

SONY®

MVS-6000 System

(With CCP-9000 Series Center Control Panel)

User's Guide

Multi Format Switcher System

Volume 2 English

1st Edition

Software Version 8.00 and Later

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<Organization of This User's Guide>

The User's Guide for this system comprises Volumes 1 to 3.

Volume 1

The volume comprises the following chapters.

- Chapter 1 MVS-6000 Functions
- Chapter 2 Menus and Control Panel
- Chapter 3 Signal Selection and Transitions
- Chapter 4 Keys
- Chapter 5 Wipes
- Chapter 6 DME Wipes
- Chapter 7 Frame Memory
- Chapter 8 Color Backgrounds, Copy and Swap, and Other Settings
- Chapter 9 Color Corrector
- Chapter 10 Special Functions
- Appendix (Volume 1)
 - Wipe Pattern List
 - DME Wipe Pattern List
 - Resizer DME Wipe Pattern List
 - Menu Tree

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Volume 2

This book. For the contents of this volume, see “Table of Contents” at the front.

- Chapter 11 DME Operations
- Chapter 12 External Devices
- Chapter 13 Keyframe Effects
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- Chapter 15 Utility/Shotbox
- Chapter 16 Macros
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 - SpotLighting
 - Functional Differences With Models of DME
 - Macro File Editing Rules
 - About the Macro Attachment List Display
 - Menu Operations Not Recorded in a Menu Macro

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- Chapter 18 System Setup (System)
- Chapter 19 Control Panel Setup (Panel)
- Chapter 20 Switcher Setup (Switcher)
- Chapter 21 DME Setup (DME)
- Chapter 22 DCU Setup (DCU)

Chapter 23 Setup Relating to Router Interface and Tally (Router/Tally)
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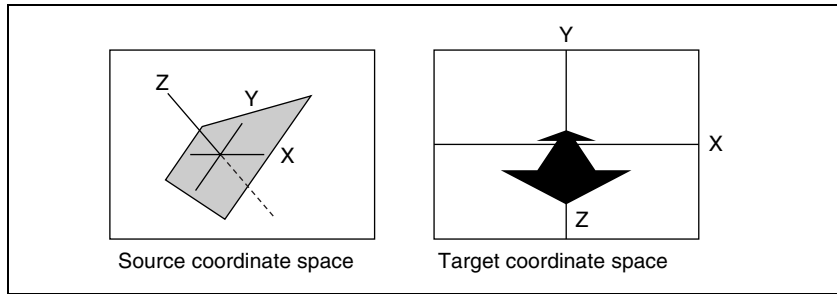
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Chapter 11 DME Operations

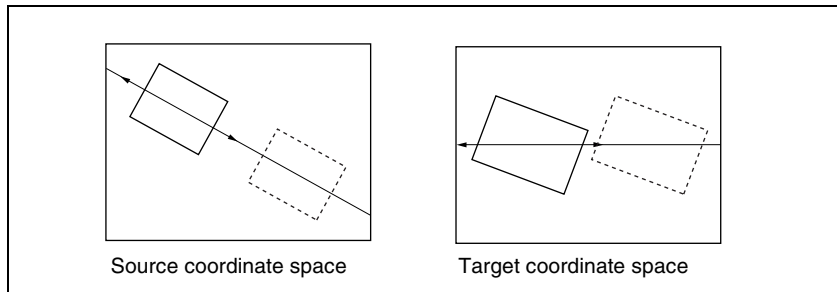
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Source coordinate space and target coordinate space

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.

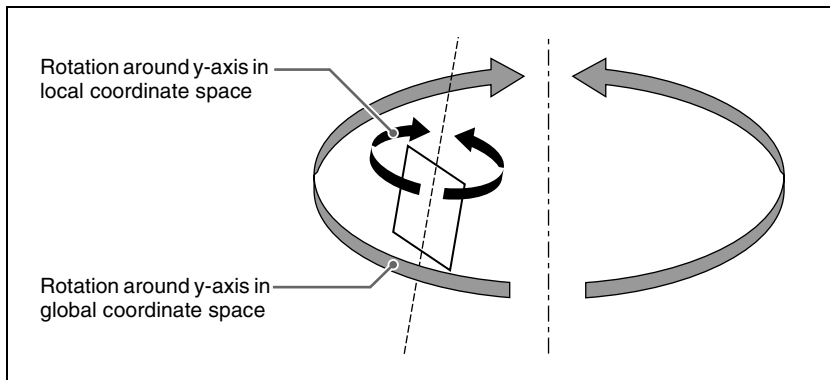


Movement along the x-axes of the source coordinate space and target coordinate space

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 (*page 176*).



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: $x = 4.00, y = 3.00, z = 0.00$

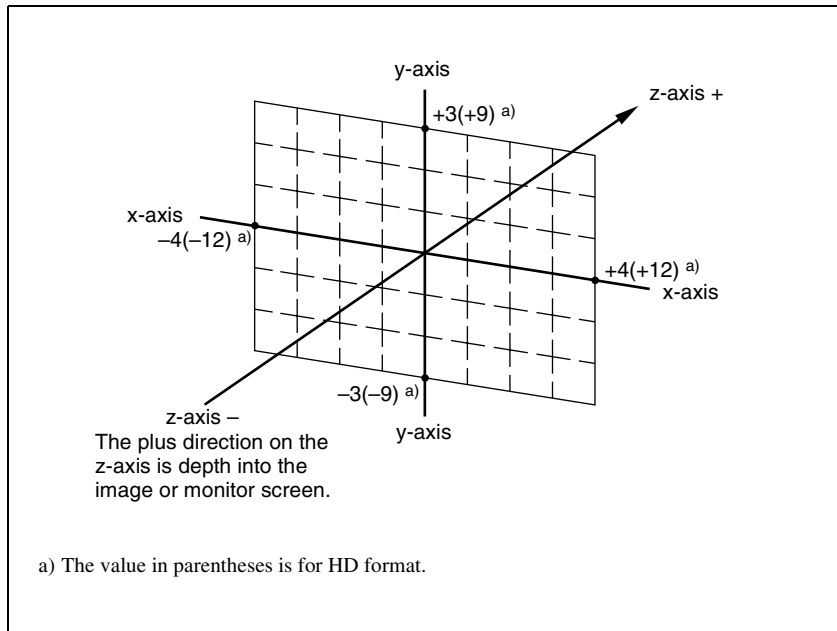
When using HD format signals: $x = 12.00, y = 9.00, z = 0.00$



• **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**

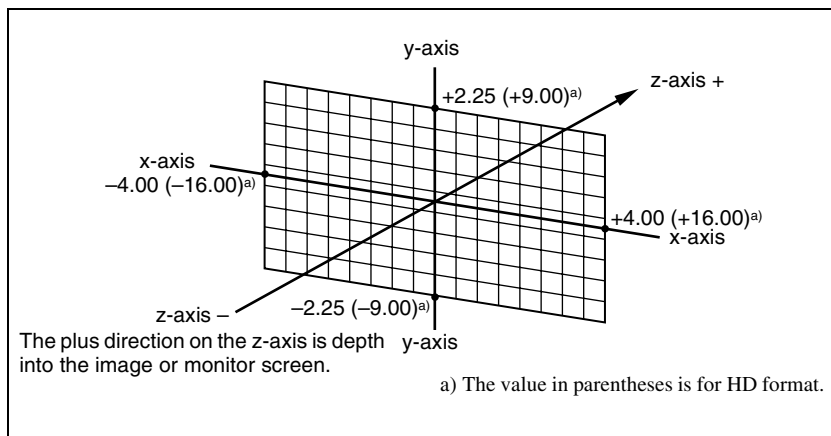
When using SD format signals: $x = 4.00$, $y = 2.25$, $z = 0.00$

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

Operation mode	Limits of three-dimensional transformation parameters
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 (*page 30*) 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 21*).

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)	1.0000
Perspective (z)	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] (*page 30*) 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)	0.0000
Perspective (z)	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

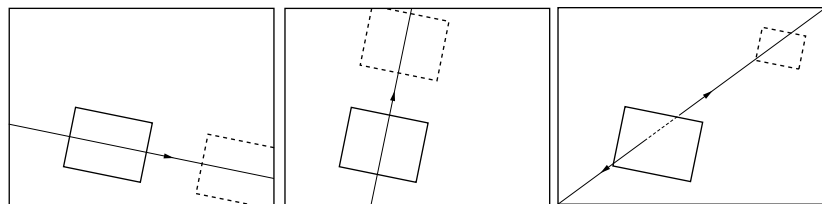
Transformation Operation Modes

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 28).*)

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



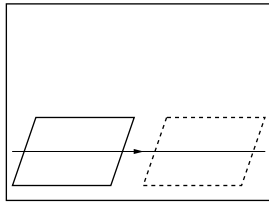
Movement on the x-axis

Movement on the y-axis

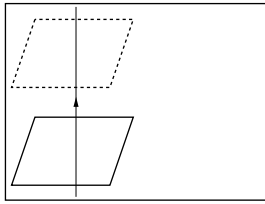
Movement on the z-axis



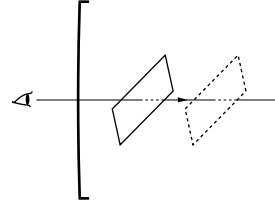
Image movement in the target coordinate space



Movement on the x-axis



Movement on the y-axis

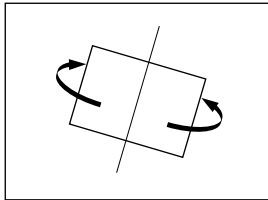


Movement on the z-axis

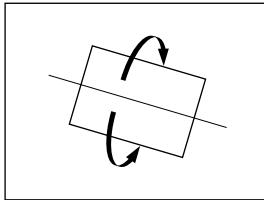
Rotation

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.

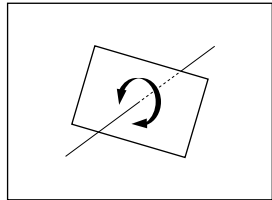
Image rotation in the source coordinate space



Rotation around the y-axis

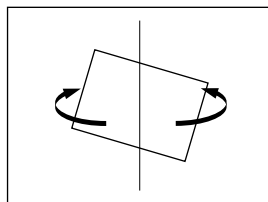


Rotation around the x-axis

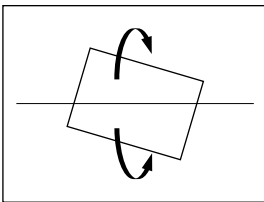


Rotation around the z-axis

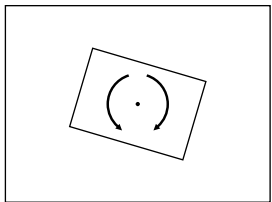
Image rotation in the target coordinate space



Rotation around the y-axis



Rotation around the x-axis



Rotation around the z-axis

Spin

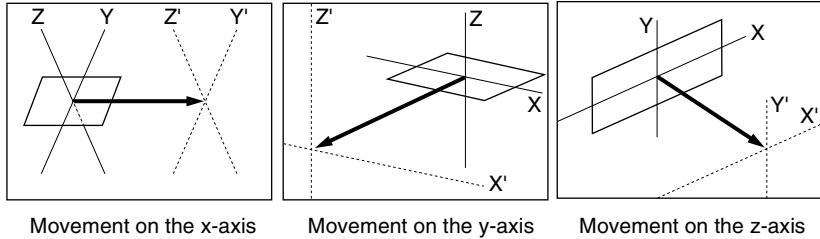
When rotating the image in Rotation mode, it may not always be possible to achieve the kind of rotation around an axis that you want. Combining Rotation mode with Spin mode creates an effect that rotates the image around a specified axis. The type of rotation differs depending on whether you are manipulating

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

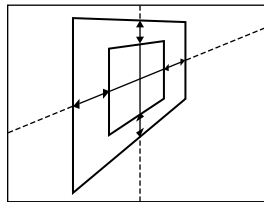


Location Size

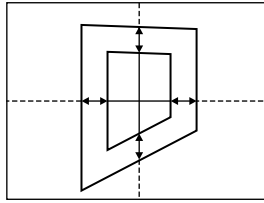
Changes the size of the whole image.

- 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

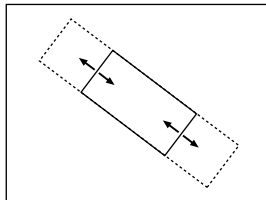


Magnification and shrinking in the target coordinate space

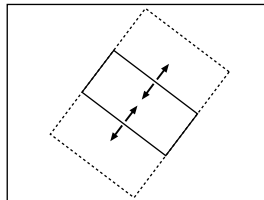


Aspect

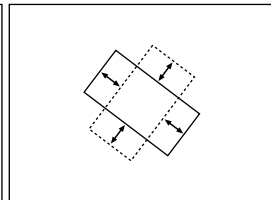
In the source coordinate space, changes the aspect ratio in the x-axis direction and y-axis direction, either independently or simultaneously.



Change of aspect ratio in x-axis direction



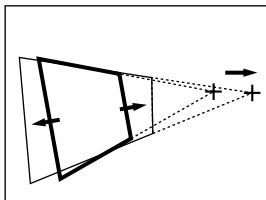
Change of aspect ratio in y-axis direction



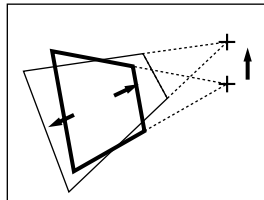
Simultaneous change aspect ratio in x-axis direction and y-axis direction

Perspective

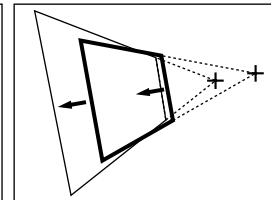
In the target coordinate space, changes the perspective on the image by changing an imaginary view point, without changing the position of the image. The x-axis and y-axis values define the position of the view point. The z-axis value defines its distance from the image.



Change of view point on x-axis



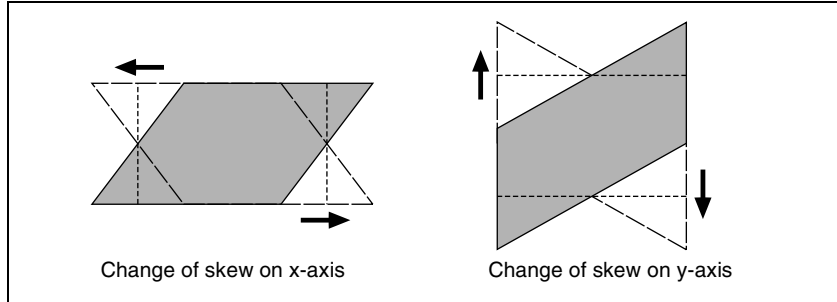
Change of view point on y-axis



Change of distance from view point to 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.

Note

When using MKS-6470, these graphics are output to the monitor signal of the switcher.

To make graphics display settings, use the DME menu. (*For details, see “Graphics Display Operation” (page 36).*)

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 179*), 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.

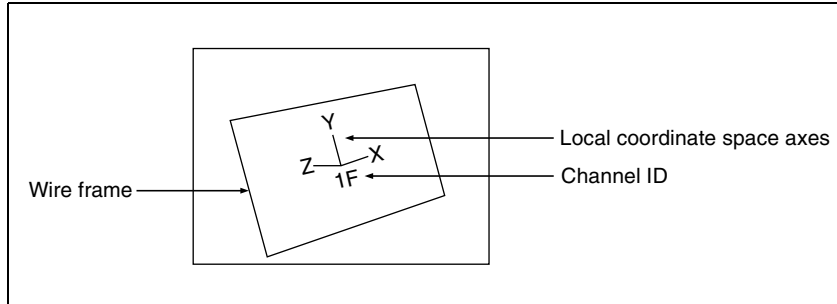


Channel ID

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.

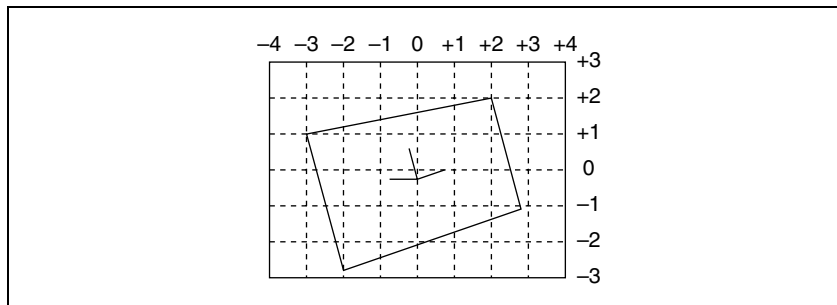
- In local coordinate space, the channel number is displayed along with “F” or “B” to indicate whether you are looking at the front (F) or back (B) of the current wire frame. For example, “1F” means the front of the wire frame on channel 1 in local coordinate space.
- In global coordinate space, the 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

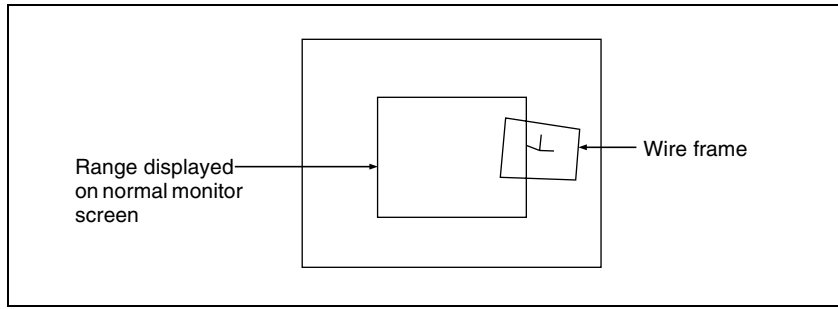
This is a grid pattern representing the whole of the monitor screen. The grid makes it easy to set the position of an image in two-dimensional coordinates.



Grid (SD format, 4:3 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 70*), turn Flex Shadow Axis on to display the Flex Shadow center axis. This is an effective aid in making settings for this function.

Note

The Flex Shadow center axis function is not supported on the MVE-8000A and MKS-6470.

Three-Dimensional Parameter Display

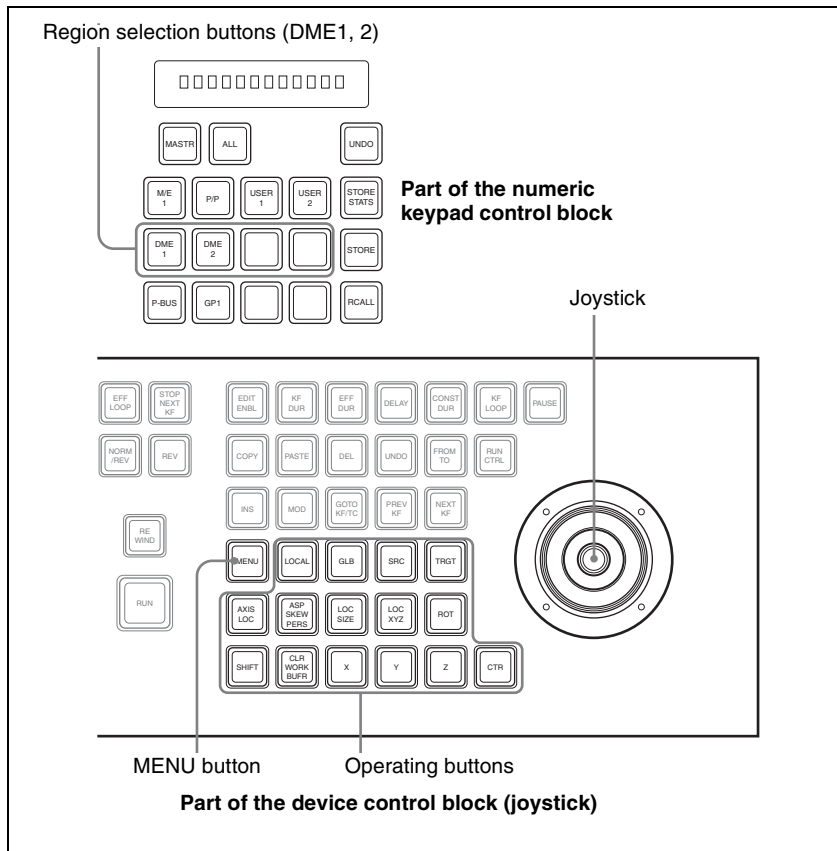
You can display a three-dimensional parameter list for the currently controlled image. When more than one DME channel is selected, the status of the reference channel is displayed.

For the method of displaying a parameter list and an example display, see “Viewing the three-dimensional parameter details” (page 34).

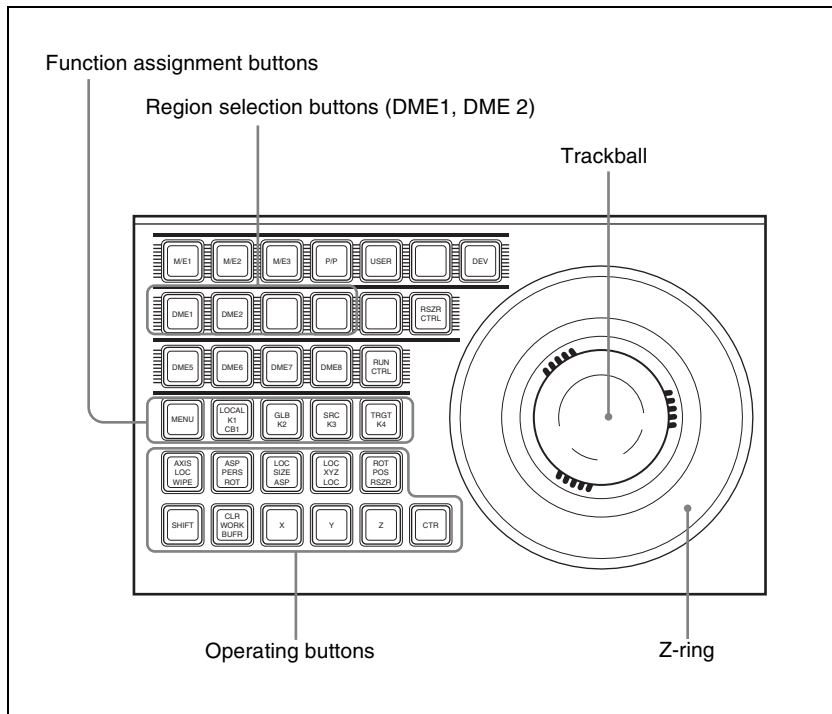
Three-Dimensional Transformation Operations

To carry out three-dimensional DME transformations, use either part of the device control block (joystick) and numeric keypad control block or the optional device control block (MKS-8031TB trackball module).

Basic Operations



Controls used for DME operations



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

For details of three-dimensional DME coordinate space, see “Three-Dimensional Parameter Display” (page 27).

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 joystick is assigned to the selected three-dimensional coordinate space transformation mode.

For details of the three-dimensional transformation operation modes, see “Transformation Operation Modes” (page 21).

To move the image: Press the [LOC XYZ] button, turning it on.

You can move the image with the joystick. 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 with the joystick.

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 joystick.

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 with the joystick.

To magnify or shrink the image: Press the [LOC SIZE] button, turning it on.

You can magnify and shrink the image by rotating the joystick knob. 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 with the joystick.

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 by moving the joystick horizontally or vertically, and change the distance to the view point by rotating the joystick knob.

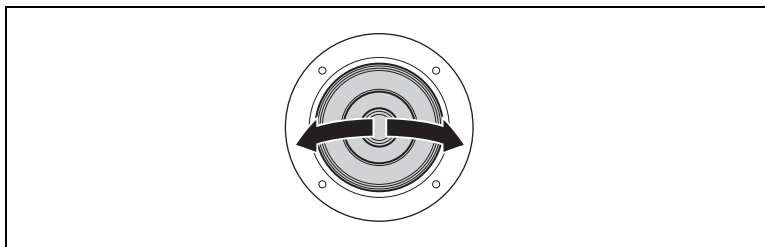
To change the skew of the image: With the [SRC] button selected in step **2**, press the [ASP PERS] button, turning it on, while holding down the [SHIFT] button.

You can change the skew of the image along the x- and y-axes with the joystick.

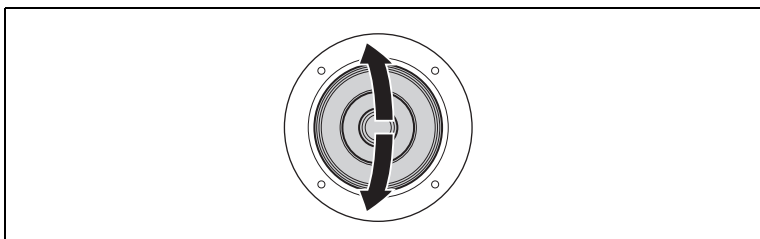
- 4** Depending on the axis of the change, operate the joystick as follows.



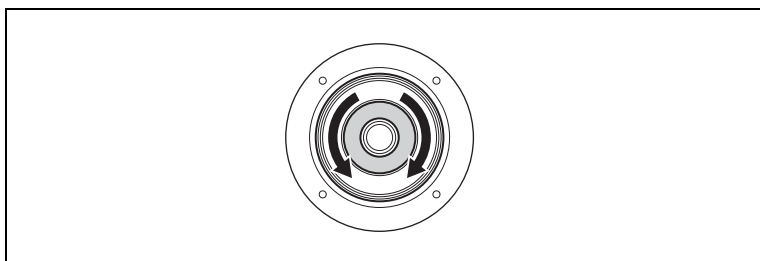
- To change on the x-axis, move the joystick horizontally. Parameter values increase as you move to the right, and decrease as you move to the left.



- To change on the y-axis, move the joystick vertically. Parameter values increase as you move upward, and decrease as you move downward.



- To change on the z-axis, rotate the joystick knob. 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 joystick on the selected axis only.

Functions assignable to joystick operations

Button	Usable coordinate space	Joystick x-direction	Joystick y-direction	Joystick z-direction
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



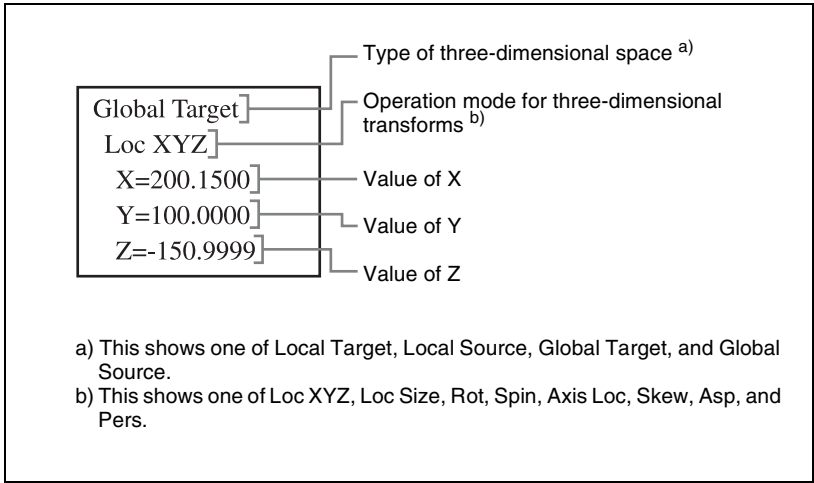
Three-Dimensional Parameter Display

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.



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.

Edge	Local	X	Y	Z
	Size:	1.0000	1.0000	1.0000
	Aspect:	1.0000	1.0000	1.0000
	Skew:	0.0000	0.0000	0.0000
Video Modify	Location:	-4.4420	-0.1820	0.0400
	Axis Location:	0.0000	0.0000	0.0000
	Rotation:	0.6330	-0.1068	0.0152
Freeze	Source Spin:	0.0000	0.0000	0.0000
	Target Spin:	0.0000	0.0000	0.0000
	Perspective:	-0.0660	-0.0440	1.0000
	Target Loc/Size:	-0.2360	-0.1360	1.0000
Non-Linear				
Light/Trail	Global	X	Y	Z
	Size:			1.0000
	Location:	-2.8300	-0.0540	0.0000
	Axis Location:	0.0000	0.0000	0.0000
	Rotation:	0.6330	-0.1068	0.0152
	Source Spin:	0.0000	0.0000	0.0000
Input/Output	Target Spin:	0.0000	0.0000	0.0000
	Perspective:	-0.0660	-0.0440	1.0000
	Target Loc/Size:	-0.2360	-0.1360	1.0000

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 20*).

To reset three-dimensional parameter values to the defaults (*page 20*) 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. (*See “Selecting the State After Powering On (Start Up Menu)” in Chapter 18 (Volume 3).*)

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 25).*

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.

Note

The flex shadow axis function is not supported on the MVE-8000A and MKS-6470.

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.



Note

When using MKS-6470, graphics are displayed on the monitor signal of the switcher.

For details, see “Superimposing the graphic display on the monitor signal” (page 38).

When the MKE-8021A is installed in the MVE-8000A to provide an SDI interface or when the MVE-9000 is used, it is possible to output graphics to the Monitor Out connector.

Superimposing the graphic display on the monitor signal

Note

When using the MKS-6470, the graphic display is superimposed on the monitor signal (DME MON V, DME MON K).

In the Graphic menu, press [Monitor Out], turning it on.
The graphic display appears on the monitor signal to which the DME output is assigned.

You can select which DME channel output is assigned to the monitor signal. For details, see “Applying a DME Effect to a Key” in Chapter 4 (Volume 1).

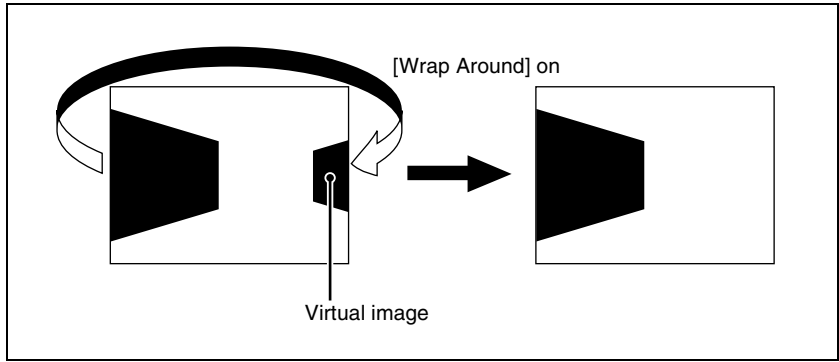
Canceling Virtual Images

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.
The virtual image disappears.




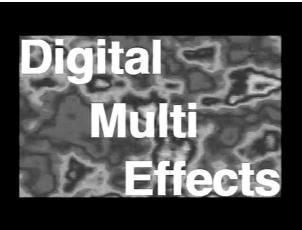
DME Special Effect Operations

You can use DME to add a variety of special effects.


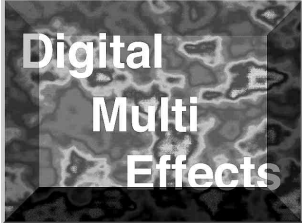

Usable function differs depending on the model. For details, see “Functional Differences With Models of DME” (page 414).

Special Effects

Edge effects

Name	Effect/Image
Border (See page 54.)	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 56.)	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. 



Name	Effect/Image
<p>Beveled Edge (See page 59.)</p>	<p>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.</p> <div data-bbox="435 181 736 402"><p>Digital Multi Effects</p></div> <p data-bbox="555 410 606 431">Color</p> <div data-bbox="795 181 1097 402"><p>Digital Multi Effects</p></div> <p data-bbox="919 410 971 431">Lights</p>
<p>Key Border (See page 61.)</p>	<p>Adds borders to keys or gives a key consisting of an outline only.</p> <div data-bbox="435 500 736 727"><p>Digital Multi Effects</p></div>





Name	Effect/Image
<p>Art Edge (See page 62.)</p>	<p>Adds edges to the inner and outer side of the input image. The following items can be set.</p> <ul style="list-style-type: none">• Art edge width and position• Separate softening of the art edge inner and outer sides• Color of art edges <p>Examples of Art Edge source</p> <div data-bbox="435 272 736 500"></div> <p data-bbox="499 506 659 529">Gradation Matte</p> <div data-bbox="795 272 1097 500"></div> <p data-bbox="865 506 1027 529">Radial Gradation</p> <div data-bbox="435 558 736 786"></div> <p data-bbox="504 792 654 815">Rainbow Matte</p> <div data-bbox="795 558 1097 786"></div> <p data-bbox="870 792 1022 815">Radial Rainbow</p> <p>Examples of Art Edge source [Rainbow Matte]</p> <div data-bbox="435 889 736 1117"></div>



Name	Effect/Image
<p>Flex Shadow (See page 70.)</p>	<p>Allows a shadow to be added to the image using only one DME channel. The following settings can be made for the shadow.</p> <ul style="list-style-type: none">• The signal to use for the shadow<ul style="list-style-type: none">- 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 <div data-bbox="435 386 736 610"></div> <p data-bbox="508 618 650 639">Rainbow Matte</p> <div data-bbox="795 386 1099 610"></div> <p data-bbox="873 618 1023 639">Radial Rainbow</p>
<p>Drop Shadow (See page 77.)</p>	<p>Allows a shadow to be added to the image using only one DME channel. The following settings can be made for the shadow.</p> <ul style="list-style-type: none">• Shadow position• Shadow density• Shadow color• Edge soft function
<p>Wipe Crop (See page 78.)</p>	<p>Crops the video image to be visible inside or outside a wipe pattern.</p> <div data-bbox="443 862 1087 1198"><p data-bbox="619 862 731 883">Background</p><p data-bbox="520 1174 638 1195">Video image</p><p data-bbox="866 1174 1038 1195">When Invert is On</p></div>

Effects for entire image

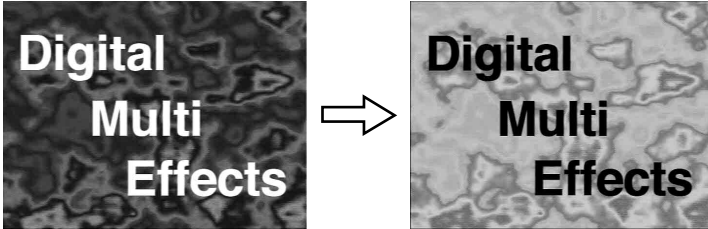
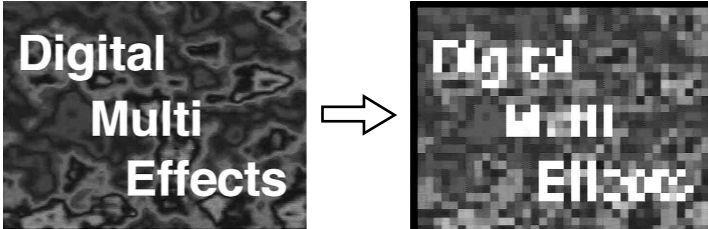
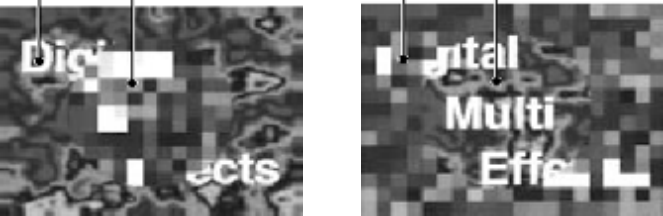
Name	Effect/Image
Defocus <i>(See page 85.)</i>	Defocuses the whole image. The degree of defocusing can be set simultaneously or separately for video and key signals. (However, when the DME dedicated interface is used, the degree of defocusing can be set for video signals only.) You can also cancel the black level leaking that occurs at the edge of the screen when the Defocus effect is used. 
Blur <i>(See page 87.)</i>	Applies a rounded blurring to the whole image.
Multi Move <i>(See page 89.)</i>	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 <i>(See page 90.)</i>	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 <i>(See page 91.)</i>	Converts the image into a monochrome image.
Posterization <i>(See page 91.)</i>	Coarsens the luminance gradations of the image, for a paintinglike effect.
Solarization <i>(See page 91.)</i>	Coarsens the chroma gradations of the image, for a paintinglike effect.





Name	Effect/Image
Nega (See page 92.)	Reverses the luminance or chroma of the image. 
Contrast (See page 92.)	Changes the contrast of the luminance and chroma of the image.
Mosaic (See page 93.)	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 100.)	Masks part of the picture, so that special effects are applied only inside a selected pattern. <p>Video image Effect video image (Mosaic) Effect video image (Mosaic) Video image</p>  <p>MASK (NORMAL) MASK (INVERT)</p>




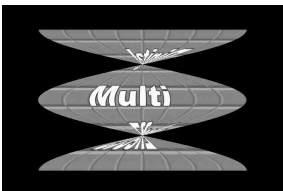



Name	Effect/Image
Sketch (See page 94.)	<p data-bbox="403 118 1079 167">Provides a sketch-like effect based on the outlines of the image, using different touches such as sketch, edge color, drawing, relief, and sharp.</p>  <p data-bbox="542 412 629 431">SKETCH</p>
Metal (See page 97.)	<p data-bbox="403 459 1079 508">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.</p> 
Dim and Fade (See page 98.)	<p data-bbox="403 776 1124 849">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.</p>  <p data-bbox="555 1094 616 1114">FADE</p>
Glow (See page 99.)	<p data-bbox="403 1141 1098 1190">Softens the edges of highlights, giving an effect like being struck by a soft light.</p> 

Freeze effects

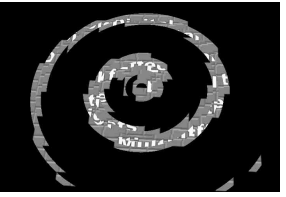
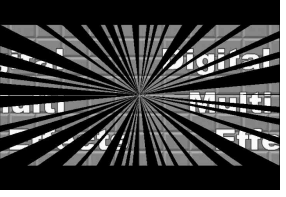
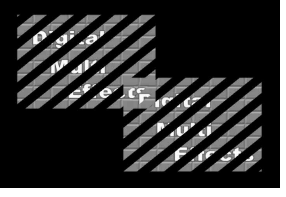

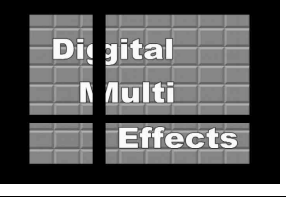

Freezes the input video. The video can also be freezed at a specified interval (*see page 103*).

Nonlinear effects

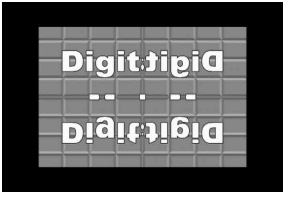





Name	Effect/Image
Wave (See page 105.)	Produces a wave-like effect in the image. 
Mosaic Glass (See page 110.)	Makes the image rougher and finer at a specified interval. 
Flag (See page 110.)	Applies an effect like a flag waving in the wind. 
Twist (See page 111.)	Twists the image. 
Ripple (See page 112.)	Applies an effect like ripples moving across the image. 



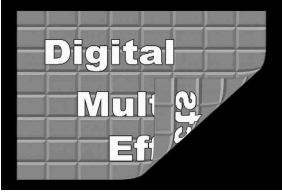

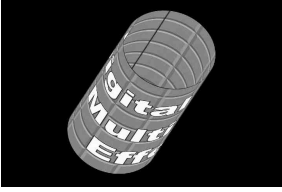


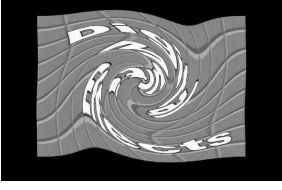



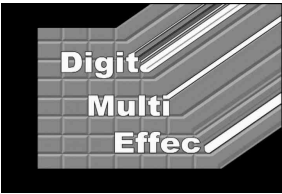
Name	Effect/Image	
Rings (See page 116.)	Partitions the image into rings that rotate while moving in the same direction.	
Broken Glass (See page 117.)	Partitions the image like broken glass, with shards flying outward.	
Flying Bar (See page 118.)	Divides the image into bars which peel off in two blocks as they move.	
Blind (See page 118.)	Divides the image into bars or wedges, with blocks rotating like the slats of venetian blinds.	
Split (See page 120.)	Splits the image upper and lower, left and right.	
Split Slide (See page 120.)	Divides the image into bars which slide alternately in reverse directions.	






Name	Effect/Image	
Mirror (See page 121.)	Partitions the image vertically and horizontally, creating an image like a reflection in a mirror.	
Multi Mirror (See page 122.)	Divides the image into originals and reflections, lining them up vertically and horizontally.	
Kaleidoscope (See page 123.)	Creates an image like a view into a kaleidoscope.	
Lens (See page 124.)	Creates an image like a view through a lens.	
Circle (See page 126.)	Makes a circle with the image.	
Panorama (See page 126.)	Curves the upper and lower edges of the image to emphasize the sense of perspective.	



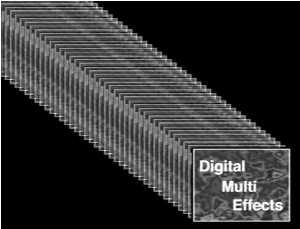

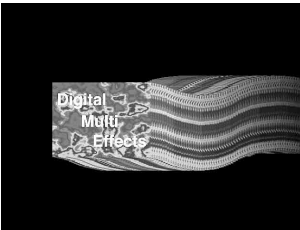
Name	Effect/Image
Page Turn (See page 127.)	Turns the image like a turning page. 
Roll (See page 128.)	Rolls the image up. 
Cylinder (See page 128.)	Winds the whole image onto a cylinder. 
Sphere (See page 129.)	Winds the whole image onto a sphere. 
Explosion (See page 129.)	Divides the image into fragments which expand as they fly out. 
Swirl (See page 130.)	Swirls the image. 

Name	Effect/Image
Melt <i>(See page 131.)</i>	Melts the image away from a specified part. 
Character Trail <i>(See page 133.)</i>	Extends the edge of the image like a trail. 

Lighting effects

Name	Effect/Image
Lighting <i>(See page 133.)</i>	Provides the effect of light striking the image. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Normal</p> </div> <div style="text-align: center;">  <p>Specular</p> </div> </div> <div style="text-align: center; margin-top: 20px;">  <p>Mat</p> </div>
Spotlighting <i>(See page 149.)</i>	Creates the effect of a spotlight striking the surface of the image.

Recursive effects

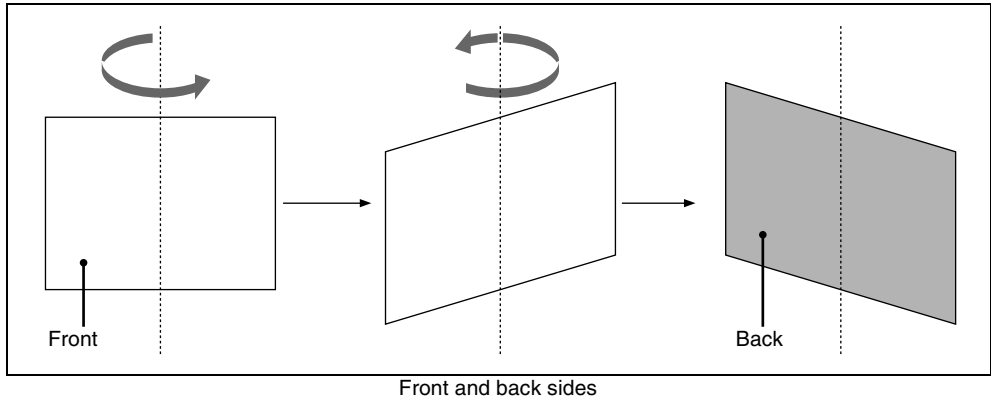
Name	Effect/Image
Trail <i>(See page 139.)</i>	Recursively freezes the input video at regular intervals so that a trail of afterimages is created. You can make the afterimages stardust trails. 
Motion Decay <i>(See page 143.)</i>	Blurs the motion of a moving video by creating afterimages of the moving video. You can make the afterimages stardust trails. 
Keyframe Strobe <i>(See page 145.)</i>	Freezes the video each time the effect passes a keyframe. You can make the afterimages stardust trails.
Wind <i>(See page 147.)</i>	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 167).*

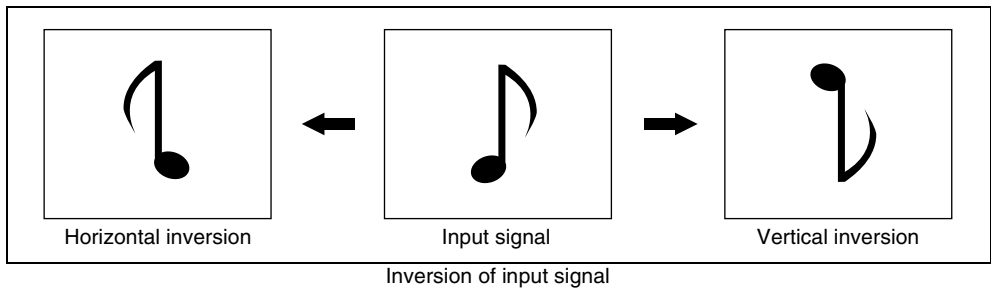
Separate sides (effects for front and back sides)

Applies separate video signals and key signals to the front and back of the image *(See page 168).*



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 171*).



Key density adjustment

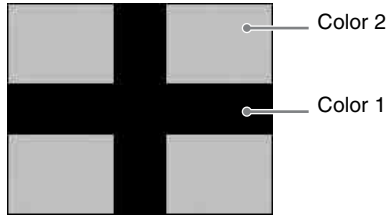
Adjusts the key density for the key signal input to the DME (*see page 171*).

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 171*).

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 83*).



Operations Common to All DME 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.

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.
The Border effect is enabled. You can adjust the border width parameters with the knobs.
- 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/MKS-6470 or MVE-9000).

When the MVE-8000A/MKS-6470 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 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 83*)

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
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.

The Crop effect is enabled. You can adjust degree of cropping with the knobs.

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)

Knob	Parameter	Adjustment	Setting values
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

Note

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.

This enables the beveled edge, and you can now use the knobs to adjust the parameters.

Note

When the border is enabled, the edge soft function (*see page 56*) is not available.

- 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 4.00 (SD) 0.00 to 12.00 (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

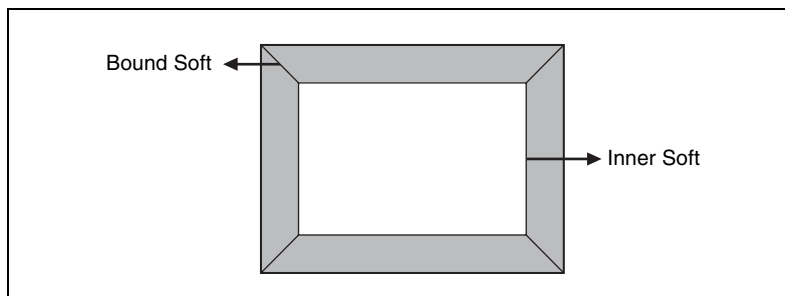
• **To set the colors for each edge (Top, Left, Right, Bottom, All)**

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00 ^{a)}
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

Note

The Key Border function is not supported on the MVE-8000A and MKS-6470.

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.

This enables key borders, and you can now use the knobs to adjust the parameters.

Note

The key border function and Glow function (*see page 99*) 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.

The outline only effect is enabled.

Art Edge Settings

Note

The Art Edge function is not supported on the MVE-8000A and MKS-6470.

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.

This enables art edges, and you can now use the knobs to adjust the parameters.

Note

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 1800 (HD)
2	Left	Width of left edge	0.00 to 8.00 (SD) 0.00 to 24.00 (HD)

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
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 4.50 (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.

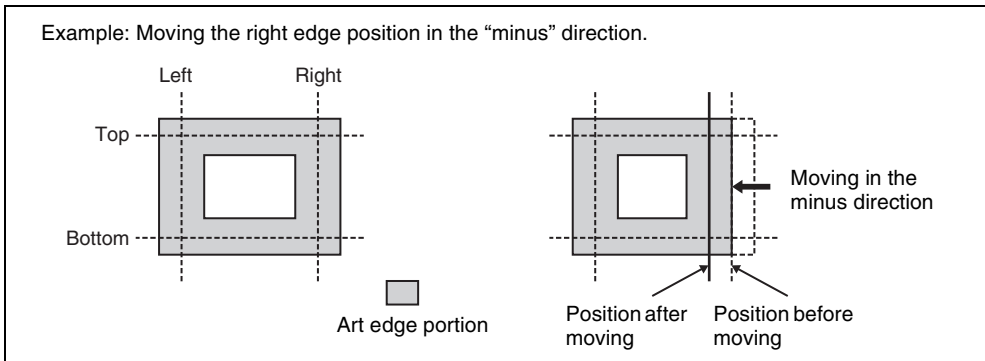


• **4:3 mode**

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 68) as a flat color.

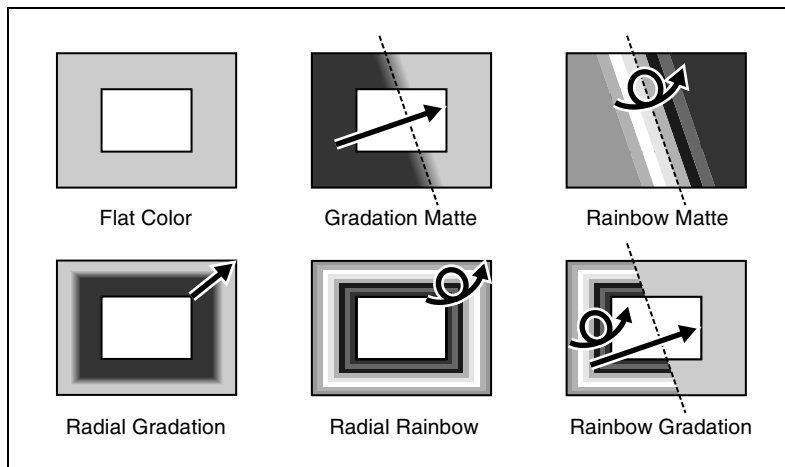
Gradation Matte: Color 1 changes to Color 2 (see page 68) at the border lines (see step 2).

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 page 68) 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)





Knob	Parameter	Adjustment	Setting values
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**

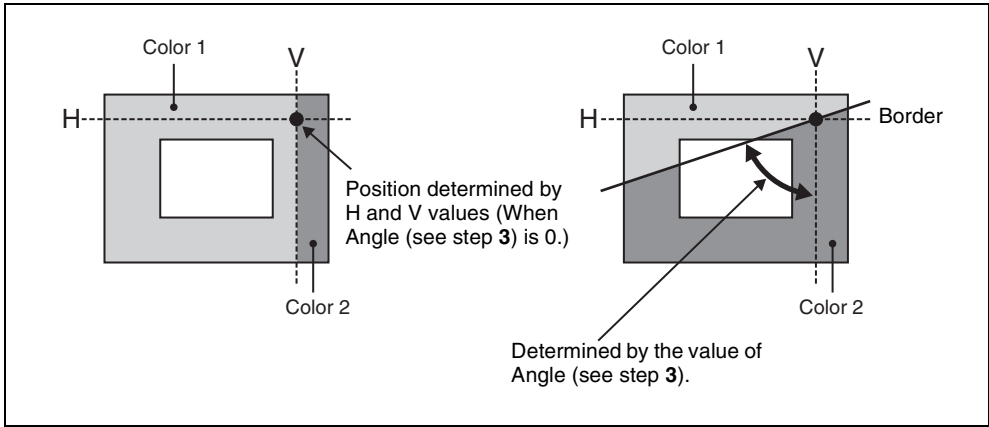
Knob	Parameter	Adjustment	Setting values
1	Angle	Rotation angle of pattern	-8.00 to +8.00 ^{a)}

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**

Note

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**



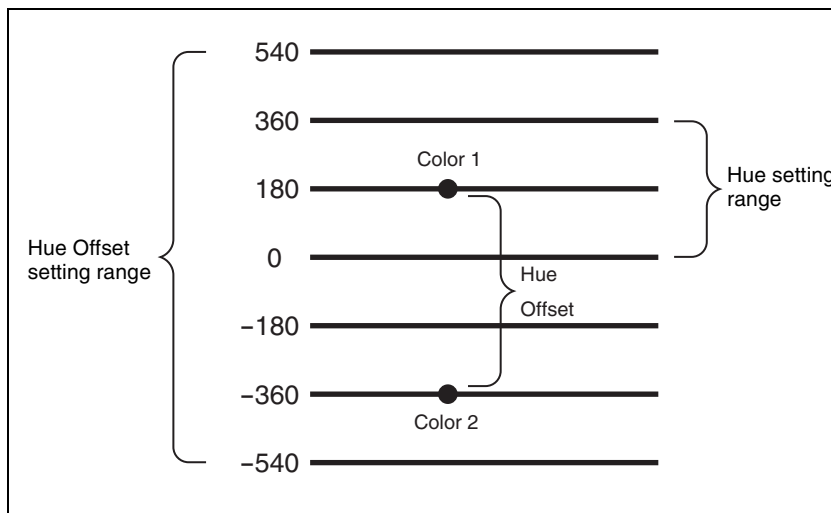
Note

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.

Note

This function is available only when [Soft] is on.

Flex Shadow Settings

Notes

- The Flex Shadow function is not supported on the MVE-8000A and MKS-6470.
- “Mix Color” or “Ext Video” can only be applied to one of the background (see page 167), flex shadow, trail (see page 139), and wind (see page 147) 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 Drop Shadow.’

The Flex Shadow menu appears.

- 2 Press [Flex Shadow], turning it on.

This enables flex shadows, and you can now use the knobs to adjust the parameters.

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)



Knob	Parameter	Adjustment	Setting values
3	Size All	Enlarge or shrink horizontally and vertically	Value of Size H (see page 72) 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 72) 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 83)

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 Drop 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 Drop Shadow menu, press [Axis Loc], turning it on.
- 2 Adjust the following parameters.

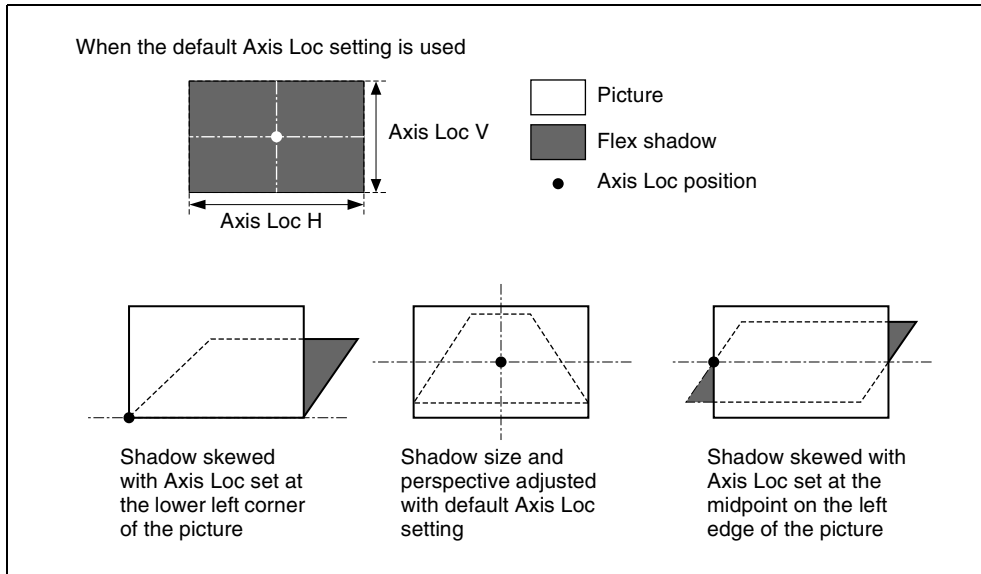
The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 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 36).

Skewing the flex shadow

- 1 In the Flex Drop Shadow menu, press [Skew], turning it on.
- 2 Adjust the following parameters.

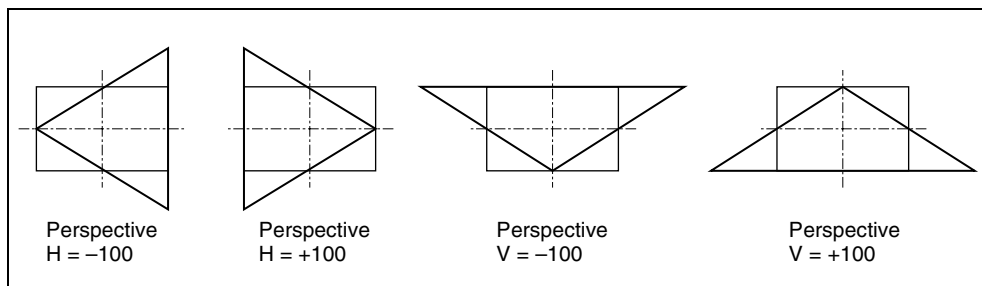
Knob	Parameter	Adjustment	Setting values
1	Skew H	Skew horizontally	-100.00 to +100.00
2	Skew V	Skew vertically	-100.00 to +100.00

Adding perspective to the flex shadow

- 1 In the Flex Drop 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

Knob	Parameter	Adjustment	Setting values
2	Perspective V	Add vertical perspective	-100.00 to +100.00

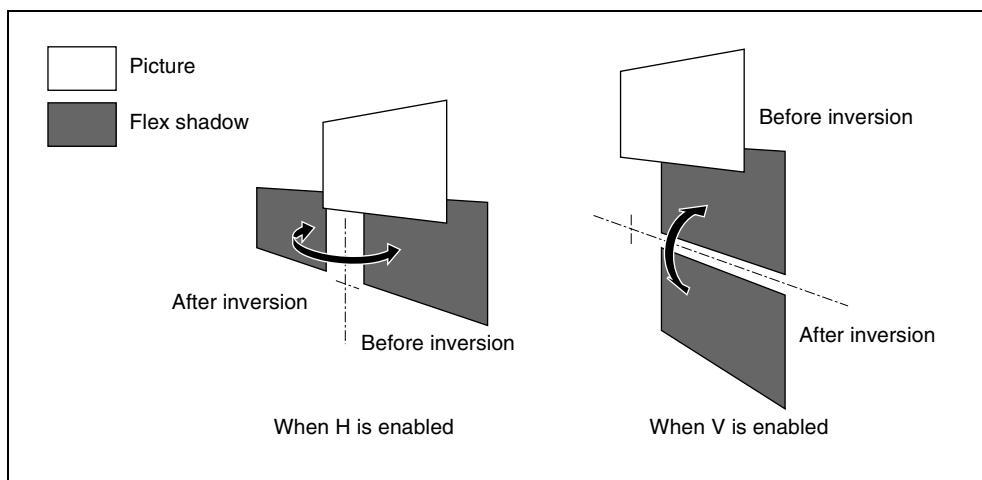


Inverting the flex shadow

In the <Invert> group of the Flex Drop 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].

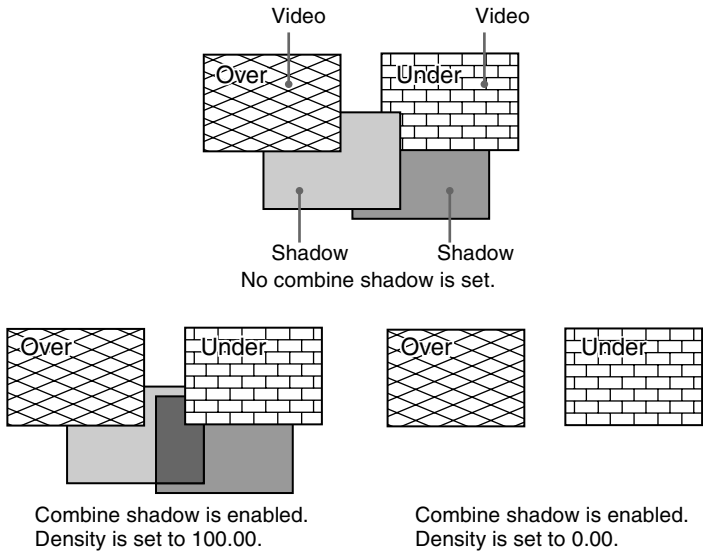
V: Invert the shadow in the vertical direction. The inversion is applied around the axis of the knob 1 parameter Axis Loc H set with [Axis Loc].



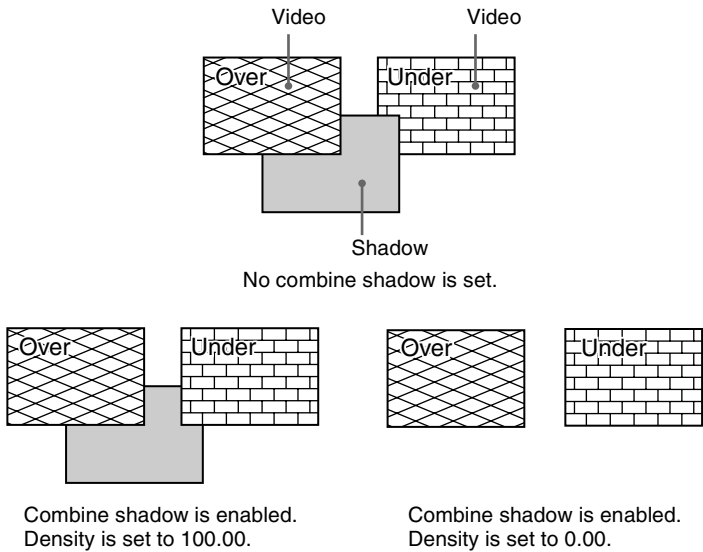
Setting a combine shadow

When there are several images, adds a flex shadow in the depth of an image or overlays multiple flex shadows.

Example 1: When Flex Shadow is enabled on both of two channels.



Example 2: Flex Shadow is enabled on one channel only.



- 1** In the Flex Drop 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 horizontally.
- 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)

Drop Shadow Settings

Notes

- Drop shadow effect is available for MKS-6470 only.
- It is not possible to use drop shadow simultaneously with the trail, motion decay, or keyframe strobe function.

- 1** In the DME menu, select VF1 ‘Edge’ and HF5 ‘Flex/Drop Shadow.’

The Flex/Drop Shadow menu appears.

- 2** Press [Drop Shadow], turning it on.

This enables drop shadow, and you can now adjust the parameters with the knobs.

- 3** Adjust the following parameters.

The parameter ranges depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected for the system as follows.

• In 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 0.00(SD) - 18.00 to 0.00(HD)
5	Density	Shadow density	0.00 to 100.00

• In 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 0.00(SD) - 18.00 to 0.00(HD)
5	Density	Shadow density	0.00 to 100.00



- 4 To change the shadow color, press [Drop Shdw Color], 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

- 5 To soften the edges, turn [Shadow Soft] on.

Wipe Crop Settings

Notes

- The wipe crop function is not supported on the MVE-8000A and MKS-6470.
- 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

Note

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

Note

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

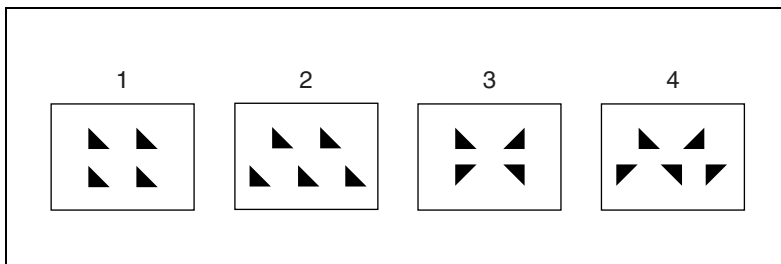
Replicating the wipe crop pattern (Multiplication)

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 following figure



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

Note

The color mix function is not supported on the MVE-8000A and MKS-6470.

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 80)
- “Replicating the wipe crop pattern (Multi)” (page 81)
- “Rotating the wipe crop pattern (Rotation)” (page 80)
- “Applying modulation to the wipe crop pattern (Modulation)” (page 80)

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.

The Defocus effect is enabled. You can adjust the defocusing of video and key signals with the knobs.

Note

On the MVE-8000A and MKS-6470, 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

Note

“Key” can be selected only when the MVE-8000A/MVE-9000 is connected through an SDI interface.

4 Set the parameters.

• **When Video/Key is selected (with MKS-6470)**

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 MVE-8000A/MVE-9000)**

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 MVE-8000A/MVE-9000)

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.

For details, see “Mask Settings” (page 100).

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.

The Blur effect is enabled. You can adjust the blurring of video and key signals with the knobs.

Note

On the MVE-8000A and MKS-6470, 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 MVE-8000A/MVE-9000 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 MKS-6470 is used**

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 MVE-8000A/ MVE-9000)**

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 MVE-8000A/MVE-9000)

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 MVE-8000A/MVE-9000)

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.

For details, see “Mask Settings” (page 100).

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.

The Multi Move effect is enabled. You can adjust the center point of shrinking, the ratio of shrinking, and the aspect ratio of the shrunken images with the knobs.

- 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
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)



Knob	Parameter	Adjustment	Setting values
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.
The Sepia effect is enabled. You can adjust the degree of mixing between the sepia image and the original image with the knobs.
- 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.

For details, see “Mask Settings” (page 100).

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.
The Mono effect is enabled. The color image changes to monochrome.

Masking the Mono effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.
For details, see “Mask Settings” (page 100).

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.
The Posterization and Solarization effects are enabled. You can adjust the coarseness of the gradations with the knobs.
- 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.

For details, see “Mask Settings” (page 100).

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.

For details, see “Mask Settings” (page 100).

Contrast Settings

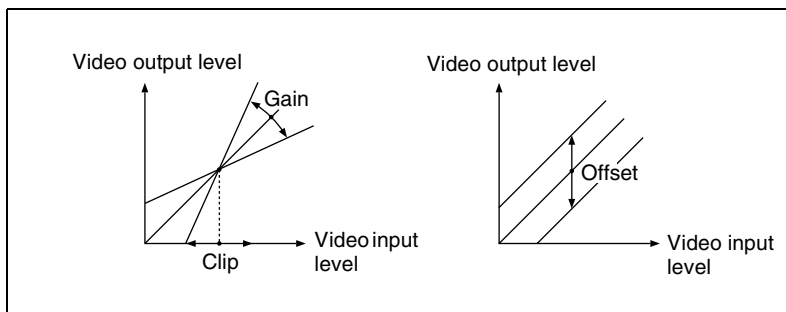
Applying the Contrast effect

- 1** In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’
The Color Modify menu appears.
- 2** Press [Contrast], turning it on.
The Contrast effect is enabled. You can adjust the luminance and chroma contrast with the knobs.
- 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.

For details, see “Mask Settings” (page 100).

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.

The Mosaic effect is enabled. You can adjust the size and aspect ratio of the mosaic tiles with the knobs.

- 3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Size of tiles	0.00 to 100.00



Knob	Parameter	Adjustment	Setting values
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.

For details, see “Mask Settings” (page 100).

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.

The Sketch effect is enabled.

- 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

Knob	Parameter	Adjustment	Setting values
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.

For details, see “Mask Settings” (page 100).

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.
This enables the Metal effect.
- 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.

For details, see “Mask Settings” (page 100).

Dim and Fade Settings

Note

The Dim and Fade function are not supported on the MVE-8000A and MKS-6470.

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.

This enables the Dim effect.

- 3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Start	Point where dimming starts (dim start point)	-100.00 to +100.00
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.

This enables the Fade effect.

- 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.
This enables the Glow effect.

Notes

- On the MVE-9000, 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 and MKS-6470, 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.

For details, see “Mask Settings” (page 100).

Mask Settings

The mask function is applied in units made up of the groups.

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

Note

On the MVE-8000A and MKS-6470, 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)

Knob	Parameter	Adjustment	Setting values
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 and MKS-6470.

• 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 and MKS-6470.

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 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.

Image 1: Image before applying mask

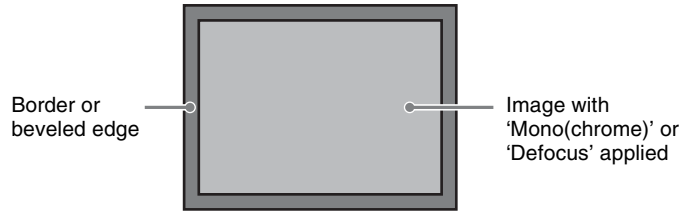
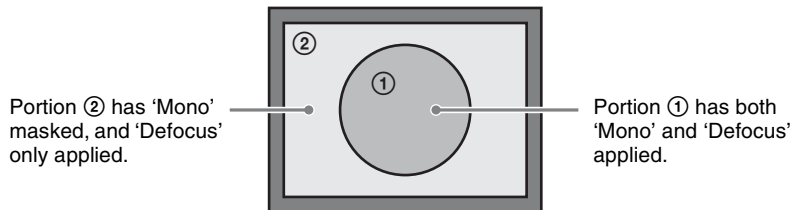
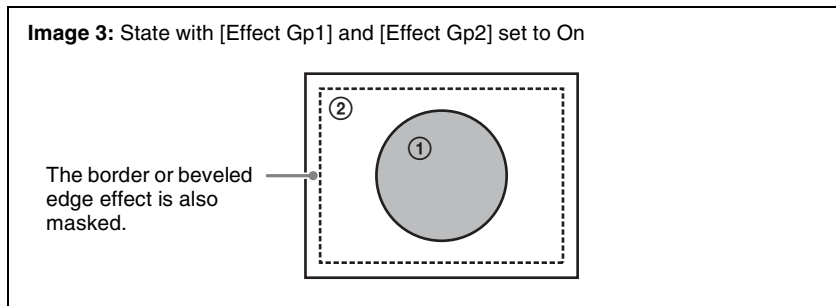


Image 2: State with [Effect Gp1] only set to On



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.



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.

Note

When 720P 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.

The Hard Freeze is executed, displaying a still image.

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.

Note

The freeze timing setting is not required when the following signal formats are being used.

Signal formats: 720P/59.94, 720P/50

2 In the <Freeze> group, press [Time Strobe], turning it on.

The Time Strobe freeze is enabled. You can adjust the freeze interval and the ratio of live video inserted between freeze images.

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

Note

When 720P signal format is used, the Film mode cannot be selected.

1 In the <Freeze> group, press [Film], turning it on.

The Film freeze is enabled. You can adjust the ratio of frame advance.

2 Set the parameter.

Knob	Parameter	Adjustment	Setting values
1	Film	Ratio of frame advance	0.00 to 100.00

Nonlinear Effect Settings

You can add a variety of effects, including effects that change the shape of the image as a whole.

Note

Nonlinear effects are possible using a second DME.

1 In the DME menu, select VF4 'Non Linear' and HF1 'Type.'



A menu for selecting the various effects appears.

- 2 Display the menu for the effect that you want to apply by pressing its button.

The effect displayed is enabled.

- 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 and MKS-6470.

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.

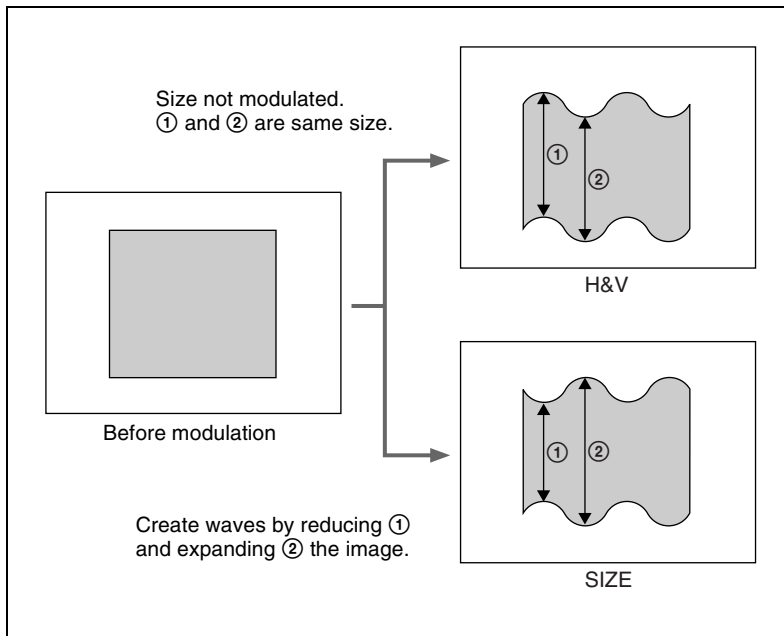
To apply the Wave effect

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]

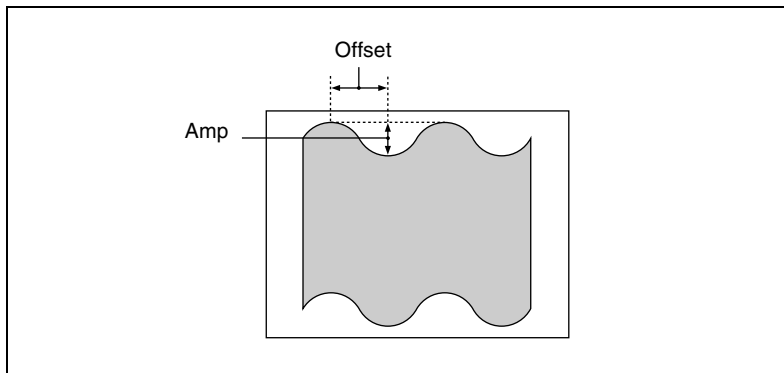
Knob	Parameter	Adjustment	Setting values
3	Offset V ^{a)}	Vertical direction in which to offset wave phase and amount of movement	-16.00 to +16.00 ^{c)} -64.00 to +64.00 ^{d)}
4	Speed V ^{b)}	Vertical direction and speed of waves	-100.00 to +100.00
5	Slant	Slant of waves	-8.000 to +8.000

- 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	-8.00 to +8.00

- 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

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

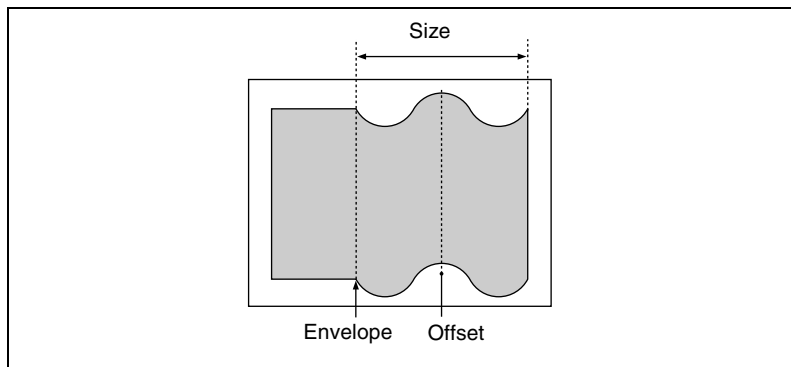
b) Setting for HD 4:3, HD 16:9

• **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.

For more information about how to make settings, see “Wave settings” (page 105).

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.

For more information about how to make settings, see “Wave settings” (page 105).



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.

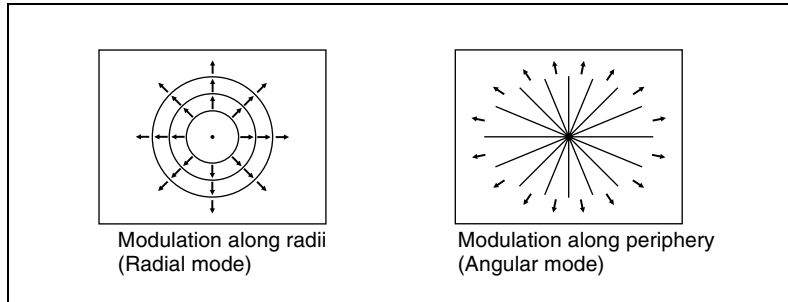
- 1 In the <Mode> group, select the ripple modulation mode.

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)}

Knob	Parameter	Adjustment	Setting values
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
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)}



Knob	Parameter	Adjustment	Setting values
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



Knob	Parameter	Adjustment	Setting values
2	Offset R	Center of modulation range along radius	-8.000 to +8.000 ^{a)} -32.000 to +32.000 ^{b)}
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 105).

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

Knob	Parameter	Adjustment	Setting values
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, with the exception of [Direction].

For details about operation, see “Rings settings” (page 116).

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.

Knob	Parameter	Adjustment	Setting values
1	Transition H	Degree of left and right separation	0.000 to 100.000
2	Transition V	Degree of top and bottom separation	0.000 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	0.000 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	0.000 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
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

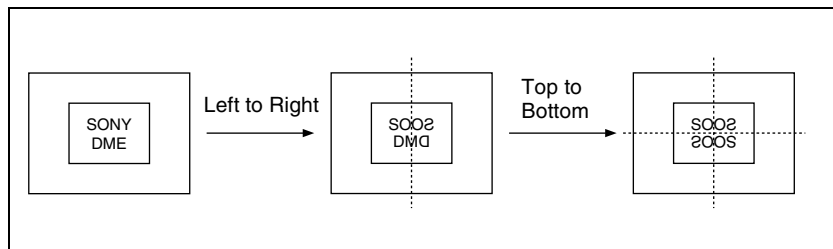
With the Mirror menu displayed, press [Left to Right], [Right to Left], [Top to Bottom], or [Bottom to Top] to set the reflection method (multiple selections possible).

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)}

Knob	Parameter	Adjustment	Setting values
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)}
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 ^{a)}
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
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
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

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.

For details about operation, see “Page Turn settings” (page 127).

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.

For details about operation, see “Page Turn settings” (page 127).

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.

Note

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.

For details about operation, see “Cylinder settings” (page 128).

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



Knob	Parameter	Adjustment	Setting values
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

Knob	Parameter	Adjustment	Setting values
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

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.

Note

The function for setting the bar mode of the lighting area is not supported on the MVE-8000A and MKS-6470.

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.

The Lighting effect is enabled.

3 In the <Light Pattern> group, select the lighting pattern Plane, Bar or Preset.

You can adjust the intensity of the light and other parameters with the knobs.

Note

For MKS-6470, the pattern Preset is not supported.

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.

Note

The Total Ambient parameter is not supported on the MVE-8000A and MKS-6470.

- **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.

Note

The Total Ambient parameter is not supported on the MVE-8000A and MKS-6470.

- **When Preset is selected**

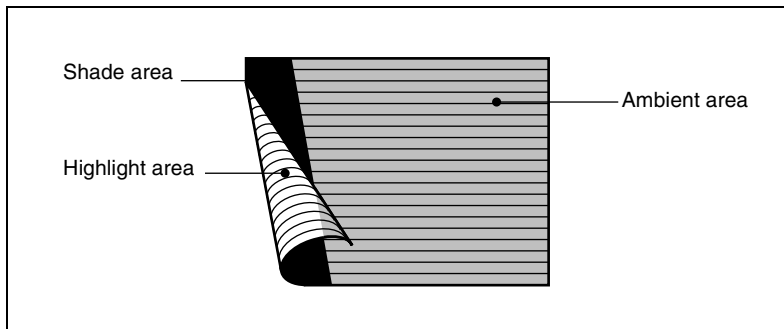
Knob	Parameter	Adjustment	Setting values
1	Light	Intensity of light in highlight area	0.00 to 100.00
2	Ambient	Intensity of light in ambient area	0.00 to 100.00
3	Shade	Intensity of light in shade area	0.00 to 100.00 ^{a)}
5	Total Ambient	Brightness of whole image	0.00 to 100.00 ^{b)}

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.

Note

The Total Ambient parameter is not supported on the MVE-8000A and MKS-6470.



The three regions for which the light intensity can be set

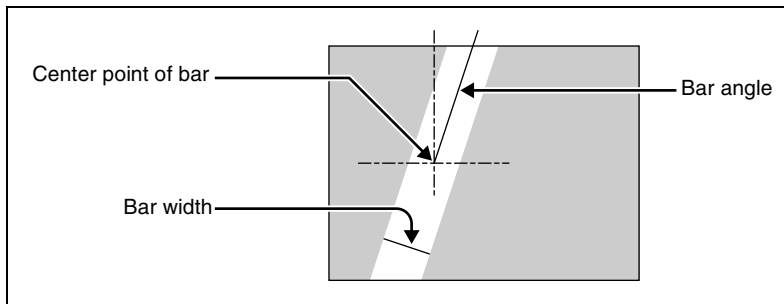
Setting the bar shape of the highlight area

When you select [Bar] or [Preset] in step **3** of “Applying the Lighting effect” (page 134), 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 134), 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” (*see page 134*), use the following procedure to set the bar mode of the highlight area.

Note

The bar mode of the highlight area is not supported on the MVE-8000A and MKS-6470.

- 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

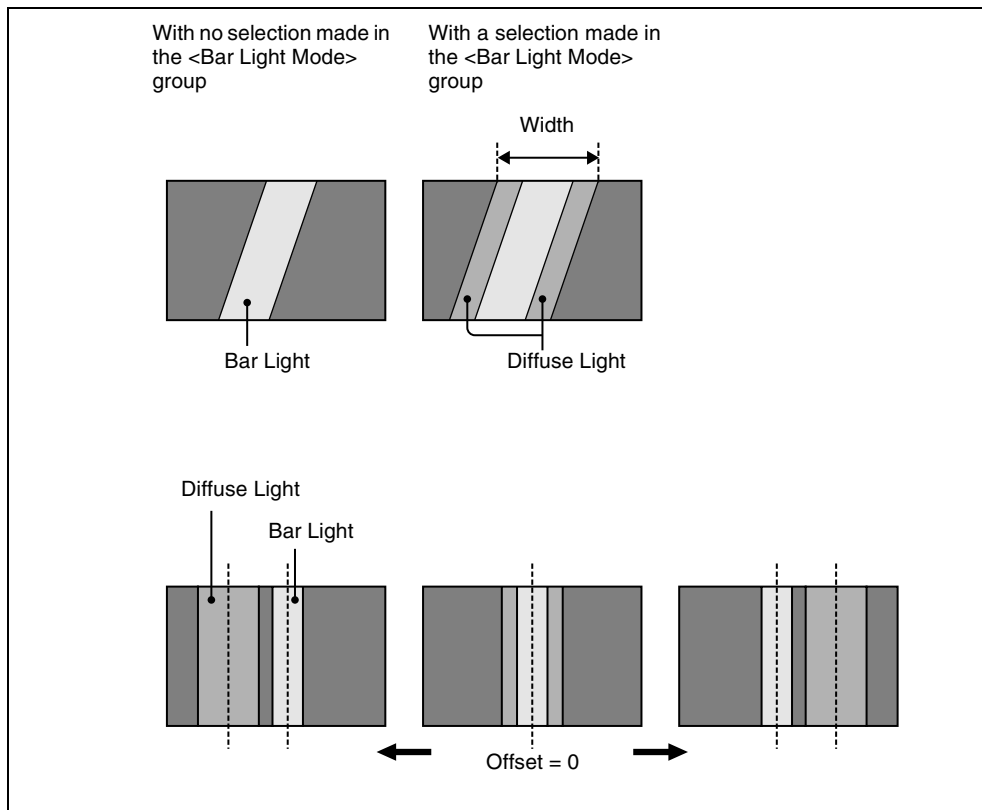
b) For HD 4:3

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 Drop Shadow, Motion Decay, Keyframe Strobe or Wind 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.
The Trail effect is enabled. You can adjust the parameters with the knobs.
- 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 and MKS-6470.
- “Mix Color” or “Ext Video” can only be applied to one of the background (*see page 167*), flex shadow (*see page 70*), trail, and wind (*see page 147*) 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

(The following are possible using a second DME.)

Mix Color: Insert a mix color signal set in the Color Mix menu (*see page 83*) 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.

Note

The freeze timing setting is not required when the following signal formats are being used.

Signal formats: 720P/59.94, 720P/50

Defocusing the afterimage portion (Defocus)

Notes

- Defocus is possible using a second DME.
- The function to defocus the trail afterimage portion is not supported on the MVE-8000A and MKS-6470.

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
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.

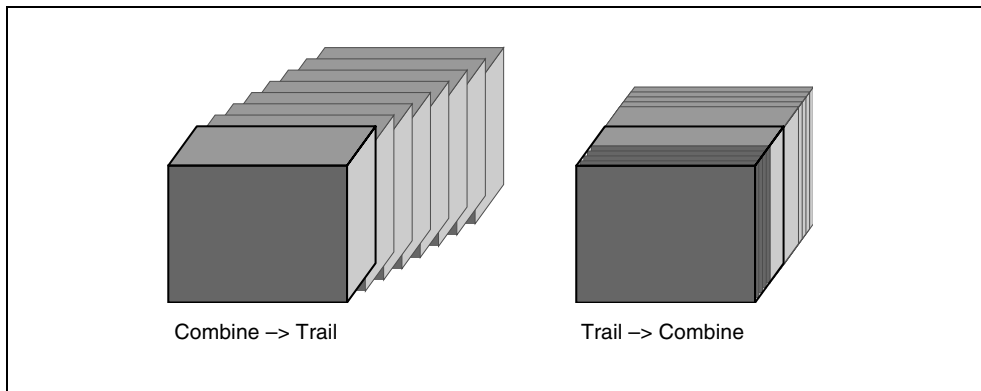
Notes

- The combine process function is possible using a second DME.
- The combine process function is not supported on the MVE-8000A and MKS-6470.
- 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

Note

When you turn on motion decay, if the Drop Shadow, 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.



This enables motion decay, and you can now use the knobs to adjust the parameters.

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.

Note

The freeze timing setting is not required when the following signal formats are being used.

Signal formats: 720P/59.94, 720P/50

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
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

Note

When you turn on keyframe strobe, if the Drop Shadow, Trail, Motion Decay or Wind effect is on, it automatically goes off. (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.

This enables the Keyframe Strobe effect, and you can now use the knobs to adjust the parameters.

- 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.

Note

The freeze timing setting is not required when the following signal formats are being used.

Signal formats: 720P/59.94, 720P/50

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 and MKS-6470.
- 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 and MKS-6470.
- 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.

This enables the wind, and you can now adjust the parameters with the knobs.

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 167*), flex shadow (*see page 70*), trail (*see page 139*), 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

Knob	Parameter	Adjustment	Setting values
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 83*) 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 139).

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 and MKS-6470.
- 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 “Texture Patterns” (page 412) for the texture patterns.

Non Linear: Spotlighting effect is applied to an area to which a DME nonlinear effect is applied.

Note

The BZDM-9050 is required to enable Texture and Non Linear settings.

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.

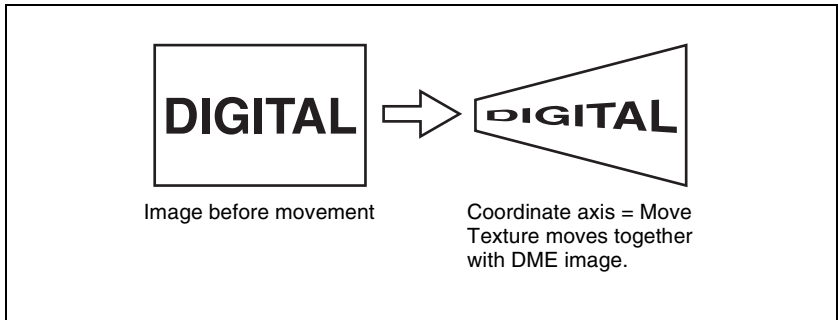
For more information about test sphere, see “Relation between test spheres and parallel rays” (page 154).

Coordinate axis on surface of image

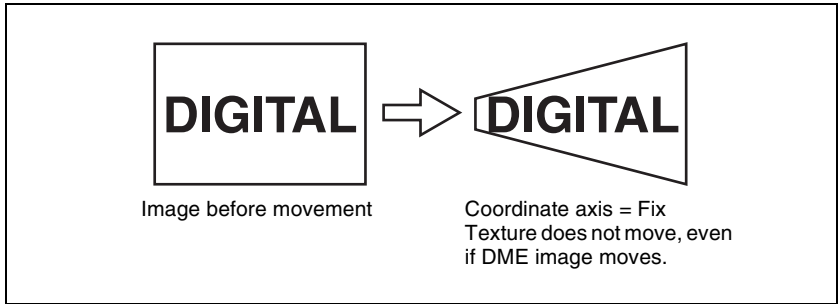
Specify where to apply the texture or test sphere on the image surface.

Move: The texture moves together with the DME image.





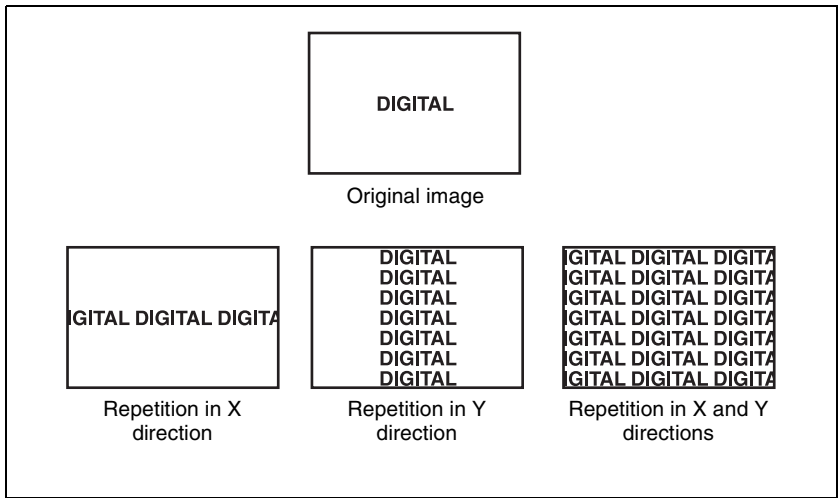
Fix: The texture does not move, even if the DME image moves.



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

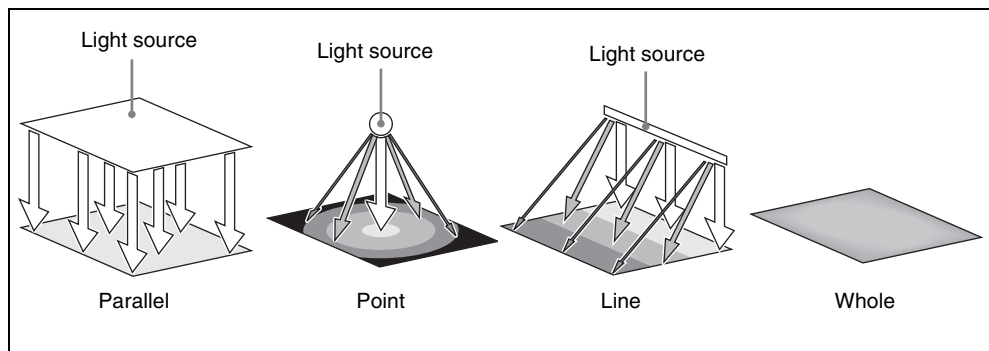
The following type of light sources are available (*see figure*).

Parallel: Parallel light source

Point: Point light source. As the light source is placed further away, the illuminated range becomes wider and the light becomes weaker.

Line: Line light source

Whole: Non-directional light source which illuminates the whole image.

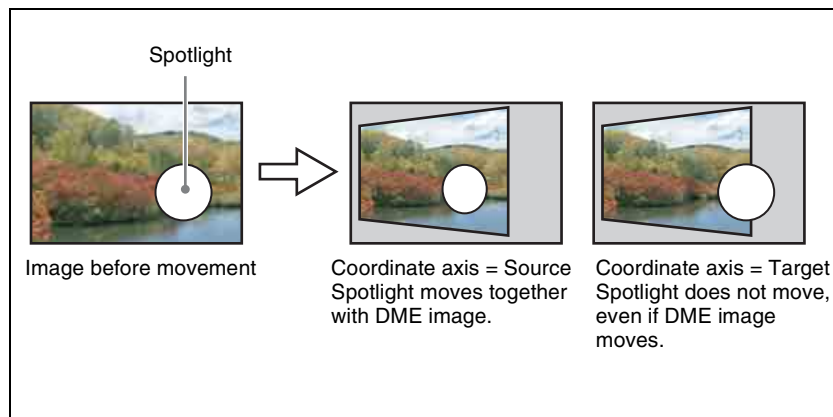


Linking and unlinking image and spotlight

The spotlight can move together with a DME image, or be fixed in place.

Source: Place the light source in source 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.

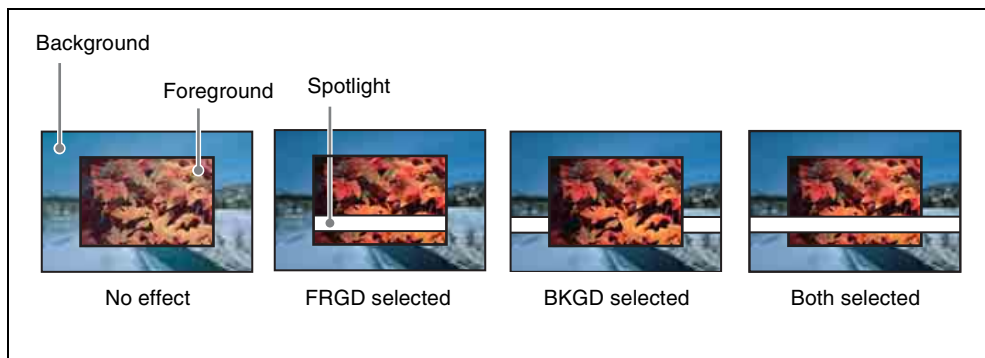


Selecting the lighted area

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 413).

- Set the size, degree of deformation, softness, and rotation.

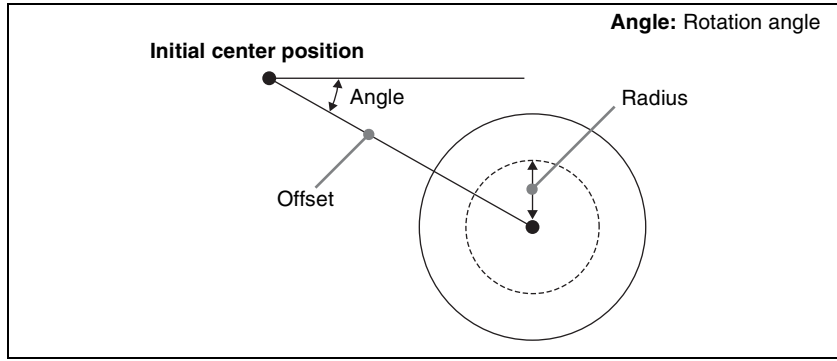
Ring settings

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

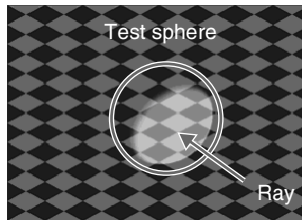
Specifies the way in which the light is blended with the image.

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

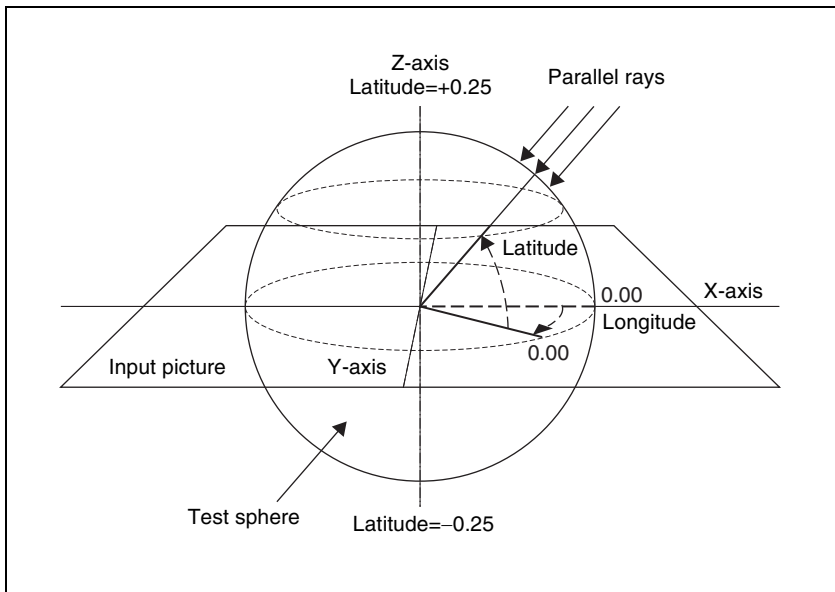
The following figure shows an example of the effect of parallel rays on a test sphere.



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.



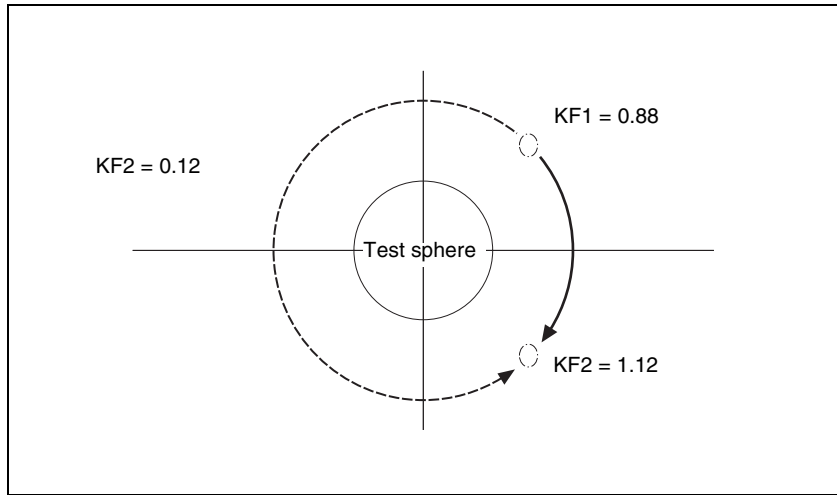
The unit of these direction parameters is the number of rotations, with 360° (1 rotation) expressed as 1.00, in the same way as 3D rotation parameters. The following relationships apply in the example shown in the figure.

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 ($360^\circ + 45^\circ$).



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.

This enables Spotlighting, and you can now use the knobs to adjust the parameters.

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 3).*)
- The Spotighting 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, Panarama, 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 150).

Note

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 3).)
[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 154).

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

Note

The BZDM-9050 Texture Lighting Software (for MVE-9000) is required to enable Light 2 and Light 3.

An install key must be entered to use the software. (For details, see “Installation and Device Setup (Install/Unit Config Menu)” in Chapter 18 (Volume 3).)

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.

This enables the Light 1 light source, and you can now use the knobs to adjust the parameters.

- 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.

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).

For more information about light source types, see “Light source types” (page 152).

- 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 152).

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 152).

Notes

- If you select [Multiply] in the <Fill Blending Mode> group of the Light Color Adjust menu (see page 165), 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 165) 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 413) 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



Knob	Parameter	Adjustment	Setting values
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 413) 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

Note

If you select Parallel or Whole (*see page 160*) 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.

Note

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.

Note

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.

The lighted area is inverted.

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	Brilliance	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	Brilliance	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.

The data is copied or swapped.

To undo a copy or swap

Press [Undo]. Settings are returned to their values before the copy or swap.

Background Settings

Adds a color or inputs an external signal to the background of the image.

Note

Signal selection for this purpose is not supported on the MVE-8000A and MKS-6470.

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 83*)
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 70*), trail (*see page 139*), and wind (*see page 147*) 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).



Notes

- The shaped video function is valid when using an SDI setting.
- In the case of the MKS-6470, shaped video for the first channel is always on. Shaped video for the second channel is always off.

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 (restriction of this version only).

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 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.
This enables the key density function, and you can now use the knobs to adjust the parameters.
- 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

Note

When the shaped video setting (*see page 168*) 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 and MKS-6470: 480i/59.94, 576i/50
 - MVE-9000: 480i/59.94, 576i/50, 1080i/59.94, 1080i/50, 1080i/60
- The anti-moire filter function is only effective when the MVE-8000A and MKS-6470 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.

Note

This function is effective only when the HD signal format is used on the MVE-8000A and MKS-6470.

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.

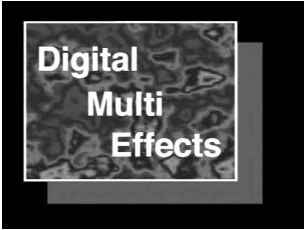
Knob	Parameter	Adjustment	Setting values
1	Anti Moire Filter	Amount of moire reduction	1 to 8



Global Effect Operations

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.

Global effects

Name	Effect/Image
Combiner	Automatically combines the selected images when multiple channels are selected on one keyer or for one transition.
Shadow	Gives the image a shadow. 

Note

The Brick effect is not supported on the MKS-6470.

Operations common to all global effects

In this section, explanations of the operating procedures for individual global effects begin with selections from VF1 'Ch1 - Ch2' 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 - Ch2.'

The Global Effect >Ch1 - Ch2 menu appears.

Combiner Settings

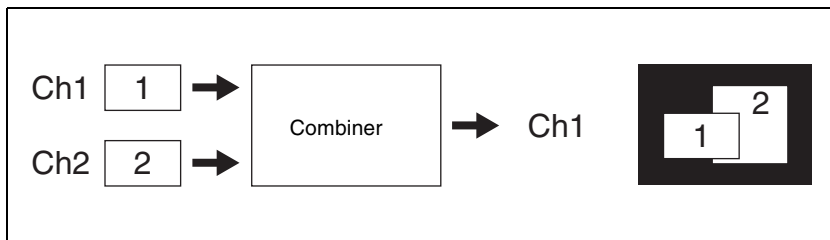
When multiple channels are selected on one keyer or for one transition, the Combiner automatically combines the selected images. Up to two channels can be combined.

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.

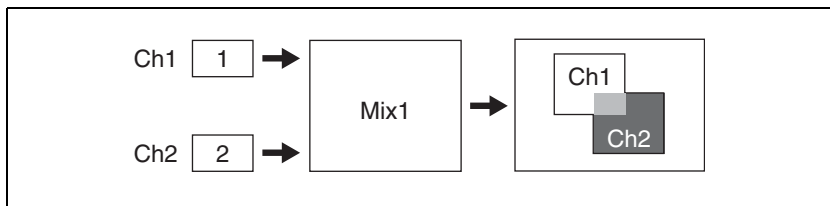
Note

When the Combiner is enabled on the MKS-6470, selecting Int Key as the key source of channel 2 prevents the effect of independent key transition to be applied to the channel. To apply the effect, select Ext Key as the key source of channel 2. For details of the key source, see “Key Source Selection” (page 171).


Combination of channel 1 (Ch1) and channel 2 (Ch2)



Mixing Ch1 and Ch2

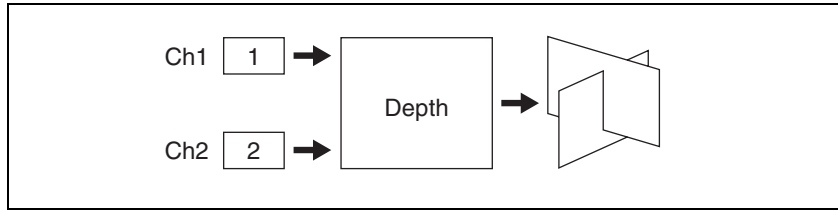


If the Mix1 setting is 70, the proportion of the channels in the mixed portion in the previous illustration is as shown in the following table.

Combination	Indication in figure	Ch1	Ch2
Ch1 and Ch2		30%	70%



Ch1 crossed with Ch2



Setting the combiners

Select how the images for channels 1 and 2 are combined.

- 1** In the Global Effect >Ch1-Ch2 menu, select HF1 'Combiner Priority.'
The Combiner Priority menu appears.
- 2** If either [Mix] or [Auto] is On, set them to Off.
- 3** In the <Priority1> group, select the channel you want to be on top.
Alternatively, in the <Priority2> group, select the channel you want to be underneath.
- 4** For a mix press [Mix], turning it to On.
- 5** Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mix1	Mix degree for channels 1 and 2	0.00 to 100.00

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.

Note

It is not possible to cross images. If an image is rotated, the priority is determined by the position on the z-axis of the center of the image.

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.

Note

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 - Ch2 menu select HF3 'Shadow.' Depending on the selected combiner channels, the valid buttons differ as follows.

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.

Note

The flex shadow function cannot be enabled when Drop Shadow is enabled.

However, the flex shadow function is not supported on the MVE-8000A and MKS-6470.

- 2 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal shadow position	-8.00 to +8.00 ^{a)} -32.00 to +32.00 ^{b)}
2	Position V	Vertical shadow position	-8.00 to +8.00 ^{a)} -32.00 to +32.00 ^{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



Chapter 12 External Devices

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Control of External Devices

In this system, you can operate while controlling the following types of external device:

- Devices supporting P-Bus (Peripheral II protocol) (referred to as “P-Bus devices” in the manual)
- 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.

Use the Device menu to carry out operations for controlling above external devices.

To access the Device menu

In the menu control block, press the top menu selection button [DEV].

VTR, Extended VTR, and disk recorder operations are only possible when the optional device control block (MKS-8031TB trackball module or MKS-8036A search dial module) is installed.

Notes

- To operate P-Bus devices, VTRs, Extended VTRs, and disk recorders in the this system, the following settings are required on the DCU 9-pin serial port.
 - Device type setting
 - Device name
 - Setting of control panel (SCU) to be used

For details of the settings, see “Making Serial Port Settings” in Chapter 22 (Volume 3).

- When using a disk recorder or Extended VTR, be sure to go to the Device >DDR/VTR >File List menu, and recall the file.

For details of the operation, see “Recalling a file” (page 219).

Shared Functions for External Device Control

Keyframe functions

There are 99 registers, numbered 1 to 99, holding external device control data as keyframe data.

The following are the keyframe functions that can be used.

- RECALL (1-99), STORE (1-99), RECALL UNDO, STORE UNDO, empty register search, AUTO SAVE, RECALL MODE (RECALL, RECALL & REWIND)
- EDIT ENABLE, EDIT UNDO
- CONST DUR, EFF DUR, KF DUR, DELAY, PAUSE, INSERT BEFORE, INSERT AFTER, MODIFY, DELETE, COPY, PASTE BEFORE, PASTE AFTER, FROM TO, ALL
- PREV KF, NEXT KF, GOTO TC, GOTO KF, RUN, REWIND, FF, STOP NEXT KF, NORMAL, JOG, KF FADER

Note

Actions set in a keyframe are executed only when the keyframe effect is executed in the normal direction. Take care when executing simultaneously with a switcher or DME keyframe effect, since the actions are not executed in the reverse direction.

The following keyframe functions cannot be used.

- KF LOOP, EFFECT LOOP, REVERSE, NORMAL/REVERSE
- PATH

Saving to registers

Set the data for controlling external devices in the Device menu. You can save the set data in keyframe, snapshot, or shotbox registers. You can recall the register in which the data is saved, and carry out operations on it with the keyframe control block.

Editing registers

You can carry out the following operations on the registers in which the data for controlling external devices is saved.

- Copy
- Move
- Swap
- Merge (this cannot be carried out for registers holding VTR, disk recorder, or Extended VTR control data.)
- Lock
- Name



File related functions

As effect data, you can save and recall, using the File menu.



Control of P-Bus Devices

You can control P-Bus devices from this system through the 9-pin serial port of a DCU.

P-Bus device control modes

There are two modes of P-Bus device control, as follows.

Trigger: Operating a previously specified button outputs the command for an action assigned to that button.

Timeline: Carrying out a keyframe effect under the control of the center control panel controls external devices.

In the setup, select which of Trigger mode and Timeline mode to use.

You can set the following actions (set what action command is output to which device) in both modes.

- Store
- Recall
- Trigger

Creating and Editing the P-Bus Timeline

At a keyframe point on the P-Bus timeline, you can set an action. At any single keyframe point you can set actions for a maximum of 24 devices.

For details of keyframe creation and editing operations, see “Creating and Editing Keyframes” (page 252).

For the action setting (or P-Bus timeline editing), use the Device menu. You can save the data set in the Device menu in keyframe effect registers. Recalling the register starts execution of the keyframe effect, and when this reaches the keyframe point at which actions are set, action commands are output to external devices through the 9-pin serial port assigned to P-Bus.

Note

Using the P-Bus timeline function requires the P-Bus control mode to be set to [Timeline]. Carry out this setting in the Engineering Setup >Panel >Device Interface menu. (*For details, see “Setting the Control Mode for P-Bus Devices” in Chapter 19 (Volume 3).*)

Setting an action

- 1 In the Device menu, press VF2 'P-Bus Timeline.'

The Device >P-Bus Timeline menu appears.

The status area shows two lists. The left list is for setting combinations of devices and actions. The settings in this list will be saved as keyframe point data. The right list is for selecting the action.

- 2 Select the P-Bus device for which you want to set an action, by using any of the following methods to specify the device ID.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	ID	Device number	0 to 23

- 3 Using either of the following methods, select the action.

- Press directly on the list on the right of the status area.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	Action No	Action	1 to 4 ^{a)}

- a) 1: Off (no specification)
2: Store
3: Recall
4: Trigger

- 4 If in step 3 you selected 2 (Store), 3 (Recall), or 4 (Trigger), turn knob 3 to select the register number or trigger number.

The indication for knob 3 changes to reflect the selection of Store, Recall, or Trigger.

Knob	Parameter	Adjustment	Setting values
3	Store No	Register number for Store	1 to 99
3	Recall No	Register number for Recall	1 to 99
3	Trigger No	Trigger number	0 to 15

The setting is reflected in the list on the right of the status area.

- 5 Press [Set].

For the device selected in the list on the left of the status area, this sets the action specified in step 4.

Repeat steps **2** to **5** as required for other devices.

Testing an action command

To produce a test output of the action command, press [Test Fire].
The action command is output from the 9-pin serial port of the DCU according to the setting in the list on the left of the status area.

Clearing an action setting

To clear the setting for separate devices

- 1** In the list on the left of the status area, select the device for which you want to clear the action setting.
- 2** In the list on the right, select “Off.”
- 3** Press [Set].

To clear the action settings for all devices in a single operation

Press [All Off].

Setting the action for a rewind operation

On the P-Bus timeline, when the [REWIND] button in the keyframe control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.

To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To carry out this setting, in the Device >P-Bus Timeline menu, press [Rewind Action] to recall the Rewind Action menu. In this setting screen, use the same setting method as in the screen for setting an action on the P-Bus timeline.

Alternatively, you can select the reverse arrangement, whereby when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details of the setting, see “Setting the First Keyframe When a Rewind Is Executed” in Chapter 19 (Volume 3).

Carrying out a Direct Store

You can carry out a Learn with the register number specified for the device selected in the menu.



- 1 Using any of the following methods, select the device.
 - Press directly on the list on the left of the status area.
 - Press the arrow keys to scroll the reverse video cursor.
 - Turn the knob.

Knob	Parameter	Setting	Setting values
1	ID	Device ID	0 to 23

- 2 In the Device >P-Bus Timeline menu, press [Direct Store].
The numeric keypad window appears.
- 3 Enter the register number for which you want to carry out the Learn.
The setting range is from 1 to 99.
- 4 Press [Enter].
This carries out a Learn with the specified register number.

P-Bus Trigger

“P-Bus trigger” is a function whereby a button operation in the numeric keypad control block or keyframe control block outputs an action command to a P-Bus device.

Note

To use the P-Bus trigger function, the P-Bus control mode must be set to [Trigger]. Make this setting in the Engineering Setup >Panel >Device Interface menu. (For details, see “Setting the Control Mode for P-Bus Devices” in Chapter 19 (Volume 3).)

The relation between the operation in each of the control blocks and the action command output is as follows.

Action command for an operation in the numeric keypad control block

- RECALL: Recall
- STORE: Store

This recalls the register specified in the numeric keypad control block, and a Recall or Store is carried out, according to the setting.

Action command for an operation in the keyframe control block

- RUN: Trigger 1
- REWIND: Trigger 4

- NEXT KF: Trigger 7
- PREV KF: Trigger 8

Outputting an action command

As an example, to output a Recall, use the following procedure.

- 1** In the numeric keypad control block, press the [EFF] button, turning it on.
The [RCALL] button in the numeric keypad control block lights.
- 2** Press the [P-BUS] button in the numeric keypad control block, turning it on, to select the P-Bus region.
- 3** Enter the number of the register to be recalled with the numeric keypad buttons.
- 4** Press the [ENTER] button in the numeric keypad control block.
This carries out the Recall.



Control of GPI Devices

You can control GPI devices from the control panel of this system, or through the GPI output port of a DCU.

GPI timeline

For a keyframe effect controlled from the center control panel, the GPI timeline allows you to set an action (setting a trigger output from a particular GPI output port) at a keyframe point on the GPI timeline. At any keyframe point, you can make a maximum of eight GPI output port settings.

GPI timeline actions

The actions that can be used on the GPI timeline are as follows.

- Control panel GPI output port
- DCU GPI output port

For the GPI output settings (keyframe editing), use the Device menu.

The data set in the Device menu are saved in a keyframe effect register. When you recall this register and start execution of the keyframe effect, and advance the effect to the keyframe point for which the GPI output is set, a trigger pulse is output to the external device from the specified GPI output port.

GPI Timeline Creation and Editing

This section describes how to set GPI output ports to be registered at a keyframe point, and how to carry out creation and editing of the GPI timeline.

For details of keyframe creation and editing operations, see “Creating and Editing Keyframes” (page 252).

GPI output port settings

Set the GPI output port number of the control panel or DCU which outputs GPI pulses at a keyframe point on the GPI timeline.

Use the following procedure. (Use the same procedure to subsequently change the settings.)

- 1** In the Device menu, press VF1 ‘GPI Timeline.’

The Device >GPI Timeline menu appears.

The status area shows the “GPI Output” list on the left and the “GPI Port” list on the right.

The “GPI Output” list (on the left) shows the relation between ports 1 to 8 for the GPI timeline and the trigger pulse output destination ports. The content of this list is saved as keyframe data.

The “GPI Port” list (on the right) is for selecting the GPI trigger pulse output destination.

2 Using either of the following methods, select the GPI timeline port you want to set on the GPI Timeline.

- Press directly on the list on the left of the status area.
- Turn the knob.

Knob	Parameter	Setting	Setting values
1	GPI Output No	GPI timeline port number	1 to 8

3 Using either of the following methods, trigger output destination.

- Press directly on the list on the right of the status area.
- Turn the knob.

Knob	Parameter	Setting	Setting values
2	GPI Port No	SCU/DCU GPI port to be the trigger output destination	1 to 3 ^{a)}

- a) 1: Off (no specification)
 2: Control panel (SCU) GPI port
 3: DCU GPI port

4 If in step **3** you selected 2 (SCU) or 3 (DCU), then use the knob to select the port number.

The indication for knob 3 depends on whether SCU or DCU is selected.

Knob	Parameter	Setting	Setting values
3	SCU Port No	SCU GPI port number	1 to 8
3	DCU Port No	DCU GPI port number	1 to 50 ^{a)}

a) The number of DCU GPI ports depends on the settings in Engineering Setup.

The setting is reflected in the list on the right of the status area.

Note

For the output port you have set here, be sure to set the trigger type to “Rising Edge,” “Falling Edge” or “Any Edge.”

For details of the trigger type settings, see “Making Control Panel GPI Output Settings” in Chapter 19 (Volume 3) and “Making DCU GPI Output Settings” in Chapter 22 (Volume 3).

5 Press [Set].

This specifies the SCU/DCU GPI port whose number you specified in step **4** as the pulse output destination for the GPI output port selected in the list on the left of the status area.

Repeat steps **1** to **5** for other GPI output ports as required.

Testing trigger output

To test the trigger output, press [Test Fire].

According to the list settings on the left of the status area, a pulse is output from the selected output port.

Clearing output port settings

To clear the settings for each device (GPI output port)

- 1** In the list on the left of the status area, select the GPI output port whose settings you want to clear.
- 2** In the list on the right, select “Off.”
- 3** Press [Set].

To clear the settings for all devices (GPI output ports) in a single operation

Press [All Off].

Setting the action for a rewind operation

On the GPI timeline, when the [REWIND] button in the keyframe control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.

To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To carry out this setting, in the Device > GPI Timeline menu, press [Rewind Action] to recall the Rewind Action menu. In this setting screen, use the same setting method as in the screen for setting an action on the GPI timeline.

Alternatively, you can select the reverse arrangement, whereby when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details of the setting, see “Setting the First Keyframe When a Rewind Is Executed” in Chapter 19 (Volume 3).



Control of VTRs, Extended VTRs, and Disk Recorders

In this system, for up to 12 VTRs, disk recorders or Extended VTRs connected to a DCU, you can carry out the following manual operations and timeline settings.

- Controlling manually from the device control block (MKS-8031TB or MKS-8036A, option)
- Saving a start point, stop point, start delay time, variable speed and so on in a data register, then recalling the register to control automatically from the keyframe control block. (Cueup & Play and VTR/disk recorder/Extended VTR timeline)
- In the Device menu, you can check the following VTR, disk recorder and Extended VTR information:
 - Device name
 - Register number
 - VTR/disk recorder/Extended VTR status
 - Current time
 - Start point
 - Stop point
 - Variable speed
 - Start delay time
 - Loop setting
 - Recue setting

Operations of a VTR, Extended VTR, or disk recorder require the optional device control block (trackball module or search dial module).

To control a VTR, Extended VTR, or disk recorder in this system, the following settings are required.

- Button assignment: For a VTR, Extended VTR, or disk recorder connected to the DCU 9-pin serial port, assign a device selection button in the device control block.
- Timecode source: When using a VTR, specify a reference signal used for determining the tape position.

For details, see “Making DCU Serial Port Settings” in Chapter 19 (Volume 3) and “Making Detailed Settings on the External Device Connected to the Serial Port” in Chapter 22 (Volume 3).

Manual Operation

In the device control block, you can carry out the following operations manually.

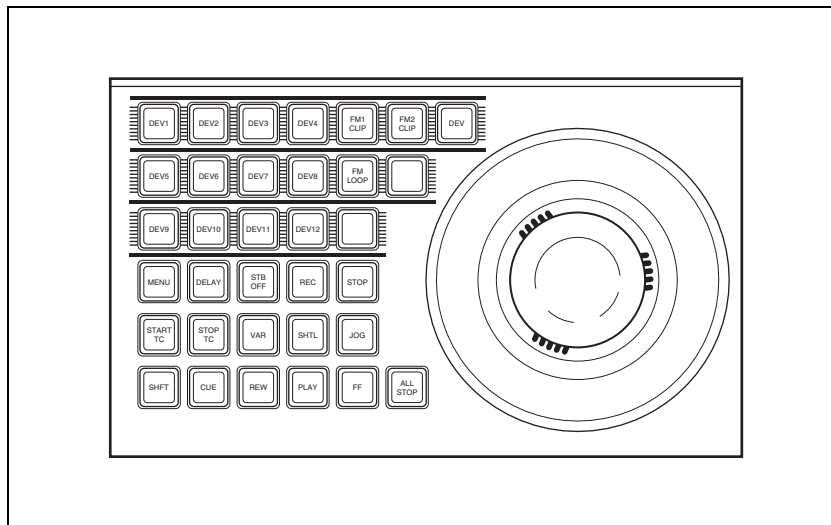
- **VTR, disk recorder or Extended VTR selection**
- **Tape transport and disk drive control:** You can use the following tape transport and disk drive control buttons:
REC, REW, PLAY, FF, CUE UP, VAR PLAY, SHTL, JOG, STANDBY OFF, STOP, and ALL STOP. (*For details of the operation of the buttons, see “Device Control Block (MKS-8031TB Trackball Module, Option)” and “Device Control Block (MKS-8036A Search Dial Module, Option)”.*)
Depending on the settings made in the Setup menu, the CUE UP, PLAY and STOP operations can be carried out from the transition control block. (*For details of the operation of the buttons, see “Transition Control Block” in Chapter 2 “Menus and Control Panel” (Volume 1).*)
- **Setting a start point:** For each selected VTR/disk recorder/Extended VTR you can set the start point timecode value as keyframe data.
- **Setting a stop point:** For each selected VTR/disk recorder/Extended VTR you can set the stop point timecode value as keyframe data.
- **Setting a start delay time:** For each selected VTR/disk recorder/Extended VTR you can set the start delay as key frame data.
- **Recording to VTR or disk recorder:** Record video to the selected VTR/disk recorder.
- **Loop/recue^{a)} setting:** You can select loop or recue as the playback mode. These operate as follows.
 - When loop is selected:** Playback repeats from the start to the end of the currently recalled file.
 - When recue is selected:** When playback reaches the stop point, automatically cue up to the start point.

a) EVS XT server (EVS Broadcast Equipment) dedicated function

Controlling the Tape/Disk Transport

To switch to VTR/disk recorder operation mode

To control a VTR/Extended VTR/disk recorder with the optional device control block (trackball module), press the [DEV] button in the device control block, turning it on, to switch the device control block to the VTR/disk recorder operation mode. The button assignment changes as follows (the [SHIFT] button is disabled in VTR/disk recorder operation mode).



Device control block in the VTR/disk recorder operation mode (trackball module)

In the device control block (search dial module), there is no such a mode selection button and you can directly select a device.

Buttons used when the VTR/disk recorder/frame memory operation mode is enabled

DELAY: Press this button, turning it on, to enter a delay value from the numeric keypad control block.

STB OFF (standby off): Press this button to switch to standby off mode. This button cannot be used for frame memory clip operations.

REC (record): Press this button at the same time as the [Y] button to start recording. This button cannot be used for frame memory clip operations.

STOP: Press this button to stop the tape, disk or frame memory clip.

START TC (start timecode): 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 [MENU] button is as follows.

When the [MENU] button is On: start point of the timeline

When the [MENU] button is Off: start point of Cueup & Play

STOP TC (stop timecode): 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 [MENU] button is as follows.

When the [MENU] button is On: stop point of the timeline

When the [MENU] button is Off: stop point of Cueup & Play

VAR (variable speed playback): Pressing this button and turning the Z-ring plays back the tape, disk or frame memory clip at a variable speed and direction proportional to the rotation angle of the Z-ring. The variable speed range is -1 to $+3$ times normal playback speed.

SHTL (shuttle): Pressing this button and turning the Z-ring plays back the tape, disk or frame memory clip at a speed and direction proportional to the rotation angle of the Z-ring.

JOG: Pressing this button and turning the Z-ring plays back the tape, disk or frame memory clip at a speed and direction proportional to the rotation of the Z-ring.

CUE: Pressing this button cues the tape, disk or frame memory clip automatically to the start point.

REW (rewind): Press this button to rewind the tape, disk or frame memory clip.

PLAY: Press this button to play the tape, disk or frame memory clip.

FF: Press this button to fast forward the tape, disk or frame memory clip.

ALL STOP: Press this button to stop all tape transport/disk drive/frame memory operations.

Selecting a VTR/Extended VTR/disk recorder

To select the VTR/Extended VTR/disk recorder to be controlled, in the device selection buttons of the device control block, press a selection of those buttons turning them on.

For details on frame memory clip operations, see “Frame Memory Clip Operations” in Chapter 7 (Volume 1).

Controlling the tape/disk transport

Using the buttons in the device control block, you can control the tape transport or the disk transport.

For more details of the effect of buttons in VTR/disk recorder operation mode, see “Device Control Block (MKS-8031TB Trackball Module, Option)” and “Device Control Block (MKS-8036A Search Dial Module, Option)” in Chapter 2 “Menus and Control Panel” (Volume 1).

If an appropriate setup setting has been made, VTR, Extended VTR, or disk recorder can also be operated with the transition control block.

For more details of the effect of buttons in VTR/disk recorder operation mode, see “Transition Control Block” in Chapter 2 “Menus and Control Panel” (Volume 1).

For details of settings in setup, see “Setting VTR Operation Button Assignment” in Chapter 19 (Volume 3).

Controlling the tape/disk transport with the search dial

With the device control block, you can play back the material on an external device in variable speed.

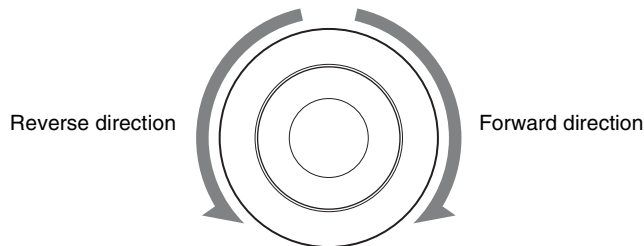
This section describes the three playback modes, taking the optional device control block (MKS-8036A search dial module) as an example.

If you turn this dial during video playback, the direction and speed of playback depend on the direction and angle of rotation. To use this dial, press the [ENBL] button to the upper right of the dial, lighting it amber. This dial has three operation modes: jog, shuttle, and variable.

To prevent overheating, if the search dial is on continuously for 10 seconds, it is automatically turned off. However, in this state, if a movement of the dial is detected, it switches on again.

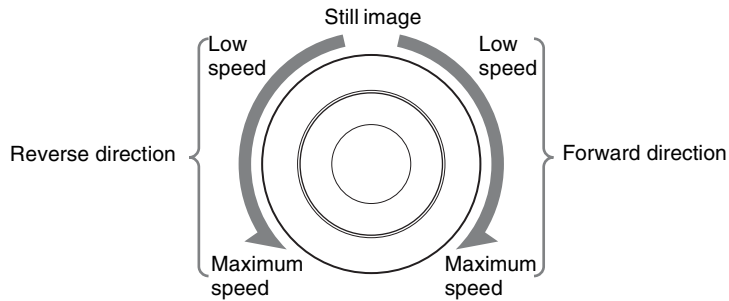
Jog mode

Press the [JOG] button, lighting the button amber, to switch the dial to jog mode. In this mode, you can advance material frame by frame at a speed proportional to the rotation angle of the dial. To show a still image, stop turning the search dial.



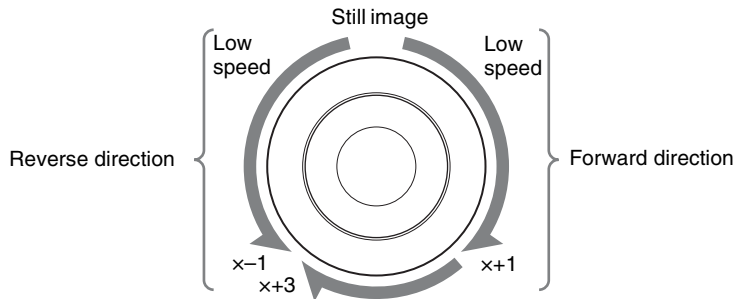
Shuttle mode

Press the [SHTL] button, lighting the button amber, to switch the dial to shuttle mode. In this mode, the playback speed varies in steps according to the rotation angle of the dial, to a maximum of 50 times normal. If the valid angle is exceeded, the dial makes a clicking sound. To show a still image, return the dial to the home position, where it stops with a clicking sound.



Variable mode

Press the [VAR] button, lighting the button amber, to switch the dial to variable mode. In this mode, the playback speed varies according to the rotation angle of the dial from -1 to $+3$ times normal speed. The dial indicates the positions where the playback speed is -1 times normal speed, $+1$ times normal speed, and $+3$ times normal speed by making a clicking sound at those positions. To show a still image (playback speed 0%), return the dial to its home position, where it stops with a clicking sound.



- $\times-1$: -1 times normal speed
- $\times+3$: $+3$ times normal speed
- $\times+1$: $+1$ times normal speed

To disable the search dial and end variable mode, press the [STOP] button. Additionally, pressing any of the [REW], [PLAY], [FF], [STB OFF], and [ALL STOP] editing buttons ends the variable mode. For shuttle mode and variable mode, you can set the valid range of the operating angle in the Engineering Setup >Panel >Operation >Sensitivity menu to either of the followings.

Narrow operating angle

- Shuttle mode: approx. -150 to $+150^\circ$
- Variable mode: approx. -120 to $+210^\circ$ ($+1$ times normal speed is $+120^\circ$)

Wide operating angle

- Shuttle mode: approx. -180 to $+180^\circ$
- Variable mode: approx. -200 to $+348^\circ$ (+1 times normal speed is $+200^\circ$)

Recording to VTRs and disk recorders

You can record to the VTR or disk recorder selected in the device control block. Proceed as follows.

Notes

- Recording is not possible if the VTR or disk recorder is not set to Recorder.
- The disk recorder type must be specified to use the video disk communications protocol.

See “Making Detailed Settings on the External Device Connected to the Serial Port” in Chapter 22 (Volume 3) for more information about how to make this setting.

- When using a disk recorder, recording is not possible unless a new file name is specified.

See “Creating new files” (page 220) for more information about how to specify file names.

- 1** Using the buttons of the device control block, select the VTR or disk recorder to which you want to record.
You can select more than one button.

The first button pressed lights green to indicate the reference device, and the subsequent buttons light amber.

- 2** While holding down the [REC] button in the device control block, press the [PLAY] button.

Recording starts. During recording, the [REC] button lights red and the [PLAY] button lights amber.

Note

Note the following points about recording to a disk recorder.

- The maximum length of time that can be recorded in one operation is 30 minutes.
- If you want to record to a different file than the file used in the previous recording, use the Device >DDR/VTR >File List menu to create a new file.
- If you resume recording without executing [Unload] from the Device >DDR/VTR >File List menu, recording starts at the position in the same file where recording was interrupted.

To stop recording

Press the [STOP] button or the [ALL STOP] button in the device control block.

Checking VTR/Disk Recorder/Extended VTR Information

You can check the VTR/disk recorder/Extended VTR information (timecode information and operating status) set in the device control block, in the Device menu display.

To check the VTR/disk recorder/Extended VTR information, press VF3 'VTR' and HF1 'Cueup & Play' or HF2 'Timeline' in the Device menu. The Device >DDR/VTR >Cueup & Play menu or Device >DDR/VTR >Timeline menu appears, and a list shows the timecode information and operating status for each device. The columns of the list show the following information.

DEV (device name): DEV1 to DEV12 represent respectively device 1 to device 12.

Reg (register): Number of the register to which settings apply.

Status: Status of each device. The meaning of the indications is as follows.

Operating status display	When VTR, Extended VTR, or Sony disk 9-pin protocol is used	When video disk communications protocol is used
XXXX	Communications with the device are being carried out normally, but status information is not received.	Not communicating, or communicating but the device type cannot be read.
Local	The REMOTE/LOCAL switch of the device is set to LOCAL.	Port is not open.
Tape Out	No tape is loaded (VTR). No file loaded. (Sony disk 9-pin protocol or Extended VTR)	No file loaded.
Rec	Recording.	Recording.
Cue>	Cueing up in the forward direction.	—
Cue<	Cueing up in the reverse direction.	—
Eject	Ejecting cassette.	—
Stb Off	Stopped in standby off mode.	—
Stop	Stopped in standby on mode.	Stopped.
Play	Playing.	Playing.



Operating status display	When VTR, Extended VTR, or Sony disk 9-pin protocol is used	When video disk communications protocol is used
FF	Fast forwarding.	—
Rewind	Rewinding.	—
Shtl>	Playing in the forward direction in shuttle mode.	—
Shtl<	Playing in the reverse direction in shuttle mode.	—
Var>	Playing in the forward direction in “variable” mode.	Playing in the forward direction in “variable” mode.
Var<	Playing in the reverse direction in “variable” mode.	Playing in the reverse direction in “variable” mode.
Jog>	Playing in the forward direction in jog mode.	Playing in the forward direction in jog mode.
Jog<	Playing in the reverse direction in jog mode.	Playing in the reverse direction in jog mode.
Still	Playing still image.	—

Current: Shows timecode for current device position.

Start TC: Shows timecode for start point set on device.

Stop TC: Shows timecode for stop point set on device.

Variable: Shows the variable speed set for each device.

Delay: Shows start delay time set on device.

Mode: Shows operation mode (Loop or Recue) set for the device (only when the EVS XT server is operated with video disk communications protocol).

Cueup & Play

You can use the device control block or Device menu to save Cueup & Play settings (start point timecode, stop point timecode, start delay time, and so on) for a VTR, disk recorder or Extended VTR in an effect register. By recalling this register, you can operate the following buttons in the keyframe control block to automatically control the VTR, disk recorder or Extended VTR.

[REWIND] button: Cue up to the start point timecode

[RUN] button: Play

With this function you can also stop the VTR, disk recorder or Extended VTR used for playback at the stop point timecode recalled from the same register.

Disk recorder (video disk communications protocol) operation when loop /recue is set

When loop is set: playback repeatedly between the start point and stop point.

When recue is set: when playback reaches the stop point, automatically cue up to the start point.

Notes

- In an effect register set on the VTR/disk recorder timeline, Cueup & Play settings are not possible. To add Cueup & Play settings to such a register, first clear the VTR/disk recorder timeline setting before carrying out the operation.
- When using a disk recorder with Cueup & Play, if you carry out the following sequence of operations, the system may freeze on the frame of the start point.
 1. Press the [RUN] button to play to a point close to the end of a file.
 2. Stop playback.
 3. Press the [RUN] button once more.In such cases, first recall a different register, then carry out the following sequence:
 1. Recall the original register again.
 2. Press the [REWIND] button.
 3. Press the [RUN] button.

Making and saving settings relating to Cueup & Play

- 1** Press the [EFF] button in the numeric keypad control block, turning it on.
This assigns the numeric keypad control block to keyframe operations, and the [RCALL] button lights.
- 2** Press the region selection button for the region for which you want to make the setting, turning it on.
You can select more than one button.
- 3** Enter the number of the register to be recalled with the numeric keypad buttons.
To search for an empty register, instead of entering a number, press the [.] (period) button.
The display shows the register number. A letter “e” or “E” after the number indicates the register status, as follows:
e: This register is empty in the selected region.
E: This register is empty in all selectable regions.
- 4** Press the [ENTER] button.
This recalls the register you selected in step **3**.



- 5 When using the MKS-8031TB trackball module, press the [DEV] button in the device control block, turning it on.

Note

Check that the [MENU] button is not lit. If it is lit, press to turn it off.

- 6 With the device selection buttons in the device control block, select the VTR, Extended VTR, or disk recorder for which you want to make the setting.

You can select more than one button.

The first button pressed lights green to indicate the reference region, and the subsequent buttons light amber.

- 7 Set the start point.

- Using the [START TC] button:
Play the VTR, Extended VTR or disk recorder by control from the device control block. Find the desired start point, and press the [START TC] button at that position.
If using the [START TC] button, each time you press the button the start point timecode is overwritten.
- Using the [SET START TC]:
Press the [SET START TC] button in the optional device control block (search dial module, option).

The display in the numeric keypad control block shows “START TC”. Enter the desired timecode from the numeric keypad control block, and press [ENTER].

For details of timecode entry, see “Setting the start point and stop point with the [SET XX] buttons” (page 206).

- Setting with the Cueup & Play menu:

For details of settings in the Cueup & Play menu, see “Setting the start point, stop point, and start delay time in a menu” (page 208).

- 8 Set the stop point or duration.

When two of the start point, stop point and duration are set, the remaining one is automatically determined. For example, if you set the stop point in the following procedure, you do not need to enter the value of the duration.

- Using the [STOP TC] button:
Play the VTR, Extended VTR or disk recorder by control from the device control block. Find the desired stop point, and press the [STOP TC] button at that point.

If using the [STOP TC] button, each time you press the button the stop point timecode is overwritten.

- Using the [SET STOP TC] button of the optional device control block (search dial module):
Press the [SET STOP TC] button in the search dial module. The display in the numeric keypad control block shows “STOP TC.” Enter the desired timecode from the numeric keypad control block, and press [ENTER].
- Using the [SET DUR] button of the optional device control block (search dial module):
Press the [SET DUR] button in the search dial module. The display in the numeric keypad control block shows “DUR” and the current setting. Enter the desired duration from the numeric keypad control block, and press [ENTER].

For details of timecode entry, see “Setting the start point and stop point with the [SET XX] buttons” (page 206).

- Setting with the Cueup & Play menu:

For details of settings in the Cueup & Play menu, see “Setting the start point, stop point, and start delay time in a menu” (page 208).

9 To set a start delay time, press the [DELAY] button in the device control block, and enter a value in the numeric keypad control block. Alternatively, make the setting in the Device >DDR/VTR >Cueup & Play menu.

If no setting is required, continue to step **10**.

For details of settings in the Cueup & Play menu, see “Setting the start point, stop point, and start delay time in a menu” (page 208).

10 Press the [STORE] button, turning it on, in the numeric keypad control block.

11 Enter the number of the register in which to save the settings.

When overwriting the settings in the register recalled in step **3**, continue to step **12** without changing the displayed register number.

12 Press the [ENTER] button.

This saves the settings in the register.

Automatically cueing up and playing VTR/Extended VTR/disk recorder

By recalling a register in which you have saved setting data for Cueup & Play, you can control the VTR/Extended VTR/disk recorder automatically in the same way as when automatically executing a keyframe effect.

- 1** In the numeric keypad control block, press the [EFF] button, turning it on.
The [RCALL] button in the numeric keypad control block lights.
- 2** With the region selection buttons in the numeric keypad control block, select the region.
You can select more than one button.
- 3** Enter the number of the register to be recalled with the numeric keypad buttons.
- 4** Press the [REWIND] button in the keyframe control block.
The VTR/Extended VTR/disk recorder automatically advances to the timecode value set as the start point.
While the VTR/Extended VTR/disk recorder is operating, the [ALL STOP] button in the device control block flashes amber, and when the start point is reached lights green.
If the operating VTR/Extended VTR/disk recorder is selected as the reference region in the device control block, the [CUE] button also flashes and lights in the same way as the [ALL STOP] button. Also, when the start point is reached, the [STOP] button lights amber.
- 5** Press the [RUN] button in the keyframe control block.
The VTR/Extended VTR/disk recorder is now controlled according to the keyframe data.

Setting the start point and stop point with the [SET XX] buttons

When you enter a timecode and make a setting with the [SET START TC], [SET STOP TC], or [SET DUR] button in the optional device control block (MKS-8036A search dial module), the timecode display changes as follows. With these buttons you can set the start point and stop point timecodes, and the duration (the duration is not displayed). When two of these values are set, the remaining one is automatically determined.



Example 1

- 1 Press the [SET START TC] button, and enter “00000000” from the numeric keypad control block.

START TC	00:00:00:00
STOP TC	--:--:--:--
(DUR (not displayed))

- 2 Press the [SET STOP TC] button, and enter “200” from the numeric keypad control block. This automatically sets DUR.

START TC	00:00:00:00
STOP TC	00:00:02:00
(DUR	0:02:00)

- 3 Press the [SET DUR] button, and enter “-100” from the numeric keypad control block.

START TC remains the same, and STOP TC changes.^{a)}

START TC	00:00:00:00
STOP TC	00:00:01:00
(DUR	0:01:00)

Example 2

- 1 Press the [SET DUR] button, and enter “200” from the numeric keypad control block.

START TC	--:--:--:--
STOP TC	--:--:--:--
(DUR	0:02:00)

- 2 Press the [SET STOP TC] button, and enter “01000000” from the numeric keypad control block.

This automatically sets START TC.

START TC	00:59:58:00
STOP TC	01:00:00:00
(DUR	0:02:00)

- 3 Press the [SET STOP TC] button, and without entering anything from the numeric keypad control block, press [Enter].

The STOP TC display, and the START TC display automatically calculated in step 2 disappear, and the setting of the DUR does not change.

START TC	--:--:--:--
STOP TC	--:--:--:--
(DUR	0:02:00)

a) If after pressing the [SET XX] button you press the [+ / -] button in the numeric keypad control block, you can enter offsets from the existing setting values. Each time you press this button, the sign of the offset cycles through the settings “ ”(absolute value) → “+” → “-”... , and the sign appears in the numeric keypad control block display. If there is no existing setting value, then it is only possible to enter an absolute value, and not an offset value.

Setting the start point, stop point, and start delay time in a menu

In the Device menu, you can set the start point, stop point, and start delay time.

1 In the Device menu, press VF3 ‘DDR/VTR’ and HF1 ‘Cueup & Play.’

The Device >DDR/VTR >Cueup & Play menu appears.

The status area shows the device number, register number, status information, current time, start point, stop point, and start delay time.

2 Using any of the following methods, select the device.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Dev	Device number	1 to 12

3 Carry out any of the following operations as required.

- To set the start point, press [Set] in the <Start TC> group.
- To set the stop point, press [Set] in the <Stop TC> group.
- To set the start delay time, press [Set] in the <Delay> group.

A timecode window appears.

4 Set the timecode value for the start point, stop point, or start delay time.

Note

You can enter a start delay time in the range that depends on the signal format as follows:

00:00 to 59:nn,

where nn = (number of frames per second) – 1 frame.

5 Press [Enter].

The set start point, stop point, or start delay time is reflected in the status area.

Clearing the start point, stop point, and start delay time settings in a menu

In the Device menu, use the following procedure.

- 1 Press VF3 'DDR/VTR' and HF1 'Cueup & Play.'
- 2 Using any of the following methods, select the device for which you want to clear the settings.
 - Press directly on the list in the status area.
 - Press the arrow keys to scroll the reverse video cursor.
 - Turn the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

- 3 Carry out any of the following operations as required.
 - To clear the start point, press [Clear] in the <Start TC> group.
 - To clear the stop point, press [Clear] in the <Stop TC> group.
 - To clear the start delay time, press [Clear] in the <Delay> group.

This clears the setting of the start point, stop point, or start delay time.

Selecting Loop or Recue as the playback mode

You can set the device operation mode to loop or recue.

Loop: Carry out playback from the start point of a file to the stop point, then indefinitely repeat playback from the start point.

Recue: Carry out playback from the start point of a file to the stop point, then return to the start point and stop.

Note

Loop and recue functions are only available when the EVS XT server is operated with the video disk communications protocol.

In the Device menu, use the following procedure.

- 1 Press VF3 'DDR/VTR' and HF1 'Cueup & Play.'

The Device >DDR/VTR >Cueup & Play menu appears.

The status area shows the device number, register number, status information, current time, start point, stop point, start delay time, and playback mode.

2 Using any of the following methods, select the device.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Dev	Device number	1 to 12

3 In the <Mode> group, press [Loop] or [Recue], turning it on.

VTR/Disk Recorder/Extended VTR Timeline

For a keyframe effect controlled from the center control panel, the timeline allows you to set a VTR, disk recorder or Extended VTR action at a keyframe point on the timeline.

Timeline actions

The actions that can be used on the timeline are as follows.

- Start
- Stop
- Cue up
- Variable speed

Notes

- The timeline does not support loop and recue.
- For a disk recorder, the maximum number of files for a single register is eight.

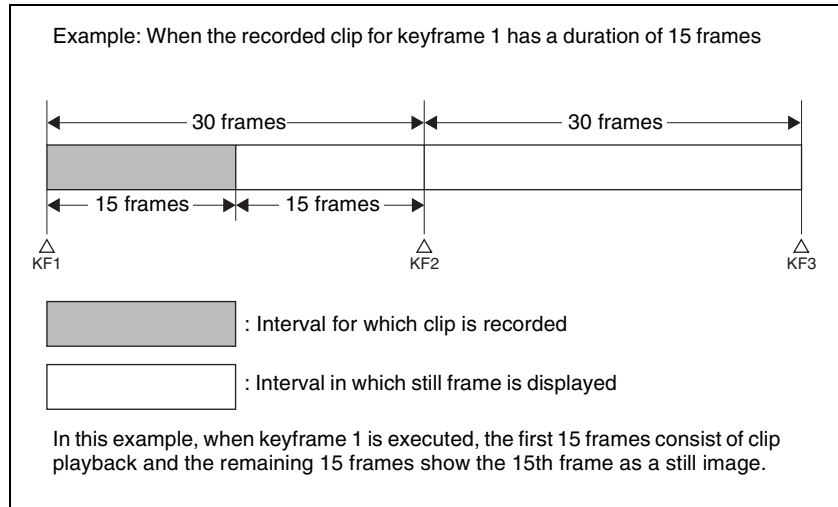
For the action settings (VTR/disk recorder/Extended VTR timeline editing), use the Device menu.

The data set in the Device menu are saved in a keyframe effect register. When you recall this register and start execution of the keyframe effect, and advance the effect to the keyframe point for which the action is set, an action command is output to the external device through the 9-pin serial port assigned to the VTR, disk recorder or Extended VTR.

Note

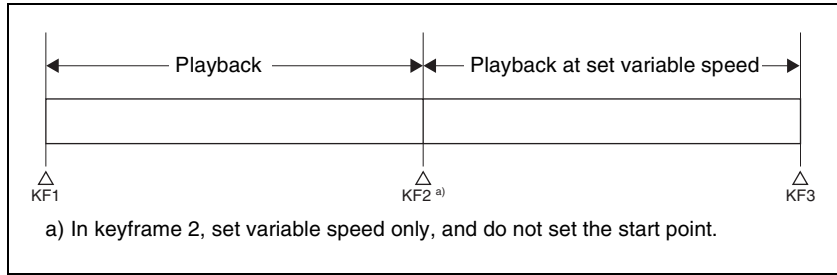
When executing a timeline using a disk recorder or Extended VTR, note the following points.

- It is not possible to use loop and recue on the timeline.
- When carrying out keyframe settings, be sure to recall the file for operation first.
- If the duration of the recorded video clip is less than the keyframe duration, after playback to the end of the clip, the remainder of the keyframe duration is filled with a still of the last frame of the clip (*see figure below*).



When executing the timeline using a disk recorder, also take note of the following points.

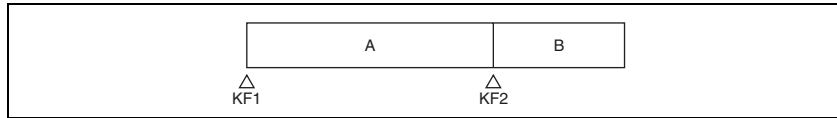
- Set the keyframe duration to at least 30 frames.
- From pressing the [RUN] button to the time when the effect actually starts execution may take around one second.
In order that pressing the [RUN] button after [REWIND] make the effect start execution as soon as possible, set cueing up of the file for operation as rewind operation ¹⁾. In the first keyframe ²⁾ to be executed with [RUN], for the cued-up file, do not set the start point, but set only the start command.
 - 1) If the setting when the [REWIND] button is pressed is for the first keyframe to be executed, then the first keyframe is executed, and otherwise the setting for the Rewind Action is carried out.
 - 2) If the setting when the [REWIND] button is pressed is for the first keyframe to be executed, then the second keyframe is executed, and otherwise the first keyframe is executed.
- To execute an effect, be sure to carry out a Rewind.
For example, when the start command only is set for a keyframe, playback starts from the current position, in the same way as with a VTR (no automatic cue-up).
- During file playback, to play the next keyframe at variable speed, for the next keyframe set variable speed only, and do not set the start point (*see figure below*).



- When using a disk recorder with the VTR/disk recorder timeline, if you carry out the following sequence of operations, the system may freeze on the frame of the start point.
 1. Press the [RUN] button to play to a point close to the end of a file.
 2. Stop playback.
 3. Press the [RUN] button once more.

In such cases, first recall a different register, then carry out the following sequence:

 1. Recall the original register again.
 2. Press the [REWIND] button.
 3. Press the [RUN] button.
- Some operating limitations apply when the video disk communications protocol is used. These are explained with reference to the following figure, which illustrates creation of a timeline that plays from the video of file A to the video of file B.



– Operation with no problems:

KF1 action setting	Operating status of file A	KF2 action setting
Start	Playing	Start

– Black video or still image appears momentarily when play switches from file A to file B:

KF1 action setting	Operating status of file A	KF2 action setting
Start	Playing	Cueup
Variable Speed set	Playing at variable speed	Cueup
Cueup	Cueup	Cueup

– Partial operating limitation:

KF1 action setting	Operating status of file A	KF2 action setting
Start	Playing	Variable Speed set ^{a)}
Variable Speed set	Playing at variable speed	Variable Speed set ^{a)}
Cueup	Cueup	Variable Speed set ^{a)}

a) Failure to operate when variable speed is set to minus value. However, operates when the file B action is set to Start, and then variable speed is set to minus after file B starts playing.

– Play does not switch from file A to file B:

KF1 action setting	Operating status of file A	KF2 action setting
Variable Speed set	Playing at variable speed	Start
Cueup	Cueup	Start

If play continues to show video of file A without switching to file B, a Stop action is required in file A in order to switch to file B.

VTR/disk recorder/Extended VTR timeline editing

This section describes how to set an action at a keyframe point, and how to edit the timeline.

For details of the operations for keyframe creation and editing, see “Creating and Editing Keyframes” (page 252).

To set an action in the menu

1 In the Device menu, press VF3 ‘DDR/VTR’ and HF2 ‘Timeline.’

The Device >DDR/VTR >Timeline menu appears.

The status area shows two lists. The upper list shows the device number, register number, keyframe number, and action type (start point, stop point, and variable speed) set for the keyframe.

The lower list is used for setting the action for the device selected above, and shows the port name, current file, current time, status information, start point, stop point, variable speed, and file name (for a disk recorder or Extended VTR).

2 Using any of the following methods, select the device for which you want to set the action.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.



Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

- 3** To set the name of a file when using an Extended VTR or disk recorder, recall the file using the Device >DDR/VTR >File List menu.

Notes

- There is a limit of eight disk recorder files that can set on a single timeline.
- If you have not set the file name when using an Extended VTR, the file recalled in the Extended VTR when the keyframe point is passed is the subject of the action.

For details of settings required to recall a file, see “Sharing Disk Recorder/Extended VTR File Lists” in Chapter 19 (Volume 3).

When not using an Extended VTR or disk recorder, or when the file name has not been set for an Extended VTR, skip to step **4**.

- 4** In the <Action> group, select the action.

Cueup: Output a command to cue up to the currently displayed start point.

Start: Output a Play command.

Note

When the stop point and variable speed are both set, the variable speed setting takes priority.

Stop: Output a Stop command.

Note

Before executing the Stop command, if the timecode for the set stop point has been reached, or on an Extended VTR or disk recorder if the end of the file has been reached, then at that point the device stops.

- 5** To set a start point, in the <Start TC> group, press the [Set] button.

A timecode window appears.

If you do not want to set the start point, skip to step **8**.

Note

For a disk recorder on which the start point is not set, the file recalled in the disk recorder when the keyframe point is passed is the subject of the action.

6 Set the start point as a timecode value.

7 Press [Enter].

The new start point setting is reflected in the status area.

8 To set the stop point, in the <Stop TC> group press the [Set] button.

A timecode window appears.

If you do not want to set the stop point, skip to step **11**.

9 Set the stop point as a timecode value.

10 Press [Enter].

The new stop point setting is reflected in the status area.

11 To set the variable speed, in the <Variable Speed> group, carry out either of the following.

- Press [Fit].
Without setting a speed value, this automatically carries out playback according to automatically calculated values for the duration and keyframe duration to fit the set start point and stop point.
- Press the [Set] button, and adjust the parameter with the knob.

Knob	Parameter	Setting	Setting values
2	Variable	Variable speed	-100 to +200 ^{a)}

a) The setting range of the variable speed depends on the type of connected device.

The new variable speed setting is reflected in the status area.

Repeat steps **2** to **11** as required for other devices.

To carry out start point and stop point settings and cueing up operations in the device control block

With the following buttons in the device control block, you can set the start point or stop point of a keyframe point on the timeline, or carry out a cueing up operation.

Notes

- When using the optional device control block (trackball module), check that the [MENU] button in the block is lit amber. If it is not lit, press it, turning it on.
- When using the device control block (search dial), check that the [TIMELINE] is lit amber.



- [START TC] button:** Set the start point of the keyframe point to the current time.
- [STOP TC] button:** Set the stop point of the keyframe point to the current time.
- [SET START TC] button (of the search dial module, option):** Enable to input the timecode of the start point of the keyframe point with the numeric keypad control block.
- [SET STOP TC] button (of the search dial module, option):** Enable to input the timecode of the stop point of the keyframe point with the numeric keypad control block.
- [SET DUR] button (of the search dial module, option):** Enable to input the duration between the start point and stop point of a keyframe point with the numeric keypad control block.
- [CUE] button:** Cue up to the start point set for the keyframe point.

To display or check the settings, use the Device >DDR/VTR >Timeline menu.

To test an action command output

To test an action command output, select the desired device from the upper list in the status area, and press [Test Fire].

An action command is output from the DCU 9-pin serial port, according to the settings in the list.

To clear the start point, stop point, and variable speed settings

- 1** In the upper list in the status area, select the device for which you want to clear the settings.
- 2** Carry out any of the following operations as required.
 - To clear the start point setting, press [Clear] in the <Start TC> group.
 - To clear the stop point setting, press [Clear] in the <Stop TC> group.
 - To clear the variable speed setting, press [Clear] in the <Variable Speed> group.

To set the action for a rewind operation

On the VTR/disk recorder/Extended VTR timeline, when the [REWIND] button in the keyframe control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.

To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To carry out this setting, in the Device >DDR/VTR >Timeline menu, press [Rewind Action] to recall the Rewind Action menu. In this setting screen, use the same setting method as in the screen for setting an action on the VTR/disk recorder timeline.

Alternatively, you can select the reverse arrangement, whereby when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details of the setting, see “Setting the First Keyframe When a Rewind Is Executed” in Chapter 19 (Volume 3).

Disk Recorder/Extended VTR File Operations

Material held on a disk recorder/Extended VTR is managed in units of files. You can recall a file to play it back. (In the case of an Extended VTR, the register number is recalled.)

To carry out disk recorder/Extended VTR file operations, use the Device menu.

Accessing the file list

Before playback and suchlike operations on a disk recorder/Extended VTR, it is first necessary to display a list of the disk recorder files on the DCU. The file list includes the following information.

- File name
- Date of last update ¹⁾
- Duration of recorded material ¹⁾

To recall the file list, use the Device menu.

1) Not displayed in the case of an Extended VTR

Recalling a file

In the recalled list of files, select the file you want to play back, and open the file.

File list sharing

You can connect multiple DCU serial ports to a single disk recorder/Extended VTR.

You can share the recalled list of files between serial ports connected to the same disk recorder/Extended VTR.

For settings relating to file list sharing, see “Serial Port Settings (Serial Port Assign Menu)” in Chapter 22 (Volume 3).

File creation

To create a new file on the disk recorder, use the Device menu to create a new file.

Note

In the case of an Extended VTR, it is not possible to record a new file.

Refreshing (recalling) the disk recorder/Extended VTR file list

- 1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR > File List menu appears.

In the status area, two lists appear.

The upper list shows the selected device name, and the currently selected file name (register number), and set file name.

The lower list shows a list of files for the selected device (the device appearing in the upper list). In this list is shown the file name (register number) set when the material was recorded, the length of the file data (timecode value), and the file update information.

Notes

- File update information is not shown when using the video disk communications protocol.
- When using an Extended VTR, the length of file data and file update information are not shown, and the register number is shown in place of the file name.

- 2 Select the device for which you want to recall the file list, using the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

- 3 Press the [File List Update] button.

This starts the process of recalling the file list, and a message box appears. When the file list recall is completed, the message box disappears.

To cancel recalling the file list

During the recall, press the [Cancel] button in the message box.

File list sharing

You can share the recalled file list across serial ports connected to the same disk recorder.

For details of file list sharing settings, see "Sharing Disk Recorder/Extended VTR File Lists" in Chapter 19 (Volume 3).

Sorting files in the list

You can sort the files in the list by name, number, or update date.

- 1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR >File List menu appears.

- 2 Select the device for which you want to recall the file list, using the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

- 3 In the <Sort> group, press one of [File Name], [File No], and [Update].

File Name: Sort in alphabetical order of file name.

File No: Sort in ascending file number order.

Update: Sort in file update date order, newest first.

Notes

- Files cannot be sorted by the file update date and time when using the video disk communications protocol.
- When using an Extended VTR, it is not possible to sort files.

This sorts the files in the selected order.

Recalling a file

To recall a file from the file list, use the following procedure.

Note

Files cannot be recalled when the disk recorder is set to Recorder.

- 1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR >File List menu appears.

- 2 Select the device from which you want to recall a file, using the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

- 3 Using any of the following methods, select the file you want to recall.

- Press directly on the lower list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Setting	Setting values
2	No	File selection	1 to 5000 ^{a)} 0 to 99 ^{b)}

- a) For disk recorders. The range of setting values depends on the total number of files.
- b) For Extended VTRs. The range of setting values depends on the total number of files.

4 Press [Load].

This recalls the selected file, and the file name appears at the top of the status area.

Creating new files

A file name must be specified to record to a new file on a disk recorder.

Notes

- New files cannot be created when the disk recorder is set to Player or Recorder/Player.
- In the case of Extended VTRs, new files cannot be created.

1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR >File List menu appears.

2 Press [New File].

The keyboard window appears.

3 Enter a file name and press [Enter].

When using the Sony disk recorder 9-pin protocol: Up to 23 characters.

When using the video disk communications protocol: Up to 8 characters (in Fixed 8 Character mode) or 23 characters (in Variable Length mode)

For details of how to select the file name character count mode in the video disk communications protocol, see "Making Detailed Settings on the External Device Connected to the Serial Port" in Chapter 22 (Volume 3).

The name appears as the current file name at the top of the status area.

When the loaded file is not a target for recording

When a file that is not a target for recording is loaded in the disk recorder, proceed as follows.

1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR >File List menu appears.

2 Press [Unload].

The current file name at the top of the status area is cleared.

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outputs. The settings made for frame memory images in the Freeze menu, Composite menu or other menus do not apply to snapshots or keyframes.

- To reproduce a frame memory still image or a clip of them by recalling a snapshot or keyframe, you must have the same images that were present in the frame memory when you saved the snapshot or keyframe. Therefore, when saving a snapshot or keyframe using frame memory, you must also save the images to a storage media such as the hard disk.

Reference region

When multiple regions are selected, only one region appears in the displays for menu and numeric keypad operations. This is called the “reference region.”

The reference region is determined according to the following precedence.

```
M/E1 >P/P >User1 >User2 >User3 >User4 >User5 >User6 >User7
>User8 >DME ch1 >DME ch2 >Device1 >Device2 >Device3 >Device4
>Device5 >Device6 >Device7 >Device8 >Device9 >Device10 >Device11
>Device12 >P-Bus >GPI >Router >Macro
```

Master region

The regions saved in a master snapshot register or master timeline register and the register numbers saved in such regions can be recalled at a time as the master region.

The master region can be saved or recalled using the numeric keypad control block.



Registers

A register is an area of memory in a device which holds a snapshot, keyframe, macro, and so on.

For details of macros, see Chapter 16 “Macros” (page 327).

Keyframe effect registers

Dedicated effect registers

There are 99 dedicated registers for keyframe effects in each region, numbered 1 to 99.

Shared user-programmable DME registers

In addition to the 99 DME registers for each region (i.e. each channel), there are also shared registers for each processor as shown in the following table. These are used for user-programmable DME.

Register number	Register allocation
101 to 199	Shared register for one-channel effects
201 to 299	Shared register for two-channel effects

Note

When operating with these shared registers, be sure to select the appropriate regions depending on the number of channels.

Work register

This is a temporary register used when editing keyframes.

When you recall an effect, it is read from the effect register into the work register, and when you save, the contents of the work register are written to the effect register.

Master timeline registers

There are 99 master timeline registers, numbered 1 to 99, for each control panel. They store keyframe effect regions and the register numbers saved in the regions.

Snapshot registers

These are registers for snapshots, and there are 99, numbered 1 to 99 for each region.

Master snapshot registers

There are 99 master snapshot registers, numbered 1 to 99, for each control panel. They store snapshot regions and the register numbers saved in the regions.



These conditions are called “attributes” of the effect, and can be added when the keyframe effect is saved or recalled.

Type of attribute

The attribute that can be attached to an effect is as follows.

Effect dissolve: The transition from the state before the effect recall to the state at the effect start point is carried out smoothly, by a dissolve. The dissolve duration can be set in the Effect menu.

Temporary attributes

When a keyframe is recalled, independently of the attributes held in the register, you can also enable or disable temporary attributes. These temporary attributes are set when the keyframe effect is recalled.

Effect Editing

For editing operations such as to insert, delete, or modify a keyframe, it is necessary to stop the effect at the corresponding point on the time axis. This is termed an “edit point.”

You can edit either on a keyframe within the effect, or at any point between keyframes.

Insert: Insert the current image as a keyframe. Inserting a keyframe in an existing effect may change the duration of the effect (*see page 230*).

Modify: Modify a keyframe. You can modify a single keyframe or a range of keyframes in the effect together.

Delete: Delete a keyframe. You can delete a single keyframe or a range of keyframes in the effect together. Deleting keyframes from an effect reduces the duration of the effect (*see page 231*).

After deleting a keyframe, you can reinsert the keyframe with a paste operation.

Copy: Copy a keyframe. You can copy a single keyframe or a range of keyframes in the effect together.

Paste: Paste the keyframe last copied or deleted anywhere within the effect.

Pause: You can set a pause on a particular keyframe, so that when the effect is run it pauses on this keyframe. You can make this setting on any number of keyframes. To restart the paused effect, repeat the operation to run the effect.

KF Loop: Execute the effect the specified number of times through the keyframes in the specified range.

Undo an edit operation: Undo the effect of the last operation to insert, modify, delete, or paste a keyframe.

Duration modes

In keyframe editing, there are two duration modes; switch between them in the keyframe operation section. (See “*Creating and Editing Keyframes*” (page 252).)

Variable duration mode: In this mode, inserting or deleting a keyframe increases or reduces the duration.

Constant duration mode: In this mode, inserting or deleting a keyframe does not change the duration. This is useful for keyframe editing of an effect with a fixed duration.

In the variable and constant duration modes, the keyframes to which a modify operation applies, and the effect of a paste operation are different.

Difference in keyframes to which a modify operation applies

Effect position	Variable duration mode	Constant duration mode
On a keyframe	Applies to currently selected keyframe	Applies to currently selected keyframe
Between two keyframes	Applies to previous keyframe	Modify operation not possible ^{a)}

a) A new keyframe is inserted at the effect position.

Difference in the effect of a paste operation

Variable duration mode: The copied keyframe is inserted at the specified position.

Constant duration mode: The copied keyframe is written over the specified position.

Transition mode

You can use an effect created with keyframes as a DME wipe pattern on the switcher. In this case, it is necessary to set the transition mode (the way in which the effect behaves).

For details of the setting, see “Transition Mode Settings for User Programmable DME” (page 264).

Time Settings

Keyframe duration and effect duration

You can determine the execution time of an effect by setting either the keyframe durations or the effect duration.

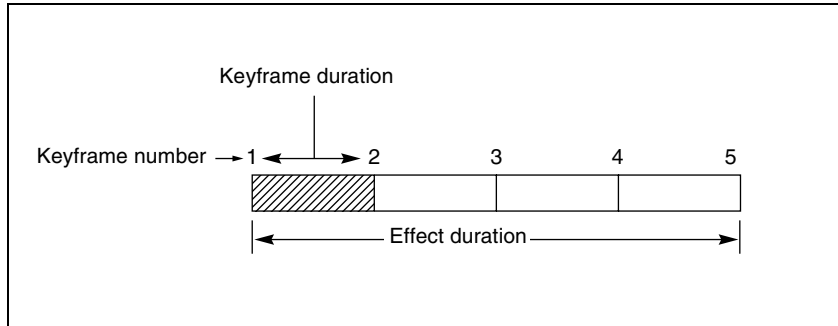
Keyframe duration: This is the time from the keyframe to the next keyframe.

You can set this time in the keyframe control block. (See “Setting the Keyframe Duration” (page 265).)

In constant duration mode (see page 229), it is not possible to change the keyframe duration setting.

Effect duration: This is the total execution time of the effect, from the first keyframe to the last. You can set this time in the keyframe control block. (See “Setting the Effect Duration” (page 266).)

When you change the effect duration, the keyframe duration for each keyframe in the effect is automatically recalculated proportionally.



Schematic view of keyframe duration and effect duration

The effect duration may also be changed by inserting or deleting keyframes.

Changes in the effect duration caused by inserting a keyframe

- When the effect is stopped on a keyframe, inserting a keyframe increases the effect duration by the duration of the inserted keyframe.
- When the effect is stopped between two keyframes, inserting a keyframe does not change the effect duration.

Note

In constant duration mode (see page 229), the duration of the current keyframe is reduced to zero, and the new keyframe is inserted with the previous duration of the current keyframe. Thus the effect duration does not change.

Insertion position	Change in effect duration
Insertion before the first keyframe	
Insertion between two keyframes	
Insertion at an existing keyframe	
Insertion at the last keyframe	

Keyframe insertion position and the change in effect duration

Changes in the effect duration caused by deleting a keyframe

- When the effect is stopped on a keyframe, a delete operation deletes the keyframe, and reduces the effect duration by the duration of the deleted keyframe.
- When the effect is stopped between two keyframes, a delete operation deletes the preceding keyframe, and reduces the effect duration by the duration of the deleted keyframe.

Note

In constant duration mode (*see page 229*), the duration of the keyframe before the deleted keyframe is increased by the duration of the deleted keyframe. Thus the effect duration does not change.

Deletion position	Change in effect duration
Deletion of the first keyframe	
Deletion of an intermediate keyframe	
Deletion between two keyframes	
Deletion of the last keyframe	

Keyframe deletion position and the change in effect duration

Delay setting

You can set the delay from the time of executing an operation to run the effect, and the effect actually starting (that is, the delay until the first keyframe). You can make this setting in the keyframe control block.

Note that changing the delay does not alter the duration of the effect.



Paths

The term “path” refers to the specification of how interpolation is carried out from one keyframe to the next.

Images are interpolated from an edit point to the next one according to the path setting.

For details of the path setting procedure, see “Path Setting” (page 268).

Switcher path settings

Carry out path settings in the Key Frame menu.

For each menu, the following settings are available.

M/E-1 and P/P menus

Item	Paths that can be set
M/E1, P/P All	For each M/E and PGM/PST, path settings for the following items are made simultaneously.
Key1 to Key4	Overall path settings for items relating to keys 1 to 4 are made simultaneously.
Key 1 All to Key 4 All	
Source	Key source path for keys 1 to 4
Fill	Key fill path for keys 1 to 4
Proc	Proc path for keys 1 to 4
Trans	Transition path for keys 1 to 4
Bkgd/Util	Overall path settings for items relating to backgrounds and utility buses are made simultaneously.
Bkgd/Util All	
Bkgd A	Path for background A
Bkgd B	Path for background B
Util	Path for utility
DME 2nd Video	Path for video to be used for second DME channel
Wipe/DME Wipe	Overall path settings for items relating to wipes and DME wipes are made simultaneously.
Wipe/DME Wipe All	
Wipe	Path for wipes
DME Wipe	Path for DME wipes
Trans	– Transition path for each M/E and P/P bank

User1 to User8 menus

The items that can be adjusted depend on the settings in the Setup menu.

For details, see “Settings of Switcher Configuration (Config Menu)” in Chapter 20 (Volume 3).

Item		Paths that can be set
User1 All to User8 All		Overall path settings for the following items for each “User” are made simultaneously.
FM All		Overall path settings for frame memory items are made simultaneously.
FM Src		Overall path settings for frame memory source items are made simultaneously.
	FM Src All	
	FM Src1	Path for frame memory source 1 and video process
	FM Src2	Path for frame memory source 2 and video process
FM Proc		Overall path settings relating to the signal processing other than frame memory source and frame memory freeze outputs are made simultaneously.
	FM Proc All	
	FM Proc1	Path for frame memory signal processing 1
	FM Proc2	Path for frame memory signal processing 2
FM Still Store		Overall path settings for frame memory freeze image output are made simultaneously.
	FM Still Store All	
	FM Still Store 1 to 8	Paths for frame memory freeze image outputs 1 to 8
Aux		Overall path settings for AUX buses are made simultaneously.
	Aux All	
	Aux 1 to 48	Paths for Aux 1 to 48
Mon		Overall path settings for monitor buses are made simultaneously.
	Mon All	
	Mon 1 to 8	Paths for monitor buses 1 to 8
Color Bkgd		Overall path settings for color backgrounds are made simultaneously.
CCR		Overall path settings for color corrector
	CCR All	
	CCR 1	Path for color corrector 1
	CCR 2	Path for color corrector 2



Paths relating to DME

DME 3D Trans Local menu

Item	Paths that can be set
3D Trans Local All	Overall path settings for local channel three-dimensional transform items are made simultaneously.
Loc Size	Overall path settings for items relating to image size changes and movement are made simultaneously.
Loc Size All	
Size	Path for image size
Post Loc X, Post Loc Y	Paths for movement in the x- and y-axes
Post Size	Path for size
Loc XYZ	Overall path settings for items relating to image movement are made simultaneously.
Loc XYZ All	
Loc X, Loc Y, Loc Z	Paths for the x-, y- and z-axes
Rot	Overall path settings for items relating to image rotation are made simultaneously.
Rot All	
Rot X, Rot Y, Rot Z	Paths for the x-, y- and z-axes
Spin	Overall path settings for items relating to spin are made simultaneously.
Spin All	
Spin Src X, Spin Src Y, Spin Src Z	Paths for the x-, y- and z-axes
Spin X, Spin Y, Spin Z	Paths for the x-, y- and z-axes
Asp	Overall path settings for items relating to aspect ratio are made simultaneously.
Asp All	
Rate X, Rate Y	Paths for the x- and y-axes
Skew	Overall path settings for items relating to skew are made simultaneously.
Skew All	
Skew X, Skew Y	Paths for the x- and y-axes
Aspect	Path for aspect ratio
Pers	Overall path settings for items relating to perspective are made simultaneously.
Pers All	
Pers X, Pers Y, Pers Z	Paths for the x-, y- and z-axes

Item		Paths that can be set
Axis Loc		Overall path settings for items relating to image rotation axis are made simultaneously.
	Axis All	
	Axis X, Axis Y, Axis Z	Paths for the x-, y- and z-axes

DME 3D Trans Global menu

Item		Paths that can be set
3D Trans Global All		Overall path settings for three-dimensional transform items in the global channel are made simultaneously.
Loc Size		Overall path settings for items relating to image size changes and movement are made simultaneously.
	Loc Size All	
	Size	Path for image size
	Post Loc X, Post Loc Y	Paths for movement in the x- and y-axes
	Post Size	Path for size
Loc XYZ		Overall path settings for items relating to image movement are made simultaneously.
	Loc XYZ All	
	Loc X, Loc Y, Loc Z	Paths for the x-, y- and z-axes
Rot		Overall path settings for items relating to image rotation are made simultaneously.
	Rot All	
	Rot X, Rot Y, Rot Z	Paths for the x-, y- and z-axes
Spin		Overall path settings for items relating to spin are made simultaneously.
	Spin All	
	Spin Src X, Spin Src Y, Spin Src Z	Paths for the x-, y- and z-axes
	Spin X, Spin Y, Spin Z	Paths for the x-, y- and z-axes
Pers		Overall path settings for items relating to perspective are made simultaneously.
	Pers All	
	Pers X, Pers Y, Pers Z	Paths for the x-, y- and z-axes
Axis Loc		Overall path settings for items relating to image rotation axis are made simultaneously.
	Axis All	
	Axis X, Axis Y, Axis Z	Paths for the x-, y- and z-axes



DME Effect menu

Item	Paths that can be set
Effect All	Overall path settings for DME effect items are made simultaneously.
Edge	Overall path settings for edge items are made simultaneously.
	Edge All
	Border Path for border
	Crop/Edge Soft Path for crop/edge softness
	Beveled Edge Path for beveled edge
	Key Border Path for key border ^{a) b)}
	Art Edge Path for art edge ^{a) b)}
	Flex Shadow Path for flex shadow ^{a) b)}
	Drop Shadow Path for drop shadow ^{a) c)}
	Wipe Crop Path for wipe crop ^{a) b)}
	Color Mix Path for color mix ^{a) b)}
Video Modify	Overall path settings for video modify items are made simultaneously.
	Video Modify All
	Defocus/Blur Path for defocus/blur
	Multi Move Path for “multi-move”
	Color Modify Path for color modify
	Mosaic Path for mosaic
	Mask Path for mask
	Sketch Path for sketch
	Metal Path for metal
	Dim/Fade Path for dim/fade ^{a)}
	Glow Path for glow
Freeze	Path for freeze
Non-Linear	Path for nonlinear effects
Light	Overall path settings for lighting items are made simultaneously.
	Light All
	Lighting Path for lighting
	Spot Lighting Path for spotlighting ^{a) b)}
Trail	Path for trails

Item		Paths that can be set
In/Out		Overall path settings for items relating to input/output are made simultaneously.
	In/Out All	
	Bkgd	
	Video/Key	Path for video/key

- a) This cannot be used on the MVE-8000A.
- b) This cannot be used on the MKS-6470.
- c) This is only supported by the MKS-6470.

DME Global Effect menu

Item		Paths that can be set
Global Effect All		Overall path settings for DME global effect items are made simultaneously.
Combine		Path for combiner
Shadow		Path for shadow

Types of path

Path types for Curve

There are five types, as follows.



OFF: Executing the effect causes no change.



Step: There is no interpolation between keyframes, so that the effect parameters are updated each time a keyframe is passed.



Linear: Linear interpolation between keyframes, resulting in constant speed movement.



S-Curve: The rate of change accelerates and decelerates before and after a keyframe, so that the rate of change is maximum midway between two keyframes.



Spline: The effect follows a smooth curved path from each keyframe to the next.

Path types for Hue

There are four types, as follows.



CW: The hue changes in a clockwise direction as seen on a Vectorscope.



CCW: The hue changes in a counterclockwise direction as seen on a Vectorscope.



Short: The hue changes in whichever of the clockwise and counterclockwise directions is shorter.



Long: The hue changes in whichever of the clockwise and counterclockwise directions is longer.

Path types for Xpt

There are two types, as follows.



Xpt Hold off: When replaying a keyframe, change the inputs to the settings saved in memory.



Xpt Hold on: When replaying a keyframe, do not change the inputs.

Effect Execution

By using the [RUN] button in the keyframe control block, you can replay the effect as a continuous sequence of images. This is referred to as effect execution.

Range of execution

Each time the [RUN] button is pressed, the range of execution of the effect is from timecode 01:00:00:00 or the current time (the position at which the current effect is stopped) to the end point of the effect. However, if there is a pause set on a keyframe, the execution range is up to that point. Pressing the [RUN] button again resumes the effect, which then runs to the next pause point or the end of the effect.

Run mode setting

You can select from the following run modes for when the effect is executed.

DIRECTION: Specify the effect execution direction.

STOP NEXT KF: Run the effect, and stop at the next keyframe.

EFFECT LOOP: Repeat the effect in an endless loop.

Make these settings in the keyframe control block. (See “Run mode setting” (page 239).)

Master Timelines

You can save the regions selected for a keyframe effect and the register numbers saved in the regions in a master timeline register so that operation can be applied to two or more regions at a time.

Master timeline registers can be saved or recalled from the numeric keypad control block or using a menu operation.

For more details, see “Creating and Saving a Master Timeline” (page 277).

Sequence of Keyframe Operations

The following table shows the principal operations involved in the sequence from creating keyframes to executing an effect. For details of each operation, see the page number in parenthesis.

For the overview of keyframes, see “Keyframes” in Chapter 1 (Volume 1).

Recalling a register (see page 245)

To create a new effect, recall an empty register; to edit an effect, open the register containing it.



Specifying the region and edit points (see page 248)

Select the region in which editing applies, and set the edit points.



Creating and editing keyframes (see page 252)

Create the keyframes that make up the effect, using operations to create, insert, modify, or delete keyframes.



Time settings (see page 265)

Set the overall duration of the effect or the duration of each keyframe.



Path setting (see page 268)

Set the type of interpolation used between successive keyframes.



Executing effects (see page 272)

This provides a smooth effect, based on the time and path settings.



Saving effects (see page 275)

Save a completed effect in a register.

Displaying the Timeline Menu

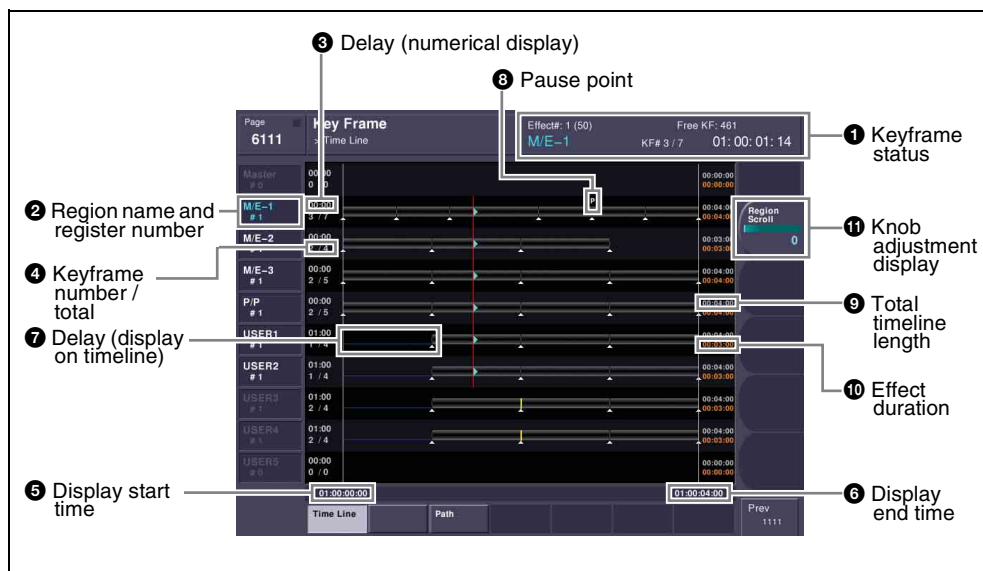
By displaying the Timeline menu, you can view keyframe effects on the timeline for each region, and the associated information.

Recalling the Timeline menu

- 1 In the menu control block, press the top menu selection button [KEY FRAME].
 - 2 Select HF1 'Time Line.'
- The Time Line menu appears.

Interpreting the Timeline Menu

The following are the main parts of the menu display.



Key Frame >Timeline menu



1 Keyframe status

This shows the region name, register number, register name, number of remaining keyframes, current position and timecode with regard to the reference region.

2 Region name and register number

This shows the region name and the number of the register recalled in this region.

The display color indicates the region selection as follows.

Blue: reference region

White: selected region

Gray: not selected region

3 Delay (numerical display)

This shows the delay between carrying out an effect operation, and the start of the actual effect.

4 Keyframe number / total

This shows the number of the keyframe at the cursor position, and the total number of keyframes in the register.

5 Display start time

This shows the timecode value for the timeline display start point.

6 Display end time

This shows the timecode value for the timeline display end point.

7 Delay (display on timeline)

When a delay is set, the interval is shown by a blue line.

8 Pause point

A “P” appears where a pause is set.

9 Total timeline length

The total time of delays and effect duration appears in white.

10 Effect duration

The total duration of the effect appears in orange.

11 Knob adjustment display

Turning the corresponding knob scrolls the timeline display, allowing you to see the timeline for regions that were previously hidden.

Settings in the Timeline Menu

Selecting the region to be displayed

The Timeline menu shows a timeline for each region, but you can also restrict the regions to be shown.

Recalling the Timeline Assign menu

- 1 In the menu control block, press the top menu selection button [KEY FRAME].
- 2 Select HF5 ‘Timeline Assign.’

The Key Frame>Timeline Assign menu appears.

The right of the status area shows a list of the regions (including the global region) assigned to the region selection buttons in the numeric keypad control block. The left shows the regions in order of precedence, and whether each region is shown on the Timeline menu.

Deciding which regions appear on the timeline

In the Timeline Assign menu, press [Active Region], toggling it on or off.

On: The regions for which the region selection buttons in the numeric keypad control block are lit are shown in the precedence order (*see next item*) set in this menu, followed by the regions for which the buttons are off, in the same order.

Off: The regions appear according to the precedence order (*see next item*) and display on/off setting (*see page 244*) set in this menu.

Deciding the precedence order for timeline display

To change the precedence order, insert and delete regions in the list, in the desired order.

- 1 In the Timeline Assign menu, use any of the following methods to select the desired precedence order position and the region you want to insert.
 - Press directly on the precedence order position in the list on the left and the region you want to insert in the list on the right.
 - Press the arrow keys to scroll the reverse video cursor.
 - Turn the knobs to make the setting.

Knob	Parameter	Adjustment	Setting values
1	Priority	Precedence order of insertion position	1 to upwards

Knob	Parameter	Adjustment	Setting values
2	Region	Region to be inserted	1 to upwards

2 In the <Priority> group, press [Insert].

This inserts the selected region before the specified precedence order. If the inserted region is already present in a different precedence order, it is deleted from that precedence order.

3 To delete a region from a precedence order, use any of the following methods to select the region.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Priority	Precedence order assigned to the region to be deleted	1 to upwards

4 To carry out the deletion, press [Delete] in the <Priority> group.

This deletes the selected region from the precedence order list.

Setting the display of regions in the Timeline menu on or off

When [Active Region] is off, to select which regions are displayed in the Timeline menu, use the following procedure.

1 In the Timeline Assign menu, use any of the following methods to select the region.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Priority	Region selection	1 to upwards

2 For no display, press [Display], turning it off. To display, press once more, turning it on.

When [Active Region] is off, regions with the “Display Off” setting are not displayed in the Timeline menu.

To return to the default precedence order and timeline menu display settings

Press [Default] in the <Priority> group.

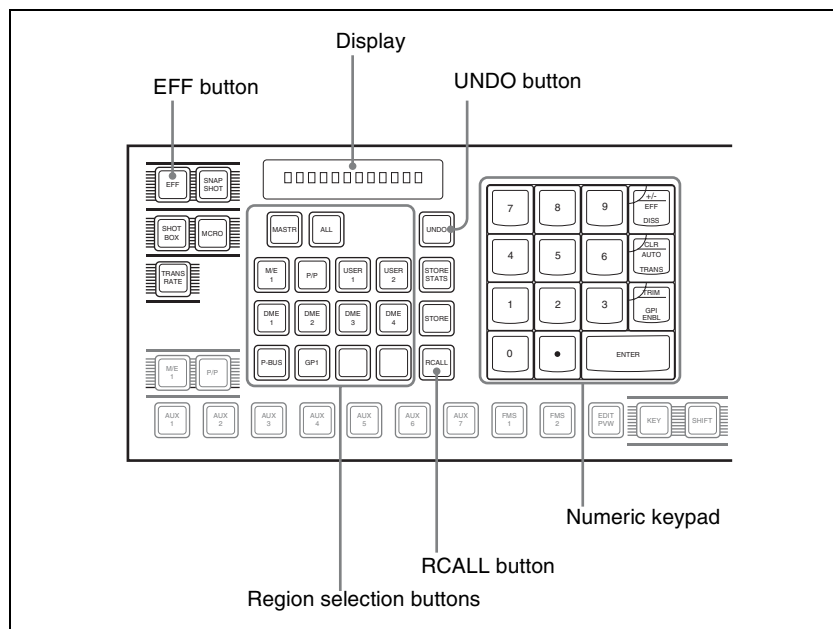
Recalling a Register

Use the numeric keypad control block to recall a register. For each region there are 99 registers dedicated to keyframes, numbered from 1 to 99.

When creating an effect as a user programmable DME, use a 3-digit register number which is commonly used for all DME regions (channels).

For a description of the concept of regions and registers, see “Regions” (page 223) and “Registers” (page 225).

Recalling a register from the numeric keypad control block



Numeric keypad control block

- 1** Press the [EFF] button, turning it on.
This allocates the numeric keypad control block to keyframe operations, and the [RCALL] button lights.
- 2** Press the button corresponding to the region you want to select, turning it on.
You can also press more than one button.

[M/E 1], [P/P]: These select the corresponding M/E-1 and PGM/PST regions.

[USER 1] to [USER 8]: These select the User regions.

[DME 1], [DME 2]: These select the DME channels.

[DEV 1] to [DEV 12]: These select the regions Device 1 to Device 12, respectively.

[P-BUS]: This selects P-Bus.

[GPI]: This selects GPI.

[MCRO]: This selects Macro.

[ALL]: This selects all valid regions.

[MASTR]: This selects the master timeline (see “*Creating and Saving a Master Timeline*” (page 277)).

Note

The regions that can be selected simultaneously are those assigned to the region selection buttons in the numeric keypad control block. (See “*Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block*” in Chapter 19 (Volume 3).)

It is not possible to select [MASTR] and other regions simultaneously. If selected simultaneously, the master timeline takes precedence.

The first button pressed lights green as the reference region, and any subsequently pressed buttons light amber.

Pressing one of the amber-lit buttons, while holding down [EFF], turns the button green to indicate its corresponding region as the new reference region.

For details of the precedence order for becoming the reference region, see “Registers” (page 223) and “Registers” (page 225).

The display shows the name of the reference region, and the number of the last register recalled for this region.

- 3** Enter the number of the register you want to recall, using the numeric keypad.

To find an empty register, instead of entering a number, press the [.] (period) button. To search for an empty register common to all currently selectable regions, press the [.] button again.

To search for an empty register in the 100 range, press [1], [0], [0], [.] (period) in this order. Similarly, to search for an empty register in the 200 range, press [2], [0], [0], [.] (period), and to search for an empty register in the 300 range, press [3], [0], [0], [.] (period).

The register number appears in the display. If the number is followed by a letter ‘e’ or ‘E,’ this indicates the following.



- e: The selected register is empty for the regions selected in step 2.
- E: The selected register is empty for all currently selectable regions.

- 4 To apply a temporary attribute (effect dissolve), press the [+/-/EFF DISS] button.

Note

It is not possible to apply temporary attributes to the master timeline.

- 5 Press the [ENTER] button.

This recalls the specified register.

When the master timeline is recalled, the region selection buttons light according to the saved region information.

To undo the recall of a register

Immediately after recalling the register, press the [UNDO] button to undo the operation.

Note

After recalling the master timeline, you cannot undo the recall.

Specifying the Region and Edit Points

Selecting the Region in Which Editing Applies

Selecting by control panel

Select the region in which the editing is applied by the effect consisting of keyframes, using the region selection buttons in the numeric keypad control block. (See step 2 (page 245) in “Recalling a Register.”)

Selecting by menus

This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

Note

The function of region selection buttons in the numeric keypad control block is linked to the menu. If you carry out region selection by pressing a region selection button, then all the regions assigned to that button are selected.

- 1 In the Key Frame menu, press HF7 ‘Region Select.’

The Key Frame >Region Select menu appears.

On the left of the status area, region selection buttons appear.

Depending on the region selection state, the following indications appear.

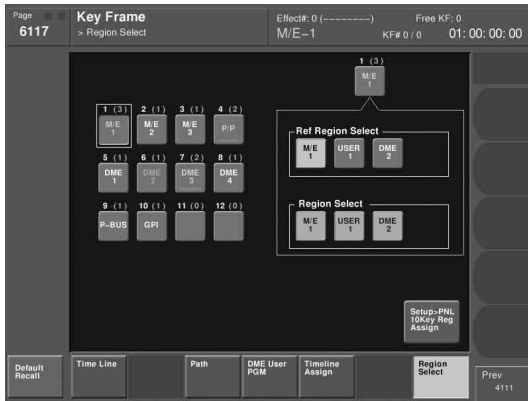
Green text: the assigned regions include the reference region.

Orange text: one of the assigned regions is selected.

White text: no assigned region is selected.

When any one or more of the regions assigned to the region selection buttons is not selected, a red bar appears within the button indication. The [STORE] and [RCALL] buttons in the numeric keypad control block flash amber.





- 2** Press a button indication on the left of the status area, to select the button you want to assign.

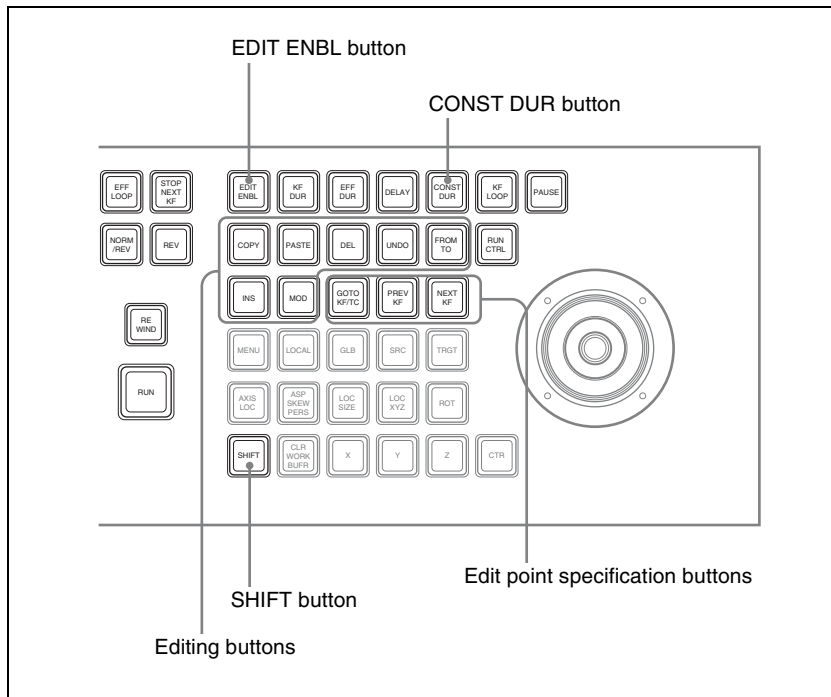
The regions currently assigned to the button you pressed appear on the right side of the status area.

- 3** In the <Region Select> group, press the button for the region you want to select, turning it on.

- 4** In the <Ref Region Select> group, press the button indication you want to make the reference region.

The button you pressed lights green.

Setting the Edit Points



Keyframe control block

To set the edit points, use any of the following operations in the keyframe control block.

- To move the edit point to the keyframe immediately after the current time (the position at which the effect is currently stopped), press the [NEXT KF] button.
- To move the edit point to the keyframe immediately before the current time, press the [PREV KF] button.
- To move the edit point to a keyframe specified by number, press the [GO TO KF/TC] button turning its LED on, then enter the keyframe number with the numeric keypad in the numeric keypad control block, and press the [ENTER] button to confirm.
- To move the edit point to a specified timecode, holding the [SHIFT] button, press the [GO TO KF/TC] button turning its LED on, then enter the timecode value with the numeric keypad in the numeric keypad control block and press the [ENTER] button to confirm.



To enter a difference value

When moving to a point specified with the [GO TO KF/TC] button, you can also enter the difference from the current keyframe number or timecode value. Press the numeric keypad [+/-] button, and enter the difference, then press the [TRIM] button. Each time you press the [+/-] button, it toggles between plus (+) and minus (-).

Creating and Editing Keyframes

Creation

Creating new keyframes

To create new keyframes, after recalling an empty register, use the following procedure to create and insert each new keyframe. Use the keyframe control block for carrying out the operation.

1 Press the [EDIT ENBL] button, turning it on.

This enables effect editing in the keyframe control block.

2 Create the image you want to be the first keyframe.

3 Press the [INS] button.

This takes the current image as the first keyframe.

You can make a setting in the Setup menu so that when you recall an empty register, the system state at that point is automatically captured as the first keyframe.

4 Create the image you want to be the next keyframe.

5 Press the [INS] button.

This inserts the current image as the second keyframe after the first keyframe.

Repeat steps **4** and **5** to create the required number of keyframes.

To insert a new keyframe before an existing keyframe

Hold down the [SHIFT] button and press the [INS] button, to insert a new keyframe before the current keyframe.



Insertion

Inserting keyframes

To insert a keyframe in an existing effect, use the following procedure in the keyframe control block.

- 1** Press the [EDIT ENBL] button, turning it on.
- 2** Stop the effect at the desired edit point.
- 3** Create the image for the keyframe you want to insert.
- 4** Press the [INS] button.
When the edit point is on a keyframe, to insert the new keyframe before the existing keyframe, hold down the [SHIFT] button and press the [INS] button.

This inserts the current image as the new keyframe.

Inserting a keyframe may change the total duration of the effect. (See “Time Settings” (page 229).)

Modification

Modifying keyframes

Use the following procedure in the keyframe control block.

- 1** Press the [EDIT ENBL] button, turning it on.
- 2** Stop the effect at the desired edit point.

When the edit point is on a keyframe, this is what you modify. If the edit point is between two keyframes, the previous keyframe is what you modify.

Note

In constant duration mode (see page 229) modification is only possible when the edit point is on a keyframe.

- 3** Using image transformations or adding special effects, modify the keyframe.

- 4 Press the [MOD] button.

This modifies the keyframe.

Modifying more than one keyframe simultaneously

You can modify a number of keyframes simultaneously. There are three different cases for this operation.

- Modifying from the edit point to a particular keyframe
- Modifying all keyframes in the effect
- Modifying the keyframes in a specified range

The different procedures for these cases are now described.

To modify from the edit point to a particular keyframe

- 1 Press the [EDIT ENBL] button, turning it on.
- 2 Stop the effect at the first keyframe of the range to be modified.
- 3 Carry out the necessary modifications.
- 4 Press the [FROM TO] button, turning it on.

The display in the numeric keypad control block shows the current keyframe number, followed by “TO.”

- 5 Enter the number of the last keyframe to be modified from the numeric keypad control block and press the [ENTER] button to confirm.
- 6 Press the [MOD] button. Alternatively, hold down the [SHIFT] button and press the [MOD] button.
For the difference in the result, see “Differences in the changes when a number of keyframes are modified” (page 255).

This makes the modification simultaneously to all keyframes from the edit point to the specified keyframe.

To modify the keyframes in a specified range

- 1 Press the [EDIT ENBL] button, turning it on.
- 2 Stop the effect at any keyframe within the range to be modified.
- 3 Carry out the necessary modifications.
- 4 Press the [FROM TO] button, turning it on.



The display in the numeric keypad control block shows the current keyframe number, followed by “TO.”

5 Using the numeric keypad in the numeric keypad control block, carry out the following operations.

- To set the first keyframe in the range to be modified, press the [CLR] button, then enter the keyframe number, and press the [ENTER] button to confirm.
- To set the last keyframe in the range to be modified, enter the keyframe number from the numeric keypad, and press the [ENTER] button to confirm.

6 Press the [MOD] button. Alternatively, hold down the [SHIFT] button and press the [MOD] button.

For the difference in the result, see “Differences in the changes when a number of keyframes are modified” (page 255).

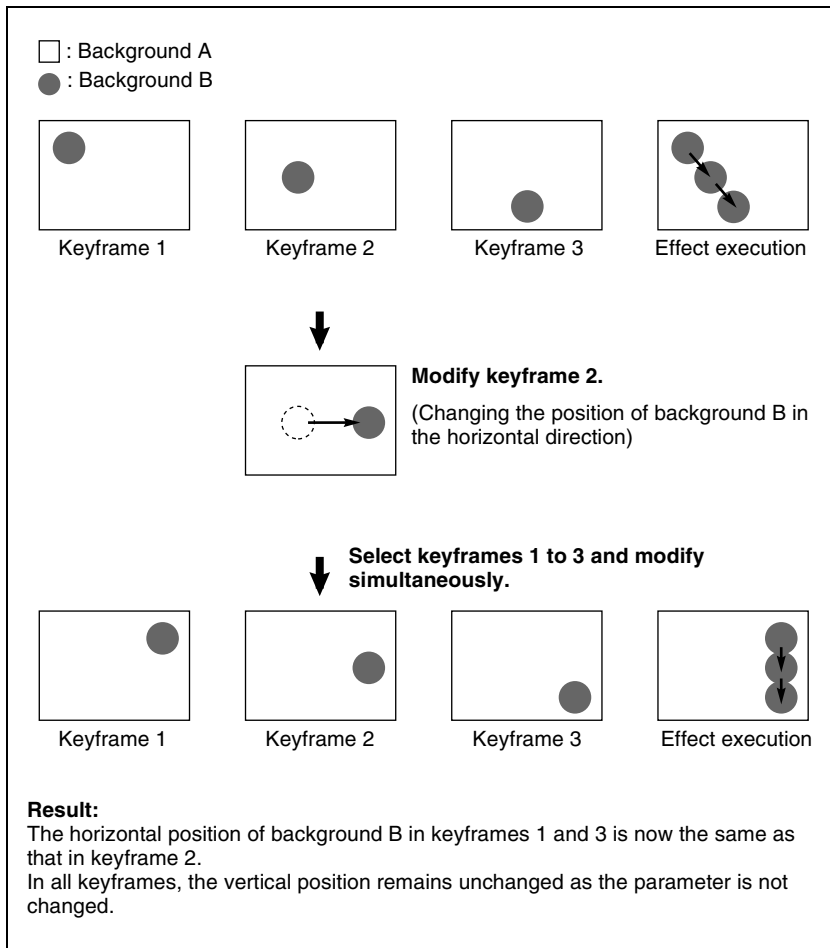
This makes the modification simultaneously to all keyframes in the specified keyframe range.

Differences in the changes when a number of keyframes are modified

When you select a number of keyframes to modify, and press the [MOD] button alone or in combination with the [SHIFT] button, the result of the operation differs as shown below.

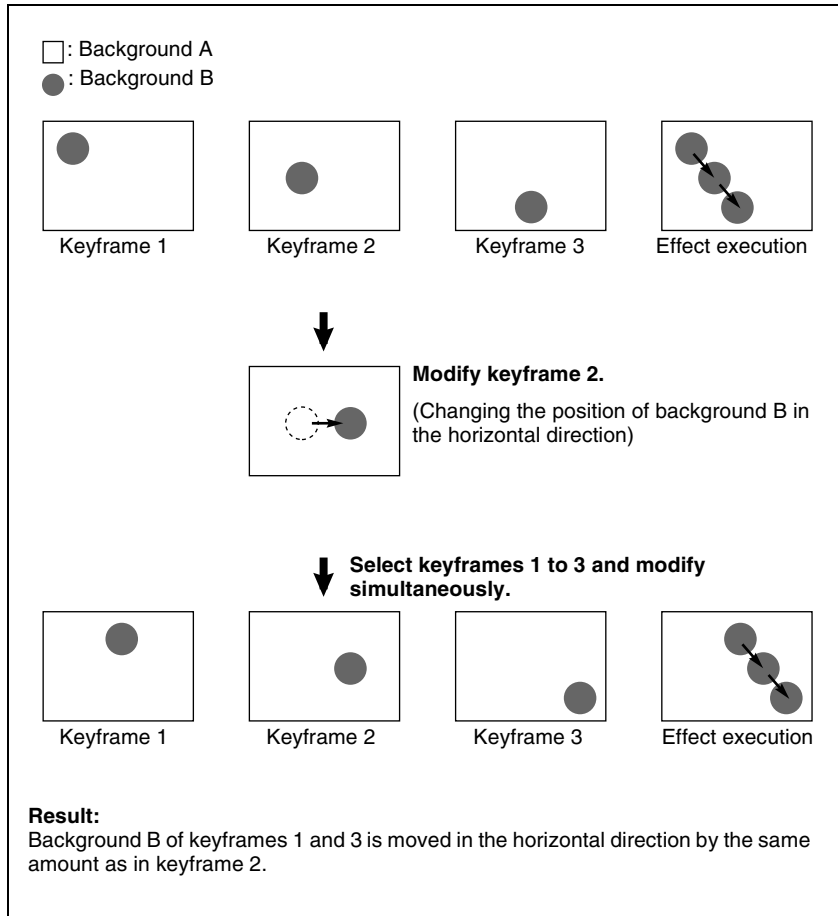
Modifying the keyframes by pressing the [MOD] button alone

The modified parameter values are taken as absolute values, and applied to all of the selected keyframes.



Modifying the keyframes by holding down the [SHIFT] button and pressing the [MOD] button

The modified parameter values are taken as relative values, which modify all of the selected keyframes.



Deletion

Deleting keyframes

- 1 Press the [EDIT ENBL] button, turning it on.
- 2 Stop the effect at the desired edit point.

When the edit point is on a keyframe, this is what you delete. If the edit point is between two keyframes, the previous keyframe is what you delete.

- 3 To delete a number of keyframes in a single operation, press the [FROM TO] button, turning it on.

For how to specify a range of keyframes, see “Modifying more than one keyframe simultaneously” (page 254).

- 4 Press the [DEL] button.

This deletes the keyframe.

Deleting a keyframe reduces the total duration of the effect.

In constant duration mode (*see page 263*), however, the duration does not change.

For details, see “Changes in the effect duration caused by deleting a keyframe” (page 231).

Movement

Moving keyframes

- 1 Press the [EDIT ENBL] button, turning it on.
- 2 Stop the effect at the edit point you want to move.
- 3 To move a number of keyframes in a single operation, press the [FROM TO] button, turning it on, to specify the keyframes.

For how to specify a range of keyframes, see “Modifying more than one keyframe simultaneously” (page 254).

- 4 Press the [DEL] button.

This deletes the keyframe, and saves it in the paste buffer.

- 5 Move the edit point to the position to which you want to move the keyframe.

- 6 Press the [PASTE] button.

This inserts the keyframe you have moved after the current keyframe. In constant duration mode, the moved keyframe overwrites the edit point.

To insert the moved keyframe before a keyframe

Hold down the [SHIFT] button, and press the [PASTE] button to insert the moved keyframe before the current keyframe.

Copying

Copying keyframes

- 1** Press the [EDIT ENBL] button, turning it on.
- 2** Stop the effect at the edit point you want to copy.
- 3** To copy a number of keyframes in a single operation, press the [FROM TO] button, turning it on.

For how to specify a range of keyframes, see “Modifying more than one keyframe simultaneously” (page 254).

- 4** Press the [COPY] button.
This copies the specified keyframe, and saves it to the paste buffer.
- 5** Move the edit point to the position where you want to insert the copied keyframe.
- 6** Press the [PASTE] button.

This inserts the keyframe you have copied after the current keyframe. In constant duration mode, the copied keyframe overwrites the edit point.

To insert the copied keyframe before a keyframe

Hold down the [SHIFT] button, and press the [PASTE] button to insert the copied keyframe before the current keyframe.

Pause

To apply a pause to a keyframe, use the following procedure.

- 1** Press the [EDIT ENBL] button, turning it on.
- 2** Stop the effect on the keyframe to which you want to apply a pause.
- 3** Press the [PAUSE] button.

This applies a pause to the specified keyframe.

Keyframe Loop (Repeated Execution of a Specified Range)

By setting the range of the loop within the effect, and the number of loop executions, you can execute the loop range repeatedly.

Note

It is only possible to set one keyframe loop for each region.

Creating a new keyframe loop

To specify the loop range and loop count, carry out the following procedure.

- 1** Press the [EDIT ENBL] button, turning it on.
- 2** Stop the effect on the keyframe you want to make the first of the loop range (start point). (Here, by way of example, keyframe 2 is taken as the start point.)
- 3** Press the [KF LOOP] button in the keyframe control block, turning it on.

The numeric keypad control block display shows the start point keyframe number as follows.

FM 2 TO

The example shown means “from (keyframe) 2 to...,” where the end keyframe is to follow.

- 4** With the numeric keypad buttons of the numeric keypad control block, enter the number of the last keyframe in the loop range (end point). (Here, by way of example, keyframe 5 is the end point.)

FM 2 TO 5

- 5** Press the [ENTER] button to confirm the entry.

The display changes as follows, prompting you to enter the loop count.

COUNT

- 6** Enter the loop count. (Here, by way of example, “15” is entered.)
 - To specify a loop count, enter a number in the range 1 to 99.
 - To specify an endless loop, enter “0” (zero).



COUNT 15

- 7 Press the [ENTER] button to confirm the entry.

The start point, end point, and loop count that you have set are reflected in the Timeline menu.

If you enter the loop count as “0” (endless loop), the count is shown as “inf” (infinity).

The numeric keypad control block display changes back to the state shown in step 4.

Changing the keyframe loop settings

To change the loop range or count for the currently recalled effect, carry out the following procedure.

- 1 When the [KF LOOP] button in the keyframe control block is lit amber, press it, turning it green.

The numeric keypad control block display shows the current loop range. If, for example, the start point is keyframe 2 and the end point is keyframe 5, this appears as follows.

FM 2 TO 5

- 2 To change the loop range, press the [CLEAR] button in the numeric keypad control block.
To change the loop count only, press the [ENTER] button, then skip to step 6.

When you press the [CLEAR] button, this appears as follows.

FM TO

- 3 Enter the keyframe number for the new start point, and press the [ENTER] button.
- 4 Enter the keyframe number for the new end point, and press the [ENTER] button.

The display shows the currently set loop count.

- 5 To change the setting, press the [CLEAR] button.

This clears the set loop count.

COUNT

6 Enter the new loop count, and press the [ENTER] button.

Executing a keyframe loop

In the keyframe control block, press the [RUN] button.

The set loop range is executed repeatedly for the set loop count number of times.

The screen shows the total loop count and the number of loops remaining. (If the loop count is infinite (inf), the remaining number is not shown.)

If the [REV] button is lit, the loop is played in the reverse order.

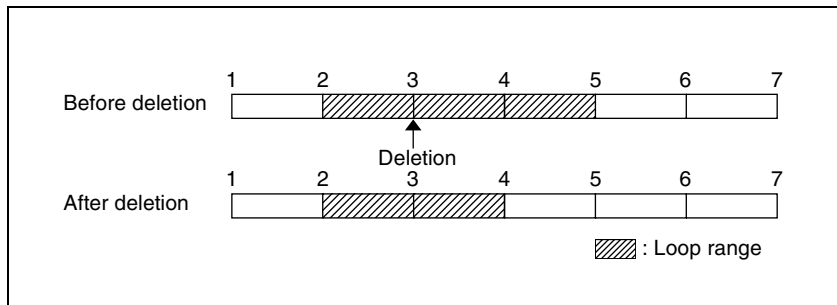
Canceling keyframe loop execution

Press the [REWIND] button in the keyframe control block.

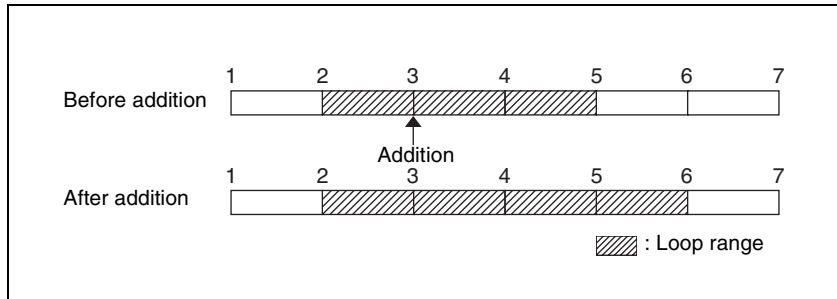
Changes to the loop range caused by keyframe insertion/deletion

When a keyframe is inserted or deleted within the loop range, the loop range also changes. The following are examples.

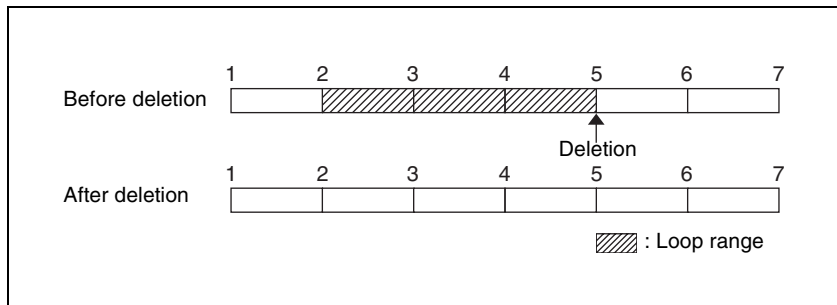
Example 1: If keyframe 3 is deleted, the loop end point moves forward as follows.



Example 2: If keyframe 3 is added, the end point keyframe number moves back.



Example 3: If the keyframe at the end of the loop range (the end point) is deleted, the keyframe loop settings are all cleared, as follows, and the [KF LOOP] button goes off. The same occurs if the first keyframe in the loop range (the start point) is deleted.



Undoing an Edit Operation

To undo a keyframe insert, modify, delete, or paste operation immediately after execution, press the [UNDO] button.

Duration Mode Setting

There are two keyframe duration modes: variable duration mode, and constant duration mode in which the effect duration is fixed (*see page 229*).

- To select variable duration mode, turn the [CONST DUR] button off.
- To select constant duration mode, press the [CONST DUR] button, turning it on.

Transition Mode Settings for User Programmable DME

To create an effect for user programmable DME, it is necessary to set the transition mode.

Setting the transition mode

- 1** In the Key Frame menu, select HF4 ‘DME User PGM.’

The DME User PGM menu appears.

- 2** In the <Transition Mode> group, select the transition mode according to the DME wipe action.

Single: select single transition mode.

Flip/Tumble: select the flip/tumble transition mode.

Dual: select dual transition mode.

P in P: select picture-in-picture mode.

Compress: select compress mode.

Frame I/O: select frame in-out transition mode.

Frame I/O H: select frame in-out transition mode in the horizontal direction.

Frame I/O V: select frame in-out transition mode in the vertical direction.

For details of creating an effect for user programmable DME, see “Creating User Programmable DME Patterns” in Chapter 6 (Volume 1).

Note

Which DME channel is selected as the reference region (lit green) in the numeric keypad control block is reflected in the <Transition Mode> group display.

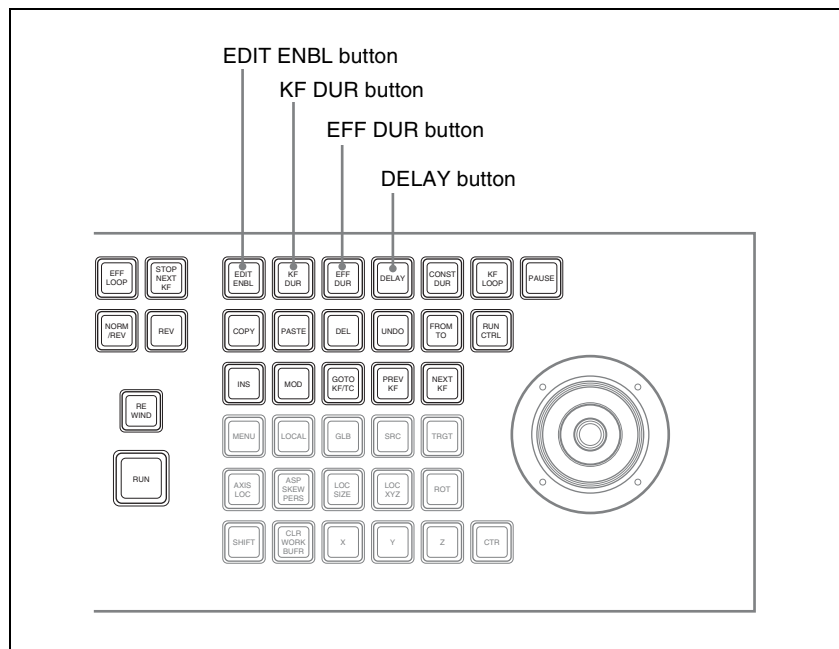


Time Settings

You can determine the execution time of an effect by setting either the keyframe durations or the effect duration.

For details of keyframe duration and effect duration, see “Keyframe duration and effect duration” (page 229).

Setting the Keyframe Duration



Keyframe control block

Setting the keyframe duration

You can set the value of the keyframe duration independently for each keyframe, by the following method.

- 1** Press the [EDIT ENBL] button, turning it on.
- 2** Stop the effect on the keyframe for which you want to set the duration.

The time from this keyframe to the following keyframe is what you set.

- 3 Press the [KF DUR] button, turning it on.

The display in the numeric keypad control block shows “KF DUR” followed by the duration of the current keyframe (seconds:frames).

- 4 Using the numeric keypad in the numeric keypad control block, enter the timecode value for the keyframe duration, as a maximum of four digits.

For example, to set 9 seconds and 20 frames, enter 920. You can also use the [TRIM] button to enter a difference value. (*See “To enter a difference value” (page 251).*)

- 5 Press the [ENTER] button to confirm the entry.

This changes the keyframe duration to the new setting.

Note

In addition to the above operation, the keyframe duration may also be automatically changed as a result of changing the effect duration. (*See the next section.*)

Setting the Effect Duration

To set the effect duration, use the following procedure.

- 1 Press the [EDIT ENBL] button, turning it on.

- 2 Press the [EFF DUR] button, turning it on.

The display in the numeric keypad control block shows “DUR” followed by the effect duration (minutes:seconds:frames).

- 3 Using the numeric keypad in the numeric keypad control block, enter the timecode value for the effect duration, as a maximum of six digits.

For example, to set 3 minutes 7 seconds and 15 frames, enter 30715. You can also use the [TRIM] button to enter a difference value. (*See “To enter a difference value” (page 251).*)

- 4 Press the [ENTER] button.

This changes the effect duration to the new setting.

Note

In addition to the above operation, the effect duration may also be changed as a result of inserting or deleting keyframes. *See “Time Settings” (page 229).*

Setting the Delay

To set the delay (*see “Time Settings” (page 229)*), use the following procedure.

1 Press the [EDIT ENBL] button, turning it on.

2 Press the [DELAY] button, turning it on.

The display in the numeric keypad control block shows “DELAY” followed by the delay time (seconds:frames).

3 Using the numeric keypad in the numeric keypad control block, enter the timecode value for the delay, as a maximum of four digits.

You can also use the [TRIM] button to enter a difference value. (*See “To enter a difference value” (page 251).*)

4 Press the [ENTER] button to confirm the entry.

This changes the delay setting.

Path Setting

The term “path” refers to the specification of how interpolation is carried out from one keyframe to the next.

For details of the notion of path, see “Paths” (page 233).

Set keyframe paths in the Key Frame >Path menu.

To access the Key Frame>Path menu

In the menu control block, press the top menu selection button [KEY FRAME], then select HF3 ‘Path.’

Basic Procedure for Path Settings

Selecting the category

From the 16 buttons in the function button area, select the category for which you want to make the setting.

First row: path settings for the switcher M/E1 and PGM/PST banks

Second and third rows: path settings for User1 to User8

Fourth row: path settings for DME local channel and global channel 3D transforms and effects

Making switcher path settings

This section describes settings for M/E-1 Key1 as an example.

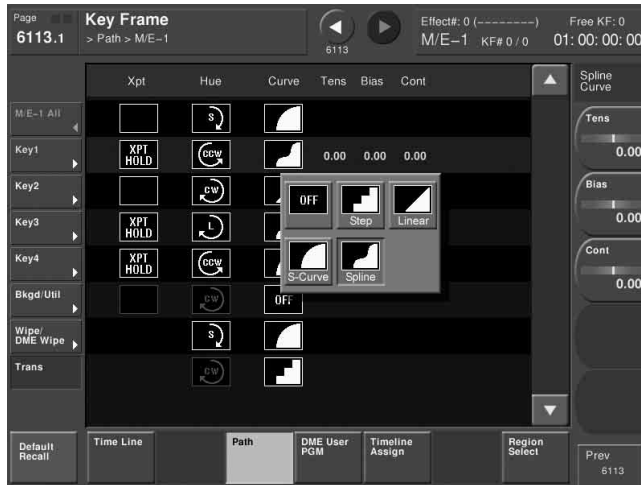
The area for the VF buttons shows the names of items.

A ► sign by a button indicates that pressing it opens a more detailed setting menu.

The status area shows the settings for Xpt, Hue, and Curve. However, depending on the item, these parameters may or may not be present.

Note

Whenever you set a path or modify its setting, be sure to press the [MOD] button in the keyframe control block. The setting does not become effective unless the [MOD] button is pressed.



Changing the path type for Curve

- 1 In the Path menu, press [M/E-1].
The M/E-1 menu appears.
- 2 Press the Curve path type indication for the Key1 item that you want to change.
A path selection window appears.
- 3 Press the indication for the desired path type, to select it.
 - OFF:** Executing the effect causes no change.
 - Step:** There is no interpolation between keyframes, so that the effect parameters are updated each time a keyframe is passed.
 - Linear:** Linear interpolation between keyframes, resulting in constant speed movement.
 - S-Curve:** The rate of change accelerates and decelerates before and after a keyframe, so that the rate of change is maximum midway between two keyframes.
 - Spline:** The effect follows a smooth curved path from each keyframe to the next.

The status area reflects the selected path type.

At this point, depending on the setting for Curve, the effect for Hue and Xpt is also affected as shown in the following table. In the menu, the Hue and Xpt settings do not change, but the path type indication is dimmed out.

Curve setting	Hue change	Xpt change
OFF	Does not change	Hold
Step	Changes as with the Step setting	Is not affected

- 4** If you selected Spline as the path type, set the following parameters, using the knobs.

Knob	Parameter	Adjustment	Setting values
1	Tens	Spline interpolation tension	-4.00 to +4.00
2	Bias	Spline interpolation bias	-4.00 to +4.00
3	Cont	Spline interpolation continuity	-4.00 to +4.00

Changing the path type for Hue

- 1** Press the Hue path type indication for the item that you want to change.
- 2** Turn knob 1 to change the Hue path type.

The path type indications shown in the menu represent the change in hue as seen on a Vectorscope.



CW: Rotate clockwise.



CCW: Rotate counterclockwise.



Short: The hue changes in whichever of the clockwise and counterclockwise directions is shorter.



Long: The hue changes in whichever of the clockwise and counterclockwise directions is longer.

Changing the path type for Xpt

- 1** Press the Xpt path type indication for the item that you want to change.
A path selection window appears.
- 2** Press the indication for the desired path type, to select it.



Xpt Hold off: When replaying a keyframe, change the inputs to the settings saved in memory.





Xpt Hold on: When replaying a keyframe, do not change the inputs.



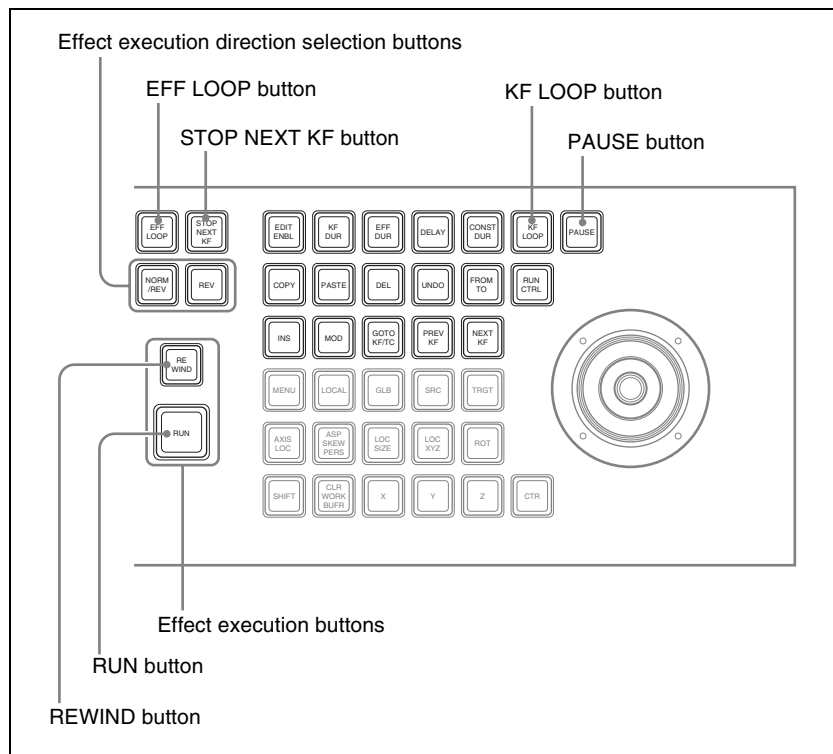
Executing Effects

By means of the [RUN] button in the keyframe control block, you can play an effect as a continuously varying image. This is referred to as effect execution.

See also “Effect Execution” (page 239).

It is also possible to execute an effect from the device control block (see Chapter 2 (Volume 1)).

Executing Effects in the Keyframe Control Block



Keyframe control block

Executing an effect automatically

- 1** Select the region in which you want to execute the effect, using the region selection buttons in the numeric keypad control block. (See step **2** (page 245) of “Recalling a register.”)
- 2** With the numeric keypad, enter the number of the register in which the effect you want to execute is saved, and press the [ENTER] button to confirm.

This recalls the effect saved in the register.
- 3** In the keyframe control block, press the [RUN] button.

The [RUN] button lights amber and the effect is executed automatically.

Executing an effect manually

In step **3** above, operate the fader lever.

To use the transition control block fader lever as a keyframe fader

Press the [KF] button in the transition control block, turning it on, to execute a keyframe effect with the fader lever in the same control block.

You can also assign the [KF] button to a transition type selection button in the transition control block.

Notes

- For the operation of assigning the [KF] button to the transition type selection buttons, see “Overall Control Panel Settings (Config Menu)” in Chapter 19 (Volume 3).
- It is not possible for the [KF] button to be on for multiple banks (M/E or PGM/PST) at the same time. If you press the [KF] button in more than one bank, only the last button pressed remains on.
- If a macro is assigned to the transition control block fader lever, then while in use as a keyframe fader the macro is not executed.

Moving to the first keyframe of the effect

To move to the first keyframe of the effect, press the [REWIND] button.

Setting the Run Mode

You can set the run mode in which an effect is executed when you press the [RUN] button.

Specifying the effect execution direction

To specify the effect execution direction, press the [REV] button, turning it on (for reverse direction) or off (for normal direction).

To execute the effect so as to alternate the normal and reverse directions, press the [NORM/REV] button, turning it on.

When the [REV] button is off: The effect is executed in the direction from the first keyframe to the last keyframe.

When the [REV] button is on: The effect is executed in the direction from the last keyframe to the first keyframe.

When the [NORM/REV] button is on: Each time the effect is executed, the direction reverses.

Executing an effect up to the next keyframe

1 Press the [STOP NEXT KF] button, turning it on.

2 Press the [RUN] button.

This executes the effect as far as the next keyframe. When the [REV] button is lit, it is executed as far as the previous keyframe.

Repeating an effect

1 Press the [EFF LOOP] button, turning it on.

2 Press the [RUN] button.

This executes the effect repeatedly, from the first keyframe to the last keyframe.

When the [REV] button is lit, the effect is executed in the reverse direction.

3 To stop the repeating effect, press the [EFF LOOP] button, turning it off, or press the [REWIND] button.



Saving Effects

When you recall an effect, the currently recalled effect is automatically saved in a register. This is referred to as the auto save function.

You can disable the auto save function in a Setup menu.

By means of the following operation, you can also specify a register and save an effect in it.

Saving an effect in a specified register

Specify the register using the numeric keypad control block.

1 Press the [EFF] button, turning it on.

This assigns the numeric keypad control block to keyframe operations.

2 Press the region selection button corresponding to the region for which you want to save the register, turning it on.

See step 2 (page 245) of “Recalling a Register.”

3 Press the [STORE] button, turning it on.

4 With the numeric keypad, enter the number of the register in which you want to save the effect.

To find an empty register, instead of entering a number, press the [.] (period) button. To search for an empty register common to all currently selectable regions, press the [.] button again.

To search for an empty register in the 100 range, press [1], [0], [0], [.] (period) in this order. Similarly, to search for an empty register in the 200 range, press [2], [0], [0], [.] (period), and to search for an empty register in the 300 range, press [3], [0], [0], [.] (period).

The register number appears in the display. If the number is followed by a letter ‘e’ or ‘E,’ this indicates the following.

e: The selected register is empty for the regions selected in step 2.

E: The selected register is empty for all selectable regions.

5 To add an attribute (effect dissolve), press the [+/-/EFF DISS] button, turning it on.

For details of attributes, see “Effect Attributes” (page 227).

6 Press the [ENTER] button.

This saves the current effect in the specified register, and turns off the [STORE] button. The [RCALL] button and [STORE STATS] button both light.

To undo the saving of an effect

Immediately after saving an effect, hold down the [STORE STATS] button and press the [UNDO] button to undo the save.



The regions selected in step **3** and the register numbers recalled in those regions are saved in the master timeline register, and the [STORE] button goes off. At the same time, the [RCALL] button lights.

Notes

- It is not possible to undo a master timeline save.
- Saving the master timeline does not carry out a save of effects. Save the effects for each region first, then carry out the master timeline save.

Changing a master timeline

You can change information already saved in a master timeline.

As an example, to change the M/E-1 register from Effect 5 to Effect 10, use the following procedure.

Information in master timeline register 1 before change

Region	Register
M/E-1	Effect 5
P/P	Effect 5



Information in master timeline register 1 after change

Region	Register
M/E-1	Effect 10
P/P	Effect 5

- 1** Recall the master timeline register you want to change. (*See “Recalling a Register” (page 245).*)

This simultaneously recalls M/E-1 register 5 and P/P register 5, and the [M/E-1] and [P/P] region selection buttons light.

- 2** Press the region selection button [MASTR], turning it off.
- 3** Turn on only the button for the region you want to change (here, [M/E-1]), and recall the desired register (here, Effect 10).

This recalls M/E-1 register 10, while on P/P register 5 remains selected.

- 4** Press the buttons for the regions you want to save on the master timeline (here, [M/E-1] and [P/P]), turning them on.

- 5** Press the region selection button [MASTR], turning it on.

The display shows the register number last used for master timeline operation.

- 6** Press the [STORE] button, turning it on.
- 7** With the numeric keypad buttons, enter the number of the register (here “1”) in which you want to save the master timeline, and press the [ENTER] button.

This saves M/E-1 register 10 and P/P register 5 in master timeline register 1, and the [STORE] button goes off. At the same time, the [RCALL] button lights.

Checking the regions saved on a master timeline

For example in the course of changing a master timeline, you can check which regions are saved in the register. With the [MASTR] button in the numeric keypad control block lit, hold down the [STORE] button. While it is held down, the buttons for the saved regions light. When the button is released, the state before it was held down is restored.

Creating and Saving a Master Timeline With the Menu

You can save a master timeline using the Effect >Master Timeline >Store menu.

Recalling the Store menu

- 1** Do either of the following.
 - In the menu control block, press the top menu selection button [EFF].
 - In the numeric keypad control block, press the [EFF] button twice in rapid succession.

The Effect menu appears.

- 2** Press VF1 ‘Master Timeline’ and HF1 ‘Store.’

The Master Timeline >Store menu appears.

The status area shows the master timeline register names, register lock status, register number for each region, and so on.

- 3** If required, press the following buttons in the status area to change the region display.

- M/E, P/P:** indicate assignment of M/E-1 (“M/E1”) and P/P (“P/P”).
- User:** indicate assignment of User1 (“USR1”), User2 (“USR2”), User3 (“USR3”), User4 (“USR4”), User5 (“USR5”), User6 (“USR6”), User7 (“USR7”), and User8 (“USR8”).
- DME:** indicate assignment of DME ch1 (“DME1”) and ch2 (“DME2”).
- DEV1-8:** indicate assignment of Device1 (“DEV1”), Device2 (“DEV2”), Device3 (“DEV3”), Device4 (“DEV4”), Device5 (“DEV5”), Device6 (“DEV6”), Device7 (“DEV7”), and Device8 (“DEV8”).
- DEV9-12:** indicate assignment of Device9 (“DEV9”), Device10 (“DEV10”), Device11 (“DEV11”), and Device12 (“DEV12”).
- Misc:** indicate assignment of P-Bus (“PBUS”), GPI (“GPI”), and Macro (“MCRO”).

Creating and saving a master timeline

To save a master timeline register with the menu, use the following procedure.

- 1** In the Store menu, using any of the following methods, select the register in which you want to save the master timeline.
 - Press directly on the list in the status area.
 - Press the arrow keys to scroll the reverse video cursor.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Master Reg	Master timeline register number	1 to 99

- 2** Press [Edit].

The Edit menu appears, and you can now save the master timeline in the specified register. In this menu again, you can turn the knob to select the master timeline register.

The status area shows the status of each region in this master timeline.
- 3** Using any of the following methods, select the region. Multiple selections are also possible.
 - Press directly on the display in the status area.
 - To cancel the selection, press once more to return to the normal display.
 - To select all regions, press [ALL].
To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].
- 4** Press [Assign], turning it on.
 - If the selected register is locked, a confirmation message appears asking whether or not to cancel the operation. Press [OK] to return to the previous menu display without carrying out the registration.



- If the operation is carried out, the region selected in step **3** is registered on the master timeline, and the parameters are now valid.

5 Turn the knob to select the number of the effect register.

Knob	Parameter	Adjustment	Setting values
3	Effect Reg	Effect register number	1 to 399

6 Repeat steps **3** to **5** as required to set all regions and register numbers to be saved on the master timeline.

7 In the <Store> group, press [Store].

This saves the settings.

To return to the state before saving the master timeline content

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

Register Operations in the Menus

Using the Effect menu, you can carry out the following effect register operations.

- Attribute setting
- Status display
- Register editing

To display the Effect menu

Press the top menu selection button [EFF] in the menu control block.

The menus for editing registers are divided up by registers. Here the menu for registers 1 to 99 is described as an example, but you can carry out operations in the same way on registers 101 to 199, 201 to 299, and 301 to 399, using VF3 to VF5.

Effect Attribute Settings

Applying effect dissolve

To apply the “effect dissolve” attribute to a keyframe effect, use the following procedure.

- 1** In the Effect menu, press VF2 ‘Effect 1-99’ and HF1 ‘Attribute.’

The Attribute menu appears.

The status area shows the region names, register numbers and status, and attribute settings.

- 2** Press the region display in the upper part of the list, and in the selection window select the region. Selecting multiple regions is also possible. To select all regions, press [ALL].

- 3** Press [OK].

The selected region name appears in the upper part of the list.

- 4** Using any of the following methods, select the register.
 - 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	Register	Register number	1 to 99
3	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

5 Press [Effect Dissolve], turning it on.

6 Turn the knob to set the duration.

Knob	Parameter	Adjustment	Setting values
4	Eff Diss Duration	Dissolve duration	1 to 999 (frames)

Setting the duration for a temporary attribute

To set the duration for a temporary attribute set in the numeric keypad control block, turn knob 5.

Knob	Parameter	Adjustment	Setting values
5	Temp Dur	Temporary attribute dissolve duration	0 to 999 (frames)

Effect Status Display

The Effect >Effect 1-99 menu displays the following information.

Region name: The selected region name appears in the upper part of the list.

Register number

Register name

Write-protected status: When the register is write-protected, a letter “L” appears.

Empty status: When the register is empty, a letter “E” appears.

Effect Register Editing

You can carry out the following editing on effect registers and master timeline registers.

- **Lock:** Write-protect the contents of the register.
- **Copy:** Copy the contents of one register to another register.
- **Merge:** Merge the data of two registers. It is not possible to merge master timeline registers.

- **Move:** Move the contents of one register to another register.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the contents of a register.
- **Name:** Attach a name to a register.

Write-protecting the contents of the effect register

Note

It is not possible to write-protect an empty register.

- 1 In the Effect menu, press VF2 'Effect 1-99' and HF2 'Lock.'

The Lock menu appears.

- 2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.

To select all regions, press [ALL].

- 3 Press [OK].

The selected region name appears in the upper part of the list.

- 4 Using any of the following methods, select the register.

- 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	Register	Register number	1 to 99
3	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

- 5 Press [Lock], turning it on.

To unlock the register

Select the register you want to unlock, and press [Lock], turning it off.

Copying, moving, and swapping effect register data

This section describes the procedure for copying. You can move or swap registers using a similar procedure.

- 1 In the Effect menu, press VF2 'Effect 1-99' and HF3 'Copy/Merge.'



- The Copy/Merge menu appears.
- The left side of the status area shows the register number of the copy source, and the right side shows the register number of the copy destination.

- 2** Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.
To select all regions, press [ALL].

Operation between regions

Operation between regions is possible in the following cases.

- M/E-1 and P/P regions
- Two of the User1 to 8 regions of the same configuration
- Two of the DME ch1 and ch2 (including Global) regions

- 3** Press [OK].

The selected region name appears in the upper part of the list.

- 4** Using any of the following methods, select the desired registers.

- 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	From Reg	Copy source register number	1 to 99
2	To Reg	Copy destination register number	1 to 99
3	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

- 5** To copy without transferring the name, in the <Copy> group, press [W/o Name], turning it on.

- 6** In the <Copy> group, press [Copy].

This carries out the copy.

If, for example, the copy destination register is write-protected or the same register is specified both as the copy source and destination registers, a confirmation message appears. Press [OK] to cancel the copy.

Merging effect registers

- 1** In the Effect menu, select VF2 ‘Effect 1-99’ and HF3 ‘Copy/Merge.’

- The Copy/Merge menu appears.

- The left side of the status area shows a list for the register coming afterward when merged. The right side shows a list for the register coming before when merged.

2 Press the region display in the upper part of the list, and in the selection window select the region. Selecting multiple regions is also possible. To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register.

- 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	From Reg	The register coming afterwards when merged	1 to 99
2	To Reg	The register coming before when merged	1 to 99

5 Press [Merge].

This carries out the merge.

Deleting data from effect registers

1 In the Effect menu, press VF2 ‘Effect 1-99’ and HF6 ‘Delete.’

The Delete menu appears.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.

To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the desired registers.

- 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	Register	Register number	1 to 99
3	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

5 Press [Delete].

Attaching a name to an effect register

1 In the Effect menu, press VF2 ‘Effect 1-99’ and HF7 ‘Rename.’

The Rename menu appears.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.

To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register you want to name.

- Press directly on the list in status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register number	1 to 99

The selected register appears in reverse video.

5 Press [Rename].

A keyboard window appears.

For details of keyboard window operation, see “Menu Operations” in Chapter 2 (Volume 1).

6 Enter the name, of not more than eight characters, and press [Enter].

The set name is reflected in the status area.

Note

The following names cannot be used.

CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3,
COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Displaying a List of Effect Registers for Editing

You can display a list of effect registers including status information (whether data is present and so on), then carry out lock, copy, delete, and rename operations.

Displaying the list of effect registers with status information

Press the menu title button at the top left of the Effect menu.

The Effect >Status menu appears. The status area shows a list of effect registers (1 to 99).

Register name displays

For the same number, the register name for the M/E-1 region takes precedence. If there is no data for the M/E-1 region, then the register name appears in the sequence P/P >User1 to User8 >DME ch1 >DME ch2 >Device1 to Device12 >P-Bus >GPI >Macro.

Indication colors

Each register has a color-coded border, indicating its status.

Selected register: pale blue border

Register containing data: shown amber within the border. If, however, there are one or more locked regions, the display is in red.

Write-protecting the contents of the register (lock function)

(This applies to all regions.)

In the Effect >Status menu, use the following procedure.

- 1 Using any of the following methods, select the register you want to lock.
 - Press directly on the corresponding register indication in the status area.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register selection	1 to 99



2 Press [Lock].

The register is locked, and the background of the register indication appears in red.

To release the lock

Press [Lock] once more, turning the contents of the frame to amber.

Copying the contents of a register

(This applies to all regions.)

In the Effect >Status menu, use the following procedure.

- 1** Using any of the following methods, select the copy source register.
- Press directly on the corresponding register indication in the status area.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register selection	1 to 99

2 In the <Copy> group, press [From __].

3 Select the copy destination register.

4 In the <Copy> group, press [To __].

This executes the copy.

Deleting the contents of a register

(This applies to all regions.)

In the Effect >Status menu, use the following procedure.

- 1** Using any of the following methods, select the register you want to delete.
- Press directly on the corresponding register indication in the status area.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register selection	1 to 99

2 Press [Delete].

This deletes the data from the register.

Renaming a register

(This applies to all regions.)

In the Effect >Status menu, use the following procedure.

- 1 Using any of the following methods, select the register you want to rename.
 - Press directly on the corresponding register indication in the status area.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register selection	1 to 99

- 2 Press [Rename].

A keyboard window appears.
- 3 Enter a name of up to eight characters, and press [Enter].

This changes the name.



Chapter 14 Snapshots

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Overview

The term “snapshot” refers to a function whereby the various settings required to apply a particular effect to an image are saved in memory as a set of data, for recall as required, to recover the original state.

You can carry out snapshot operations using the numeric keypad control block (*see page 295*) and the Snapshot menu (*see page 300*).

Note

If the M/E bank has the Inhibit setting (*see “Overall Control Panel Settings (Config Menu)” in Chapter 19 (Volume 3)*), it is not possible to recall a snapshot on that M/E bank.

Snapshot Types

Snapshots are divided as follows.

Snapshots applying to a particular region (functional block of the switcher or DME)

The term “snapshot” alone usually refers to this type of snapshot. This only applies to regions assigned to region selection buttons in the numeric keypad control block.

For details about a region, see “Regions” (page 223).

Master snapshot: This applies to the selected regions and the register numbers saved in the regions. A master snapshot can be saved and recalled using the numeric keypad control block.

Snapshots applying only to particular functions

This type of snapshot includes the following.

Key snapshot: This includes the key on/off state and all key settings other than key priority for each keyer. (*See “Key Snapshots” in Chapter 4 (Volume 1).*)

To use this function requires the MKS-8032 DSK Fader Module.

Wipe snapshot: This includes the wipe settings of each of the M/E-1 to M/E-3 and PGM/PST banks. (*See “Wipe Snapshots” in Chapter 5 (Volume 1).*)

DME wipe snapshot: This includes the DME wipe settings of each of the M/E-1 to M/E-3 and PGM/PST banks.



The rest of this section describes the snapshots that apply to a particular region or regions.

Snapshot Attributes

An individual snapshot may also have attached special conditions relating to switcher or DME operation when the snapshot is recalled. These conditions are called “attributes” of the snapshot, and can be added when the snapshot is saved or recalled.

Types of attribute

There are five snapshot attributes, as follows.

Cross-point hold: When the snapshot is recalled, the cross-point button selection remains unchanged. This can be set independently for each bus.

Key disable: When the snapshot is recalled, the key settings remain unchanged. This can be set independently for each keyer. A Setup menu allows you to select whether or not the key on/off state should also remain unchanged.

For details of the setting operation, see “Settings Relating to Keys, Wipes, Frame Memory and Color Correction (Key/Wipe/FM/CCR Menu)” in the Chapter 20 (Volume 3).

Effect dissolve: The transition from the state before the snapshot recall to the snapshot settings is carried out smoothly, by a dissolve. The dissolve duration can be set in the Snapshot menu.

Auto transition: An auto transition starts the instant the snapshot is recalled. The auto transition setting is valid only for M/E-1 and PGM/PST.

Note

If both effect dissolve and auto transition are selected as attributes, the auto transition takes precedence.

GPI output: A GPI output is sent to the allocated GPI port the instant the snapshot is recalled. The trigger type depends on the switcher GPI output settings made in the Setup menu.

For details, see “Interfacing With External Devices (Device Interface Menu)” under “Switcher Setup” in Chapter 20 (Volume 3).

Clip event: Recall a frame memory clip immediately after the snapshot is recalled.

Auto play: Play a frame memory clip immediately after the snapshot is recalled.

Table of available attributes

The attributes that can be used depend on the region, as follows.

Yes: Can be used No: Cannot be used

Attribute	Region		
	M/E-1 and PGM/PST	User 1 to User 8	DME ch 1, ch 2
Cross-point hold	Yes	Yes	Yes
Key disable	Yes	No	No
Effect dissolve	Yes	Yes	Yes
Auto transition	Yes	No	No
GPI outputs	Yes	Yes	No
Clip event	No	Yes	No
Auto play	No	Yes	No

Attribute display

You can view the attributes of a snapshot in the Snapshot menu.

For more details, see “Snapshot Operations in the Menu” (page 300).

Temporary attributes

When recalling a snapshot, you can temporarily apply attributes distinct from the attributes set for each register. These are called “temporary attributes.”

You can set temporary attributes when recalling a snapshot.

Bus override

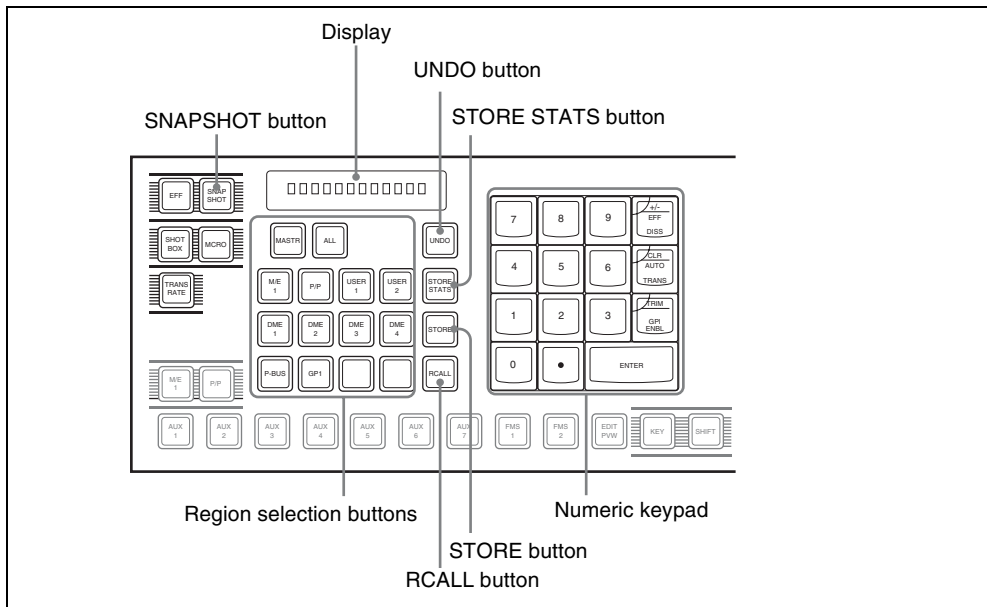
If you recall a snapshot while holding down an A or B bus button, the selection of the signal on the A or B bus does not change when the snapshot is recalled. This function is called “bus override.”

This function is effective when cross-point hold is off, and you want to temporarily maintain the cross-point setting. When cross-point hold is on, the above operation is not necessary.

Snapshot Operations From the Numeric Keypad Control Block

Saving and Recalling Snapshots

Snapshot operations with the numeric keypad control block use the following buttons.



Numeric keypad control block

Saving a snapshot from the numeric keypad control block

- 1 Make the settings for the state you want to save as a snapshot.
- 2 In the numeric keypad control block, press the [SNAPSHOT] button, turning it on.

This allocates the numeric keypad control block to snapshot operations, and the [RCALL] button lights.

- 3** Press the region selection button corresponding to the region for which you want to save, turning it on. You can select more than one region.

[M/E 1], [P/P]: These select the corresponding M/E-1 and PGM/PST regions.

[USER 1] to [USER 8]: These select the User regions.

[DME 1], [DME 2]: These select the DME channels.

[RTR]: This selects the Router region.

[ALL]: This selects all regions.

Note

The regions that can be selected simultaneously are those assigned to the region selection buttons in the numeric keypad control block. (See “Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block” in Chapter 19 (Volume 3).)

The first button pressed lights green as the reference region, and any subsequently pressed buttons light amber.

Pressing one of the amber-lit buttons, while holding down [SNAPSHOT], turns the button green to indicate its corresponding region as the new reference region.

For details of the precedence order for becoming the reference region, see “Registers” (page 223) and “Registers” (page 225).

The display shows the name of the reference region and the number of the register previously recalled for that region.

- 4** Press the [STORE] button, turning it on.

- 5** Enter the desired register number from the numeric keypad.

To find an empty register, instead of entering a number, press the [.] (period) button. To search for an empty register common to all currently selectable regions, press the period button again.

Note

If you choose a register which already contains a snapshot, and save a snapshot, then the existing register contents are overwritten.

The register number appears in the display. If the number is followed by a letter ‘e’ or ‘E,’ this indicates the following.

e: The selected register is empty for the regions selected in step **3**.

E: The selected register is empty for all currently selectable regions.

The entered register number appears in the display.



- 6** To apply attributes, press the following buttons, turning them on.

Attribute to apply	Button
Effect dissolve	[+/-/EFF DISS] button
Auto transition	[CLR/AUTO TRANS] button
GPI output ^{a)}	TRIM/GPI ENBL] button

a) The GPI port that can be set is 1 (fixed).

For details of attributes, see “Snapshot Attributes” (page 293).

Note

In the numeric keypad control block, it is not possible to apply the cross-point hold. *For details, see “Applying snapshot attributes” (page 300).*

- 7** Press the [ENTER] button.

This saves the snapshot, and the [STORE] button goes off. The [RCALL] and [STORE STATS] buttons light.

To cancel a snapshot save operation

After saving a snapshot, to cancel the save, hold down the [STORE STATS] button and press the [UNDO] button.

Recalling a snapshot from the numeric keypad control block

- 1** In the numeric keypad control block, press the [SNAPSHOT] button, turning it on.

This allocates the numeric keypad control block to snapshot operations, and the [RCALL] button lights.

- 2** Press the region selection button corresponding to the region you want to recall, turning it on. Multiple selections are also possible.

[M/E 1], [P/P]: These select the M/E-1 and PGM/PST regions.

[USER 1] to [USER 8]: These select the User regions.

[DME 1], [DME 2]: These select the DME channels.

[RTR]: This selects the Router region.

[ALL]: This selects all regions.

[MASTR]: This selects a master snapshot.

Note

The regions that can be selected simultaneously are those assigned to the region selection buttons in the numeric keypad control block. *(See*

“Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block” in Chapter 19 (Volume 3).

It is not possible to select [MASTR] and other regions simultaneously. If selected simultaneously, the master snapshot takes precedence.

The first pressed button lights green as the reference region, and subsequently pressed buttons light amber.

Pressing one of the amber-lit buttons, while holding down [SNAPSHOT], turns the button green to indicate its corresponding region as the new reference region.

For details of the precedence order for becoming the reference region, see “Reference region” (page 224).

The display shows the name of the reference region and the number of the register previously recalled for that region.

3 Enter the desired register number from the numeric keypad.

See step 5 (page 296) in “Saving a snapshot from the numeric keypad control block.”

The entered register number appears in the display.

4 To apply temporary attributes, press the following buttons, turning them on.

Control block	Temporary attribute to apply	Button
Cross-point control block	A/B bus cross-point hold	[XPT HOLD] button in the background A/B bus
	Key cross-point hold	[XPT HOLD] button ^{a)}
Numeric keypad control block	Effect dissolve	[+/-/EFF DISS] button
	Auto transition	[CLR/AUTO TRANS] button

a) Enabled by a setup setting (page 301).

For the setup setting, see “Operation Settings (Operation Menu)” in Chapter 19 (Volume 3).

For details of temporary attributes and available attributes, see “Snapshot Attributes” (page 293).

Notes

- The cross-point hold and key disable settings are maintained until you next press the [XPT HOLD] button.



- Applying temporary attributes does not affect the contents of the register.
- It is not possible to apply temporary attributes to a master snapshot.

5 Press the [ENTER] button.

This recalls the specified snapshot, and the reference region name and recalled register number appear in the display.

If you applied the effect dissolve or auto transition temporary attributes in step **4**, the corresponding buttons go off.

When a master snapshot is recalled, the region selection buttons light according to the saved region information.

To cancel a snapshot recall operation

After saving a snapshot, to cancel the recall, press the [UNDO] button.

Note

It is not possible to cancel recalling a master snapshot.

Creating and saving a master snapshot with the numeric keypad control block

To create and save a master snapshot with the numeric keypad control block, refer to the operations in “*Creating and Saving a Master Timeline Using the Buttons in the Numeric Keypad Control Block*” (page 277). Note, however, that in place of the [EFF] button in the numeric keypad control block, the [SNAPSHOT] button is used.



Snapshot Operations in the Menu

Operations in the Snapshot menu

You can also set snapshot or key snapshot attributes in the Snapshot menu, which also displays the status of the registers. To access the Snapshot menu, press the top menu selection button [SNAPSHOT] in the menu control block. In the Snapshot menu, as well as setting snapshot attributes, you can carry out editing operations on snapshots, including copy and delete.

See “*Snapshot Register Editing*” (page 306).

Operations in the Misc >Snapshot menu

For M/E and PGM/PST snapshots only, you can carry out saving, recalling, applying attributes, and so on using the same menu. (See page 307.)

Selecting a Region or Reference Region in a Menu

During snapshot operations, you can select a region in the menu. This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

For details of the operations, see “*Selecting by menus*” (page 248).

Setting Snapshot Attributes

Applying snapshot attributes

- 1** In the Snapshot menu, press VF2 ‘Snapshot’ and HF1 ‘Attribute.’
The Snapshot>Attribute menu appears.
The status area shows the region names, register numbers, and the status and attributes set.
- 2** Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible. To select all regions, press [ALL].
- 3** Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register.

- 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	Register	Register number	1 to 99
2	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

5 In the <Attribute> group, press the buttons for the attributes you want to apply, turning them on.

Carry out the following procedures for each of the attributes.

To apply the cross-point hold attributes

Note

Applying the key disable attribute (so the key state is not reflected) to cross-point hold requires a setting in setup. *For details, see “Selecting the Bank to Make the Settings” in Chapter 20 (Volume 3).*

1 Press [XPT Hold].

The Snapshot>Attribute>Xpt Hold menu appears. The status area shows a list of the currently selected regions and bus names.

2 Using any of the following methods, select the register.

- Press directly on the list in the status area. To select one or more buses, press [Plural] and then select buses.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Destination ^{a)}	Destination selection	1 to 128
3	Bus ^{b)}	Bus name selection	–

a) Appears when the region is RTR.

b) Appears when the region is other than RTR.

- To select all registers, press [ALL].

3 When the region is set to RTR (Router) only, press [RTR Level].

A window appears for selecting the router level.

- 4 Press the level for which you want to set the cross-point hold, turning it on, and press [OK]. To select all levels, press [ALL].
- 5 Press [On].

This enables cross-point hold on the selected bus or buses.
To switch cross-point hold off, press [Off].

To apply the effect dissolve attribute

- 1 Press [Effect Dissolve], turning it on.
- 2 Turn the knob to set the effect dissolve duration.

Knob	Parameter	Adjustment	Setting values
3	Eff Diss Duration	Dissolve duration	0 to 999 (frames)

To set the duration for a dissolve set as a temporary attribute effect

To set the duration for a dissolve set as a temporary attribute effect in the numeric keypad control block, turn the knob.

Knob	Parameter	Adjustment	Setting values
5	Temp Dur	Temporary attribute dissolve duration	0 to 999 (frames)

To apply the auto transition attribute

Press [Auto Transition], turning it on.

To apply the GPI output attribute

- 1 Press [GPI Output], turning it on.
- 2 Turn the knob to set the port number.

Knob	Parameter	Adjustment	Setting values
4	GPI Out Port	GPI output port number	1 to 8

To apply the clip event attribute

Note

The following operating procedure can be used only for the frame memory channels assigned to a user region.



For details of frame memory assignment, see “Setting User Regions” in Chapter 20 (Volume 3).

1 Press [Clip Event].

The Snapshot >Attribute >Clip Event menu appears.

2 In the <Frame Memory Select> group, press the desired button.

On the left of the status area, the name and content of the selected region (for example, USER1) are shown. On the right, the content of the clip of the current frame memory is shown.

3 Press [Clip Event], turning it on.

The clip event attribute is applied.

4 To select the clip of the current frame memory, press [Set].

5 To play the clip as soon as it is recalled, press [Auto Play], turning it on.

For details of attributes and available attributes, see “Snapshot Attributes” (page 293).

Snapshot Status Display

The Snapshot >Attribute menu displays the following information.

For details of how to access the Snapshot >Attribute menu, see page 300.

Region name: The selected region name appears in the upper part of the list.

Register number

Register name

Write-protected status: When the register is write-protected, an “L” (for “lock”) appears.

Empty status: When the register is empty, an “E” (for “empty”) appears.

Attribute settings: The attributes set for a register are shown by the following character codes.

When the cross-point hold is set:

Displayed character codes	Attributes set
A, B	Cross-point hold is set for the A or B background bus.
1, 2, 3, 4	Cross-point hold is set for key bus 1, 2, 3, or 4.
U	Cross-point hold is set for the utility bus.

Displayed character codes	Attributes set
D2	Cross-point hold is set for video bus selected for 2nd DME channel.
FvFkBvBk	Cross-point hold is set for all of the DME front video bus, DME front key bus, DME back video bus, and DME back key bus.
Aux	Cross-point hold is set for one of the AUX buses.
Mon	Cross-point hold is set for one of the monitor buses.
Fm1, Fm2	Cross-point hold is set for one of the frame memory 1 and 2 buses.
Ccr1, Ccr2	Cross-point hold is set for one of the CCR 1 and 2 buses.
RTR	Cross-point hold is set for the Router region.

When an effect dissolve is set:

Displayed character codes	Attributes set
Duration value	The effect dissolve attribute is set, with the displayed duration.

When an auto transition is set:

Displayed character codes	Attributes set
T	Auto transition is set.

When a GPI output is set:

Displayed character codes	Attributes set
Port number	GPI output is set for the port of the displayed number.

When a clip event is set:

Displayed character codes	Attributes set
On	Clip event is set.



- In the menu control block, press the top menu selection button [SNAPSHOT].
- In the numeric keypad control block, press the [SNAPSHOT] button twice in rapid succession.

The Snapshot menu appears.

2 Press VF1 ‘Master Snapshot’ and HF1 ‘Store.’

The Master Snapshot >Store menu appears.

The status area shows the master snapshot register names, register lock status, register number for each region, and so on.

3 If required, press the following buttons in the status area to change the region display.

M/E, P/P: indicate assignment of M/E-1 (“M/E1”) and P/P (“P/P”).

User: User1 (“USR1”) to User8 (“USR8”)

DME: indicate assignment of DME ch1 (“DME1”) and ch2 (“DME2”).

Snapshot Register Editing

You can carry out the following editing on snapshot registers.

(You can use similar procedures also on master snapshot, wipe snapshot, DME wipe snapshot and key snapshot registers.)

- **Lock:** Write-protect the contents of the register.
- **Copy:** Copy the contents of one register to another register.
- **Move:** Move the contents of one register to another register.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the contents of a register.
- **Name:** Attach a name to a register.

For details of snapshot register operations, see “Effect Register Editing” (page 283).

Displaying a List of Snapshot Registers for Editing

You can display a list of snapshot registers including status information (whether data is present and so on), then carry out lock, copy, delete, and rename operations.

Displaying the list of snapshot registers with status information

Press the menu title button at the top left of the Snapshot menu.

The Snapshot >Status menu appears. The status area shows a list of snapshot registers (1 to 99).

For details of lock, copy, delete, and rename operations, see “Displaying a List of Effect Registers for Editing” (page 288).

Register name displays

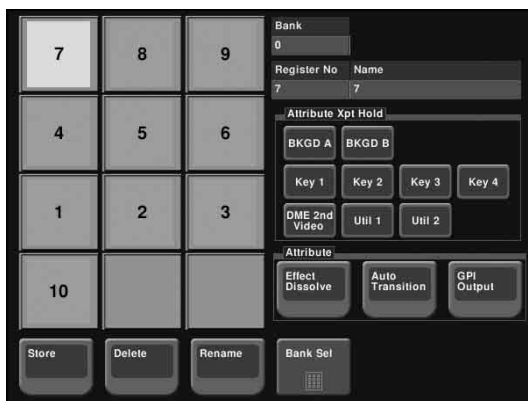
For the same number, the register name for the M/E-1 region takes precedence. If there is no data for the M/E-1 region, then the register name appears in the sequence M/E-2 >P/P >User1 to User8 >DME ch1 DME ch2 >DME ch5 to DME ch8 >RTR.

Operations in the Misc >Snapshot menu

Recalling a snapshot

- 1 In the Misc menu, press [Snapshot].

The Snapshot menu appears.



- 2 As required, change the bank (*see page 308*).
- 3 Press the button for the number or name you want to recall.

This recalls the snapshot, and the button you pressed lights green.

Saving a snapshot

- 1 Display the Misc >Snapshot menu.
- 2 Set the state you want to save as a snapshot.
- 3 Press [Store].
The button lights amber.
- 4 As required, change the bank (*see page 308*).
- 5 Press the button for the number or name you want to save.
This saves the snapshot, and the button goes off.

Changing the bank

Change the combination shown on the memory recall buttons (the bank).

- 1 Press [Bank Sel].
- 2 Select the bank in the numeric keypad window.
For example, to show the numbers or names corresponding to registers 11 to 20, select “1” in the numeric keypad window.

Applying attributes

To apply an attribute to the snapshot represented by a lit-green memory recall button, use the following procedure.

- 1 To apply the cross-point hold attribute, in the <Attribute Xpt Hold> group select the appropriate bus.

Note

A setting in the Setup menu determines whether key disable is applied to cross-point hold or not. For details, see “*Setting the Operation Mode of the Key Bus [XPT HOLD] Button*” in *Chapter 20 (Volume 3)*.

- 2 Select the following attributes in the <Attribute> group as required.

Effect Dissolve: Apply effect dissolve.

Auto Transition: Apply auto transition.

GPI Output: Apply GPI output. When this is selected, select the GPI number with the knob.



Deleting a snapshot

- 1** In the Misc >Snapshot menu, press [Delete].
The button lights amber.
- 2** As required, change the bank.
- 3** Press the button for the number or name you want to delete.
This deletes the snapshot, and the button you pressed goes off.

Renaming a snapshot register

- 1** In the Misc >Snapshot menu, press [Rename].
The button lights amber.
- 2** As required, change the bank.
- 3** Press the button for the number you want to rename.
A keyboard window appears.
- 4** Enter the register name, and press [Enter].
The new name appears on the memory recall button.



Chapter 15 Utility/Shotbox

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Utility Execution

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

The functions you can assign include menu shortcuts, enabling/disabling functions (recalling utility commands), and recalling (shotbox registers or macro registers).

Carry out the button assignment in the Setup menu.

For details of the operation, see “Setting Button Assignments (Prefs/Utility Menu)” in Chapter 19 (Volume 3).

You can carry out the utility function in the utility/shotbox control block (see page 313) or using the user preference buttons in the menu control block (see page 313).

For details of the menu control block, the utility/shotbox control block, and the cross-point control block, see “Menu Control Block,” “Utility/Shotbox Control Block (MKS-8033 Utility/Shotbox Module, Option),” and “Cross-Point Control Block” in Chapter 2 “Menus and Control Panel” (Volume 1).

For details of the settings for assigning functions to buttons, see “Setting Button Assignments (Prefs/Utility Menu)” in Chapter 19 (Volume 3).

Executing a Utility With the User Preference Buttons (Menu Control Block)

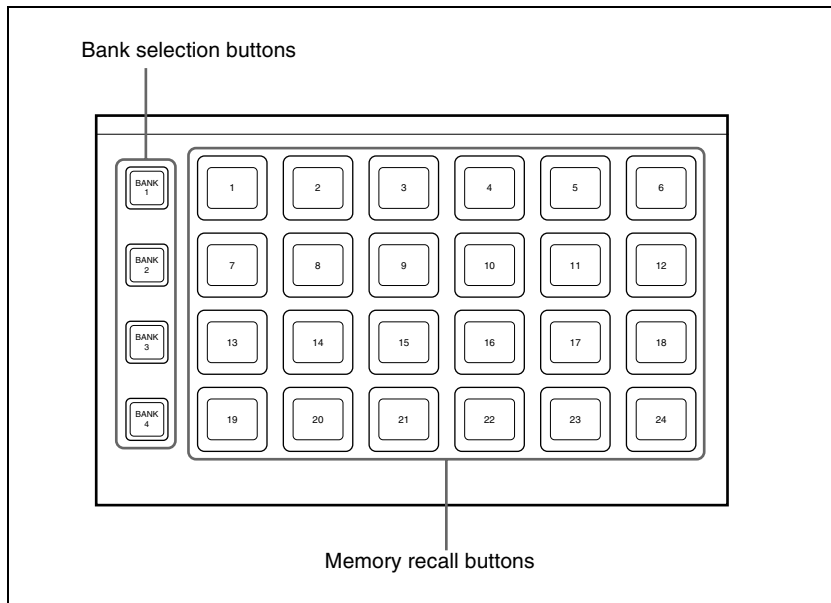
In the setup menu, you can assign any 16 actions to the user preference buttons in the menu control block.

To execute an assigned action

Press the corresponding user preference button ([PREFS 1] to [PREFS 16]).

- In the case of a function on/off action, the button you pressed lights amber, and this enables the function.
To disable the function, press the button once more.
- For other actions, the button you pressed momentarily lights amber, and then the function is executed.

Executing a Utility in the Utility/Shotbox Control Block (MKS-8033 Utility/Shotbox Module, Option)



Utility/shotbox control block (MKS-8033)

By default, the memory recall buttons in the utility/shotbox control block are assigned to shotbox registers 1 to 96, in banks 1 to 4 (*see page 323*), but in the setup menu, you can assign these to any 96 actions.

To execute an assigned action

When the action is to execute a shotbox register, follow the procedure in .

- 1** Press one of the bank selection buttons [BANK1] to [BANK4] to select a bank.
 - The bank selection button you pressed lights amber.
 - For the selected bank, the memory recall buttons show the button numbers and corresponding button states. If a button has been given a name in the setup menu, this name appears.
Not lighted: buttons with nothing saved
Lit orange: buttons saving a utility command or menu shortcut
- 2** Press the memory recall button for which the action you want to execute has been registered.

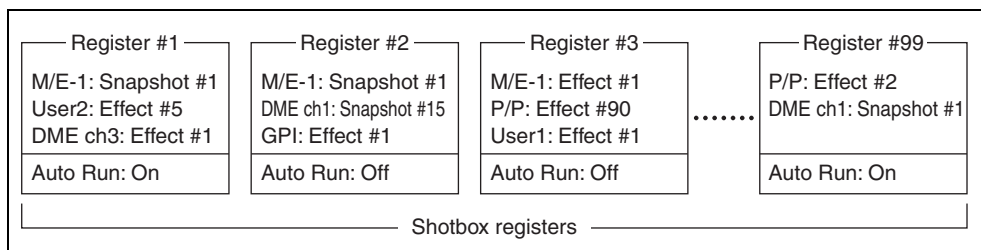
- In the case of a function on/off action, the button you pressed lights green, and this enables the function.
To disable the function, press the button once more.
- For other actions, the button you pressed momentarily lights green, and then the function is executed.



Shotbox

The term “shotbox” refers to a function whereby for each specified region any snapshot or keyframe effect can be recalled simultaneously.

The simultaneous recall setting data such as region names, snapshot numbers and keyframe effect numbers are stored in “registers.” There are 99 registers for each control panel.



The previous figure shows schematically the settings in the 99 shotbox registers.

Each register may contain any combination of the regions to which the register applies, with the snapshots or effects to be recalled.

The Auto Run function is an attribute which can be set for each register. When this is set to On, an effect recalled by a shotbox operation is automatically run.

- When register 1 is executed, this recalls M/E-1 snapshot 1, User2 effect 5, and DME ch3 effect 1. For register 1, auto run is On, and therefore the User2 and DME ch3 effects are run as soon as they have been recalled.
- When register 3 is executed, M/E-1 effect 1, P/P effect 90, and User1 effect 1 are recalled. For register 3, auto run is off, and therefore to run the recalled effects, press the [RUN] button in the keyframe control block.

Shotbox Register Creation

You can create (save) shotbox registers in the following control blocks.

- Numeric keypad control block (See “*Numeric Keypad Control Block*” in *Chapter 2 (Volume 1)*.)
- Menu control block (See “*Menu Control Block*” in *Chapter 2 (Volume 1)*.)

Creating a Shotbox Register in the Numeric Keypad Control Block

When you create a shotbox register in the numeric keypad control block, you carry out separate operations in respect of the snapshot setting data and the effect setting data, and save in the register. The procedure described here makes the snapshot settings first, followed by the effect settings.

Creating a shotbox register

- 1** In the numeric keypad control block, press the [SNAPSHOT] button, turning it on.

This assigns the numeric keypad control block to snapshot operations.

- 2** Specify the register number of the snapshot you want to save in a shotbox register, and then recall it for each region.

For details of the procedure for recalling a register, see “Recalling a snapshot from the numeric keypad control block” (page 297).

- 3** Press the [SHOTBOX] button, turning it on.

This assigns the numeric keypad control block to shotbox operations.

- 4** Press the [STORE] button, turning it on.

The [SNAPSHOT] button lights green.

If not lighted, press the [SNAPSHOT] button to turn it on.

Note

Only in [SHOTBOX] operation mode with the [STORE] button lit, the [SNAPSHOT] button or [EFF] button lights green to indicate that a setting



operation is in progress for the purpose of saving snapshot data or effect data in a shotbox register.

5 Press the region button for the snapshot you want to save, turning it on.

6 Enter the desired shotbox register number with the numeric keypad buttons.

To find an empty register, instead of entering a number, press the [.] (period) button.

The display shows the relevant register numbers. When a register number is postfixed with an “E,” the register is empty.

7 Press [ENTER].

This saves the region you turned on in step **5**, and the register number you recalled for that region as a snapshot setting in a shotbox register, and the [STORE] button goes off. At the same time, the [RCALL] button lights.

8 In the numeric keypad control block, press the [EFF] button, turning it on.

9 Specify the register number of the keyframe effect you want to save in a shotbox register, and then recall it for each region.

For details of the procedure for recalling a register, see “Recalling a Register” (page 245).

10 Referring to steps **3** to **5**, carry out the setting operation for effect register saving. In step **4**, however, press the [EFF] button, lighting it green.

11 Enter the shotbox register number specified in step **6** using the numeric keypad buttons.

12 Press the [ENTER] button.

This saves the effect setting in a shotbox register, and the [STORE] button goes off. At the same time, the [RCALL] button lights.

To change the contents of a shotbox register

After recalling the shotbox register you want to change, referring to the previous item “*Creating a shotbox register*,” change the contents of the shotbox register, and save.

To check the region saved in a shotbox register

During operations to change the contents of a shotbox register, to check which region is saved in the register, use the following procedure.



- 1 With the [SHOTBOX] button lit, press the [STORE] button, turning it on.
- 2 Press the required button, as follows, turning it on.
To check the snapshot region: [SNAPSHOT] button
To check the effect region: [EFF] button
- 3 Hold down the [STORE] button.
While this button is held down, the button for the saved region lights. Releasing the button returns you to the state before holding down the [STORE] button.

Note

While the [STORE] button is lit, the mode selection buttons ([TRANS RATE] button and so on) in the numeric keypad control block do not operate. To change the mode, press the [RCALL] button or [SHOTBOX] button so that the [STORE] button goes off.

Creating a Shotbox Register Using the Menus

Accessing the Shotbox menu

Carry out creation and editing of shotbox registers in the Shotbox menu. To access the Shotbox menu, use either of the following methods.

- In the menu control block, press the top menu selection button [SHOTBOX].
- In the numeric keypad control block, press the [SHOTBOX] button twice in rapid succession.

Creating a shotbox register

- 1 In the Shotbox menu, press VF1 ‘Register’ and HF1 ‘Store/Recall.’

The Store/Recall menu appears.

In the status area, the settings for each register appear as follows.

Region settings: Appear as “Sxxx” when a snapshot is allocated, and as “Exxx” when an effect is allocated. (xxx is the register number.) The register name also appears. If nothing is allocated, nothing appears in the display.

Register lock setting: When the register is write-protected, an “L” (for “lock”) appears.

Empty status: When the register is empty, an “E” (for “empty”) appears.

Auto run setting: When this is enabled, so that an effect is executed simultaneously with recall, “AR” appears.

Shotbox register name: This shows the shotbox register name.

- 2** If necessary, switch the region display by pressing one of the following buttons in the status area.

M/E, P/P: Shows the allocations for M/E-1 (“M/E1”) and P/P (“P/P”).

User: Shows the allocations for User1 (“USR1”) to User8 (“USR8”).

DME: Shows the allocations for DME ch1 (“DME1”) and ch2 (“DME2”).

DEV1-8: Shows the allocations for Device1 (“DEV1”) to Device8 (“DEV8”).

DEV9-12: Shows the allocations for Device9 (“DEV9”) to Device12 (“DEV12”).

Misc: Shows the allocations for P-Bus (“PBUS”), GPI (“GPI”), Router (“RTR”), and Macro (“MCRO”).

- 3** Using any of the following methods, select the register you want to create (or edit).

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Shotbox Reg	Shotbox register number	1 to 99

- 4** Press [Edit].

The Edit menu appears, and it is now possible to make the settings for the specified register.

You can also use knob 1 to select the register in this menu.

In the status area, the shotbox register status for each region appears.

- 5** Using any of the following methods, select the desired region. You may select more than one region.

- Press directly on the region display in the status area, turning it to reverse video.
- Press [ALL] to select all regions.
- To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].
- To cancel a selection, press once more to return to the normal display.

- 6** In the <Assign> group, select the snapshot or effect to be allocated to the region.

Snapshot: Allocate a snapshot register.

Effect: Allocate a keyframe effect.



- If the selected register is locked, a confirmation message appears asking whether or not to cancel the operation. Press [OK] to return to the previous menu display without carrying out the registration.
- If the operation is carried out, the region selected in step 5 is registered on the master timeline, and the parameters are now valid.

7 Depending on the selection in step 6, set the parameters as follows.

• **When a snapshot is selected**

Knob	Parameter	Adjustment	Setting values
3	Snapshot	Snapshot register number	1 to 99

• **When an effect is selected**

Knob	Parameter	Adjustment	Setting values
3	Effect	Keyframe effect number	1 to 99 ^{a)}

a) For the DME region, you can also set register numbers 101 to 199, 201 to 299, and 301 to 399.

8 To run the allocated effect as soon as it is recalled, press [Auto Run], turning it on.

9 Repeat steps 5 to 8 as required.

10 In the <Store> group, press [Store] to save the setting.

To return to the state before saving the setting

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

To execute the settings to check them

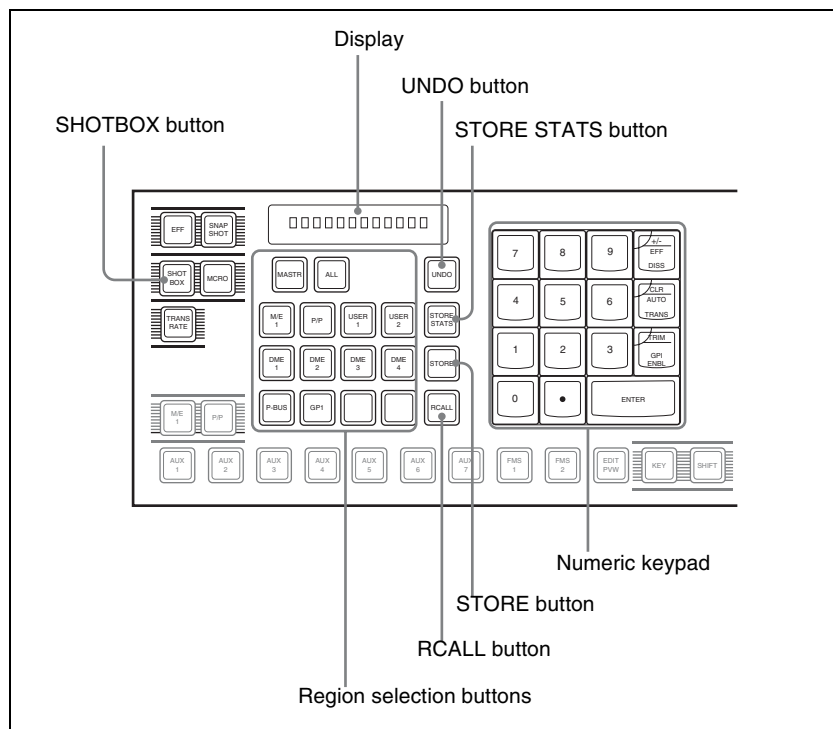
Press [Recall] to execute the shotbox.

Shotbox Execution

You can recall (and run) shotbox registers from the following control blocks. This section describes the various methods of operation.

- Numeric keypad control block (see page 321)
- Utility/shotbox control block

Shotbox Execution From the Numeric Keypad Control Block



Numeric keypad control block

- 1 In the numeric keypad control block, press the [SHOTBOX] button, turning it on.
 - This allocates the numeric keypad control block to shotbox operations.



- The [RCALL] button lights amber.
- The display shows the last recalled register number.

2 With the numeric keypad buttons, enter the desired register number.

- The display now shows the entered register number.
- If the specified register is empty, an “E” automatically appears after the register number.

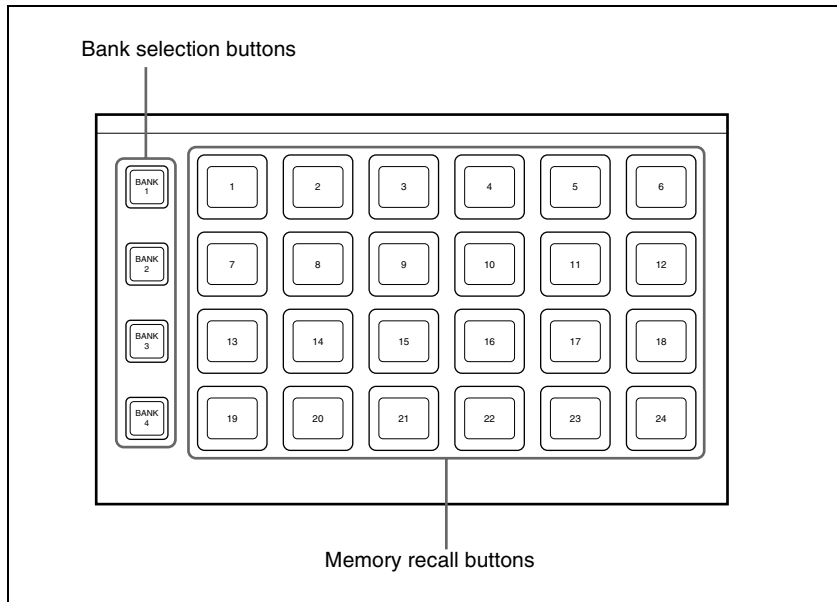
3 Press the [ENTER] button.

- This runs the specified shotbox register.
- The number of the recalled register appears in the display.
- The region selection buttons corresponding to the regions for which the effect is set light.
- If auto run is set for the specified shotbox register, on recall the effect is immediately executed.
- If you recall an empty register, then shotbox execution has no effect.

When auto run is not set for the recalled register

Simply recalling the register does not run the effect. To do this, in the keyframe control block, press the [RUN] button.

Shotbox Execution in the Utility/Shotbox Control Block (MKS-8033 Utility/Shotbox Module, Option)



Utility/shotbox control block (MKS-8033)

In the utility/shotbox control block, as the default setting the memory recall buttons have registers 1 to 96 allocated to banks 1 to 4.

Bank	Register allocation to memory recall buttons
1	1 to 24
2	25 to 48
3	49 to 72
4	73 to 96

- 1** Press one of the bank selection buttons [BANK1] to [BANK4] to select the bank.
 - The pressed bank selection button lights amber.
 - The memory recall buttons show the names and states of the registers corresponding to the selected bank.

Off: register in which nothing is saved

Lit orange: register holding shotbox settings

Lit yellow: last recalled register



- 2 Press the memory recall button to which the shotbox register you want to run is allocated.
 - The shotbox execution is carried out.
 - The pressed button lights yellow.
 - The numeric keypad control block [SHOTBOX] button lights, and the region selection button corresponding to the region for which the effect is set also lights.
 - If the selected shotbox register has auto run set, on recall the effect is immediately executed.

When auto run is not set for the recalled register

Simply recalling the register does not run the effect. To do this, press the [RUN] button in the keyframe control block.

Shotbox Register Editing

You can carry out the following editing on shotbox registers.

- **Lock:** Write-protect the contents of the register.
- **Copy:** Copy data from one register to another.
- **Move:** Move data from one register to another.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the contents of a register.
- **Name:** Attach a name to a register.

The procedures for shotbox register editing are similar to the procedures described in “*Effect Register Editing*” (page 283).

Unlike in effect register editing, however, it is not necessary to specify a region in shotbox register editing.



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Macros

Overview

The term “macro” refers to the function whereby a sequence of signal selections and other operations on the control panel is saved as data in memory, so that it can be recalled as required to automatically execute the same sequence of operations.

To record menu operations in memory, use a menu macro (*see page 366*).

Macro registers

The area of memory that holds a macro is termed a “macro register.” For each control panel there are 99 macro registers, numbered 1 to 99.

Events

The individual control panel operations constituting a macro are termed “events.” One macro can contain a maximum of 99 events.

The following table shows the operations for each control block of the control panel that can be saved as events in a macro.

Control block	Event
Auxiliary bus control block	Bus selection
Cross-point control block	Cross-point selection
Transition control block	<ul style="list-style-type: none">• Auto transition and cut for the transition execution section• Auto transition and key on/off for the independent key transition execution section ^{a)}• Next transition setting• Transition type selection• Pattern limit on/off• VTR/disk recorder/Extended VTR/frame memory clips playback ^{b)}• VTR/disk recorder/Extended VTR/frame memory clips stop ^{b)}• VTR/disk recorder/Extended VTR/frame memory clips cue-up ^{b)}
Numeric keypad control block	Recalling the following data <ul style="list-style-type: none">• Effects• Snapshots• Shotbox• Master snapshots• Master timeline



Control block	Event
Keyframe control block	<ul style="list-style-type: none"> • Effect rewind • Effect execution • Effect fast forward • Selection of effect execution direction
Device control block (trackball) (search dial) ^{c)}	<ul style="list-style-type: none"> • VTR/disk recorder/Extended VTR/frame memory clips start point setting • VTR/disk recorder/Extended VTR/frame memory clips playback • VTR/disk recorder/Extended VTR/frame memory clips stop • VTR/disk recorder/Extended VTR/frame memory clips cue-up • VTR/disk recorder/Extended VTR/frame memory clips fast forward • VTR/disk recorder/Extended VTR/frame memory clips rewind • VTR/disk recorder record • Frame memory clip loop setting
Downstream key control block	<ul style="list-style-type: none"> • Auto transition and cut for the independent key transition execution section ^{a)} • Key snapshot recall
Menu control block	<ul style="list-style-type: none"> • Disk recorder/Extended VTR file recalling • Recalling the functions assigned to [PREFS 1] to [PREFS 16] buttons • Execution of a menu macro • Recalling frame memory clips
Utility/Shotbox control block	Recalling the functions assigned to memory recall buttons

a) In the case of an event that inserts or deletes a key, the key state at the time of event registration (inserted or not inserted) is also saved in the macro. When the macro is executed, the event is only replayed if the key state matches the saved state. (Example: For a macro with an event that deletes a key, when the macro is executed, if the key is inserted it is deleted, but otherwise nothing occurs as concerns keying.)

b) Function valid only when [PLAY], [STOP], and [CUEUP] have been set in the Setup menu.

c) When a search dial module is connected, this operates as the reference module. When not connected, this operates on the module selected in the Panel >Config menu.

For details of reference module selection, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3).

Macro Creation and Editing

You can create or edit a macro by recalling a macro register.

To create a new macro, recall an empty macro register, and create the desired sequence of events (by executing the sequence of operations on the control panel that you want to save as events in the macro).

To add an event to an existing macro, recall the register holding the macro, and create the event you want to add.

Note

While editing a macro, it is not possible to execute another macro.

Creating a macro

To include all information associated with an operation when registering a macro event

When registering an auto transition operation as an event, you can register the auto transition event to include the transition rate and background A/B bus selection status. When registering an effect execution, rewind, or fast forward as an event, you can also save the region to which this applies.

To use this capability, assign the following functions to user preference buttons in the menu control block or buttons in the utility/shotbox control block, and turn the relevant button on before you start an event to register.

Macro AT with Rate (Macro Auto Trans Event with/without Rate): When registering an auto transition macro event in one of the M/E banks or the PGM/PST bank, include the transition rate.

Macro AT with A/B Bus (Macro Auto Trans Event with/without A/B Bus): When registering an auto transition macro event in the transition control block, include the background A/B bus cross-point.

Macro TL with Region (Macro Timeline with Region): When registering an effect execution, rewind, or fast forward as a macro event, save the affected region together in the macro.

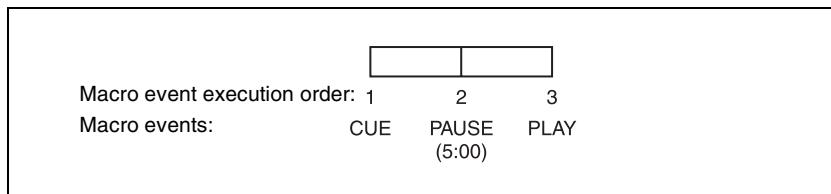
For details of the method of assigning these functions to buttons, see “Setting Button Assignments (Prefs/Utility Menu)” in Chapter 19 (Volume 3).

Events requiring adjustment when creating a macro

The following events require time for execution to complete, and therefore when executed within a macro sequence, a pause event must be inserted to adjust the timing.

- Rewinding effects involving external device control
- VTR/disk recorder/Extended VTR cue-up

For example, create a macro to cue up a VTR and then play back as follows.



Auto insert mode on/off setting

You can switch on or off the mode (auto insert mode) in which at the same time that a control panel operation is carried out, the event is automatically saved in a macro. To switch this on or off, assign this function to a utility/shotbox control block button or user preference button, then use that button.

Editing a macro

You can carry out the following macro editing operations.

Event insertion

Insert the control panel operation as an event in a macro.

Event modification

Modify any event. You can modify all events within a macro, or events within a specified range in a single operation.

Event deletion

Delete any one event. You can delete all events within a macro, or events within a specified range in a single operation. You can then paste the deleted event using the paste function.

Event copy

Copy any one event. You can copy all events within a macro, or events within a specified range in a single operation.

Event paste

Paste a copied or deleted event at a desired position within a macro.

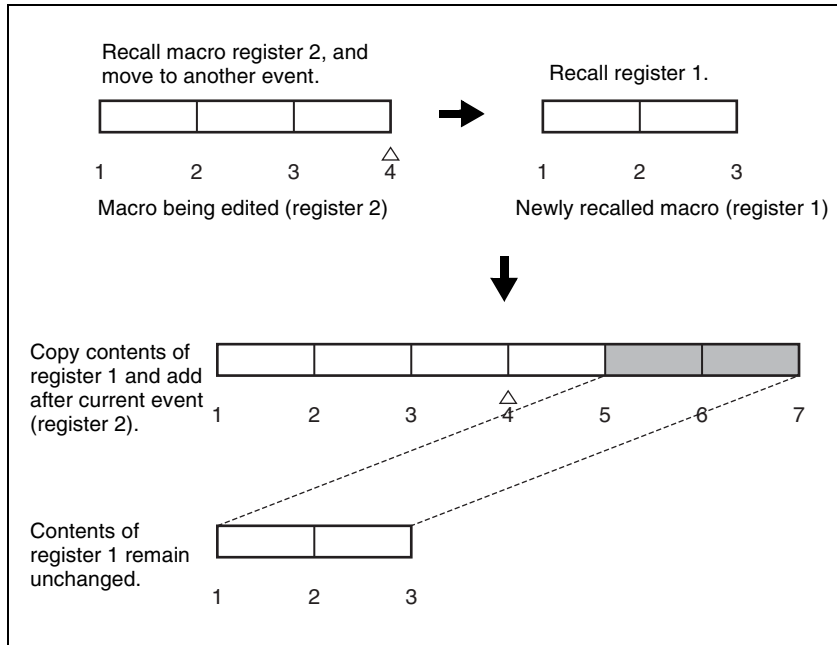
Undoing an editing operation

You can undo the last event insertion, modification, deletion, or paste operation.

Macro merging

During macro editing, you can recall and copy another register to merge it with the macro being edited.

For example, while editing macro register 2 you can recall and copy register 1 to merge it as shown in the following figure.



Macro Execution

To execute a macro, recall the register in which the macro is held. Simultaneous with the register recall, all events stored in the macro are played back (executed) in sequence without pause.

Pausing and restarting macro execution

It is also possible to execute a macro in the following ways.

Pause event

To adjust the execution timing of a particular event (to delay the start of execution of the event by a particular time interval), you can store a special event which pauses macro execution. This event is called a "pause event." When you store a pause event, you can set the interval for which the macro is paused (the pause length) to any value in the range 1 to 999 frames. When the set time has elapsed, the macro is automatically executed.

Pause zero event

By including a pause event with the time set to zero, you can make macro execution pause at the pause event.

Step execution (requires a Setup menu setting)

By selecting step execution mode in the Setup menu, you can make macro execution pause every time an event is executed.

Take operation

When a paused macro is restarted, this is referred to as a “Take” operation.

Macro take operation using a GPI input

You can carry out a macro take operation using a GPI input on the control panel and DCU.

For GPI input settings, see “Interfacing With External Devices (Device Interface Menu)” in Chapter 19 (Volume 3) and “GPI Input Setting (GPI Input Assign Menu)” in Chapter 22 (Volume 3).



Macro Operations in the Numeric Keypad Control Block and the Keyframe Control Block

This section describes macro operations carried out in the numeric keypad control block and the keyframe control block.

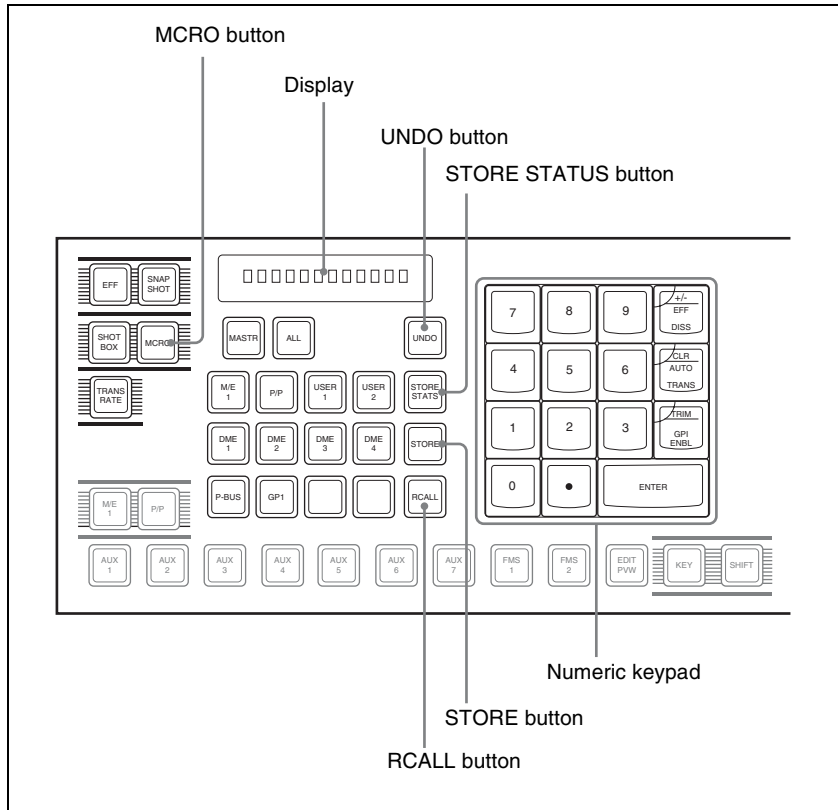
Note

For a macro take operation (see “Macro Execution” (page 332)), do not use the numeric keypad control block or keyframe control block. Operate with the take assigned to a utility/shotbox control block or user preference button. (See “Setting Button Assignments (Prefs/Utility Menu)” in Chapter 19 (Volume 3).)

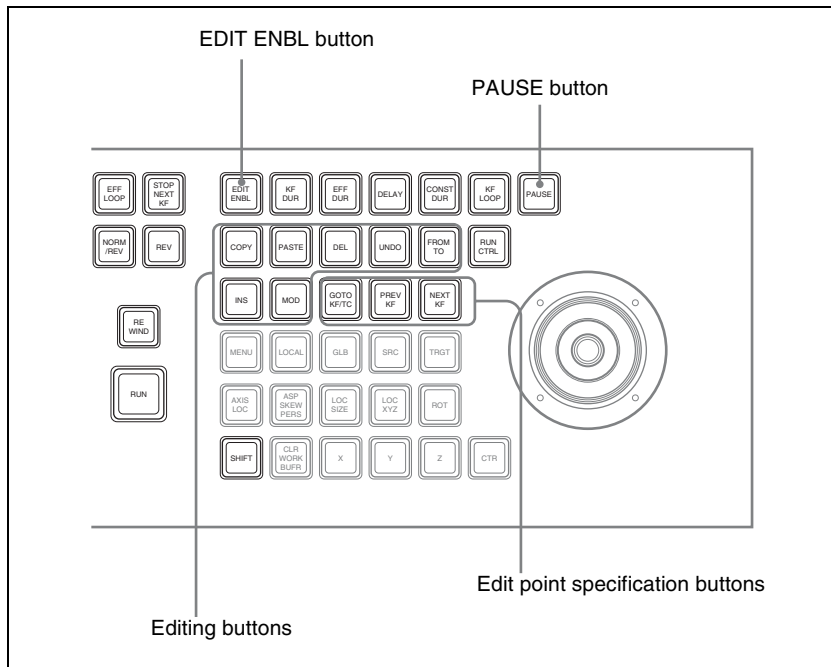
For an overview of macros, see “Macros” (page 328).

For macro operations in the numeric keypad control block, use the following buttons. (See the figure on next page.)





For macro operations in the keyframe control block, use the following buttons. (See the following figure.)



Recalling a Macro Register and Executing a Macro

To carry out a macro operation, recall a macro register. Recalling an empty register allows you to carry out macro editing operations. Recalling a register holding a macro executes the macro immediately.

To recall a macro register, use the following procedure.

- 1 In the numeric keypad control block, press the [MCRO] button, turning it on.

This assigns the numeric keypad control block to macro operations, and the [RCALL] button lights.

- 2 Enter the number of the register to be recalled with the numeric keypad buttons.

To search for an empty register, instead of entering a number, press the [.] (period) button.

The display shows the corresponding register number. A letter “E” after the number indicates that the corresponding register is empty.

3 Press the [ENTER] button.

This recalls the specified register.

When you recall an empty register

This assigns the numeric keypad control block and keyframe control block to macro editing.

For details of macro editing, see “Creating and Editing a Macro” (see below).

When you recall a register holding a macro

This immediately executes the macro. While the macro is executed, the [RCALL] button flashes.

Notes

- It is not possible to execute more than one macro at a time.
- During macro execution, recalling the same register again stops the macro being executed.
- Individual events stored in a macro are executed according to the settings in setup. If you change the settings in setup, a saved macro may not have the expected effect.
- During macro execution, if you switch the control panel to macro editing mode, the macro being executed stops.
- During macro editing it is not possible to execute a macro.
- While executing a macro using the button with a macro attachment set, it is not possible to recall and execute a different macro from the numeric keypad control block.

Creating and Editing a Macro

Use the numeric keypad control block and keyframe control block to create and edit a macro.

After carrying out creation and editing, be sure to carry out a save operation (*see page 343*), using the numeric keypad control block.

Switching auto insert mode on or off for macro creation/editing

In the auto insert mode, when creating or editing a macro, an operation carried out on the control panel is automatically registered as an event.

When this mode is off, it is necessary to press the [INS] button in the keyframe control block for each operation to register the event.

To switch the auto insert mode on or off, press the [AUTO INS] button assigned to a utility/shotbox control block button or user preference button.

Note

When you start macro editing using the numeric keypad control block with the macro execution mode set to “Normal” (see “Setting the Macro Execution Mode” in Chapter 19 (Volume 3)), the auto insert mode is automatically on. When “Step” is selected as the macro execution mode, the auto insert mode is automatically off.

Creating a new macro

- 1 Recall an empty register.

For details of the method of operation, see “Recalling a Macro Register and Executing a Macro” (page 336).

This assigns the numeric keypad control block and keyframe control block to macro editing, and the [MCRO] button in the numeric keypad control block and the [EDIT ENBL] button in the keyframe control block light red. The [STORE] button in the numeric keypad control block flashes red.

- 2 If required, press the [AUTO INS] button assigned to a utility/shotbox control block or user preference button, to toggle the auto insert mode on or off.

- 3 Create the events (carry out the control panel operations to be registered as events in the macro).

You can include pause events (see page 342).

For details of events that can be registered, see “Events” (page 328).

- When auto insert mode (see page 337) is on, execution of a control panel operation automatically registers an event in the macro.
- When auto insert mode is off, proceed to step 4.

Notes

- During macro editing, if you press any of the mode selection buttons in the numeric keypad control block other than the [MCRO] button ([TRANSRATE] button, and so on), the executed operation is also registered as an event. In this case, the [MCRO] button stays lit red.
- Even during macro editing, you can carry out keyframe operations using the fader lever in the keyframe control block and the following buttons: [EFF LOOP], [STOP NEXT KF], [REV], [NORM/REV], [REWIND], [RUN]
- During macro editing, if you press a button for which a macro attachment is set, the outcome is as described in the next item.

4 When auto insert mode is off, press the [INS] button in the keyframe control block to register the event.

5 Repeat steps **2** and **3** to register the required events in the macro.

This registers the events in the macro, in the order the operations were carried out on the control panel.

6 Press the [STORE] button.

Macro editing finishes, and the [MCRO] button and [STORE] button in the numeric keypad control block light amber. The keyframe control block returns to the state before starting macro editing.

Merging a macro for which a macro attachment is set

While creating/editing a macro, if you press a button for which a macro attachment is set, the macro in the register assigned to the button is recalled, and the following occurs.

- When auto insert mode is on, it is merged with the macro being edited. However, the macro assigned to the button is not executed.
- When auto insert mode is off, it is copied to the paste buffer. Pressing the [PASTE] button in the keyframe control block merges it with the macro being edited.

Specifying an edit point

To specify an edit point with the numeric keypad control block and keyframe control block, use the following procedure.

1 Recall the register of the macro you want to edit.

For details of the method of operation, see “Recalling a Macro Register and Executing a Macro” (page 336).

2 In the numeric keypad control block, hold down the [MCRO] button, and press the [STORE] button.

This assigns the numeric keypad control block and keyframe control block to macro editing, and the [MCRO] button in the numeric keypad control block and the [EDIT ENBL] button in the keyframe control block light red. The [STORE] button in the numeric keypad control block flashes red.

3 Using any of the following methods, specify the edit point.

- To move the edit point to the event immediately following the current macro event, press the [NEXT KF] button in the keyframe control block.
- To move the edit point to the event immediately preceding the current macro event, press the [PREV KF] button in the keyframe control block.

- To move to an edit point by specifying an event number (the number showing the position of the event in the macro execution sequence), press the [GO TO KF] button in the keyframe control block, then in the numeric keypad control block, enter the target number and confirm with the [ENTER] button.

Inserting an event

- 1** Specify the edit point. (*See page 339.*)
- 2** If required, press the [AUTO INS] button assigned to a utility/shotbox control block or user preference button, to toggle the auto insert mode on or off.
- 3** Create the event.
 - When auto insert mode (*see page 337*) is on, the event is automatically added to the macro.
 - When auto insert mode is off, proceed to step **4**.
- 4** When auto insert mode is off, press the [INS] button in the keyframe control block.
- 5** Repeat steps **2** and **3** to insert the required events in the macro.

Modifying a single event

- 1** Specify the edit point. (*See page 339.*)
- 2** When the [AUTO INS] button assigned to a utility/shotbox control block button or user preference button is lit, press this to turn the auto insert mode off.
- 3** Create the event.
- 4** Press the [MOD] button in the keyframe control block.

Modifying a particular range of events

- 1** Carry out steps **1** to **3** of the procedure in “*Modifying a single event*” (*the previous item*).
- 2** Press the [FROM TO] button in the keyframe control block, turning it on.



The numeric display in the numeric keypad control block shows the current event number and the indication “TO.”

- 3** To set the start of the range to other than the current event number, press the [CLR/AUTO TRANS] button in the numeric keypad control block, then enter the desired event number with the numeric keypad and press the [ENTER] button. (This operation is not required when using the current event number.)
- 4** Enter the event number for the end of the range and press the [ENTER] button.
- 5** Press the [MOD] button in the keyframe control block.
This modifies the specified range of events simultaneously.

Deleting an event

- 1** Specify the edit point. (*See page 339.*)
- 2** To delete multiple events simultaneously, press the [FROM TO] button in the keyframe control block, then enter the event numbers from the numeric keypad control block to specify a range to be deleted.
- 3** Press the [DEL] button.
This deletes the specified events.

Moving events

- 1** Specify the edit point for the start of the range to be moved. (*See page 339.*)
- 2** To move multiple events simultaneously, press the [FROM TO] button in the keyframe control block, then specify the range in the numeric keypad control block.
- 3** Press the [DEL] button.
This temporarily deletes the specified events from the macro, and copies them to the paste buffer.
- 4** Move to the edit point which is the destination within the macro to which you want to move the events.
- 5** To paste the contents of the paste buffer after the edit point, press the [PASTE] button in the keyframe control block.

To paste before the edit point, hold down the [SHIFT] button in the keyframe control block and press the [PASTE] button.

This pastes the events from the paste buffer.

Copying events

- 1** Specify the edit point for the start of the range to be copied.
- 2** To copy multiple events simultaneously, press the [FROM TO] button in the keyframe control block, then specify the range in the numeric keypad control block.
- 3** Press the [COPY] button.
This copies the specified events into the paste buffer.
- 4** Move to the edit point which is the destination within the macro to which you want to copy the events.
- 5** To paste the contents of the paste buffer after the edit point, press the [PASTE] button in the keyframe control block.
To paste before the edit point, hold down the [SHIFT] button in the keyframe control block and press the [PASTE] button.

This copies the events from the paste buffer.

Inserting a pause event

- 1** Press the [PAUSE] button in the keyframe control block, lighting it green.
The indication “PAUSE” appears in the numeric keypad control block display.
- 2** If required, press the [AUTO INS] button assigned to a utility/shotbox control block or user preference button, to toggle the auto insert mode on or off.
- 3** Enter the pause duration with the numeric keypad control block (0 or 1 to 999 (frames)).
- 4** Press the [ENTER] button.
 - If auto insert mode is on, this sets the pause duration, and inserts the pause event.
 - When auto insert mode is off, continue to step **5**.



- 5 When auto insert mode is off, press the [INS] button in the keyframe control block to insert the pause event.

Merging macro register data

- 1 Specify the edit point. (*See page 339.*)
- 2 Press the [RCALL] button in the numeric keypad control block, lighting it amber.
- 3 Enter the number of the macro register you want to copy using the numeric keypad buttons.

The display shows the register number.

- 4 Press the [ENTER] button.

The [RCALL] button goes off, and the specified register data is copied to the paste buffer.

- When auto insert mode is on, the data from the specified register is included after the edit point.
- When auto insert mode is off, continue to step 5.

- 5 When auto insert mode is off, to include after the edit point, press the [PASTE] button in the keyframe control block.
To include before the edit point, hold down the [SHIFT] button in the keyframe control block, and press the [PASTE] button.

The same effect is obtained if you use a button which has a macro attachment set. In this case, the data from the assigned macro register is copied into the paste buffer.

Undoing a macro editing operation with the numeric keypad control block

Immediately after inserting, modifying, deleting, or pasting an event, you can undo the operation by pressing the [UNDO] button in the numeric keypad control block.

Saving a Macro

Use the following procedure to save the register after creating or editing/modifying a macro.



1 In the numeric keypad control block, press the [MCRO] button, turning it on.

This assigns the numeric keypad control block to macro operations.

2 Press the [STORE] button, turning it on.

3 Enter the number of the register in which you want to save the macro with the numeric keypad buttons.

To search for an empty register, instead of entering a number, press the [.] (period) button.

The display shows the corresponding register number. A letter “E” after the number indicates that the corresponding register is empty.

4 Press the [ENTER] button.

This saves the macro data in the specified register, and the [STORE] button goes off.

The [RCALL] and [STORE STATS] buttons light.

To cancel the saving of a macro

To cancel the saving of a macro immediately after performing it, hold down the [STORE STATS] button and press the [UNDO] button.

Macro Editing Using Menus

Using any of the menus in the following table, you can edit macro registers and macro events.

Menu	Function	Operations
Register menu (macro register editing)	Carry out macro register editing.	<ul style="list-style-type: none">• Locking a register• Copying a register• Deleting a register• Naming a register
On Line Edit menu (online editing of macro events)	Edit events in a macro register, using the control panel and menus.	<ul style="list-style-type: none">• Inserting an event• Deleting an event• Modifying an event
Off Line Edit menu (offline editing of macro events)	Edit events in a macro register, on the hard disk, or on a memory card, using the menus.	<ul style="list-style-type: none">• Inserting an event• Adding an event• Deleting an event• Creating a new macro

Macro Register Editing

You can display the current state of a macro register using the Macro >Register menu.

The items displayed are the same as under “*Effect Status Display*” (see page 283), with the exception that the region name is not displayed and that the total number of macro events saved in the register is displayed.

In the Macro >Register menu, you can do the following editing operations on macro registers.

- **Lock:** Write-protect the contents of the register.
- **Copy:** Copy the contents of one register to another register.
- **Delete:** Delete the contents of a register.
- **Name:** Attach a name to a register.

The operations for macro register editing are the same as those for effect register editing (see page 283) except the region selection operation, which is not necessary for macro register editing.

Online Editing of Macro Events

Using the On Line Edit menu, you carry out online editing of macro events.

In the On Line Edit menu, you can check the control panel operating sequence in the menu. You can also carry out editing using the control panel and menu.

To display the On Line Edit menu

1 Recall the macro register you want to edit with the control panel, and select the macro editing mode ¹⁾.

1) With the numeric keypad control block or keyframe control block assigned to macro editing (see step 2 in “Specifying an edit point” (page 339))

2 In any of the following menus, select the same register as the register recalled in step 1, and press [On Line Edit] in the button area.

- Macro >Register >Lock menu
- Macro >Register >Delete menu
- Macro >Register >Rename menu
- File >Shotbox, Macro >Macro >File Edit menu

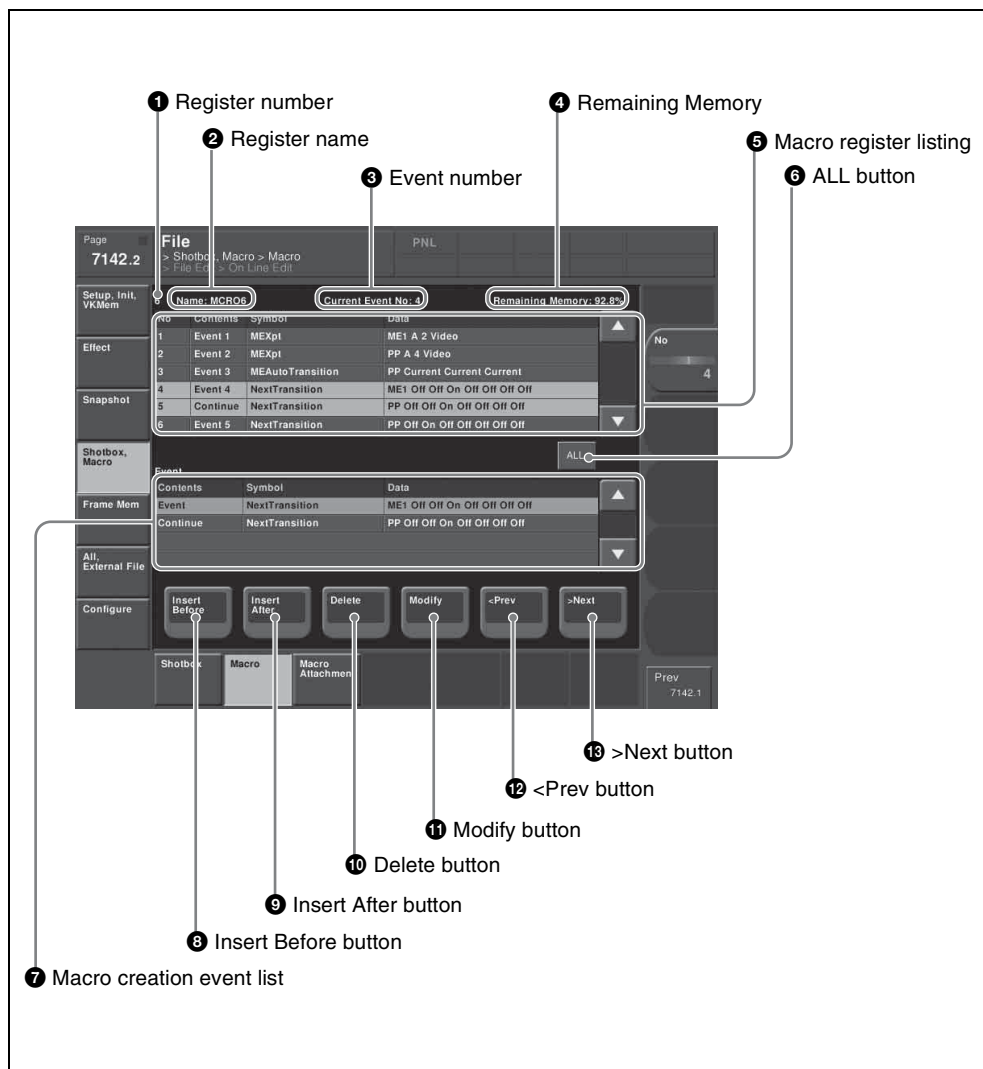
The On Line Edit menu appears, and you can now carry out online editing of the events held in the recalled register. Meanwhile, the control block of the control panel operated in step 1 is assigned to control editing operations.

Note

In the following cases, [On Line Edit] is disabled, and it is not possible to display the On Line Edit menu.

- When the recalled register and the register selected in the menu are different.
- When a device other than [Register] is selected ([HDD] or [Memory Card]) in the File >Shotbox, Macro >Macro >File Edit menu.
- If the recalled register is locked.

On Line Edit menu



- 1 Register number**
Shows the number of the register being edited.
- 2 Register name**
Shows the name of the register being edited.

③ Event number

Shows the current event number. When the [FROM TO] button in the keyframe control block is pressed to select a range of events, this appears as a range, “From X To Y.”

The event number reflects the position of the cursor in the macro register listing.

④ Remaining Memory

Shows the percentage of memory still available for recording events.

⑤ Macro register listing

When a macro is stored in the register, this shows a list of the macro events. Each macro event consists of the following components, which you can check in the list.

- **Contents:** Identifies this as an Event statement, Continue statement, or event number
- **Symbol:** Type of event (ASCII character string)
- **Data:** Event details in the form of parameters and data

For details of the event components, see “Macro File Editing Rules” (page 417).

The cursor shows the current event in the list, in reverse video. You can turn knob 1 to scroll the list, but this does not change the cursor position. Depending on the switcher status, the cursor color changes as follows.

- **Yellow:** in macro editing mode
- **Gray:** when the editing mode is exited by a control panel operation
- **Blue:** during macro execution

⑥ ALL button

Selects all events in the macro register listing.

⑦ Macro creation event list

Shows the event being created or executed in the control panel.

⑧ Insert Before button

Inserts a created event immediately before the selected event in the macro register listing.

⑨ Insert After button

Inserts a created event immediately after the selected event in the macro register listing.

⑩ Delete button

Deletes the selected event in the macro register listing.

11 Modify button

Replaces the selected event in the macro register listing with a created event.

12 <Prev button

Moves the cursor to the event immediately before the selected event in the macro register listing.

13 >Next button

Moves the cursor to the event immediately after the selected event in the macro register listing.

Carrying out online editing of macro events

In the On Line Edit menu, you can carry out the following editing operations on the events in the macro register.

- **Insert:** Insert a macro event.
- **Delete:** Delete a macro event.
- **Modify:** Modify a macro event.

Note

It is not possible to save editing results using this menu alone. Carry out the necessary control panel operations to save the edited register.

To insert an event

1 On the control panel, if auto insert mode is on, switch it off.

2 On the control panel, create a macro event.

The created event appears in the macro creation event list.

For more details of the display, see “Macro File Editing Rules” (page 417).

3 In the macro register listing, press [<Prev] or [>Next] to select the position where you want to insert the created event.

4 Carry out either of the following.

To insert before the event selected in the list: Press [Insert Before].

To insert after the event selected in the list: Press [Insert After].

This inserts the created event either before or after the specified event.

Note

In the following cases, [Insert Before] and [Insert After] are disabled, and it is not possible to insert the event.



- If the memory or register is full.
- The size of the created macro event is larger than the memory or register space available.
- When multiple events are selected.
- When the number of events has reached 99.
- When not in macro editing mode.¹⁾

1) While a macro is being executed on the control panel, or when macro saving has been executed

5 Operate the control panel to save the editing result.

To delete an event

1 In the macro register listing, press [<Prev] or [>Next] to select the event you want to delete.

To select all events in the register

Press [All].

2 Press [Delete].

This deletes the selected event.

Note

If not in macro editing mode¹⁾, [Delete] is disabled, and it is not possible to delete the selected event.

1) While a macro is being executed on the control panel, or when macro saving has been executed

3 Operate the control panel to save the editing result.

To modify an event

1 On the control panel, if auto insert mode is on, switch it off.

2 In the macro register listing, press [<Prev] or [>Next] to select the event you want to modify.

3 On the control panel, modify the macro event.

The modified event appears in the macro creation event list.

For more details of the display, see “Macro File Editing Rules” (page 417).

4 Press [Modify].

This modifies the event selected in the list.

Note

If not in macro editing mode ¹⁾, [Modify] is disabled, and it is not possible to modify the event.

1) While a macro is being executed on the control panel, or when macro saving has been executed

5 Operate the control panel to save the editing result.

Offline Editing of Macro Events

Using the Off Line Edit menu, you carry out offline editing of macro events. In the Off Line Edit menu, you can carry out editing in the menu only, unrelated to operation of the control panel.

To display the Off Line Edit menu

In any of the following menus, select the register or device holding the macro you want to edit, and press [Off Line Edit] in the button area.

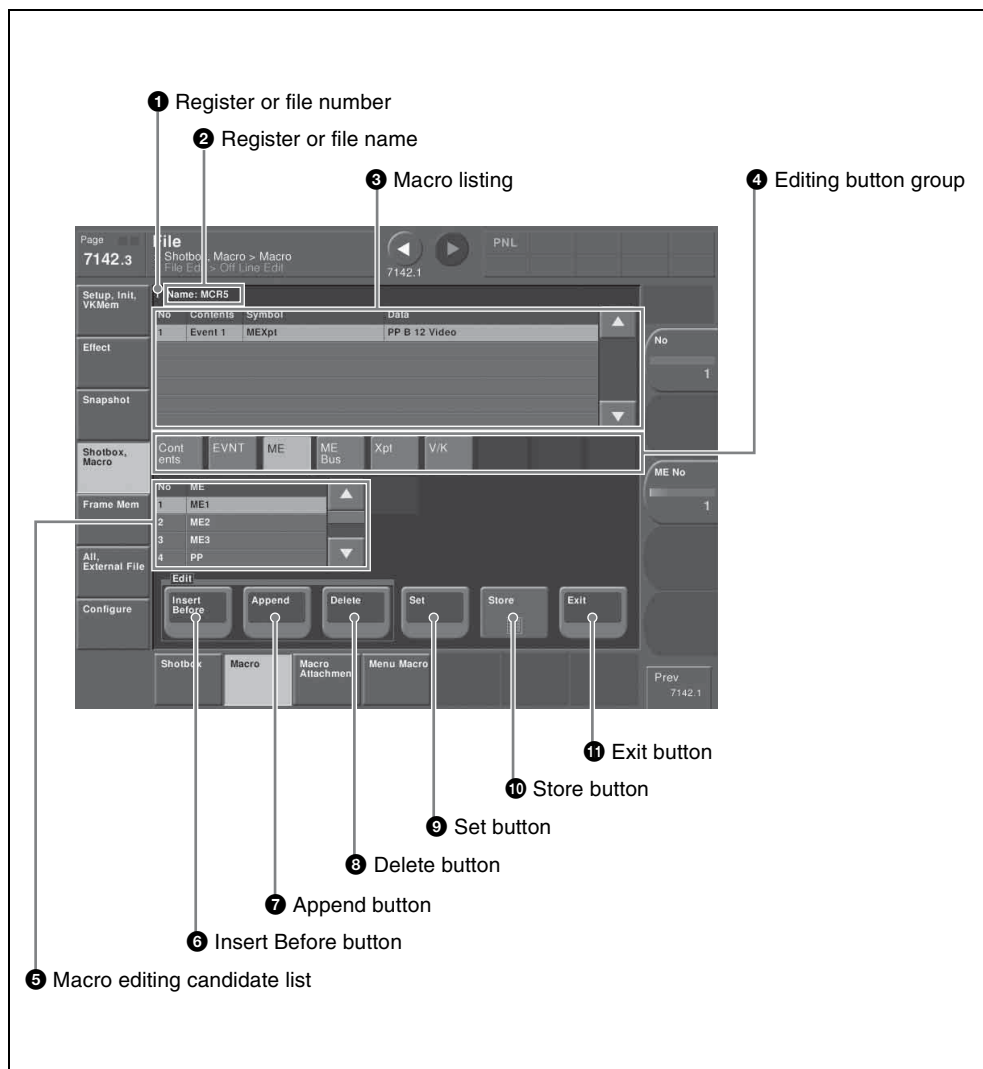
- Macro >Register >Lock menu
- Macro >Register >Delete menu
- Macro >Register >Rename menu
- File >Shotbox, Macro >Macro >File Edit menu

This recalls the selected macro register or macro file, and offline editing is now possible.

Note

If the selected register is locked, [Off Line Edit] is disabled, and it is not possible to display the Off Line Edit menu.

Off Line Edit menu



1 Register or file number

Shows the number of the register or file being edited.

2 Register or file name

Shows the name of the register or file being edited.

3 Macro listing

Lists the macro events that are saved in the register or file. The cursor moves to the selected event. Each macro event consists of the following components, which you can check in the list.

- **Contents:** Event statement, Continue statement, comment (#), or event number, as selected in the editing button group [Contents]
- **Symbol:** Event type (ASCII character string), as selected in the editing button group [EVNT]
- **Data:** Parameters and data as set in the editing button group

For more details of the event components, see “Macro File Editing Rules” (page 417).

4 Editing button group

This row of buttons shows the components of an event. To carry out event editing: (1) press an editing button, then (2) select an item from the list of macro editing candidates, and repeat this process as required.

5 Macro editing candidate list

Shows the list of editing candidates for the selection from the editing button group.

6 Insert Before button

Inserts immediately before the event selected in the macro listing.

7 Append button

Adds an empty row at the end of the macro listing.

8 Delete button

Deletes the event selected in the macro listing.

9 Set button

Reflects the item selected in the macro editing candidate list, in the macro listing and editing buttons.

10 Store button

Saves the results of the macro register or macro file editing.

11 Exit button

Closes the Off Line Edit menu without saving the results of the macro register or macro file editing, and returns to the File Edit menu.

Carrying out offline editing of macro events

In the Off Line Edit menu, you can carry out the following editing operations on the events in the macro register or macro file.

- **Insert:** Insert a macro event.

- **Add:** Add a macro event.
- **Delete:** Delete a macro event.

You can also create a new macro.

To insert an event

1 In the macro listing, select the event immediately after the position where you want to insert an event.

2 Press [Insert Before].

This inserts a blank row before the event selected in step 1.

3 Press [Contents] in the editing button group.

The following event types appear in the macro editing candidate list.

- **Event:** Event
- **Continue:** Event continuation
- **#:** Comment

For details of the items, see “Macro File Editing Rules” (page 417).

4 Select the desired item from the macro editing candidate list, and press [Set].

The selected item appears at the event insertion position in the macro listing, as an event component. Additionally, in the leftmost blank position of the editing button group (to the right of [Contents]), a button appears, corresponding to the item in the macro editing candidate list. For example, if “Event” is selected, an [EVNT] button appears.



5 In the editing button group, press the button that has just appeared.

The item corresponding to the button appears in the macro editing candidate list.

If you press the [EVNT] button, the symbol indicating the event contents appears.

For details of symbols, see “Correspondence Between Events and Symbols” (page 420).

6 Select the desired item from the macro editing candidate list, and press [Set].

At the event insertion position of the macro listing, the selected item is added as an event component. Additionally, in the next blank position of the editing button group, a button appears, corresponding to the item in the macro editing candidate list. For example, if “MEAutoTransition” is selected, a button for the parameters and data for the MEAutoTransition appears.



Note

If you select an item from the macro editing candidate list, be sure to press [Set]. If [Set] is not pressed, the selection is not confirmed.

- 7** Repeat steps **5** and **6**, to edit the event components.

At the event insertion position of the macro listing, the confirmed item is added as an event component.

To further add an event

Repeat steps **1** to **7**.

To close the Off Line Edit menu without saving the editing results

Press [Exit] to return to the menu that was on the screen immediately before the offline editing.

- 8** Press [Store].
- The numeric keypad window appears.
- 9** Enter the register number as required, and press [Enter].

The current macro is stored in the register.

The menu screen switches to the menu that was on the screen immediately before the offline editing.

To append an event

This adds an event at the end of the macro.

- 1** Press [Append].
- A blank row is added at the end of the macro listing.
- 2** Carry out steps **3** to **8** of the previous item, “To insert an event,” to edit an event.



To delete an event

- 1** In the macro listing, select the event you want to delete.
- 2** Press [Delete].

This deletes the selected event.

If a deleted Event statement is followed by a Continue statement, the Continue statement is converted to an Event statement.

To close the Off Line Edit menu without saving the editing results

Press [Exit] to return to the File Edit menu.

- 3** Press [Store].

This saves the results of the macro register or macro file editing, and returns to the File Edit menu.

To create a new macro

- 1** From the list in any of the following menus, select an empty register or file, and press [Off Line Edit] in the button area.
 - Macro >Register >Lock menu
 - Macro >Register >Delete menu
 - Macro >Register >Rename menu
 - File >Shotbox, Macro >Macro >File Edit menu

The Off Line Edit menu appears.

- 2** Carry out steps **3** to **8** of the procedure “To insert an event” (*page 354*), to create an the event.

Macro Attachment Assigning

Macro attachment is a function whereby a macro register is assigned to a control panel button or a particular position of a fader lever, linking the execution of the button function or a fader lever operation with a macro execution.

Setting a macro attachment to a button

Select one of the following three linking modes to make the macro attachment.

Pre-macro: Mode in which the button function is executed after macro execution has completed

Post-macro: Mode in which the macro is executed after carrying out the button function

Macro only: Mode in which the button function is not executed, and the macro only is executed

Assign the linking mode selection function to a utility/shotbox control block button or user preference button.

You can assign any one of the 99 macro registers to a button.

For a button whose function is switched by delegation, you can make a separate macro attachment for each function.

For each control panel, you can make up to 1000 macro attachment settings. The macro attachment setting is possible for the following bus buttons.

For button locations, see Chapter 2 “Menus and Control Panel” (Volume 1).

Block	Button
PGM/PST or M/E block	<ul style="list-style-type: none"> • Background A row cross-point buttons • Background B row cross-point buttons • Cross-point buttons in the key row of the bus assigned by key delegation button setting • Cross-point buttons in the key row of the bus assigned by AUX delegation button setting • [AUTO TRANS] button • [CUT] button • [KEY1 TRANS] to [KEY4 TRANS] buttons in the independent key transition control block ^{a)} • The button to which the same function as that of VTR/disk recorder/Extended VTR play button • Buttons set to “Inhibit”
Keyframe control block	<ul style="list-style-type: none"> • [RUN] and [REWIND] buttons • [REV] and [NORM/REV] buttons



Block	Button
Device control block (trackball)	The buttons to which the same functions as those of VTR/disk recorder/Extended VTR/frame memory clips play, cue, stop, and start tc buttons
Device control block (search dial)	[PLAY], [CUE], [STOP] and [START TC] buttons
Downstream key control block	<ul style="list-style-type: none">• [DSK1 ON] to [DSK4 ON] buttons ^{a)}• [TAKE] button ^{a)}• [MIX], [WIPE], [DME], and [CUT] buttons
Transition control block	<ul style="list-style-type: none">• [PTN LIMIT] button ^{b)}• [LIMIT SET] and [KF] buttons ^{b)}• [NORM], [NORM/REV], and [REV] buttons ^{b)}• [MIX], [NAM], [SUPER MIX], [PST COLOR MIX], [WIPE], and [DME] buttons• [MIX], [WIPE], and [DME] buttons• [ALL], [KEY PRIOR], [BKGD], and [KEY1] to [KEY4] buttons
Utility/shotbox control block	Memory recall buttons
Menu control block	[PREFS 1] to [PREFS 16] buttons

- a) In the case of an event that inserts or deletes a key by an independent key transition, the key state at the time of event registration (inserted or not inserted) is also saved in the macro. When the macro is executed, the event is only replayed if the key state matches the saved state. (Example: For a macro with an event that deletes a key, when the macro is executed, if the key is inserted it is deleted, but otherwise nothing occurs as concerns keying.)
- b) Macro attachment can be set with these buttons only when they are assigned to [Play/Stop/Cue] in the Engineering Setup >Panel >Config >Program Button >Transition Module menu and when the [DEV] button in the device control block is lit.

Notes

- After setting a macro attachment to a cross-point button of the bus assigned by AUX delegation setting, if in the Setup menu you change the bus assignment to the button, the macro attachment setting disappears.
- After setting a macro attachment to a button for which you can perform function replacement or function assignment, if you change the function assignment to the button, the macro attachment setting disappears.
- After setting a macro attachment to a cross-point button in the cross-point control block, if you change the function assignment to the button, the macro attachment setting disappears.

Enabling and disabling macro attachment

You can temporarily disable the macro attachment settings. When a macro attachment is disabled, pressing the button does not cause execution of the assigned macro.

You can enable or disable macro attachments for the individual control panels. Assign the function to enable or disable macro attachments to a button in the

utility/shotbox control block or a user preference button, and turn the button on and off as required.

Setting a macro attachment to a fader lever

You can set a macro attachment to any particular position of a fader lever in the transition control block.

Notes

- In macro-only mode it is not possible to set a macro attachment.
- It is not possible to set a macro attachment to a fader lever in the keyframe control block or downstream key control block.

Clearing the macro attachments

You can clear all of the macro attachments in a single operation.

Displaying the macro attachment list

You can display the macro attachment settings in the form of a list in the menu display to check them.

Setting and Canceling a Macro Attachment

Setting a macro attachment to a button

This section describes the example of setting a macro attachment for the background A row cross-points.

See “Setting a macro attachment to a button” (page 357) for the buttons for which a macro attachment can be set.

Note

For each of the [PRE MCRO] and [POST MCRO] settings, it is necessary to make assignments to user preference buttons in the menu control block or to the utility/shotbox control block. Carry out these assignments in the Eng Setup >Panel >Prefs/Utility menu. (*For details, see “Setting Button Assignments (Prefs/Utility Menu)” in Chapter 19 (Volume 3).*)

- 1** Recall the macro register you want to assign to the button.

For details of recall, see page 336.

- 2 To make the setting in pre macro mode, hold down the [PRE MCRO] button assigned to a utility/shotbox control block button or user preference button. To make the setting in post macro mode, hold down the similar [POST MCRO] button, then press the desired button in the background A row.

The cross-point button you pressed flashes amber, and the register you recalled in step 1 is assigned to the button.

If you make both pre macro and post macro settings for the same button

The later setting is valid.

To set a macro attachment without changing cross-points

When you set a macro attachment to a cross-point button, you can make the setting without changing the bus cross-points. Carry out this selection in the Engineering Setup >Panel >Operation menu. For details, see “*Setting the Macro Execution Mode*” in Chapter 19 (Volume 3).

To make a macro attachment setting in macro only mode

Note

To carry out this operation, it is first necessary to assign the “Macro Only Set” function to the user preference buttons in the menu control block or the utility/shotbox control operation. Carry out this assignment in the Eng Setup >Panel >Prefs/Utility menu. (For details, see “*Setting Button Assignments (Prefs/Utility Menu)*” in Chapter 19 (Volume 3).)

To make a macro attachment in macro only mode, use the following procedure.

- 1 Recall the macro register you want to assign to the button.
For details of recall, see page 336.
- 2 Press the button to which [MCRO ONLY SET] is assigned, turning it on.
- 3 Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block button or user preference button, and press the desired button in the background A row.

The cross-point button you pressed flashes green, and the register you recalled in step 1 is assigned to the button. The [MCRO ONLY SET] button goes off.

Without switching to macro only mode in step 2, if you hold down the [PRE MCRO] and [POST MCRO] buttons together and press the desired

button, it is possible to set a macro attachment in macro only mode for that button.

To check macro attachment settings

Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block button or user preference button. While this is held down, the buttons for which a macro attachment is set flash as follows.

While the [PRE MCRO] button is held down:

- Buttons set in pre macro mode: flash amber
- Buttons set in macro only mode: flash green

While the [POST MCRO] button is held down:

- Buttons set in post macro mode: flash amber
- Buttons set in macro only mode: flash green

Setting a macro attachment to a fader lever

You can set a macro attachment to any particular position of a fader lever in the transition control block.

Notes

- In macro only mode it is not possible to set a macro attachment.
- It is not possible to set a macro attachment to a fader lever in the downstream key control block.

1 Recall the macro register that you want to assign to the fader lever.

For details of recall see page 336.

2 Move the fader lever to the position where you want to set the macro attachment.

3 Hold down the [PRE MCRO] or [POST MCRO] button ¹⁾ assigned to a utility/shotbox control block or user preference button, and press the [LIMIT SET] or [PRIOR SET] button in the control block containing the fader lever operated in step **2**.

1) Only when setting a macro attachment to the start point or end point of fader lever operation, use [PRE MCRO] and [POST MCRO] in distinction, as follows.

To set the operation start point (0%): hold down [PRE MCRO] for the operation.

To set the operation end point (100%): hold down [POST MCRO] for the operation.

This assigns the register recalled in step **1** to the fader lever position selected in step **2**.

To check a macro attachment setting

Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block or user preference button. While it is held down, the



fader lever position where the macro attachment is set appears in the following places.

- **Transition indicator in the transition execution section:** The indicator lights at the position where the macro attachment is set.
- **Transition rate indication in the transition execution section:** This shows the fader lever position where the macro attachment is set, as a percentage value. (Fader lever start position as 0%, end position 100%)

Removing macro attachment settings

To cancel a macro attachment to a button

Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block button or user preference button, and press the background A row button that is flashing. The button for which a macro attachment was set stops flashing and goes off, and the setting is canceled.

To cancel a macro attachment to a fader lever

Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block or user preference button, and press the [LIMIT SET] or [PRIOR SET] button in the control block containing the fader lever having the macro attachment set.

To remove all macro attachment settings in a single operation

You can remove all macro attachment settings in a single operation.

- 1** In the Macro menu, select VF2 ‘Attachment.’
- 2** Press [All Clear].
A confirmation message appears.
- 3** Select [Yes].
This deletes all macro attachment setting data.

Displaying the Macro Attachment List

In the Macro >Attachment menu, you can display the macro attachment list to check the macro attachment settings.

The macro attachment list includes the following columns.

- **Block:** Shows the names of control panel blocks.
- **Button:** Shows the names of macro attachment assigned buttons (of up to 30 characters).

- **Reg:** Shows the names of assigned registers.
 - **Name:** Shows the names of macro registers.
 - **Mode:** Shows the names of macro modes (Pre/Post/Only/--- 1).
- Above the list is shown the names of the block and macro attachment assigned button currently selected in the list.

1) When no macro mode is set

For details of the macro modes, see “Setting a macro attachment to a button” (page 357).

For details of the macro attachment list display, see “About the Macro Attachment List Display” in the Appendix (page 430).

Moving quickly within the macro attachment list from one block to another

When you are viewing the macro attachment settings for a block in the macro attachment list, you can move quickly from the current block to another block to check the settings for that block by pressing the following buttons in the <Block Select> group.

- **P/P:** Move to a block in the PGM/PST bank.
- **M/E-1:** Move to a block in the M/E-1 bank.
- **M/E-2:** Move to a block in the M/E-2 bank.
- **M/E-3:** Move to a block in the M/E-3 bank.
- **Aux:** Move to a section in the auxiliary bus control block.
- **Others:** Move to a block/section in a location other than the PGM/PST bank, M/E-1 to M/E-3 banks, and the auxiliary bus control block.

Scrolling the list

To scroll the macro attachment list, do one of the following.

- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Macro attachment settings scrolling	1 and upwards

Executing a Macro by Macro Attachment

Note

To carry out this operation, it is first necessary to assign the “MCRO ATTCH ENBL” function to the user preference buttons in the menu control block or the utility/shotbox control block. Carry out this assignment in the Eng Setup >Panel >Prefs/Utility menu. (For details, see “Setting Button Assignments (Prefs/Utility Menu)” in Chapter 19 (Volume 3).)

Executing a macro assigned to a button

1 Press the [MCRO ATTCH ENBL] button assigned to a utility/shotbox control block button or user preference button, turning it on.

2 Press the desired button for which a macro attachment has been set.

This recalls the macro register assigned to the button, and the macro is executed as follows, according to the operation mode.

Pre macro mode: The macro is executed first, and then the button function is executed.

Post macro mode: The button function is executed first, and then the macro is executed.

Macro only mode: The button function is not executed, and the macro only is executed.

During macro execution, the button you pressed flashes.

Notes

- It is not possible to execute more than one macro at a time. Therefore, even if you simultaneously press multiple buttons for which macro attachments are set, only one macro is executed.
- During macro execution, recalling the same register again stops the macro being executed. Therefore, pressing twice a button for which a macro attachment is set stops the macro being executed.
- Individual events stored in a macro are executed according to the settings in setup. If you change the settings in setup, a saved macro may not have the expected effect.
- During macro execution, if you switch the control panel to macro editing mode, the macro being executed stops.
- During macro editing, pressing a button for which a macro attachment is set does not execute the macro.



To disable macro attachment settings

Press the [MCRO ATTCH ENBL] button assigned to a utility/shotbox control block button or user preference button, turning it off.

In this state, pressing a button for which a macro attachment is set does not execute the macro.

Executing a macro assigned to a fader lever

- 1 Press the [MCRO ATTCH ENBL] button assigned to a utility/shotbox control block button or user preference button, turning it on.
- 2 Move the fader lever from the start position to the end position.

When the fader lever passes the position at which the macro attachment is set, the macro register is recalled, and the macro is executed.

Notes

- Unless you move the fader lever to the end position (completing the travel), it is not possible to execute the macro again.
- When the preset color mix stroke mode is Normal (*see “Settings Relating to Video Switching (Transition Menu)” in Chapter 20 (Volume 3)*), the first lever operation executes the macro, but the second lever operation does not.
- During macro execution, it is not possible to execute another macro.
- Individual events stored in a macro are executed according to the settings in setup. If you change the settings in setup, a saved macro may not have the expected effect.
- During macro execution, if you switch the control panel to macro editing mode, the macro being executed stops.
- During macro editing, even if you operate a fader lever with a macro attachment set, the macro is not executed.

To disable a macro attachment setting

Press the [MCRO ATTCH ENBL] button assigned to a utility/shotbox control block button or user preference button, turning it off.

In this state, operating a fader lever with a macro attachment set does not execute the macro.

Menu Macros

The term “menu macro” refers to the function whereby a sequence of menu operations is saved as data in memory, so that it can be recalled as required to automatically execute the same sequence of operations.

Using any of the menus in the following table, you can edit menu macro registers and menu macro events.

Menu	Function	Operations
Menu Macro Register menu (menu macro register editing)	<ul style="list-style-type: none">• Carry out menu macro register editing.• Recall a menu macro register and execute a menu macro.	<ul style="list-style-type: none">• Recalling a register and executing a menu macro• Locking a register• Copying a register• Deleting a register• Naming a register
Menu Macro Edit menu (editing of menu macro events)	Edit events in a menu macro register.	<ul style="list-style-type: none">• Inserting an event• Deleting an event• Modifying an event

Menu macro registers

The area of memory that holds a menu macro is termed a “menu macro register.” For each control panel there are 99 menu macro registers, numbered 1 to 99. You can manipulate these in the menu macro register menu.

Menu macro events

The events that can be recorded in a menu macro are operations carried out in a menu.

For menu operations which are not recorded in menu macros, see “Menu Operations Not Recorded in a Menu Macro” (page 436).

Menu macro creation and editing

Carry out menu macro creation and editing in the menu.

Executing menu macros

You execute a menu macro after recalling a menu macro register.

You can recall and execute simultaneously. You can also recall and execute a menu macro from a macro recalled on the control panel.

Recalling a Menu Macro Register and Executing a Menu Macro

Menu macro operation is carried out by recalling a menu macro register.

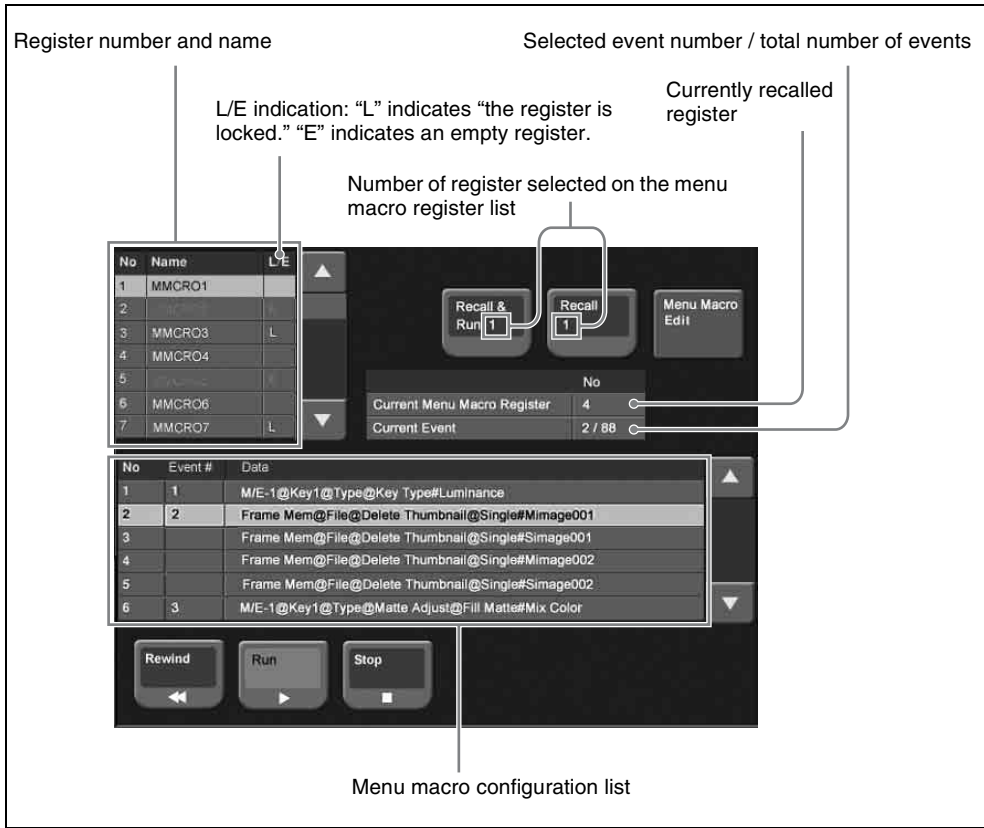
Notes

- Menu macros and macros recalled with a control panel button operate independently. Therefore, to synchronize these, adjustment of the execution timing is required.
- Events saved in a menu macro are executed according to the settings in setup, and therefore if you change the setup settings, it may not be possible to replay an event.
- When two menu macros are recalled successively, the later coming macro is ignored as far as the first macro is being executed.

Recalling a Menu Macro Register

- 1 In the Macro menu, select VF3 'Menu Macro Register' and HF1 'Recall & Run.'

The Recall & Run menu appears.



2 Using any of the following methods, select the register to be recalled.

- Press directly on the menu macro register list.
- Press the arrow keys on the right list to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Menu Macro Register	Register selection	1 to 99

3 Press [Recall & Run x] or [Recall x] (x is the number of the register selected in the menu macro register list).

- To execute the menu macro at the same time as recalling the register, press [Recall & Run x].
- To recall the register only, press [Recall x].

Executing a menu macro

In the Macro >Menu Macro Register >Recall & Run menu, check that you are not in macro editing mode, then use the following procedure.

- 1** Using any of the following methods, specify the event from which you want to execute.
 - Press directly on the menu macro register configuration list.
 - Press the arrow keys on the right list to scroll the reverse video cursor.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	No	Select start event	1 and upwards

- 2** Press [Run].

This executes the menu macro from the specified event.

To stop execution of a macro

Press [Stop].

To move to the start of a menu macro event

Press [Rewind].

Recalling a menu macro register from a macro register

Menu macro recall and execution operations can be saved as events in a control panel macro, and then recalled.

If with the control panel in macro editing mode you execute a menu macro, then this operation is recorded as an event.

For details of recording operations, use the following references, depending on the control panel or menu used.

- Using the numeric keypad control block and the keyframe control block: *page 336*
- Using menus: *page 351*

Menu Macro Creation and Editing

Create or edit menu macro registers.

Note

It is not possible to execute a menu macro during editing. To run the macro, first press the [Store] button to end editing.

Creating a new menu macro

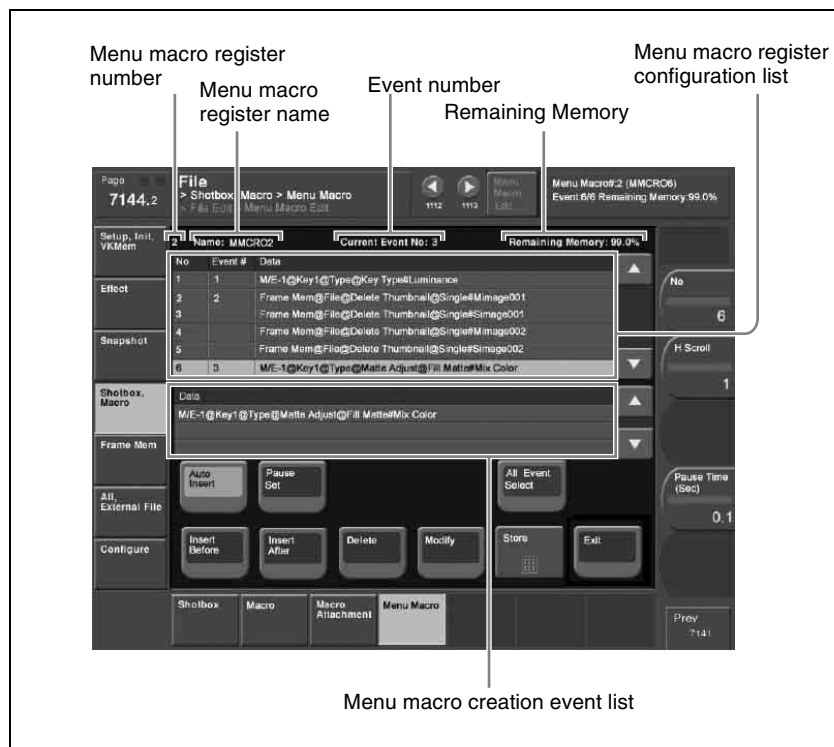
- 1 In the Macro >Menu Macro Register >Recall & Run menu, select an empty register in the menu macro register list.

For details of the method of operation, see “Recalling a Menu Macro Register” (page 367).

- 2 Press [Menu Macro Edit].

The menu macro register is recalled, and the system is now in menu macro editing mode.

The Menu Macro Edit menu appears.



- 3 If required, press [Auto Insert] to switch the auto insert mode on or off.

In the auto insert mode, when you carry out a menu operation, this is automatically recorded as an event in the menu macro.

- 4** Create an event (carry out the menu operation you want to record as an event in the menu macro).

For details of menus that can be recorded, see page 366.

- When auto insert mode (*see page 337*) is on, carrying out a menu operation automatically saves the event in a menu macro.
- When auto insert mode is off, skip to step **5**.

- 5** When auto insert mode is off, press [Insert Before] or [Insert After] to save the event.

- 6** Repeat steps **4** and **5**, to record the required events in the menu macro.

- 7** Press the [Store] button.

The numeric keypad window appears.

- 8** Enter the menu macro register number as required, and press [Enter].

The menu macro is saved with the specified number.

The menu returns to the state in step **1**.

To set a pause duration

During menu macro editing, use the following procedure.

- 1** Enter the pause duration with the knob.

Knob	Parameter	Adjustment	Setting values
4	Pause Time (Sec)	Pause duration	0.1 to 99.9 (sec)

- 2** Press [Pause Set].

- When auto insert mode (*see page 337*) is on, this sets the pause duration, and inserts the pause event.
- When auto insert mode is off, use the same operations as in step **5** of “*Creating a new menu macro*” (*page 370*) to save the event.

Editing a menu macro

To edit the content of a menu macro, use the following procedure.

- 1** In the Macro >Menu Macro Register >Recall & Run menu, select the desired register on the menu macro register list.

For details of the menu macro register list, see “Recalling a Menu Macro Register” (page 367).

2 Press [Menu Macro Edit].

The Menu Macro Edit menu (*see previous figure*) appears. The menu macro register is recalled, and the system is now in menu macro editing mode.

3 Select the event you want to edit.

- Press directly on the menu macro register configuration list.
- Press the arrow keys on the right list to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Event number	1 and upwards

- To select all events, press [All Event Select].

4 If required, press [Auto Insert] to switch the auto insert mode on or off.

- When auto insert mode (*see page 337*) is on, a new menu is automatically inserted after the event selected in step **3**.
- When auto insert mode is off, skip to step **5**.

5 Carry out the editing, using any of the following methods.

- To delete the selected event, press the [Delete] button.
- To overwrite the selected event, carry out the new menu operation, then press the [Modify] button.
- To insert an event before the selected event, carry out the new menu operation, then press the [Insert Before].
- To insert an event after the selected event, carry out the new menu operation, then press the [Insert After].

6 With the same operation as steps **7** and **8** of “Creating a new menu macro,” save the register.

Exiting the Menu Macro Edit menu without saving the results of editing

In the Menu Macro Edit menu, press [Exit].

Scrolling event display using the menu macro listing

1 Move the cursor to the event you want to display.

2 Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	H Scroll	Scroll the characters in the "Data" field.	1 and upwards

About the menu macro editing mode display

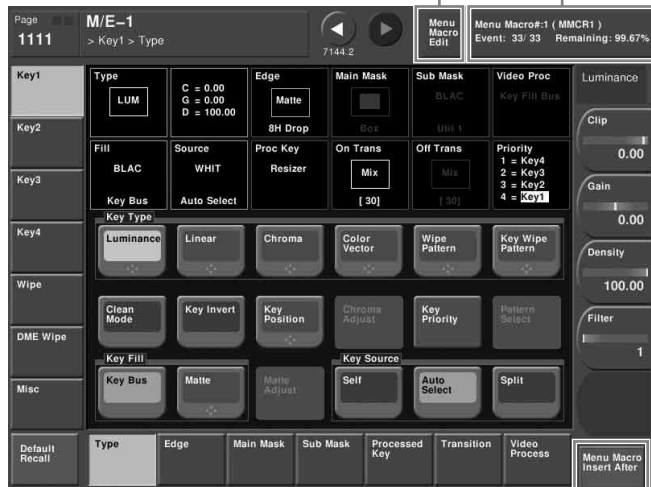
If while in menu macro editing mode you switch to another menu, the display is as shown in the following figure.

Screen when the keyframe status is displayed

The keyframe status section appears as follows.

- Menu macro register number
- Menu macro register name
- Current event number / total number of events
- Remaining memory

Menu shortcut button to Menu Macro Edit menu



The Previous page button shows one of the following:

- When [Auto Insert] is on, "Menu Macro Auto Insert" appears.
- When [Auto Insert] is off, "Menu Macro Insert After" appears, but operates as [Insert After].

Screen when the keyframe status is not displayed



The Default Recall button shows the following.

Menu shortcut button to Menu Macro Edit menu

The Previous page button shows one of the following:

- When [Auto Insert] is on, "Menu Macro Auto Insert" appears.
- When [Auto Insert] is off, "Menu Macro Insert After" appears, but operates as [Insert After].

Menu Macro Register Editing

You can display the current state of a menu macro register using the Menu Macro menu.

The items displayed are the same as under "Effect Status Display" (see page 280), with the exception that the region name is not displayed.

In the Menu Macro menu, you can do the following editing operations on menu macro registers.

- **Lock:** Write-protect the contents of the menu macro register.
- **Copy:** Copy the contents of one menu macro register to another menu macro register.
- **Delete:** Delete the contents of a menu macro register.
- **Name:** Attach a name to a menu macro register.

The operations for menu macro register editing are the same as those for effect register editing (*see page 283*) except the region selection operation, which is not necessary for menu macro register editing.



Macro Timeline

By recording macro recall and execute action on a timeline, in the same way as for key frames in an effect, you can automatically execute them in a sequence. This timeline is called a “macro timeline,” and one macro timeline can have up to 99 macros being executed simultaneously in parallel. There are 99 registers in the Macro region that can be recorded on the macro timeline, numbered 1 to 99. These registers are distinct from the registers where individual macros are stored.

Note

If you use a macro timeline to superimpose more than one macro, the macros may not be executed according to the timing information registered in the timeline.

Available key frame functions

The following lists the key frame functions that can be used on the macro timeline.

- RECALL(1 to 99), STORE(1 to 99), RECALL UNDO, STORE UNDO, search for empty register, AUTO SAVE, RECALL MODE (RECALL, RECALL & REWIND)
- EDIT ENABLE, EDIT UNDO
- CONST DUR, EFF DUR, KF DUR, DELAY, PAUSE, INSERT BEFORE, INSERT AFTER, MODIFY, DELETE, COPY, PASTE BEFORE, PASTE AFTER, FROM TO, ALL
- PREV KF, NEXT KF, GOTO TC, GOTO KF, RUN, REWIND, FF, STOP NEXT KF, NORMAL, JOG, KF FADER

The following key frame functions cannot be used

- KF LOOP, EFFECT LOOP, REVERSE, NORMAL/REVERSE
- PATH

Saving to a register

Set the recall and execute actions for the macros to be registered in the timeline, using the Macro Timeline menu. The setting data can be saved in a register as key frame data. You can manipulate this data by recalling the register in which it is saved, and using the key frame control block.

For details, see “Recalling a Menu Macro Register and Executing a Menu Macro” (page 367).

Note

An action set for a key frame is only executed when the key frame effect is executed in the forward direction. It is important to remember that the action is not executed in the reverse direction when executing simultaneously with switcher and DME key frame effects.

Forcibly ending a macro timeline

- If the timeline has completed but a macro is still executing, press the [REWIND] or [RUN] button in the key frame control block to forcibly end the macro timeline.
- In a macro timeline, since a take operation is not possible, if a macro included in the timeline has a pause event with a pause time of zero, the remainder of the timeline after the pause is ignored, and the macro timeline ends at that point.

Register editing functions

You can use the following editing functions on a register in which a macro timeline is stored.

- Copy
- Move
- Swap
- Merge
- Lock
- Name
- Delete

File-related functions

You can save and recall a created macro timeline as effect data, in the File menu.

Timeline operations are carried out on a macro timeline in the same way as for normal effects.

For details of timeline operations, see “Chapter 13 Keyframe Effects” (page 221).

Note

When using a macro timeline, note the following.

- To use a macro timeline, the Macro region must be assigned to a region selection button in the numeric keypad control block. For details of region assignment operations, see “Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block” in Chapter 19 (Volume 3).

- On a macro timeline, only macro recall and execution actions are stored. The data for a macro to be recalled on the macro timeline is not held on the timeline. It is necessary to create the macro data first.
- A macro timeline can be saved and recalled on the master timeline or a shotbox register, but cannot be saved as a snapshot.

Creating and Editing a Macro Timeline

This section describes how to set actions, and add keyframe points. Note that path settings are not needed on the macro timeline.

For details of keyframe operations, see “Creating and Editing Keyframes” (page 252).

Saving a keyframe

For the operations, use the Macro Timeline menu and the [INS] button in the keyframe control block.

- 1 Press the [EDIT ENBL] button, turning it on.

This enables timeline editing in the keyframe control block.

- 2 In the Macro menu, select VF4 ‘Timeline’ and HF1 ‘Timeline.’

The Macro Timeline menu appears.

- 3 Select “Recall-1” that appears on the right.

As required, turn the knob to select the number of the macro register.

Knob	Parameter	Adjustment	Setting values
3	Recall No	Selection of macro register	1 to 99

- 4 Press the [Set] button.

“Recall-1” appears in the Action column on the left.

- 5 Press the [INS] button in the keyframe control block.

This creates the keyframe “Recall-1” on the macro timeline.

To set the action for a rewind operation

On the macro timeline, when the [REWIND] button in the keyframe control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.

To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To carry out this setting, in the Macro

>Timeline >Timeline menu, press [Rewind Action] to recall the Rewind Action menu. In this setting screen, use the same setting method as in the screen for setting an action on the macro timeline.

Alternatively, you can select the reverse arrangement, whereby when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details of the setting, see “Setting the First Keyframe When a Rewind is Executed” in Chapter 19 (Volume 3).





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Overview of File Operations

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. You can also convert the format of image data in frame memory into a different format and save it in an external device.

Files that can be manipulated

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

File operations

You can carry out the following file operations.

When operating on individual files or registers

Save: Save the data in a register to the hard disk or memory card.

Load: Load a file from the hard disk or memory card.

Copy: Copy a file within a directory or from one directory to another. When a remote panel is used, this function applies to it, too.

Rename: Rename a file on the hard disk or memory card.

Delete: Delete a file from the hard disk or memory card.

When operating on files or registers in a batch

The Save, Load, Copy and Delete operations are performable.



Notes on transferring multiple frame memory files together to a memory card

- Transferring all of the files within frame memory together fails if the capacity of the memory card is too small to hold all of the images. In this case, replace with a larger capacity memory card, or delete files until saving is possible.

The following table roughly shows the relation between memory card capacity and number of files that can be saved.

Memory card capacity	Number of files that can be saved	
	SD system	HD system
256 MB	214	46

Note that when transferring to the hard disk, there is ample capacity, so that problems such as this do not occur.

- If you cancel the operation during a data transfer between frame memory and hard disk or memory card, then an image which was not completely transferred will not be reproducible. Avoid canceling such operations.
- When loading a file from hard disk or memory card, if [Freeze Enable] in the Freeze menu is on, the loaded file may sometimes be overwritten by the frame memory input image.

To avoid this when loading a file, ensure that [Freeze Enable] is turned off.

Importing or exporting files to or from frame memory

Import: Import a file in a different format from hard disk or memory card into frame memory after changing its format.

Export: Export a file in a register to hard disk or memory card after changing its format.

You can import TIFF, BMP, and TARGA files as follows into frame memory.

File type	Format	File name	Notes
TIFF file	RGB uncompressed format	Maximum eight characters, plus extension .tif required	<ul style="list-style-type: none"> • Layers cannot be used. • If an alpha channel is present, two files are created as a pair.
BMP file	Windows ^{a)} 24-bit format	Maximum eight characters, plus extension .bmp required	—
TARGA file	RGB uncompressed/compressed format	Maximum eight characters, plus extension .tga required	<ul style="list-style-type: none"> • Layers cannot be used. • If an alpha channel is present, two files are created as a pair.

a) Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

Note

This functionality has been tested and confirmed to work with TIFF files created by Photoshop, but it may not be possible to use TIFF files created with some other software. (Photoshop is a trademark of Adobe Systems Incorporated.)

About import image size

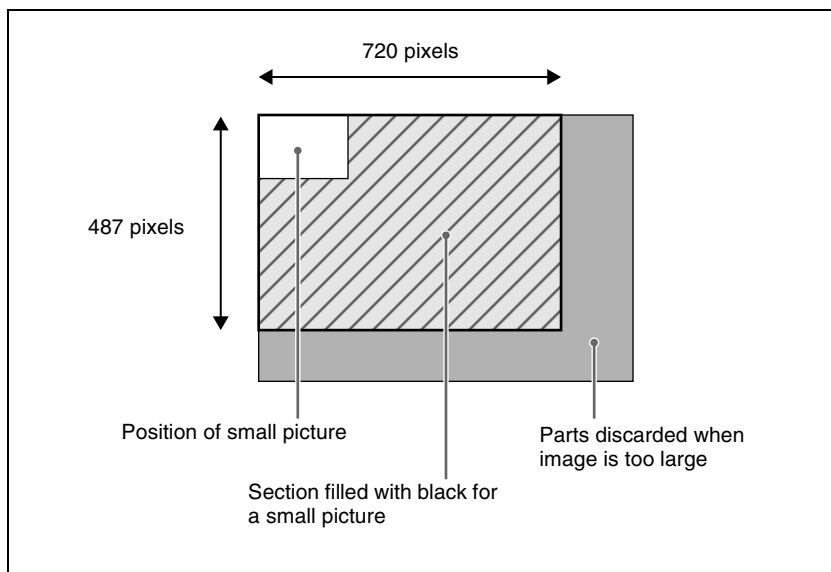
Pay attention to the following, depending on the signal format which you use.

SDTV (480i)

Images 720×487 pixels in size are exactly the size which fills the full screen. The following figure shows how an import image is processed when the 480i/59.94 format is used.

Images are placed with the upper left of the screen as the origin.

When an image is smaller than the screen, the remainder of the screen is filled with black. When it is larger, parts which extend beyond the screen are discarded.



No pixel ratio conversion is performed when images are imported for the SDTV format.

When the signal format is 480i/59.94, if you create an image with a size of 720×540 on a computer and then import it just as it is, the image will be too tall. To maintain the shape of the image, first create it as a 720×540 image and then use computer software tools to compress the vertical dimension to 487 pixels before importing it.

HDTV (1080i)

Images of 1920×1080 pixels in size are exactly the size which fills the full screen.

Like SDTV, images are placed with the upper left of the screen as the origin. When an image is smaller or larger than the screen, processing is the same as for SDTV.

Since the pixel ratio of the HDTV format is 1:1, files created on computers are imported in their original shapes.

The following table shows the image sizes which exactly fill the full screen for the various signal formats.

Signal format	Image size (H × V)
480i/59.94	720 × 487
576i/50	720 × 576
1080i/50	1920 × 1080
1080i/59.94	
720P/50	1280 × 720
720P/59.94	

Importing 720P movie material

To import movie material in 720P format, it is necessary to treat each frame as a separate image file.

Directory operations

You can create a new directory within a hard disk or memory card, and carry out other operations, such as renaming and deleting.

For details of operations, see “Directory Operations” (page 404).

File copying between different unit IDs

Switcher and DME files within the hard disk or memory card are managed by unit ID.

To copy files between different unit IDs, use the Unit ID Copy menu.

For details of operations, see “Copying Files Between Different Unit IDs” (page 406).

Saving data recalled by autoloading

At power on, you can automatically recall data previously stored on the hard disk. (Autoload function)

The following data can be loaded by the autoload function.

- Keyframe effect setting data
- Snapshot setting data
- Wipe snapshot setting data
- DME wipe snapshot setting data
- Key snapshot setting data
- Shotbox setting data
- Macro setting data
- Macro attachment data
- Frame memory image data

To use the autoload function, the data required must first be saved.

For the on/off setting of the autoload function, see “Selecting the State After Powering On (Start Up Menu)” in Chapter 18 (Volume 3).

For details of saving operations, see “Saving Files Recalled by Autoload” (page 408).



Operations on Individual Files

You can save or load the contents of an individual file or register. Carry out these operations in the File menu.

Displaying the Individual File Operation Menus

- 1** In the menu control block, press the top menu selection button [FILE].
- 2** Depending on the type of file to be manipulated, select the following 'VF' and 'HF' combination.

Button	HF1	HF2	HF3	HF4
VF1	Setup	Initial Status	Key Memory	Video Proc Memory
VF2	Effect 1-99	Effect 101-199	Effect 201-299	Effect 301-399
VF3	Snapshot	Wipe Snapshot	DME Snapshot	Key Snapshot
VF4	Shotbox	Macro	Macro Attachment	–
VF5	Frame Memory	–	–	–

The following description refers to the example of carrying out operations on snapshot files, but the procedure is similar in the other menus.

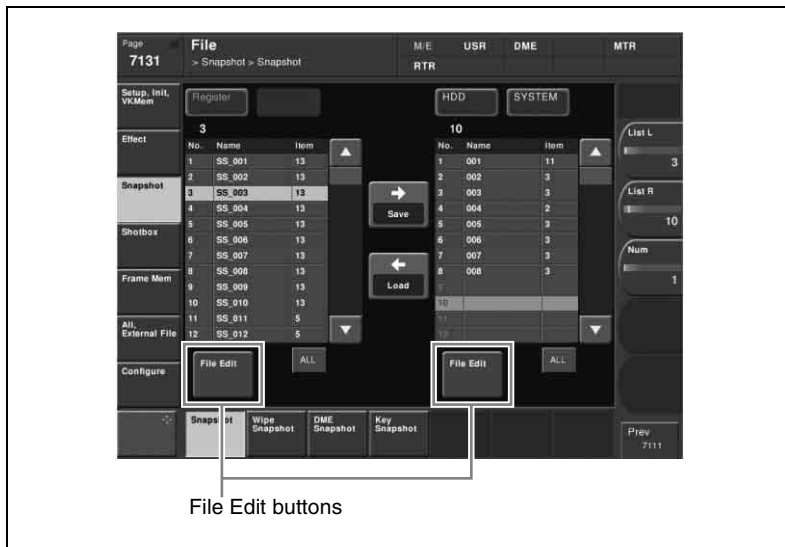
Viewing Detailed File Information

As an example, to view detailed snapshot file information, carry out the following procedure.

- 1** In the File menu, select VF3 'Snapshot' and HF1 'Snapshot.'

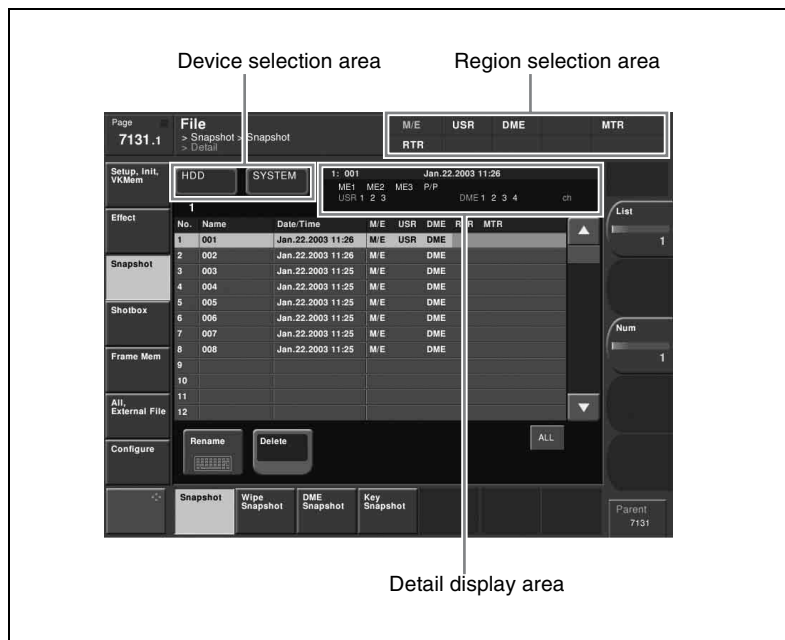
The Snapshot menu appears.

The status area shows the device status, and a list of files present on the device.



2 Press [File Edit].

The file details appear (reference region file name, creation date, regions including data) in table form.



Selecting a particular file displays more detailed information about that file in the detail display area at the top right of the file list.

In the Frame Memory menu, the following items are also shown.

Pair: In the case of a pair file, “P” is shown.

Ext: In the case of an extended clip file, “Ext” is shown.

Selecting Regions

You can carry out a file operation on a number of regions simultaneously. However, a region selection is not required for the following files.

- Key memory
- Video process memory
- Shotbox
- Macro
- Macro attachment
- Frame memory
- Setup
- Initial status

In the above list, for frame memory in Dual Simul mode you can select the switcher to be used for the operation in a way similar to the region selection. For setup and initial status, you can similarly separate the files to be operated on by device.

To make a region selection

- 1** Press the region selection area at the top right of the screen (*see page 388*).
The region selection window appears.
- 2** Press the region names you do not want to select, turning them off.
- 3** Press [OK].

Selecting a Device for Operations

To carry out file operations, you need to specify the device holding the data (or file), as one of the following: register, hard disk, memory card, and so on. You can then further select a directory.

Notes

- Files saved on the hard disk may be lost if the hard disk fails. Always keep separate backup copies of important files on a memory card.
- Format a memory card before using it for the first time.

For details on formatting a memory card, see “Using a Memory Card” in Chapter 18 (Volume 3).

As an example, to select a memory card, use the following procedure.

- 1** In the File menu, press the device selection indication above the file list (default is [HDD] (hard disk)).
(If [Memory Card] appears, then since the memory card is already selected, steps **1** and **2** are not necessary.)

A pull-down menu appears.

- 2** Press [Memory Card].

A list of directories on the memory card appears. (Maximum 40 per page)
The maximum number of directories is 120 on a memory card, or 200 on an internal hard disk.

- 3** As required, press the ◀ or ▶ button, to switch directory pages.

- 4** Press the name of the directory you want to use.

This selects the specified directory on the memory card to be manipulated.

Saving Files

As an example, to save snapshot register data to hard disk or memory card, use the following procedure.

- 1** In the File menu, select VF3 ‘Snapshot’ and HF1 ‘Snapshot.’
- 2** In the device selection area on the left, select [Register].
- 3** In the device selection area on the right, select [HDD] or [Memory Card], then select a directory.

See “Selecting a Device for Operations” (page 389).

- 4** Using either of the following methods, select the data to be saved, and the file in which to save it.



- To select all files within the list, press [ALL] below the list.
- To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List L	Select the first register whose data is to be saved	1 to 99
2	List R	Select the first file to which data is to be saved	1 to 99
3	Num	Number of registers to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or press directly on the list in the status area.

5 Press [→ Save].

This saves the selected register data in the specified location.

If there is already data in the specified location, a confirmation message appears.

- Select “Yes” to overwrite the data.
- Select “No” to cancel saving all of the data.

Saving frame memory files

Between steps **3** and **4** of the procedure above, “Saving Files,” do as follows.

1 To select the frame memory folder, press [Default] in the device selection in the list on the left.

A pull-down menu appears.

2 Press the required folder name.

3 Carry out the same operations as in steps **1** and **2** on the list on the right.

4 Select the type of data to be displayed.

- To display still image files, press [Still].
- To display clip files, press [Clip].

Loading Files

As an example, to load a snapshot file from hard disk or memory card to a register, use the following procedure.

1 In the File menu, select VF3 ‘Snapshot’ and HF1 ‘Snapshot.’

- 2** In the device selection area on the left, select [Register].
- 3** In the device selection area on the right, select where the file is held ([HDD] or [Memory Card]), and then specify a directory.

See “*Selecting a Device for Operations*” (page 389).

- 4** Using any of the following methods, select the register to which you want to load, and the file to be loaded.
 - To select all files within the list, press [ALL] below the list.
 - To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List L	Select the first register into which the data is to be loaded	1 to 99
2	List R	Select the first file in which data is held	1 to 99
3	Num	Number to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or press directly on the list in the status area.

- 5** Press [← Load].

This loads the contents of the selected file from the specified location. (Setup data is first loaded.)

Loading frame memory files

Between steps **3** and **4** of the procedure above, “Loading Files,” do as follows.

- 1** To select the frame memory folder, press [Default] in the device selection in the list on the left.
A pull-down menu appears.
- 2** Press the required folder name.
- 3** Carry out the same operations as in steps **1** and **2** on the list on the right.
- 4** Select the type of data to be displayed.
 - To display still image files, press [Still].
 - To display clip files, press [Clip].



Copying Files

You can copy files either within a directory or between directories, on the hard disk, or memory card.

As an example, to copy a snapshot file from memory card to hard disk, use the following procedure.

- 1** In the File menu, select VF3 ‘Snapshot’ and HF1 ‘Snapshot.’
- 2** In the device selection area on the left, specify the location of the file to be copied (in this case [Memory Card] and a directory). (See page 389.)
- 3** In the device selection area on the right, select the destination of the copied file (in this case [HDD] and a directory).
- 4** Using any of the following methods, select the source and destination files.
 - To select all files within the list, press [ALL] below the list.
 - To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List L	Select the first copy source file	1 to 99
2	List R	Select the first destination file	1 to 99
3	Num	Number to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or press directly on the list in the status area.
- 5** Press [→ Copy].

This copies the selected file or files to the specified destination.

If there is already data in the specified location, a confirmation message appears.

- Select “Yes” to overwrite the data.
- Select “No” to cancel copying all of the files.

Copying frame memory files

Between steps **3** and **4** of the procedure above, “Copying Files,” do as follows.

- 1** To select the frame memory folder, press [Default] in the device selection in the list on the left.

A pull-down menu appears.
- 2** Press the required folder name.

- 3 Carry out the same operations as in steps 1 and 2 on the list on the right.
- 4 Select the type of data to be displayed.
 - To display still image files, press [Still].
 - To display clip files, press [Clip].

Renaming Files

You can rename a file on the hard disk or memory card and a register. As an example, to rename a snapshot file, use the following procedure.

- 1 In the File menu, select VF3 'Snapshot' and HF1 'Snapshot.'

The Snapshot menu appears. The status area shows the device status, and a list of files present on the device.

- 2 Press [File Edit].

A detailed list appears. Here too, you can select a device or specify a directory. (*See page 389.*)

- 3 Using any of the following methods, select the file you want to rename.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	List	File selection	1 to 99

- 4 Press [Rename].

The keyboard window appears. (*See "Menu Operations" in Chapter 2 (Volume 1).*)

- 5 Enter a name of not more than eight characters, and press [Enter].

The name you have entered is reflected in the status area.

Notes

- Within the switcher, the names for Initial Status and Setup data are fixed. You can change the file names on the hard disk or memory card, but the next time they are reloaded they will revert to the default names.
- The following names cannot be used.



CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Renaming frame memory files

1 In the File menu, select VF5 'Frame Mem' and HF1 'Frame Memory.'

The Frame Memory menu appears. The status area shows the device status, and a list of files present on the device.

2 Press [File Edit].

3 Select the type of data to be displayed.

- To display still image files, press [Still].
- To display clip files, press [Clip].

4 Using any of the following methods, select the file you want to rename. (When you selected [Clip] in step **3**, you cannot select multiple files.)

- 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	List L	File selection in the left list	1 and upwards
2	List R	File selection in the right list	1 and upwards
3	Num	Number to be selected	1 and upwards

5 Press [Rename].

The keyboard window appears.

6 Depending on the selections of steps **3** and **4**, enter a name as follows and press [Enter].

- When you selected a single file with [Still]: Enter a name of not more than eight characters.
- When you selected more than one file with [Still]: Enter a name of not more than four characters.
- When you selected a clip file: Enter a name of not more than four characters.

The name you have entered is reflected in the status area.

Note

If you select [Register] in the operation device selection block, then with [Still] select multiple files and change a file name, these still images are converted to a clip.

Deleting Files

You can delete data from the hard disk or memory card and snapshot or effect data from a register. As an example, to delete a snapshot file, use the following procedure.

1 In the File menu, select VF3 ‘Snapshot’ and HF1 ‘Snapshot.’

The Snapshot menu appears. The status area shows the device status, and a list of files present on the device.

2 Press [File Edit].

A detailed list appears. Here too, you can select a device or specify a directory. (*See page 389.*)

3 Using any of the following methods, select the file you want to delete.

- To select all files within the list, press [All] below the list.
- To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List	Select the first file	1 to 99
3	Num	Number to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or press directly on the list in the status area.

4 Press [Delete].

A confirmation message appears.

- Select “Yes” to delete.
- Select “No” to cancel the deletion.

Deleting frame memory files

Between steps **2** and **3** of the procedure above, “Deleting Files,” do as follows.

1 To select the frame memory folder, press [Default] in the device selection in the list.



A pull-down menu appears.

- 2** Press the required folder name.
- 3** Select the type of data to be displayed.
 - To display still image files, press [Still].
 - To display clip files, press [Clip].

Creating a frame memory folder on the device (HDD or Memory Card)

- 1** In the File menu, press VF5 'Frame Mem' and HF2 'Frame Memory Folder.'

The Frame Memory Folder menu appears. The status area shows the device status, and a list of files present on the device.

- 2** In the pull-down menu of the device selection section, select [HDD] or [Memory Card], and then specify the directory.

- 3** Press [New].

A keyboard window appears. (*See the section "Menu Operations" in Chapter 2 (Volume 1).*)

- 4** Enter a name of up to eight characters, and press [Enter].

The name entered appears in the status area as a frame memory folder.

Notes

- The following names cannot be used.
Default, Flash1, Flash2
CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3,
COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2,
LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9
- It is not possible to create 12 or more directories in the frame memory folder.

To rename a frame memory folder

- 1** Using any of the following methods, select the folder.
 - 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	List L	Folder selection	1 and upwards

2 Press [Rename].

A keyboard window appears. (*See the section “Menu Operations” in Chapter 2 (Volume 1).*)

3 Enter a name of up to eight characters, and press [Enter].

The name entered appears in the status area as a frame memory folder.

To delete a frame memory folder

1 With the same operations as in step **1** of the procedure “To rename a frame memory folder,” select the folder.

2 Press [Delete].

A confirmation message appears; select “Yes” to carry out the deletion.



3 Press [→ Save].

A confirmation message appears.

- Select “Yes” to carry out the batch save.
- Select “No” to cancel the batch save.

Batch Loading Files

To load files from hard disk or memory card, use the following procedure.

1 In the device selection area of the All menu, select where the files are held ([HDD] or [Memory Card] and directory). (*See page 389.*)

2 If there are files you do not want to load, in the <Category> group, exclude them from the operation. To select all files, press [All Select].

For details of the data to which operations apply, see “Files that can be manipulated” (page 382).

Note

The frame memory is not selected when you press [All Select]. To apply the setting to frame memory, press [Frame Memory], turning it on. When frame memory is selected, it is not possible to apply settings to the <Category> group data.

3 Press [← Load].

A confirmation message appears.

- Select “Yes” to carry out the batch load. (Setup data is first loaded.)
- Select “No” to cancel the batch load.

To execute the load after clearing the data in the destination regions

Before pressing [← Load], press [CLR Before Load], turning it on.

The following categories of data can be cleared before execution of the load.

Effect, Snapshot, Wipe Snapshot, DME Wipe Snapshot, Key Snapshot, Shotbox, and Macro

Note

When frame memory is selected for the setting, the data is always deleted before recalling.

Batch Copying Files

To copy files between the hard disk and a memory card, use the following procedure.

- 1** In the operating device selection section to the left of the All menu, select the storage location ([HDD] or [Memory Card] and directory) of the source files (*see page 389*).
- 2** In the operating device selection section to the right of the All menu, select the destination storage location ([HDD] or [Memory Card] and directory) (*see page 389*).
- 3** If there are files you do not want to copy, remove them from the selection in the <Category> group. To select all files, press [All Select].

For details of the data to which the operation applies, see “Files that can be manipulated” (page 382).

Note

The frame memory is not selected when you press [All Select]. To apply the setting to frame memory, press [Frame Memory], turning it on. When frame memory is selected, it is not possible to apply settings to the <Category> group data.

- 4** Press [→ Copy].

This copies the selected files to the specified destination.

If there is already data present in the destination location, a confirmation message appears.

- Select “Yes” to overwrite.
- Select “No” to cancel copying all of the files.

Importing and Exporting Files

You can import or export frame memory image data from or to external media.

Import: to transfer a file in a different format from hard disk or memory card to frame memory as image data.

Export: to change the file format of register data and save the data on hard disk or memory card.

To carry out these operations, use the File >All,External File >Import/Export menu.

For details of the formats supported for import and export, see “Importing or exporting files to or from frame memory” (page 383).

Displaying the Import/Export Menu

In the File menu, select VF6 ‘All, External File’ and HF2 ‘Import/Export.’ The list on the left shows the frame memory registers, and the list on the right shows the content of the external recording media.

Importing Frame Memory Data

As an example, to import data in a bitmap format from a memory card to a frame memory register, use the following procedure.

About the points you should take note of when importing data, see “About import image size” (page 384).

Note

The imported file is created in the “Default” folder.

- 1** In the Import/Export menu, press the device selection area on the left to select [Frame Memory (.BMP)].
- 2** Press the device selection area on the right to select [Memory Card]. It is not possible to select a directory.
- 3** Using any of the following methods, select the register into which the data is to be imported and the file.
 - 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	List L	Register selection	1 and upwards
2	List R	File selection	1 and upwards

4 Press [← Import].

This transfers the external file to the frame memory register.

Exporting Frame Memory Data

As an example, to save image data from frame memory in a bitmap format on a memory card, use the following procedure.

- 1** In the Import/Export menu, press the device selection area on the left to select [Frame Memory (.BMP)].
- 2** Press the device selection area on the right to select [Memory Card]. It is not possible to select a directory.
- 3** Using any of the following methods, select the data you want to export from the list on the left.
 - Press directly on the list in the status area.
 - Press the arrow keys to scroll the reverse video cursor.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	List L	Register selection	1 and upwards
2	List R	File selection	1 and upwards

4 Press [→ Export].

This adds the image data from the frame memory in a bitmap format on the memory card.

Executing export creates a file in the MVS_EXP directory immediately under root directory. If the directory does not exist, it is automatically created.

If the specified destination file name already exists, an overwriting confirmation message appears.

- Select “Yes” to overwrite the data.
- Select “No” to cancel the whole file export operation.

Directory Operations

You can create a new directory on hard disk or memory card, rename, or delete a directory.

To carry out these operations, use the File >Configure >Directory menu.

Displaying the Directory Menu

In the File menu, select VF7 ‘Configure’ and HF1 ‘Directory.’

The Directory menu appears.

Creating a New Directory

You can create a maximum of 120 directories on a memory card, or 200 on an internal hard disk.

- 1** In the device selection pull-down menu, select [HDD] or [Memory Card].
(See page 389.)
- 2** Press [New].
The keyboard window appears. (See “Menu Operations” in Chapter 2 (Volume 1).)
- 3** Enter a name of not more than eight characters, and press [Enter].
A new directory with the name you have entered appears in the status area.

Note

The following names cannot be used for directories:

CON, PRN, AUX, CLOCK\$, and NUL
COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7,
COM8, and COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, and
LPT9



Renaming a Directory

- 1 In the device selection pull-down menu, select [HDD] or [Memory Card].
(See page 389.)
- 2 Using any of the following methods, select the directory.
 - Press directly on the list in the status area.
 - Press the arrow keys to scroll the reverse video cursor.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	List	Directory selection	1 and upwards

- 3 Press [Rename].

The keyboard window appears. (See “Menu Operations” in Chapter 2 (Volume 1).)
- 4 Enter a new name of not more than eight characters, and press [Enter].

The new name appears in the status area.

Deleting a Directory

- 1 In the device selection pull-down menu, select [HDD] or [Memory Card].
(See page 389.)
- 2 Using any of the following methods, select the directory.
 - Press directly on the list in the status area.
 - Press the arrow keys to scroll the reverse video cursor.
 - Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	List	Directory selection	1 and upwards

- 3 Press [Delete].

A confirmation message appears.
 - Select “Yes” to delete the directory.
 - Select “No” to cancel the deletion.

Copying Files Between Different Unit IDs

Switcher and DME files on the hard disk or a memory card are handled separately for each unit ID.

With the normal file copy operation, it is not possible to copy files between different unit IDs. To copy files between different unit IDs, use the following procedure.

For details of unit IDs, see “Setup for the Whole System” in Chapter 18 (Volume 3).

Displaying the Unit ID Copy menu

In the File menu, select VF7 ‘Configure’ and HF2 ‘Unit ID Copy.’
The Unit ID Copy menu appears.

Copying files between different unit IDs

To copy files between different unit IDs, grouped by category, use the following procedure.

- 1** In the Unit ID Copy menu, press the category selection section at the top right of the screen.
- 2** Press the categories you do not want to select, turning them off.
- 3** Press [OK].
- 4** In the operating device selection section on the left list, select the storage location of the source files, and in the operating device selection section on the right list, specify the destination storage location (*see “Selecting a Device for Operations” (page 389)*).
- 5** Using either of the following methods, select the copy source and copy destination unit IDs.
 - Press directly on the list for the copy source on the left of the status area, and on the right for the copy destination.
 - Press the arrow keys to scroll the reverse video cursor.
 - Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	List L	Selection of copy source unit ID	1 to 4
2	List R	Selection of copy desitination unit ID	1 to 4

6 Press [→Copy].

A confirmation message appears.

- Select “Yes” to carry out the copy to the specified destination of the selected file categories.
- Select “No” to cancel the copy.

Note

If there is already data present in the copy destination, note that this will overwrite all of the data.



Saving Files Recalled by Autoload

If you save effect setting data, frame memory image files and so on in the PWON_LD directory on the hard disk, then when the system is powered on this data is recalled automatically. This is known as the autoload function. To save the data to be recalled by the autoload function, use the menu for operations on individual files.

For the data recalled by the autoload function, see “Saving data recalled by autoload” (page 385).

For the setting enabling or disabling the autoload function, see “Setting Automatic Loading of Register Data at Power On (Autoload Function)” in Chapter 18 (Volume 3).

For example, to save snapshot data, use the following procedure.

- 1** In the File menu, select VF3 ‘Snapshot’ and HF1 ‘Snapshot.’
The Snapshot menu appears.
- 2** In the device selection area on the left, select [Register].
- 3** In the device selection area on the right, select [HDD].
Be sure to select [HDD] as the saving destination.
- 4** Select the PWON_LD directory.
The PWON_LD directory is automatically created when [Power On File Load] is set to On in the System >Start Up menu. If set to Off, the directory does not appear.
- 5** Using any of the following methods, select the data to be saved, and the file in which to save it.
 - To select all files within the list, press [ALL] below the list.
 - To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List L	Select the first register whose data is to be saved	1 to 99
2	List R	Select the first file to which data is to be saved	1 to 99
3	Num	Number of registers to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or directly press on the list in the status area.

6 Press [→Save].

The data from the selected registers is saved in the specified destination. If the specified destination already contains data, a confirmation message appears.

- Select “Yes” to overwrite the existing data.
- Select “No” to cancel the entire saving operation.



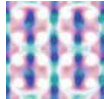




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SpotLighting

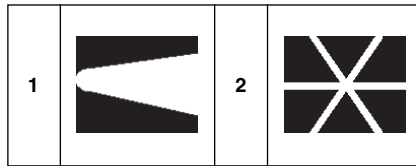
Texture Patterns

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					

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Shape Patterns



Functional Differences With Models of DME

Function	Menu number	MVE-8000A	MKS-6470	MVE-9000	See
Selection of signal to insert in the border	4111	Flat Color only	Flat Color only	Flat Color Ext Video Mix Color	page 56
Key Border	4113	No	No	Cannot be turned on when Glow is on.	page 61
Art Edge	4114	No	No	Yes	page 62
Flex Shadow	4115	No	No	Yes	page 70
Drop Shadow	4115	No	Yes ^{a)}	No	page 77
Wipe Crop	4116	No	No	Yes	page 78
Color Mix	4117	No	No	Yes	page 83
Defocus/Blur	4121	Cannot be turned on when Glow is on.	Cannot be turned on when Glow is on.	Yes	page 85
Mask	4127	Yes ^{b)}	Yes ^{a)}	Yes	page 100
Wave	4141.1	Yes	No	Yes	page 105
Nonlinear effects	4141	Yes	No	Yes	page 104
Adjustment of entire image brightness in Lighting/Spotlighting (parameter Total Ambient)	4151 4156	No	No	Yes	page 134 page 156
Setting the bar mode of the highlight area	4151	No	No	Yes	page 138
Adjustment of color of the diffuse light area (parameter Bar Diffuse Color)	4151	No	No	Yes	page 138
Selection of signal to insert in the trail afterimage portion	4152	Freeze Video Flat Color Hue Rotate	Freeze Video Flat Color Hue Rotate	Without limitation	page 140
Combine process for Trail	4152	No	No	Yes	page 142

Function	Menu number	MVE-8000A	MKS-6470	MVE-9000	See
Defocus function for Trail	4152	No	No	Yes	page 142
Combine process for Keyframe Strobe	4154	No	No	Yes	page 147
Wind	4155	No	No	Yes	page 147
Spotlighting	4156	No	No	Yes	page 149
Selection of signal to insert in the background	4161	Flat Color only	Flat Color only	Flat Color Ext Video Mix Color	page 167
Key source selection	4162	Ext Key ^{b)} Int Key Lum Key ^{b)}	Int Key	Ext Key ^{b)} Int Key Lum Key ^{b)}	page 171
Shaped Video	4162	Yes only when SDI interface is used	No	Yes only when SDI interface is used	page 168
Interpolation settings	4163	Yes only for SD	Yes only for SD	Yes both for SD and HD	page 172
Anti-moire filter	4163	Yes only for HD	Yes only for HD	No	page 174
Flex shadow axis settings	4164	No	No	Yes	page 37
Outputting graphics to the monitor	4164	Yes only when SDI interface is used	Yes only when SDI interface is used	Yes	page 37
Dim and Fade	4173	No	No	Yes	page 98
Glow	4174	Cannot be turned on when Defocus/Blur is on.	Cannot be turned on when Defocus/Blur is on.	Cannot be turned on when Key Border is on.	page 99
Combiner depth settings (three-dimensional crossing function) (parameter Depth)	4211	No	No	Yes	
Brick	4212	Yes	No	Yes	
Shadow	4213	Yes	No	Yes	page 179
Adding user texture patterns (for Spotlighting)	7316.9	No	No	Yes	"Adding User Texture Patterns" in Chapter 18 (Volume 3)

Function	Menu number	MVE-8000A	MKS-6470	MVE-9000	See
Setting AUX bus output/re-entry input	7337.7	It is not possible to make settings for DME 1 to 8 Ext In.	No	When using the DME dedicated interface, it is not possible to make settings for DME 1 to 8 Video/Key.	"Setting the Interface Between the DME and the Switcher" in Chapter 20 (Volume 3)
TBC window center position	7341.1	Yes only when SDI interface is used. ^{c)}	No	Yes only when SDI interface is used.	"Setting the TBC Window Center Position" in Chapter 21 (Volume 3)
Adjustment of monitor output video clip level	7343	Yes only when SDI interface is used.	No	Yes only when SDI interface is used.	"Adjusting the Monitor Output" in Chapter 21 (Volume 3)
Monitor output signal settings	7343.1	Yes only when SDI interface is used.	No	Yes	"Setting the Monitor Output" in Chapter 21 (Volume 3)

- a) Drop shadow is automatically set to off when the function of trail, motion decay, keyframe strobe or window is on.
- b) Effect groups 1 and 2 cannot be selected at the same time. Pattern 304 (round corner) is not supported.
- c) When Shaped Video is off.
- d) It is not possible to make settings for external input signals.



Macro File Editing Rules

When editing a macro file, follow the rules described below.

Macro File Syntax

The macro file syntax is as follows.

File format

The file is in CSV (comma-separated value) format.

Newline code

CR (ASCII code 0D), LF (ASCII code 0A), or CRLF may be used.

Statement syntax

There are four types of statement, each terminated by a newline code.

File header: This must always appear as the first line of the file. It comprises 28 characters, as follows.

Example: PNL (space) 0001PNL_rrrr.PMRnnnnnnnn

rrrr: macro register number (0001 to 0099)

nnnnnnnn: In a file created on the switcher, this is a register name automatically set by the switcher.

When creating a new file, it is recommended to set this to be the same as the file name (*see page 419*).

The name is limited to eight characters.

The following characters may not be used.

space, \, /, :, ;, , (comma), . (dot), <, >, *, ?, “ ”

Comment: Begins with “#”. The content of the line following the “#” up to the next newline has no effect on macro execution, and can be used as a comment.

Note

You can only use comments in files saved to the hard disk or a memory card. When you load a macro file into a register, the comments are discarded.

Event statement: Begins with “Event?”, and defines the macro event. (*See next item, “Syntax of Event and Continue Statements.”*)

Continue statement: Begins with “Continue?”, and defines the macro event. (*See next item, “Syntax of Event and Continue Statements.”*)

Some events cannot be used. (See “Correspondence Between Events and Symbols” (page 420).)

Syntax of Event and Continue Statements

An event can be written with an Event statement only, or with an Event statement followed by any number of Continue statements. The Event statements and Continue statements have the following syntax.

Word separator character

Use “,” (comma).

Ignored

Spaces and tabs are ignored. There is no distinction between lowercase and uppercase. If two or more separator characters appear consecutively, later ones are ignored. Separator characters at the beginning of a line are also ignored.

Content of line

Must begin with “Event?” or “Continue?”, followed by symbols and parameters.

Event?,[symbol], [parameter], [parameter], ...

Continue?,[symbol], [parameter], [parameter], ...

symbol: ASCII character string showing the type of event. (See “Correspondence Between Events and Symbols” (page 420).)

parameter: Shows details of an event. Consists of parameter names and arguments, and these must appear in pairs. The number and type of parameters depends on the event. (See “Symbols and Parameters” (page 421).)

If the same parameter appears twice or more, the last occurrence is valid.

How to use Continue statements

When a single parameter has more than one argument, use a Continue statement. The following example is of a snapshot event.

An event to recall a snapshot in region M/E-1 is written as:

```
Event?,Snapshot,Region?,ME1,Register?,1,Attribute?,Off,Time?,Current
```

In the Event statement, only one region can be specified.

To specify both regions M/E-1 and DME1, use a Continue statement, thus:

```
Event?,Snapshot,Region?,ME1,Register?,1,Attribute?,Off,Time?,Current  
Continue?,Snapshot,Region?,DME1,Register?,1,Attribute?,Off,Time?,Current
```

To specify more than one argument for a region parameter, follow the Event statement by a Continue statement on the next line.

File Name

Set the file name as follows.

Example: nnnnnnnn.PNL_rrrr.PMR

nnnnnnnn: In a file created on the switcher, this is a register name automatically set by the switcher.

The name is limited to eight characters.

The following characters may not be used.

space, \, /, :, ;, , (comma), . (dot), <, >, *, ?, “ ”

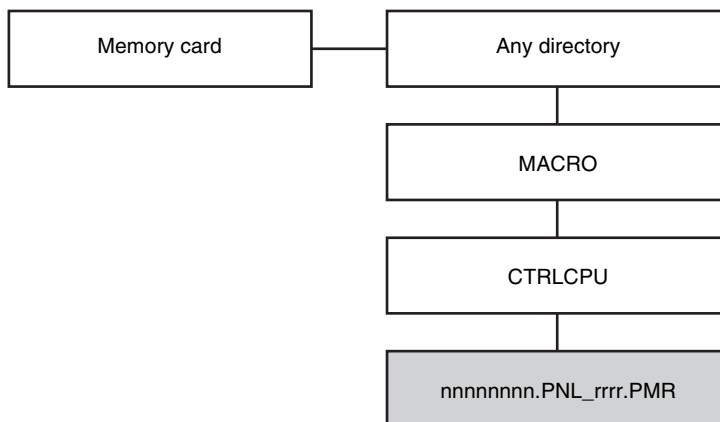
rrrr: macro register number (0001 - 0099)

Saving and Recalling a File

For a newly created file, if you create a directory on the memory card (*see figure below*), and move the file to the prescribed location, you can then recall it in the File >All, External File menu.

Note

When amending a file saved on the switcher, be sure to save it in the original directory.



Path example: Memory Card\Sample\MACRO\CTRLCPU\
nnnnnnnn.PNL_rrrr.PMR

Errors

If any of the following problems occur, it is not possible to recall the file. Attempting to recall the file will produce an error message.

- If there is a syntax error.
- If a required parameter is not present.

For details of error messages, see “Error Messages” in Appendix (Volume 3).

Correspondence Between Events and Symbols

For details of events, see “Events” (page 328).

Event	Symbol	Using Continue
Cross-point selection in the auxiliary bus control block	AuxXpt	No
Cross-point selection in the auxiliary bus control block in router control mode	RouterXpt	Yes
Cross-point selection in the cross-point control block	MEXpt	Yes
Auto transition and take in the transition execution section	MEAutoTransition	Yes
Cut in the transition execution section	MECut	No
Transition type selection	TransitionType	No
Next transition setting	NextTransition	No
Pattern limit on/off	PatternLimit	No
Fade-to-black execution	FadeToBlack	No
Auto transition and take in the independent key transition execution section	KeyAutoTransition	Yes
Key insertion and deletion in the independent key transition execution section	KeyCut	Yes
Independent key transition type selection	KeyTransitionType	No
VTR/DDR/clip start point setting	StartTc	Yes
VTR/DDR/clip playback	Play	Yes
VTR/DDR/clip stop	Stop	Yes
VTR/DDR/clip cue-up	Cue	Yes
VTR/DDR/clip fast forward	FF	Yes
VTR/DDR/clip rewind	Rewind	Yes

Event	Symbol	Using Continue
Disk recorder/Extended VTR file recall	DiskFileLoad	No
Recall snapshot	Snapshot	Yes
Recall key snapshot	KeySnapshot	Yes
Recall wipe snapshot	WipeSnapshot	Yes
Recall DME wipe snapshot	DMEWipeSnapshot	Yes
Recall shotbox	Shotbox	No
Recall master snapshot	MasterSnapshot	No
Recall master timeline	MasterTimelineRecall	No
Recall effect	TimelineRecall	Yes
Execute effect	TimelineRun	Yes
Rewind keyframe	TimelineRewind	Yes
Fast forward effect	TimelineFF	Yes
Effect execution direction selection (normal)	TimelineDirectionNormal	Yes
Effect execution direction selection (reverse)	TimelineDirectionReverse	Yes
Effect execution direction selection (normal/reverse on)	TimelineNormalReverseOn	Yes
Effect execution direction selection (normal/reverse off)	TimelineNormalReverseOff	Yes
Pause ^{a)}	Pause	No
Recall of function assigned to memory recall button/user preference button	UtilityButton	No
Recall of function assigned to the key 2 row cross-point buttons	Key Bus Utility Button	No
Frame memory clip loop on/off	FMLoop	Yes
Menu macro recall and execution	MenuMacroRun	No
Recall of frame memory clip	ClipRecall	No
Record with device	DeviceRecord	Yes

a) For details of pause events, see “Macro Execution” (page 332).

Symbols and Parameters

n: indicates a numeral 0 to 9.

x: indicates an alphanumeric character.

Symbol	Parameter name	Arguments	Description
MEXpt	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	MEBus?	A, B, Key1 to Key4, Key1Source to Key4Source, Utility1, Utility2 ^{a)} , DMEExternalVideo	Applicable bus
	Xpt?	1 to 128	Main table cross-point button number set in the Xpt Assign menu
	VideoKey?	Video, Key	Signal type selected on the applicable bus (video signal or key signal)
AuxXpt	AuxBus?	EditPreview, AUX1 to AUX48, Monitor1 to Monitor8, FrameMemory1, FrameMemory2, DME1Video to DME8Video ^{b)} , DME1Key to DME8Key ^{b)} , DME1Video2nd to DME8Video2nd (a) ^{b)} , DME1Key2nd to DME8Key2nd (b) ^{b)} , DMEUtility1 ^{b)} , DMEUtility2 ^{b)} , CCR1, CCR2	Applicable AUX bus (a): DMEnVideo2nd= Bus for selecting back video signal of DMEn channel (n=1 to 8), (b): DMEnKey2nd= Bus for selecting back key signal of DMEn channel (n=1 to 8)
	Xpt?	1 to 128	Cross-point button number in the main table set in the Xpt Assign menu
	VideoKey?	Video, Key	Type of signal (video signal or key signal) to be selected on the applicable bus

Symbol	Parameter name	Arguments	Description
MEAutoTransition	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	Time?	Current (a), 0 to 999	Transition rate (number of frames) (a): Mode in which the current value set on the transition control block is used
	ABusXpt?	Current (a), 1 to 128	A bus or B bus cross-point button number. Use the button number of the main table set in the Xpt Assign menu. (a): Mode in which the cross-point number set for the current A bus or B bus is used
	BBusXpt?	Current (a), 1 to 128	
MECut	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
KeyAutoTransition	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	Key?	Key1 to Key4	Key of the applicable independent key transition control block
	Time?	Current (a), 0 to 999	Transition rate (number of frames) (a): Mode in which the current value set on the independent key transition control block is used
	Direction?	ToOn (a), ToOff (b), Any (c)	Transition execution mode (a): Key is inserted (b): Key is deleted (c): Transition is always executed
KeyCut	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	Key?	Key1 to Key4	Key of the applicable independent key transition control block
	Direction?	ToOn (a), ToOff (b), Any (c)	Transition execution mode (a): Key is inserted (b): Key is deleted (c): Transition is always executed

Symbol	Parameter name	Arguments	Description
Play	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
	Mode?	Normal (a), Recue (b), Loop (c)	Playback mode (a): Normal mode As for Frame Memory 1 Clip to Frame Memory 8 Clip, settings are ignored and operation mode is fixed to "Normal." (b): Recue mode (c): Loop mode
Cue	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
	Timecode?	Current (a), hh:mm:ss:ff	Start point timecode hh=hours (00 to 23) As for Frame Memory 1 Clip to Frame Memory 8 Clip, hh is fixed to "01." mm=minutes (00 to 59) ss=seconds (00 to 59) ff=frames (00 to 29) (a): Mode in which the currently set timecode is used
Stop	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
FF	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
Rewind	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
DiskFileLoad	Device?	1 to 12	Applicable device
	FileName?	File Name	Name of file being set (max. 23 characters)



Symbol	Parameter name	Arguments	Description
Snapshot	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^c), Router	Applicable region
	Register?	1 to 99	Applicable register number
	Attribute?	Off, Dissolve, AutoTransition, Dissolve&AutoTransition	Applicable snapshot attributes
	Time?	Current (a), 0 to 999	Duration of effect dissolve (number of frames) (a): Mode in which the currently set value is used
KeySnapshot	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	Key?	Key1 to Key4	Applicable key
	Register?	1 to 4	Applicable register number
WipeSnapshot	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	Register?	1 to 10	Applicable register number
DMEWipeSnapshot	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	Register?	1 to 10	Applicable register number
TimelineRecall	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^c), PBus, Device1 to Device12, GPI	Applicable region
	Register?	1 to 399	Applicable register number
TimelineRun	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^c), PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineRewind	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^c), PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block

Symbol	Parameter name	Arguments	Description
TimelineFF	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^o , PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
Shotbox	Register?	1 to 99	Applicable register number
Pause	Time?	0 to 999	Time for which macro is paused (number of frames)
StartTc	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
MasterSnapshot	Register?	1 to 99	Applicable register number
MasterTimelineRecall	Register?	1 to 99	Applicable register number
RouterXpt	DestinationButton?	1 to 128	Router cross-point button
	Source?	1 to 1024	Router source number
	Level?	1 to 8	Router level selection
PatternLimit	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	Status?	ToOn (a), ToOff (b), Any (c)	Pattern limit status (a): Pattern limit applies (b): Pattern limit does not apply (c): The pattern limit status always changes
TransitionType	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	TransitionType?	Mix, NAM, SuperMix, PresetColorMix, Wipe, DMEWipe, FM1&2Clip, FM3&4Clip, FM5&6Clip, FM7&8Clip	Transition type



Symbol	Parameter name	Arguments	Description
KeyTransitionType	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	Key?	Key1 to Key4	Key of the applicable independent key transition control block
	Direction?	On (a), Off (b), Any (c)	Independent key transition execution mode (a): Key is inserted (b): Key is deleted (c): Transition is always executed
	KeyTransitionType ?	Mix, Wipe, DMEWipe, Cut	Transition type of the independent key transition control block
NextTransition	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	All?	On, Off	Applicable next transition
	KeyPriority?	On, Off	Applicable next transition
	BKGD?	On, Off	Applicable next transition
	Key1? to Key4?	On, Off	Applicable next transition
FadeToBlack	Time?	Current (a), 1 to 999	Transition rate (number of frames) (a): Mode in which the current value set on the fade to black control block is used
TimelineDirectionNormal	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^c , PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineDirectionReverse	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^c , PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineNormalReverseOn	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^c , PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block

Symbol	Parameter name	Arguments	Description
TimelineNormalReverseOff	Region?	ME1 to ME3, PP, User1 to User8, DME1 to DME8 ^o , PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
UtilityButton	UtilityModule?	UserPrefs, UtilityBox	Applicable control block
	Button?	1 to 96	Applicable button
	UtilityStatus?	On, Off, Current (a)	Status of function assigned to button (a): Operates according to currently assigned function
FMLoop	Device?	FrameMemory1Clip to FrameMemory8Clip	Applicable clip
	FMLoopMode?	On (a), Off (b)	Frame memory clip loop on/off (a): Loop is enabled (b): Loop is disabled
MenuMacroRun	Register?	1 to 99	Applicable register number
KeyBusUtilityButton	ME?	ME1 to ME3, PP	Control blocks on the applicable bank
	BANK?	Bank1 to Bank5	Applicable bank
	KeyBusUtilityButton?	1 to 32	Applicable button
	UtilityStatus?	On, Off, Current (a)	Status of function assigned to button (a): Operates according to currently assigned function
ClipRecall	Device?	FrameMemory1Clip to FrameMemory8Clip	Applicable clip
	ClipType?	Pair, Single	File type of clip (pair/single)
	Clip?	Clip Name	Name of clip (up to four characters)
Device Record	Device?	1 to 12	Applicable device

- a) For MVS-6000, the utility bus appears as “UTIL1 Bus”, and the utility 2 bus is not supported.
b) For MVS-6000, the following parameters are not available.
DME3Video, DME4Video, DME3Key, DME4Key, DME3Video2nd, DME4Video2nd,
DME3Key2nd, DME4Key2nd, DMEUtility1, DMEUtility2
c) For MVS-6000, DME3 and DME4 are not available.

Example of File Contents

Line	Content	Description
1	PNL 0001PNL_0000.PMRMACROREG	File header
2	#,Sample,	Comment
3	Event?,Snapshot,Region?,ME1,Register?,1,Attribute?,Off,Time?,Current	Simultaneously recall snapshots from register number 1 in the M/E-1 and DME1 regions.
4	Continue?,Snapshot,Region?,DME1,Register?,1,Attribute?,Off,Time?,Current	
5	Event?,MEXpt,ME?,ME2,MEBus?,A,Xpt?,121,VideoKey?,Video	Select button number 121 on the M/E-2 A bus.

About the Macro Attachment List Display

The Button column in the macro attachment list displayed in the status area of the Macro >Attachment menu screen shows character strings which identify macro attachment assigned buttons. Each of these character strings is in fact a combination of characters shown in the Button(1), Button(2), and Button(3) columns in the following tables.

For example, if Block and Button(1) to Button(3) are combined as:

Block: P/P XPT
Button(1): UTIL1 Bus
Button(2): V
Button(3): XPT2

The Button column in the macro attachment list in the Macro >Attachment menu screen shows “UTIL1 Bus V XPT2,” which means “utility 1 bus, video signal, cross-point number 2.”

M/E and PGM/PST Banks

The following table shows only the macro attachment assignable buttons in the PGM/PST bank.

For the M/E-1 (M/E-2 or M/E-3) bank, “P/P” in the Block Select and Block columns changes to “M/E-1” (“M/E-2” or “M/E-3”) and “DSK” in the Button(1) and Button(2) columns changes to “KEY.” The contents of the Button(3) column do not change.



Block Select	Block	Button(1)	Button(2)	Button(3)
P/P	P/P XPT	A Bus B Bus DSK1 Bus : DSK4 Bus	(nothing) Shift	XPT 1 : XPT 128 M/E 1 M/E 2 M/E 3 P/P
		DSK1 Src Bus : DSK4 Src Bus	V K V Shift K Shift	
		Sub A Bus Sub B Bus Sub DSK1 Bus : Sub DSK4 Bus Main&Sub A Bus Main&Sub B Bus Main&Sub DSK1 Bus : Main&Sub DSK4 Bus	(nothing) Shift	
		Sub DSK1 Src Bus : Sub DSK4 Src Bus Main&Sub DSK1 Src Bus : Main&Sub DSK4 Src Bus	V K V Shift K Shift	



Block Select	Block	Button(1)	Button(2)	Button(3)
P/P	P/P XPT	UTIL1 Bus ^{a)} UTIL2 Bus ^{b)} EXT DME Bus Sub UTIL1 Bus ^{a)} Sub UTIL2 Bus ^{b)} Sub EXT DME Bus Main&Sub UTIL1 Bus ^{a)} Main&Sub UTIL2 Bus ^{b)} Main&Sub EXT DME Bus EDIT PVW AUX 1 : AUX 48 Mon1 : Mon8 FM1 FM2	(nothing) Shift	XPT 1 : XPT 128 M/E 1 M/E 2 M/E 3 P/P
		DMEUtility1 ^{b)} DMEUtility2 ^{b)}	V K V Shift K Shift	
		DME1V2nd ^{c)} : DME8V2nd DME1K2nd ^{d)} : DME8K2nd	(nothing) Shift	
		CCR1 CCR2	V K V Shift K Shift	
		P/P UTIL1 ^{a)} P/P UTIL2 ^{b)} M/E-1 UTIL1 ^{a)} M/E-1 UTIL2 ^{b)} M/E-2 UTIL1 ^{a)} M/E-2 UTIL2 ^{b)} M/E-3 UTIL1 ^{a)} M/E-3 UTIL2 ^{b)}	V K V Shift K Shift	



Block Select	Block	Button(1)	Button(2)	Button(3)
P/P	P/P XPT	DSK1 : DSK4 M/E-1 KEY1 M/E-1 KEY2 M/E-1 KEY3 M/E-1 KEY4 M/E-2 KEY1 M/E-2 KEY2 M/E-2 KEY3 M/E-2 KEY4 M/E-3 KEY1 M/E-3 KEY2 M/E-3 KEY3 M/E-3 KEY4	(nothing) Shift	XPT 1 : XPT 128 M/E 1 M/E 2 M/E 3 P/P
		DSK1Src : DSK4 Src M/E-1 KEY1 Src M/E-1 KEY2 Src M/E-1 KEY3 Src M/E-1 KEY4 Src M/E-2 KEY1 Src M/E-2 KEY2 Src M/E-2 KEY3 Src M/E-2 KEY4 Src M/E-3 KEY1 Src M/E-3 KEY2 Src M/E-3 KEY3 Src M/E-3 KEY4 Src	V K V Shift K Shift V 2nd Row K 2nd Row V 2nd Row Shift K 2nd Row Shift	
		P/P EXT DME M/E-1 EXT DME M/E-2 EXT DME M/E-3 EXT DME		



Block Select	Block	Button(1)	Button(2)	Button(3)
P/P	P/P Trans	(blank) DSK1 : DSK4 Sub Sub DSK1 : Sub DSK4 Main&Sub Main&Sub DSK1 : Main&Sub DSK4	MIX ^{e)} NAM ^{e)} SUPER MIX ^{e)} PST COLOR MIX ^{e)} WIPE ^{e)} DME ^{e)} AUTO TRANS CUT DSK_ON ALL KEY PRIOR BKGD DSK1 : DSK4 NORM (PLAY) NORM/REV (STOP) REV (CUEUP) PTN LIMIT (PLAY) LIMIT SET (STOP) KF (CUEUP) PTN LIMIT Fader	(nothing)

- a) For MVS-6000, the utility bus appears as "UTIL1 Bus", and the utility 2 bus is not supported.
b) For MVS-6000, these parameters do not appear.
c) For MVS-6000, only DME1V2nd, DME2V2nd, and DME5V2nd to DME8V2nd are available.
d) For MVS-6000, only DME1K2nd, DME2K2nd, and DME5K2nd to DME8K2nd are available.
e) These buttons can be assigned with their functions in the setup menu. The assignable functions include four clip transition functions (FM1&2, FM3&4, FM5&6, FM7&8) besides the above functions (MIX, NAM, SUPER MIX, PST COLOR MIX, WIPE, DME).



Other Blocks

Block Select	Block	Button(1)	Button(2)	Button(3)
Others	Keyframe	RUN REWIND FF NORM REV NORM/REV	(nothing)	(nothing)
	Joystick Trackball	DEV	CLR WORK BUFR (CUEUP) Y (PLAY) TRGT (STOP) AXIS LOC (START TC)	
	Device Control	(nothing)	CUE UP PLAY STOP START TC	
	Utility Box 1 Utility Box 2 Menu	Utility 1 : Utility 96	(nothing)	
	DSK/FTB	Key1 Key2	AUTO TRANS KEY_ON FTB	
	FTB	(blank)	FTB	
	DSK Fader 1 : DSK Fader 4	P/P M/E1 M/E2 M/E3	KEY1 : KEY4	MIX WIPE DME CUT TAKE KEY_ON

Menu Operations Not Recorded in a Menu Macro

The menu operations not recorded in a menu macro comprise some operations common to all menus and some operations inhibited in individual menus.

Operations not recorded in menu macros, common to all menus

- Recalling a menu
- Delegation operations: region selection, channel delegation, operations assigning a parameter to a knob, and so forth
- Parameter setting operations using the knobs, trackball, or joystick (value input operations from the numeric keypad are recorded)

Operations not recorded in menu macros, in individual menus

Menu number	Menu including operations not recorded
0011 to 0023	All menus under Home
2141	FrameMemory >File >Delete Thumbnail
2142	FrameMemory >File >Delete List
2143	FrameMemory >File >Rename Thumbnail
2144	FrameMemory >File >Rename List
2145	FrameMemory >File >Backup/Restore
2544	FrameMemory >File >Move
2545	FrameMemory >File >Delete
2546	FrameMemory >File >Rename
2547	FrameMemory >File >Backup/Restore
2551	FrameMemory >File >Folder
2561	FrameMemory >External HDD >Format
2562	FrameMemory >External HDD >Backup/Restore
5333	Device >DDR/VTR >File List
5412 to 5437	All menus under Macro
7111 to 7172	All menus under File
7311 to 7317.1	All menus under Engineering Setup >System
7327	All menus under Engineering Setup >Panel >Maintenance

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