signals), press the following buttons, turning them on.

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 In the DME menu, select VF6 'Input/Output' and HF2 'Video/Key.'

The Video/Key menu appears.

2 Press [Key Density], turning it on.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Key Density	Key density	0.00 to 100.00

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 signals

Notes

When the shaped video setting *(see page 331)* is on, it is not possible to select the key source. It is fixed as "Ext Key" as listed in the following.

1 In the DME menu, select VF6 'Input/Output' and HF2 'Video/Key.'

The Video/Key menu appears.

2 In the <Front Key> group or <Back Key> group respectively, press one of the following, turning it on.

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 in step **2**, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for key signal generation	–7.31 to +109.59
2	Gain	Key sensitivity	–100.00 to +100.00

Notes

- The Ext Key and Lum Key in the <Front Key> group share clip and gain settings. Similarly, Ext Key and Lum Key in the <Back Key> group also share clip and gain settings.
- The Ext Key parameter setting is only enabled when the shaped video setting is off.

Interpolation Settings

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, and select the method used to show the picture reduced or expanded.
Further, you can apply an anti-moire filter to reduce the moire patterns created by interpolation.

Notes

- Interpolation processing is possible for the following signal formats and DME systems.
  - MVE-8000A: 480i/59.94, 576i/50
  - MVE-9000 and MKS-7470X/7471X: 480i/59.94, 576i/50, 1080i/59.94, 1080i/50
- The anti-moire filter is only effective when the MVE-8000A is used in an HD system.

Selecting an interpolation method for input video signals

1 In the DME menu, select VF6 'Input/Output' and HF3 'Process.'

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 moving video.
Frame: Do interpolation in frame units. This gives higher image precision, suitable for still pictures.

3 When you select Adaptive Y/C or Adaptive Y in step **2**, set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mode	Degree of motion detection	1 to 4

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 moving video.
Frame: Do interpolation in frame units. This gives higher image precision, suitable for still pictures.

5 When you select Adaptive in step **4**, set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mode	Degree of motion detection	1 to 4

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 show the picture reduced or expanded.

Mode1 (standard): Even when the picture is reduced, add compensation so that it can be seen clearly.
Mode2 (soft): Suppress aliasing when expanding or reducing the picture.
Mode3 (sharp): Do not suppress aliasing when expanding or reducing the picture.

Applying the anti-moire filter

You can reduce the moire patterns created by interpolation when an image is enlarged, compressed, or rotated.

Notes

This function is effective only when the HD signal format is used on the MVE-8000A.

1 In the DME menu, select VF6 'Input/Output' and HF3 'Process.'

The Process menu appears.

2 Press [Anti Moire Filter], turning it on.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Anti Moire Filter	Amount of moire reduction	1 to 8

Corner Pinning Settings

Notes

When the Brick effect is enabled, the Corner Pinning function cannot be used.

Setting the Foreground Corner Pinning positions

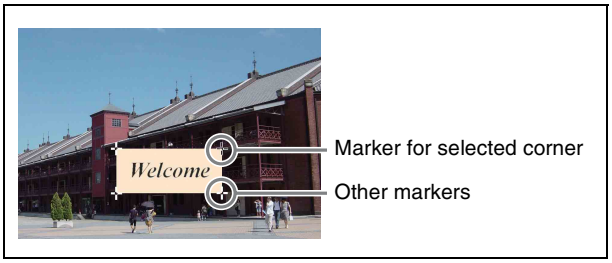
1 In the DME menu, select VF4 'Non Linear/Corner Pin', HF2 'Corner Pinning.'

The Corner Pinning menu appears.

2 Set [Corner Pinning] to On.

3 Set [Corner Marker] to 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 corner to operate on.

Top Left: Top left
Top Right: Top right
Bottom Left: Bottom left
Bottom Right: Bottom right
All: All four corners

5 Turn the knobs to adjust the position of the corner selected in step **4**.

The parameter setting ranges depend on the system's selected signal format (SD/HD) and aspect ratio (4:3/16:9) combination, as follows.

4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Pos X	Movement in x-axis direction	–8.00 to +8.00 (SD) a) –24.00 to +24.00 (HD) a)
2	Pos Y	Movement in y-axis direction	–6.00 to +6.00 (SD) a) –18.00 to +18.00 (HD) a)

a) When the selection for operation is "All," the Top Left value appears, and the knobs move all four corners correspondingly.

16:9 mode

Knob	Parameter	Adjustment	Setting values
1	Pos X	Movement in x-axis direction	–8.00 to +8.00 (SD) a) –32.00 to +32.00 (HD) a)
2	Pos Y	Movement in y-axis direction	–4.50 to +4.50 (SD) a) –18.00 to +18.00 (HD) a)

a) When the selection for operation is "All," the Top Left value appears, and the knobs move all four corners correspondingly.

Resetting the corner positions

In the Corner Pinning menu, press [Reset Corner].

Selecting the area used for pinning

When the foreground is cropped, press [Crop Link] to select either of the following.
On: Use the area of the cropped image for positioning
Off: Use the area of the entire image, including the part hidden by cropping (shaded in the diagram below) for positioning

Area positioned by pinning when Crop Link is On

Area positioned by pinning when Crop Link is Off

(The bold frame shows the area used for positioning.)

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.

Notes

This setting is not saved in a key frame or snapshot.

1 In the Corner Pinning menu, set [Video Through] to On.

2 Turn the knob to adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
4	Density	Image density	0.00 to 100.00

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 Corner Pinning menu, press [Zoom Enable], turning it On.

2 Turn the knob to adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
5	Zoom	Degree of zooming in on the corners	1.00 to 16.00

Zoom Off

Zoom On

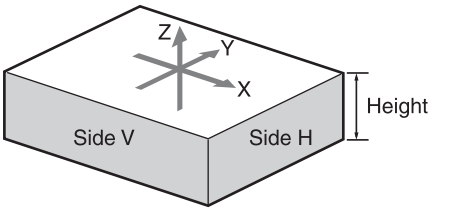
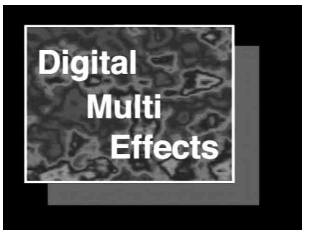
Global Effect Operations

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.

Notes

On the MVE-8000A, when the signal format is 1080P, of the following effects, three or more channel combiner and brick effects cannot be used.

Name	Effect/Image
Combiner	Automatically combines the selected images when multiple channels are selected on one keyer or for one transition.
Brick	Creates a rectangular parallelepiped from 3 successive channels. 
Shadow	Gives the image a shadow. 

Operations Common to All Global Effects

In this section, explanations of the operating procedures for individual global effects begin with selections from VF1 ‘Ch1 - Ch4’ in the Global Effect menu. The following are common operations that you must do prior to selecting from this menu.

1 In the device control block, select the target DME channel.

2 In the menu control block, press the top menu selection button [GLB EFF], then select VF1 ‘Ch1 - Ch4.’

The Global Effect >Ch1 - Ch4 menu appears.

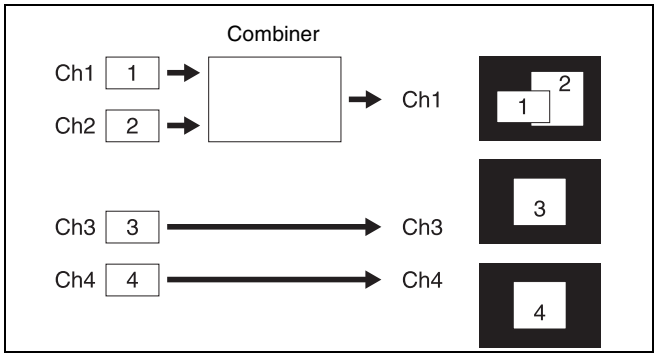
Combiner Settings

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 also control the way in which the combination is carried out, as a mix or an overlap with priority set automatically. For a mix, you can control the relative amounts of each channel.
Images can also be crossed in three dimensions.

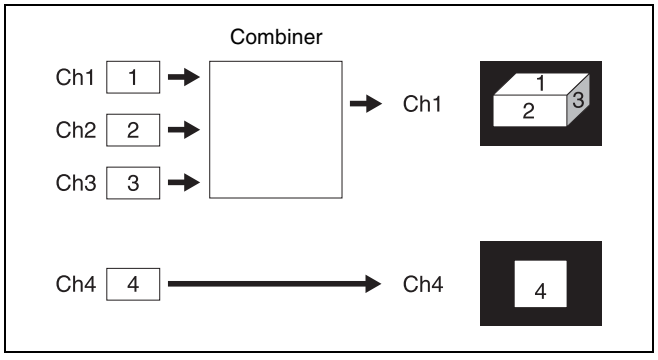
Notes

Three-dimensional image crossing is not supported on the MVE-8000A.

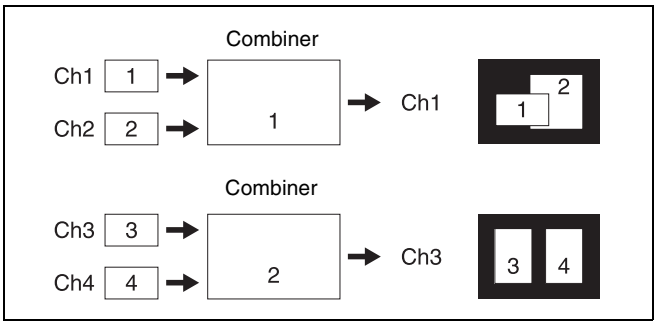
Combination of channel 1 (Ch1) and channel 2 (Ch2)



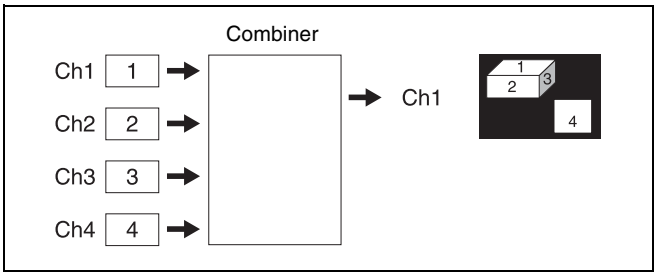
Combination of Ch1, Ch2, and Ch3



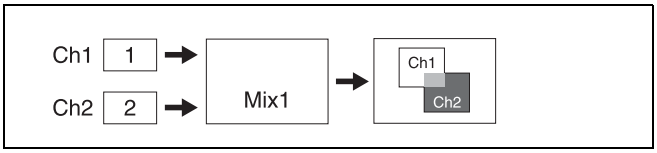
Combination of Ch1 and Ch2 / combination of Ch3 and Ch4



Combination of Ch1, Ch2, Ch3, and Ch4



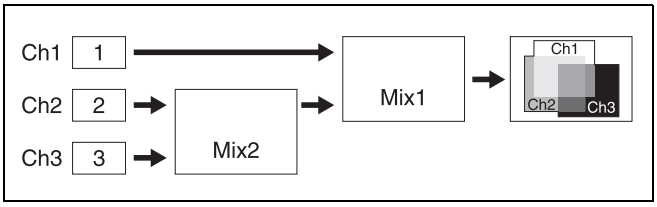
Mixing Ch1 and Ch2



If the Mix1 setting is 70, the proportion of the channels in the mixed portion in the previous illustration is as shown in the following table.

Combination	Indication in figure	Ch1	Ch2
Ch1 and Ch2		30%	70%

Mixing Ch1, Ch2, and Ch3

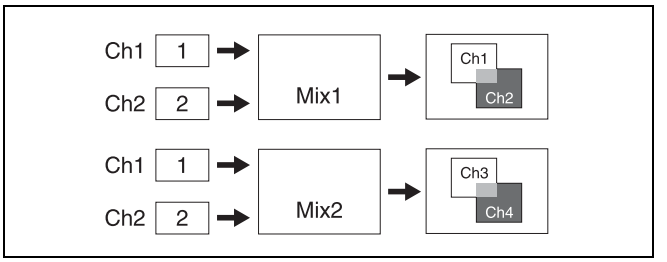


If the Mix1 setting is 70 and the Mix2 setting is 40, the proportions of the channels in the mixed portions in the previous illustration are as shown in the following table.

Combination	Indication in figure	Ch1	Ch2	Ch3
Ch1 and Ch2		30%	70%	–
Ch2 and Ch3		–	60%	40%
Ch1 and Ch3		30%	–	70%

Combination	Indication in figure	Ch1	Ch2	Ch3
Ch1, Ch2, and Ch3		30%	42%	28%

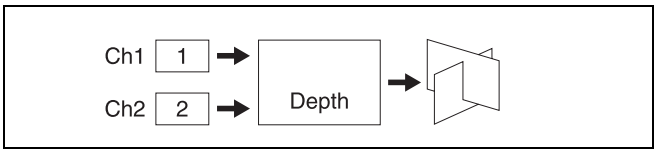
Pairwise mixing of Ch1 and Ch2, and Ch3 and Ch4



If the Mix1 setting is 70 and the Mix2 setting is 40, the proportions of the channels in the mixed portions in the previous illustration are as shown in the following table.

Combination	Indication in figure	Ch1	Ch2	Ch3	Ch4
Ch1 and Ch2		30%	70%	–	–
Ch3 and Ch4		–	–	60%	40%

Ch1 crossed with Ch2



Setting the combiners

The setting menu differs according to the combiner usage status.
This section shows the cases of “Ch1+Ch2+Ch3” and “Ch1+Ch2, Ch3+Ch4” as examples.

For details of operating procedures when using an SDI interface, see “Procedure for combine operation when using an SDI interface” (page 338).

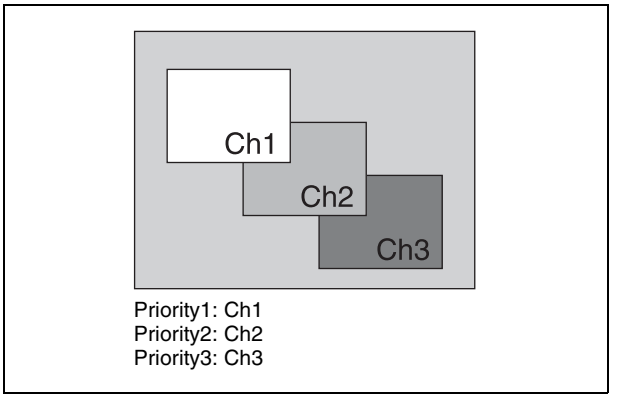
1 In the Global Effect >Ch1- Ch4 menu, select HF1 ‘Combiner Priority.’

The Combiner Priority menu appears.

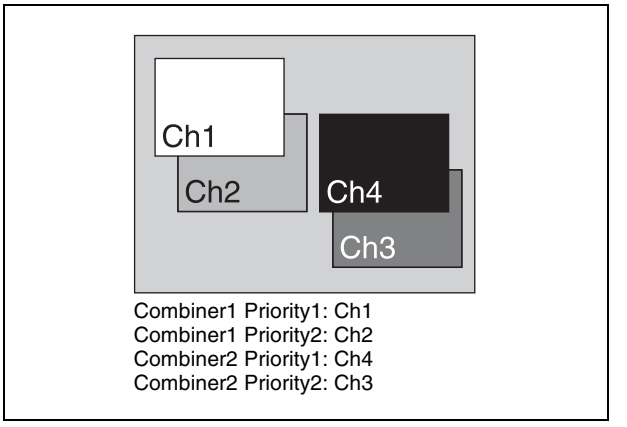
2 If [Mix], [Auto] or [Depth] is on, turn it off.

3 Set the overlap priority for “Ch1+Ch2+Ch3” or “Ch1+Ch2, Ch3+Ch4” as follows.

For case “Ch1+Ch2+Ch3”
Under <Priority1> to <Priority3>, 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 case “Ch1+Ch2, Ch3+Ch4”
Under <Combiner 1 Priority 1> and <Combiner 1 Priority 2>, press [Ch1] and [Ch2] respectively, and under <Combiner 2 Priority 1> and <Combiner 2 Priority 2>, press [Ch4] and [Ch3] respectively, to set the respective priorities for overlaying the images.



Procedure for combine operation when using an SDI interface

Use the following procedure only when the DME with an SDI interface.

Notes

It is not possible to select channels with buttons in the key control block.
In the following, the example given is that channels 2 and 3 are combined, then channels 1+2 and channels 3+4 are combined, but other combinations are also possible.

1 In the Global Effect menu, select VF1 ‘Ch1-Ch4’ and HF7 ‘Combine Gp Select.’

The Combine Gp Select menu appears.

2 In the <Combine Gp Select> group, select the channel combination.

- To combine channels 2 and 3, press [Ch2+Ch3], turning it on.
- To combine the previously combined combinations of channels 1 and 2, and channels 3 and 4, press [Ch1+Ch2] and [Ch3+Ch4], turning them on.

Notes

The only two buttons that can be selected simultaneously are the combination of [Ch1+Ch2] and [Ch3+Ch4].

The selected channels are combined.

To cancel a combine

When for example [Ch2+Ch3] is on, pressing [Ch2+Ch3] once more turns it off. Alternatively, pressing a different combination button to select it cancels the combine selection for the current combination.

Mixing the images of up to four consecutive channels

1 In the Combiner Priority menu, press [Mix], turning it on.

2 Adjust the following parameters.

For case "Ch1+Ch2"

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix degree	0.00 to 100.00 a)

a) See "Mixing Ch1 and Ch2" *(page 337)*.

For case "Ch1+Ch2+Ch3"

Knob	Parameter	Adjustment	Setting values
1	Mix1	Mix degree for mix of channel 1 with result of Mix2	0.00 to 100.00 a)
2	Mix2	Mix degree for channels 2 and 3	0.00 to 100.00 a)

a) See "Mixing Ch1, Ch2, and Ch3" *(page 337)*.

For case "Ch1+Ch2+Ch3+Ch4"

Knobs 1 and 2 set the same parameters as "For case 'Ch1+Ch2+Ch3'," respectively. Knob 3 is additionally effective, which sets the parameter Mix3 (in the same setting value range as with knobs 1 and 2).

Mixing pairwise the images of channels 1 and 2, and channels 3 and 4

1 In the Combiner Priority menu, press [Combiner1 Mix], turning it on.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mix1	Mix degree for channels 1 and 2	0.00 to 100.00 a)

a) See "Pairwise mixing of Ch1 and Ch2, and Ch3 and Ch4" *(page 338)*.

3 Press [Combiner2 Mix], turning it on.

4 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mix2	Mix degree for channels 2 and 3	0.00 to 100.00 a)

a) See "Pairwise mixing of Ch1 and Ch2, and Ch3 and Ch4" *(page 338)*.

Automatically setting the priority of overlapping images

To set the system so that the priority of overlapping images is automatically determined by their position on the z-axis, in the Combiner Priority menu, press [Auto], turning it on.

Notes

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

Notes

The three-dimensional crossing function is not supported on the MVE-8000A.

1 In the Combiner Priority menu, press [Depth], turning it on.

2 Set the following parameters.

For case "Ch1+Ch2"

Knob	Parameter	Adjustment	Setting values
1	Soft	Softness of edges of crossed section	0.00 to 100.00

For case "Ch1+Ch2+Ch3"

Knob	Parameter	Adjustment	Setting values
1	Soft1	Softness of edges of channel 1 and channel 2 crossed section	0.00 to 100.00
2	Soft2	Softness of edges of channel 2 and channel 3 crossed section	0.00 to 100.00

For case "Ch1+Ch2+Ch3+Ch4"
Knobs 1 and 2 set the same parameters as "For case 'Ch1+Ch2+Ch3'," respectively. Knob 3 is additionally effective, which sets the parameter Soft3 (in the same setting value range as with knobs 1 and 2).

Crossing images from channels 1 and 2, and channels 3 and 4 in three dimensions

Notes

The three-dimensional crossing function is not supported on the MVE-8000A.

1 In the Combiner Priority menu, press [Combiner1 Depth], turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Soft1	Softness of edges of channel 1 and channel 2 crossed section	0.00 to 100.00

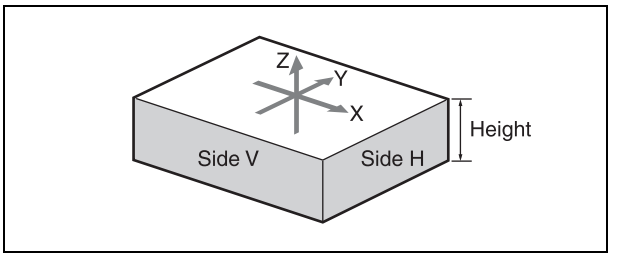
3 Press [Combiner2 Depth], turning it on.

4 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Soft2	Softness of edges of channel 3 and channel 4 crossed section	0.00 to 100.00

Brick Settings

Brick allows you to create a rectangular parallelepiped 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.

Applying the Brick effect

1 In the Global Effect >Ch1 - Ch4 menu, select HF2 'Brick.'

The Brick menu appears.

2 Press [Brick], turning it on.

The Brick effect is enabled, and a rectangular parallelepiped (brick) showing the images of three channels appears. You can use the knobs to adjust parameters for the height of the brick and the overlap between the three images.

Notes

- When the Brick effect is enabled, the z-axis position of the front image in the source coordinate frame is shifted by the amount of half the height. Therefore, the image is somewhat magnified.
- The flex shadow function cannot be enabled when Brick is enabled.

However, the flex shadow function is not supported on the MVE-8000A.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Height	Height of brick	0.00 to 8.00 [a] 0.00 to 32.00 [b]
2	Front Overlap	Front overlap	–100.00 to +100.00
3	Side H Overlap	Side H overlap	–100.00 to +100.00
4	Side V Overlap	Side V overlap	–100.00 to +100.00

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

4 Specify the way to insert the side images when the height is changed by pressing one of the following buttons in the <Side V> group or the <Side H> group.

Crop: Crop the parts that do not fit into the side without shrinking the picture. You can set the following parameters.
The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of left crop	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
2	V	Position of top crop	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
3	Rotation	Angle of rotation, when rotated around the Z-axis of the source space	0/90/180/270°

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of left crop	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
2	V	Position of top crop	–2.25 to +2.25(SD) –9.00 to +9.00 (HD)
3	Rotation	Angle of rotation, when rotated around the Z-axis of the source space	0/90/180/270°

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 compressed. You can set the following parameters.
The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top crop	–2.83 to +3.00 (SD) –8.50 to +9.00 (HD)
2	Left	Position of left crop	–4.00 to +3.83 (SD) –12.00 to +11.50 (HD)
3	Right	Position of right crop	–3.83 to +4.00 (SD) –11.50 to +12.00 (HD)
4	Bottom	Position of bottom crop	–3.00 to +2.83 (SD) –9.00 to +8.50 (HD)
5	Rotation	Angle of rotation, when rotated around the Z-axis of the source space	0/90/180/270°

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top crop	–2.12 to +2.25 (SD) –8.50 to +9.00 (HD)
2	Left	Position of left crop	–4.00 to +3.87 (SD) –16.00 to +15.50 (HD)
3	Right	Position of right crop	–3.87 to +4.00 (SD) –15.50 to +16.00 (HD)
4	Bottom	Position of bottom crop	–2.25 to +2.12 (SD) –9.00 to +8.50 (HD)
5	Rotation	Angle of rotation, when rotated around the Z-axis of the source space	0/90/180/270°

The part of the image defined by Top, Left, Right, and Bottom is magnified or shrunk to fit into Side V or Side H.

To invert the image in a side face

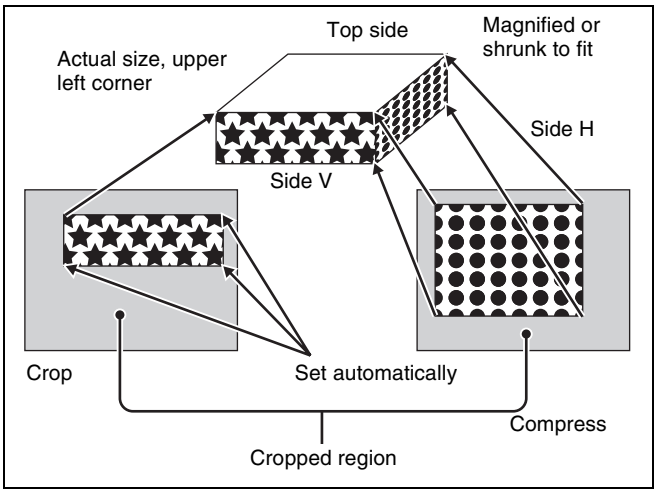
For example, to invert the image on the front of Side H in the <Side H Front> group, press the following buttons, turning them on.

Invert H: To invert horizontally.

Invert V: To invert vertically.

For the images on the other faces, 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

The 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.

Notes

When the Combiner function is off, the shadow effect cannot be used.

Applying the Drop Shadow effect

The Shadow menu allows you to apply the Drop Shadow effect. To access the Shadow menu, in the Global Effect >Ch1 - Ch4 menu select HF3 'Shadow.'
Depending on the selected combiner channels, the valid buttons differ 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+Ch 4	Valid	Valid	Valid	Valid	

Taking Ch1 Shadow as an example, the following explains the procedure for applying the Drop Shadow effect.

1 Press [Ch1 Shadow], turning it on.

The Drop Shadow effect is enabled, and channel 2 becomes the channel for the shadow to the image. You can adjust the position and density of the shadow with the knobs.

Notes

The flex shadow function cannot be enabled when Drop Shadow is enabled.
However, the flex shadow function is not supported on the MVE-8000A.

2 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal shadow position	–8.00 to +8.000 a) –32.00 to +32.000 b)
2	Position V	Vertical shadow position	–8.00 to +8.000 a) –32.00 to +32.000 b)
3	Density	Density of shadow	0.00 to 100.00

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

3 In the <Ch1 Shadow Source> group, select the shadow source signal.

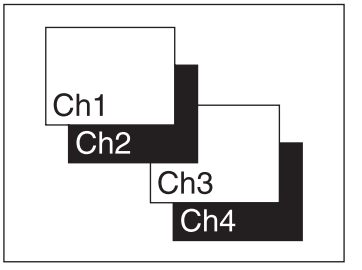
Video: Select Ch2 video input as the shadow.
Flat Color: Select a matte color as the shadow.

4 When you select Flat Color in step **3**, adjust the parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

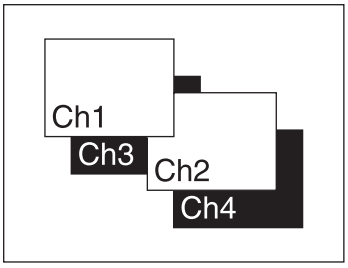
To combine the video images after applying a shadow

Use the Combiner function to select channel 1 + channel 2 and channel 3 + channel 4, then turn [Ch 1 Shadow] and [Ch 3 Shadow] on.



To apply a shadow after combining the video images

Use the Combiner function to select channel 1 + channel 2 + channel 3 + channel 4, then turn [Ch 1 + Ch 2 Shadow] on.



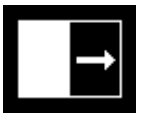
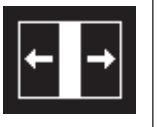
Appendix (Volume 1)

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.

Standard Wipes

1		2		3		4		5		6	
7		8		9		10		11		12	
13		14		15		16		17		18	
19		20		21		22		23		24	

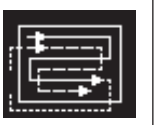
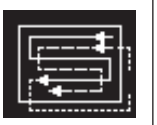
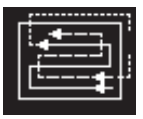
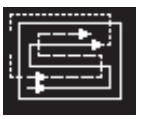
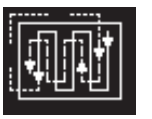
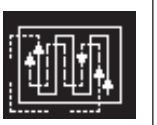
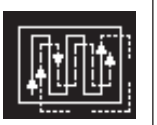
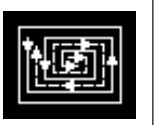
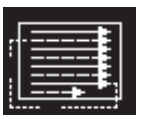
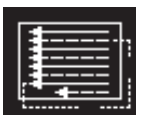
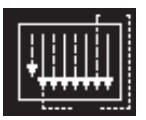
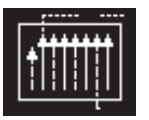
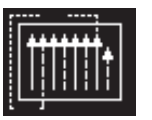
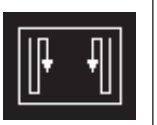
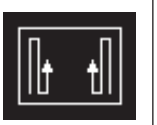
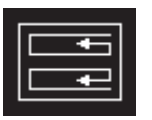
Enhanced Wipes

26		27		29		49		300		301	
302		303		304							

Rotary Wipes

100		101		102		103		104		105	
106		107		150		151		156		158	
160		162		516		518		604		606	
624		661									

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	

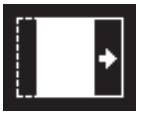
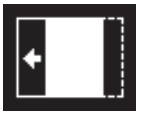
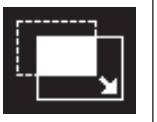
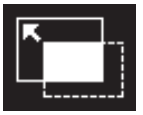
DME Wipe Pattern List

Notes

When 3M/E mode or 4M/E mode is selected on the MVS-7000X, there are cases in which utility bus 1 (U1) appears instead of utility bus 2 (U2) and utility bus 2 (U2) does not appear.

DME Wipe Patterns Available in One-Channel Mode

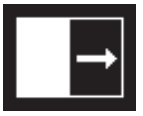
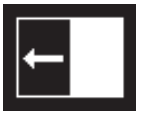
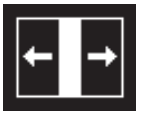
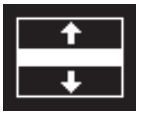
Slide

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									

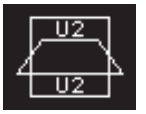
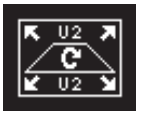
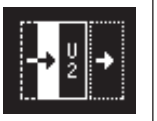
2D trans

1051		1052		1053		1054		1055		1056	
1057		1058		1061		1062		1063		1064	
1068											

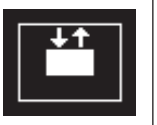
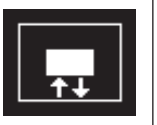
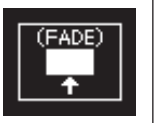
3D trans

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		1206	
1207		1208		1221		1222		1223		1224	

Picture-in-picture

1251	

Page turn

1301		1302		1303		1304		1305		1306	
1307		1308		1309		1310		1311		1312	
1313		1315		1316		1317		1318		1341	
1342		1343		1344		1345					

Page roll

1321		1322		1323		1324		1325		1326	
1327		1328		1329		1330		1331		1332	
1333		1335		1336		1337		1338		1346	
1347		1348		1349		1350					

Mirror

1355		1356		1357		1358	

Sphere

1365	

Character trail

1371		1372	

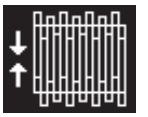
Wave

1378		1379	

Ripple

1381	

Split slide

1384		1385		1386		1387		1388		1389	

Sparkle

1391	1393	1394	1396	1398	1399

Mosaic

1701

Defocus

1702

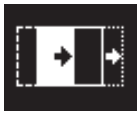
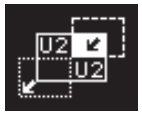
User programmable DME

The illustrations for patterns 1901 to 1999 show an effect register number or register name.

1901	• • •	1999

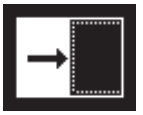
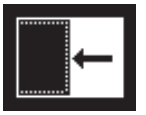
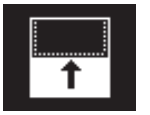
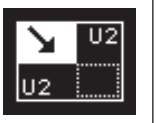
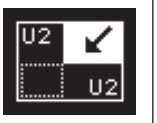
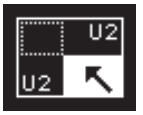
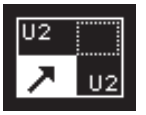
DME Wipe Patterns Available in Two-Channel Mode

Slide

2601	2602	2603	2604	2605	2606
					

2607	2608

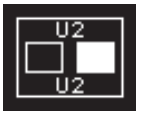
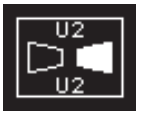
Squeeze

2621		2622		2623		2624		2625		2626	
2627		2628									

3D trans

2801		2802		2803		2804		2811		2812	
2813		2814									

Picture-in-picture

2651		2652	

Page turn

2701		2702		2703		2704		2705		2706	
2707		2708		2709		2710		2711		2712	
2713		2715		2716		2717		2718		2741	
2742		2743		2744		2745					

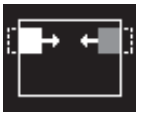
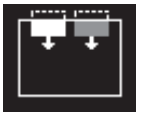
Page roll

2721		2722		2723		2724		2725		2726	
2727		2728		2729		2730		2731		2732	
2733		2735		2736		2737		2738		2746	
2747		2748		2749		2750					

Brick

2801		2802		2803		2804		2811		2812	
2813		2814									

Frame in-out

2851		2852		2853		2854		2861		2862	
2863		2864									

User programmable DME

The illustrations for patterns 2901 to 2999 show an effect register number or register name.

2901		• • •	2999	

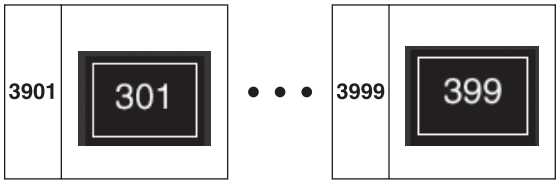
DME Wipe Patterns Available in Three-Channel Mode

Brick

3601	

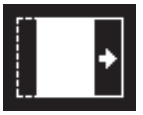
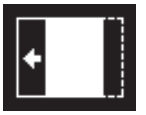
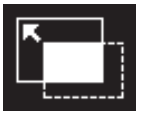
User programmable DME

The illustrations for patterns 3901 to 3999 show an effect register number or register name.

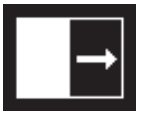
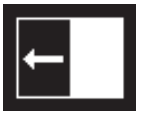
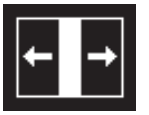
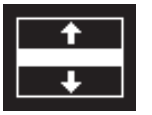

3901
301
3999
399

Resizer DME Wipe Pattern List

Slide

7001		7002		7003		7004		7005		7006	
7007		7008									

Squeeze

7021		7022		7023		7024		7025		7026	
7027		7028		7029		7030		7031			

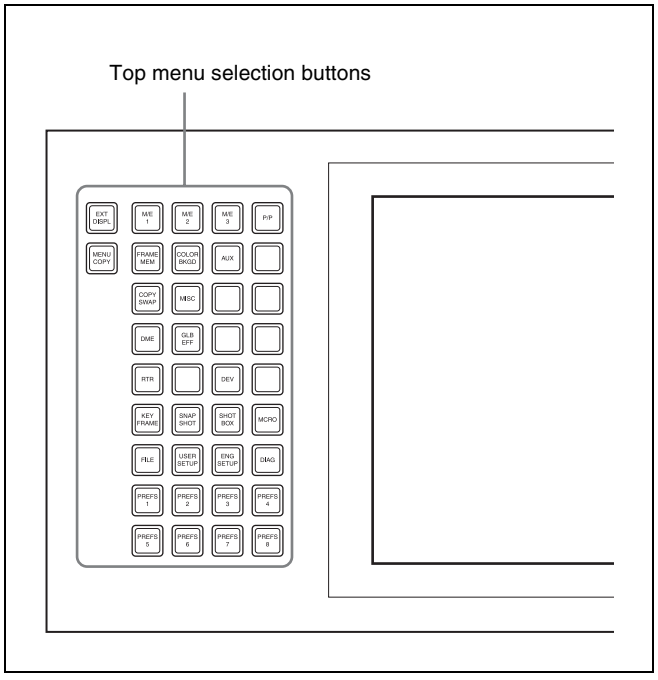
Frame in-out

7201		7202		7203		7204		7205		7206	
7207		7208		7221		7222		7223		7224	

Menu Tree

Recalling Menus

This section details the menu structure, and shows the top menu selection buttons in the menu control block which are used to access the menus.



Menu control block

Some menus can also be accessed by pressing other buttons twice in rapid succession.

For more details, see "Overview" (page 65).

Notes

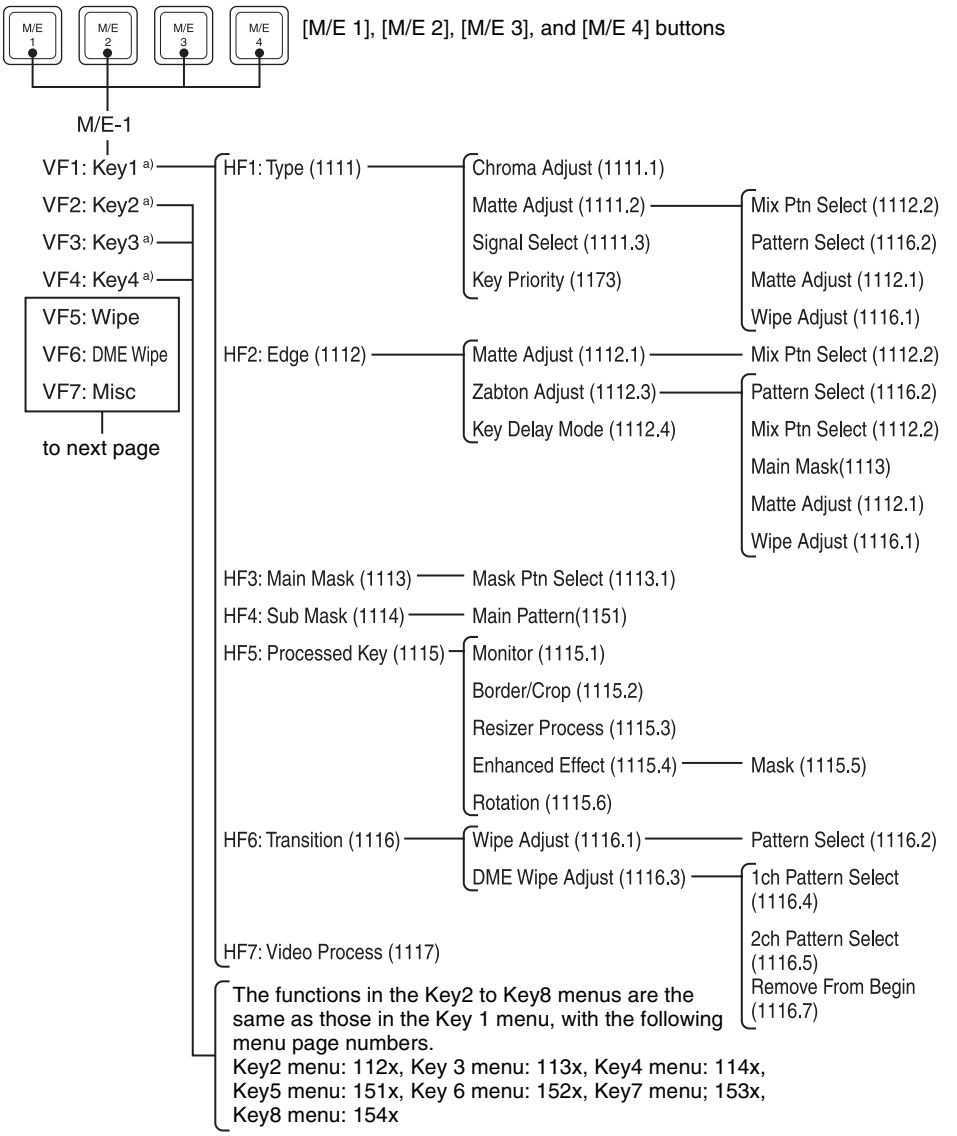
Some menus may not appear, depending on the model.

M/E-1 to M/E-4 Menus

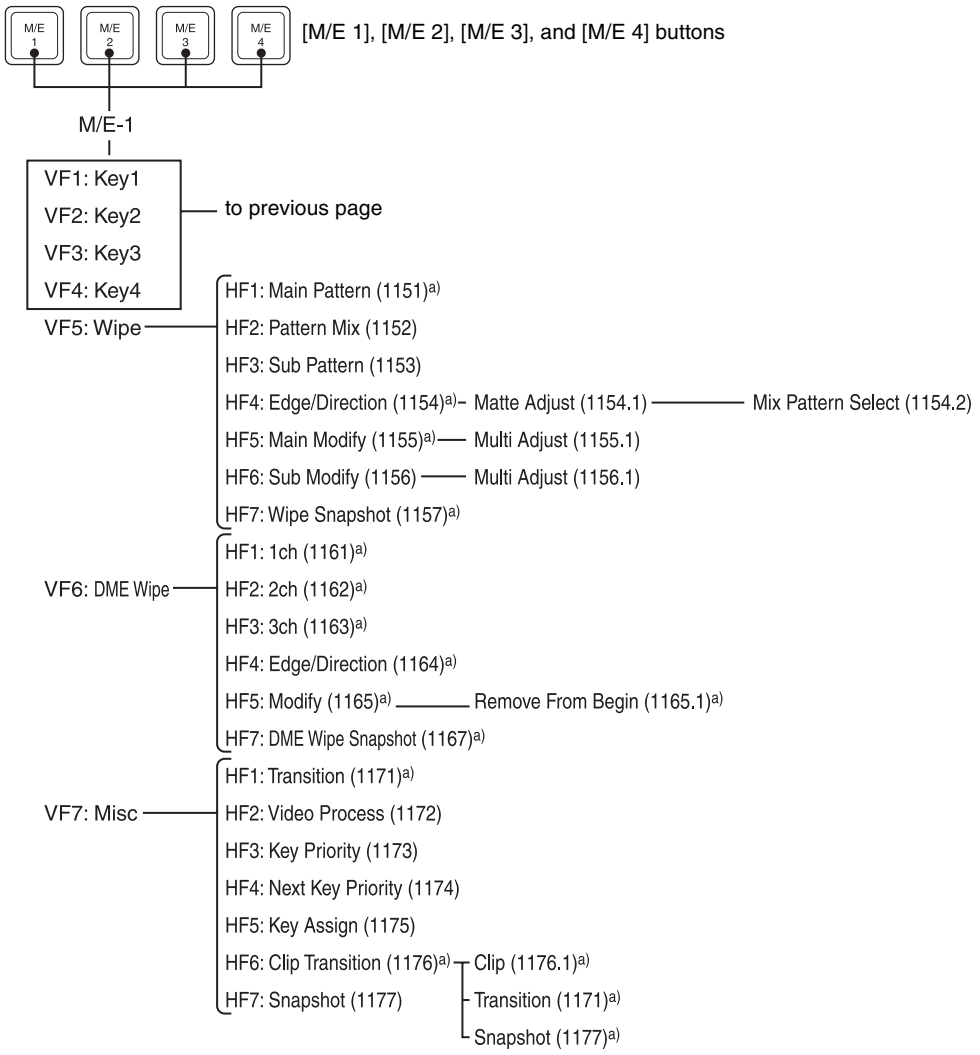
The functions in the M/E-1, M/E-2, M/E-3, and M/E-4 menus are the same, but the menu page numbers are distinguished as follows.

M/E-1 menus: 11xx, M/E-2 menus: 12xx,
M/E-3 menus: 13xx, M/E-4 menus: 81xx

In this section, the numbers for the M/E-1 menus are given as examples.

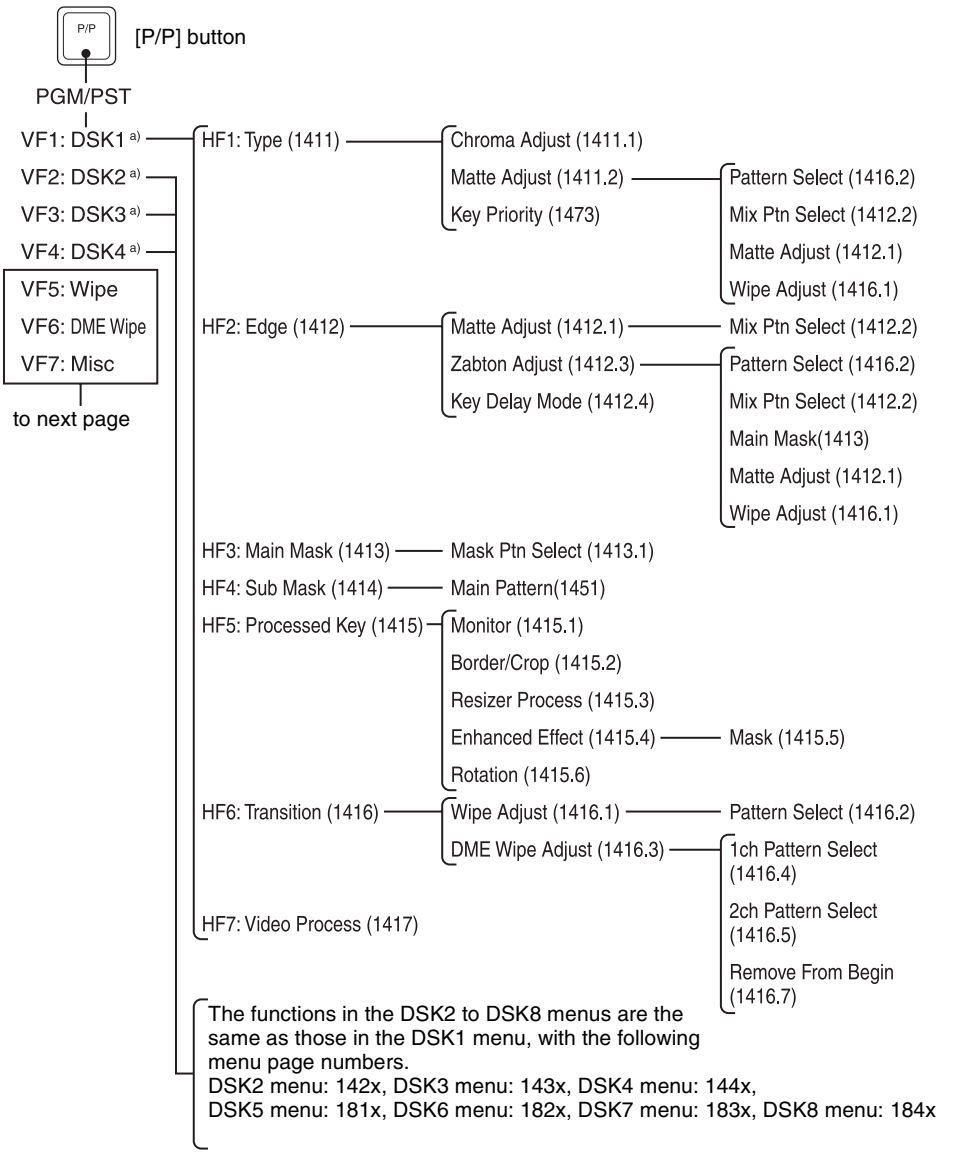


a) For VF1 to VF4, either of the groups Key1 to Key4 and Key5 to Key8 appears.

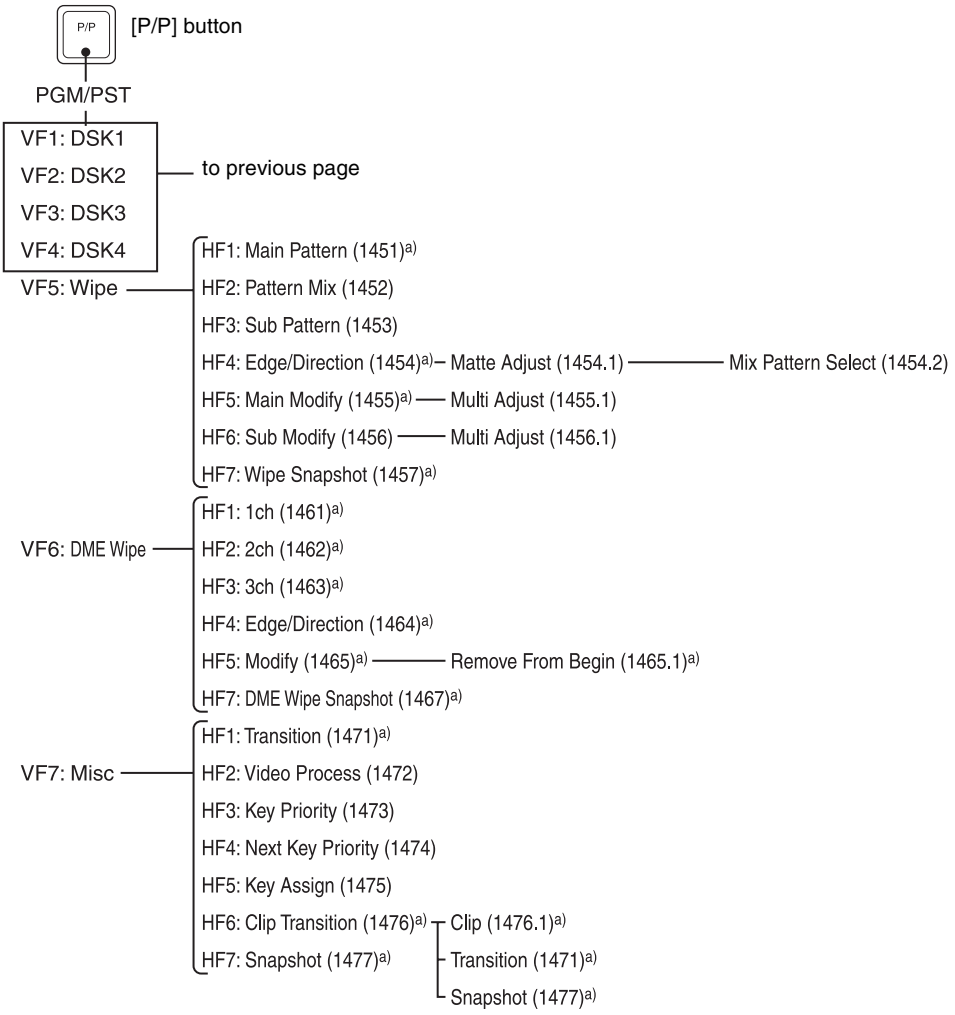


a) In Multi Program 2 mode, the menus for sub are displayed with 400 higher numbers than the above for main.

PGM/PST Menu

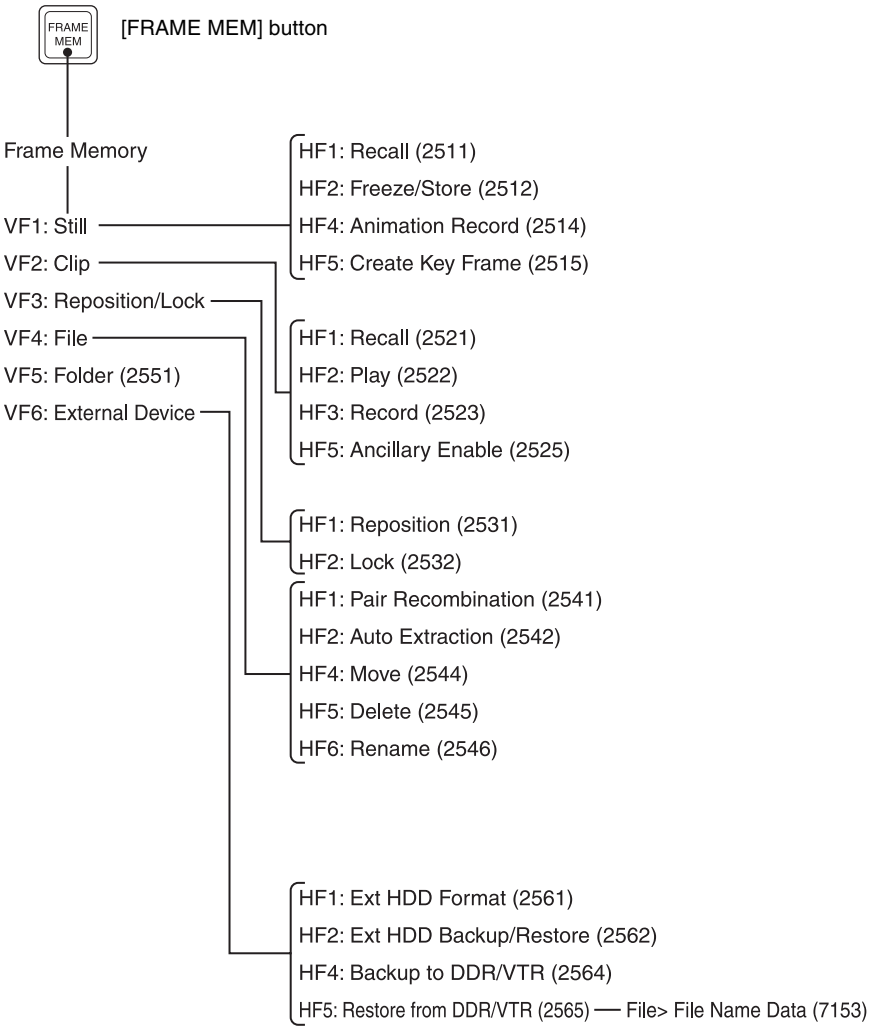


a) For VF1 to VF4, either of the groups Key1 to Key4 and Key5 to Key8 appears.

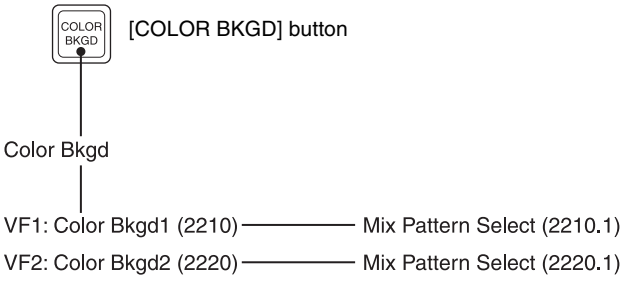


a) In Multi Program 2 mode, the menus for sub are displayed with 400 higher numbers than the aboves for main.

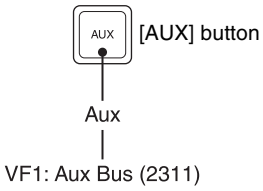
Frame Memory Menu



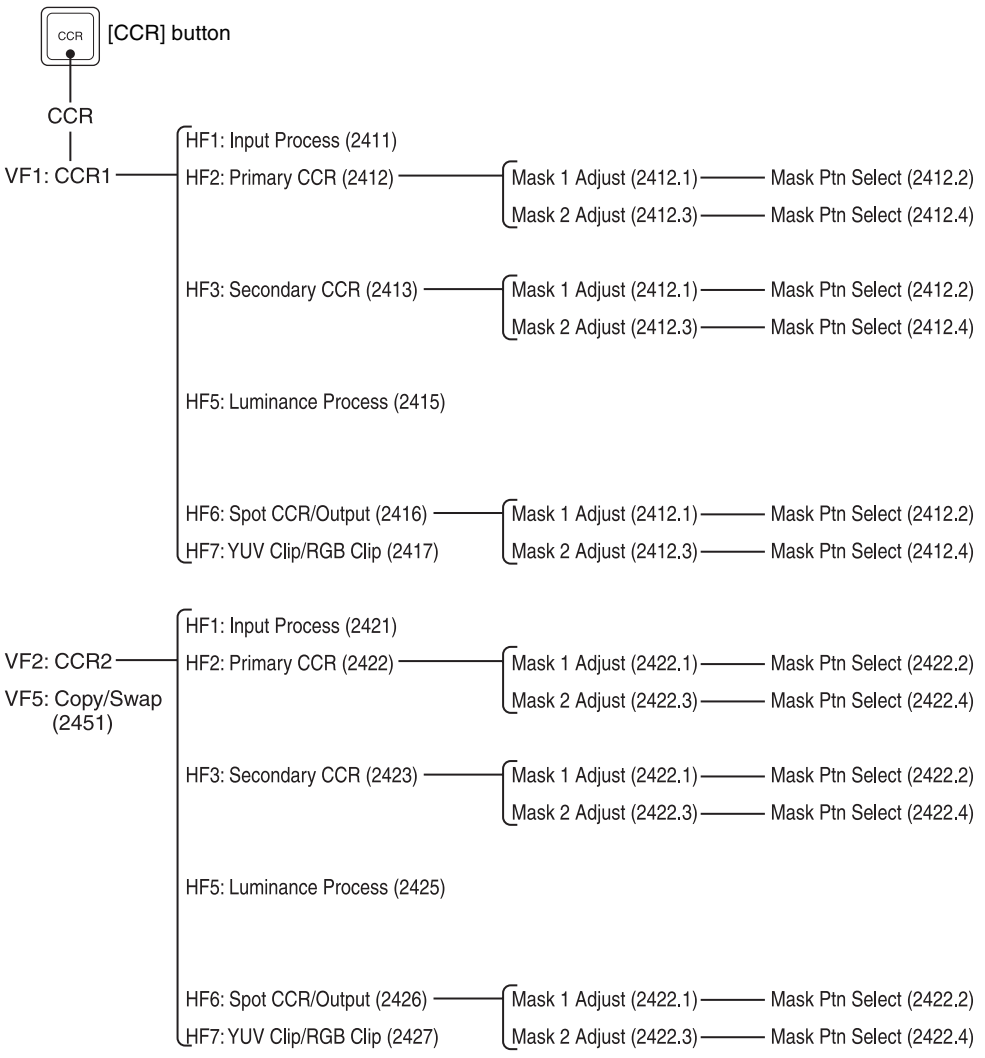
Color Bkgd Menu



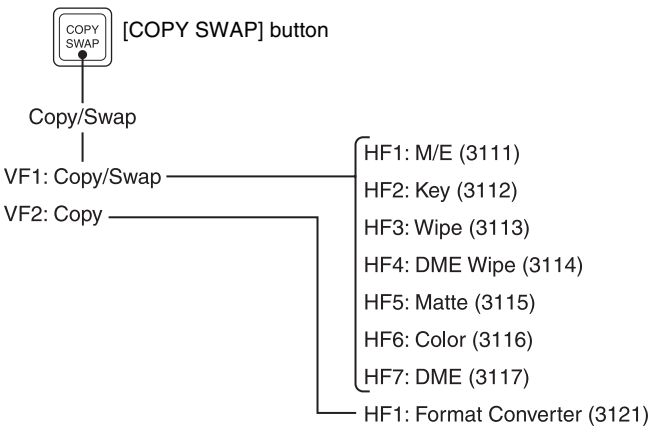
AUX Menu



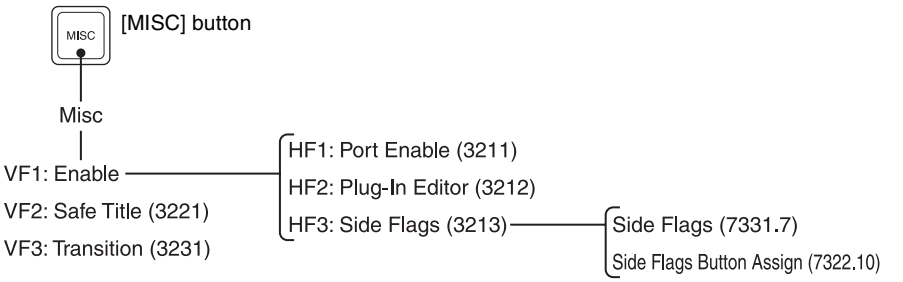
CCR Menu



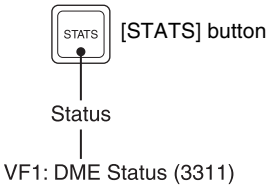
Copy/Swap Menu



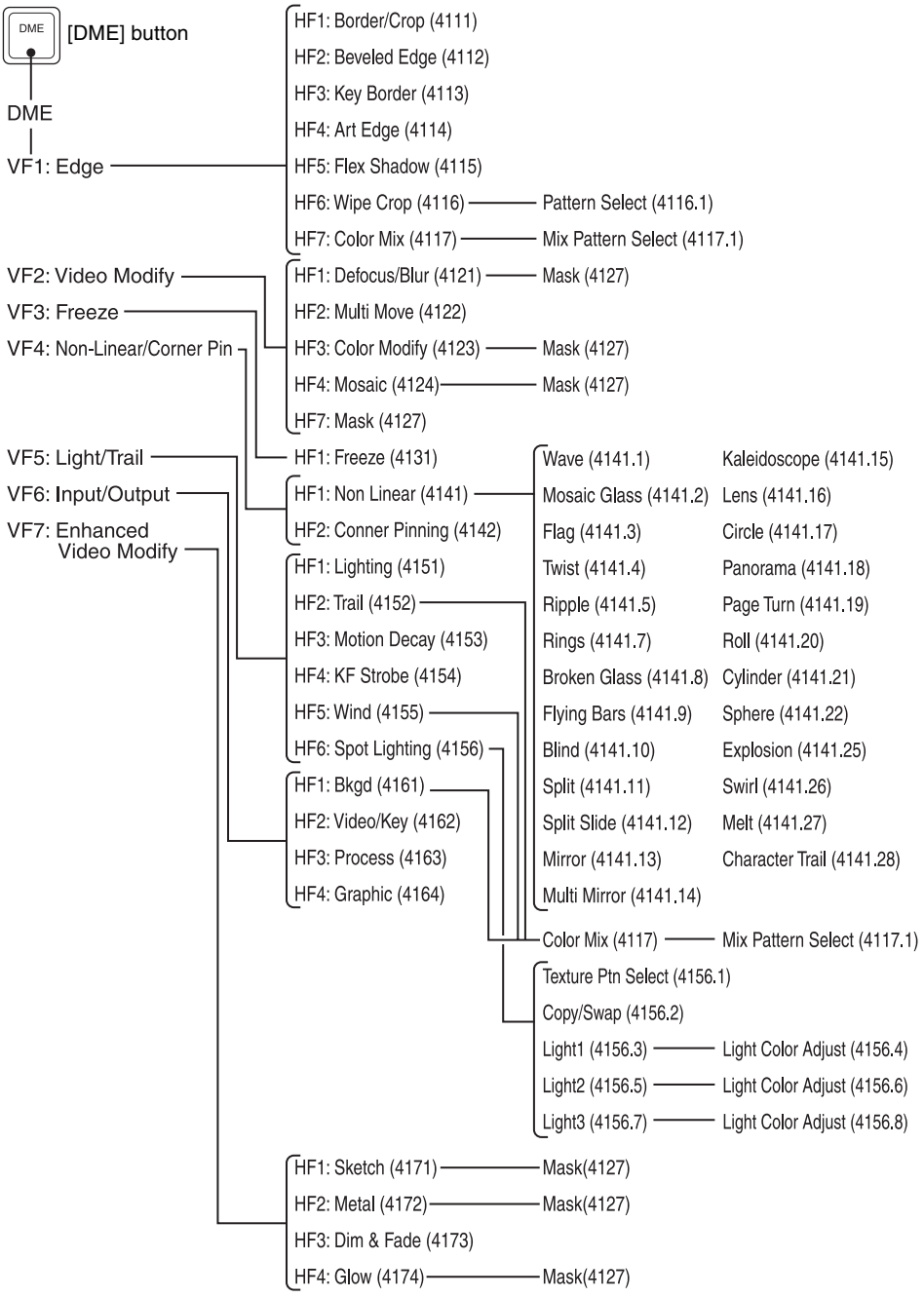
Misc Menu



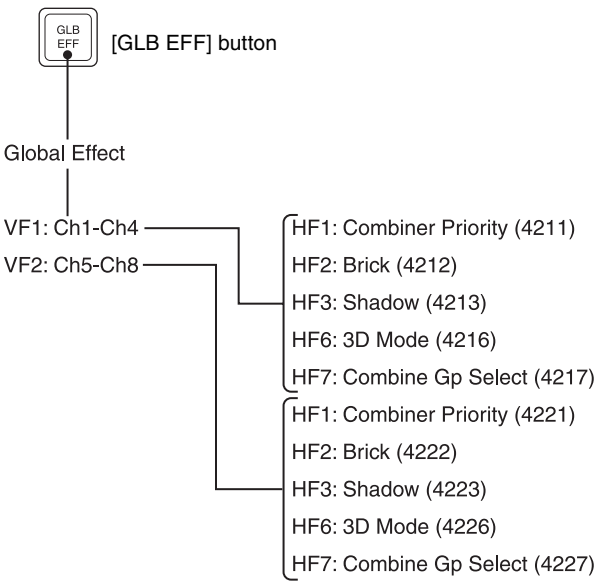
Status Menu



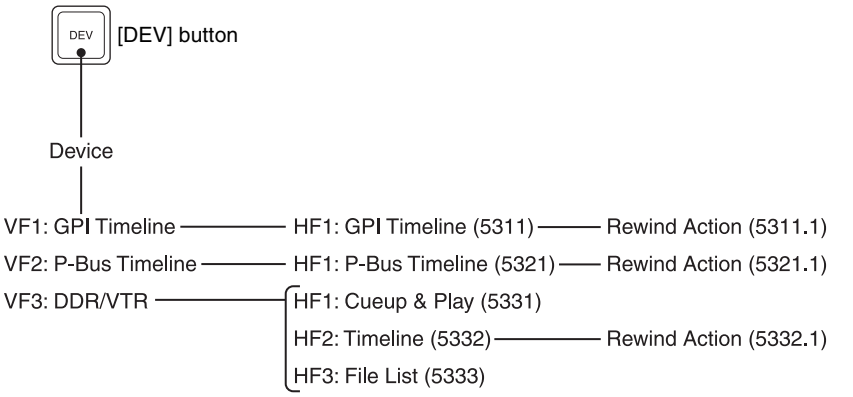
DME Menu


DME
[DME] button
DME
VF1: Edge
HF1: Border/Crop (4111)
HF2: Beveled Edge (4112)
HF3: Key Border (4113)
HF4: Art Edge (4114)
HF5: Flex Shadow (4115)
HF6: Wipe Crop (4116)
Pattern Select (4116.1)
HF7: Color Mix (4117)
Mix Pattern Select (4117.1)
VF2: Video Modify
VF3: Freeze
VF4: Non-Linear/Corner Pin
HF1: Defocus/Blur (4121)
Mask (4127)
HF2: Multi Move (4122)
HF3: Color Modify (4123)
Mask (4127)
HF4: Mosaic (4124)
Mask (4127)
HF7: Mask (4127)
VF5: Light/Trail
VF6: Input/Output
VF7: Enhanced Video Modify
HF1: Freeze (4131)
HF1: Non Linear (4141)
HF2: Conner Pinning (4142)
Wave (4141.1)
Mosaic Glass (4141.2)
Flag (4141.3)
Twist (4141.4)
Ripple (4141.5)
Rings (4141.7)
Broken Glass (4141.8)
Flying Bars (4141.9)
Blind (4141.10)
Split (4141.11)
Split Slide (4141.12)
Mirror (4141.13)
Multi Mirror (4141.14)
Kaleidoscope (4141.15)
Lens (4141.16)
Circle (4141.17)
Panorama (4141.18)
Page Turn (4141.19)
Roll (4141.20)
Cylinder (4141.21)
Sphere (4141.22)
Explosion (4141.25)
Swirl (4141.26)
Melt (4141.27)
Character Trail (4141.28)
HF1: Lighting (4151)
HF2: Trail (4152)
HF3: Motion Decay (4153)
HF4: KF Strobe (4154)
HF5: Wind (4155)
HF6: Spot Lighting (4156)
HF1: Bkgd (4161)
HF2: Video/Key (4162)
HF3: Process (4163)
HF4: Graphic (4164)
Color Mix (4117)
Mix Pattern Select (4117.1)
Texture Ptn Select (4156.1)
Copy/Swap (4156.2)
Light1 (4156.3)
Light Color Adjust (4156.4)
Light2 (4156.5)
Light Color Adjust (4156.6)
Light3 (4156.7)
Light Color Adjust (4156.8)
HF1: Sketch (4171)
Mask(4127)
HF2: Metal (4172)
Mask(4127)
HF3: Dim & Fade (4173)
HF4: Glow (4174)
Mask(4127)

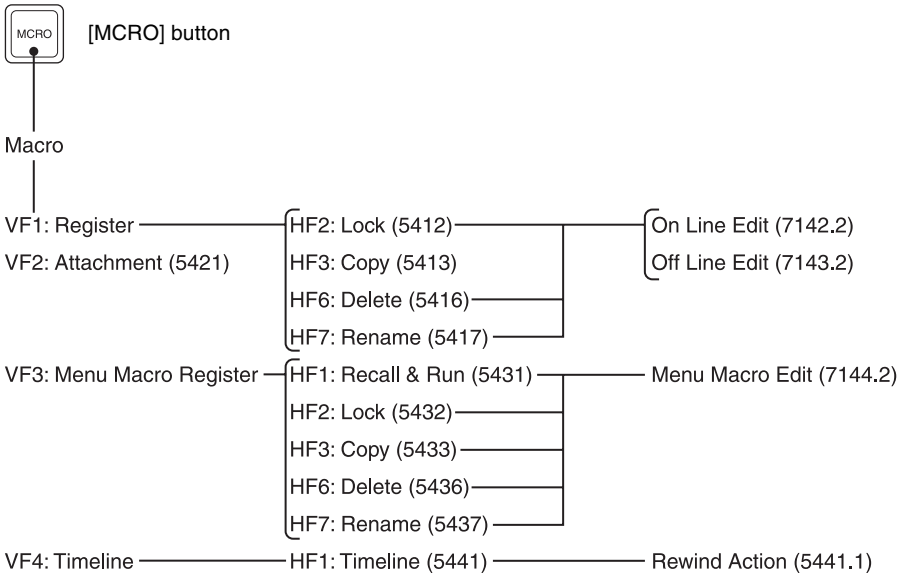
Global Effect Menu



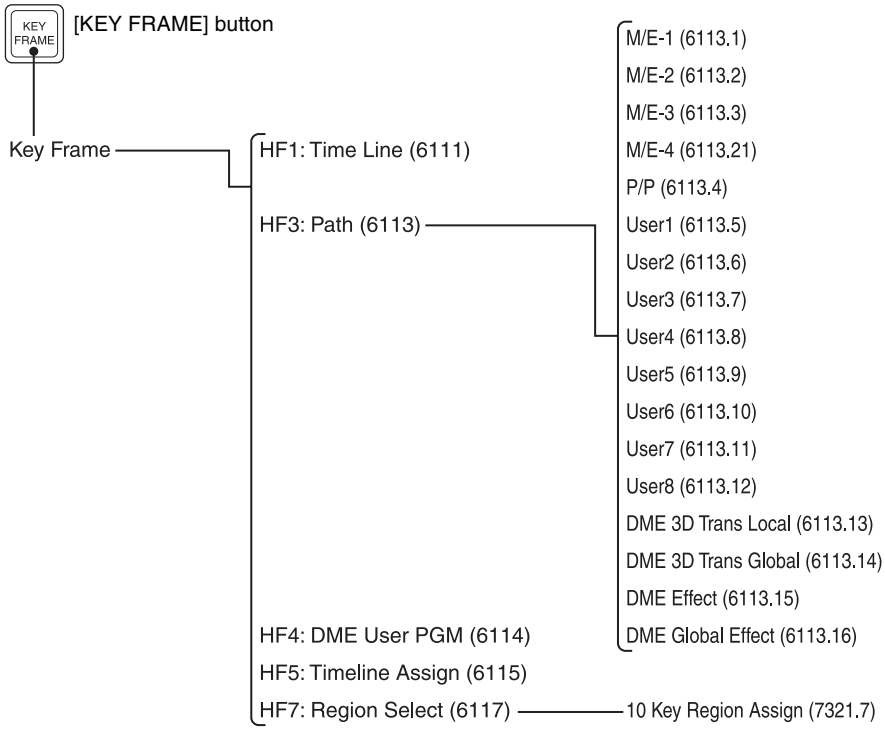
Device Menu



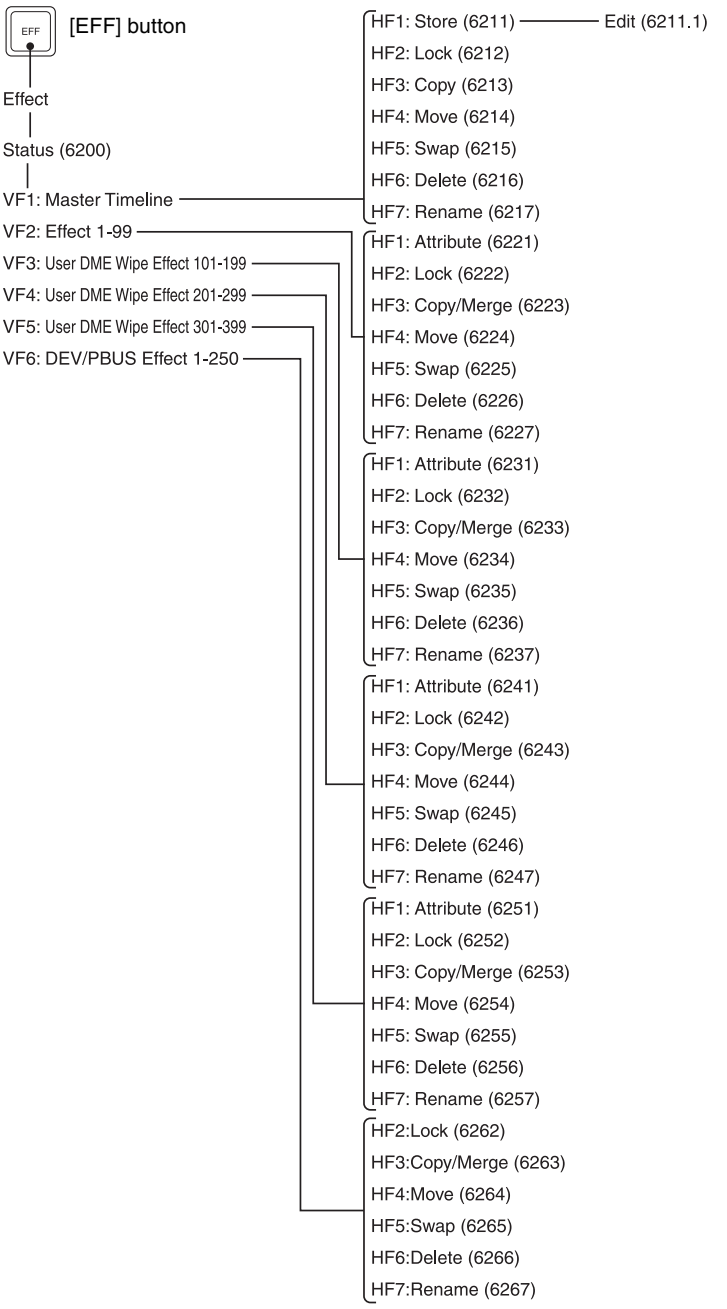
Macro Menu



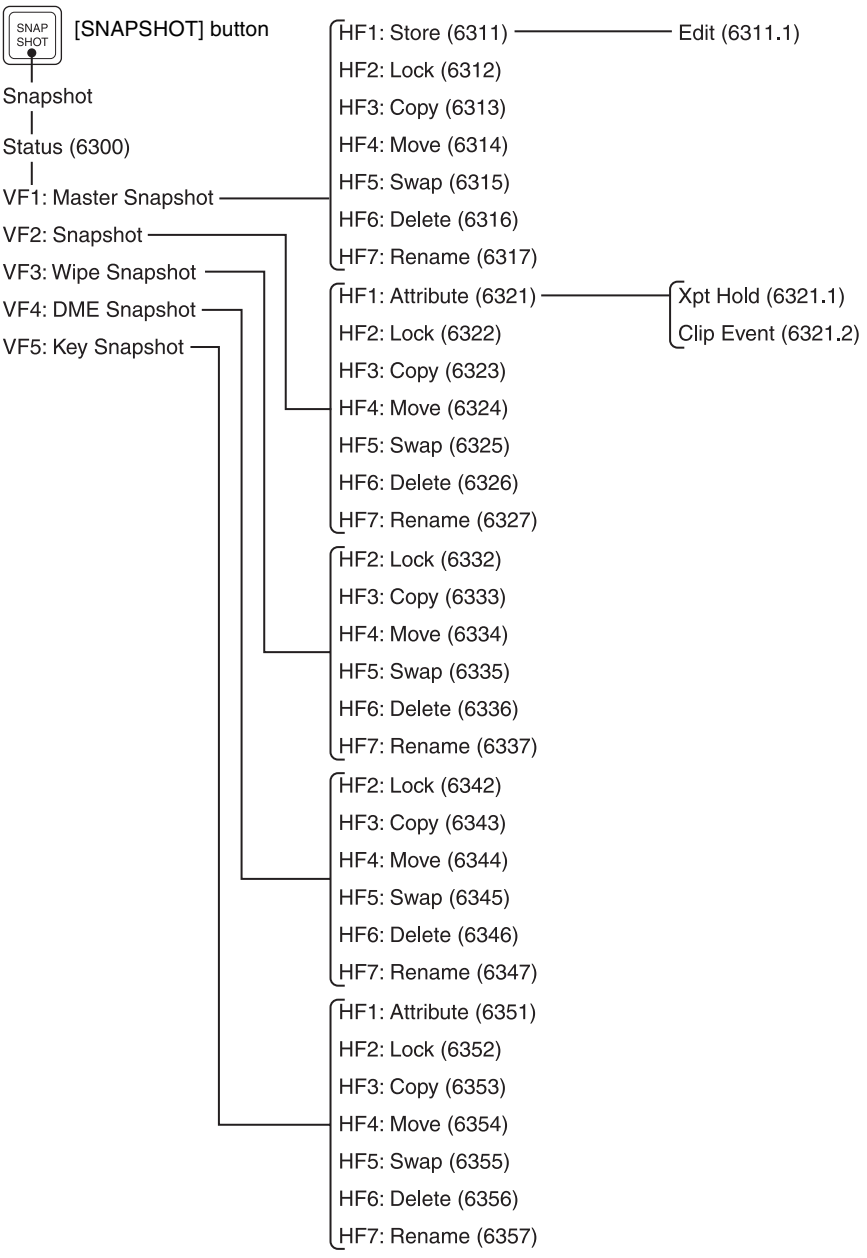
Key Frame Menu



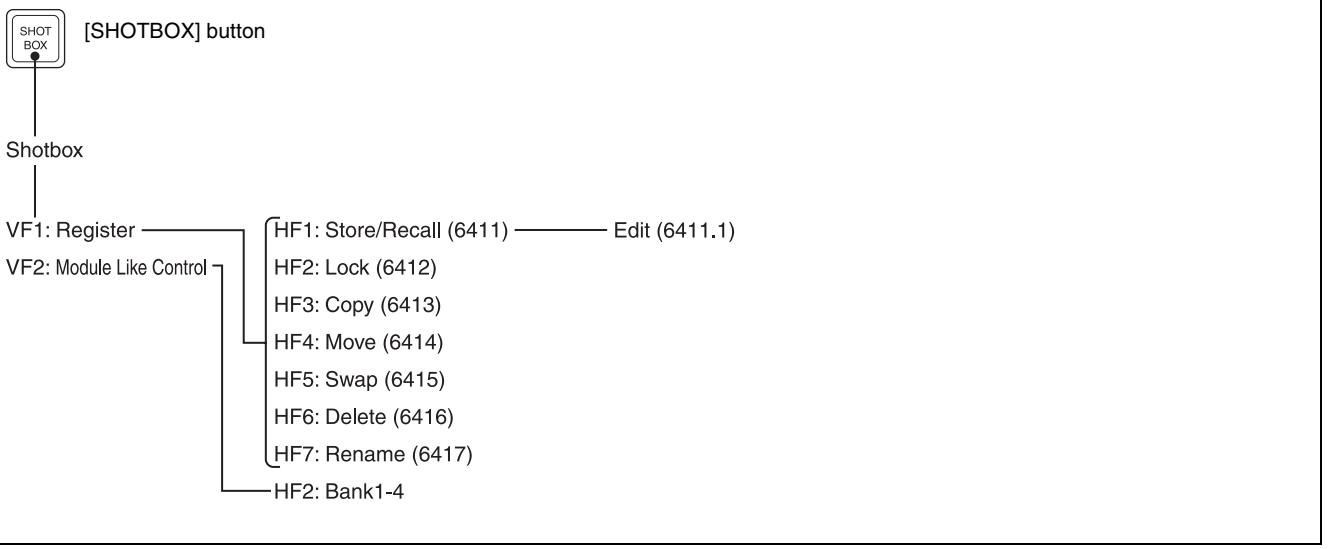
Effect Menu


[EFF] button
Effect
Status (6200)
VF1: Master Timeline
VF2: Effect 1-99
VF3: User DME Wipe Effect 101-199
VF4: User DME Wipe Effect 201-299
VF5: User DME Wipe Effect 301-399
VF6: DEV/PBUS Effect 1-250
HF1: Store (6211)
Edit (6211.1)
HF2: Lock (6212)
HF3: Copy (6213)
HF4: Move (6214)
HF5: Swap (6215)
HF6: Delete (6216)
HF7: Rename (6217)
HF1: Attribute (6221)
HF2: Lock (6222)
HF3: Copy/Merge (6223)
HF4: Move (6224)
HF5: Swap (6225)
HF6: Delete (6226)
HF7: Rename (6227)
HF1: Attribute (6231)
HF2: Lock (6232)
HF3: Copy/Merge (6233)
HF4: Move (6234)
HF5: Swap (6235)
HF6: Delete (6236)
HF7: Rename (6237)
HF1: Attribute (6241)
HF2: Lock (6242)
HF3: Copy/Merge (6243)
HF4: Move (6244)
HF5: Swap (6245)
HF6: Delete (6246)
HF7: Rename (6247)
HF1: Attribute (6251)
HF2: Lock (6252)
HF3: Copy/Merge (6253)
HF4: Move (6254)
HF5: Swap (6255)
HF6: Delete (6256)
HF7: Rename (6257)
HF2:Lock (6262)
HF3:Copy/Merge (6263)
HF4:Move (6264)
HF5:Swap (6265)
HF6:Delete (6266)
HF7:Rename (6267)

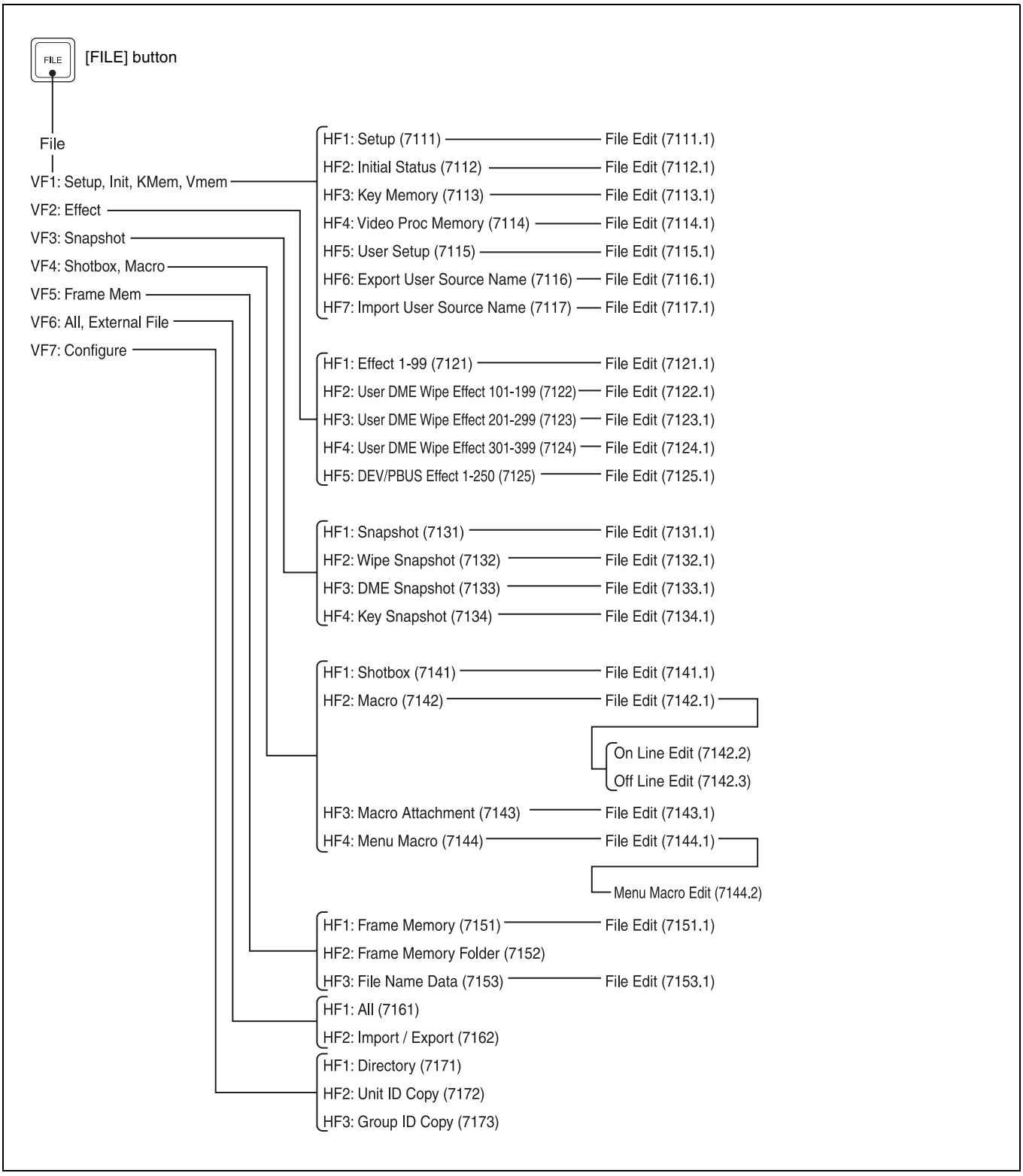
Snapshot Menu



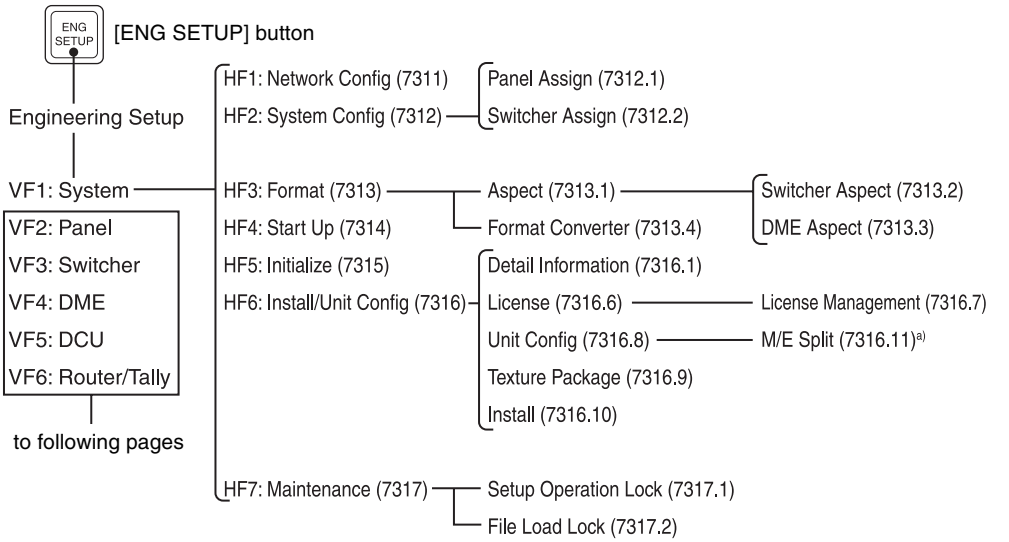
Shotbox Menu



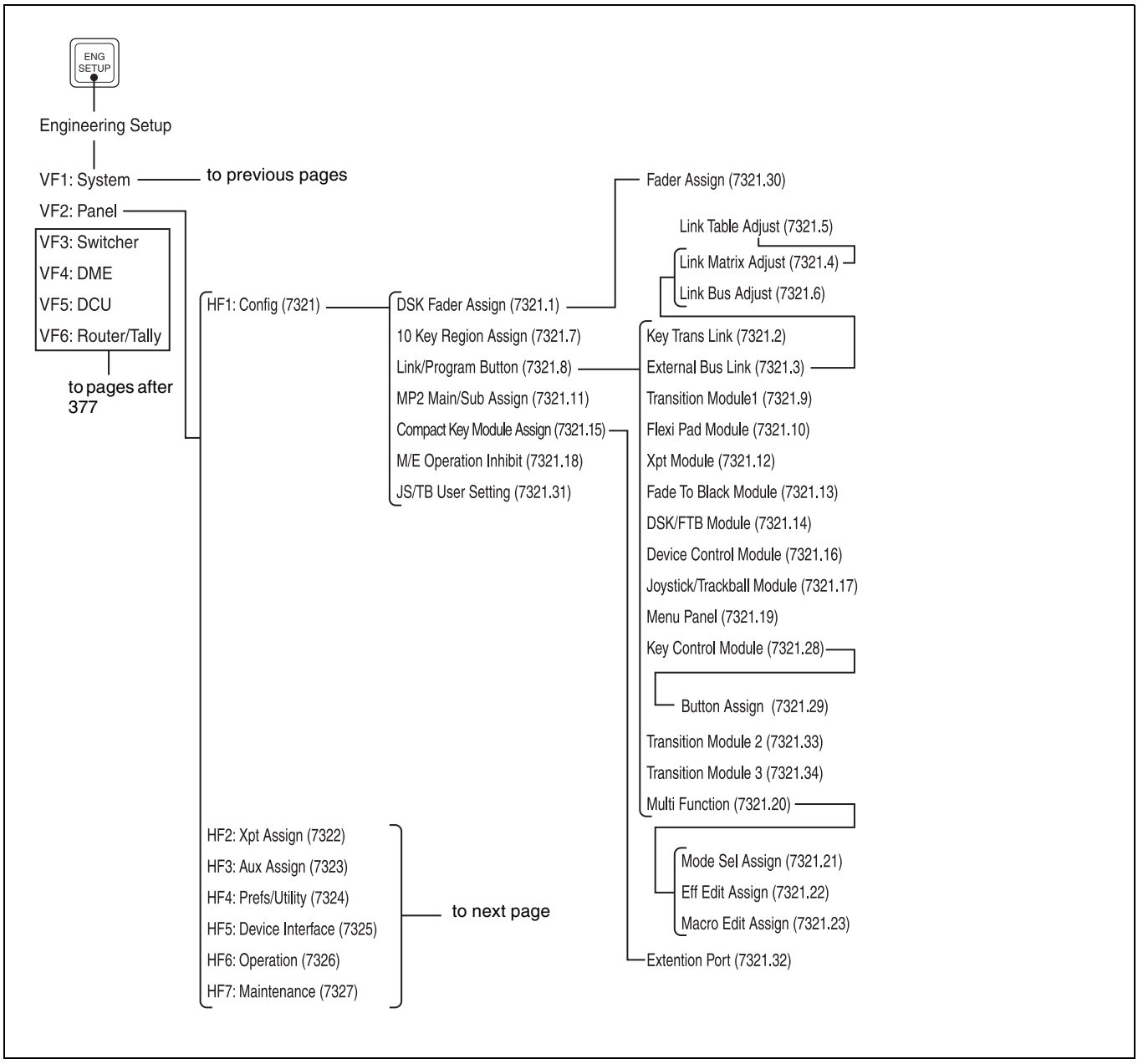
File Menu

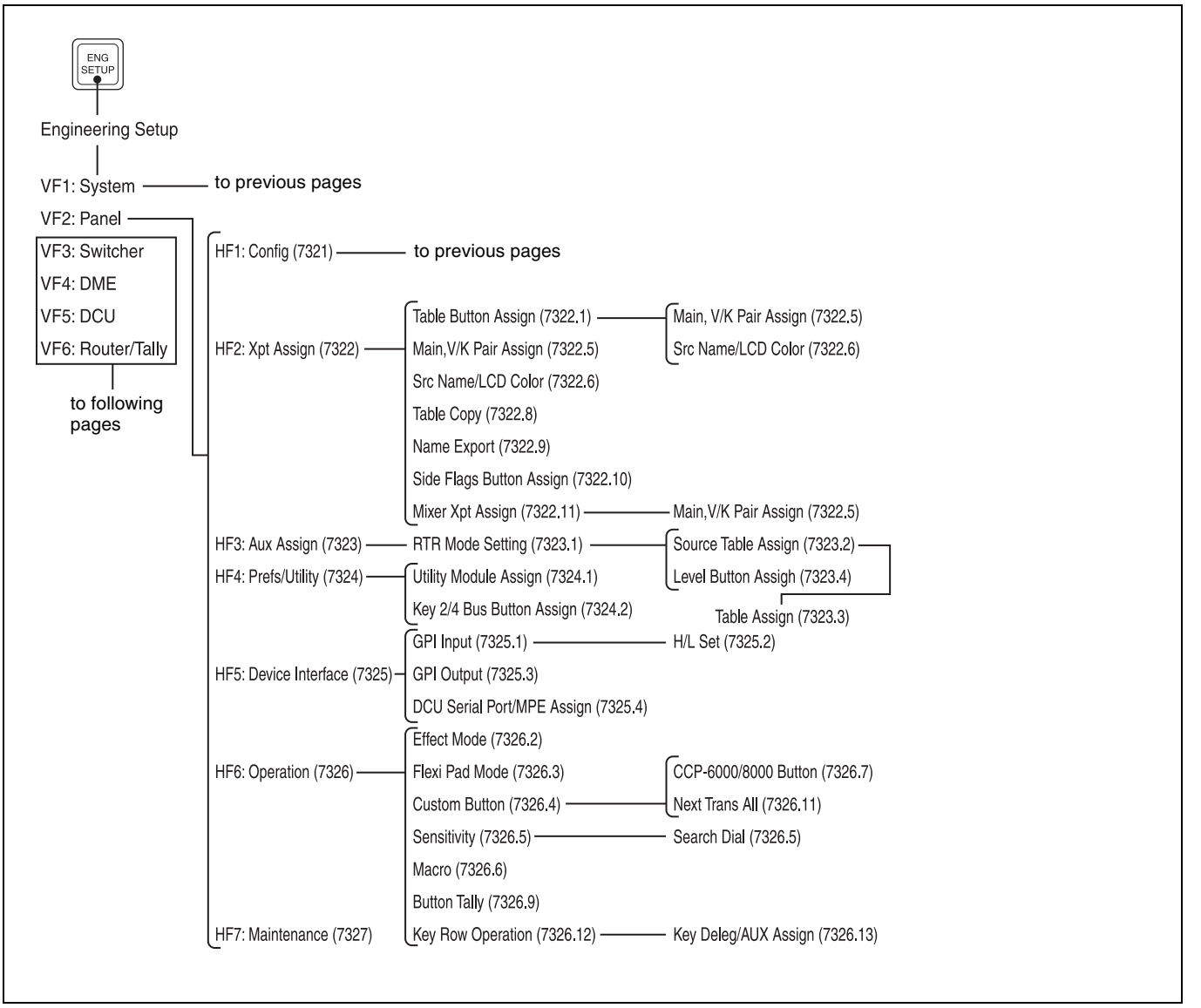

FILE
[FILE] button
File
VF1: Setup, Init, KMem, Vmem
VF2: Effect
VF3: Snapshot
VF4: Shotbox, Macro
VF5: Frame Mem
VF6: All, External File
VF7: Configure
HF1: Setup (7111)
File Edit (7111.1)
HF2: Initial Status (7112)
File Edit (7112.1)
HF3: Key Memory (7113)
File Edit (7113.1)
HF4: Video Proc Memory (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)
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)
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)
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)
HF1: Frame Memory (7151)
File Edit (7151.1)
HF2: Frame Memory Folder (7152)
HF3: File Name Data (7153)
File Edit (7153.1)
HF1: All (7161)
HF2: Import / Export (7162)
HF1: Directory (7171)
HF2: Unit ID Copy (7172)
HF3: Group ID Copy (7173)

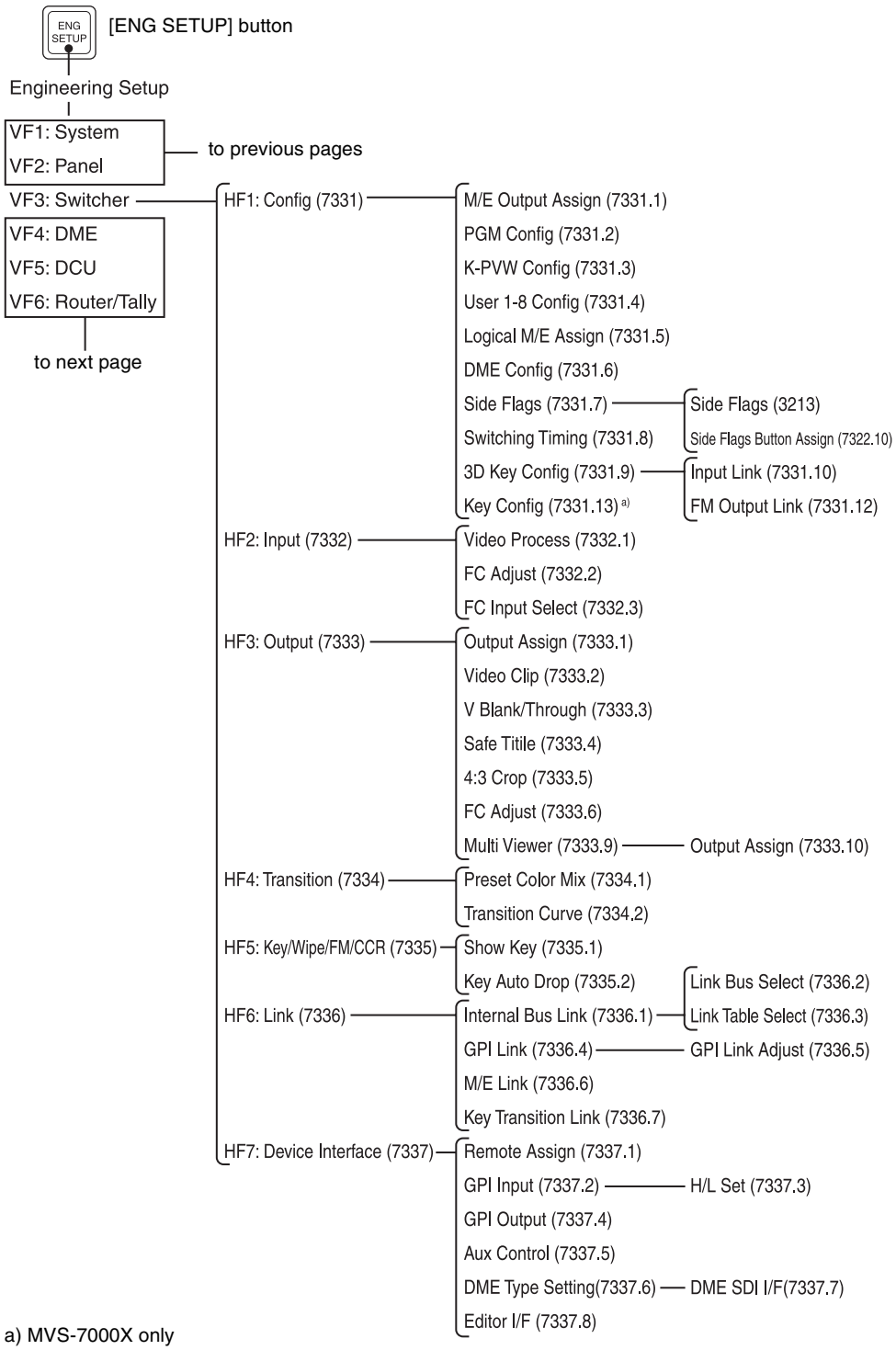
Engineering Setup Menu



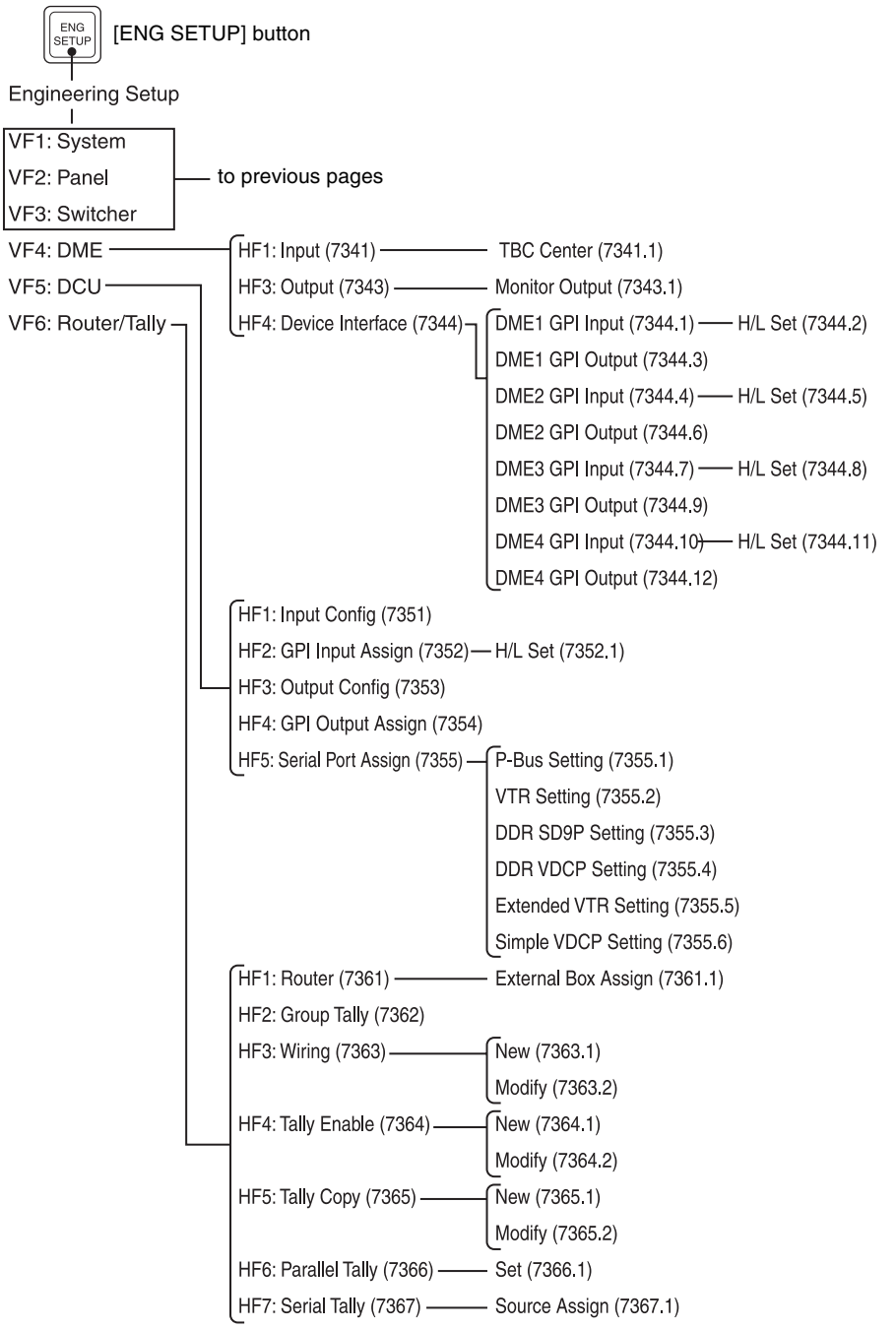
a) MVS-7000X only


ENG SETUP
Engineering Setup
VF1: System
to previous pages
VF2: Panel
VF3: Switcher
VF4: DME
VF5: DCU
VF6: Router/Tally
to pages after 377
HF1: Config (7321)
DSK Fader Assign (7321.1)
10 Key Region Assign (7321.7)
Link/Program Button (7321.8)
MP2 Main/Sub Assign (7321.11)
Compact Key Module Assign (7321.15)
M/E Operation Inhibit (7321.18)
JS/TB User Setting (7321.31)
Fader Assign (7321.30)
Link Table Adjust (7321.5)
Link Matrix Adjust (7321.4)
Link Bus Adjust (7321.6)
Key Trans Link (7321.2)
External Bus Link (7321.3)
Transition Module1 (7321.9)
Flexi Pad Module (7321.10)
Xpt Module (7321.12)
Fade To Black Module (7321.13)
DSK/FTB Module (7321.14)
Device Control Module (7321.16)
Joystick/Trackball Module (7321.17)
Menu Panel (7321.19)
Key Control Module (7321.28)
Button Assign (7321.29)
Transition Module 2 (7321.33)
Transition Module 3 (7321.34)
Multi Function (7321.20)
Mode Sel Assign (7321.21)
Eff Edit Assign (7321.22)
Macro Edit Assign (7321.23)
Extention Port (7321.32)
HF2: Xpt Assign (7322)
HF3: Aux Assign (7323)
HF4: Prefs/Utility (7324)
HF5: Device Interface (7325)
HF6: Operation (7326)
HF7: Maintenance (7327)
to next page

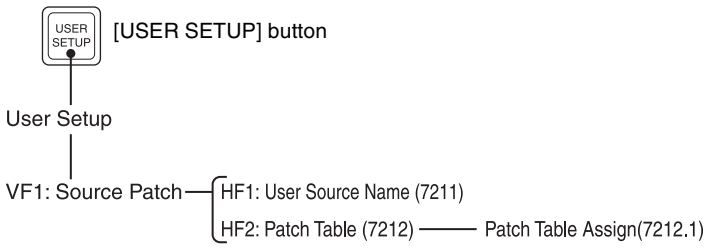

ENG SETUP
Engineering Setup
VF1: System
to previous pages
VF2: Panel
VF3: Switcher
VF4: DME
VF5: DCU
VF6: Router/Tally
to following pages
HF1: Config (7321)
to previous pages
HF2: Xpt Assign (7322)
Table Button Assign (7322.1)
Main, V/K Pair Assign (7322.5)
Main,V/K Pair Assign (7322.5)
Src Name/LCD Color (7322.6)
Src Name/LCD Color (7322.6)
Table Copy (7322.8)
Name Export (7322.9)
Side Flags Button Assign (7322.10)
Mixer Xpt Assign (7322.11)
Main,V/K Pair Assign (7322.5)
HF3: Aux Assign (7323)
RTR Mode Setting (7323.1)
Source Table Assign (7323.2)
HF4: Prefs/Utility (7324)
Utility Module Assign (7324.1)
Level Button Assigh (7323.4)
Key 2/4 Bus Button Assign (7324.2)
Table Assign (7323.3)
GPI Input (7325.1)
H/L Set (7325.2)
HF5: Device Interface (7325)
GPI Output (7325.3)
DCU Serial Port/MPE Assign (7325.4)
Effect Mode (7326.2)
HF6: Operation (7326)
Flexi Pad Mode (7326.3)
CCP-6000/8000 Button (7326.7)
Custom Button (7326.4)
Next Trans All (7326.11)
Sensitivity (7326.5)
Search Dial (7326.5)
Macro (7326.6)
Button Tally (7326.9)
HF7: Maintenance (7327)
Key Row Operation (7326.12)
Key Deleg/AUX Assign (7326.13)



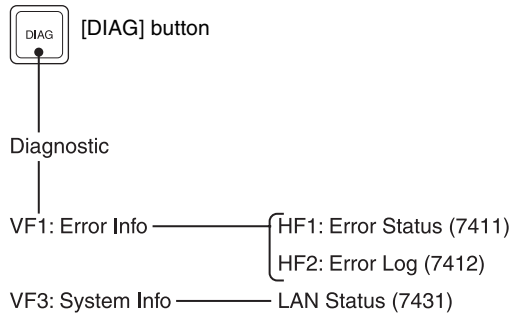
a) MVS-7000X only


ENG SETUP
[ENG SETUP] button
Engineering Setup
VF1: System
VF2: Panel
VF3: Switcher
to previous pages
VF4: DME
VF5: DCU
VF6: Router/Tally
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)
HF1: Input Config (7351)
HF2: GPI Input Assign (7352)
H/L Set (7352.1)
HF3: Output Config (7353)
HF4: GPI Output Assign (7354)
HF5: Serial Port Assign (7355)
P-Bus Setting (7355.1)
VTR Setting (7355.2)
DDR SD9P Setting (7355.3)
DDR VDCP Setting (7355.4)
Extended VTR Setting (7355.5)
Simple VDCP Setting (7355.6)
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)

User Setup Menu



Diagnostic Menu



Using the M/E-4 Bank

Assigning a Button for M/E-4 Selection in the Setup Menu

- In the factory defaults for this system, M/E-4 is not assigned to buttons on the control panel.
- To select M/E-4, assign buttons in the Setup menu according to the following table.

Control block	Button	Menu number	Reference in User Guide "Control Panel Setup (Panel)" and "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 2)
Cross-point control block	Reentry buttons	7322.1 7322.5	"Creating Cross-Point Assign Tables" Engineering Setup >Panel >Xpt Assign >Table Button Assign menu Engineering Setup >Panel >Xpt Assign >Main,V/K Pair Assign menu
Entire switcher bank	-	7321	"Interchanging the Bank Order or Disabling Operation" Engineering Setup >Panel >Config menu
Key control block	Delegation buttons	7321.29	"Assigning Functions to Key Control Block Buttons" Engineering Setup >Panel >Config >Link/Program Button >Key Control Module >Button Assign menu
Device control block	Region selection buttons	7321.17	"Assigning Functions to the Device Control Block" Engineering Setup >Panel >Config >Link/Program Button >Joystick/Trackball Module menu
Numeric keypad control block	Region selection buttons	7321.7	"Assigning a Region to the Region Selection Buttons in the Numeric Keypad Control Block or Multifunction Flexi Pad Control Block" Engineering Setup >Panel >Config >10 Key Region Assign menu
Fade to black control block	Preview selection buttons	7321.13	"Assigning Preview Output to Preview Selection Buttons" Engineering Setup >Panel >Config >Link/Program Button >Fade To Black Module menu
Menu control block	Top menu selection buttons	7321.19	"Assigning Functions to the Menu Control Block Top Menu and User Preference Buttons" Engineering Setup >Panel >Config >Link/Program Button >Menu Panel menu
Multifunction Flexi Pad control block	Region selection buttons	7321.7	"Assigning a Region to the Region Selection Buttons in the Numeric Keypad Control Block or Multifunction Flexi Pad Control Block" Engineering Setup >Panel >Config >10 Key Region Assign menu

Using Keys 5 to 8

Notes

Keys 5 to 8 cannot be used when the signal format is 1080P.

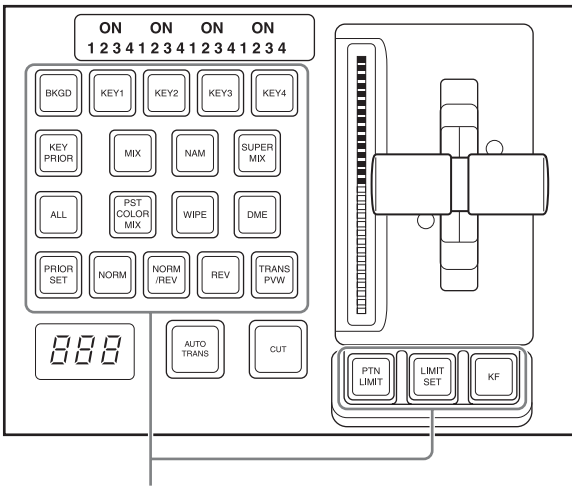
Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu

In the factory defaults for this system, keys 5 to 8 are not assigned to buttons on the control panel.

To select keys 5 to 8, assign buttons in the Setup menu according to the following table.

Control block	Button	Menu number	Reference in User Guide "Control Panel Setup (Panel)" and "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 2)
Transition control block	Next transition selection buttons	7321.9	"Setting Transition Control Block Button Assignments" Engineering Setup >Panel >Config >Link/Program Button >Transition Module1 menu
Cross-point control block	SHIFT button	7322.1	"Creating Cross-Point Assign Tables" "Setting the action of the [SHIFT] button in the cross-point control block" Engineering Setup >Panel >Xpt Assign >Table Button Assign menu
Key Control Block	Delegation button	7321.29	"Assigning Functions to Key Control Block Buttons" Engineering Setup >Panel >Config >Link/Program Button >Key Control Module >Button Assign menu
Transition control block (standard type)	Key delegation buttons	7321.33	"Setting Transition Control Block Button Assignments" Engineering Setup >Panel >Config >Link/Program Button >Transition Module2 menu
	Independent key transition execution section	7321.34	"Setting Transition Control Block Button Assignments" Engineering Setup >Panel >Config >Link/Program Button >Transition Module3 menu
Independent key transition control block	Entire block	7321.15	"Assigning Keys to the Independent Key Transition Control Block (Simple Type)" Engineering Setup >Panel >Config >Compact Key Module Assign menu
Downstream key control block	Key delegation buttons	7321.1	"Assigning the Key Delegation in the Downstream Key Control Block" Engineering Setup >Panel >Config >DSK Fader Assign menu
Downstream key/ fade-to-black control block	Key delegation buttons	7321.14	"Assigning Keys to the DSK1 and DSK2 Buttons in the Downstream Key/Fade-to-Black Control Block" Engineering Setup >Panel >Config >Link/Program Button >DSK/FTB Module menu
Device control block (joystick)	Operating buttons	7321.31	"Selecting the Module to be the Reference for Device Control Block" Menu Engineering Setup >Panel >Config >JS/TB User Setting menu
Device control block (trackball)			
Cross-point control block	Key 1 row	7326.13	"Assigning the key/AUX bus delegation function to the key 1 row" Engineering Setup >Panel >Operation >Key Row Operation >Key Deleg/AUX Assign menu

Selecting Keys 5 to 8 for Next Transition



Buttons to which keys can be assigned

To select keys 5 to 8 for the next transition, in addition to assigning [KEY5] to [KEY8] for the operation, it is also possible to make the selection with [KEY1/5], [KEY2/6], [KEY3/7], [KEY4/8], [SHIFT], and [ADD].
The following describes this method of operation.
First in the Setup menu, assign the following to any buttons:

[KEY1/5], [KEY2/6], [KEY3/7], [KEY4/8], [SHIFT], and [ADD]

By way of example, this is the procedure for [KEY1/5].

To select key 5

Press [SHIFT], turning it on, then press the [KEY1/5] button.

To select keys 1 and 5 simultaneously

1 Press the [KEY1/5] button alone.

This selects key 1.

2 Press [SHIFT], turning it on.

3 Holding down [ADD], press the [KEY1/5] button.

This selects keys 1 and 5 simultaneously.

Selecting Input Signals for Keys 5 to 8 in the Cross-Point Control Block

Buttons used for selection of keys 5 to 8

For the positions of the following buttons in the cross-point control block, see page 23.

Key	Key row	Dedicated SHIFT button [a)]	[KEY3]/[KEY4] button
5	Key 1 row	Lit	[KEY3] button off
6	Key 2 row		[KEY4] button off
7	Key 1 row		[KEY3] button lit
8	Key 2 row		[KEY4] button lit

a) Button previously assigned in the Setup menu to selection of keys 5 to 8

To select the key 5 fill signal

1 Turn on the dedicated SHIFT button.

2 Turn off the [KEY3] button.

3 Select the signal in the key 1 row.

When a key delegation function is assigned to the key 1 row

1 In the key 1 row, press the button assigned to the desired key 5.

2 In the key 2 row, select the signal.

For details, see "Cross-Point Control Block in Key/AUX Bus Delegation Mode" (page 26).

Menus accessed 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 HF menu recalled last in the VF menu.)

Cross-point control block

Buttons	Menus	See
FM1 to 8 signals assigned buttons	Frame Memory >Still >Recall	*page 198*
Color Bkgd1 signal assigned button	Color Bkgd >Color Bkgd1	*page 217*
Color Bkgd2 signal assigned button	Color Bkgd >Color Bkgd2	
CCR1 signal assigned button	CCR >CCR1 >XX	Chapter 19 (Volume 2)
CCR2 signal assigned button	CCR >CCR2 >XX	
FMS1	Frame Memory >Still >Recall	
FMS2	Frame Memory >Still >Recall	

Transition control block (standard type, compact type)

Buttons	Menus	See
KEY1 (DSK1) [a]	• M/E-1, 2, 3, 4 >Key1 >XX • PGM/PST >DSK1 >XX	*page 115*
KEY2 (DSK2) [a]	• M/E-1, 2, 3, 4 >Key2 >XX • PGM/PST >DSK2 >XX	
KEY3 (DSK3) [a]	• M/E-1, 2, 3, 4 >Key3 >XX • PGM/PST >DSK3 >XX	
KEY4 (DSK4) [a]	• M/E-1, 2, 3, 4 >Key4 >XX • PGM/PST >DSK4 >XX	
KEY5 (DSK5) [a]	• M/E-1, 2, 3, 4 >Key5 >XX • PGM/PST >DSK5 >XX	
KEY6 (DSK6) [a]	• M/E-1, 2, 3, 4 >Key6 >XX • PGM/PST >DSK6 >XX	
KEY7 (DSK7) [a]	• M/E-1, 2, 3, 4 >Key7 >XX • PGM/PST >DSK7 >XX	
KEY8 (DSK8) [a]	• M/E-1, 2, 3, 4 >Key8 >XX • PGM/PST >DSK8 >XX	
WIPE	M/E-1, 2, 3, 4, PGM/PST >Wipe >Main Pattern	*page 152*
DME	M/E-1, 2, 3, 4, PGM/PST >DME Wipe >XX	*page 176*
SUPER MIX	M/E-1, 2, 3, 4, PGM/PST >Misc >Transition	*page 92*
PST COLOR MIX	M/E-1, 2, 3, 4, PGM/PST >Misc >Transition	*page 92*
FM1&2 CLIP, FM3&4 CLIP, FM5&6 CLIP, FM7&8 CLIP	M/E-1, 2, 3, 4, PGM/PST >Misc >Clip Transition	*page 208*
PRIOR SET	M/E-1, 2, 3, 4, PGM/PST >Misc >Key Priority	*page 89*
KEY PRIOR	M/E-1, 2, 3, 4, PGM/PST >Misc >Next Key Priority	*page 90*
WIPE (Independent key transition type selection button (standard type))	• M/E-1, 2, 3, 4 >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 164*
DME (Independent key transition type selection button (standard type))	• M/E-1, 2, 3, 4 >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 182*

Transition control block (standard type, compact type)

Buttons	Menus	See
K-SS STORE	Snapshot >Key Snapshot >XX	Chapter 14 (Volume 2)

a) Including the key delegation buttons of the transition control block (standard type).

Independent key transition control block (simple type) a)

Buttons	Menus	See
WIPE	• M/E-1, 2, 3, 4 >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 164*
DME	• M/E-1, 2, 3, 4 >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 182*
SHIFT	• M/E-1, 2, 3, 4 >Key1, 2, 3, 4, 5, 6, 7, 8 >XX • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >XX	*page 115*

a) The menu to be recalled depends on the setup of the key assignment.

Flexi Pad control block (standard type)

Buttons	Menus	See
WIPE	M/E-1, 2, 3, 4, PGM/PST >Wipe >Main Pattern	*page 152*
DME	M/E-1, 2, 3, 4, PGM/PST >DME Wipe >XX	*page 176*
SNAPSHOT	Snapshot >Snapshot >XX	Chapter 14 (Volume 2)
EFF	Effect >Effect 1-99 >XX	Chapter 13 (Volume 2)
SHOTBOX	Shotbox >Register >Store/Recall	Chapter 15 (Volume 2)
MCRO	Macro >Register >XX	Chapter 16 (Volume 2)

Key control block a)

Buttons	Menus	See
KEY1	• M/E-1, 2, 3, 4 >Key1 >XX • PGM/PST >DSK1 >XX	*page 115*
KEY2	• M/E-1, 2, 3, 4 >Key2 >XX • PGM/PST >DSK2 >XX	
KEY3	• M/E-1, 2, 3, 4 >Key3 >XX • PGM/PST >DSK3 >XX	
KEY4	• M/E-1, 2, 3, 4 >Key4 >XX • PGM/PST >DSK4 >XX	
KEY5	• M/E-1, 2, 3, 4 >Key5 >XX • PGM/PST >DSK5 >XX	
KEY6	• M/E-1, 2, 3, 4 >Key6 >XX • PGM/PST >DSK6 >XX	
KEY7	• M/E-1, 2, 3, 4 >Key7 >XX • PGM/PST >DSK7 >XX	
KEY8	• M/E-1, 2, 3, 4 >Key8 >XX • PGM/PST >DSK8 >XX	

Key control block [a]

Buttons	Menus	See
LUM	• M/E-1, 2, 3, 4 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Type	*page 116*
LIN		
CVK		
PTN		
CRK	• M/E-1, 2, 3, 4 >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 120*

a) The menu recalled depends on which of the M/E delegation buttons and key delegation buttons are selected in the key control block.

Numeric keypad control block

Buttons	Menus	See
EFF	• Effect >Effect 1-99 >XX [b] • Effect >Master Timeline >Store [c]	Chapter 13 (Volume 2)
SNAPSHOT	• Snapshot >Snapshot >XX [b] • Snapshot >Master Snapshot >Store [c]	Chapter 14 (Volume 2)
SHOTBOX	Shotbox >Register >Store/Recall	Chapter 15 (Volume 2)
MCRO	Macro >Register >XX	Chapter 16 (Volume 2)
TRANS RATE [a]	Misc >Transition	*page 97*
STORE RCALL	Key Frame >Region Select [d]	Chapter 13 (Volume 2)

a) The menu recalled depends on which of the M/E-1 to M/E-4 banks and PGM/PST bank the numeric control block is delegated to.
b) When other than [MASTR] is selected with the region selection buttons.
c) When [MASTR] is selected with the region selection buttons.
d) When the [SNAPSHOT] button or [EFF] button is set to On, or lit green.

Downstream key control block [a]

Buttons	Menus	See
DSK1	• M/E-1, 2, 3, 4 >Key1 >XX • PGM/PST >DSK1 >XX	*page 115*
DSK2	• M/E-1, 2, 3, 4 >Key2 >XX • PGM/PST >DSK2 >XX	
DSK3	• M/E-1, 2, 3, 4 >Key3 >XX • PGM/PST >DSK3 >XX	
DSK4	• M/E-1, 2, 3, 4 >Key4 >XX • PGM/PST >DSK4 >XX	
WIPE	• M/E-1, 2, 3, 4 >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 164*
DME	• M/E-1, 2, 3, 4 >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition >Wipe Adjust >Pattern Select • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Transition >DME Wipe Adjust >Pattern Select	*page 182*
K-SS STORE [b]	Snapshot >Key Snapshot >XX	Chapter 14 (Volume 2)

a) The menu recalled depends on which of keyers 1 to 8 the downstream key control block is delegated to.
b) Recalling is possible only when the [K-SS] button is On.

Auxiliary bus control block

Buttons	Menus	See
FMS1, FMS2	Frame Memory >Still >Freeze/Store	*page 196*
FM1 to 8 signals assigned buttons	Frame Memory >Still >Recall	*page 198*
Color Bkgd1 signal assigned button	Color Bkgd >Color Bkgd1	*page 217*
Color Bkgd2 signal assigned button	Color Bkgd >Color Bkgd2	
CCR1 signal assigned button	CCR >CCR1 >XX	*page 229*
CCR2 signal assigned button	CCR >CCR2 >XX	

Device control block (trackball or joystick)

Buttons	Menus	See
DME1 to DME8 a)	DME >XX	*page 275*
DEV1 to DEV12 assigned buttons	• Device >DDR/VTR >Cueup & Play b) • Device >DDR/VTR >Timeline c)	Chapter 12 (Volume 2)
FM1CLIP to FM8CLIP assigned buttons	Frame Memory >Clip >Recall	*page 203*
K1RSZ to K8RSZ d)	• M/E-1, 2, 3, 4 >Key1, 2, 3, 4, 5, 6, 7, 8 >Processed Key • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Processed Key	*page 141*

a) When the three-dimensional transformation operation mode is enabled.
b) When the [MENU] button is Off.
c) When the [MENU] button is On.
d) When the resizer control mode is enabled.

Device control block (search dial)

Buttons	Menus	See
DEV1 to DEV12	• Device >DDR/VTR >Cueup & Play a) • Device >DDR/VTR >Timeline b)	Chapter 12 (Volume 2)
FM1CLIP to FM8CLIP assigned buttons	Frame Memory >Clip >Recall	–

a) When the [TIMELINE] button is Off.
b) When the [TIMELINE] button is On.

Downstream key/fade-to-black control block

Buttons	Menus	See
DSK1, DSK2	PGM/PST >DSK1, 2 >XX a)	*page 115*

a) When a key other than DSK1 or DSK2 is assigned, the menu for the corresponding key appears.

Transition control block and Flexi Pad control block (simple type)

Buttons	Menus	See
KEY1 (DSK1)	• M/E-1, 2, 3, 4 >Key1 >XX • PGM/PST >DSK1 >XX	*page 115*
KEY2 (DSK2)	• M/E-1, 2, 3, 4 >Key2 >XX • PGM/PST >DSK2 >XX	
WIPE	• M/E-1, 2, 3, 4 >Wipe >Main Pattern • PGM/PST >Wipe >Main Pattern	*page 152*
DME	• M/E-1, 2, 3, 4 >DME Wipe >XX • PGM/PST >DME Wipe >XX	*page 176*
FM1CLIP to FM8CLIP assigned buttons	• M/E1, 2, 3, 4 >Misc >Clip Transition • PGM/PST >Misc >Clip Transition	–
SNAPSHOT	Snapshot >Snapshot >XX	Chapter 14 (Volume 2)

Transition control block and Flexi Pad control block (simple type)

Buttons	Menus	See
MCRO [a)]	Macro >Register >XX	Chapter 16 (Volume 2)

a) When the button is assigned to macro function in the Setup menu.

Multifunction Flexi Pad control block

Buttons		Menus	See
WIPE		M/E-1, 2, 3, 4, PGM/PST >Wipe >Main Pattern	*page 152*
DME WIPE		M/E-1, 2, 3, 4, PGM/PST >DME Wipe >xxx [a)]	*page 176*
SNAPSHOT		When the [MSTR] button is On. Snapshot >Master Snapshot >Store	Chapter 14 (Volume 2)
		When the [MSTR] button is Off Snapshot >Snapshot >xxx [a)]	
EFF		When the [MSTR] button is On Effect >Master Timeline >Store	Chapter 13 (Volume 2)
		When the [MSTR] button is Off Effect >Effect 1-99 >xxx [a)]	
SHOTBOX		Shotbox >Register >Store/Recall	Chapter 15 (Volume 2)
MCRO		Macro >Register >xxx [a)]	Chapter 16 (Volume 2)
TRANS RATE		Misc >Transition	*page 223*
KEY SS		Snapshot >Key Snapshot >xxx [a)]	Chapter 14 (Volume 2)
KEY ADJ >	KEY1	• M/E1, 2, 3, 4 >Key1 >xxx [a)] • PGM/PST >DSK1 >xxx [a)]	*page 115*
	KEY2	• M/E1, 2, 3, 4 >Key2 >xxx [a)] • PGM/PST >DSK2 >xxx [a)]	
	KEY3	• M/E1, 2, 3, 4 >Key3 >xxx [a)] • PGM/PST >DSK3 >xxx [a)]	
	KEY4	• M/E1, 2, 3, 4 >Key4 >xxx [a)] • PGM/PST >DSK4 >xxx [a)]	
	KEY5	• M/E1, 2, 3, 4 >Key5 >xxx [a)] • PGM/PST >DSK5 >xxx a)	
	KEY6	• M/E1, 2, 3, 4 >Key6 >xxx [a)] • PGM/PST >DSK6 >xxx [a)]	
	KEY7	• M/E1, 2, 3, 4 >Key7 >xxx [a)] • PGM/PST >DSK7 >xxx [a)]	
	KEY8	• M/E1, 2, 3, 4 >Key8 >xxx [a)] • PGM/PST >DSK8 >xxx [a)]	
	LUM LIN WIPE PTN	M/E-1 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type	*page 116*
		M/E-2 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type	
		M/E-3 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type	
		M/E-4 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type	
		PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Type	
	CRK	M/E-1 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust	*page 119*
		M/E-2 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust	
		M/E-3 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust	
		M/E-4 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust	
		PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust	

Multifunction Flexi Pad control block

Buttons		Menus	See
KEY SS	KEY1	• M/E1, 2, 3, 4 >Key1 >xxx [a)] • PGM/PST >DSK1 >xxx [a)]	*page 115*
	KEY2	• M/E1, 2, 3, 4 >Key2 >xxx [a)] • PGM/PST >DSK2 >xxx [a)]	
	KEY3	• M/E1, 2, 3, 4 >Key3 >xxx [a)] • PGM/PST >DSK3 >xxx [a)]	
	KEY4	• M/E1, 2, 3, 4 >Key4 >xxx [a)] • PGM/PST >DSK4 >xxx [a)]	
	KEY5	• M/E1, 2, 3, 4 >Key5 >xxx [a)] • PGM/PST >DSK5 >xxx [a)]	
	KEY6	• M/E1, 2, 3, 4 >Key6 >xxx [a)] • PGM/PST >DSK6 >xxx [a)]	
	KEY7	• M/E1, 2, 3, 4 >Key7 >xxx [a)] • PGM/PST >DSK7 >xxx [a)]	
	KEY8	• M/E1, 2, 3, 4 >Key8 >xxx [a)] • PGM/PST >DSK8 >xxx [a)]	

a) “xxx” represents the last accessed page of the relevant menu.

Menus allowing a return to default settings

Top menu selection button name	VF number (HF number)	Menu number	Menu name
M/E1	VF1 [a]	1110-series/1510-series	Key1/Key5 [b]
	VF2 [a]	1120-series/1520-series	Key2/Key6 [b]
	VF3 [a]	1130-series/1530-series	Key3/Key7 [b]
	VF4 [a]	1140-series/1540-series	Key4/Key8 [b]
	VF5	1150-series	Wipe [b]
	VF6	1160-series	DME Wipe [b]
	VF7	1170-series	Misc [b]
M/E2	VF1 [a]	1210-series/1610-series	Key1/Key5 [b]
	VF2 [a]	1220-series/1620-series	Key2/Key6 [b]
	VF3 [a]	1230-series/1630-series	Key3/Key7 [b]
	VF4 [a]	1240-series/1640-series	Key4/Key8 [b]
	VF5	1250-series	Wipe [b]
	VF6	1260-series	DME Wipe [b]
	VF7	1270-series	Misc [b]
M/E3	VF1 [a]	1310-series/1710-series	Key1/Key5 [b]
	VF2 [a]	1320-series/1720-series	Key2/Key6 [b]
	VF3 [a]	1330-series/1730-series	Key3/Key7 [b]
	VF4 [a]	1340-series/1740-series	Key4/Key8 [b]
	VF5	1350-series	Wipe [b]
	VF6	1360-series	DME Wipe [b]
	VF7	1370-series	Misc [b]
M/E4	VF1 [a]	8110-series/8510-series	Key1/Key5 [b]
	VF2 [a]	8120-series/8520-series	Key2/Key6 [b]
	VF3 [a]	8130-series/8530-series	Key3/Key7 [b]
	VF4 [a]	8140-series/8540-series	Key4/Key8 [b]
	VF5	8150-series	Wipe [b]
	VF6	8160-series	DME Wipe [b]
	VF7	8170-series	Misc [b]
P/P	VF1 [a]	1410-series/1810-series	DSK1/DSK5 [b]
	VF2 [a]	1420-series/1820-series	DSK2/DSK6 [b]
	VF3 [a]	1430-series/1830-series	DSK3/DSK7 [b]
	VF4 [a]	1440-series/1840-series	DSK4/DSK8 [b]
	VF5	1450-series	Wipe [b]
	VF6	1460-series	DME Wipe [b]
	VF7	1470-series	Misc [b]
COLOR BKGD	VF1	2210	Color Bkgd 1 [b]
	VF2	2220	Color Bkgd 2 [b]
CCR	VF1	2410-series	CCR1 [b]
	VF2	2420-series	CCR2 [b]

Top menu selection button name	VF number (HF number)	Menu number	Menu name
FRAME MEM	VF1	2510-series	Still [c]
	VF2	2520-series	Clip [c]
	VF3	2530-series	Reposition/Lock [c]
	VF4	2540-series	File [c]
	VF5	2550-series	Folder [c]
AUX	VF1	2311	Aux Bus [c]
DME	VF1	4110-series	Edge [c]
	VF2	4120-series	Video Modify [c]
	VF3	4131	Freeze [c]
	VF4	4141	Non-Linear [c]
	VF5	4150-series	Light/Trail [c]
	VF6	4160-series	Input/Output [c]
	VF7	4170-series	Enhanced Video Modify [b]
GLB EFF	VF1	4210-series	Ch1–Ch4 [c]
	VF2	4220-series	Ch5–Ch8 [c]
KEY FRAME	(HF3)	6113	Path [c]

a) VF1 to VF4 are shared between Key1 (DSK1) to Key4 (DSK4) and Key5 (DSK5) to Key8 (DSK8).

b) Menu to return to the default settings for particular functions or for particular knob parameters *(for the relevant knob parameters, see page 390)*

c) Menu to return to the default settings for particular knob parameters *(for the relevant knob parameters, see page 390)*

Knob parameters to which default recall does not apply

Menu number [a]	Menu name	Button name	Knob	Parameter
1111	Type	[Luminance] and [Linear] in <Key Type> group	4	Filter
		[Color Vector] in <Key Type> group	1 2 (Parameter group [2/2])	Y Filter, C Filter
1111.1	Type >CRK Adjust	[Key Active]	5	Filter
		[Color Cancel] in <Color Cancel> group	5	Filter
1112.1	Edge >Matte	[Mix Color] in <Edge Matte> group	5	Pattern
		[Multi]	3	Invert Type
1113	Main Mask	[Pattern]	5	Pattern
		[Multi]	3	Invert Type
1116	Transition	[Wipe] in <ON Transition Type> group	1 5	Transition Rate Pattern
		[Wipe] in <OFF Transition Type> group	1 5	Transition Rate Pattern
		[Key Blink] and [Edge Blink] in <Blink> group	1	Blink Rate
		[Mix] in <Transition Type> group	1	Transition Type
		[Wipe] in <Transition Type> group	1 5	Transition Rate Pattern

Knob parameters to which default recall does not apply

Menu number [a]	Menu name	Button name	Knob	Parameter
1116.1	Transition > Wipe Adjust	[Multi]	3	Invert Type
		[H] and [V] in <Pairing> group	1	Width
		[H], [V], and [Fringe] in <Modulation> group	4	Shape
1154	Edge/Direction	[Split] in <Edge> group	1	Split No
1154.1	Edge/Direction > Matte Adjust	[Mix Color] in <Edge Matte> group	3	Pattern
		[Multi]	3	Invert Type
1155	Main Modify	[H] and [V] in <Pairing> group	1	Width
		[H], [V], and [Fringe] in <Modulation> group	4	Shape
1164	Edge/Direction	[Independent Trans Rate] in <Pattern Limit Release> group	1	Transition Rate
1171	Transition	[Mix], [Nam], [Super Mix], [Preset Color Mix], [Wipe], [DME Wipe], and [FTB] in <Transition Type> group	1	Transition Rate

a) The menu numbers shown by way of example are those for M/E-1: the same applies for M/E-2, M/E-3, M/E-4, and P/P. Also, content applying to Key1 applies equally to Key2 to Key8.

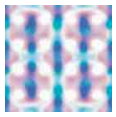
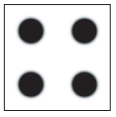
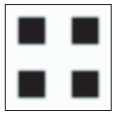
Knob parameters subject to restriction on default recall

Menu number	Menu name	Button name	Knob	Parameter
1111.1 [a]	Type >CRK Adjust	[Sample Mark] in the <Auto> group	1 2	Position H Position V
1112.1 [a]	Edge >Matte Adjust	[Position]		
1113 [a]	Main Mask	[Position]		
1116.1 [a]	Transition >Wipe Adjust	[Position]		
1116.3 [a]	Transition >DME Wipe Adjust	[Position]	1 2	H V
1154.1 [a]	Edge Direction >Matte Adjust	[Position]	1 2	Position H Position V
1155 [a]	Main Modify	[Position] in the <Position> group		
1155.1 [a]	Main Modify >Multi Adjust	[Position]		
1156 [a]	Sub Modify	[Position] in the <Position> group		
1156.1 [a]	Sub Modify >Multi Adjust	[Position]		
2122.2	Composite >Pattern Adjust	[Position]	1 2	Position H Position V
2131	Reposition	[Normal]		
		[Black&White]		
2210	Color Bkgd1 [b]	[Position]		
2412.1 [c]	Primary CCR >Mask1 Adjust [d]	[Position]		
4116	DME >Edge >Wipe Crop	[Position/Size]	5	Pattern
4127	DME >Video Modify >Mask	[Position/Size]		

a) The menu numbers shown by way of example are those for M/E-1: the same applies to M/E-2, M/E-3, M/E-4, and P/P. Equally, content applying to Key1 applies equally to Key2 to Key8.
b) The same applies to Color Bkgd2.
c) The menu numbers shown by way of example are those for CCR1: the same applies to CCR2.
d) The sample applies to Mask2 Adjust.

SpotLighting

Texture Patterns

1		2		3		4		5		6	
7		8		9		10		11		12	
13		14		15		16		17		18	
19		20		21		22		23		24	
25		26		27		28		29		30	

Material provided by Digital Archive Japan, INC.

Shape Patterns

1		2	

Functional Differences With Models of DME

Function	Menu number	MVE-8000A	MVE-9000	MKS-7470X/7471X	See
Selection of signal to insert in the border	4111	Flat Color only	Flat Color Ext Video Mix Color	Flat Color Ext Video Mix Color	*page 276*
Key Border	4113	No	Cannot be turned on when Glow is on.	Cannot be turned on when Glow is on.	*page 279*
Art Edge	4114	No	Yes	Yes	*page 279*
Flex Shadow	4115	No	Yes	Yes [a)]	*page 283*
Wipe Crop	4116	No	Yes	Yes	*page 287*
Color Mix	4117	No	Yes	Yes	*page 289*
Defocus/Blur	4121	Cannot be turned on when Glow is on.	Yes	Yes	*page 290*
Mask	4127	Yes [b)]	Yes	Yes	*page 297*
Adjustment of entire image brightness in Lighting/Spotlighting (parameter [Total Ambient])	4151 4156	No	Yes	Yes	*page 316* *page 326*
Setting the bar mode of the highlight area	4151	No	Yes	Yes	*page 317*
Adjustment of color of the diffuse light area (parameter [Bar Diffuse Color])	4151	No	Yes	Yes	*page 318*
Selection of signal to insert in the trail afterimage portion	4152	Freeze Video Flat Color Hue Rotate	Without limitation	Without limitation	*page 318*
Combine process for Trail	4152	No	Yes	Yes	*page 320*
Defocus function for Trail	4152	No	Yes	Yes	*page 319*
Combine process for Keyframe Strobe	4154	No	Yes	Yes	*page 322*
Wind	4155	No	Yes	Yes	*page 322*
Spotlighting	4156	No	Yes	Yes	*page 323*
Selection of signal to insert in the background	4161	Flat Color only	Flat Color Ext Video Mix Color	Flat Color Ext Video Mix Color	*page 331*
Interpolation settings	4163	Yes (SD only)	Yes (both SD/HD)	Yes (both SD/HD)	*page 333*
Anti-moire filter	4163	Yes (HD only)	No	No	*page 334*
Flex shadow axis settings	4164	No	Yes	Yes	*page 274*
Dim and Fade	4173	No	Yes	Yes	*page 296*
Glow	4174	Cannot be turned on when Defocus/ Blur is on.	Cannot be turned on when Key Border is on.	Cannot be turned on when Key Border is on.	*page 297*
Combiner depth settings (three-dimensional crossing function) (parameter [Depth])	4211	No	Yes	Yes	*page 339*

Function	Menu number	MVE-8000A	MVE-9000	MKS-7470X/7471X	See
Adding user texture patterns (for Spotlighting)	7316.9	No	Yes	No	“Adding User Texture Patterns” in Chapter 18 (Volume 2)
Setting AUX bus output/ reentry input	7337.7	It is not possible to make settings for DME 1 to 8 Ext In.	It is not possible to make settings for DME 1 to 8 Ext In.	It is not possible to make settings for DME 1 to 8 Ext In.	“Setting the AUX Bus Output and Reentry Input” in Chapter 20 (Volume 2)
TBC window center position (Video/Key)	7341.1	Yes only when SDI interface is used.	Yes only when SDI interface is used.	No	“Setting the TBC Window Center Position” in Chapter 21 (Volume 2)
TBC window center position (Ext.In)		No	Yes	Yes	“Setting the TBC Window Center Position” in Chapter 21 (Volume 2)
Adjustment of monitor output video clip level	7343	Yes only when SDI interface is used.	Yes only when SDI interface is used.	No	“Adjusting the Monitor Output” in Chapter 21 (Volume 2)
Settings relating to usage of editor port	7344	Yes	Yes	No	“Interfacing With External Devices (Device Interface Menu)” in Chapter 19 (Volume 2)
1080P supported	7313.1	Yes	No	Yes	“Setting the Signal Format (Format Menu)” in Chapter 18 (Volume 2)

a) [External] cannot be selected in the <Flex Shadow Source> group or [Ext Video] cannot be selected in the <Flex Shadow Fill> group.
b) Effect groups 1 and 2 cannot be selected at the same time. Pattern 304 (Round Corner) is not supported.

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