SONY

Operation Software

BZS-7020A

User's Guide

Digital Video Switcher System

DVS-7300/7350 System

1st Edition English

Software Version 5.00 and Later

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Overview

Introduction

This is the User's Guide for the BZS-7020A Operation Software for a DVS-7300/7350 switcher system. It mainly describes the operation of a DVS-7300 switcher system using the BKDS-7011/7012 control panel or a DVS-7350 switcher system using the BKDS-7021/7022/7023 control panel.
The “DVS-7300/7350” is a system name. It does not refer to any specific hardware device.

For details of the DVS-7300/7350 system, see the following section, “Terms for system types”.

System configurations and terminology

This manual refers to the principal components of the DVS-7300/7350 switcher system by the terms listed below.

Terms for system components

The following table lists the full model names of system components and the terms used to identify them in this manual.

Full model name	Term used in this manual
DVS-7000A Digital Video Switcher	Switcher
BKDS-7021/7022/7023 TYPE-4D Switcher Control Panel	3.5-M/E panel[a)]
BKDS-7011/7012 TYPE-3D Switcher Control Panel	3-M/E panel[a)]
BZS-7020A Operation Software	Software
DMK-7000 Digital Multi Keyer	Downstream keyer
BKDS-7032 DSK Control Panel Unit	Downstream keyer control section[b)]
DME-7000 or other Digital Multi Effects unit	DME unit

a) Unless it is necessary to distinguish “3.5-M/E panel” and “3-M/E panel” the term “control panel” is used.
b) In a 3.5-M/E panel, the downstream keyer control section is built-in as standard.

Terms for system types

This manual also uses the terms listed below to distinguish different types of system where necessary.

System characteristics	Term used
• Switcher system using a 3.5-M/E panel (BKDS-7021/7022/7023) as the switcher control panel • Switcher system with a DMK-7000 Digital Multi Keyer connected	DVS-7350 system or 3.5-M/E system
Switcher system using a 3-M/E panel (BKDS-7011/7012) as the switcher control panel	DVS-7300 system or 3-M/E system[a)]
System equipped with an option board and with system settings to support composite signal format	D2 system
System equipped with an option board and with system settings to support component signal format	D1 system

a) In the case of a system equipped with a DMK-7000 and BKDS-7032 DSK Control Panel Unit, where required the term "3-M/E system equipped with a downstream keyer" is also used.

About the BZS-7020A Operation Software

The BZS-7020A Operation Software is a program for operating the DVS-7300/7350 system hardware from the control panel.

The BZS-7020A software is supplied on three floppy disks, one each for the switcher, the control panel, and the downstream keyer. The software is installed from the floppy disk drive on the control panel, and copied to non-volatile memory (flash memory) in each of the units.

For details of the software installation procedure, see page 14-6 in this manual, and also refer to the DVS-7000A Installation Manual.

Related manuals

The following manuals are supplied with the DVS-7000A Digital Video Switcher:

- DVS-7000A Operation Manual
- DVS-7000A Installation Manual
- DVS-7000A Maintenance Manual Part 1

The following manuals are supplied with the DMK-7000 Digital Multi Keyer:

- DMK-7000 Operation Manual
- DMK-7000 Installation Manual
- DMK-7000 Maintenance Manual Part 1

Features of the DVS-7300/7350 Switcher System

The DVS-7300/7350 switcher system offers high performance and high functionality in a system based on the DVS-7000A Digital Video Switcher. The following are some of the features of this system.

Full-featured video effects

M/E banks

There are three M/E banks, each with equivalent functionality. Each bank includes two keyers which can be operated independently and simultaneously.
The output from any M/E bank can be input as a background signal to any other, for further keying and other operations.

PGM/PST bank (operation coupled to a DMK-7000)

In a DVS-7350 system, the three M/E banks are supplemented by a PGM/PST bank, for manipulating the final program output from the switcher. Using the PGM/PST bank, you can insert a total of four downstream keys into the final background output. These operations are controlled from the switcher control panel, but the processing is carried out by a DMK-7000 Digital Multi Keyer connected to the system.

In a DVS-7300 system, by connecting a DMK-7000, and equipping the control panel with a BKDS-7032 DSK Control Panel Unit, you can again control the insertion of a maximum of four downstream keys.

DME wipes (operation coupled to a DME)

By connecting a DME-7000 or other Digital Multi Effects unit, you can use the control panel to carry out DME wipes, using DME effects (the "DME LINK™" function).

System configuration flexibility

Wide range of options

In addition to the two basic control panel types, that is, 3.5-M/E and 3-M/E panels, there is a wide range of options, allowing just the features required to be installed in a system.

Support for D1 and D2 formats

Except for some options, both D1 (component) and D2 (composite) signal formats are supported. A simple control panel operation switches between the D1 and D2 selections, and also in the case of D1 format between 525- and 625-line systems.

Convenient interfaces with external equipment

Using the DVS-7000A along with the DVS-V6464B Routing Switcher, you can make up a large-scale switcher system.
Connecting the BVE-9100 Editing Control Unit to your system will allow you to carry out such advanced editing operations as ISR (System Status Reporting) and EDL (Edit Decision List) management.

Powerful remote control functions

You can connect the BKDS-2010 Control Panel to the DVS-7000A and use it as a separate panel exclusively for the M/E banks.
For key adjustment operations such as chroma key adjustment, the BKDS-7060 Keyer Remote Control Panel is available.You can use the dedicated panel connected to the DVS-7000A to remote-control the auxiliary bus and Shot Box operations.

Operation adapted to live operation

The DVS-7300/7350 system is not only a fully featured switcher system for post-production tasks, but also well adapted to live broadcast applications, since the control panel has been designed to provide the necessary rapid operability.

Combined use of menu settings and button operation

All detailed settings for video processing are carried out in menus, but for some more frequently used operations you can carry out the selections and adjustments by direct button operations on the control panel. In particular, clip, gain, density and other basic parameter settings can be controlled using the three knobs provided on each M/E bank, quite independently of the currently accessed menu.

Snapshot function

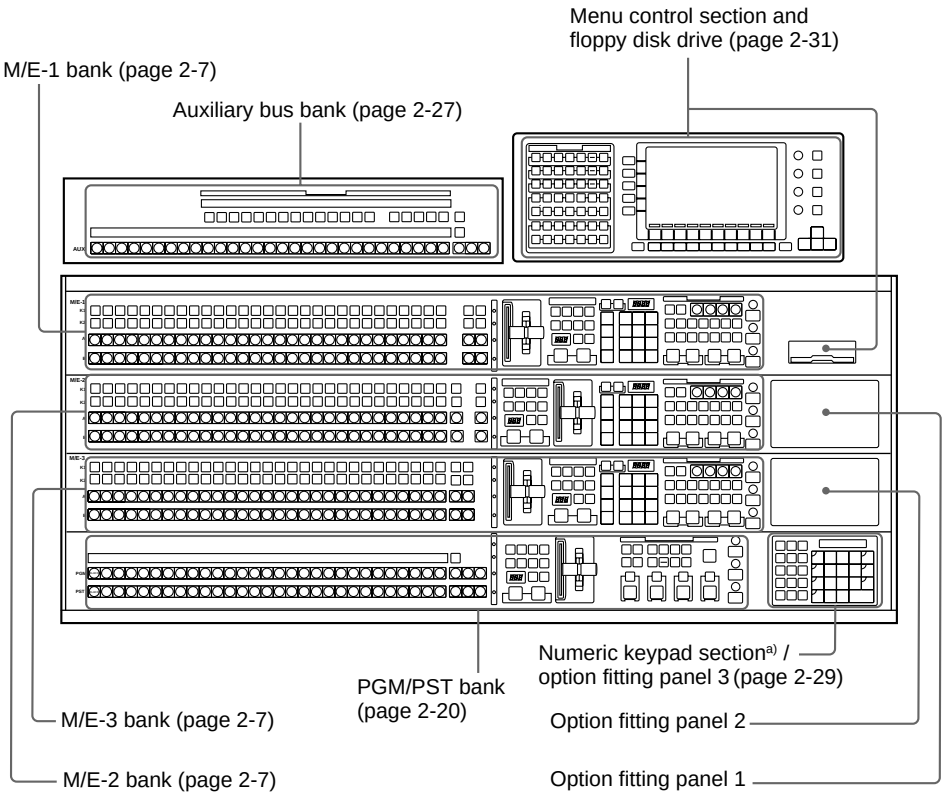
The DVS-7300/7350 system has a comprehensive snapshot function, which allows a collection of settings for a particular effect to be saved in memory, and recalled as required for an instant return to the settings. Snapshots can be saved from memory to floppy disk, and reloaded into the system when required.
Snapshots can reflect the overall system settings, or can apply only to key, wipe, or DME wipe settings for a particular M/E bank. These latter can be easily saved and recalled using the buttons of the FlexiPad™ provided on the M/E bank.

Chapter 2
Location and Function of Parts

Overall Organization

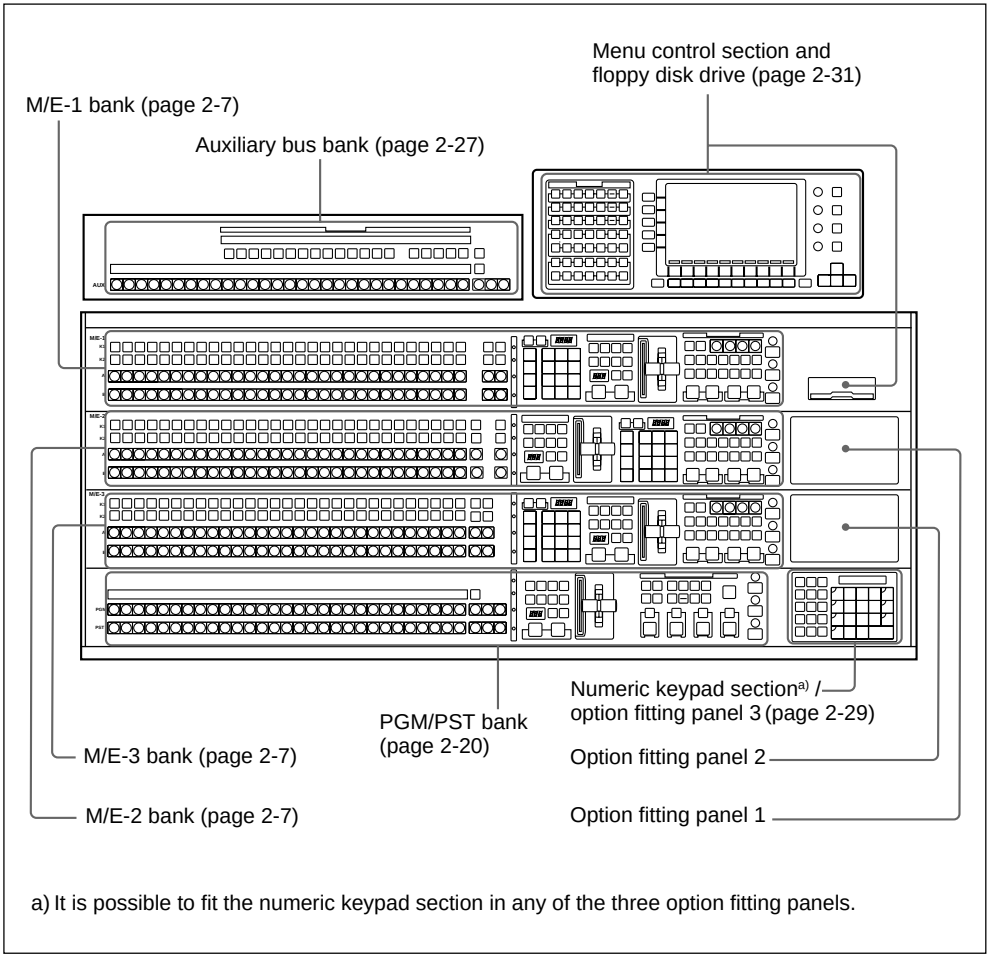
The control panel is divided into several blocks of buttons and other controls, as shown in the illustrations on this and the following pages.

See the page numbers indicated in parenthesis for more details.



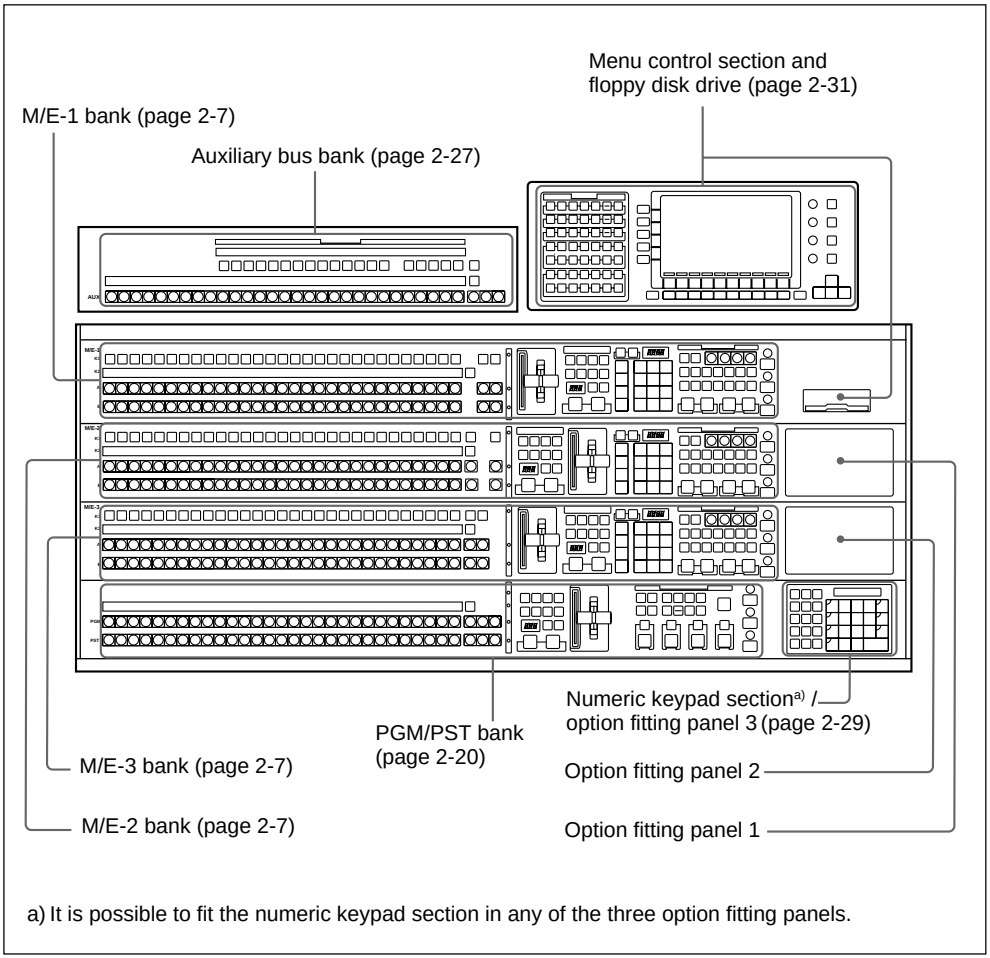
a) It is possible to fit the numeric keypad section in any of the three option fitting panels.

BKDS-7021 Type 4D control panel (3.5-M/E panel)



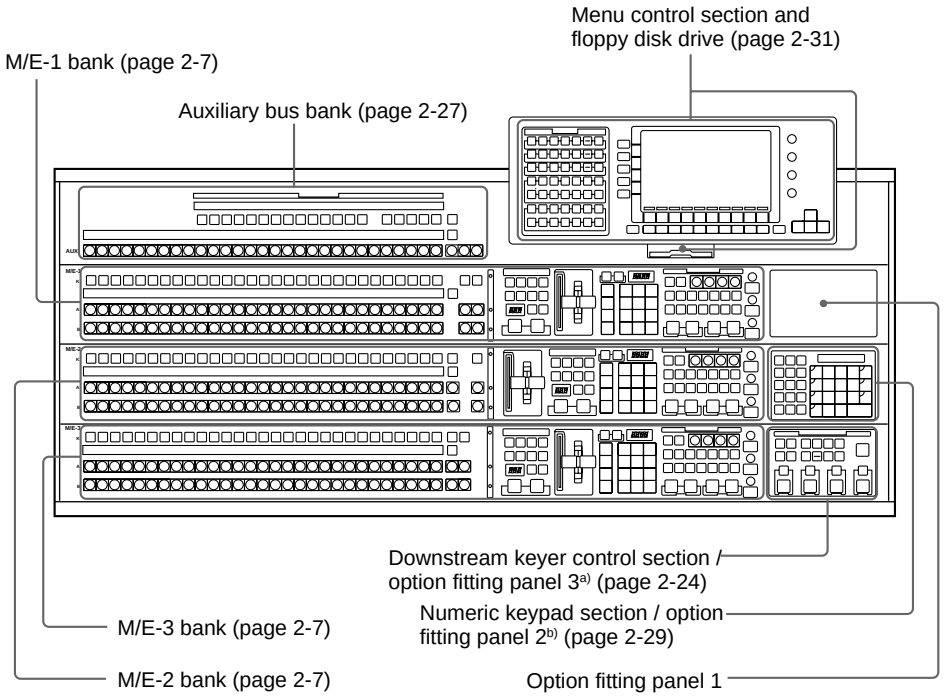
a) It is possible to fit the numeric keypad section in any of the three option fitting panels.

BKDS-7022 Type 4D control panel (3.5-M/E panel)



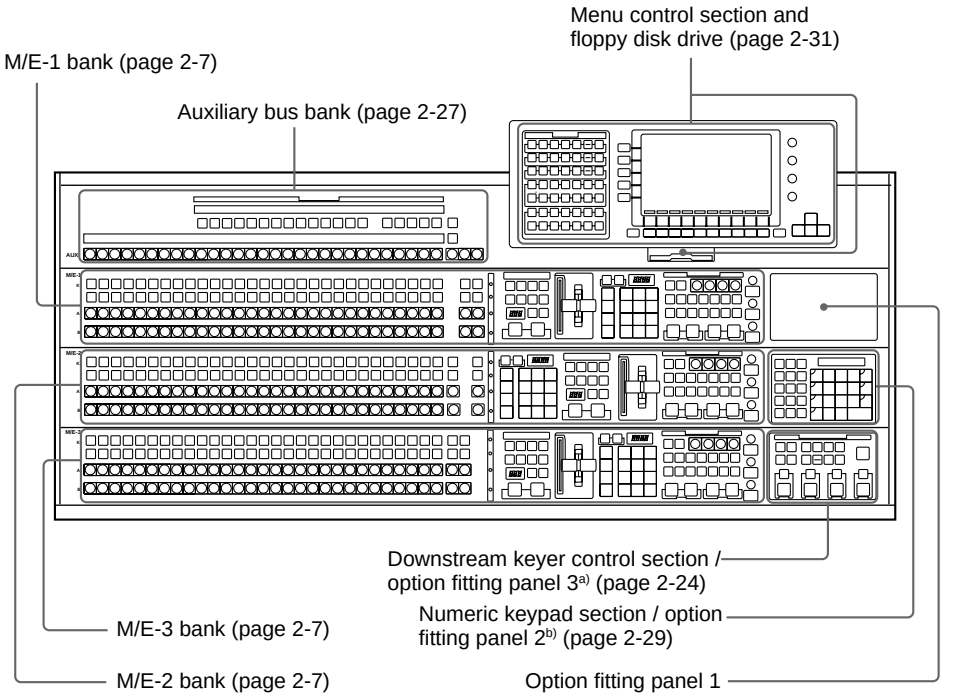
a) It is possible to fit the numeric keypad section in any of the three option fitting panels.

BKDS-7023 Type 4D control panel (3.5-M/E panel)



a) It is possible to fit the optional downstream keyer control section in any of the three option fitting panels.
b) It is possible to fit the numeric keypad section in any of the three option fitting panels.

BKDS-7011 Type 3D control panel (3-M/E panel)



a) It is possible to fit the optional downstream keyer control section in any of the three option fitting panels.
b) It is possible to fit the numeric keypad section in any of the three option fitting panels.

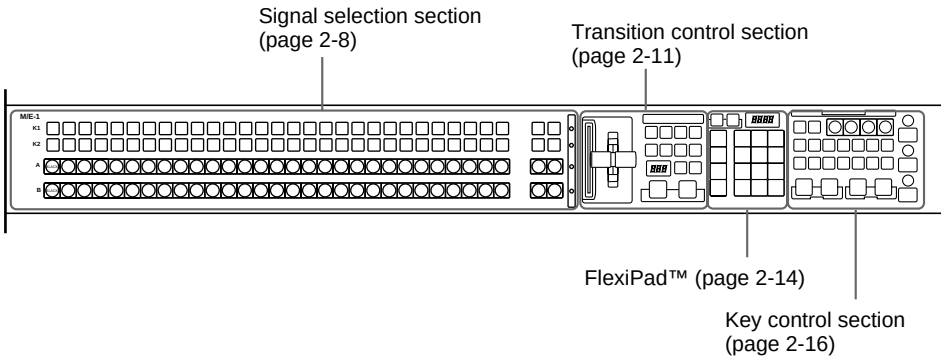
BKDS-7012 Type 3D control panel (3-M/E panel)

Mix/Effects Banks

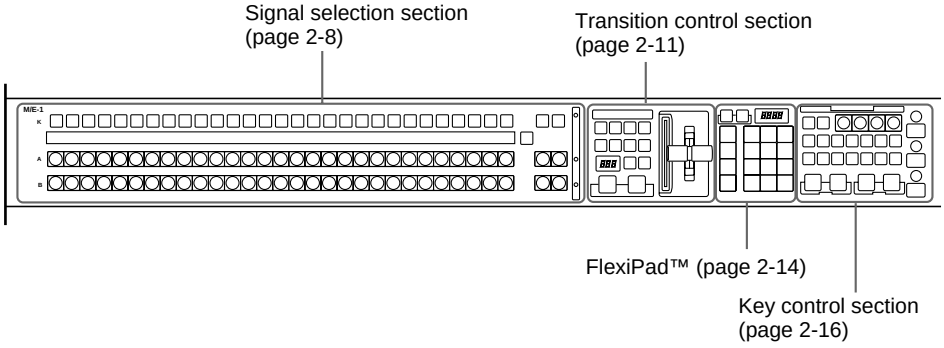
The three mix/effects banks (M/E-1, M/E-2, and M/E-3) provide separate mix/effects functionality.

These three banks are functionally and structurally similar; the following illustration shows the M/E-1 bank by way of example.

BKDS-7012/7021/7022[a)]



BKDS-7011/7023[a)]



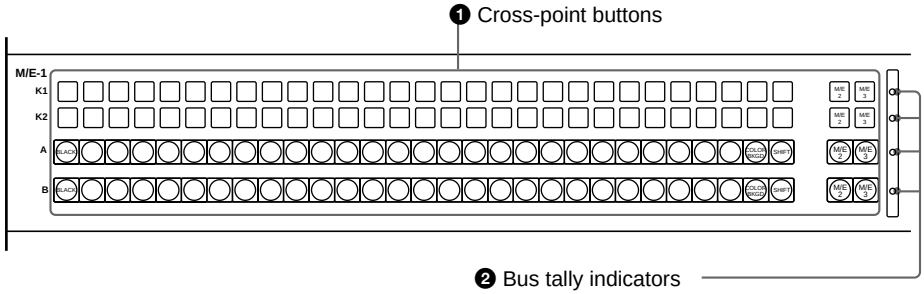
a) Depending on the control panel model and the M/E bank, the positions of the transition control section and the FlexiPad may be reversed.

M/E bank

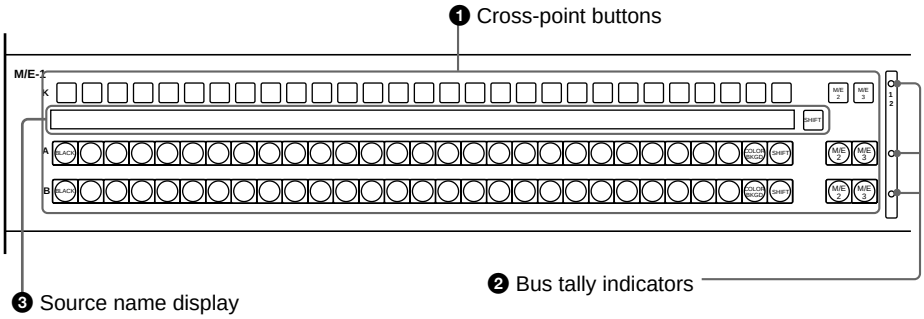
Signal Selection Section

This is used for selecting signals on this M/E bank.

BKDS-7012/7021/7022



BKDS-7011/7023



Signal selection section

❶ Cross-point buttons

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

Using a setup menu, you can assign any signals to the first 29 cross-point buttons in each row. The two buttons at the right of each row are reentry buttons for selecting the output signals from the other mix/effects banks.

The buttons to which you can assign signals are numbered 0 to 28 from left to right. By means of a setup operation, you can assign the rightmost button (number 28) as a shift button. In this case buttons 0 to 27 can be used to select a second set of signals, numbered 30 to 57, in the shifted state. To select these shifted signals, hold down the SHIFT button then press the required cross-point button.

It is also possible, using a setup menu operation, to switch the shift button to be the leftmost button instead of the rightmost. In this case the assignable signals are numbered 1 to 28 and 31 to 58.

The setup menu operation assigns signals to cross-point button columns, so that naturally buttons select the same signals regardless of which bank or row they are in.

K1 (key 1) and K2 (key 2) rows (BKDS-7012/7021/7022), K (key) row (BKDS-7011/7023):

These buttons select the key signals to be inserted into the video on this bank.

- On the BKDS-7012/7021/7022, the K1 row controls the key 1 fill bus, and the K2 row the key 2 fill bus.
- On the BKDS-7011/7023, the K row controls both the key 1 and key 2 fill buses. To delegate these buttons to the key 1 fill bus press the KEY 1 button in the key control section, turning it on, and to delegate these buttons to the key 2 fill bus press the KEY 2 button in the key control section, turning it on.
  When the K row is delegated to the key 1 fill bus, a “1” appears below the key bus tally indicator, and similarly a “2” when it is delegated to the key 2 fill bus.

A row (background bus A): These buttons select the signal for background A. Except while executing a background transition, this bus provides the output of the mix/effects block.

B row (background bus B): This bus provides the second background for a transition, which replaces the background currently on bus A.

Visual indications on cross-point buttons

The currently selected button in a row (i.e. the last button pressed) lights amber or red.

Amber ("low tally"): the signal selected on the bus does not form part of the program output from the switcher.

Red ("high tally"): the signal selected on the bus forms part of the program output from the switcher.

❷ Bus tally indicators

These light when the signal from the corresponding bus (row of cross-point buttons) forms part of the output from this M/E bank.

You can also use these indicators as the indicators for the video process function.

For more details, see "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

❸ Source name display (BKDS-7011/ 7023 only)

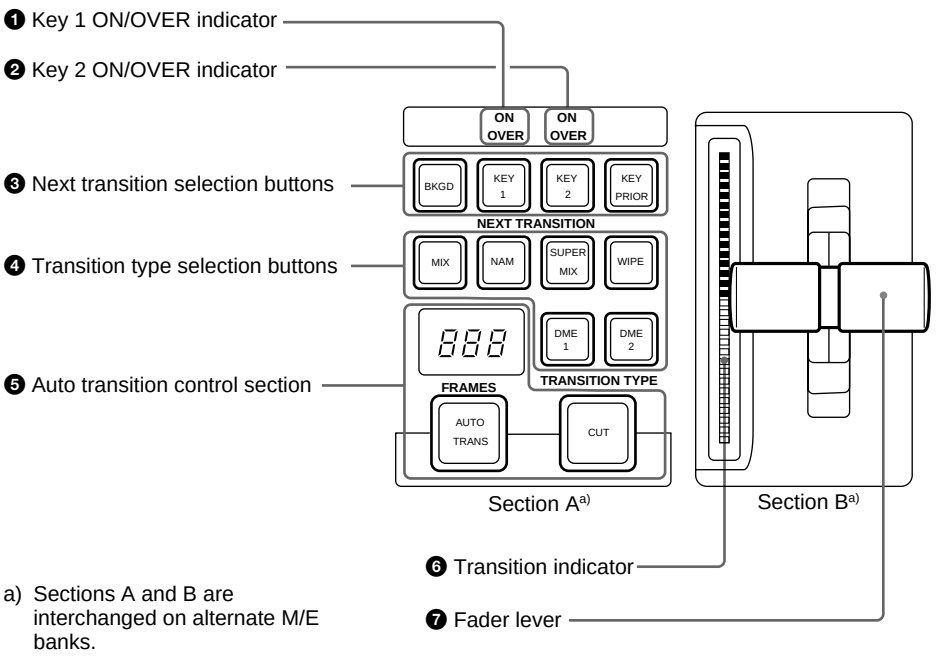
This shows the identifiers of source signals. When there are two signals assigned to a cross-point button column, hold down the SHIFT button at the right end to show the identifiers assigned to the shifted buttons.

Again, if the shift button in the cross-point button row is held down, the second set of signal names is displayed.

If you are using the switcher and a DVS-B series routing switcher connected by a BKDS-7700, the signal names selected on the routing switcher can be displayed.

Transition Control Section

The buttons in this section control transitions on the output from this M/E bank.



Transition control section

❶ Key 1 ON/OVER indicator

ON: Lights when key 1 is inserted in the output from this mix/effects bank.

OVER: Lights when key 1 is over key 2.

❷ Key 2 ON/OVER indicator

ON: Lights when key 2 is inserted in the output from this mix/effects bank.

OVER: Lights when key 2 is over key 1.

❸ Next transition selection buttons

These buttons determine what the next transition will apply to.

BKGD: Next transition is a background transition.

KEY 1: Next transition will insert or remove key 1. If key 1 is currently inserted it will be removed, and vice versa.

KEY 2: Next transition will insert or remove key 2. If key 2 is currently inserted it will be removed, and vice versa.

KEY PRIOR (priority): Next transition will interchange the priority relationship between key 1 and key 2.

More than one of these four buttons can be lit simultaneously.

❹ Transition type selection buttons

Press one of these buttons, turning it on, to determine the type of the next transition.

MIX: In a background transition, the new video (bus B) fades in as the old video (bus A) fades out. The new video level is increased from 0% to 100% as the old video is reduced from 100% to 0%, in such a way that the overall signal level is always 100%.

In a key transition, the key fades in (for insertion) or out (for removal).

NAM (non-additive mix): The old background and new background video signals are compared, and the higher one is used as the output.

The old video is reduced from 100% to 0% over the second half of the transition, and the new video level is increased from 0% to 100% over the first half, all the while combining the two signals by non-additive mixing.

SUPER MIX: The old video is reduced from 100% to 0% over the second half of the transition, and the new video level is increased from 0% to 100% over the first half, all the while combining the two signals by (ordinary) mixing.

It is also possible to set the video levels at the mid-point of the transition to any value between 0 and 100%, by using the BKGD/TRANS menu for the M/E bank.

WIPE: The transition executed will be a wipe, using the settings in the wipe setting menu for the M/E bank.

DME 1: The transition will be a wipe-like effect, using the effects provided by DME channel 1. This requires at least one DME-7000 or other Digital Multi Effects unit to be connected to the switcher system.

To carry out a dual DME wipe using the effects provided by two DME channels, press this button and the DME 2 button simultaneously, turning them on.

You can use a setup operation to make this button select DME 3 or DME 5 instead.

DME 2: The transition will be a wipe-like effect, using the effects provided by DME channel 2. This requires at least two DME-7000 or other DME units to be connected to the switcher system.

To carry out a dual DME wipe using the effects provided by two DME channels, press this button and the DME 1 button simultaneously, turning them on.

You can use a setup operation to make this button select DME 4 or DME 6 instead.

❺ Auto transition control section

Duration display: This shows the number of frames in the transition duration. You can set the duration using the numeric keypad.

AUTO TRANS button: Pressing this button carries out an auto transition of the set duration. The transition starts immediately, and the button lights amber. When the transition completes, the button goes off. While a transition is in progress (i.e. while the button is lit amber), pressing the AUTO TRANS button again pauses the transition, and the AUTO TRANS button then lights green. Pressing the button again in this state resumes the transition, and the AUTO TRANS button reverts to amber.

CUT button: Pressing this button carries out the transition as a cut (i.e. instantaneously).

❻ Transition indicator

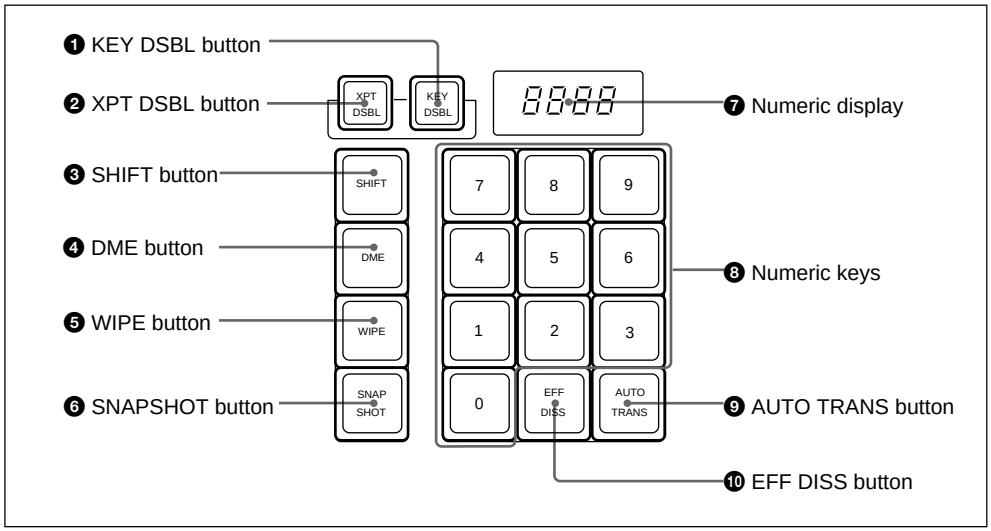
This comprises 30 LEDs which show the current status of the transition.

❼ Fader lever

This is used to carry out a manual transition.

FlexiPad™

The FlexiPad™ is used for saving and recalling snapshots[1] of this M/E bank.



FlexiPad™

❶ KEY DSBL (disable) button

Press this button, turning it on, to apply the "KEY DISABLE" attribute to the M/E snapshot next to be recalled. This means that recalling the snapshot will not change the current key settings on this M/E bank.

❷ XPT DSBL (cross-point disable) button

Press this button, turning it on, to apply the "XPT DISABLE" attribute to the M/E snapshot next to be recalled. This means that recalling the snapshot will not change the current signal selections on background buses A and B on this M/E bank.

1) The snapshot function allows you to save a collection of switcher settings in memory, and recall them as necessary to use the same settings again. The collection of settings saved in memory is itself referred to as a snapshot.
For more details of snapshot operations, see Chapter 7.

❸ SHIFT button
Use this button in combination with the numeric keypad in the FlexiPad when saving and recalling snapshots.

❹ DME button
Use this button when saving or recalling a DME wipe snapshot.

❺ WIPE button
Use this button when saving or recalling a wipe snapshot.

❻ SNAPSHOT button
Use this button when saving or recalling an M/E snapshot, and also in combination with the key snapshot buttons in the key control section when saving or recalling a key snapshot.

❼ Numeric display
- While you are saving or recalling an M/E snapshot, this shows the snapshot register number.
- While you are saving or recalling a wipe or DME wipe snapshot, this shows the pattern number.

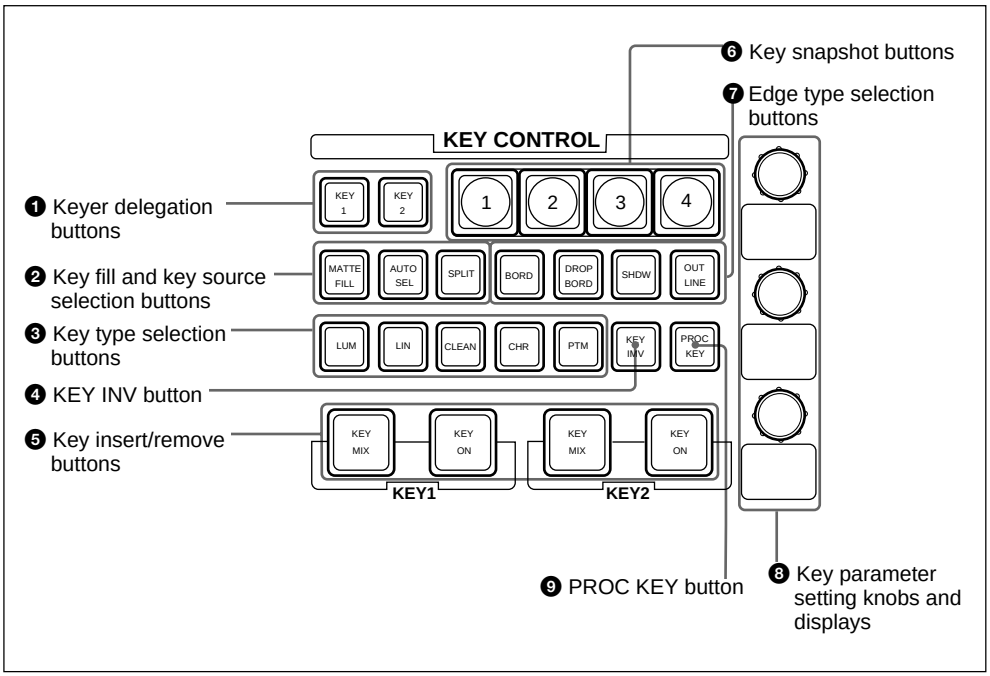
❽ Numeric keys
- When saving or recalling an M/E snapshot, use these keys to specify the snapshot register number.
- Also when saving or recalling a wipe or DME wipe snapshot, use this to specify the register number.
  To return to the state before recalling a wipe or DME wipe snapshot, press the 0 key.

❾ AUTO TRANS (transition) button
Press this button, turning it on, to save an M/E snapshot with the "AUTO TRANSITION" attribute. Recalling a snapshot saved with this attribute will immediately start an auto transition on this M/E bank.

❿ EFF DISS (effect dissolve) button
Press this button, turning it on, to save an M/E snapshot with the "EFFECT DISSOLVE" attribute. Recalling a snapshot saved with this attribute will cause a smooth change from the current M/E bank settings to the settings in the snapshot.

Key Control Section

Each M/E bank has two keyers (1 and 2); the buttons in this section select the keyer[1] and then control the key operations.



Key control section

❶ Keyer delegation buttons
Press the KEY 1 button, turning it on, to delegate the buttons in the key control section to keyer 1, and the KEY 2 button similarly for keyer 2.

On a BKDS-7011/7023, pressing one of the keyer delegation buttons, turning it on, not only delegates the buttons in the key control section, but also delegates the cross-point buttons in the K row to the key 1 bus or key 2 bus as the case may be.

1) In this manual, this is referred to as delegating the buttons in the key control section to keyer 1 or keyer 2.

❷ Key fill and key source selection buttons

MATTE FILL: Pressing this button, turning it on, selects a color matte produced by the switcher as the key fill signal.

When this button is off, the signal selected on the key fill bus is used as the key fill. When all three of this button, the AUTO SEL button and the SPLIT button are off, the signal selected on the key fill bus is also used as the key source (self-keying).

AUTO SEL (auto selection): Press this button, turning it on, to use the signal assigned in a setup menu to the current key fill as the key source.

SPLIT: Press this button, turning it on, to use the signal on the key source bus as the key source. To select the signal on the key source bus, hold down this button, and press a cross-point button in the auxiliary bus bank or in the M/E bank a cross-point button in the K row (BKDS-7011/7023) or K1 or K2 row (BKDS-7012/7021/7022).

To use the signal selected on the key fill bus as the key source, press both the SPLIT button and the AUTO SEL button simultaneously, so that both are off.

❸ Key type selection buttons

LUM (luminance): A hole is cut at a certain level of the Y (luminance) signal of the key source, and the key fill signal inserted.

- In a D2 system, the key source is passed through a filter, and the resulting Y signal is used to determine the key.
- In a D1 system, the key source Y signal is passed through a filter to apply S-curve compensation, and the resulting signal is used to determine the key.

LIN (linear): A hole is cut in the background and the key fill signal inserted. Compared with a luminance key, there is a reduced variability in gain.

- In a D2 system, the key source signal including the chrominance component is used to determine the key.
- In a D1 system, the key source Y signal is used to determine the key.

CLEAN: In a luminance or linear key the key source is used as a mask on both the background (i.e. to cut the hole) and on the key fill (i.e. trimming it to fill the hole). The clean key technique, on the other hand, does not mask the key fill, but simply mixes it with the background from which the hole has been cut. This means that the key fill signal must already be trimmed to fit the hole (i.e. black everywhere else).

CHR (chroma key): A particular hue (usually blue) in the key source signal is used to determine the hole to be cut in the background.
You can use the following signals as chroma key signals (foreground).
- In a D2 system: an analog component signal.
- In a D1 system: an analog component signal, or a primary input.

PTN (pattern): This uses a wipe pattern (generated by the dedicated wipe generators on each M/E bank) to cut the hole in the background and insert the key fill. As for a wipe, you can also apply a variety of modifications depending on the pattern, but the wipe direction and edge modifiers are not available.

❹ KEY INV (invert) button

To invert the sense of the key source signal. Instead of the normal black titling on a white background, you can use this function to provide a key source with white titling on a black background.
You can also use this button as the programmable button by assigning other functions.

For more details, see "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

❺ Key insert/remove buttons

Use these buttons to insert and remove keys 1 and 2.

KEY ON: These buttons (instantaneously) cut the respective keys in, or when the key is already inserted, cut it out.
When the corresponding key is inserted in the output of this M/E bank, these buttons light amber, and when it is present in the final program output from the switcher these buttons light red.

KEY MIX: These buttons fade the respective keys in, or when the key is already inserted, fade it out.
During a fade in or fade out, when key 1 or key 2 is present in the output of this M/E bank, the corresponding KEY ON button lights amber; when the key is present in the final program output from the switcher the button lights red.
The durations for a fade in or fade out can be set independently for key 1 and key 2, to be different from the transition duration of an M/E transition.

❻ Key snapshot buttons

Use these for saving and recalling separate snapshots for the keyers.
For example, to save the key 1 settings, with the KEY 1 button of the keyer delegation buttons lit, hold down the SNAPSHOT button in the FlexiPad and press one of the key snapshot buttons (1 to 4). This saves all the key 1 settings except the key on/off state as a snapshot in the corresponding register. When a chroma key is set, the settings are saved. To recall a saved snapshot, press the corresponding key snapshot button.

❼ Edge type selection buttons

Press one of these buttons, turning it on, to apply a particular modification to the key edge.

BORD (border): Apply a border around the key.

DROP BORD: Apply a border in specified directions (for example below and to the right or below and to the left) around the key.

SHDW (shadow): Add a shadow to the key in specified directions (for example below and to the right or below and to the left).

OUTLINE: Use the key outline function.

- When you apply a border, drop border or shadow, you can select the edge fill signal to be inserted in this area, using either the dedicated color matte generator, or a signal selected on the utility bus.
- When you use the outline function, you can use the signal selected on the key fill bus for the edge fill.

You can also adjust the width, position, softness and density of the edge portion.

❽ Key parameter setting knobs and displays

Turning the knobs allows you to change various key parameters. The display below each knob shows the initial letter of the parameter name and its value (a maximum of three digits including a minus sign).

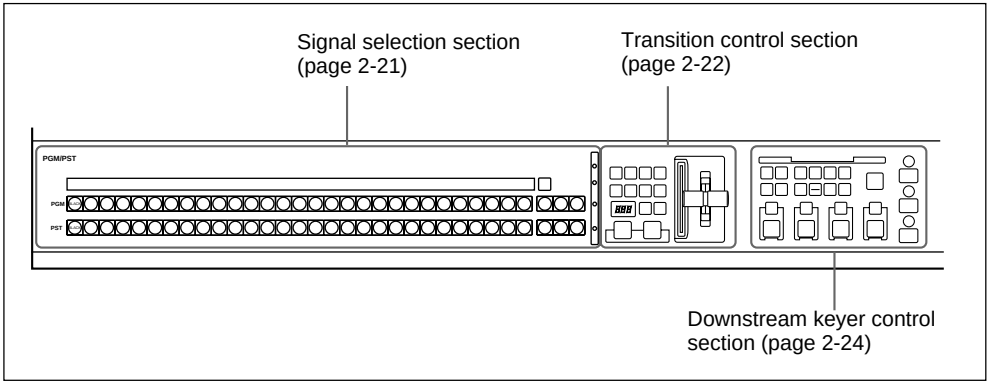
Display	Meaning
C–10	Clip value is –10.
D100	Density value is 100.

❾ PROC (processed) KEY button

When the switcher system has a DME-7000 or other DME unit connected, pressing this button, turning it on, allows you to use the processed key function. When the processed key function is enabled, before combination with the background, the key fill and key source signals produced by the switcher keyer (with borders, shadows and other processing already effected) are output to the DME from the switcher auxiliary buses. These signals are subjected to DME processing to add extra effects, and then returned to the switcher. Finally the signals returned from the DME undergo further processing and are then combined with the background.
Since the same keyer is used both for the initial processing and for the processing of the return signals from the DME, you can use both keyers on an M/E bank simultaneously, for greater efficiency.

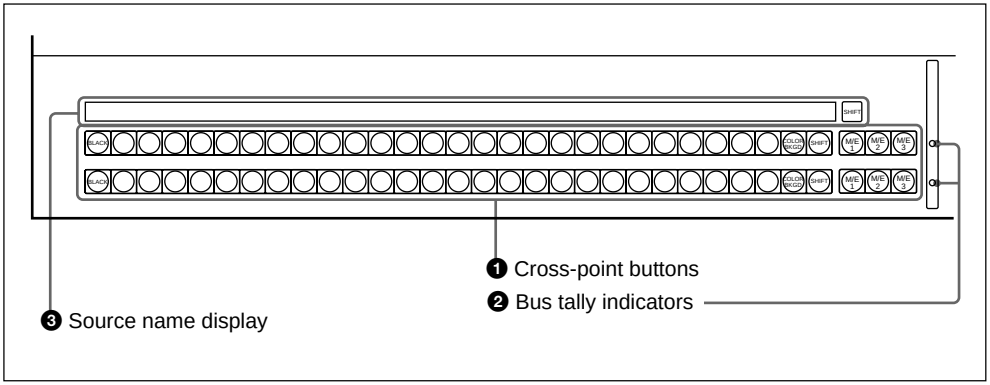
Program/Preset Bank

The program/preset (PGM/PST) bank provides the final program output from the switcher. Only the BKDS-7021, BKDS-7022 and BKDS-7023 models (3.5-M/E panels) are equipped with this bank, and it can only be used when the switcher system has a DMK-7000 Digital Multi Keyer connected.



PGM/PST bank (BKDS-7021/7022/7023)

Signal Selection Section



Signal selection section

❶ Cross-point buttons
These buttons select the signals used for video making on the PGM/PST bank. The PGM (program) and PST (preset) rows of buttons correspond to the A and B buses of the M/E banks. Each row also has three reentry buttons (M/E-1, M/E-2, and M/E-3) to select the output from any of the M/E banks.

PGM row: These buttons correspond to the A row of an M/E bank. Except while executing a background transition, this bus provides the final program output of the switcher.

PST row: These buttons correspond to the B row of an M/E bank. This bus provides the second background for a transition, which replaces the background currently on the program bus.

The identifying numbers of the cross-point buttons, and the visual indications are the same as on the M/E banks.

For details, see pages 2-9 and 2-10.

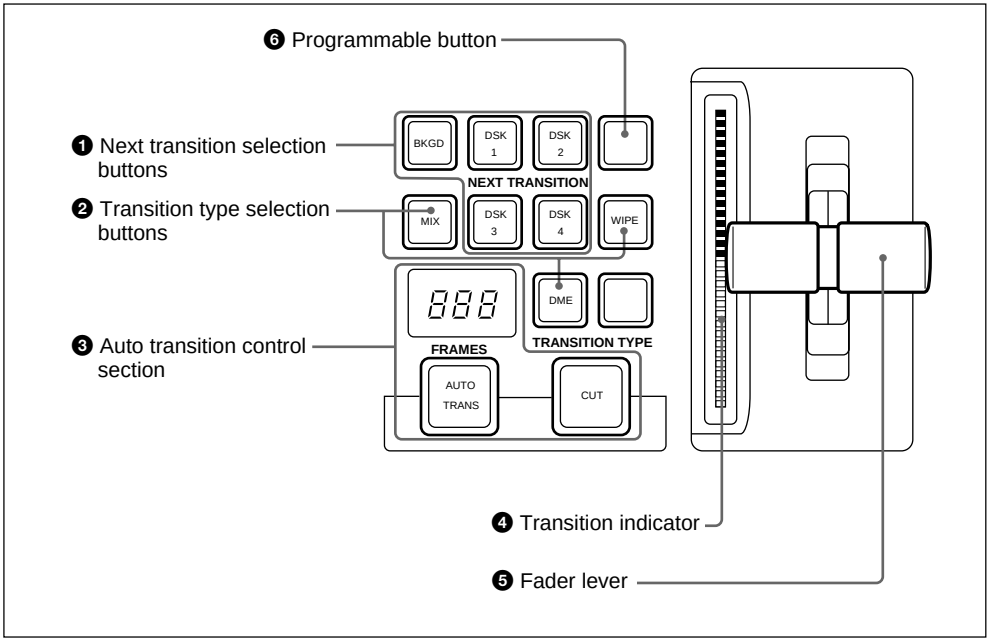
❷ Bus tally indicators
These have the same function as on the M/E banks.

For details, see page 2-10.

❸ Source name display
This has the same function as the source name display on the BKDS-7011/7023.

For details, see page 2-10.

Transition Control Section



Transition control section

❶ Next transition selection buttons
These buttons determine what the next transition will apply to.

DSK (downstream key) 1, DSK 2, DSK 3, DSK 4: Next transition will insert or remove the corresponding downstream key. If the key is currently inserted it will be removed, and vice versa.

BKGD: Next transition is a background transition.

You can press more than one of these buttons simultaneously, and specify different transition types for the different transitions.

❷ Transition type selection buttons
Press one of these buttons, turning it on, to determine the type of the next transition. If you have specified different transition types on this bank, all of these buttons light.

MIX: The same as "MIX" on an M/E bank. *(See page 2-12.)*

WIPE: Carry out a wipe, using the settings in the wipe setting menu for the PGM/PST bank.

DME: Selects a DME wipe (when a DME-7000 or other Digital Multi Effects unit is connected to the DMK-7000).

- In addition to these buttons, to select the DSK transition type, you can also use the transition type selection buttons (MIX, WIPE, DME) in the downstream keyer control section.
- When you have selected a wipe or DME wipe, you can also select the wipe direction, using the wipe direction selection buttons (NORM, NORM/REV, REV) in the downstream keyer control section.

❸ Auto transition control section
This is the same as the auto transition control section on an M/E bank.

❹ Transition indicator
This has the same function as the transition indicator on an M/E bank.

❺ Fader lever
This has the same function as the fader lever on an M/E bank.

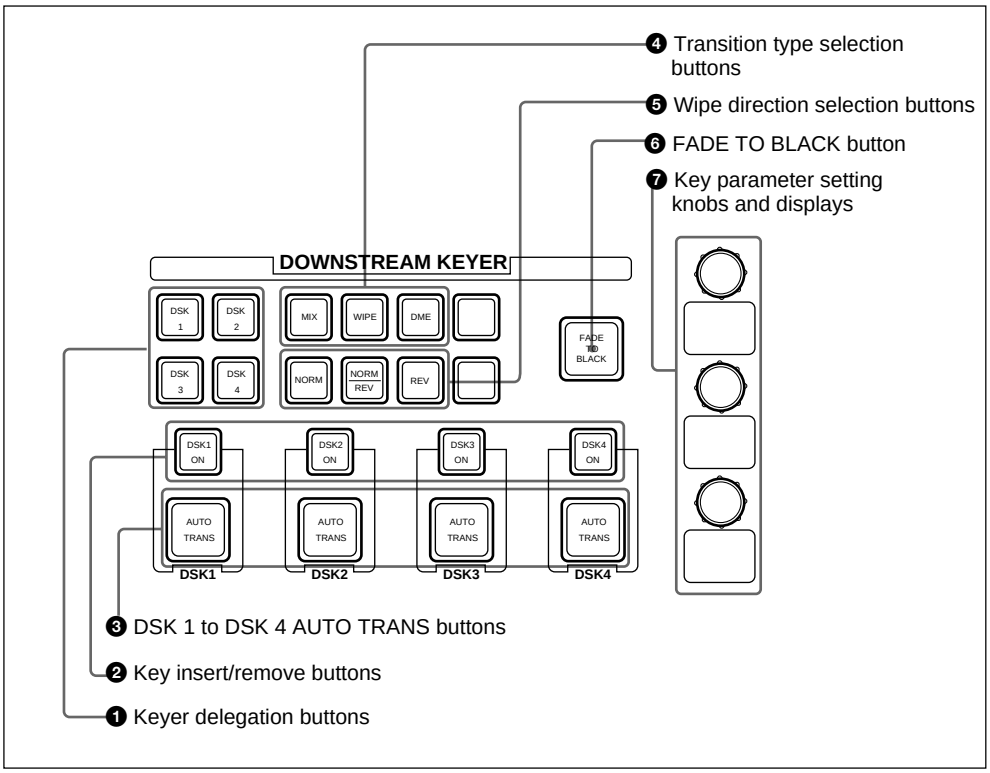
❻ Programmable button
By means of a setup menu, you can use this button to light all of the next transition buttons.

For more details, see "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

Downstream Keyer Control Section

The optional DMK-7000 Digital Multi Keyer can incorporate a maximum of four keyers. The buttons in the downstream keyer control section select the keyer and then control the key operations.

On a BKDS-7011/7012 model with no PGM/PST bank, fitting the optional BKDS-7032 DSK control panel unit provides the same functions as the downstream keyer control section. The BKDS-7032, however, has no key parameter setting knobs and displays ❼.



Downstream keyer control section

❶ Keyer delegation buttons
Press one of these buttons, turning it on, to delegate the buttons in the downstream keyer control section to the corresponding keyer (DSK 1 to DSK 4).

❷ Key insert/remove buttons
These buttons (instantaneously) cut the respective keys in, or when the key is already inserted, cut it out.
When the corresponding downstream key is inserted in the output of the switcher system, these buttons light red; when the FADE TO BLACK button ❻ is lit, they light amber.

❸ DSK 1 to DSK 4 AUTO TRANS buttons
Pressing one of these buttons carries out an auto transition on the respective downstream key. The transition starts immediately, and the button lights amber. When the transition completes, the button goes off.
While a transition is in progress (i.e. while the button is lit amber), pressing the button again pauses the transition, and the button then lights green. Pressing the button again in this state resumes the transition, and the button reverts to amber.
You can set the transition duration using the numeric keypad.

❹ Transition type selection buttons
Press one of these buttons, turning it on, to determine the type of the next transition.
MIX: This is the same function as a mix (i.e. dissolve) on the M/E banks. *(See page 2-12.)*
WIPE: The transition executed will be a wipe, using the pattern selected in the DSK WIPE menu.
DME: Carries out a DME wipe, using the pattern selected in the P/P DME WIPE menu. (when a DME-7000 or other Digital Multi Effects unit is connected to the DMK-7000).

- In addition to these buttons, you can also use the MIX, WIPE and DME buttons in the transition control section. *(See page 2-23.)*
- When you select a wipe or DME wipe, you can also select the wipe direction using the wipe direction selection buttons ❺.

❺ Wipe direction selection buttons

When you have selected a wipe or DME wipe as the transition type, press one of these buttons, turning it on, to select the wipe direction.

NORM (normal) button: The wipe proceeds in the direction from black to white as shown on the wipe pattern in the list of wipe patterns *(page A-2)* and of DME wipe patterns *(page A-4)*, or in the direction of the arrow.

REV (reverse) button: The wipe proceeds in the opposite direction to that when the NORM button is pressed.

NORM/REV (normal/reverse) button: Alternate wipes go in normal and reverse directions.

❻ FADE TO BLACK button

Press this button, turning it on, to fade to black. At the end of the transition, when the video output is completely black, the button lights red.

You can set the transition duration of the fade-to-black, using a menu setting.

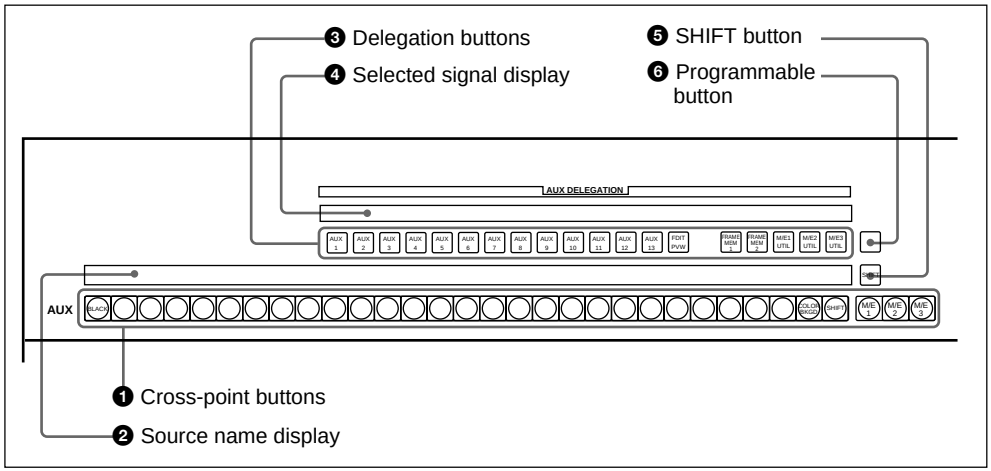
❼ Key parameter setting knobs and displays

These have the same basic function as on the M/E banks *(see page 2-19)*, but the parameters controlled are only clip, gain and density. For other parameters, use the DSK menu.

The optional BKDS-7032 DSK control panel unit which can be fitted to the BKDS-7011/7012 model, however, has no key parameter setting knobs and displays. On this control panel unit, use the DSK menu for all parameter settings.

Auxiliary Bus Bank

The auxiliary bus bank controls the selection of signals output from the unit, and of signals used for video masking.



Auxiliary bus bank

❶ Cross-point buttons

The leftmost 29 cross-point buttons in each row are allocated to the same signals as the cross-point buttons in the M/E banks (and PGM/PST bank on the BKDS-7021/7022/7023). At the right, there are also three reentry buttons (M/E-1, M/E-2, and M/E-3) to select the output from any of the M/E banks.

The 29 buttons from the left act as buttons numbered 0 to 28 when the SHIFT button ❺ is not pressed. When the SHIFT button is held down, these buttons select the signals numbered 30 to 58. If, however, in a setup menu you have allocated the 29th button from the left as a shift button, then the same operation as with the M/E cross-point button is possible.

The cross-point buttons serve a total of 19 buses, including AUX 1 to AUX 13 and the edit preview bus. Before selecting the signal, delegate the cross-point buttons with the appropriate delegation button ❸.

❷ Source name display

This displays the identifiers of the signals which can be selected with the cross-point buttons. When there are two signals allocated to a cross-point button, hold down the SHIFT button ❺ to show the identifiers assigned to the shifted buttons. Holding down the shift button in the cross-point button row also displays the identifiers assigned to the shifted buttons.

If you are using the switcher and a DVS-B series routing switcher connected by a BKDS-7700, the signal names set on the routing switcher can be displayed.

❸ Delegation buttons

Press one of these buttons, turning it on, to delegate the cross-point buttons to the corresponding bus.

AUX 1 to AUX 13 buttons: These correspond to auxiliary buses 1 to 13. The signals on these buses are output from the connectors on the rear panel labeled AUX BUS OUTPUTS 1 to 13.

EDIT PVW (preview) button: This corresponds to the edit preview bus. The signal on this bus is output from the connector on the rear panel labeled EDIT PVW OUTPUT.

FRAME MEM (memory) 1 and 2 buttons: These correspond to frame memory buses 1 and 2. The signals selected on these bases are input to frame memory 1 and 2.

M/E1 to M/E3 UTIL buttons: These correspond to the utility buses on the M/E banks.

❹ Selected signal display

This displays the identifier of the source signal currently selected on each bus.

❺ SHIFT button

Hold down this button and press a cross-point button to select one of the signals numbered 30 to 58. At this time the identifiers assigned to the shifted buttons are displayed.

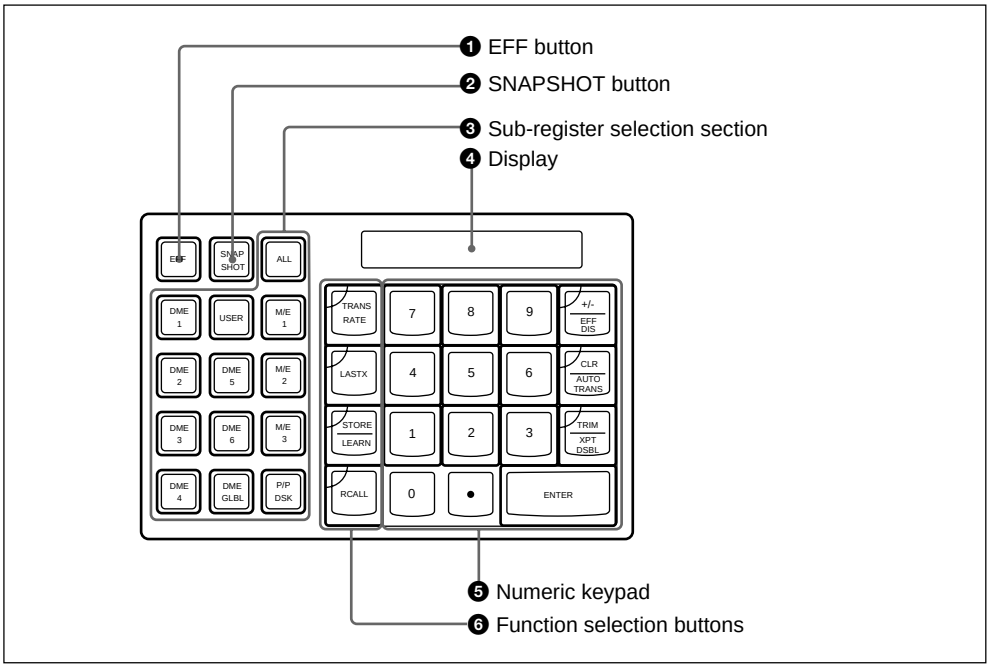
❻ Programmable button

By means of a SETUP menu setting, you can use this button for switching the auxiliary bus bank between controlling the auxiliary buses and controlling a routing switcher.

For details, see the section "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

Numeric Keypad Section

The buttons in this section are used for various numerical settings such as transition durations, and for storing and recalling snapshots and other values.



Numeric keypad section

❶ EFF button
Press this button, turning it on, to save or recall a key frame effect.

❷ SNAPSHOT button
Press this button, turning it on, to save or recall a snapshot.

❸ Sub-register selection section
These buttons select the sub-registers to which data save and recall operations apply.
Sub-registers refer to subdivisions of a register, and more than one can be selected simultaneously.

Of the following buttons, the M/E 1, M/E 2, M/E 3, and P/P DSK buttons are also used for selecting the bank to which a transition rate setting applies.

ALL: Pressing this button selects all of the following buttons.
It is possible to specify the buttons to be selected when this button is pressed.

For more details, see the section "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

M/E 1 to M/E 3 and P/P DSK: These select the sub-registers corresponding to the respective banks.

USER: This button selects the set of sub-registers corresponding to the frame memory, the auxiliary buses, and the video processing function settings. For snapshot registers, however, you can select the USER button to control any subset of these sub-registers, using the REGISTER menu.

DME 1 to DME 6 and DME GLBL (global): These buttons select the DME units connected to the switcher system.

❹ Display

This shows entered numerical values, and also the current function (for example LEARN) or parameter name.

❺ Numeric keypad

As well as numerical buttons, this also includes buttons for applying attributes to snapshots.

0 to 9: Input the corresponding digit.

" . ": Input a decimal point.

+/– /EFF DIS (effect dissolve): This button inverts the sign of the value being entered.
When the SNAPSHOT button ❷ is lit, this button has the effect of adding the "EFFECT DISSOLVE" attribute to the snapshot.

CLR/AUTO TRANS (clear/auto transition): This clears an entered value, and returns to the state before starting input.
When the SNAPSHOT button ❷ is lit, this button has the effect of adding the "AUTO TRANSITION" attribute to the snapshot.

TRIM/XPT DSBL (cross-point disable): Press this button instead of the ENTER button if you wish to trim the current setting, that is add the value entered from the numeric keypad to its current value.
When the SNAPSHOT button ❷ is lit, this button has the effect of adding the "XPT DISABLE" attribute to the snapshot.

ENTER: This confirms the value entered.

❻ Function selection buttons

Use these buttons for setting the transition duration, or for saving or recalling data in registers.

TRANS (transition) RATE: Sets the transition duration, thus determining the rate at which it is carried out.

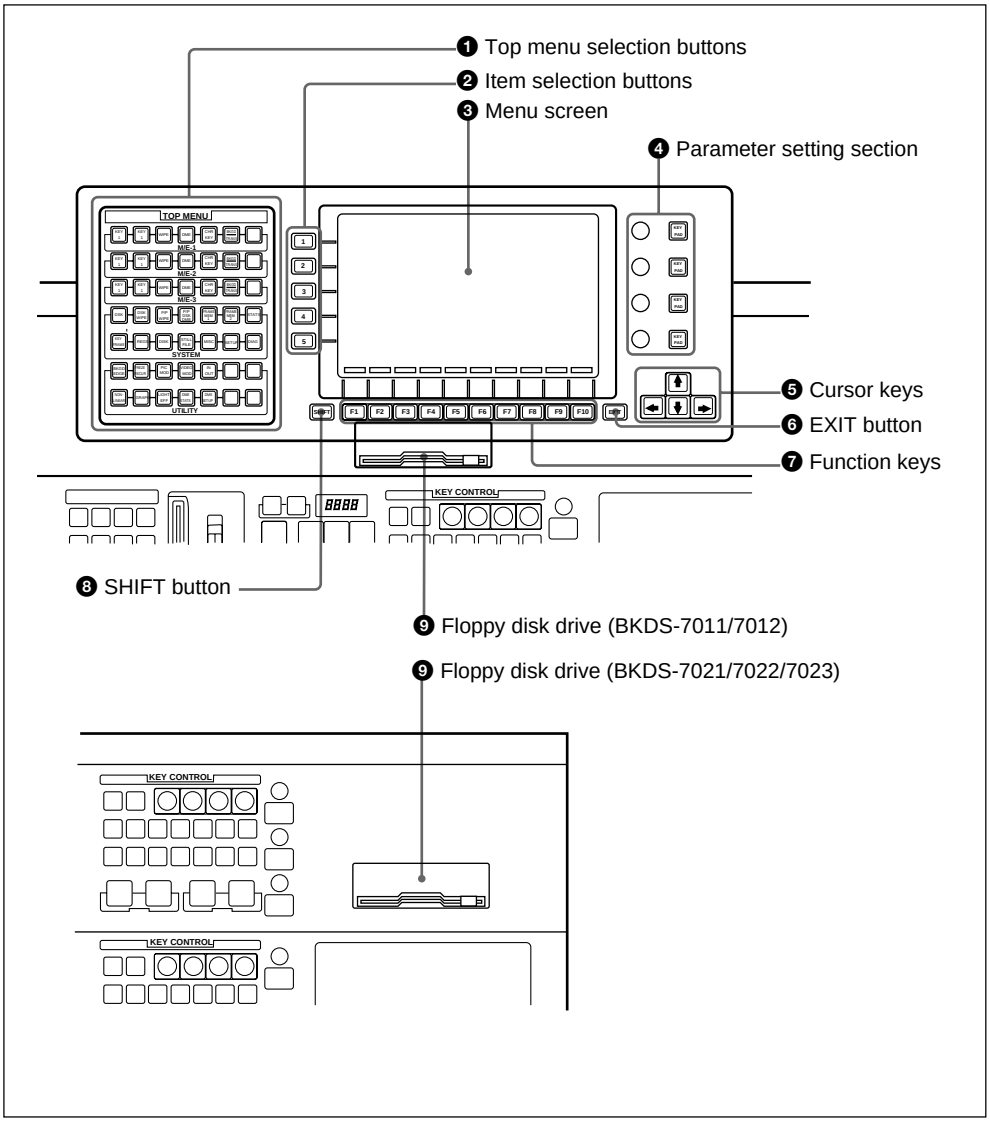
LAST X: Undoes a register recall operation.

STORE/LEARN button: Saves a key frame effect or snapshot in a register.

RCALL (recall) button: Recalls the contents of a register.

Menu Control Section and Floppy Disk Drive

The menu control section provides a variety of functions through the menu screen.



Menu control section and floppy disk drive

❶ Top menu selection buttons
Each of these buttons accesses a top menu.

For details of the menu names and functions associated with these buttons, see page 3-2.

❷ Item selection buttons
These five buttons select the items within a menu. Pressing a button highlights the item display in reverse video, and changes the function key indications accordingly.

❸ Menu screen
This displays the menu currently in use.

For detailed menu operation, see Chapter 3.

❹ Parameter setting section
The controls in this section correspond to the values of parameters represented by bar indications at the right side of the menu screen.

Knobs: Turning a knob adjusts the value directly. In this manual these are referred to as knobs 1 through 4 from the top down.

KEY PAD buttons: Pressing one of these buttons allows you to enter the corresponding parameter value from the numeric keypad.

❺ Cursor keys
Press these to change the group of parameters being adjusted, and also to move the cursor about the menu screen.

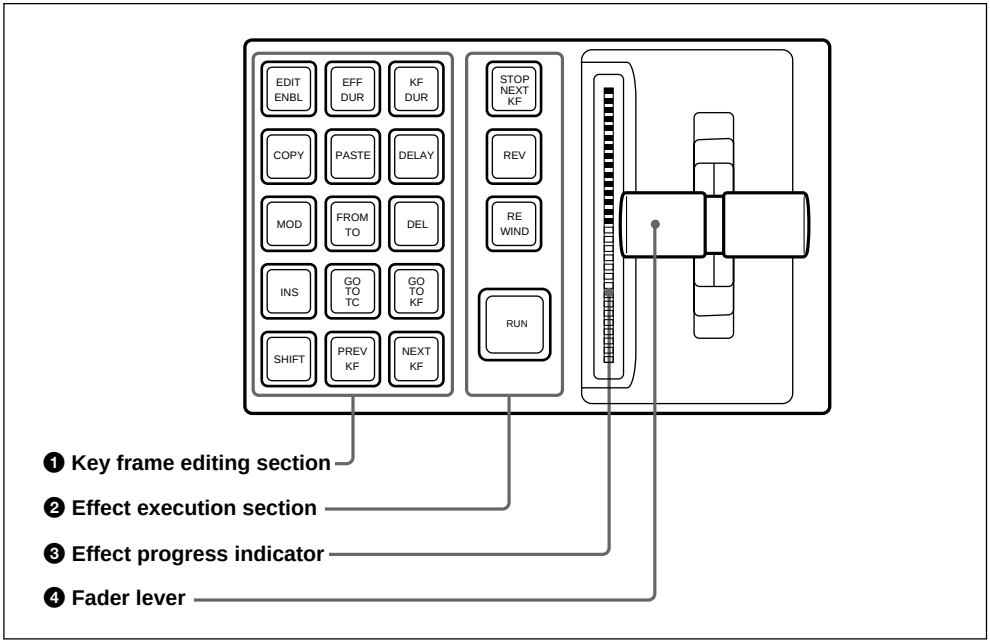
❻ EXIT button
Press this button to exit from the currently displayed menu to its parent menu, or the previously displayed menu. When a pop-up appears in the menu screen, this button also clears the pop-up.

❼ Function keys
Function keys F1 to F10 carry out the on/off or selection operations shown by the function key indications along the lower edge of the menu screen.
If there are two indications for a single function key, hold down the SHIFT button and press the function key to obtain the effect of the upper indication.

❽ SHIFT button
Use this in conjunction with the function keys F1 to F10 ❼ and item selection buttons 1 to 5 ❷.

❾ Floppy disk drive
This takes a 3.5-inch floppy disk. You use it for installing the operation software, and for saving snapshot, key frame, setup and other data on a floppy disk.
The disk drive is controlled by menu operations.

Key Frame Control Section (BKDS-7030 Key Frame Control Panel Unit – Option)



Key frame control section

❶ Key frame editing section

EDIT ENBL (enable) button: Pressing this button, turning it on, enables the creation and editing of key frames (edit mode). Regardless of the setting of this button, however, while an effect is being executed it is not possible to create or edit effects.

EFF DUR (effect duration) button: Press this button to set the effect duration (the overall length of the effect) using the numeric keypad.

KF DUR (key frame duration) button: Press this button to set the key frame duration (the time from the current key frame to the next key frame) using the numeric keypad.

COPY button: This copies the current key frame into the paste buffer. It can then be inserted using the PASTE button.

If a range is specified with the FROM TO button, all key frames in this range are copied together into the paste buffer.

PASTE button: Pressing this button inserts the key frame from the paste buffer into the current position where the effect is stopped.
If the effect is stopped at a key frame, the insertion point is determined as follows.
- When this button only is pressed, the insertion is immediately after the current key frame.
- When this button is pressed with the SHIFT button held down, the insertion is immediately before the current key frame.

DELAY button: Press this button to set the delay from the position of the first key frame to the start of the effect using the numeric keypad.

MOD (modify) button: Writes the current working key frame buffer to the current key frame. When the effect is stopped between frames, the immediately previous key frame is rewritten.
If a range is specified with the FROM TO button, all key frames in this range are rewritten together.

FROM TO button: To copy, delete, or modify a number of key frames together, first press this button, and input the key frame numbers to specify a range.

DEL (delete) button: This deletes the current key frame. When the effect is stopped between frames, the immediately previous key frame is deleted. If a range is specified with the FROM TO button, all key frames in this range are deleted.

INS (insert) button: While the effect is stopped, this inserts a new key frame. If the effect is stopped at a key frame, the insertion point is determined as follows.
- When this button only is pressed, the insertion is immediately after the current key frame.
- When this button is pressed with the SHIFT button held down, the insertion is immediately before the current key frame.

GO TO TC (time code) button: Press this button, then enter a time code value from the numeric keypad, to go to that time code position.

GO TO KF (key frame) button: Press this button, then enter a key frame number from the numeric keypad, to go to that key frame.

SHIFT button: Holding down this button changes the effect of the INS and PASTE buttons.

PREV KF (previous key frame) button: Moves back to the last key frame before the current position.

NEXT KF (key frame) button: Moves forward to the next key frame after the current position.

❷ Effect execution section

STOP NEXT KF (key frame) button: When this button is lit, effect execution continues up to the next key frame.

REV (reverse) button: When this button is lit, effect execution occurs in the reverse direction.

REWIND button: This rewinds to the first key frame of the currently recalled effect. If the REV button is on, however, this moves to the last key frame.

RUN button: Executes the effect from the first key frame to the last key frame. If, however, a pause time point is set at some point during the effect, the execution stops when it reaches this point.

Pressing this button while the effect is being executed stops execution, and pressing it again resumes execution.

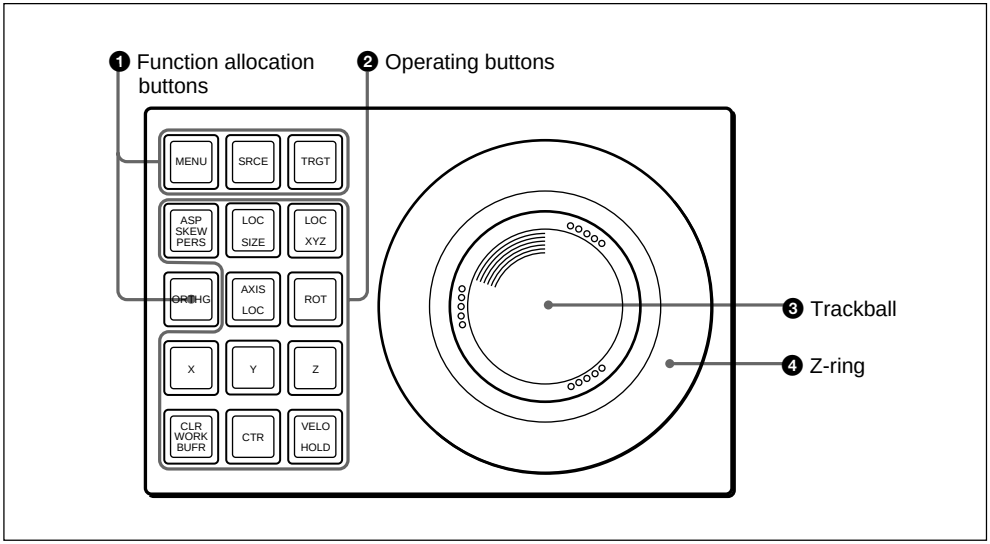
❸ Effect progress indicator

The lit portion of the indicator shows the state of progress of the effect.

❹ Fader lever

Use this for manual execution of an effect.

DME Control Section (BKDS-7031 DME Control Panel Unit – Option)



DME control section

In addition to DME operations, the optional DME control panel unit can be used for wipe pattern positioner operations on the switcher and VTR tape transport control.

❶ Function allocation buttons

Allocate the overall functions of the DME control panel as follows.

SRCE (source): Allocate to operations in the DME source coordinate system.

TRGT (target): Allocate to operations in the DME target coordinate system.

For details of the effect of controls ❷ to ❹ when the SRCE or TRGT button is pressed and lit, refer to the BZDM-7720/3720 User's Guide.

MENU: Allocate to knob operations in the menu control section. This button also lights when allocated to the wipe pattern positioner.

ORTHG (orthogonal or VTR control): Allocate to VTR tape transport control.

To use the ORTHG button for tape transport control, in the setup menus a setting is necessary for using this button as a VTR button. For details, see the section "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

When the setting to use this button as a VTR button is not made, this button functions as one of the operating buttons ❷.

For details of the effect of controls ❷ to ❹ when the MENU or ORTHG button is pressed and lit, see below.

Effect of controls ❷ to ❹ when the MENU button is lit

❷ Operating buttons

ASP SKEW PERS (M/E-1): Functions as the M/E-1 button, allocated to M/E-1 operations on the DME control panel.

LOC SIZE (M/E-2): Functions as the M/E-2 button, allocated to M/E-2 operations on the DME control panel.

LOC XYZ (M/E-3): Functions as the M/E-3 button, allocated to M/E-3 operations on the DME control panel.

AXIS LOC (REV): When the ASP SKEW PERS (M/E-1), LOC SIZE (M/E-2) or LOC XYZ (M/E-3) button is lit, functions as a REV (reverse) button for wipe operations on the corresponding bank. When this is "ON", wipe transitions occur in the reverse direction. When it is "OFF", wipe transitions occur in the forward ("normal") direction.

ROT (POS): When the ASP SKEW PERS (M/E-1), LOC SIZE (M/E-2) or LOC XYZ (M/E-3) button is lit, toggles on or off the main pattern wipe positioner function on the corresponding bank.

X, Y, Z: The X and Y buttons enable movement of the trackball in the x- and y-directions. The Z button enables operation of the Z-ring. If all three buttons are off, the X, Y, and Z directions are all enabled; that is, this is the same as when all three buttons are lit.

CLR WORK BUFR: Not used.

CTR (center): When the ASP SKEW PERS (M/E-1), LOC SIZE (M/E-2) or LOC XYZ (M/E-3) button is lit, returns the wipe pattern to the default position on the corresponding bank.

VELO HOLD (velocity hold): If you hold down this button while manipulating the trackball or Z-ring, then when you release the trackball or Z-ring the function continues at the same velocity as long as the button is held down.

ORTHG (when not used as a function allocation button ❶): When this button is lit, moving the trackball produces an orthogonal effect, moving only in whichever of the x- and y-directions has the larger component.

❸ Trackball

Horizontal movement (X) is allocated to the control of knob 1, and vertical movement (Y) to the control of knob 2. When the ASP SKEW PERS (M/E-1), LOC SIZE (M/E-2) or LOC XYZ (M/E-3) button is lit, functions as the wipe positioner on the corresponding bank.

❹ Z-ring

Allocated to the control of knob 3. When the auto chroma key sample mark adjustment menu is displayed, this is used to adjust the size of the sample mark.

To keep the knob controls allocated to the trackball and Z-ring

With the knob controls allocated to the trackball and Z-ring, press the MENU button twice in rapid succession. The MENU button lights green, and even if you change to another menu, the allocation of the trackball and Z-ring remains unchanged.
To end this allocation, press the SRCE, TRGT, or ORTHG (VTR) button.

Effect of controls ❷ to ❹ when the ORTHG (VTR) button is lit

❷ Operating buttons
ASP SKEW PERS (MARK IN): Saves the current timecode as the start point.
LOC SIZE: Not used.
LOC XYZ (MARK OUT): Saves the current timecode as the stop point.
AXIS LOC: Not used.
ROT: Not used.
X (REW): Rewinds the tape.
Y (PLAY): Plays back the tape.
Z (FF): Fast forwards the tape.
CLR WORK BUFR (STB OFF): Switches to “standby off” mode.
CTR (STOP): Stops the tape.
VELO HOLD (JOG): Moves the tape at a speed dependent on the rate of rotation of the search dial (jog mode).

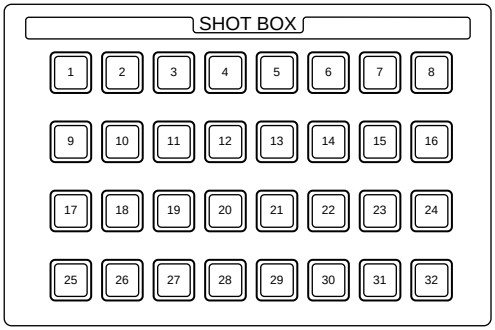
❸ Trackball
Not used.

❹ Z-ring
In jog mode, acts as a search dial.

SHOT BOX Control Section (BKDS-7033 Memory Recall Control Panel Unit – Option)

This section executes the function preassigned using a setup menu. (UTILITY buttons)
You can assign registers storing such data as snapshots and key frame effects to these buttons so that you can recall them by pressing the corresponding buttons. (Shot box function)

For more information, see the section "Assigning functions to the UTILITY buttons (UTILITY menu)" (page 14-92).



SHOT BOX control section

Chapter 3
Basic Menu Operations

Menu Organization

Operations on the DVS-7300/7350 switcher system make frequent use of menu operations. This section describes the menus and their interrelationships.

Overview

All detailed settings for basic operations such as transitions, keys, or wipes, are made in menus. There are also menus for carrying out general system control, managing setting data, and initial setup.

Accessing menus

There are two ways to access a menu, and the initially selected items (1 to 5) depend on the method used.

- Pressing a top menu button in the menu control section.
  This always returns to the selection when you last accessed this particular menu.
  After initially powering on the system, however, item 1 is always selected.
- Pressing a button other than a top menu button twice in rapid succession.
  Depending on the menu, this may select a fixed item or the item selected last time you accessed the menu.

For details of the menu items, see page 3-6.

Menus and their functions

Menus accessed from a top menu button

The menus which can be accessed from a top menu button are listed in the following table, together with their functions.

Menus accessed from a top menu button

Group	Button	Menus	Function	See page
M/E-1, M/E-2, M/E-3	KEY1, KEY2	M/E-1, -2, -3 KEY1 or KEY2	Key 1 and key 2 settings for the M/E bank	4-47
	WIPE	M/E-1, -2, -3 WIPE	Wipe settings for the M/E bank	4-102
	DME	M/E-1, -2, -3 DME WIPE	DME wipe settings for the M/E bank	4-130
	CHR KEY	M/E-1, -2, -3 CHROMA KEY	Chroma key settings for the M/E bank	5-4,5-18
	BKGD/ TRANS	M/E-1, -2, -3 BKGD/TRANS	Color background, transition limit and other settings for the M/E bank	4-140
SYSTEM	DSK	DSK1, 2, 3, 4	Settings for the four downstream keys[a)]	4-72
	DSK WIPE	DSK 1, 2, 3, 4 WIPE	Downstream key wipe settings[a)]	4-116
	P/P WIPE	PGM/PST WIPE	Wipe and color background settings for the PGM/PST bank[b)]	4-115
	P/P DSK DME	P/P DSK DME WIPE	DME wipe settings for PGM/PST background[b)] and downstream key[a)] transitions	4-132
	FRAME MEM 1, 2	FRAME MOMERY 1, 2	Settings for the two frame memories	6-6
	STATS	STATUS	Displaying the status of each bank	4-143
	KEY FRAME	KEY FRAME	Key frame operation and editing	8-32
	REGS	REGISTER	Managing registers holding snapshots and other data	9-6
	DISK	DISK	Floppy disk operations	10-5
	MISC	MISC	Miscellaneous operations including control by external equipment, safe title display, the video process function, and the color correction function	12-2
	SETUP	SETUP	Setup functions	14-3
	DIAG	DIAGNOSIS	Displaying the board configuration and adjusting analog output signals	15-3
UTILITY	The buttons in this group access the menus assigned to them using a setup menu.			14-92

a) This function is only available in a 3.5-M/E system or a 3-M/E system equipped with a downstream keyer.

b) This function is only available in a 3.5-M/E system.

Menus accessed by pressing a button twice

For certain buttons other than the top menu buttons, pressing twice in rapid succession directly recalls a related menu. The following table lists these buttons, together with the menus they recall.

Items listed in parenthesis after the menu names are automatically selected when the menu is recalled. If no item is shown, the item you last selected in this menu is automatically selected.

Menus accessed by pressing a button twice

Button location	Buttons	Menus	See page
Transition control section of M/E-1, M/E-2, or M/E-3 bank	KEY1, KEY2	M/E-1, -2, -3 KEY1 or KEY2	4-47
	WIPE	M/E-1, -2, -3 WIPE	4-101
	DME	M/E-1, -2, -3 DME WIPE	4-130
	SUPER MIX	M/E-1, -2, -3 BKGD/TRANS (item 2: LIMIT/S-MIX)	4-20
Key control section of M/E-1, M/E-2, or M/E-3 bank	KEY1, KEY2	M/E-1, -2, -3 KEY1 or KEY2	4-47
	CHR	M/E-1, -2, -3 CHROMA KEY	5-4,5-18
	PTN	M/E-1, -2, -3 WIPE	4-101
	LUM, LIN, CLEAN	M/E-1, M/E-2, M/E-3 KEY 1 or KEY 2[a)] (item 1: TYPE)	4-47
	AUTO SEL, SPLIT	M/E-1, M/E-2, M/E-3 KEY 1 or KEY 2[a)] (item 2: FILL/SOURCE)	4-51
Transition control section of PGM/ PST bank (3.5-M/E panels)	DSK1, DSK2, DSK3, DSK4	DSK1, DSK2, DSK3, DSK4	4-72
	WIPE	PGM/PST WIPE	4-115
	DME	P/P DSK DME WIPE	4-133
Downstream keyer control section (3.5-M/E panels, and 3-M/E panels with a BKDS-7032 fitted)	DSK1, DSK2, DSK3, DSK4	DSK1, DSK2, DSK3, DSK4	4-72
	WIPE	DSK1, DSK2, DSK3 or DSK4 WIPE[b)]	4-115
	DME	P/P DSK DME WIPE	4-132

a) The menu recalled depends on which of keyers 1 and 2 the key control section is delegated to.
b) The menu recalled depends on which of the downstream keys (DSK1 to DSK4) the downstream keyer control section is delegated to.

(Continued)

Menus accessed by pressing a button twice (Continued)

Button location	Buttons	Menus	See page
Cross-point button in M/E-1, M/E-2, M/E-3 or PGM/PST bank (3.5-M/E panels) to which the signal indicated in “Buttons” column is assigned	Color background signal (M/E banks)	M/E-1, M/E-2, M/E-3 BKGD/TRANS (item 1: COLOR BKGD)	4-141
	Color background signal (PGM/PST bank)	PGM/PST WIPE (item 5: COLOR BKGD)	4-142
	Frame momory 1 or 2 signal	FRAME MEMORY 1 or 2	6-6
	Chroma key fill 1, 2, or 3 signal	M/E-1, -2, -3 CHROMA KEY	5-4,5-18
Numeric keypad section	EFF	REGISTER (item 1: EFFECT)	9-6
	SNAPSHOT	REGISTER (item 2: SNAPSHOT)	9-6
	TRANS RATE	STATUS (item 5: ALL)	4-144
Auxiliary bus bank	AUX1 to AUX13 EDIT PVW	STATUS (item 5: ALL)	4-143
FlexiPad in M/E-1, M/E-2 or M/E- 3	DME, WIPE, SNAPSHOT	STATUS (item 1: M/E-1), (item 2: M/E-2), (item 3: M/E-3)	4-146 to 4-148

Basic Menu Operations

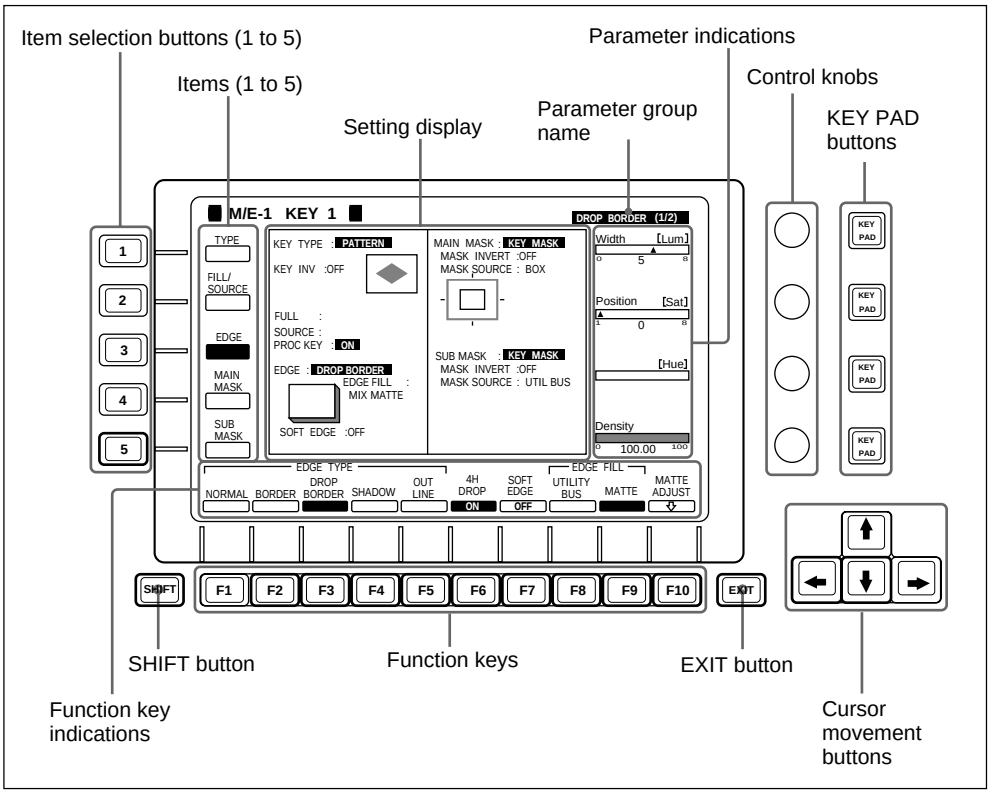
This section describes the basic menu operations, taking the M/E-1 KEY 1 menu as an example.

Accessing the menu

To access the M/E-1 KEY 1 menu, use either of the following operations.

- In the M/E-1 group of the top menu buttons, press the KEY 1 button.
- In the transition control section of the M/E-1 bank, press the next transition selection button KEY 1 twice in rapid succession.
- In the key control section of the M/E-1 bank, press the keyer delegation button KEY 1 twice in rapid succession.

The M/E-1 KEY 1 menu appears as shown in the following figure.



Menu display and menu control section

Understanding the menu display

The following are the principal components of the menu display.
In the menu display, reverse video indicates that an item or function is currently selected (or set to “on”).

Items: These are the items to which the menu settings apply. Depending on the item selected, the menu display and function key indications change. In the example shown, item 3 “EDGE” is selected, and settings and function key indications relating to edge settings appear. In this manual, the menu display when a particular item is selected is sometimes referred by the name of the item: for example, the EDGE menu.

Setting display: This shows current settings. In the example shown, “DROP BORDER” is selected as the edge type.

Parameter group name: The set of parameters associated with the function for a particular function key is termed a “parameter group”.
In the example shown, the “DROP BORDER” parameter group is selected. Note that where there are five or more parameters in the same group, either “(1/2)” or “(2/2)” is appended to the group name.

Parameter indications: These show the current values of the parameters adjusted with the four control knobs.
In the example shown, the values for three of the “DROP BORDER” parameters appear. In total the “DROP BORDER” group has seven parameters, and the names of those not currently displayed appear in brackets (e.g. “[Lum]”, for luminance).

Function key indications: These indicate the operations carried out by the respected function keys.

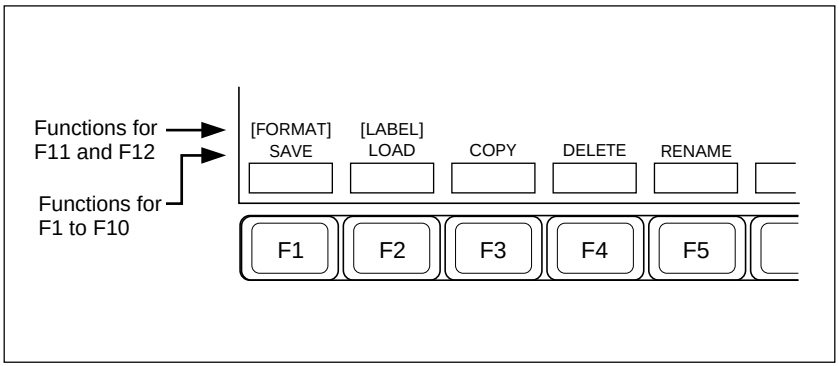
To select an item

Press the corresponding one of the item selection buttons (numbered 1 to 5). The function key indications change, and you can now make the relevant settings.

To select a function

Press the corresponding function key.
In this manual, for example in the M/E-1 KEY 1 menu shown on page 3-6 pressing F3 to select the “DROP BORDER” function is indicated simply by “Press F3 (DROP BORDER)”.

In the figure on page 3-6 there is a single row of function key indications, but in some menus two rows appear.



To select the upper row of functions (indicated as F11 to F20), hold down the SHIFT button to interchange the two rows of indications, then press the corresponding function key F1 to F10.

To return to the previous menu

To return to the menu displayed before the current menu, press the EXIT button.

Moving the cursor

In wipe pattern selection and SETUP menu screens, a cursor appears. To move the cursor press one of the cursor movement buttons (↑ ↓ ← →).

Setting parameter values

You can change a currently displayed parameter in either of the following ways.

- Turn the one of the four control knobs corresponding to the parameter.
- Press the KEY PAD (1 to 4) button corresponding to the parameter, then enter the new value using the numeric keypad section.

The following is a concrete example showing adjustment using the control knobs, as a typical case.

4 Adjust the parameters.

When you have selected a box:

Knob	Parameter	Setting
1	Top	Top edge position (0.00 to 100.00)
2	Left	Left edge position (0.00 to 100.00)
3	Right	Right edge position (0.00 to 100.00)
4	Bottom	Bottom edge position (0.00 to 100.00)
1	Softness	Set the degree of edge softness (0.00 to 100.00)

Example of parameter settings

Changing the parameter group

When more than one parameter group is shown, to display the parameters in a different group, press the corresponding function key or the cursor ← or → button. Again, when there are five or more parameters in the same group, as shown in the example above, to display different parameters, press the cursor ↑ or ↓ button.

In the example, when the parameters “Top”, “Left”, “Right”, and “Bottom” are displayed, press the ↑ or ↓ button to change to the “Softness” parameter. You can then adjust the edge softness with control knob 1.

The arrows in icons appearing on the menu screen, as shown below, indicate which cursor buttons can be used.

In the example below, the vertical arrows indicate that the cursor ↑ and ↓ buttons toggle between the 1/2 and 2/2 selections. The horizontal arrows indicate that the cursor ← and → buttons switch to other parameter groups.

Returning a parameter value entered with the numeric keypad to its previous value

After setting a parameter by entering a numeric value, you can undo this setting, using what is known as the “LAST X” function. To do this, press the LAST X button in the numeric keypad section. This function only operates, however, if there has been no intervening operation.

Copying parameter values

You can copy the value of a currently displayed parameter into the display in the numeric keypad section, and thence to another parameter.

1 Press the KEY PAD button corresponding to the value you wish to copy.

2 Press the STORE/LEARN button in the numeric keypad section.

This copies the parameter value to the display in the numeric keypad section.

3 Change the menu display to the destination parameter, and press the KEY PAD button corresponding to this parameter.

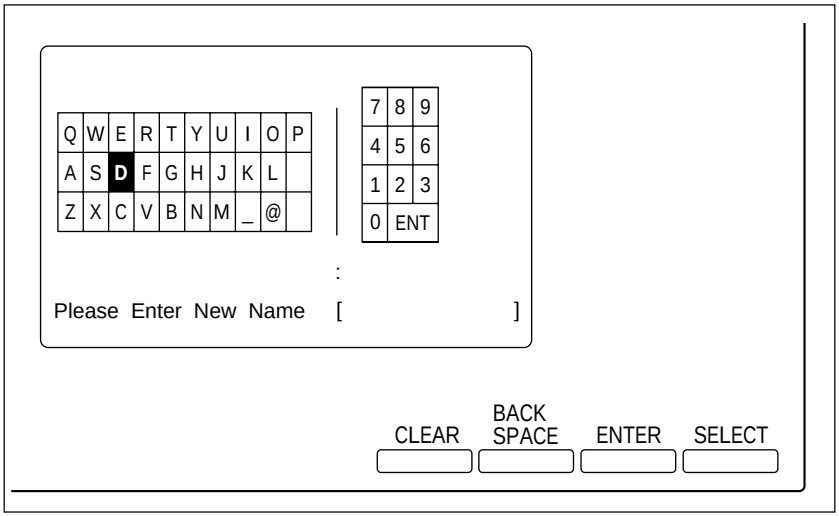
The displayed value does not change.

4 Press the ENTER button.

This sets the parameter you selected in step **3** to the copied value.

Text input

In the procedure for assigning a name to a register *(page 9-11)*, assigning a name to a file *(page 10-7)*, assigning a label to a floppy disk *(page 10-10)*, or assigning a source name to an input signal *(page 14-70)*, the character input screen shown below appears.



Character input screen

Use the following procedure to input a name. The procedure before and after this step is described in the relevant section.

1 Use the cursor movement buttons(↓ ↑ ← →) to align the cursor with the desired character.

2 Press F10 (SELECT).

This enters the character you selected.

3 Repeat steps **1** and **2** up to a maximum of eight characters.

- To delete the last character entered, press F8 (BACKSPACE).
- To delete all the characters so far entered, press F7 (CLEAR).

You can also enter numeric characters directly, using the numeric keypad section.

(Continued)

4 Press F9 (ENTER) or press the ENTER button in the numeric keypad section.

This confirms the sequence of characters entered.

Chapter 4
Basic Operations for Image Creation

(Continued)

Chapter 4
Basic Operations for Image Creation (Continued)

Before Beginning Image Creation

Before considering the operations of image creation proper, this section describes how the various video sources are combined to produce the final program output.

For an explanation of the terms "3.5-M/E" and "3-M/E", see page 1-2.

Video Signal Flow

The DVS-7300/7350 system has three mix/effects banks and, depending on the system, a program/preset bank and downstream keyer.

Final program output

Strictly speaking, it is possible to distinguish the "switcher program output" from the "system program output", as follows.

Switcher program output

This refers to the signal output from the PGM OUTPUTS connectors on the switcher unit. Which signal is output depends on the system as follows:

3.5-M/E systems: the program output signal (PGM) on the PGM/PST bank.

3-M/E systems: the output signal from the final M/E bank. Use a setup menu operation to select which M/E bank this is *(see page 14-10)*.

System program output

This again depends on the system. Unless otherwise noted, in this manual, "program output" normally refers to the system program output.

3.5-M/E systems: the program output signal from the PGM OUTPUTS connectors on the downstream keyer (DMK-7000 Digital Multi Keyer). Use the downstream keyer control section (included in the PGM/PST bank) to control this signal.

3-M/E systems:

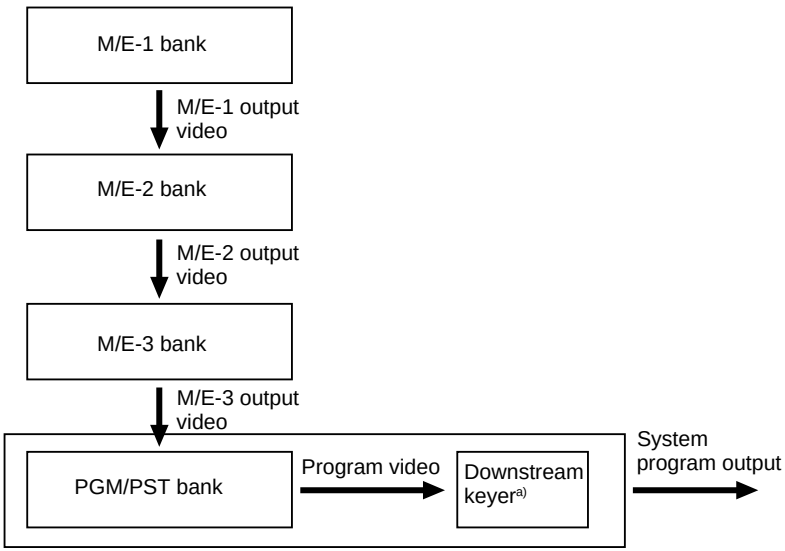
- In a 3-M/E system equipped with a downstream keyer, the program output signal from the PGM OUTPUTS connectors on the downstream keyer. Use the downstream keyer control unit installed in the control panel (the optional BKDS-7032 DSK Control Panel Unit) to control this signal.
- In a 3-M/E system not equipped with a downstream keyer, the program output signal from the PGM OUTPUTS connectors on the switcher unit. In such a system, therefore, the switcher program output and system program output signals are the same.

Examples of signal flow

The following examples show how the outputs of the M/E banks can be fed to each other, in the two principal system types.
For convenience it is assumed here that the signals are fed in the fixed order from M/E-1 to M/E-2 to M/E-3, but in fact any of these banks can feed any of the others. In a 3.5-M/E system, however, it is not possible to feed the output of the PGM/PST bank to one of the M/E banks.

Example signal flow in a 3.5-M/E system

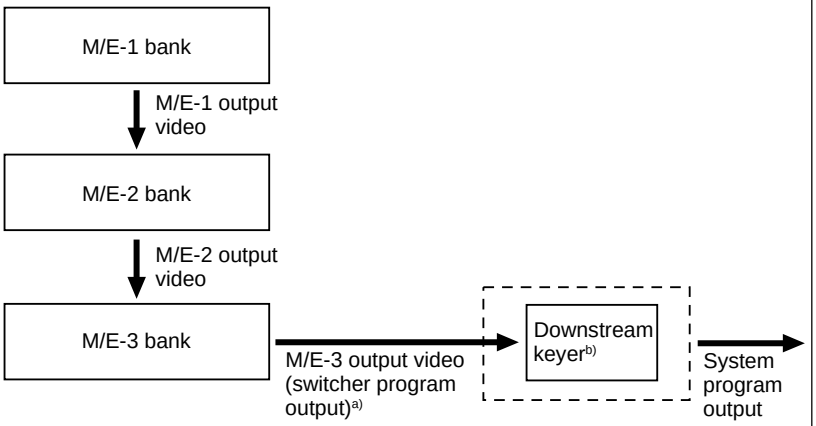
The following diagram shows an example of the signal flow in a 3.5-M/E system.



a) The downstream keyer is also controlled from the PGM/PST section of the control panel.

Example signal flow in a 3-M/E system

The following diagram shows an example of the signal flow in a 3-M/E system, with the output from the M/E-3 bank set up to be the switcher program output.



a) When no downstream keyer is installed, the M/E-3 output becomes the system program output.
b) The downstream keyer is controlled from the downstream keyer control unit installed in the control panel (the BKDS-7032 option).

Signal Selection

Pressing a cross-point button selects a signal on the corresponding bus, but in some cases a single row of cross-point buttons is used for more than one bus. In this case it is first necessary to delegate the row of cross-point buttons to the required bus. The next section describes which rows of cross-point buttons belong to which buses.

For details of the assignment of signals to cross-point button columns, see the next page.

Cross-point buttons and buses

The relation between cross-point buttons and buses depends on the model of control panel, as shown in the following tables.

Cross-point buttons and buses for the BKDS-7012/7021/7022

Bus	Button row	Banks	Delegation operation
Background A	A	M/E-1, M/E-2, M/E-3	None required.
Background B	B		
Key 1 fill	K1		
Key 2 fill	K2		
Key 1 source	K1	M/E-1, M/E-2, M/E-3	Press the KEY 1 or KEY 2 button in the key control section of the relevant M/E bank to delegate the corresponding keyer, then hold down the SPLIT button.
	Auxiliary bus cross-point buttons		
Key 2 source	K2	M/E-1, M/E-2, M/E-3	
	Auxiliary bus cross-point buttons		
Program (BKDS-7021/7022)	PGM	PGM/PST	None required.
Preset (BKDS-7021/7022)	PST		
AUX 1 to AUX 13	Auxiliary bus cross-point buttons		Press the required auxiliary delegation button, turning it on.
Edit preview			
Frame memories 1 and 2			
M/E-1, M/E-2, and M/E-3 utility buses			

Cross-point buttons and buses for the BKDS-7011/7023

Bus	Button row	Banks	Delegation operation
Background A	A	M/E-1, M/E-2, M/E-3	None required.
Background B	B		
Key 1 and key 2 fill	K	M/E-1, M/E-2, M/E-3	Press the KEY 1 or KEY 2 button in the corresponding key control section, turning it on.
Key 1 and key 2 source	K	M/E-1, M/E-2, M/E-3	Press the KEY 1 or KEY 2 button in the key control section of the relevant M/E bank to delegate the corresponding keyer, then hold down the SPLIT button.
	Auxiliary bus cross-point buttons		
Program (BKDS-7023)	PGM	PGM/PST	None required.
Preset (BKDS-7023)	PST		
AUX 1 to AUX 13	Auxiliary bus cross-point buttons		Press the required auxiliary delegation button, turning it on.
Edit preview			
Frame memories 1 and 2			
M/E-1, M/E-2, and M/E-3 utility buses			

Assigning signals to cross-point button columns

Each row of cross-point buttons in the M/E banks, PGM/PST bank (3.5-M/E systems only), and auxiliary bus bank includes 29 basic buttons for signal assignment. It is also possible to assign a shift function to one button, allowing a maximum total of 56 assignable signals. Using a setup menu operation, you can assign any of the columns in either the unshifted or shifted state to any of the signals from the PRIMARY INPUTS 1 to 36 connectors on the switcher unit, or to various signals generated internally by the switcher.

For the procedure for assignment, see page 14-68.

Although in principle the signal assignment is to a column of buttons, there are cases in which a particular signal cannot be selected on a particular bus.

For details of the restrictions on selecting certain signals, see page 14-68.

Using the shift function

The 29 cross-point buttons in each row are numbered 0 to 28. Normally the rightmost button is the shift button; the buttons to which signals are assigned are then numbered 0 to 27 in the unshifted state, and 30 to 57 in the shifted state.

To select the signal corresponding to the unshifted state, press the required button alone; to select the signal corresponding to the shifted state, hold down the shift button, then press the required button. Note that for the auxiliary bus bank there is the dedicated SHIFT button, and even when not using the 29th button as a shift button, holding down the SHIFT button and pressing a cross-point button selects one of the second set of signals.

It is also possible, using a setup menu operation, to switch the shift button to be the leftmost button instead of the rightmost. In this case the assignable signals are numbered 1 to 28 and 31 to 58. You can also use a setup menu operation so that the shift button acts as a "shift lock" button.
All shift function settings are carried out in a setup menu *(see page 14-73).*

Source name indications

Using a setup menu operation, you can assign an identifier of up to eight characters to each signal, for display on the control panel.

For details of the procedure for assigning signal names, see page 14-70.

The source name display on the control panel shows the first two and the last two characters of the specified identifier.
When using the shift function, hold down the SHIFT button beside the source name displays to show the identifiers assigned to the shifted buttons.
While you hold down the shift button for the cross-point button row, the second set of names appears here.
If you are using the switcher and a DVS-B series routing switcher connected by a BKDS-7700, the signal names selected on the routing switcher can be displayed.

Reentry buttons

To use the output of one M/E bank as a background input to another M/E bank, press the corresponding button (M/E-1, M/E-2, or M/E-3) at the right of the bank.

For example, to use the output of the M/E-1 bank as background B on the M/E-2 bank, press the M/E-1 button in the B row of cross-point buttons in the M/E-2 bank.

Cross-point button indications

In any row of cross-point buttons, the last button pressed is selected, and lights. A button which lights red indicates that the signal is being fed to the corresponding bus, and is forming part of the program output. A button which lights amber is selected, but the signal is not currently reaching the program output.

Note

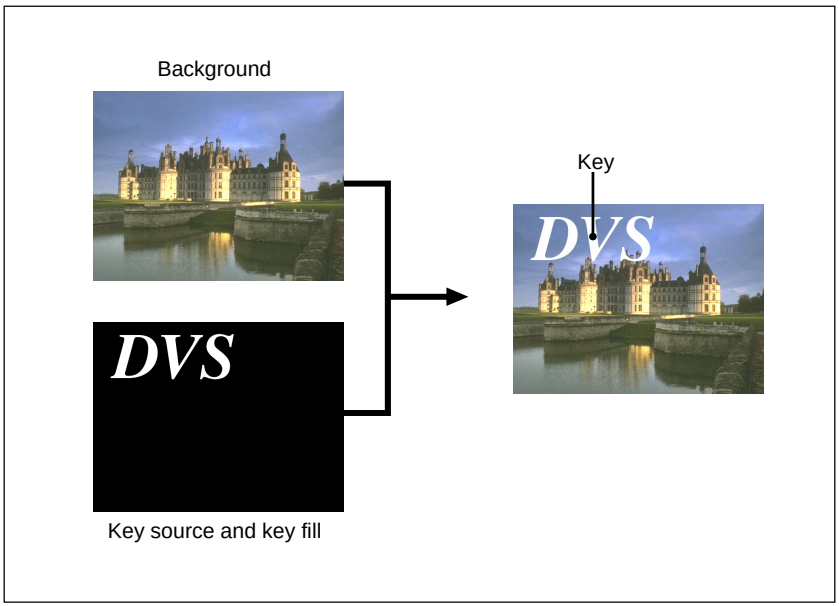
The red and amber color coding thus corresponds to buttons lighting in high and low tally respectively on some switchers.

Using the Mix/Effects Banks

This section describes some of the effects which you can create using mix/effects banks.

Backgrounds and Keys

You can use each of the mix/effects banks to insert one or two keys into a background video image.
To define a key requires two video signals, the key source, which specifies which part of the background is cut out, and the key fill, which supplies the different video to insert in the cutout.
The following illustration shows an example in which the key source and key fill signals are actually the same (“self-keying”), and which superimposes some lettering on the background.



Background and key

Key types

For each of the M/E banks, you can use the following key types. See the page numbers indicated in parenthesis for more details.
- Luminance key *(page 4-39)*
- Linear key *(page 4-40)*
- Clean key *(page 4-40)*
- Chroma key *(page 4-40)*
- Pattern key *(page 4-40)*

Basic Operating Procedure

On any of the M/E banks, the change from the existing (or "old") video to new video is termed a transition.
The following is the basic procedure for carrying out a transition on any of the M/E banks.

1 Select the background video on the background A bus, using the cross-point buttons.

2 Select whether the transition is a background or key transition with the next transition selection buttons in the transition control section.
- For a background transition: press the BKGD button, turning it on.
- To insert or remove key 1: press the KEY 1 button, turning it on.
- To insert or remove key 2: press the KEY 2 button, turning it on.
- To invert the priority of the two keys: press the PRIOR button, turning it on.

You can press two or more buttons simultaneously, turning them on.

For more details, see the section "Selecting the Next Transition" (page 4-14).

(Continued)

3 Prepare the new video.
- Select a new background on the background B bus, using the cross-point buttons.
- When inserting a key, select the key signals and make any other required settings in the key control section.

For more details of key signal selection and other settings, see the section "Basic Operation for Key Settings Using a Menu" (page 4-46).

For a cut, skip to step **6**. For all other transitions, continue with step **4**.

4 Select the transition type with the buttons in the transition type selection section.
- For a dissolve: press one of the MIX, NAM, and SUPER MIX buttons, turning it on.
- For a wipe or DME wipe: press one of the WIPE, DME 1, and DME 2 buttons, turning it on. For a dual DME wipe, press both of the DME 1 and DME 2 buttons simultaneously, turning them on.

For more details of transition types, see the section "Selecting the Transition Type" (page 4-17).

5 Make the necessary settings, depending on the selected transition type.

For details of the settings, see the sections on the pages indicated in the following table.

Super Mix	"Super Mix Settings" (4-20)
Wipe	"Basic Operation for Wipe Settings" (4-101)
DME wipe	"DME Wipe Settings" (4-130)
Dual DME wipe	"DME Wipe Settings" (4-130)
Transition limit	"Setting a Transition Limit" (4-19)

6 Use the transition control section to execute the transition.
- For a gradual transition such as a wipe or dissolve: press the AUTO TRANS button, or use the fader lever.
- For an instantaneous transition: press the CUT button.

For more details, see the section "Executing a Transition" (page 4-31).

Background and key transitions

Key cut

Suppose that in step **2** of the procedure above you pressed just the KEY 1 button, and then in step **6** pressed the CUT button. This cuts key 1 in or out, i.e. instantaneously, and amounts to a cut transition on the M/E bank.
On the other hand, using the KEY ON button in the key control section, you can cut the key in (or out) independently of the transition on the M/E bank.

For details of key cut operations with the KEY ON buttons, see page 4-34.

Key mix

Using the KEY MIX button in the key control section, you can fade a key in or out independently of the transition on the M/E bank.

For details of the operation of the KEY MIX buttons, see page 4-35.

Checking the status of keys and their priority

The ON and OVER indicators above the KEY 1 and KEY 2 buttons in the transition control section provide additional status information for the two keys. The following table shows the significance of the various button and indicator states. (The key whose priority is indicated as "over" is the key which appears when the two keys overlap.)

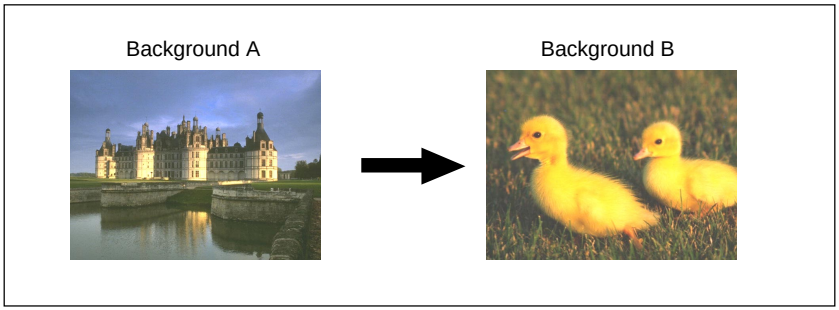
Indicator/button state		**Key state**
Transition control section	Key 1 or 2 ON indicator lit	Corresponding key is included in the output from the M/E bank.
	Key 1 or 2 OVER indicator lit	Corresponding key is over the other key.
Key control section	KEY ON button for key 1 or 2 is lit amber	Corresponding key is included in the output from the M/E bank, but not program output.
	KEY ON button for key 1 or 2 is lit red	Corresponding key is included in the program output.

Selecting the Next Transition

In a transition you can change between the two backgrounds, or insert or remove either of the keys, or carry out any of these operations simultaneously. The following figures illustrate some possible effects.

Background transition

A background transition switches from the currently selected background A (old video) to background B (new video).



Background transition

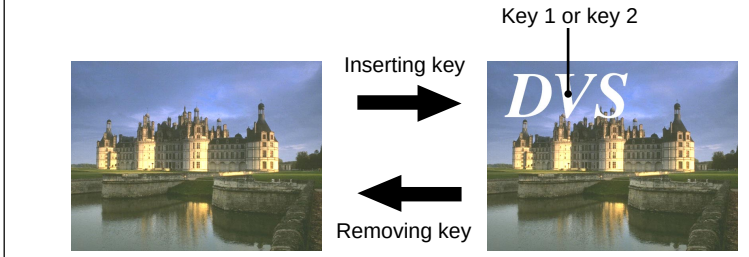
In bus flip-flop mode, a background transition always proceeds from background A to background B, and at the end of the transition the signal selections on the two background buses flip-flop. This means that except during a transition it is always background A which feeds the output of each of the mix/effects banks.

For more details, see the section "Bus fixed mode and bus flip-flop mode" (page 4-37).

Key transitions

Inserting or removing a single key

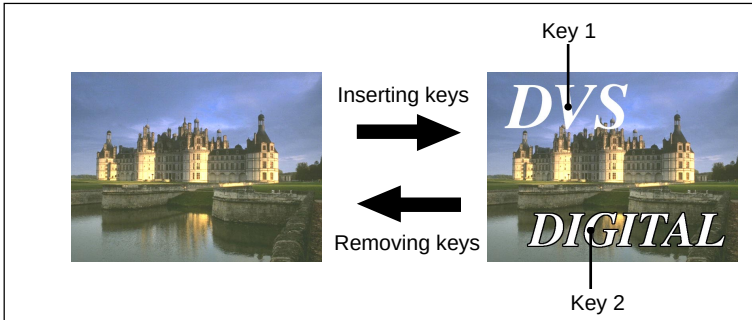
This inserts or removes key 1 or key 2 in the current video.



Inserting and removing key 1 or key 2

Inserting or removing both keys simultaneously

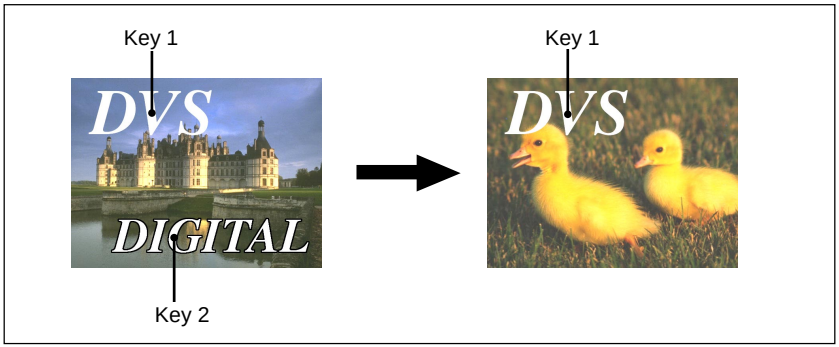
This inserts or removes both key 1 and key 2 in the current video.



Inserting and removing key 1 and key 2 simultaneously

Carrying out background and key transitions simultaneously

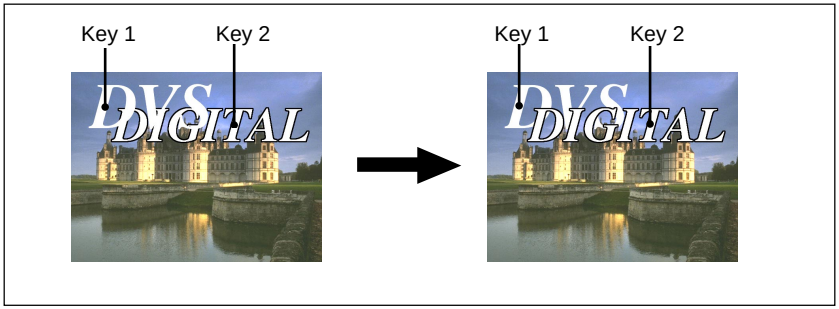
You can switch any combination of the background and keys 1 and 2 simultaneously. The following example illustrates leaving key 1 unchanged, while changing both the background and key 2.



Changing the background and key 2 simultaneously

Inverting the priority of keys 1 and 2

This transition inverts the priority of the two keys. In the following example, before the transition key 1 is over key 2, and parts of key 2 may be obscured by key 1. After the transition this relation is reversed.



Inverting the priority of keys 1 and 2

Selecting the Transition Type

The system provides the following types of transition; to select one of these, press the corresponding button in the transition control section, turning it on.

Selecting the transition type

Transition type		Selection button
Normal mix dissolve		MIX
NAM (non-additive mix) dissolve		NAM
Super Mix dissolve		SUPER MIX
Wipe		WIPE
DME wipe	Single mode	DME 1 or DME 2
	Dual mode	Press DME 1 and DME 2 simultaneously, turning them on.

The following sections illustrate each of these transition types.

Normal mix dissolve

In a dissolve, the new video fades in as the old video fades out. Using a normal mix, the new video level is increased from 0% to 100% as the old video is reduced from 100% to 0%, in such a way that the overall signal level is always 100%. At the mid-point of the transition (when the fader lever is in the center position), the output of each signal is 50%.

NAM (non-additive mix) dissolve

In this variant dissolve, the video signals are combined by a non-additive mix, and the new video level is increased from 0% to 100% over the first half of the transition, and the old video is reduced from 100% to 0% over the second half. A non-additive mix means that the two video signals are compared, and the higher one is used as the output; thus new highlights fade in first, and old highlights fade out last.

Super Mix dissolve

This is another variant dissolve, in which again the new video level is increased from 0% to 100% over the first half of the transition, and the old video is reduced from 100% to 0% over the second half.
It is also possible to set the video levels at the mid-point of the transition to a value other than 100%.

For details of the output level settings, see the section "Super Mix Settings" (page 4-20).

Wipe

In a wipe, the new video replaces the old video according to the selected wipe pattern.

For more details, see the section "Wipes" (page 4-95).

DME wipe

When there is a DME-7000 Digital Multi Effects or other DME unit connected to the switcher system, you can use DME effects for wipe transitions.

For more details, see the section "DME Wipes" (page 4-123).

Setting a Transition Limit

Normally the range of a transition corresponds to a complete switch from the old video to the new video. Alternatively, using the transition limit function, you can restrict the extent to which the transition is executed, so that in the state corresponding to a 100% movement of the fader lever, the transition is still incomplete.
For example if you enable this function with a 50% limit setting, the transition proceeds to the mid-point, then stops.
When this function is enabled, the visual indication of the next transition selection button in the transition control section which is selected changes from amber to green.

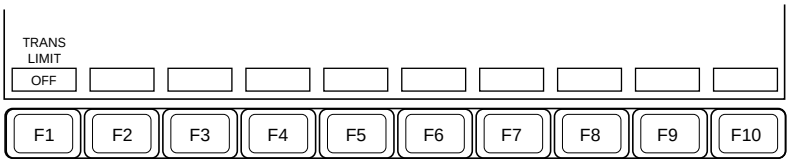
Carry out the settings for this function in the BKGD/TRANS menu for the corresponding M/E bank. For example, to set a transition limit for the M/E-1 bank, use the following procedure.

1 In the menu control section, press the BKGD/TRANS top menu button in the M/E-1 group.

The M/E-1 BKGD/TRANS menu appears in the menu screen.

2 Select item 2 (LIMIT/S-MIX).

The LIMIT/S-MIX menu appears.



Function key indications in the LIMIT/S-MIX menu

3 Press F1 (TRANS LIMIT), turning it on.

(Continued)

4 Turn control knob 4 to set the transition limit.

Knob	Parameter	Setting
4	Trans Limit	0.00 to 100.00%

- At the minimum limit setting (0%), moving the fader lever has no effect at all.
- At the maximum limit setting (100%), the entire transition occurs as normal, but the background A and B buses do not flip-flop.

Super Mix Settings

By default, at the mid-point of a Super Mix transition the levels of both background A (old video) and background B (new video) are 100%. It is possible to change these values, however, as follows.
As for the transition limit setting described on the previous page, carry out the settings for this function in the BKGD/TRANS menu for the corresponding M/E bank.

To make the Super Mix settings use the following procedure.

1 and **2** (Same as the procedure on the previous page.)

3 Adjust the parameters with control knobs 1 and 2 as follows.

Knob	Parameter	Setting
1	A Gain	Output level for background A (0.00 to 100.00%)
2	B Gain	Output level for background B (0.00 to 100.00%)

Using the Program/Preset Bank

A 3.5-M/E system includes a program/preset (PGM/PST) bank, which provides control of the final program output, with background transitions and up to four downstream key insertions.
You can control downstream key transitions either from the transition control section or from the downstream keyer control section, but this section concentrates on operations using the transition control section.

For details of the concept of downstream keying and the downstream keyer control section, see the section "Basic Downstream Key Operations" (page 4-24).

Overview

Types of transition which can be carried out

You can carry out any of the following types of transition on the backgrounds or to insert or remove any of the four keys.
• Cut
• Dissolve (normal mix dissolve only)
• Wipe
• DME wipe (single mode only)

Option

DME wipe requires the optional BKDS-7180 DME Interface Board in the DMK-7000.

All of these transitions except DME wipe can be applied to either the backgrounds or any of the keys, or any combination of the two. You can use a DME wipe only for a background transition or for a single downstream key.

Basic Operating Procedure

The following is the basic procedure for carrying out a transition on the program/preset bank.

1 Select the background video on the program bus, using the cross-point buttons.

(Continued)

2 Select whether the transition is a background or key transition with the next transition selection buttons in the transition control section.
- For a background transition: press the BKGD button, turning it on.
- To insert or remove a downstream key: press the corresponding one of the DSK 1, DSK 2, DSK 3, and DSK 4 buttons, turning it on.

For a dissolve, wipe, or cut, you can press two or more buttons simultaneously, turning them on.

Note

While a transition initiated with an AUTO TRANS button in the downstream keyer control section is still in progress, the next transition selection button for the corresponding downstream key (DSK 1, DSK 2, DSK 3, or DSK 4) does not operate.

3 Prepare the new video.
- Select a new background on the preset bus, using the cross-point buttons.
- When inserting a key, select the key fill and key source signals and make any other required settings.

For more details of key signal selection and other settings, see the section "Downstream Keys" (page 4-71).

For a cut, skip to step **6**. For all other transitions, continue with step **4**.

4 Select the transition type with the buttons (MIX, WIPE or DME) in the transition type selection section.
However, if in step **2** you selected more than one button, it is not possible to select the DME button. You can use a DME wipe only for a background transition or for a single downstream key.

For a dissolve or wipe, this selects the same transition type for all the selections (background and keys) you made in step **2**.

For a downstream key, it is possible to select a different transition type (dissolve or wipe) from that selected for the background. In this case, see the next paragraph for the method of selection.

5 If you selected a wipe or DME wipe, make the necessary settings.

For details of the settings, see the sections on the pages indicated in the following table.

Wipe	“PGM/PST Wipes and Downstream Keyer Wipes” (4-115)
DME wipe	“DME Wipe Settings” (4-130)

6 Use the transition control section to execute the transition.
- For a gradual transition using a wipe or dissolve: press the AUTO TRANS button or use the fader lever.
- For an instantaneous transition: press the CUT button.

For more details, see the section “Executing a Transition” (page 4-31).

Selecting a different transition type for the background and downstream key transitions

Reversing the above procedure, first select the transition type, then select whether it applies to a background or key transition.

For example, to carry out a dissolve for the background transition and a wipe for downstream key 1, use the following procedure.

1 In the transition control section, press the next transition selection button BKGD, turning it on.

2 In the transition type selection section, press the MIX button, turning it on.

3 In the downstream keyer control section, press the DSK 1 button, turning it on.

4 Next in the downstream keyer control section, press the WIPE button, turning it on.

5 Of the next transition selection buttons in the transition control section, press the BKGD and DSK 1 buttons simultaneously.

The WIPE and MIX buttons both light.

Basic Downstream Key Operations

Using a 3.5-M/E system or a 3-M/E system equipped with a downstream keyer, you can insert up to four keys into the final background output. The following table identifies the final background output on each of these systems.

System	Final background output
3.5-M/E	Video selected by the cross-point buttons in the PGM/PST bank
3-M/E	The output of the final M/E bank (including both keys if inserted)

This section describes the concept of downstream keying, and the basic operations for carrying it out.

Overview

The DMK-7000 Digital Multi Keyer can incorporate a maximum of four keyers (DSK 1, DSK 2, DSK 3, and DSK 4), and with either of the above systems you can control these keyers as downstream keyers from the downstream keyer control section of the control panel.
Note that in a 3.5-M/E system, you can also use the transition control section of the PGM/PST bank to control downstream key transitions, but this section describes only operations using the downstream keyer control section.

Available key types

You can use the following key types on the downstream keyers:
• Luminance key *(see page 4-39)*
• Linear key *(see page 4-40)*
• Clean key *(see page 4-40)*
• Color vector key *(see page 4-71)*

Types of key transition which can be carried out

You can carry out any of the following types of key transition.

- Cut
- Dissolve (normal mix dissolve only)
- Wipe
- DME wipe (single mode only)
- Fade-to-black

All of these transitions except DME wipe and fade-to-black can be applied to any combination of the four keyers independently and simultaneously. For a dissolve or wipe, you can set the transition rates independently for each keyer.

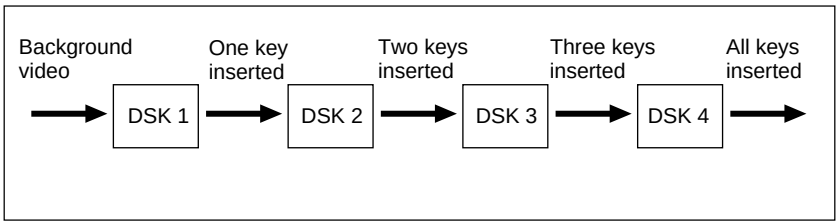
You can use a DME wipe only for a single downstream key. On a 3.5-M/E system, it is not possible to use a DME wipe simultaneously for the program/preset background and downstream keyer transitions.

Configuration of downstream keyers

You can use the four keyers in four configurations: cascade (series), parallel, independent, or dual cascade. Select the configuration in the SYSTEM CONFIGURATION menu *(see page 14-10)*.
The following examples illustrate these different configurations.

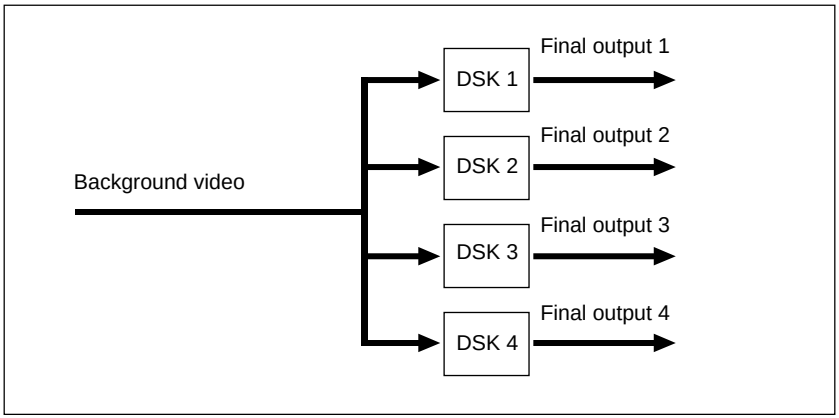
Cascade configuration

The four downstream keys are inserted successively into a single background image.



Parallel configuration

Each of the four downstream keys is inserted into a single background image to provide four different final outputs.

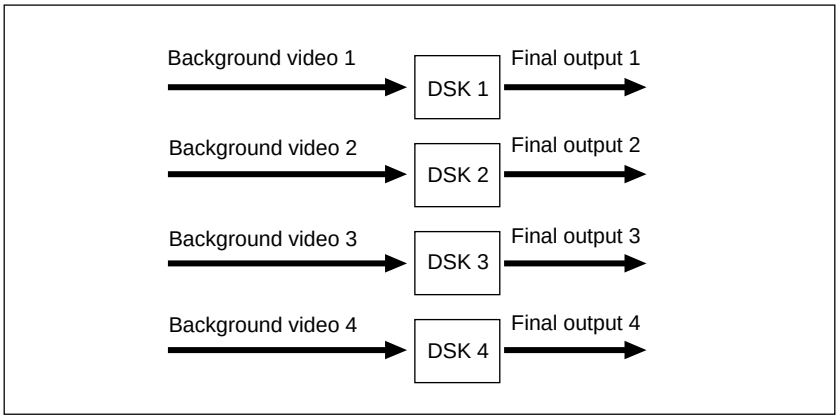


Independent configuration

Each of the four downstream keys is inserted into a separate background image to provide four different final outputs.

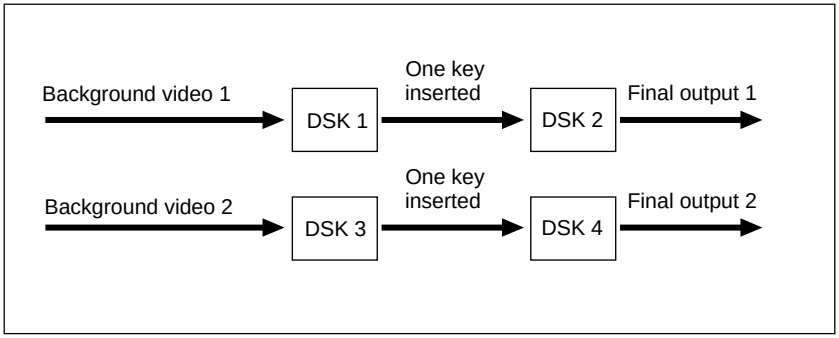
Note

It is not possible to select this configuration in a 3.5-M/E system.



Dual cascade configuration

Two downstream keys are inserted successively into each of two background images, giving two final output images.



For more details of these configurations, refer to the Operation Manual supplied with the DMK-7000.

Basic Operating Procedure

First delegate the buttons in the downstream keyer control section to the required keyer, then control the downstream key transition using the downstream keyer control section and associated menus.
The following is the basic procedure for carrying out a downstream key transition.

Inserting or removing a downstream key

Using a dissolve, wipe or DME wipe

Option

DME wipes requires an optional BKDS-7180 DME Interface Board in the DMK-7000.

The following example procedure inserts or removes DSK 1.

1 Press the DSK 1 keyer selection button, turning it on.

This delegates the downstream keyer control section to DSK 1.

2 When inserting a key, select the key fill and key source signals and make any other required settings.

For more details of key signal selection and other settings, see the section "Downstream Keys" (page 4-71).

3 Select the key transition type with the buttons (MIX, WIPE or DME) in the transition type selection section.

Notes

- A DME wipe can be used only for one of the four downstream keys. If a DME wipe is already selected for one of the other keyers, for example DSK 2, then first change the transition type for DSK 2 to wipe or dissolve, then select DME for DSK 1.
- On a 3.5-M/E system, if a DME wipe is already selected for the background transition or for one of the other keyers, then the DME button in the downstream keyer control section does not operate.

4 If you selected a wipe or DME wipe as the transition type, make the necessary settings.

For details of the settings, see the sections on the pages indicated in the following table.

Wipe	"PGM/PST Wipes and Downstream Keyer Wipes" (4-115)
DME wipe	"DME Wipe Settings" (4-130)

5 Set the transition rate.

For details, see the section "Setting the Transition Rate" (page 4-32).

6 Press the AUTO TRANS button for DSK 1.

This starts the transition, and inserts or removes downstream key 1 at the prescribed rate.

- The AUTO TRANS button lights amber during the transition, and then goes off.
- During the transition, while key 1 is present in the output, the DSK 1 ON button lights red or amber.
- To pause the transition while it is in progress, press the AUTO TRANS button again. The AUTO TRANS button then lights green.
  To resume a paused transition, press the AUTO TRANS button once again. This time the AUTO TRANS button reverts to amber.

Cutting a key in using the KEY ON button

To cut in a key which is already set up, press the corresponding KEY ON button.
This inserts the key, and the KEY ON button lights.

Cutting a key out using the KEY ON button

To cut out a key which is already inserted in the output, press the corresponding KEY ON button (which is lit red or amber).
This removes the key, and the KEY ON button goes off.

Carrying out a fade-to-black

You can carry out a fade-to-black on the output of a keyer for which you have selected “ENBL” (enabled) in the SETUP menu.
To carry out a fade-to-black, press the FADE TO BLACK button in the downstream keyer control section. If more than one keyer has “ENBL” set, the fade-to-black will be carried out on each of them simultaneously.

The FADE TO BLACK button lights amber during the transition, and changes to red when the transition is completed.

For details of setting the fade-to-black transition rate, see the section “Setting the transition rate” (page 4-144).
For details of the ENBL/DSBL setting for the keyers, see the section “Making settings relating to control panel operation, screen saver and fade-to-black function (PANEL ENABLE menu)” (page 14-83).

Executing a Transition

This section describes the transition execution modes, transition rate setting, and the procedure for executing a transition.

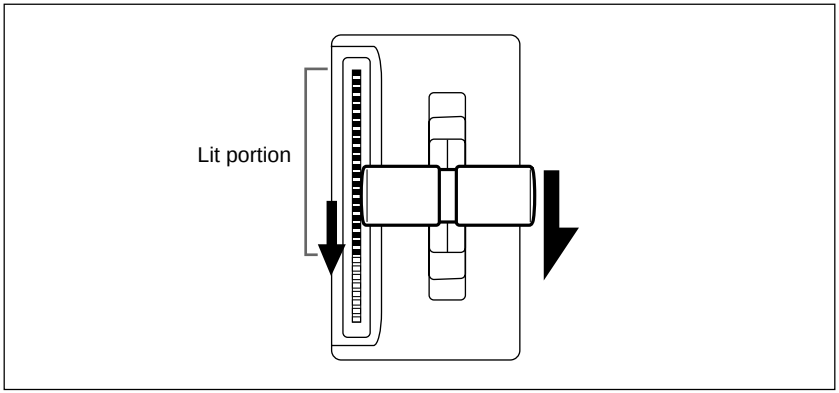
Overview

Transition execution modes

There are two modes: the auto transition mode, carried out by pressing buttons, and the manual transition mode, using the fader levers. It is also possible to combine these two techniques.
3-M/E system equipped with downstream keyer, it is only possible to carry out downstream keying in the auto transition mode.

Transition progress indicators

The fader lever on each of the mix/effects banks and the program/preset bank on a 3.5-M/E system has an indicator on the left, comprising 30 LEDs. This shows the current state of progress of the transition, whether it is being executed manually with the fader lever or as an auto transition.



Transition progress indicator

In the example shown in the figure, the transition is a little more than half way completed. When the transition is completed, all of the indicator LEDs go off.

Setting the Transition Rate

You can set the rate of an auto transition, by specifying the duration as the number of frames required. Use the following procedure to set the transition rate before pressing the AUTO TRANS button to carry out an auto transition. To set the transition rate, first specify the bank or keyer for which you wish to carry out the setting, then enter the numeric value from the numeric keypad section.

Setting the transition rate

Setting the transition rate for one of the M/E banks or the PGM/PST bank

To set the transition rate for one of these banks, use the following procedure.

1 Press the TRANS RATE button in the numeric keypad section.

2 Press the sub-register selection button corresponding to the bank for which you wish to set the new transition rate, turning it on.

M/E-1, M/E-2, and M/E-3 buttons: M/E banks
P/P DSK button: PGM/PST bank

This displays the transition duration set for the selected bank in the numeric keypad section.

3 Enter the required number of frames for the transition duration in the numeric keypad section.

4 Press the ENTER button.

This confirms the entered value, which appears in the display of the numeric keypad section.
For an M/E bank or the PGM/PST bank, the set duration also appears in the FRAMES display.

Adjusting the duration

Instead of entering a new value, you can enter the difference from the current setting. First press the +/– button, then enter a signed value, and then finally press the TRIM button.
Pressing the +/– button toggles between positive and negative values.

Specifying the keyer when using a KEY MIX button

When using a KEY MIX button to carry out a key transition on an M/E bank keyer, to specify what the transition rate setting applies to, hold down the TRANS RATE button in the numeric keypad section, then press the keyer delegation button in the key control section of the corresponding M/E bank. Alternatively, you can use a menu.

For details, see the section "Setting the transition rate" (page 4-144).

Specifying the downstream keyer

To set a transition rate for DSK 1, hold down the TRANS RATE button in the numeric keypad section, then press the DSK 1 button in the downstream keyer control section, and similarly for DSK 2, DSK 3 and DSK 4. Alternatively, you can use a menu.

For details, see the section "Setting the transition rate" (page 4-144).

Setting the transition rate for fade-to-black

To make a transition rate setting apply to a fade-to-black, use a menu.

For details, see the section "Setting the transition rate" (page 4-144).

Executing a Transition

This section describes how to execute a transition on an M/E bank or the PGM/PST bank of a 3.5-M/E system.
Note that for the PGM/PST bank, it is only possible to execute the transition using the transition control section.

For details of the procedure for transitions using the downstream keyer control section of the PGM/PST bank, see the section "Basic Downstream Key Operations" (page 4-24).

Executing an auto transition

Use the following procedures to execute an auto transition for all of the items (background and keys) selected by the next transition selection buttons in the transition control section, using the buttons in the auto transition control section.

- For an instantaneous transition, press the CUT button.
- For a gradual (auto) transition, press the AUTO TRANS button.
  This executes the transition at the rate determined by the current setting of the transition duration. While it is in execution the AUTO TRANS button lights amber.
- To pause an auto transition when the AUTO TRANS button is lit amber (i.e. in execution), press the AUTO TRANS button again. Its color changes from amber to green.
- To resume a paused transition, press the AUTO TRANS button while it is lit green. Its color reverts from green to amber.
- When a transition is in progress or paused, press the CUT button to complete the transition immediately. The AUTO TRANS button then goes off.

Cutting a key in or out on an M/E bank using the KEY ON button

To cut a key in or out instantaneously, and independently of any other transition on the M/E bank, press the corresponding KEY ON button in the key control section.
When the key is inserted in the output from the M/E bank, the KEY ON button lights amber, and if it is present in the final program output, the button lights red.

Fading a key in or out on an M/E bank using the KEY MIX button

Press the corresponding KEY MIX button in the key control section. This begins the transition at the preset rate.
During the fade in or fade out, when the key is inserted in the output from the M/E bank, the KEY ON button lights amber, and if it is present in the final program output, the KEY ON button lights red.

Inverting the priority of keys 1 and 2 on an M/E bank

If for example key 1 is over key 2 (the key 1 OVER indicator in the transition control section is lit), to instantaneously invert the relation between the two keys, either press the KEY PRIOR button in the transition control section, then press the CUT button, or press the KEY PRIOR button twice in rapid succession. The key 1 OVER indicator goes out, and the key 2 OVER indicator lights.

Note that you can also invert the key priority with a menu operation. *(See page 4-50.)*

Executing a manual transition with the fader lever

To carry out a manual transition, you can control the progress of the transition directly, using the fader lever as follows.

- To execute a complete transition, move the lever from one end of its range to the other.
- To pause the transition, simply stop moving the lever.
- To resume the transition, start moving the lever again.

Combining auto and manual transition control

You can use either of the following techniques to combine manual and auto transition control.

Using the fader lever during an auto transition

After starting an auto transition by pressing the AUTO TRANS button, if you move the fader lever to the position corresponding to the current transition state, the auto transition control is released, the AUTO TRANS button goes off, and from now on the fader lever controls the transition.

Switching from manual to auto transition control

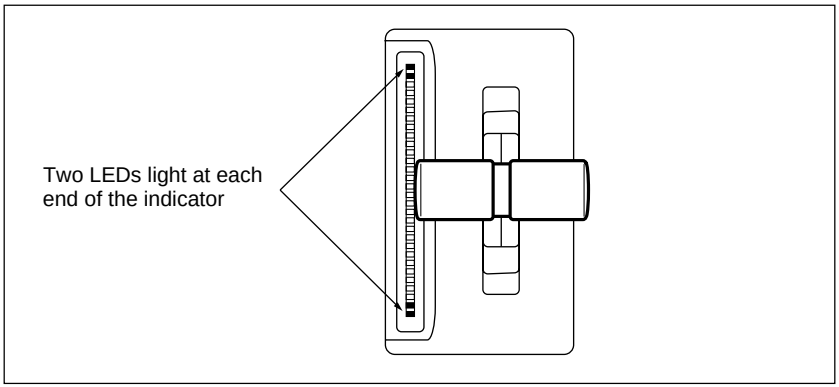
- If you press the CUT button, the transition completes instantaneously.
- If you press the AUTO TRANS button while using the fader lever to control a transition, auto transition control starts from the transition state represented by the current fader lever position, and completes the transition at the set rate (taking a time proportional to the remaining transition).

Non-sync state

If you start a manual transition with the fader lever, then switch to auto transition, the position of the fader lever no longer agrees with the state of the transition. This is termed the non-sync state, and in this state the transition progress indicator appears as shown below, with only the ends (two LEDs) lit.

In the non-sync state, moving the fader lever has no effect on the transition. To use the fader lever again, first move it to either end of its range. This releases the non-sync state, and all LEDs in the transition progress indicator go off.

Even in the non-sync state, you can press the AUTO TRANS button to carry out an auto transition. In this case, the indicator shows the progress of the transition as usual, then when the transition completes, returns to the non-sync indication.



Non-sync state

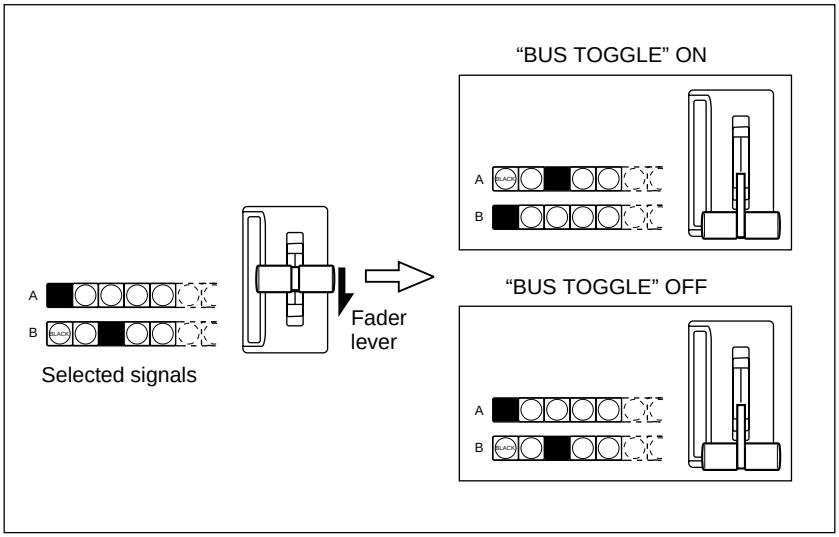
Bus fixed mode and bus flip-flop mode

The following description of the bus fixed mode and bus flip-flop mode takes the M/E banks as an example, but the same description also applies to the PGM/PST bank.

The default operating mode for the switcher is bus flip-flop mode, in which an M/E background transition always proceeds from background A to background B, and at the end of the transition the signal selections on the two background buses flip-flop. This means that except during a transition it is always background A which feeds the output of each of the mix/effects banks, and always a background A bus tally indicator which is lit.

The DVS-7300/7350 system can also, however, operate in bus fixed mode. This treats the two background buses A and B equally: a transition may go from A to B, or back from B to A, and there is no automatic flip-flop. In this case the fader lever position also has a fixed relation to the output: 100% background A when it is at the top, and 100% background B at the bottom position.

To select the bus flip-flop mode or bus fixed mode, set the BUS TOGGLE item in a setup menu *(page 14-73)*: “ON” for bus flip-flop mode and “OFF” for bus fixed mode.



Bus flip-flop mode and bus fixed mode

Fader lever operation in bus fixed mode

• In the bus fixed mode there is a fixed relationship between the position of the fader lever and the signal output on each bus. Depending on the direction of the transition, the fader lever must therefore always be moved in a particular direction, as shown in the following table. This does not affect an auto transition, which is executed regardless of the fader lever direction.

Fader lever operating direction in bus fixed mode

Transition	Transition direction	Fader lever movement
Background	Background A → background B	Downward
	Background B → background A	Upward
Keys 1 and 2	On → Off (Deletion)	Downward
	Off → On (Insertion)	Upward

• When the transition affects two or more of key 1, key 2 and the backgrounds, the transition cannot be effected unless all are in accordance with the table above.
• If, because of an auto transition for example, the fader lever position becomes out of synchronization with the signal outputs as indicated in the table, the fader lever must first be moved to the correct position before it affects the transition state. This non-sync movement has no effect on the video output.

Keys

This section describes the settings for keying operations (excluding chroma keying) which you can make on the M/E banks. It also describes the settings for downstream keying on a 3.5-M/E system, or 3-M/E system equipped with a downstream keyer.

For details of chroma key operations and settings, see Chapter 5.

Overview

A key is a video effect in which a hole is cut in the background video, and filled with a different video image, or simply a matte if the shape of the hole corresponds to titling for example. The video signal which cuts the hole, determining its shape, is termed the key source signal, and the video used to fill the hole is termed the key fill signal. A component of the system which carries out keying is called a keyer.

Each M/E bank is provided with two keyers (numbered 1 and 2), and when using the DMK-7000 Digital Multi Keyer option, an additional maximum of four downstream keyers (DSK 1 to DSK 4).

Key types

The key type determines the technique used to cut the hole in the background video. The M/E banks provide the following five key types.

For details of the key types used by the downstream keyer, see the section "Downstream Keys" (page 4-71).

Luminance key

The hole is cut at a certain level of the Y (luminance) signal of the key source.

- In a D2 system, the key source is passed through a filter, and the resulting Y signal is used to determine the key.
- In a D1 system, the key source Y signal is passed through a filter to apply S-curve compensation, and the resulting signal is used to determine the key.

Linear key

This is a variant type of luminance key, but with reduced variability in gain.

- In a D2 system, the key source signal including the chrominance component is used to determine the key.
- In a D1 system, the key source Y signal is used to determine the key.

Clean key

In a luminance or linear key the key source is used as a mask on both the background (i.e. to cut the hole) and on the key fill (i.e. trimming it to fill the hole). The clean key technique, on the other hand, does not mask the key fill, but simply mixes it with the background from which the hole has been cut. This tends to provide a higher quality result, but means that the key fill signal must already be trimmed to fit the hole (i.e. black everywhere else).

Chroma key

A particular hue (usually blue) in the key source signal is used to determine the hole to be cut in the background.

Option

Using chroma keying requires the optional BKDS-2031 Chroma Key Board. In addition to the BKDS-2031, using chroma keying in a D2 system requires the optional BKDS-7133 Chroma Key Analog Component Input Board.

For details of chroma key operations, see Chapter 5.

Pattern key

This uses a wipe pattern (generated by the special-purpose wipe generators on each M/E bank) to cut the hole in the background and insert the key fill. As for a wipe, you can also apply a variety of modifications depending on the pattern, but the wipe direction and edge modifiers are not available.

Modifications to keys

There are a number of variables you can adjust to vary a key effect.

Inverting the key source

This allows a signal comprising black letters on a white background, for example, to be used as a key source to insert the letters.

Edge modifications

It is possible to modify the edge of the key in several ways, for example adding a border or softening the edge.

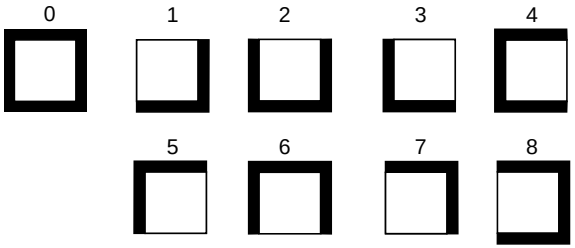
Option

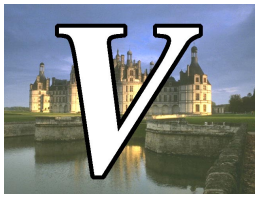
Edge modifications require the optional BKDS-7270 Key Border Board or BKDS-7271 Fine Key/Key Border Board to be fitted.

The following figures illustrate some of the edge modifications.

Normal (unmodified) edge

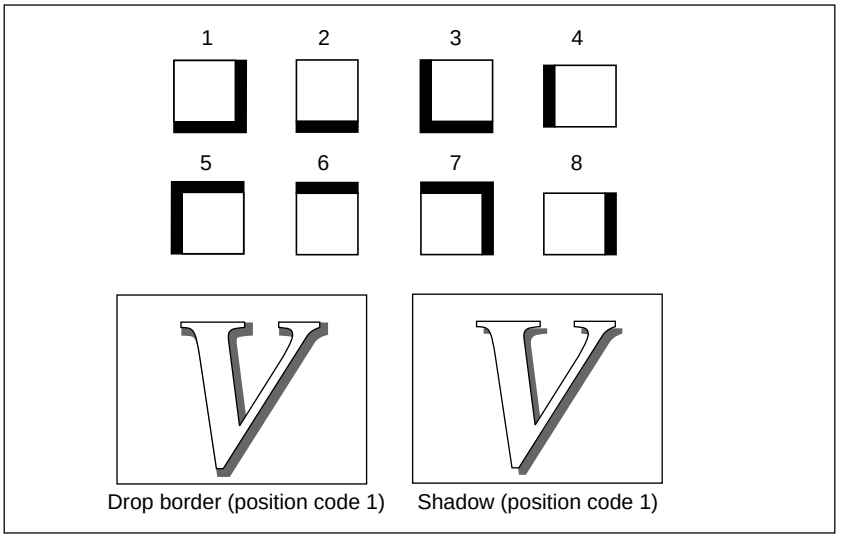
Border: You can apply a constant-width border to the edge of the key. When using the BKDS-7270, there are nine possibilities (numbered 0 to 8) for the border position.





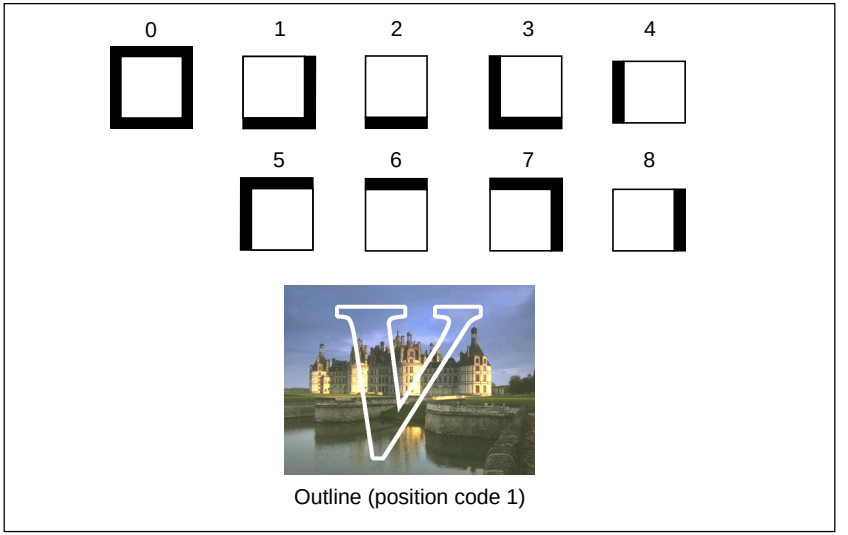
Border (position code 0)

Drop border or shadow: When using the BKDS-7270, there are eight positions (numbered 1 to 8) to apply a drop border or shadow. When using the BKDS-7271, you can adjust the drop border or shadow position continuously through the eight positions.



Drop border (position code 1) Shadow (position code 1)

Outline: You can apply an outline to the edge of the key. When using the BKDS-7270, there are nine possibilities (numbered 0 to 8) for the outline position.



Outline (position code 1)

Edge fill: When using a border, drop border or shadow effect, you can select the edge fill signal to be inserted in this area.
On each of the M/E banks, you can select either the dedicated color matte generator, or the signal selected on the utility bus. On the downstream keyer a color matte signal is automatically selected for the edge fill. There are two mattes (1 and 2) and you can also select a combination (mix) of the two; this is called a "color mix".
The outline effect uses the key fill signal as the edge fill, and fills the interior of the key with a background.

Soft edge: This gives the edge a softened appearance.

Masking

You can apply a mask to adjust the area to which the key applies, whether to obtain a special effect, or to "clean up" a key source signal.
A mask applied to the key source signal, forcing part of the image to be background, is termed a key mask, and a mask applied to the background signal, forcibly inserting the key fill signal in part of the image, is termed a background mask.
The mask source can be a rectangular box, a dedicated mask pattern, a wipe pattern, or a signal selected on the utility bus.

Unmasked key


Box mask applied

On the M/E banks, you can use two masks simultaneously on each keyer, but the downstream keyer allows only one mask per key.

Processed key function

The term “processed key” refers to the function whereby a keyer in a switcher operates in combination with an external DME unit to apply a DME effect to a key. This function is not available on the downstream keyer.

When the processed key function is enabled, before combination with the background, the key fill and key source signals produced by the switcher keyer (with borders, shadows and other processing already effected) are output to the DME from the switcher auxiliary buses. These signals are subjected to DME processing to add extra effects, and then returned to the switcher. Finally the signals returned from the DME undergo further processing and are then combined with the background.

Since the same keyer is used both for the initial processing and for the processing of the signals returned from the DME, you can use both keyers on an M/E bank simultaneously, for greater efficiency.

Key snapshots

You can instantly save all of the key settings, except the M/E bank key on or off state, in a dedicated register, and recall them as required.

For details of saving and recalling key snapshots, see the section “Key snapshot operations” (page 4-70).

Key memory function

For each signal selected as a key source on an M/E bank, this function automatically saves the parameters (Clip, Gain, and Density, Filter, Left Pos, and Right Pos, or Size, Softness, and Density) in memory. When you select the same signal again, the parameters are recalled with it. Different sets of parameters are saved, depending on the combination of key source, keyer, and key type.

You can use a setup menu *(see page 14-43)* to toggle the key memory function on and off.

Saving and recalling default values of parameters

You can make default values of key parameter settings saved in memory for a particular combination of signal selected as the key source on the M/E bank, keyer, and key type.

Use a setup menu to save the values *(see page 14-43).*

To recall the default values for M/E-1 key 1, for example, select the signal as key source with the M/E-1 KEY 1 menu displayed on screen, and hold down the function key for the required key type.

Resetting all of the key modifiers to the default settings

It is possible to reset all of the key modifiers, including key invert, key edge, and key mask to the default settings.
To do this, hold down the top menu button corresponding to the keyer on which execution is to occur. For example, for M/E-1 keyer 1, hold down the KEY 1 button in the M/E-1 group in the menu control block. You can determine the default settings using a setup menu operation.

For more information about the default settings, see the section on the BACKUP menu (page 14-15).

Basic Operation for Key Settings Using a Menu

You can carry out key setting operations either by using a menu, or by using the key control section of the control panel.

This section describes the basic menu operations for key settings for the M/E banks.

For details of the operations for key settings using the key control section, see page 4-67.

For details of the key settings for the downstream keyer, see page 4-71.

Key setting menus for the M/E banks

The key setting menus for the M/E banks are listed in the following table.

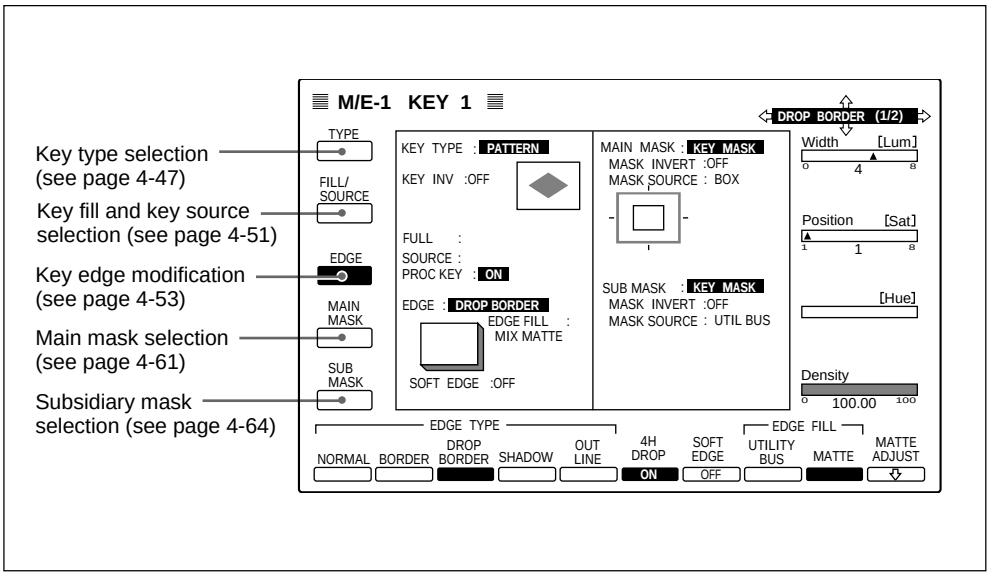
Bank	Keyer	Menu
M/E-1	key 1	M/E-1 KEY1
	key 2	M/E-1 KEY2
M/E-2	key 1	M/E-2 KEY1
	key 2	M/E-2 KEY2
M/E-3	key 1	M/E-3 KEY1
	key 2	M/E-3 KEY2

Accessing a key setting menu

For example, to access the M/E-1 KEY 1 menu, use either of the following operations:

- In the M/E-1 group of the menu control section, press the KEY 1 top menu button.
- In the transition control section of the M/E-1 bank, press the KEY 1 next transition selection button twice in rapid succession.
- In the key control section of the M/E-1 bank, press the KEY 1 keyer delegation button twice in rapid succession.

When you carry out any of the above operations, the M/E-1 KEY 1 menu shown below appears.
If you pressed the KEY 1 button in either the next transition control section or the key control section twice in rapid succession, at the same time as the menu appears the key control section is delegated to keyer 1.



Example M/E-1 KEY 1 menu display

The M/E-1 KEY 2 menu, M/E-3 KEY 1 menu and other corresponding menus are similar in appearance.

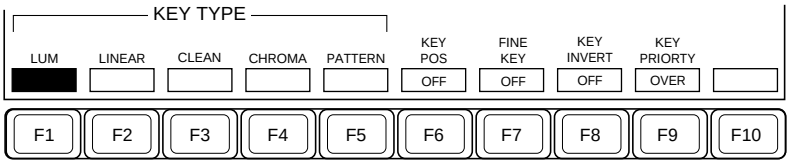
The following description always takes the M/E-1 KEY 1 menu as an example for basic key setting operations.

Selecting the key type

Use the following procedure to select the key type for key 1 on the M/E-1 bank.

1 In the M/E-1 KEY 1 menu,select item 1 (TYPE).

The TYPE menu appears.



Function key indications in the TYPE menu (when using the BKDS-7271)

(Continued)

2 Press one of F1 through F5 to select the key type.

F1 (LUM): luminance key
F2 (LINEAR): linear key
F3 (CLEAN): clean key
F4 (CHROMA): chroma key
F5 (PATTERN): pattern key

You can now adjust the parameters for the selected key type.

Option

Using chroma keying requires the optional BKDS-2031 Chroma Key Board.
In addition to the BKDS-2031, using chroma keying in a D2 system requires the optional BKDS-7133 Chroma Key Analog Component Input Board.

3 If you pressed F4 or F5 in the preceding step, set the corresponding parameters, as required.

- If you selected chroma key, make the settings in the M/E-1 CHROMA KEY menu *(see page 5-4)*, then return to the M/E-1 KEY 1 menu.
- If you selected pattern key, make the wipe pattern selection and modifier settings in the M/E-1 WIPE menu *(see page 4-102)*, then return to the M/E-1 KEY 1 menu.
  When you select a wipe pattern for the pattern key, the EDGE and DIRECTION modifier settings in the WIPE menu become invalid. You can make edge settings from the M/E-1 KEY 1 menu.

4 Adjust the parameter values.

When you have selected a luminance key, linear key, or clean key:

Knob	Parameter	Setting
1	Clip	Set clip level on the key signal (–10.00 to +110.00)
2	Gain	Set key sharpness (0.00 to 100.00)
3	Density	Set key density (0.00 to 100.00)
4	Filter	Select filter coefficient (1 to 5)

When you have selected a chroma key:

Knob	Parameter	Setting
3	Density	Set key density (0.00 to 100.00)

When you have selected a pattern key:

Knob	Parameter	Setting
1	Size	Set pattern size (0.00 to 100.00)
2	Softness	Set degree of edge softness (0.00 to 100.00)
3	Density	Set key density (0.00 to 100.00)

5 If necessary, make the following settings.

• When you have selected a luminance key, linear key, or clean key, to adjust the width or horizontal position of the key source, press F6 (KEY POS), turning it on, and set the parameters.

Knob	Parameter	Setting
1	Left Pos	Move the left edge of the key (–3.00 to +3.00)
2	Right Pos	Move the right edge of the key (–3.00 to +3.00)
3	H Phase	Move the key

• When using the FineKey™ function to adjust the positions of the four edges (top, bottom, left and right) individually, press F7 (FINE KEY), turning it on, and set the parameters.

Knob	Parameter	Setting
1	Top	Top edge position of key (–2.00 to +2.00)
2	Left	Left edge position of key (–2.00 to +2.00)
3	Right	Right edge position of key (–2.00 to +2.00)
4	Bottom	Bottom edge position of key (–2.00 to +2.00)
1	Softness	Set the degree of edge softness (0.00 to 100.00)
2	H Phase	Move the key horizontally
3	V Phase	Move the key vertically

Option

To use the FineKey™ function requires the optional BKDS-7271 Fine Key/Key Border Board.

- To invert the sense of the key source signal, press F8 (KEY INVERT), turning it on.
- To reverse the priority of key 1 and key 2, press F9 (KEY PRIORTY), to interchange the OVER and UNDER indications.

  OVER: Key 1 is over.

  The KEY 1 OVER indicator in the transition control section lights.

  UNDER: Key 1 is under.

  The KEY 2 OVER indicator in the transition control section lights.

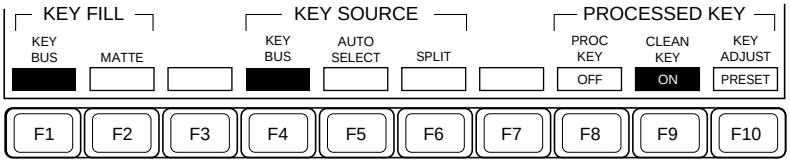
Selecting the key source and key fill

Use the following procedure to select the key source and key fill signals for keyer 1 on the M/E-1 bank.

For details of the operations for the processed key function, see the section "Using the processed key function" (page 4-65).

1 In the M/E-1 KEY 1 menu, select item 2 (FILL/SOURCE).

The FILL/SOURCE menu appears.



Function key indications in the FILL/SOURCE menu

2 Press F1 or F2 to select the type of signal used for key fill: the signal selected on the key fill bus, or a color matte.

F1 (KEY BUS): Use the signal selected on the key fill bus for key 1.
F2 (MATTE): Use a color matte generated internally by the keyer.

3 • If in step **2** you pressed F1 (KEY BUS), select the key fill signal using the cross-point buttons.

On the BKDS-7011/7023 control panel, press the KEY 1 button in the key control section to delegate the K row of cross-point buttons to the key 1 fill bus, then press the required cross-point button.

• If in step **2** you pressed F2 (MATTE), adjust the color matte parameters with the control knobs as follows.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

(Continued)

4 Press one of F4 through F6 to select the type of signal used for key source: the same as the key fill signal, or a different signal.

F4 (KEY BUS): Use the signal selected on the key fill bus for the key source (self-keying). This selection automatically switches the key source bus to the same signal as the key fill bus, and it is no longer possible to make a key source bus selection with the cross-point buttons.

F5 (AUTO SELECT): Use the key source signal allocated to this key fill signal in a setup menu. The default is to be the same as the key fill signal (self-keying). This selection also disables key source bus selection with the cross-point buttons.

F6 (SPLIT): Use the video signal selected on the key source bus.

5 If you selected F6 (SPLIT) in step **4**, select the key source signal using the cross-point buttons, as follows.
Press the KEY 1 button in the key control section to delegate the key control section to keyer 1, then hold down the SPLIT button and press the required cross-point button in the K1 row (BKDS-7012/7021/7022) or K row (BKDS-7011/7023), or in the auxiliary bus bank.

Modifying the key edge

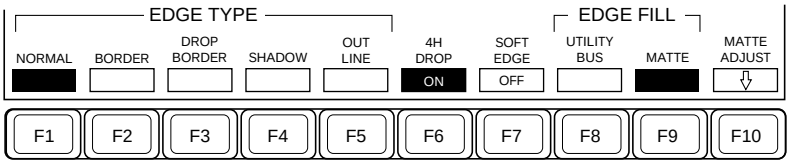
Option

Edge modifications require the optional BKDS-7270 Key Border Board or BKDS-7271 Fine Key/Key Border Board to be fitted.

Use the following procedure to modify the key edge, for example adding a border to the M/E-1 key 1.

1 In the M/E-1 KEY 1 menu, select item 3 (EDGE).

The EDGE menu appears.



Function key indications in the EDGE menu

2 Press one of F1 through F5 to select the edge type.

You can also use the BORD, DROP BORD, SHDW and OUTLINE buttons in the key control section.

F1 (NORMAL): unmodified edge.
F2 (BORDER): apply a border.
F3 (DROP BORDER): apply a drop border.
F4 (SHADOW): apply a shadow.
F5 (OUTLINE): use the outline function.

If you selected F1 (NORMAL), go to step **5**.

(Continued)

3 Adjust the parameter settings as necessary.
When you selected border, drop border or shadow in step **2**, when F9 (MATTE) is on (a color matte is selected as the edge fill), you can adjust the parameters for matte 1 regardless of whether the color mix function is on or off.

The parameter adjustment method depends on the optional board used, BKDS-7270 or BKDS-7271.

• Parameter adjustments with the BKDS-7270 installed

When applying a border:

Knob	Parameter	Setting
1	Width	Set width (0 to 4; for a pattern key: 0.00 to 100.00)
2	Position a)	Set position (0 to 8) b)
4	Density	Set density (0.00 to 100.00)
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Density	Set density (0.00 to 100.00)

a) For a pattern key the Position setting is not available.
b) For the relationship between the code numbers, 0 to 8, and the position, see page 4-41.

When applying a drop border or shadow:

Knob	Parameter	Setting
1	Width	Set width (in "4H DROP ON" a) mode: 0 to 4; in "4H DROP OFF" a) mode: 0 to 8 a)
2	Position	Set position (in "4H DROP ON" a) mode: 1 to 8b); in "4H DROP OFF" a) mode: 1 to 3)b)
4	Density	Set density (0.00 to 100.00)
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Density	Set density (0.00 to 100.00)

a) For the details of "4H DROP ON" and "4H DROP OFF" mode, see "Edge types and key fill/key source positions" *(page 4-58).*
b) For the relationship between code numbers and positions, see page 4-42.

When using the outline function:

Knob	Parameter	Setting
1	Width	Set width (0 to 4; for a pattern key: 0.00 to 100.00)
2	Position [a)]	Set position (0 to 8) [b)]
4	Density	Set density (0.00 to 100.00)

a) For a pattern key the Position setting is not available.
b) For the relationship between the code numbers and positions, see page 4-42.

• Parameter adjustments with the BKDS-7271 installed

When applying a border:

Knob	Parameter	Setting
1	Width	Set width (0 to 4)
4	Density	Set density (0.00 to 100.00)
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Density	Set density (0.00 to 100.00)

To adjust separately the width of the top, bottom, left and right sides of the edge, press F6 (SEP EDGE), turning it on, and adjust the parameters.

Knob	Parameter	Setting
1	Top	Top edge width (0.00 to 4.00)
2	Left	Left edge width (0.00 to 4.00)
3	Right	Right edge width (0.00 to 4.00)
4	Bottom	Bottom edge width (0.00 to 4.00)
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Density	Set density (0.00 to 100.00)

(Continued)

When applying a drop border or shadow:

Knob	Parameter	Setting
1	Width	Set edge width (in "4H DROP ON"[a] mode: 0 to 4; in "4H DROP OFF"[a] mode: 0 to 8)
2	Position	Set edge position (in "4H DROP ON "[a] mode: 0 to 359[b]; in "4H DROP OFF"[a] mode: 180 to 359[b])
4	Density	Set density (0.00 to 100.00)
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Density	Set density (0.00 to 100.00)

a) For the details of "4H DROP ON" and "4H DROP OFF" modes, see "Edge types and key fill/key source positions" (page 4-58).
b) You can adjust the edge position continuously.

When using the outline function:

Knob	Parameter	Setting
1	Width	Set width (0 to 4)
4	Density	Set density (0.00 to 100.00)

To adjust separately the width of the top, bottom, left and right sides of the edge, press F6 (SEP EDGE), turning it on, and adjust the parameters.

Knob	Parameter	Setting
1	Top	Top edge width (0.00 to 4.00)
2	Left	Left edge width (0.00 to 4.00)
3	Right	Right edge width (0.00 to 4.00)
4	Bottom	Bottom edge width (0.00 to 4.00)
4	Density	Set density (0.00 to 100.00)

4 Press F8 or F9 to select the edge fill signal.

F8 (UTILITY BUS): signal selected on the utility bus.
To select the signal on the M/E-1 utility bus, press the M/E-1 UTIL button in the auxiliary delegation section, and select the cross-point button assigned to the required signal.
F9 (MATTE): dedicated color matte for edge fill.

When you selected F8, after selecting the signal go to step **5**.

5 To soften the edge, press F7 (SOFT EDGE), turning it on, and adjust the degree of softness.

Knob	Parameter	Setting
1	Softness	Set the degree of edge softness (0.00 to 100.00)

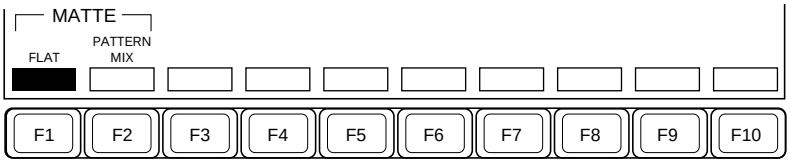
Note

When you selected a “normal” edge, drop border, or shadow in “4H DROP OFF” mode, the edge softening function is not available.

For details of “4H DROP OFF” mode, see “Edge types and key fill/key source positions” (next page).

6 When you selected a color matte as the edge fill signal, press F10 (MATTE ADJUST) to make the matte adjustments.

The EDGE MATTE menu appears.



Function key indications in the EDGE MATTE menu

7 If you do not wish to use the color mix function, press F1 (FLAT), turning it on, and set the parameters for matte 1.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

For details of the operations for using the color mix function, see page 4-59.

After setting the parameters, to return to the EDGE menu, press the EXIT button.

Edge types and key fill/key source positions

The edge modification functions have two modes: the “4H DROP ON” mode, in which the key fill/key source position moves down by four scan lines, and the “4H DROP OFF” mode, in which the key fill/key source position does not move down (with the exception of a border and an outline, for which the key fill/key source moves down by four scan lines irrespective of the modes).

- In the “4H DROP ON” mode, the width adjustment range for a drop border or shadow is narrower.
- In the “4H DROP OFF” mode, the width adjustment range for a drop border or shadow is wider.

Relation between edge type and key fill and key source positions

Edge type		**Key source/fill position**
Border or outline		Down four lines[a)]
Normal edge, drop border, or shadow	“4H DROP ON” mode	Down four lines
	“4H DROP OFF” mode	No movement

a) When the selected key type is a pattern key, the key fill position does not move down.

To toggle between “4H DROP ON” and “4H DROP OFF” modes, press F6 (4H DROP).

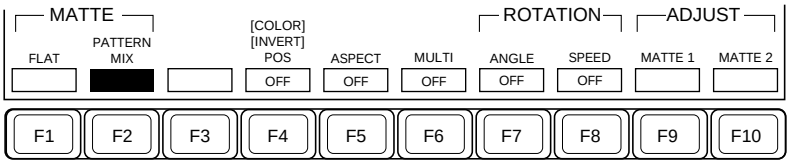
Using a color mix matte for the key edge fill

When you have selected a color matte as the edge fill signal for a border, drop border, or shadow, you can combine mattes 1 and 2, using the dedicated pattern generator. On the border of the pattern, the two mattes are mixed, forming a color gradation.

To carry out a color mix, use the following procedure.

1 In step **7** on the previous page, press F2 (PATTERN MIX), turning it on.

Function key indications appear for F3 through F10.



Funcion key indications in the EDGE MATTE menu (when F2 is set to ON)

2 Adjust the pattern parameters.

Knob	Parameter	Setting
1	Size	Set pattern size (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)
4	Pattern No.	Select pattern number (1 to 23) [a)]

a) The patterns are the same as wipe patterns 1 through 23. *(See the Appendix "Wipe Patterns" (Page A-2)).*

3 Adjust the colors for mattes 1 and 2.
To adjust matte 1 press F9 (MATTE 1), and to adjust matte 2 press F10 (MATTE 2), turning the respective button on, then adjust the parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

(Continued)

4 Press any of F4 through F8 as required, turning them on, to adjust the pattern modifiers.

F4 (POS): adjust the pattern position.

Knob	Parameter	Setting
1	H Pos	Horizontal position (–50.00 to +50.00)
2	V Pos	Vertical position (–50.00 to +50.00)

F5 (ASPECT): adjust the pattern aspect ratio.

Knob	Parameter	Setting
1	Aspect	Aspect ratio (0.00 to 100.00)

F6 (MULTI): use replicated patterns.

Knob	Parameter	Setting
1	H Multi	Number of pattern replications horizontally (1 to 63)
2	V Multi	Number of pattern replications vertically (1 to 63)
3	Shift	Replication layout (1 to 4) [a)]

a) For the layout codes (1 to 4) see page 4-100.

F7 (ANGLE): rotate the pattern.

Knob	Parameter	Setting
1	Angle	Rotation angle (–50.00 to +50.00)

F8 (SPEED): rotate the pattern at a constant angular speed.

Knob	Parameter	Setting
1	Speed	Rotation speed (–50.00 to +50.00)

5 To interchange matte 1 and matte 2, hold down the SHIFT button in the menu control section (changing the F4 indication to “COLOR INVERT”), and press F4 (COLOR INVERT), turning it on.

Masking

To mask unwanted portions or defects in the key or background, there are two masks you can use: the main mask and the subsidiary mask.

- The main mask uses as source signal the box generator built into the M/E bank keyer, or a dedicated mask pattern generator.
- The subsidiary mask uses as source signal a wipe generator from the M/E bank or a signal selected on the utility bus.

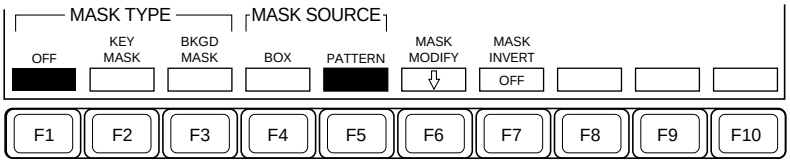
You can use the main mask and subsidiary mask independently, or you can use both simultaneously.

Using the main mask

By way of example, the following procedure uses the main mask on keyer 1 of the M/E-1 bank.

1 In the M/E-1 KEY 1 menu, select item 4 (MAIN MASK).

The MAIN MASK menu appears.



Function key indications in the MAIN MASK menu

2 Press F2 or F3, turning it on, to select the mask type.

F2 (KEY MASK): key masking
F3 (BKGD MASK): background masking

3 Press F4 or F5 to select the mask source.

F4 (BOX): signal generated by a dedicated box generator
F5 (PATTERN): signal generated by a dedicated pattern generator

(Continued)

4 Adjust the mask source parameters.

When you have selected a box mask:

Knob	Parameter	Setting
1	Top	Top edge position of box (0.00 to 100.00)
2	Left	Left edge position of box (0.00 to 100.00)
3	Right	Right edge position of box (0.00 to 100.00)
4	Bottom	Bottom edge position of box (0.00 to 100.00)
1	Softness	Set the degree of edge softness (0.00 to 100.00)

When you have selected a pattern mask:

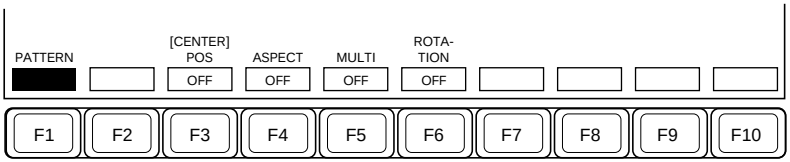
Knob	Parameter	Setting
1	Size	Set pattern size (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)
4	Pattern No.	Select pattern number (1 to 23) a)

a) The patterns are the same as wipe patterns 1 through 23. *(See the Appendix "Wipe Patterns" (page A-2)).*

5 To invert the sense of the mask source, press F7 (MASK INVERT), turning it on.

6 If you have selected a pattern mask, press F6 (MASK MODIFY) to adjust the pattern modifiers.

The MASK MODIFY menu appears.



Function key indications in the MASK MODIFY menu

When this menu is displayed, pressing F1 (PATTERN) allows you to adjsut pattern parameters with knobs as in step **4**.

7 Press any of F3 through F6 as required, turning them on, to adjust the pattern modifiers.

F3 (POS): adjust the pattern position.

Knob	Parameter	Setting
1	H Pos	Horizontal position (–50.00 to +50.00)
2	V Pos	Vertical position (–50.00 to +50.00)

To return the pattern position to the center of the screen
Hold down the SHIFT button (the indication above F3 changes to "CENTER"), and press F3 (CENTER).

F4 (ASPECT): adjust the pattern aspect ratio.

Knob	Parameter	Setting
1	Aspect	Aspect ratio (0.00 to 100.00)

F5 (MULTI): use replicated patterns.

Knob	Parameter	Setting
1	H Multi	Number of pattern replications horizontally (1 to 63)
2	V Multi	Number of pattern replications vertically (1 to 63)
3	Shift	Replication layout (1 to 4) [a)]

a) For the layout codes (1 to 4) see page 4-100.

F6 (ROTATION): rotate the pattern.

Knob	Parameter	Setting
1	Angle	Rotation angle (–50.00 to +50.00)

Using the subsidiary mask

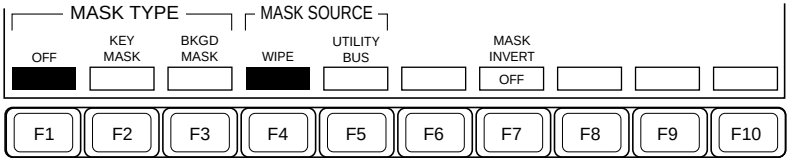
By way of example, the following procedure uses the subsidiary mask on keyer 1 of the M/E-1 bank.

Note

You cannot use the subsidiary mask for applying a border or outline with a pattern key.

1 In the M/E-1 KEY 1 menu, select item 5 (SUB MASK).

The SUB MASK menu appears.



Function key indications in the SUB MASK menu

2 Press F2 or F3, turning it on, to select the mask type.

F2 (KEY MASK): key masking
F3 (BKGD MASK): background masking

3 Press F4 or F5 to select the mask source.

F4 (WIPE): wipe pattern from the wipe generator
When you make this selection, make the wipe pattern selection and modifier settings in the M/E-1 WIPE menu *(see page 4-102)*, then return to the M/E-1 KEY 1 menu.
When you select a wipe pattern for the pattern key, the EDGE and DIRECTION modifier settings in the WIPE menu become invalid.

F5 (UTILITY BUS): signal selected on the utility bus.
To select the signal on the M/E-1 utility bus, press the M/E-1 UTIL button in the auxiliary delegation section, and select the cross-point button assigned to the required signal.

4 Adjust the mask source parameters.

When you have selected a wipe pattern:

Knob	Parameter	Setting
1	Size	Set pattern size (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)

When you have selected a signal selected on the utility bus:

Knob	Parameter	Setting
1	Clip	Set clip level on the mask signal (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)

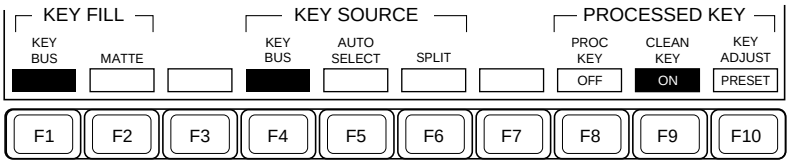
5 To invert the sense of the mask source, press F7 (MASK INVERT), turning it on.

Using the processed key function

Use the following procedure to use a processed key on keyer 1 of the M/E-1 bank.

1 In the M/E-1 KEY 1 menu, select item 2 (FILL/SOURCE).

The FILL/SOURCE menu appears.



Function key indications in the FILL/SOURCE menu

2 Select the key fill and key source signals.

For details, see the section "Selecting the key source and key fill" (page 4-51).

3 In the FILL/SOURCE menu, press F8 (PROC KEY), turning it on.

(Continued)

4 On the DME, set up the required processing to be carried out on the key fill signal (PROCV) and key source signal (PROCK).

On the DME, make the settings so that the PROCK signal level is not affected by a DME external key signal (so that the through output is obtained from the keyer for the external key).
To do this, in the DME IN/OUT menu, set the front and back key modes to “External”, and set both clip and gain for the external key signal to 0.00.

For details of the operations on the DME, refer to the BZDM-7720/3720 User’s Guide.

5 To carry out clean key processing on the return signals (DMEV and DMEK) from the DME, press F9 (CLEAN KEY), turning it on.

6 Press F10 (KEY ADJUST) to select the method of adjustment of the DME return signals. Pressing F10 toggles between PRESET and VARIABLE.

PRESET: the clip level and gain are automatically adjusted to preset values suitable for using the output key signal from the DIGITAL OUTPUTS connectors on the DME.

VARIABLE: selecting this allows manual adjustment of the clip level and gain.

Knob	Parameter	Setting
1	Clip	Set clip level on the key signal (0.00 to 100.00)
2	Gain	Set key gain (0.00 to 200.00)

Notes

- For each M/E bank, the processed key uses the following of the two channels selected by the DME IF item in the SETUP menu *(see page 14-50)*: for keyer 1, odd-numbered channels (one of DME 1, 3, and 5), and for keyer 2, even-numbered channels (one of DME 2, 4, and 6).
- For each M/E bank, if a DME wipe and processed key use the same DME, the one which was selected first takes precedence.
- Even if two DME channels can be used on an M/E bank, it is not possible to set the processed key function to ON on keyers 1 and 2 simultaneously.
- When only one DME channel can be used with the M/E banks, either of keyers 1 and 2 can be used for a processed key, but simultaneous use on both keyers is not possible.

Basic Operation for Key Settings Using the Key Control Section

You can carry out some M/E bank key setting operations using the buttons and knobs (numbered 1 to 3 from top to bottom) in the key control section.

Selecting the keyer

To make settings for keyer 1, first press the KEY 1 button in the key control section to delegate the key control section to keyer 1.
Use the same method to delegate the key control section to keyer 2.

Selecting the key type

To select the key type, press one of the key type selection buttons.

For an overview of each key type, see the page number indicated in parenthesis.

LUM button: luminance key *(page 4-39)*
LIN button: linear key *(page 4-40)*
CLEAN button: clean key *(page 4-40)*
CHR button: chroma key *(Chapter 5)*
PTN button: pattern key *(page 4-40)*

The button you have pressed lights green, and you can now adjust the parameters using the control knobs.

While the LUM, LIN or CLEAN is lit green:

Knob	Parameter	Setting
1	Clip	Set clip level on the key signal (–10 to +110)
2	Gain	Set key sharpness (0 to 100)
3	Density	Set key density (0 to 100)

While the CHR button is lit green:

Knob	Parameter	Setting
3	Density	Set key density (0 to 100)

While the PTN button is lit green:

Knob	Parameter	Setting
1	Size	Set pattern size (0 to 100)
2	Softness	Set degree of edge softness (0 to 100)
3	Density	Set key density (0 to 100)

Selecting the key fill

To use a color matte

To use a color matte generated internally by the keyer as key fill, press the MATTE FILL button.
The button lights green, and you can now adjust the parameters using the control knobs.

Knob	Parameter	Setting
1	Luminance	Set luminance (0 to 100)
2	Saturation	Set saturation (0 to 100)
3	Hue	Set hue (0 to 359)

To use the signal from the key fill bus

To use the signal selected on the key fill bus as key fill, press the MATTE FILL button, turning it off.

To select the signal, press the required cross-point button in the K1 or K2 row (BKDS-7012/7021/7022) or K row (BKDS-7011/7023).

Selecting the key source

To use the signal assigned to the key fill signal

To use the signal assigned to the key fill signal in a setup menu, press the AUTO SELECT button, turning it on.

To use the signal on the key source bus

To use the signal on the key source bus as the key source, press the SPLIT button, turning it on.
To select the signal, hold down the SPLIT button, and press the required cross-point button in the K1 or K2 row (BKDS-7012/7021/7022) or K row (BKDS-7011/7023), or in the auxiliary bus bank.

To use the signal on the key fill bus

To use the signal on the key fill bus as the key source, press the SPLIT button and AUTO SEL button simultaneously, so that both are off.

To invert the sense (black/white) of the key source signal

Press the KEY INV button, turning it on.
This allows you to use a key source which would normally correspond to black text on a white background as a key source for white text on a black background.

Modifying the key edge

To modify the key edge, press one of the edge type selection buttons, turning it on.

For an overview of the edge types, see the section "Edge modifications" (page 4-41).

BORD button: border
DROP BORD button: drop border
SHDW button: shadow
OUTLINE button: outline

The button you have pressed lights green, and you can now adjust the parameters using the control knobs.

Parameter adjustments with the BKDS-7270 installed

• While the BORD or OUTLINE button is lit green:

Knob	Parameter	Setting
1	Width	Set width (0 to 4; for a pattern key: 0.00 to 100.00)
2	Position a)	Set position (0 to 8)b)
3	Density	Set density (0 to 100)

a) For a pattern key the Position setting is not available.
b) For the correspondence between code numbers and positions, see pages 4-41 and 4-42.

• While the DROP BORD or SHDW button is lit green:

Knob	Parameter	Setting
1	Width	Set width (in "4H DROP ON"a) mode: 0 to 4; in "4H DROP OFF"a) mode: 0 to 8
2	Position	Set position (in "4H DROP ON"a) mode: 1 to 8 b); in "4H DROP OFF"a) mode: 1 to 3 b))
3	Density	Set density (0 to 100)

a) For the details of "4H DROP ON" and "4H DROP OFF" modes, see "Edge types and key fill/ key source positions" (page 4-58).
b) For the correspondence between code numbers and positions, see page 4-42.

Parameter adjustments with the BKDS-7271 installed

• While the BORD or OUTLINE button is lit green:

Knob	Parameter	Setting
1	Width	Set width (0 to 100)
3	Density	Set density (0 to 100)

• While the DROP BORD or SHDW button is lit green:

Knob	Parameter	Setting
1	Width	Set width (0 to 100)
2	Position	Set position (in "4H DROP ON"[a] mode: 0 to 359 [b]; in "4H DROP OFF"[a] mode: 180 to 359)
3	Density	Set density (0 to 100)

a) For the details of "4H DROP ON" and "4H DROP OFF" modes, see "Edge types and key fill/ key source positions" (page 4-58).

Selecting an unmodified edge

When all four of the edge type selection buttons are off, an unmodified ("normal") edge is selected. If one of the buttons is lit, press it, turning it off.

Using the processed key function

To use the processed key function to apply special effects to the key using a DME, press the PROC KEY button, turning it on.

For details of the processed key function, see page 4-65.

Key snapshot operations

Using the key snapshot function, you can save all of the key settings, except the key on or off state, in a dedicated register. Recalling a snapshot restores all the settings instantly. There are four snapshot registers per keyer.

To save a key snapshot

For example, to save the state of keyer 1, first press the KEY 1 button in the key control section to delegate the key control section to keyer 1, then hold down the SNAPSHOT button in the FlexiPad for the corresponding M/E bank, and then press one of the key snapshot buttons 1 to 4 in the key control section.

This saves a snapshot in the register corresponding to the number of the button pressed.

Note

If the key snapshot button is lit, this indicates that there is already a snapshot saved in this particular register. If with the SNAPSHOT button held down you press a key snapshot button which is lit, this overwrites the previous information in the register.

To recall a key snapshot

Press the key snapshot button (1 to 4) in the key control section for the required snapshot.

Downstream Keys

This section describes the setting operations for downstream keying on a 3.5-M/E system or 3-M/E system equipped with a downstream keyer.

Option

To use the downstream keyer, depending on the function used various option boards must be installed in the DMK-7000 Digital Multi Keyer, as shown in the following table.

Function	Option board required	Notes
Linear key, clean key, cut, mix	BKDS-7300 Linear Keyer Board	This is the basic downstream keyer board; one board is needed for each key, up to a maximum of four.
Luminance key, fine key, key wipe, key edge modifications, masking, color matte for key fill, etc.	BKDS-7320 Luminance Keyer and Border Board	To use these functions for more than one downstream key requires the corresponding number of boards. The board mounts on the BKDS-7300 board.
Color vector key	BKDS-7430 Color Vector Keyer Board	One of these boards is shared between four downstream keyers.
Frame memory	BKDS-7443 Frame Memory Board	To use these functions for more than one downstream key requires the corresponding number of boards. The board mounts on the BKDS-7300 and BKDS-7320 boards.

For more details of the option boards for the downstream keyer, refer to the Operation Manual supplied with the DMK-7000.

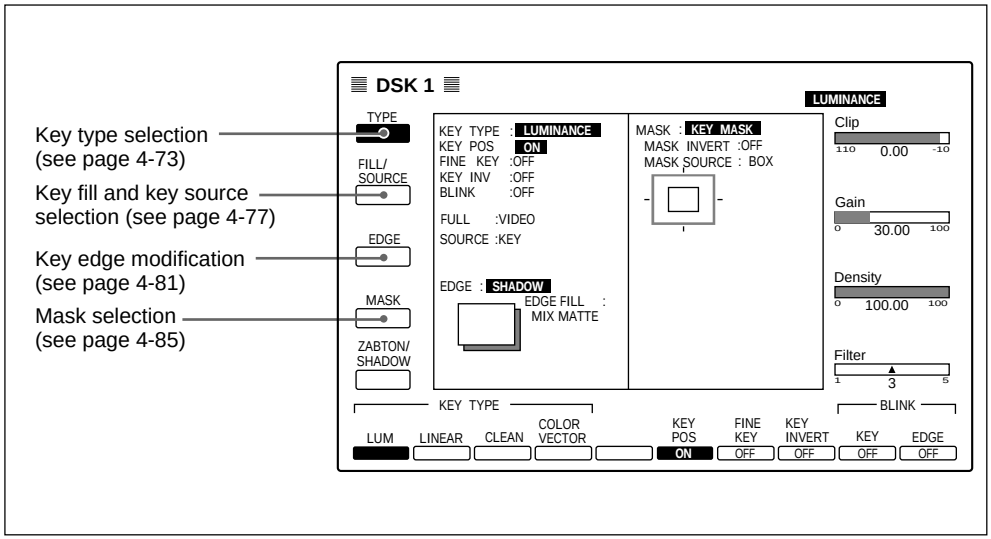
DSK menu

To make the settings for a downstream key, first select the keyer (DSK 1 to DSK 4), then access the DSK menu.

Accessing the DSK menu

For example, to make the settings for downstream key 1, carry out one of the following operations.

- In the downstream keyer control section, press the DSK 1 button, then in the menu control section, press the DSK top menu button in the SYSTEM group.
- In the downstream keyer control section, press the DSK 1 keyer selection button twice in rapid succession.
- On a 3.5-M/E system, you can also access the DSK menu immediately by pressing, in the transition control section of the PGM/PST bank, the DSK 1 button twice in rapid succession.



Example DSK menu display

Selecting the key type

You can use the following key types on the downstream keyers:

- Luminance key *(see page 4-39)*
- Linear key *(see page 4-40)*
- Clean key *(see page 4-40)*
- Color vector key: this uses a signal combining the luminance and chrominance signals as the key source. Color vector keying can provide high quality results on a signal with a low luminance which could not be used for a luminance keying, provided the color saturation is high.

Option

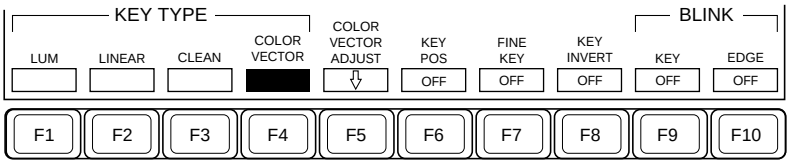
To use a luminance key requires the optional BKDS-7320 Luminance Keyer and Border Board.
To use a color vector key requires the optional BKDS-7430 Color Vector Keyer Board.

Of the above four types of key, you can use luminance, linear and clean keys on all four keyers simultaneously.
You can use two keyers simultaneously for color vector keys. One is dedicated to DSK4, and the other is common to DSK1 to DSK3.

Use the following procedure to select the downstream key type.

1 In the DSK menu, select item 1 (TYPE).

The TYPE menu appears.



Function key indications in the TYPE menu

F5 (COLOR VECTOR ADJUST) appears only when F4 (COLOR VECTOR) is selected.

(Continued)

2 Press one of F1 through F4 to select the key type.

F1 (LUM): luminance key
F2 (LINEAR): linear key
F3 (CLEAN): clean key
F4 (COLOR VECTOR): color vector key

You can now adjust the parameters for the selected key type.

3 Adjust the parameters as required.
In a 3.5-M/E system you can also use the knobs in the downstream keyer control section to adjust the Clip, Gain and Density parameters.

When you have selected a luminance key, linear key, or clean key:

Knob	Parameter	Setting
1	Clip	Set clip level on the key signal (–10.00 to +110.00)
2	Gain	Set key sharpness (0.00 to 100.00)
3	Density[a)]	Set key density (0.00 to 100.00)
4	Filter [a)]	Select filter coefficient (1 to 5)

a) Adjustment of this parameter can be made only when the optional BKDS-7320 is used.

When you have selected a color vector key:

Knob	Parameter	Setting
1	Y Clip	Set clip level on Y signal (–10.00 to +110.00)
2	Y Gain	Set Y signal sharpness (0.00 to 100.00)
3	C Clip	Set clip level on C signal (0.00 to 100.00)
4	C Gain	Set C signal sharpness (0.00 to 100.00)
1	Y Filter	Select Y filter coefficient (1 to 5)
2	C Filter	Select C filter coefficient (1 to 5)
3	Filter	Select filter coefficient (1 to 5)
4	Density [a)]	Set key density (0.00 to 100.00)

a) Adjustment of this parameter can be made only when the optional BKDS-7320 is used.

4 If necessary, make the following settings.

• To adjust the width or horizontal position of the key source, press F6 (KEY POS), turning it on, and set the parameters.

Knob	Parameter	Setting
1	Left Pos	Move the left edge of the key (–3.00 to +3.00)
2	Right Pos	Move the right edge of the key (–3.00 to +3.00)
3	Phase	Move the key

• When using the FineKey™ function to adjust the positions of the four edges (top, bottom, left and right) individually, press F7 (FINE KEY), turning it on, and set the parameters.

Knob	Parameter	Setting
1	Top	Top edge position of key (–2.00 to +2.00)
2	Left	Left edge position of key (–2.00 to +2.00)
3	Right	Right edge position of key (–2.00 to +2.00)
4	Bottom	Bottom edge position of key (–2.00 to +2.00)
1	Softness	Set the degree of edge softness (0.00 to 100.00)
2	H Phase	Move the key horizontally
3	V Phase	Move the key vertically

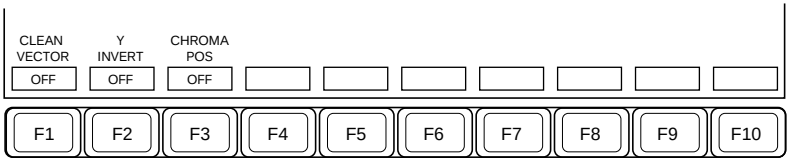
Note

When the unmodified (“normal”) edge, drop border, or shadow option is selected, in “4H DROP OFF” mode, it is not possible to adjust the Top, Bottom and Softness parameters.

• To invert the sense of the key source signal, press F8 (KEY INVERT), turning it on.

(Continued)

5 When you have selected a color vector key, if necessary press F5 (COLOR VECTOR ADJUST) to display the COLOR VECTOR ADJUST menu, and carry out the following settings.



Function key indications in the COLOR VECTOR ADJUST menu

- To carry out clean key processing, press F1 (CLEAN VECTOR), turning it on.
- To invert the black/white sense of the Y signal, press F2 (Y INVERT), turning it on.
- To adjust the width and horizontal position of the chrominance component key source, press F3 (CHROMA POS), turning it on, and adjust the parameters.

Knob	Parameter	Setting
1	C Left Pos	Move the left edge of the key (–3.00 to +3.00)
2	C Right Pos	Move the right edge of the key (–3.00 to +3.00)
3	Phase	Move the key

Selecting the key source and key fill

- As key fill for a downstream key, you can use a video signal input to one of the VIDEO INPUTS connectors on the rear panel of the downstream keyer (video input), or a signal generated by the internal color matte generator of the downstream keyer.
  Each of the maximum of four keyers has two color matte generators: matte 1 and matte 2. If the color mix function is off, matte 1 is always used.
- As key source you can use a video input or key input.

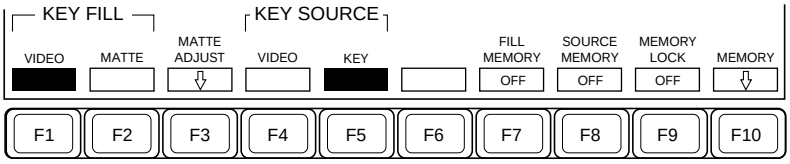
Option

To use a color matte requires the optional BKDS-7320 Luminance Keyer and Border Board.

Use the following procedure to select the key source and key fill signals for the downstream keyer.

1 In the DSK menu, select item 2 (FILL/SOURCE).

The FILL/SOURCE menu appears.



Function key indications in the FILL/SOURCE menu

2 Press F1 or F2 to select the type of signal used for key fill.

F1 (VIDEO): video input
F2 (MATTE): color matte

When you selected a color matte, you can adjust the parameters for matte 1 regardless of whether the color mix function is on or off.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

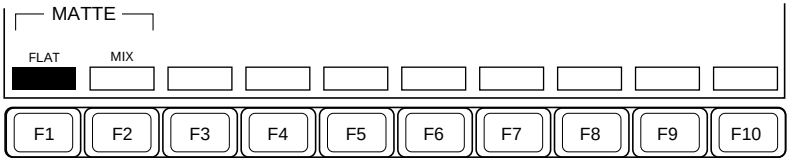
(Continued)

3 Press F4 or F5 to select the signal used for key source.
For a color vector key, the video input signal is automatically selected as key source, so this operation is not required.

F4 (VIDEO): video input
F5 (KEY): key input

4 When you have selected a color matte as the key fill signal, to adjust the color matte press F3 (MATTE ADJUST).

The MATTE ADJUST menu appears.



Function key indications in the MATTE ADJUST menu

5 If you do not wish to use the color mix function, press F1 (FLAT), turning it on, and set the parameters for matte 1.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

For details of the operations for using the color mix function, see the next page.

After setting the parameters, to return to the FILL/SOURCE menu press the EXIT button.

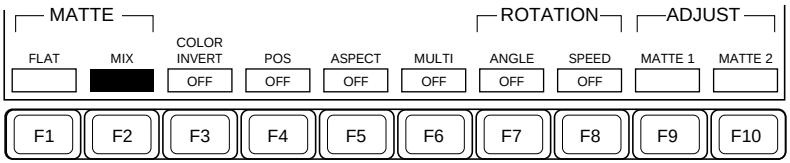
Using a color mix matte for the key fill

When you have selected a color matte as the key fill signal, you can combine mattes 1 and 2, using a pattern from the dedicated pattern generator. On the border of the pattern, the two mattes are mixed, forming a color gradation.

To carry out a color mix, use the following procedure.

1 In step **5** on the previous page, instead of pressing F1 (FLAT), press F2 (MIX), turning it on.

Function key indications appear for F3 through F10.



Function key indications in the MATTE ADJUST menu
(when F2 is set to ON)

2 Adjust the pattern parameters.

Knob	Parameter	Setting
1	Size	Set pattern size (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)
4	Pattern No.	Select pattern number (1 to 23) a)

a) The patterns are the same as wipe patterns 1 through 23. *(See the Appendix "Wipe Patterns" (page A-2)).*

3 Adjust the colors for mattes 1 and 2.
To adjust matte 1 press F9 (MATTE 1), and to adjust matte 2 press F10 (MATTE 2), turning the respective button on, then adjust the parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

(Continued)

4 Press any of F4 through F8 as required, turning them on, to adjust the pattern modifiers.

F4 (POS): adjust the pattern position.

Knob	Parameter	Setting
1	H Pos	Horizontal position (–50.00 to +50.00)
2	V Pos	Vertical position (–50.00 to +50.00)

F5 (ASPECT): adjust the pattern aspect ratio.

Knob	Parameter	Setting
1	Aspect	Aspect ratio (0.00 to 100.00)

F6 (MULTI): use replicated patterns.

Knob	Parameter	Setting
1	H Multi	Number of pattern replications horizontally (1 to 63)
2	V Multi	Number of pattern replications vertically (1 to 63)
4	Shift	Replication layout (1 to 4) [a)]

a) For the layout codes (1 to 4) see page 4-100.

F7 (ANGLE): rotate the pattern.

Knob	Parameter	Setting
1	Angle	Rotation angle (–50.00 to +50.00)

F8 (SPEED): rotate the pattern at a constant angular speed.

Knob	Parameter	Setting
1	Speed	Rotation speed (–50.00 to +50.00)

5 To interchange matte 1 and matte 2, press F3 (COLOR INVERT), turning it on.

Modifying the key edge

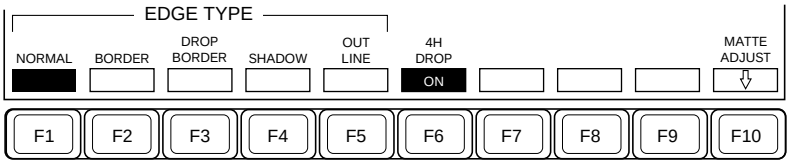
Option

Edge modifications require the optional BKDS-7320 Luminance Keyer and Border Board.

Use the following procedure to modify the key edge, for example adding a border to the downstream key.

1 In the DSK menu, select item 3 (EDGE).

The EDGE menu appears.



Function key indications in the EDGE menu

2 Press one of F1 through F5 to select the edge type.

F1 (NORMAL): unmodified edge.
F2 (BORDER): apply a border.
F3 (DROP BORDER): apply a drop border.
F4 (SHADOW): apply a shadow.
F5 (OUTLINE): use the outline function.

If you selected border, drop border or shadow, a color matte from the dedicated generator is used for key edge fill. There are two color mattes, matte 1 and matte 2, and if the color mix function is off, matte 1 is always used.

(Continued)

3 Adjust the parameter settings as necessary.
When you selected border, drop border or shadow in step **2**, you can adjust the color matte 1 parameters regardless of whether the color mix function is on or off.

When applying a border:

Knob	Parameter	Setting
1	Width	Set width (0 to 4)
4	Density	Set density (0.00 to 100.00)
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Density	Set density (0.00 to 100.00)

To adjust separately the width of the top, bottom, left and right sides of the edge, press F8 (SEP EDGE), turning it on, and adjust the parameters.

Knob	Parameter	Setting
1	Top	Top edge width (0.00 to 4.00)
2	Left	Left edge width (0.00 to 4.00)
3	Right	Right edge width (0.00 to 4.00)
4	Bottom	Bottom edge width (0.00 to 4.00)
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Density	Set density (0.00 to 100.00)

When applying a drop border or shadow:

Knob	Parameter	Setting
1	Width	Set edge width (in "4H DROP ON"[a] mode: 0 to 4; in "4H DROP OFF"[a] mode: 0 to 8)
2	Position	Set edge position (in "4H DROP ON "[a] mode: 0 to 359[b]; in "4H DROP OFF"[a] mode: 180 to 359[b])
4	Density	Set density (0.00 to 100.00)
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Density	Set density (0.00 to 100.00)

a) For the details of "4H DROP ON" and "4H DROP OFF" modes, see "Edge types and key fill/key source positions" (page 4-58).
b) You can adjust the edge position continuously.

When using the outline function:

Knob	Parameter	Setting
1	Width	Set width (0 to 4)
4	Density	Set density (0.00 to 100.00)

To adjust separately the width of the top, bottom, left and right sides of the edge, press F8 (SEP EDGE), turning it on, and adjust the parameters.

Knob	Parameter	Setting
1	Top	Top edge width (0.00 to 4.00)
2	Left	Left edge width (0.00 to 4.00)
3	Right	Right edge width (0.00 to 4.00)
4	Bottom	Bottom edge width (0.00 to 4.00)
4	Density	Set density (0.00 to 100.00)

4 To soften the edge, press F7 (SOFT EDGE), turning it on, and adjust the degree of softness.

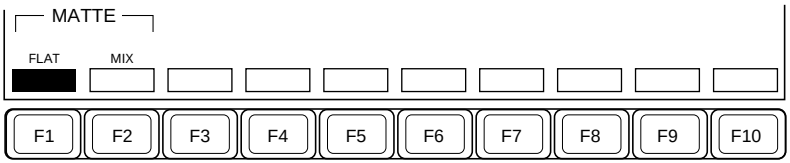
Knob	Parameter	Setting
1	Softness	Set the degree of edge softness (0.00 to 100.00)

Note

When you select a normal (unmodified) edge, the edge softening function is not available.

5 To adjust the color matte, press F10 (MATTE ADJUST).

The EDGE MATTE menu appears.



Function key indications in the EDGE MATTE menu (when F1 is selected)

(Continued)

6 If you do not wish to use the color mix function, press F1 (FLAT), turning it on, and set the parameters for matte 1.

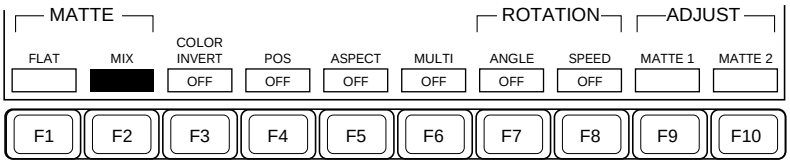
Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

For details of the operations for using the color mix function, see the next section.

After setting the parameters, to return to the EDGE menu, press the EXIT button.

Using a color mix matte for the edge fill

In step **6** of the procedure above, instead of F1 (FLAT), press F2 (MIX). Function key indications appear for F3 through F10.



Function key indications in the EDGE MATTE menu (when F2 is selected)

The significance of items and the operational procedure are the same as in the MATTE ADJUST menu for key fill. For subsequent operations, see the section “Using a color mix matte for the key fill” *(page 4-79).*

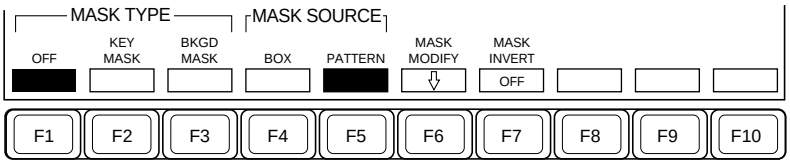
Masking

You can use one mask on each of DSK 1 to DSK 4.

Option

Masking requires the BKDS-7320.

To use the mask function, select item 4 (MASK) in the DSK menu. The MASK menu appears.



Function key indications in the MASK menu

The significance of items and the operational procedure are the same as in the MAIN MASK menu for the M/E banks. For subsequent operations, see the section “Using the main mask” *(page 4-61)*.

Using the blink function

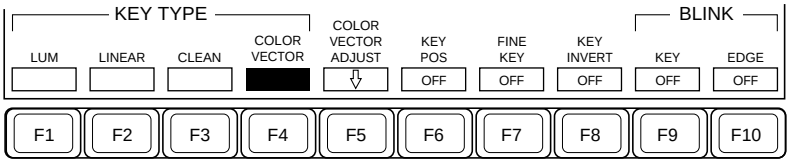
Using the blink function you can obtain the following effects.
• Blinking a downstream key on and off at regular intervals.
• Periodically interchanging the key fill and key edge fill.

Option The blink function requires the BKDS-7320 board.

For example, to use the blink function for downstream key 1, use the following procedure.

1 In the DSK menu, select item 1 (TYPE).

The TYPE menu appears.



Function key indications in the TYPE menu

2 Press F9 or F10, turning it on, and set the parameters.

F9 (KEY): the key blinks on and off.

Knob	Parameter	Setting
1	Blink rate	Rate of blinking (1 to 100)
2	Duty	Proportion of each cycle for which the key is on (0.00 to 100.00)

F10 (EDGE): the key fill alternates (blinks) between the key fill signal and the edge fill signal.

Knob	Parameter	Setting
1	Blink rate	Rate of blinking (1 to 100)
2	Duty	Proportion of each cycle for which the key fill and key edge fill signals are interchanged (0.00 to 100.00)

Using DSK frame memory

DSK frame memory provides a function whereby you can write key fill and key source freeze frames, including key transformations and modifications, to memory, then use them as DSK key fill and key source.
There is a frame memory function for each of DSK1 to DSK4.
There are two modes: MANUAL and MOVE.
Additionally, you can apply a color matte underlay or shadow effect to key fill or key source recalled from frame memory.

For details, see page 4-93 (about underlays) or 4-94 (about shadows).

Option Using DSK frame memory requires the BKDS-7443 option.

Creating a new key fill and key source and writing them to memory – MANUAL mode

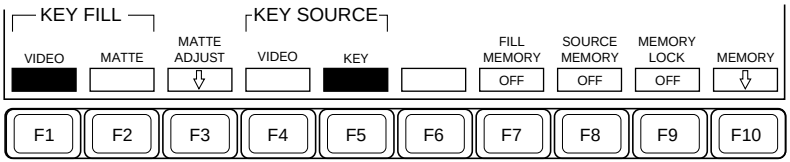
You freeze the key fill and key source, to which transformations and modifications have been applied, and write them to memory. It is also possible to combine a new image with the existing freeze frame in memory.

Use the following procedure.

1 First select the key fill and key source, and make any necessary key settings to create the state you wish to freeze.

2 In the DSK menu, select item 2 (FILL/SOURCE).

The FILL/SOURCE menu appears.



Function key indications in the FILL/SOURCE menu

(Continued)

3 Press F7 (FILL MEMORY) and F8 (SOURCE MEMORY), turning them on.

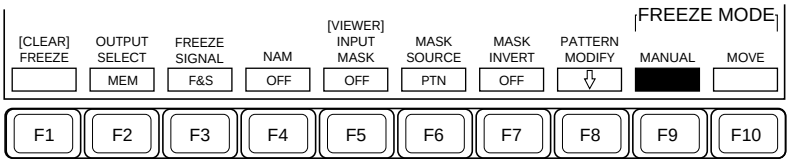
F7 (FILL MEMORY): DSK frame memory for key fill
F8 (SOURCE MEMORY): DSK frame memory for key source

4 Press F10 (MEMORY).

The DSK MEMORY menu appears.

5 Press F9 (MANUAL).

The following function key indications appear.



Function key indications in the DSK MEMORY menu (with F9 (MANUAL) selected)

6 Set F2 (OUTPUT SELECT) to “IN”.

This makes the output from memory the image which is about to be written to memory.

7 Press F3 (FREEZE SIGNAL), to select the signal to be frozen.

FILL: key fill
SOURCE: key source
F & S: key fill and key source

8 Select the way in which you wish to combine the input image (key source and key fill selected in step **1**) with the memory image (the freeze frame already captured in the DSK frame memory).
The methods of combination include NAM (non-additive mix) and masking; use a combination of F4 (NAM) and F5 (INPUT MASK) as shown in the following table.

F4 (NAM) setting	F5 (INPUT MASK) setting	Final combination method
OFF	ON	The input image is partially masked, and combined with the memory image. You can use a rectangular box or the dedicated pattern generator as the mask source.
ON	ON	The input image is partially masked, and then non-additive mixed with the memory image. You can use a rectangular box or the dedicated pattern generator as the mask source.
OFF	OFF	The input image is captured unaltered.
ON	OFF	The input image is non-additive mixed with the memory image.

- If you set F7 (INPUT MASK) to ON, carry out the following steps **9** to **12**. If you set it to OFF, skip to step **13**.
- If you set F7 (INPUT MASK) to ON, to check the masked region, hold down the SHIFT button (the function key indication for F5 changes to "VIEWER"), and press F5 (VIEWER) to ON.

Note

After adjusting the mask, return F15 (VIEWER) to OFF.

9 Use F6 (MASK SOURCE) to select the mask source.

BOX: signal generated by a dedicated box generator
PTN: signal generated by a dedicated pattern generator

(Continued)

10 Set the mask source parameters.

When you have selected BOX:

Knob	Parameter	Setting
1	Top	Top edge position (0.00 to 100.00)
2	Left	Left edge position (0.00 to 100.00)
3	Right	Right edge position (0.00 to 100.00)
4	Bottom	Bottom edge position (0.00 to 100.00)
1	Softness	Degree of edge softness (0.00 to 100.00)

When you have selected PTN:

Knob	Parameter	Setting
1	Size	Size of the pattern (0.00 to 100.00)
2	Softness	Degree of edge softness (0.00 to 100.00)
4	Pattern No.	Pattern number (1 to 23)[a)]

a) The patterns are the same as wipe patterns 1 though 23. *(See the Appendix "Wipe Patterns" (page A-2).)*

11 To modify the selected pattern with a modifier, press F8 (PATTERN MODIFY).

The PATTERN MODIFY menu appears.

*For details of the operation, see step **7** in the procedure for "Masking" (page 4-63).*

12 To logically invert the mask, set F7 (MASK INVERT) to ON.

13 In the state you wish to freeze, press F1 (FREEZE).

This writes the freeze frame to DSK frame memory.

To output only the memory frame

To output the key fill and key source currently held in memory, in the DSK MEMORY menu with F9 (MANUAL) selected, set F2 (OUTPUT SELECT) to "MEM".

To clear the memory frame to black

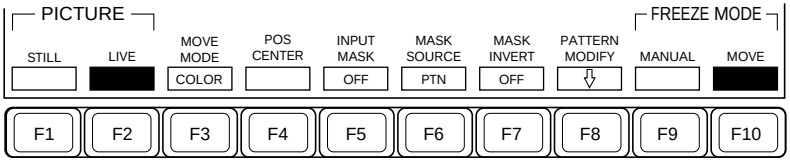
To clear the memory frame to black, in the DSK MEMORY menu with F9 (MANUAL) selected, hold down the SHIFT button (the function key indication for F1 changes to "CLEAR"), and then press F1 (CLEAR).

Moving the memory image – MOVE mode

Use the following procedure to move the memory image vertically or horizontally.

1 In the DSK MEMORY menu select F10 (MOVE).

The function key indications change as follows.



Function key indications in the DSK MEMORY menu (with F10 (MOVE) selected)

2 Press F1 or F2 to select the image to move.

F1 (STILL): Move the freeze frame image created in MANUAL mode.
F2 (LIVE): Move the input image as a movie image.

Note

Selecting F2 destroys the image currently held in memory.

3 Press F3 (MOVE MODE) to select the way in which the image moves.

COLOR: The image moves so that there is no change in hue. In a D2 system the minimum horizontal movement is 4 clock pulses and the minimum vertical movement is 2 lines. In a D1 system the minimum horizontal movement is 2 clock pulses and the minimum vertical movement is 1 line.

B & W: As the image moves there may be a hue change. The minimum horizontal movement is 1 clock pulse and the minimum vertical movement is 1 line.

(Continued)

4 Adjust the parameters until the selected image is in the desired position.

Knob	Parameter	Setting
1	H Move	Horizontal position (–50.00 to +50.00)
2	V Move	Vertical position (–50.00 to +50.00)

Note

In a D2 system when you have selected F2 (LIVE), an operation to move the image horizontally may in some cases result in a vertical movement.

5 If you selected F2 (LIVE) in step **2**, press F5 (INPUT MASK) to select whether or not to mask the input image.

OFF: Move the entire image.
ON: Move only the part of the image defined by a mask, using either a rectangular box or the dedicated pattern generator. In this case, select the mask source and set the parameters accordingly.

*For details of the settings, see steps **9** to **12** of the procedure in the section "Creating a new key fill and key source and writing them to memory" (page 4-89).*

To return a moved image to the center position

In the DSK MEMORY menu with F10 (MOVE) selected, press F4 (POS CENTER).

Write-protecting the frame – LOCK

In the FILL/SOURCE menu (*page 4-87*), press F9 (MEMORY LOCK), turning it on.

Using the ZABTON/flying shadow function

To the key fill and source recalled from DSK frame memory, you can apply a matte underlay (the ZABTON function) or flying shadows.

Applying an underlay with the ZABTON function

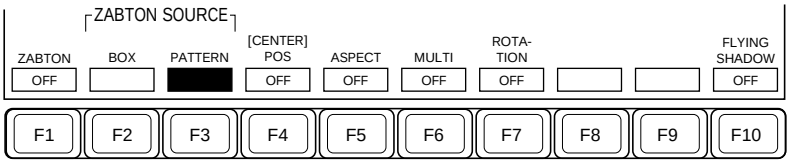
Note

When "VIEWER" is set to ON *(see step **8** in the procedure on page 4-89)* in the DSK MEMORY menu, the ZABTON function does not operate.

Use the following procedure.

1 In the DSK menu, select item 5 (ZABTON/SHADOW).

The ZABTON/SHADOW menu appears.



Function key indications in the ZABTON/SHADOW menu

2 Press F1 (ZABTON), turning it on.

3 Set the color of the underlay.

Knob	Parameter	Setting
1	Luminance	Luminance (0.00 to 100.00)
2	Saturation	Saturation (0.00 to 100.00)
3	Hue	Hue (0.00 to 359.99)
4	Density	Density (0.00 to 100.00)

4 Press F2 or F3 to select the underlay shape.

F2 (BOX): signal generated by a dedicated box generator
F3 (PATTERN): signal generated by a dedicated pattern generator

(Continued)

5 Set the parameters.

When you selected BOX:

Knob	Parameter	Setting
1	Top	Top edge position (0.00 to 100.00)
2	Left	Left edge position (0.00 to 100.00)
3	Right	Right edge position (0.00 to 100.00)
4	Bottom	Bottom edge position (0.00 to 100.00)
1	Softness	Degree of edge softness (0.00 to 100.00)

When you selected a pattern:

Knob	Parameter	Setting
1	Size	Size of the pattern (0.00 to 100.00)
2	Softness	Degree of edge softness (0.00 to 100.00)
4	Pattern No.	Pattern number (1 to 23)[a)]

a) The patterns are the same as wipe patterns 1 though 23. *(See the Appendix "Wipe Patterns" (page A-2).)*

6 When you selected F3 (PATTERN), press any of F4 (POS) to F7 (ROTATION), turning them on, to modify the selected pattern as desired.

*For details of the operation, see step **7** in the procedure for "Masking" (page 4-63).*

Applying a flying shadow

Use the following procedure to apply a shadow to the key fill and source recalled from DSK frame memory.

1 In the ZABTON/SHADOW menu, set F10 (FLYING SHADOW) to ON.

2 Adjust the parameters.

Knob	Parameter	Setting
1	H Pos	Horizontal position (–50.00 to +50.00)
2	V Pos	Vertical position (–50.00 to +50.00)
4	Density	Density (0.00 to 100.00)

Wipes

This section describes the setting operations for carrying out wipes.

Overview

A wipe is a transition in which the old video is replaced by the new video according to the progressively changing shape of a wipe pattern.
A wipe which forms a transition between two backgrounds is called a background wipe, and a wipe which inserts or removes a key is called a key wipe.
M/E wipes, PGM/PST wipes, and downstream keyer wipes each use the signals produced by dedicated wipe generators.
Note that a PGM/PST wipe is only possible on a 3.5-M/E system, and a downstream keyer wipe is only possible on a 3.5-M/E system or 3-M/E system equipped with a downstream keyer.

Option To use a downstream keyer wipe requires the optional BKDS-7320 Luminance Keyer and Border Board in the DMK-7000.

Wipe patterns

You can select a wipe pattern from the selection displayed in a menu.
The direction in which a wipe proceeds is indicated by the pattern: at an intermediate stage of the transition, the white portion represents the old video, and the black portion the new video. Alternatively, arrows indicate the direction in which some wipe patterns change. *(See the Appendix "Wipe Patterns" (page A-2)).*

The wipe patterns may be grouped together under the headings below.
Note that for PGM/PST and downstream keyer wipes, it is only possible to use the standard wipes, and further excluding number 24.

Option Note that to use any of the following patterns other than the standard wipes requires the optional BKDS-2070 Enhanced Wipe Generator Board to be installed.

Standard wipes: Basic wipe patterns, using straight lines and circles to divide the old video from the new.
Enhanced wipes: More complex shapes such as hearts and stars.
Mosaic wipes: Wipes dividing the image into a mosaic of small shapes.

Diamond dust: An effect like a scatter of small particles.
This appears in the list of wipe patterns as “DIAMOND DUST”. By adjusting the parameters, you can change the size of the particles and the rate of twinkling.

Pattern mix

This refers to a combination of two different wipe patterns (referred to as the “main” pattern and the “subsidiary” pattern) selected from the standard wipes, enhanced wipes and mosaic wipes. It is not possible to use a pattern mix on the PGM/PST bank or downstream keyer.

Option

Note that to use any of the following patterns other than the standard wipes requires the optional BKDS-2070 Enhanced Wipe Generator Board to be installed.

The following table shows whether you can use a particular combination of wipe patterns with the pattern mix function. The numbers are the pattern numbers.

Wipe pattern used as the main pattern \ Wipe pattern used as the subsidiary pattern		Standard wipes		Enhanced wipes	Mosaic wipes	Diamond dust
		1-20, 22	21, 23, 24	26, 27	200-202, 206, 210, 270-272	274
Standard wipes	1-20, 22	No	No	No	No	Yes
	21, 23, 24	No	Yes	No	No	Yes
Enhanced wipes	26, 27	No	Yes	No	No	Yes
Mosaic wipes	200-202, 206, 210, 270-272	Yes	Yes	No	No	Yes
Diamond dust	274	Yes	Yes	Yes	Yes	No

Main and subsidiary modifier link function

When carrying out a pattern mix, you can link the modifier settings for the main and subsidiary patterns. This function has two modes, as follows.

"FULL LINK" mode: All modifier settings for the main and subsidiary patterns are the same. Changing the modifier settings for either pattern automatically changes the settings for the other.

"SEMI LINK" mode: The modifier parameter values for the main and subsidiary patterns are linked, but each modifier can be switched on or off independently for the two patterns. If the parameter values of a particular modifier for the two patterns are different when you select this function, then the difference between the two values is preserved, so that changing the value for one pattern changes the value for the other pattern by the same amount.

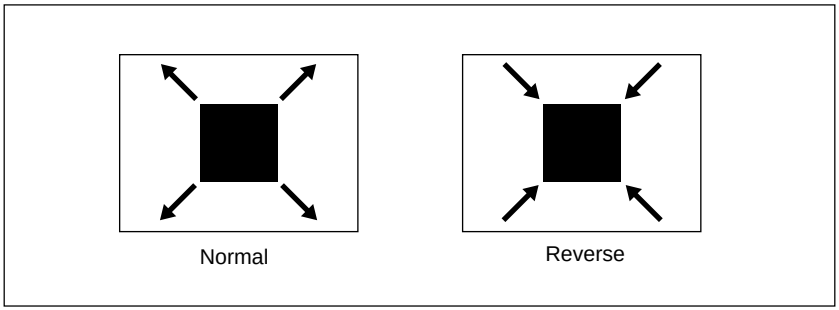
Note

When having carried out a pattern mix you execute a wipe, set the modifier link function to the "FULL LINK" mode. If this function is set to "OFF", or to the "SEMI LINK" mode, the desired video effect may not be obtained at the start or finish point of the transition.

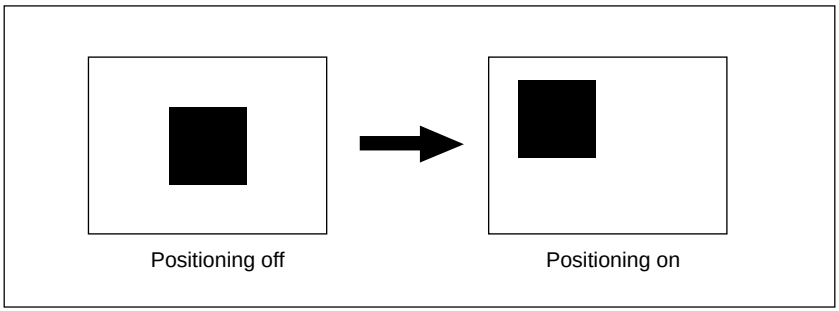
Modifying the wipe pattern

You can modify wipe patterns in the following ways. The block-capital expressions in parenthesis show how the modification is indicated on the menu screen.

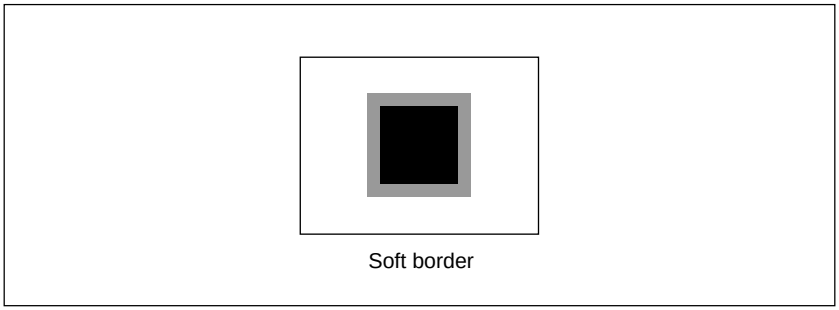
Wipe direction (DIRECTION): The wipe can proceed in the forward ("normal") direction, or the reverse direction. There is also an alternating option, in which the wipe direction reverses each time it is executed.



Pattern positioning (POSITIONER): When this function is enabled, you can alter the position of the pattern in video space.

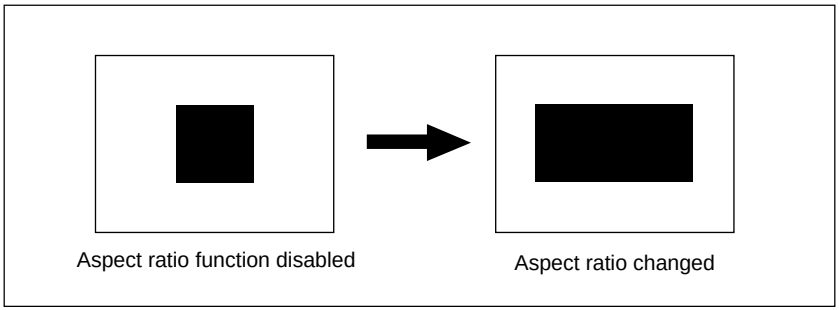


Edge modifications (EDGE): You can apply a border to the edge, or soften the edge. It is also possible to soften the applied border (soft border function).
For a downstream keyer, the only available modification is to soften the edges.

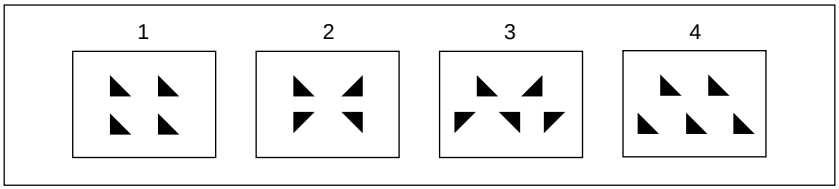


When you select a border or soft border, the signal which fills these border portions is termed edge fill.
For the edge fill signal of an M/E wipe, you can select either the dedicated color matte generator, or the signal on the utility bus. There are two mattes (1 and 2) and you can also select a combination (mix) of the two; this is called a “color mix”.
For a PGM/PST wipe, a matte signal produced by the dedicated color matte generator is used for edge fill. The color mix function is not available.

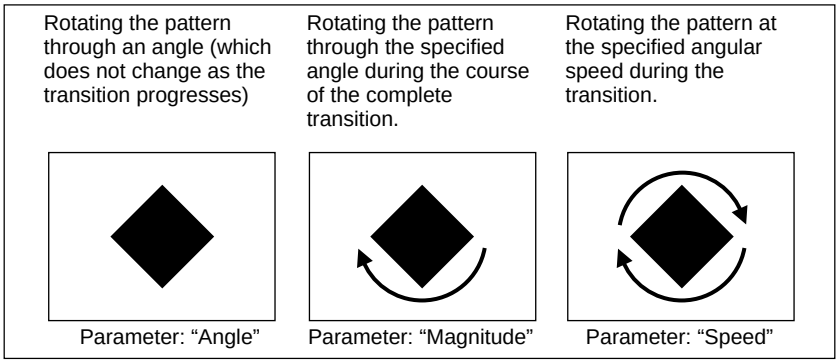
Changing the aspect ratio (ASPECT): This allows you to vary the aspect ratio of the pattern.



Replicated patterns (MULTI): This tiles the video space with multiple copies of the pattern, with a maximum of 63 copies in both horizontal and vertical directions. There are four different arrangements for the tiling (1 to 4).



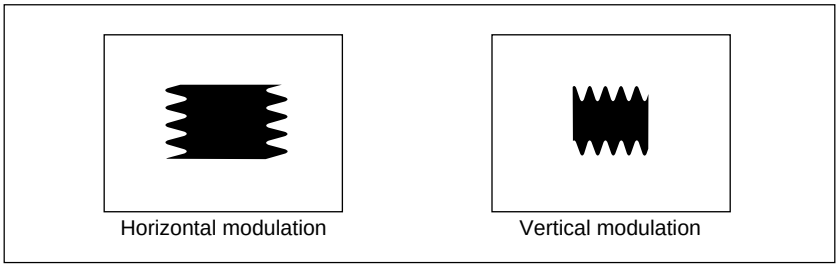
Pattern rotation (ROTATION): this rotates the pattern, in any of three ways. These are shown in the following figure, along with the names of the parameters used to control them.



Modulation (H MODULATION and V MODULATION): This modulates the signal with a sine wave, applying a wavy effect either vertically or horizontally.
Modulation is not available on the PGM/PST bank or downstream keyer.

Option

To use modulation for an M/E wipe requires the optional BKDS-2070 Enhanced Wipe Generator Board to be installed.



Combinations of patterns and modifiers

Depending on the pattern you have selected, not all modifiers may be usable. The following table shows which modification settings can be applied to which wipe patterns, with the wipe patterns arranged in groups by their numbers.

Pattern type	Wipe pattern number	Wipe direction	Pattern positioning [a]	Edge modifications	Aspect ratio [a]	Replicated patterns [a]	Pattern rotation [a]	Modulation [a]
Standard wipes	1-8	Yes	No	Yes	No	Yes	Yes	Yes
	17, 18	Yes	Yes	Yes	No	Yes	Yes	Yes
	9-16, 19, 20	Yes	No	Yes	Yes	Yes	Yes	Yes
	21-24	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhanced wipes	26, 27	Yes	No	Yes	No	No	No	Yes
Mosaic wipes	200-202, 206, 210, 270-272							
Diamond dust	274	Yes	No	Yes	No	No	No	No

a) For an M/E wipe, you can apply these modifiers independently to the main and subsidiary patterns.

Basic Operation for Wipe Settings

Most wipe settings are carried out in a dedicated menu for the bank concerned.

This section describes the basic operations for wipe settings for the M/E banks.

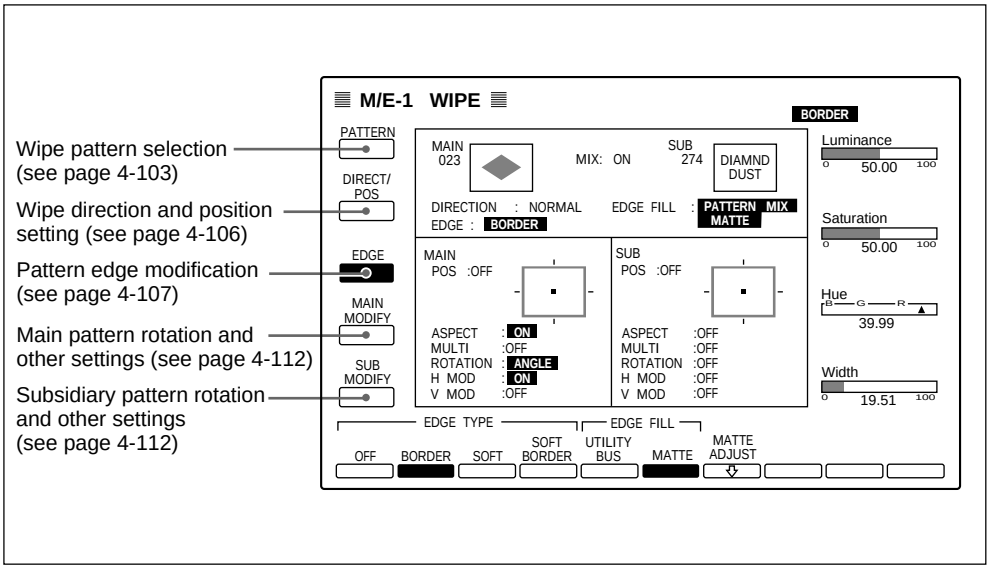
For details of the wipe settings for the PGM/PST bank and downstream keyer, see page 4-115.

Accessing the wipe setting menus

For example, to access the M/E-1 WIPE 1 menu, use any of the following operations:

- In the M/E-1 group of the menu control section, press the WIPE top menu button.
- In the transition control section of the M/E-1 bank, press the WIPE button twice in rapid succession.

After any of these operations, the M/E-1 WIPE menu shown below appears. See the page indicated in parenthesis for more details of the settings.



Example M/E-1 WIPE menu display

The M/E-2 WIPE and M/E-3 WIPE menus are similar in appearance.

The following description always takes the M/E-1 WIPE menu as an example for basic wipe setting operations.

Selecting the wipe pattern

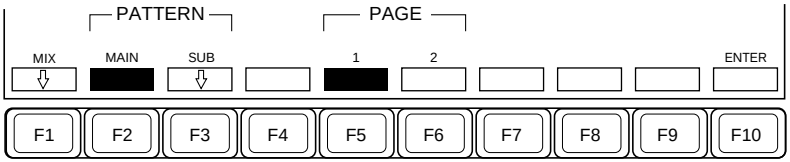
Move the cursor to select the required wipe pattern from those displayed on the menu screen. The wipe pattern display comprises two pages. Alternatively, you can enter the wipe pattern number directly using the numeric keypad.

For details of input from the numeric keypad, see page 4-105.

To select the wipe pattern for the M/E-1 bank, use the following procedure.

1 In the M/E-1 WIPE menu, select item 1 (PATTERN).

The PATTERN menu appears, and you can now select the main pattern.



Function key indications in the PATTERN menu

2 Press F5 (1) or F6 (2), turning it on, to display page 1 or page 2 of the wipe pattern display.

3 Use the cursor keys (↑ ↓ ← →) to select the required pattern.

4 Press F10 (ENTER).

The pattern you have selected appears on the screen in the “MAIN” area.

- If you are not going to use a pattern mix, this completes the wipe pattern selection.
- If you are going to use a pattern mix, continue with the procedure in the next section.

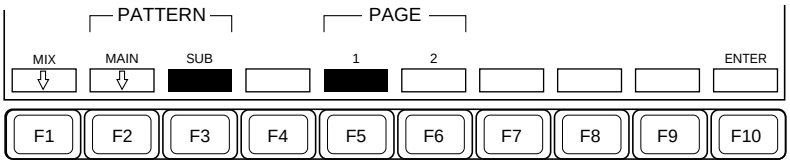
Combining two wipe patterns in a pattern mix

Option Carrying out a pattern mix requires the optional BKDS-2070 Enhanced Wipe Generator Board to be installed.

To combine the main pattern with the subsidiary pattern in a pattern mix, use the following procedure.

1 In the PATTERN menu, press F3 (SUB), turning it on.

You can now select the subsidiary pattern.



Function key indications in the PATTERN menu (after pressing F3)

2 Press F5 (1) or F6 (2), turning it on, to display page 1 or page 2 of the wipe pattern display.

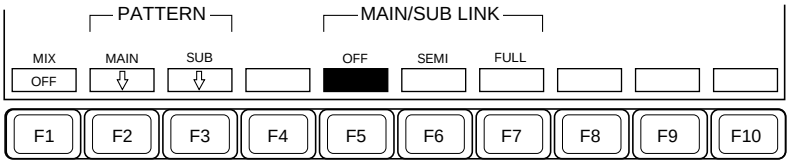
3 Use the cursor keys (↑ ↓ ← →) to select the required pattern, then press F10 (ENTER).
The subsidiary patterns selectable depend on the main pattern used.

For more information about the available main pattern and subsidiary pattern combinations, see page 4-96.

The pattern you have selected appears on the screen in the “SUB” area.

4 Press F1 (MIX).

The function key indications change as follows.



Function key indications in the PATTERN menu (after pressing F1)

5 Press F1 (MIX) once again, turning it on.

The main and subsidiary patterns are combined, and function key indications for F5 to F7 appear.

6 Press one of F5 to F7, to make the main and subsidiary modifier link function setting.

F5 (OFF): Do not use the link function.
F6 (SEMI): Use the link function in "SEMI LINK" mode
F7 (FULL): Use the link function in "FULL LINK" mode

Note

When carrying out a wipe transition, press F7 (FULL).

7 If necessary, adjust the "Mix" parameter.

Knob	Parameter	Setting
1	Mix	Degree of combination of the two patterns (0.00 to 100.00)

When you have selected diamond dust (pattern 274):
In this case you can adjust the twinkling rate.

Knob	Parameter	Setting
4	Flash Rate	Twinkling rate of diamond dust (0.00 to 100.00)

Selecting a wipe pattern using the numeric keypad

To select a pattern by number using the numeric keypad, use the following procedure.
To check pattern numbers, consult the Appendix "Wipe Patterns" *(page A-2)*.

1 In the PATTERN menu, select F2 (MAIN) or F3 (SUB).

2 Enter the number of the required pattern, using the numeric keypad, then press the ENTER button.

The newly selected pattern now appears on the screen in the "MAIN" or "SUB" area.

Applying wipe modifiers

You can modify wipe patterns, for example to reverse the wipe direction, or change the position of the pattern. Note, however, that depending on the pattern you have selected, not all modifiers may be usable.

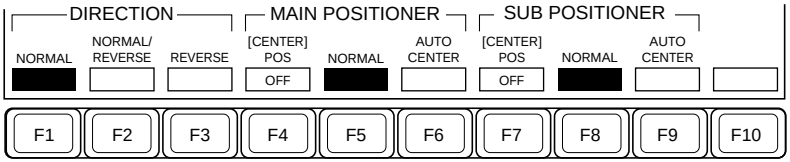
For details of possible combinations of wipe patterns and modifiers, see the table on page 4-101.

Selecting the wipe direction
Positioning the pattern

To apply these modifiers, use the following procedure.

1 In the M/E-1 WIPE menu, select item 2 (DIRECT/POS).

The DIRECT/POS menu appears.



Function key indications in the DIRECT/POS menu

2 To specify the wipe direction, press one of F1 through F3, turning it on.

F1 (NORMAL): Carry out the wipe in the forward direction.
F2 (NORMAL/REVERSE): Carry out alternate wipes in opposite directions.
F3 (REVERSE): Carry out the wipe in the reverse direction.

3 To position a pattern, press F4 (POS) for the main pattern, or F7 (POS) for the subsidiary pattern, turning it on, then adjust the parameters.

Knob	Parameter	Setting
1	H Pos	Set the horizontal position of the pattern (–50.00 to +50.00)
2	V Pos	Set the vertical position of the pattern (–50.000 to +50.00)

To return the pattern position to the center of the screen
Hold down the SHIFT button (the indications above F4 and F7 both change to “CENTER”), and press F4 (CENTER) or F7 (CENTER).

4 Press F5 or F6 (for the main pattern) or F8 or F9 (for the subsidiary pattern) to select whether or not the pattern moves toward the center as the transition progresses.

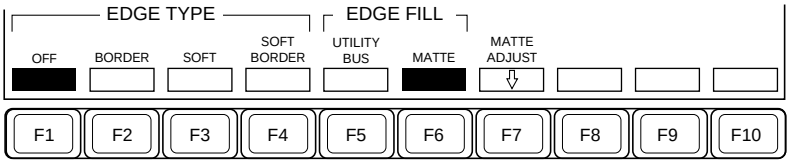
F5/F8 (NORMAL): The wipe pattern center is stationary throughout the transition.
F6/F9 (AUTO CENTER): As the transition progresses, the wipe pattern center moves toward the center of the video space.

Modifying the edge of the wipe pattern

To modify the edge of the wipe pattern, use the following procedure.

1 In the M/E-1 WIPE menu, select item 3 (EDGE).

The EDGE menu appears.



Function key indications in the EDGE menu

2 Press one of F1 through F4 to select the edge type.

F1 (OFF): unmodified edge.
F2 (BORDER): apply a border.
F3 (SOFT): soft edge.
F4 (SOFT BORDER): apply a soft border.

(Continued)

3 Adjust the parameter settings as necessary.
When you selected border or soft border in step **2**, when F6 (MATTE) is on (a color matte is selected as the edge fill), you can adjust the parameters for matte 1 regardless of whether the color mix function is on or off.

When applying a border:

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Width	Set width (0.00 to 100.00)

When applying a soft edge:

Knob	Parameter	Setting
1	Softness	Set the degree of edge softness (0.00 to 100.00)

When applying a soft border:

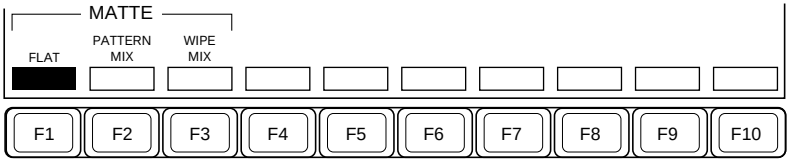
Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Width	Set width (0.00 to 100.00)
1	Inner Soft	Inner edge softness of the border (0.00 to 100.00)
2	Outer Soft	Outer edge softness of the border (0.00 to 100.00)
4	Width	Set width (0.00 to 100.00)

4 Press F5 or F6 to select the edge fill signal.

F5 (UTILITY BUS): signal selected on the utility bus.
To select the signal on the M/E-1 utility bus, press the M/E-1 UTIL button in the auxiliary delegation section, and select the cross-point button assigned to the required signal.
F6 (MATTE): dedicated color matte for edge fill.

5 When you selected a color matte as the edge fill signal, press F7 (MATTE ADJUST) to make the matte adjustments.

The EDGE MATTE menu appears.



Function key indications in the EDGE MATTE menu

6 If you do not wish to use the color mix function, press F1 (FLAT), turning it on, and set the parameters for matte 1.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

For details of the operations for using the color mix function, see the next section.

Using a color mix matte for the edge fill

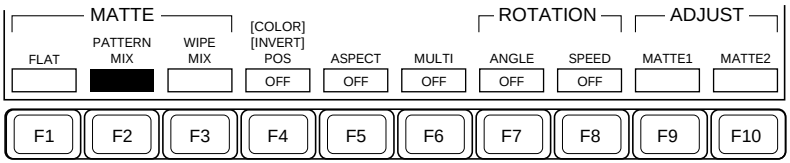
When you have selected a color matte as the edge fill signal for a border or soft border, you can combine mattes 1 and 2, using a pattern produced by the dedicated pattern generator or the wipe generator for the particular M/E bank. On the border of the pattern, the two mattes are mixed, forming a color gradation.

To carry out a color mix, use the following procedure.

When using a dedicated pattern:

1 In step **6** on the previous page, press F2 (PATTERN MIX), turning it on.

Function key indications appear for F4 through F10.



Function key indications in the EDGE MATTE menu (when F2 is selected)

2 to **4**

Basically same as steps **2** to **4** of the procedure described under “Using a color mix matte for the key edge fill” *(page 4-59)*.

5 To interchange matte 1 and matte 2, hold down the SHIFT button in the menu control section (the function key indication for F4 changes to “COLOR INVERT”), then press F4 (COLOR INVERT), turning it on.

When using a wipe pattern:

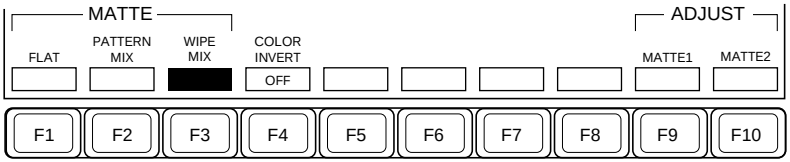
Note

When you select a wipe pattern for the color mix, the following wipe modifier settings become invalid.
• Direction
• Edge
• The “magnitude” setting for rotation

For details of the wipe modifiers, see page 4-98.

1 In step **6** of the procedure described above under “Modifying the edge of the wipe pattern” *(page 4-109)*, press F3 (WIPE MIX), turning it on.

Function key indications appear for F4, F9 and F10.



Function key indications in the EDGE MATTE menu (when F3 is selected)

2 Adjust the pattern parameters as required.

Knob	Parameter	Setting
1	Size	Set pattern size (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)

3 Adjust the colors for mattes 1 and 2.

To adjust matte 1 press F9 (MATTE 1), and to adjust matte 2 press F10 (MATTE 2), turning the respective button on, then adjust the parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

4 To interchange matte 1 and matte 2, press F4 (COLOR INVERT), turning it on.

Changing the aspect ratio of the wipe pattern
Replicating the wipe pattern
Rotating the wipe pattern
Applying a modulation to the edge of the wipe pattern

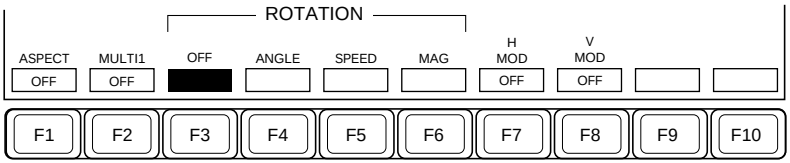
To apply these modifiers, use the following procedure.

Option

Applying modulation requires the optional BKDS-2070 Enhanced Wipe Generator Board to be installed.

1 • To apply the modifiers to the main pattern, in the M/E-1 WIPE menu, select F4 (MAIN MODIFY).
• To apply the modifiers to the subsidiary pattern, in the M/E-1 WIPE menu, select F5 (SUB MODIFY).

The MODIFY menu appears.



Function key indications in the MODIFY menu

2 Depending on the modifiers you wish to apply, press any of F1 through F8, turning them on, and adjust the parameters.

F1 (ASPECT): adjust the pattern aspect ratio.

Knob	Parameter	Setting
1	Aspect	Aspect ratio (0.00 to 100.00)

F2 (MULTI): use replicated patterns.

Knob	Parameter	Setting
1	H Multi	Number of pattern replications horizontally (1 to 63)
2	V Multi	Number of pattern replications vertically (1 to 63)
3	Shift	Replication layout (1 to 4) [a)]

a) For the layout codes (1 to 4) see page 4-100.

F3 (OFF): do not apply any of the rotation modifiers (ANGLE, SPEED, or MAGNITUDE).

F4 (ANGLE): rotate the pattern.

Knob	Parameter	Setting
1	Angle	Rotation angle (–50.00 to +50.00) (maximum one whole turn) a)

a) To avoid problems at the fader limits, depending on the angle, the pattern size is automatically corrected.

F5 (SPEED): rotate the pattern at a constant angular speed.

Knob	Parameter	Setting
1	Speed	Rotation speed (–50.00 to +50.00) a)

a) To avoid problems at the fader limits, the pattern size is automatically increased compared with the case in which the pattern does not rotate.

F6 (MAG): specify angle through which pattern turns through the course of the transition.

Knob	Parameter	Setting
1	Angle	Pattern orientation when the transition starts (–50.00 to +50.00)
2	Magnitude	Rotation through transition (–100.00 to +100.00) (maximum plus or minus two whole turns) a)

a) To avoid problems at the fader limits, depending on the angle when the transition completes, the pattern size is automatically corrected.

F7 (H MOD): modulate the pattern, giving a horizontal waviness to the edge.

Knob	Parameter	Setting
1	Amplitude	Set the modulation amplitude (0.00 to 100.00)
2	Frequency	Set the modulation frequency (0.00 to 100.00)
3	Speed	Set the modulation speed (–50.00 to +50.00)

F8 (V MOD): modulate the pattern, giving a vertical waviness to the edge.

Knob	Parameter	Setting
1	Amplitude	Set the modulation amplitude (0.00 to 100.00)
2	Frequency	Set the modulation frequency (0.00 to 100.00)
3	Speed	Set the modulation speed (–50.00 to +50.00)

Note

The F7 (H MOD) and F8 (V MOD) parameter settings are common to the main and subsidiary patterns. Therefore, changing the settings for one pattern automatically assigns the same values to the other pattern.

Resetting all of the wipe modifiers to the default settings

It is possible to reset all of the wipe modifiers for the currently selected wipe pattern to the default settings.

For example, to do this for the wipe pattern selected on the M/E-1 bank, in the menu control section, hold down the WIPE top menu button in the M/E-1 group for about two or three seconds.

You can determine the default settings using a setup menu operation.

For more information about the default settings, see the section on the BACKUP menu (page 14-15).

Wipe snapshot operations

When you have finalized a wipe pattern, complete with its various modifications, you can save the whole setting using a numeric key in the FlexiPad, for instant recall when required.

To save a wipe snapshot

For example, to save the wipe settings on the M/E-1 bank, hold down the WIPE button in the FlexiPad of the M/E-1 bank and press one of the numeric keys 1 to 9 which is not lit.
This saves the data in the register corresponding to the number of the numeric key which you have pressed.

Note

When a numeric key is lit, there is a wipe snapshot already stored in the corresponding register. If you hold down the WIPE button and press one of the numeric keys which is lit, the contents of the register are overwritten.

To recall a wipe snapshot

In the FlexiPad, press the WIPE button, turning it on, then press the numeric key corresponding to the required register (the key will be lit).

To return to the state immediately before recalling a wipe snapshot ("LAST X" function)

In the FlexiPad, press the WIPE button, turning it on, then press the numeric 0 key.

PGM/PST Wipes and Downstream Keyer Wipes

This section describes the basic operations for PGM/PST wipe and downstream keyer wipe settings.

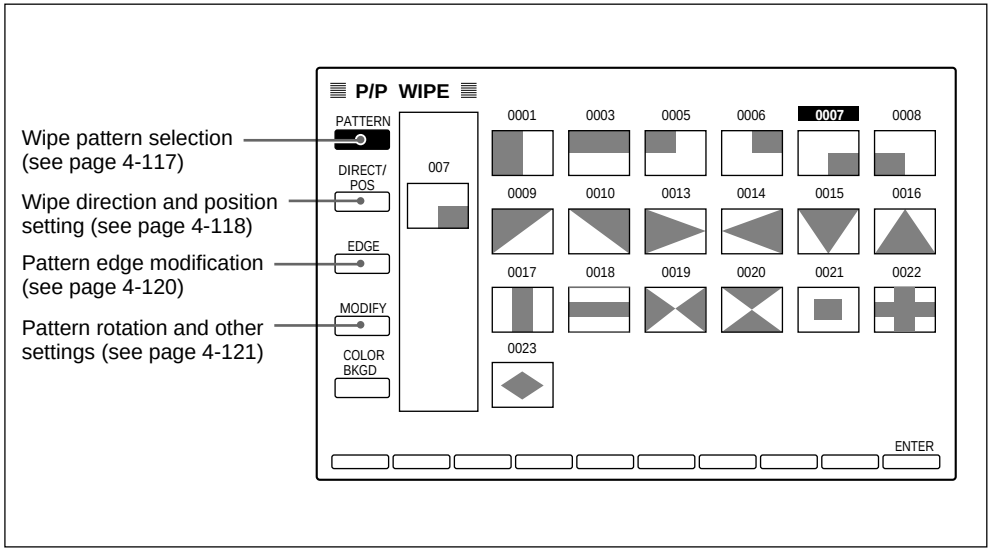
PGM/PST wipe setting menu

You carry out the settings for PGM/PST wipes in the PGM/PST WIPE menu.

To access the PGM/PST WIPE menu

Use either of the following operations:

- In the SYSTEM group of the menu control section, press the P/P WIPE top menu button.
- In the transition control section of the PGM/PST bank, press the WIPE button twice in rapid succession.



Example PGM/PST WIPE menu display

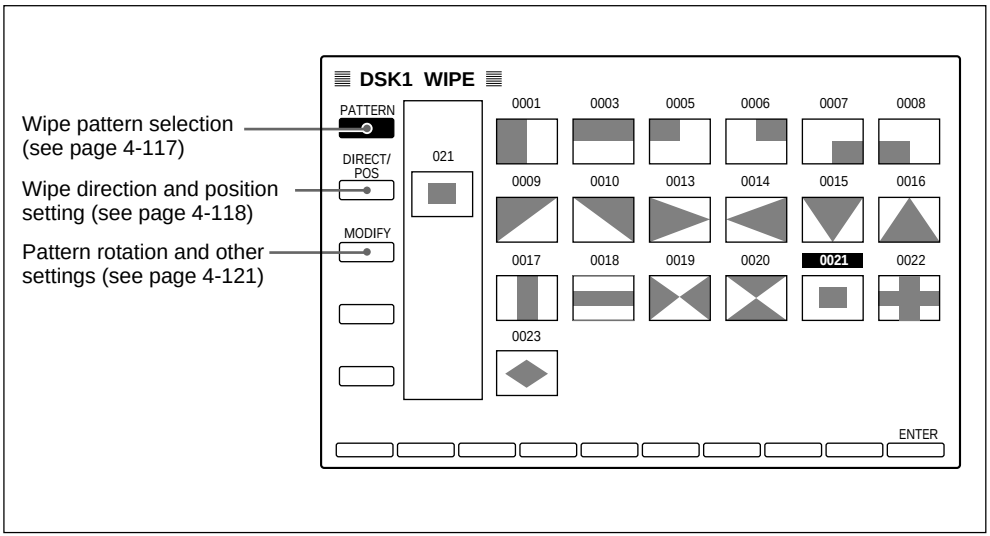
Downstream keyer wipe setting menu

You carry out the settings for downstream keyer wipes by first selecting the appropriate keyer (DSK 1 to DSK 4) and then using the DSK WIPE menu.

To access the DSK WIPE menu

For example, to make settings for DSK 1, use either of the following operations:

- Press the DSK 1 button in the downstream keyer control section, then the DSK WIPE top menu button in the SYSTEM group of the menu control section.
- Press the DSK 1 button in the downstream keyer control section, then press the WIPE button in the downstream keyer control section twice in rapid succession.



Example DSK WIPE menu display

Selecting the wipe pattern

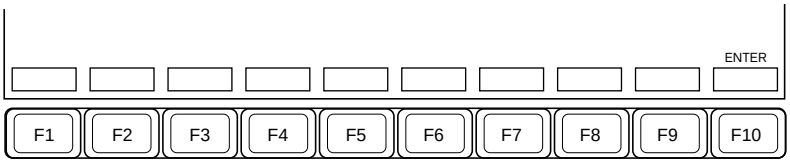
Move the cursor to select the required wipe pattern from those displayed on the menu screen.
Alternatively, you can enter the wipe pattern number directly using the numeric keypad.

For PGM/PST and downstream keyer wipes, it is only possible to use the standard wipes, and further excluding number 24. Unlike the M/E banks, it is not possible to carry out a pattern mix.

To select the wipe pattern, use the following procedure.

1 • For a PGM/PST wipe, in the PGM/PST WIPE menu, select item 1 (PATTERN).
• For a downstream keyer wipe, in the DSK WIPE menu, select item 1 (PATTERN).

The PATTERN menu appears, and you can now select the pattern.



Function key indications in the PATTERN menu

2 Use the cursor keys (↑ ↓ ← →) to select the required pattern.

3 Press F10 (ENTER).

To select a wipe pattern using the numeric keypad

With the PATTERN menu displayed, enter the number of the required pattern, using the numeric keypad, then press the ENTER button.

Applying wipe modifiers

You can modify wipe patterns, for example to reverse the wipe direction, or change the position of the pattern.
For PGM/PST wipes and downstream keyer wipes, you can use the following modifiers. For an overview of the modifiers, see the section “Modifying the wipe pattern” *(page 4-98)*.

- Direction
- Position
- Edge (only the soft edge can be used on downstream keyer wipes)
- Aspect ratio
- Pattern replication
- Pattern rotation

Depending on the pattern you have selected, not all modifiers may be usable.

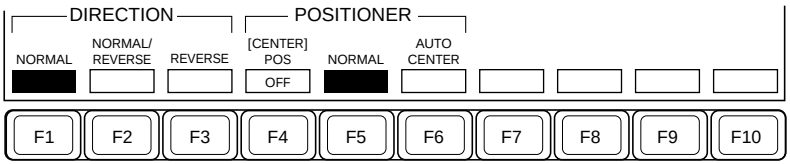
For details of possible combinations of wipe patterns and modifiers, see the table on page 4-101.

Selecting the wipe direction
Positioning the pattern

To apply these modifiers, use the following procedure.

1 • For a PGM/PST wipe, in the PGM/PST WIPE menu, select item 2 (DIRECT/POS).
• For a downstream keyer wipe, in the DSK WIPE menu, select item 2 (DIRECT/POS).

The DIRECT/POS menu appears.



Function key indications in the DIRECT/POS menu

2 To specify the wipe direction, press one of F1 through F3, turning it on. (For a downstream keyer wipe, you can also use the NORM, NORM/REV and REV buttons in the downstream keyer control section.)

F1 (NORMAL): carry out the wipe in the forward direction.
F2 (NORMAL/REVERSE): carry out alternate wipes in opposite directions.
F3 (REVERSE): carry out the wipe in the reverse direction.

3 To position the pattern, press F4 (POS), turning it on, then adjust the parameters.

Knob	Parameter	Setting
1	H Pos	Set the horizontal position of the pattern (–50.00 to +50.00)
2	V Pos	Set the vertical position of the pattern (–50.00 to +50.00)

To return the pattern position to the center of the screen
Hold down the SHIFT button (the indication above F4 changes to "CENTER"), and press F4 (CENTER).

4 Press F5 or F6 to select whether or not the pattern moves toward the center during the course of the wipe.

F5 (NORMAL): The wipe pattern center is stationary throughout the transition.
F6 (AUTO CENTER): As the wipe progresses, the wipe pattern center moves toward the center of the video space.

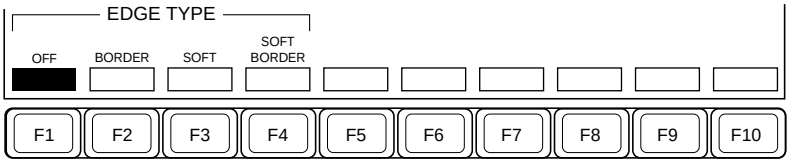
Modifying the edge of the wipe pattern

To modify the edge of the wipe pattern, use the following procedure.

• For a PGM/PST wipe

1 In the PGM/PST WIPE menu, select item 3 (EDGE).

The EDGE menu appears.



Function key indications in the EDGE menu

2 Press one of F1 through F4, turning it on, and adjust the parameters.

F1 (OFF): unmodified edge.

F2 (BORDER): apply a border. A dedicated color matte is used to fill the border. (Unlike the M/E banks, it is not possible to carry out a color mix using mattes of two colors.)

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Width	Set width (0.00 to 100.00)

F3 (SOFT): soften the edge.

Knob	Parameter	Setting
1	Softness	Set the degree of edge softness (0.00 to 100.00)

F4 (SOFT BORDER): apply a soft border.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Width	Set width (0.00 to 100.00)
1	Inner Soft	Inner edge softness of the border (0.00 to 100.00)
2	Outer Soft	Outer edge softness of the border (0.00 to 100.00)
4	Width	Set width (0.00 to 100.00)

• **For a downstream wipe**

1 In the DSK WIPE menu, select item 3 (MODIFY), to display the MODIFY menu *(see the next section)*.

2 Press F8 (SOFT), turning it on, and adjust the following parameter.

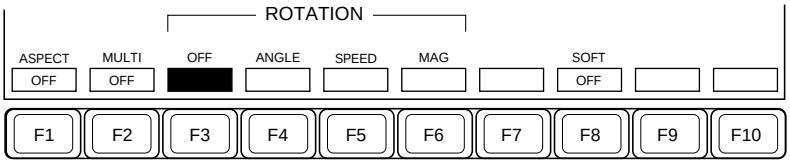
Knob	Parameter	Setting
1	Softness	Set the degree of edge softness (0.00 to 100.00)

Changing the aspect ratio of the wipe pattern
Replicating the wipe pattern
Rotating the wipe pattern

To apply these modifiers, use the following procedure.

1
- For a PGM/PST wipe, in the PGM/PST WIPE menu, select item 4 (MODIFY).
- For a downstream keyer wipe, in the DSK WIPE menu, select item 3 (MODIFY).

The MODIFY menu appears.



Function key indications in the MODIFY menu
(F8 is not displayed under the PGM/PST WIPE menu)

2 Depending on the modifiers you wish to apply, press any of F1 through F6, turning them on, and adjust the parameters.

F1 (ASPECT): adjust the pattern aspect ratio.

Knob	Parameter	Setting
1	Aspect	Aspect ratio (0.00 to 100.00)

F2 (MULTI): use replicated patterns.

Knob	Parameter	Setting
1	H Multi	Number of pattern replications horizontally (1 to 63)
2	V Multi	Number of pattern replications vertically (1 to 63)
3	Shift	Replication layout (1 to 4) [a)]

a) For the layout codes (1 to 4) see page 4-100.

(Continued)

F3 (OFF): do not apply any of the rotation modifiers (ANGLE, SPEED, or MAGNITUDE).

F4 (ANGLE): rotate the pattern.

Knob	Parameter	Setting
1	Angle	Rotation angle (–50.00 to +50.00) (maximum one whole turn) a)

a) To avoid problems at the fader limits, depending on the angle, the pattern size is automatically corrected.

F5 (SPEED): rotate the pattern at a constant angular speed.

Knob	Parameter	Setting
1	Speed	Rotation speed (–50.00 to +50.00) a)

a) To avoid problems at the fader limits, the pattern size is automatically increased compared with the case in which the pattern does not rotate.

F6 (MAG): specify angle through which pattern turns through the course of the transition.

Knob	Parameter	Setting
1	Angle	Pattern orientation when the transition starts (–50.00 to +50.00)
2	Magnitude	Rotation through transition (–100.00 to +100.00) (maximum plus or minus two whole turns) a)

a) To avoid problems at the fader limits, depending on the angle when the transition completes, the pattern size is automatically corrected.

Resetting all of the wipe modifiers to the default settings

It is possible to reset all of the wipe modifiers for the currently selected wipe pattern to the default settings.

You can determine the default settings using a setup menu operation.
For more information about the default settings, see the section on the BACKUP menu (page 14-15).

For the PGM/PST bank:
In the menu control section, hold down the P/P WIPE top menu button in the SYSTEM group for about 2 or 3 seconds.

For the downstream keyer:
In the menu control section, hold down the DSK WIPE top menu button in the SYSTEM group for about 2 or 3 seconds.

DME Wipes

This section describes the basic operations and settings for DME wipes.

Overview

By connecting one or more DME-7000 or other Digital Multi Effects units to the switcher system, it is possible to carry out wipe transitions using the DME effects. This function is called "DME Wipe" (DME LINK™), and a pattern used for the function is called a "DME wipe pattern".

Using the DME units

- To use the DME wipe function on an M/E bank, one or two DME units must be connected to the switcher. If three or more DME units are connected to the switcher, it is first necessary in a setup menu to select which DME unit will be used on which M/E bank *(see page 14-54)*.
- You can also select a DME wipe for a background transition on the PGM/PST bank. A DME wipe for either a PGM/PST background transition or a downstream key transition requires the DME unit to be connected to the DMK-7000.

Option

To connect a DME to the DMK-7000 requires the optional BKDS-7180 DME Interface Board.

Signal path for a DME wipe

- For a DME wipe on an M/E bank, the output buses for the signals to the DME use the auxiliary buses which you specify in a setup menu *(see page 14-54)*. The output signals from the DME (DMEV, DMEK) are input to the switcher through cross-point button columns specified in the same setup menu.
- For a PGM/PST background or downstream keyer DME wipe, the output signals from the DME-I/F VIDEO OUTPUT and KEY OUTPUT connectors on the DMK-7000 are input to the DME, and the output signals from the DME (DMEV, DMEK) are input to the DME-I/F VIDEO INPUT and KEY INPUT connectors.

DME wipe patterns

The DME wipe patterns can be divided into the following groups.

For details of the patterns in each group and impressions of the wipes, see the Appendix "DME Wipe Patterns" (page A-4).

The following descriptions apply when the wipe direction is "Normal" (i.e. forward).

Slide: The new video slides in over the old video.

Split: The old video splits, and the new video appears in the gap.

Squeeze: The new video appears squeezed over the old video, and progressively expands to cover it.

Door: The new video moves like a door closing, and progressively covers the old video.

Page turn: The old video moves like a page turning, and the new video appears behind it.

Page roll: The old video rolls up like a scroll, and the new video appears behind it. This is a type of page turn.

User programmable DME: This carries out a DME wipe using key frames built on the DME. The pattern numbers which can be used and the DME key frame effect numbers are related as shown in the following table.

Pattern number	Effect number
1901	1
1902	2
:	:
1911	11
1912	12

Pattern number	Effect number
1951	51
:	:
1956	56
1961	61
:	:
1966	66

For notes on how to build a key frame effect using the user programmable DME function, see page 4-137.

Note

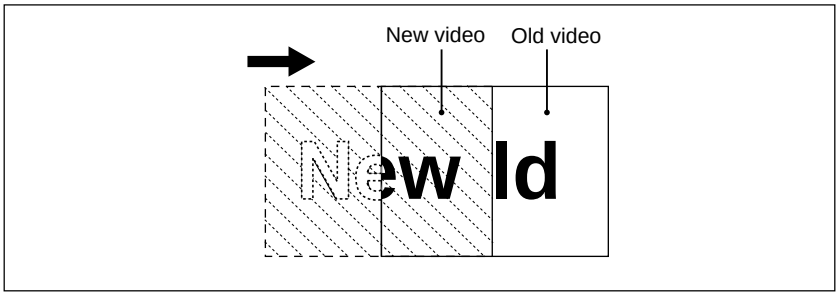
It is not possible to use a user programmable DME with the DME-3000.

DME wipe modes

There are two DME wipe operating modes: single mode, using a single DME unit, and dual mode, using two DME units.

Single mode

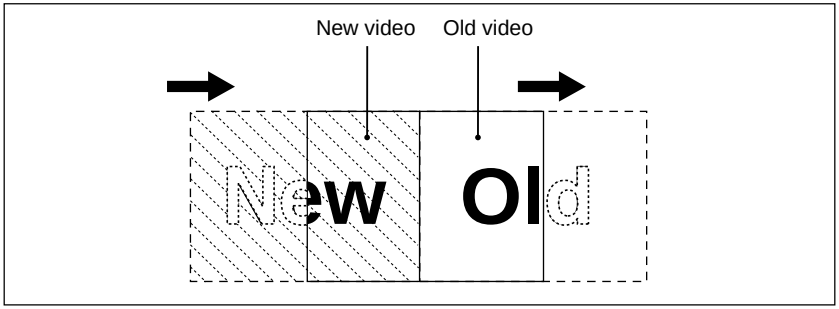
The DME is dedicated to manipulating the background, key 1, key 2, or one of the four downstream keys.
For example, using a pattern from the slide group, the video changes as shown in the following figure.



A slide effect in single mode

Dual mode

By means of setup menu operations, it is possible to use dual mode only for a background transition on an M/E bank to which the two units are connected.
For a dual mode DME wipe, you can use the two DME units connected to the M/E bank to apply the DME effect to both the old video and the new video.
For example, using a pattern from the slide group, the video changes as shown in the following figure.



A slide effect in dual mode

Modifying a DME wipe

You can execute a transition with the following modifications applied to the DME wipe.

Wipe direction (DIRECTION): The wipe can proceed in the forward direction (NORMAL), or reverse direction (REVERSE), or in alternating directions for each execution (NORMAL/REVERSE).

Note

For a key transition, the forward and reverse executions may not be the same as for a background transition. The direction setting has no effect on a user programmable DME effect.

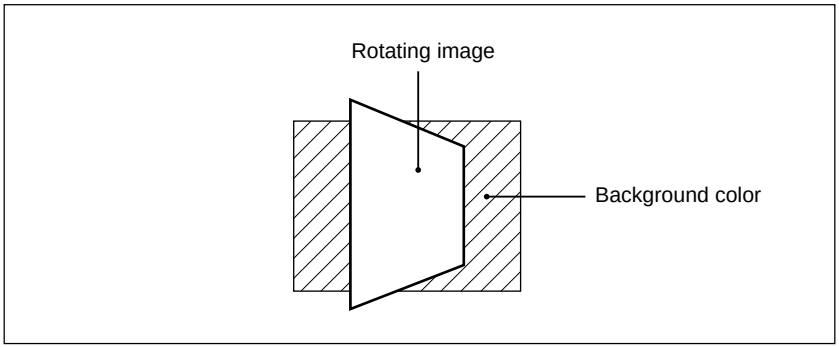
Edge modifications (BORDER): You can apply a border or soft border to the edge, or soften the edge. These modifications are not available for a user programmable DME effect.

Pattern positioning (POSITIONER): You can use this modifier for the squeeze pattern  only. As the transition proceeds, the center of the pattern moves automatically from its original position toward the center of video space. In other words, the effect is similar to the “AUTO CENTER” setting for an ordinary wipe.

Adjustments on the DME Unit

- When you have selected a page turn or page roll pattern, you can adjust the nonlinear “Angle” and “Radius” parameters, using the control panel for the DME unit.
- In a DME wipe, part of the image may be filled by the DME background color. For example, in a horizontally or vertically opening door pattern (or), the hatched portions in the figure below are filled by the DME background color. In this case, select the DME background color on the DME.
  Note that on the DME-7000/3000, for the background source you can select “MIX COLOR” (another term referring to a kind of color combination) or an external video signal.
- When applying a border, you can also adjust the border width on the DME.

For details of adjustments on the DME, refer to the BZDM-7720/3720 User’s Guide.



DME image and background color in a DME door wipe

Relationship between DME wipes and other effects

This section describes the relationship between DME wipes and other effects.

Relation with ordinary wipes

- Since a DME wipe does not use the wipe generator built into the switcher, you can use a pattern produced by the wipe generator as the source for a pattern key or mask, even while the DME wipe is executing.
- It is not possible to use a DME wipe pattern as the source for a pattern key or mask.

Relation with processed keys

On each M/E bank, if you are using the same DME for both a DME wipe and a processed key, the first selected function takes precedence.

Basic Operation for DME Wipes

Using a DME wipe for a background transition

To use a DME wipe for a background transition, use the following procedure.

1 Select the background video for after the transition.

M/E background: Select the background with the B-bus cross-point button.

PGM/PST background: Select the background with the cross-point button for the PST bus.

2 In the transition control section, press the BKGD next transition selection button, turning it on.

3 In the transition control section, select DME wipe as the transition type.

M/E background: When specifying single mode, press either DME 1 or DME 2 transition type selection button, turning it on, and when specifying dual mode, press the both buttons simultaneously, turning them on.

PGM/PST background: Press the DME transition type selection button, turning it on.

4 Select the DME wipe pattern, and if required adjust the parameters.

For details of this operation, see the section "DME Wipe Settings" (page 4-130).

5 Use the fader lever or AUTO TRANS button to carry out the transition.

Using a DME wipe for a key transition

To use a DME wipe for a key transition, use the following procedure.

1 Select the key for the next transition.

M/E key: In the transition control section, press the next transition selection button KEY 1 or KEY 2, turning it on.

Downstream key: In the downstream keyer control section, press one of the keyer selection buttons DSK 1 through DSK 4, turning it on.
In a 3.5-M/E system, you can alternatively press one of the next transition selection buttons DSK 1 through DSK 4 in the PGM/PST bank transition control section, turning it on.

2 When inserting the key, select the key type, key fill, and key source, and make any necessary settings such as key modifications.

Note

When inserting an M/E key, set the key source selection to "AUTO SELECT" or "SPLIT" *(see page 4-52)*. If you set it to "KEY BUS", the key source signal will not be transmitted correctly to the DME, and therefore the key transition will not be executed correctly.

3 Select DME wipe as the transition type.

M/E key: In the transition control section, press the transition type selection button DME 1 or DME 2, turning it on.

Note

You cannot specify dual mode for a key transition using a DME wipe.

Downstream key: In the downstream keyer control section, press the transition type selection button DME, turn it on.
In a 3.5-M/E system, you can alternatively press the DME button in the PGM/PST bank transition control section, turning it on.

4 Select the DME wipe pattern, and if required adjust the parameters.

For details of this operation, see the next section "DME Wipe Settings".

(Continued)

5 Carry out the transition.

M/E key: Use the fader lever or AUTO TRANS button in the transition control section.

Downstream key: In the downstream keyer control section, press one of the DSK 1 to DSK 4 AUTO TRANS buttons.
In a 3.5-M/E system, you can alternatively use the fader lever or AUTO TRANS button in the transition control section in the PGM/PST bank.

DME Wipe Settings

DME wipe settings are carried out in a dedicated menu for the M/E banks or PGM/PST bank concerned.

DME wipe setting menus

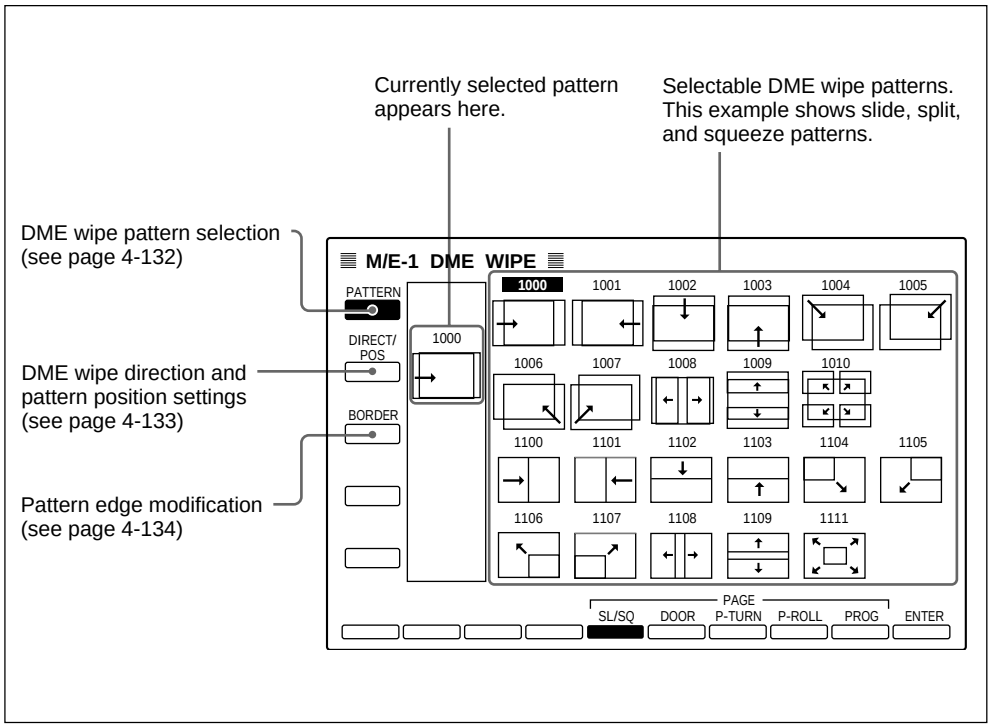
The DME wipe setting menus are listed in the following table.

Switcher bank	Menu
M/E banks (background, key 1, or key 2)	M/E-1 DME WIPE
	M/E-2 DME WIPE
	M/E-3 DME WIPE
PGM/PST background transition, or one of downstream keys 1 to 4	P/P DSK DME WIPE

Accessing an M/E bank DME wipe setting menu

For example, to access the M/E-1 DME WIPE menu, use either of the following operations:

- In the M/E-1 group of the menu control section, press the DME top menu button.
- In the transition control section of the M/E-1 bank, press either DME 1 or DME 2 button twice in rapid succession.



Example M/E-1 DME WIPE menu display

The M/E-2 and M/E-3 DME WIPE menus are similar in appearance.

The following description always takes the M/E-1 DME WIPE menu as an example for basic DME wipe setting operations.

Accessing the P/P DSK DME WIPE menu

Use any of the following operations:

- Press the P/P DSK DME top menu button in the SYSTEM group of the menu control section.
- Press the DME button in the transition control section of the PGM/PST bank twice in rapid succession (in 3.5-M/E systems only).
- In the downstream keyer control section, press one of the keyer selection buttons DSK 1 through DSK 4, turning it on, then press the DME button twice in rapid succession.

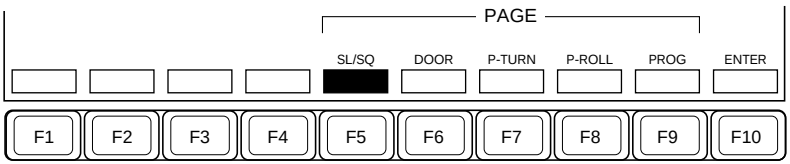
The P/P DSK DME WIPE menu is similar in appearance to the M/E-1 DME WIPE menu shown on the previous page.

Selecting the DME wipe pattern

To select the DME wipe pattern, use the following procedure.
Note that it is not possible to use a user programmable DME with the DME-3000.

1 In the M/E-1 DME WIPE menu or P/P DSK DME WIPE menu, select item 1 (PATTERN).

The PATTERN menu appears, and you can now select the pattern.



Function key indications in the PATTERN menu

2 Press one of F5 to F9 to select the required group of patterns.

F5 (SL/SQ): slides and squeezes
F6 (DOOR): door effects
F7 (P-TURN): page turn
F8 (P-ROLL): page roll (scroll)
F9 (PROG): user programmable DME effects

The patterns from the group you have selected appear.

3 Use the cursor movement buttons (↑ ↓ ← →) to align the cursor with the required pattern number.

4 Press F10 (ENTER), or press the ENTER button on the numeric keypad.

The selected pattern now appears in the current pattern box.

To select a DME wipe pattern using the numeric keypad
With the PATTERN menu displayed, enter the number of the required pattern, using the numeric keypad, then press the ENTER button.

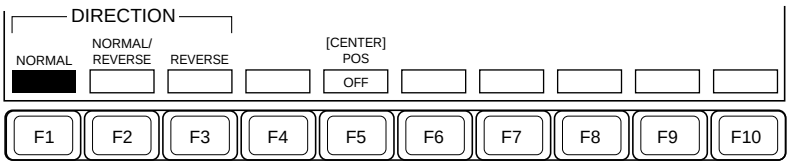
Applying DME wipe modifiers

There are three modifiers you can apply to a DME wipe: the direction, position and edge modifiers.
Note that only the direction setting has effect on a user programmable DME effect.
Additionally, the position modifications can only be applied to the pattern in the squeeze group.

Selecting the wipe direction
Positioning the pattern
To apply these modifiers, use the following procedure.

1 In the M/E-1 DME WIPE menu or P/P DSK DME WIPE menu, select item 2 (DIRECT/POS).

The DIRECT/POS menu appears.



Function key indications in the DIRECT/POS menu

(Continued)

2 To specify the wipe direction, press one of F1 through F3, turning it on. (For a downstream keyer wipe, you can also use the NORM, NORM/REV and REV buttons in the downstream keyer control section.)

F1 (NORMAL): carry out the wipe in the forward direction.
F2 (NORMAL/REVERSE): carry out alternate wipes in opposite directions.
F3 (REVERSE): carry out the wipe in the reverse direction.

Note

For a key transition, the forward and reverse executions may not be the same as for a background transition. The direction setting has no effect on a user programmable DME effect.

3 When using the  pattern from the squeeze group, to apply the "AUTO CENTER" positioning effect, press F5 (POS), turning it on, then adjust the initial position of the pattern.

Knob	Parameter	Setting
1	H Pos	Set the horizontal position of the pattern (–50.00 to +50.00)
2	V Pos	Set the vertical position of the pattern (–50.00 to +50.00)

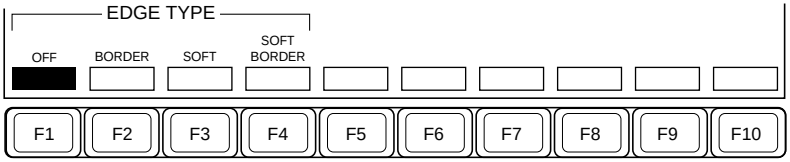
To return the pattern position to the center of the screen
Hold down the SHIFT button (the indication above F5 changes to "CENTER"), and press F5 (CENTER).

Modifying the edge of the wipe pattern

To modify the edge of the DME wipe pattern, use the following procedure. Note that it is not possible to use the border function on a user programmable DME effect or for a key transition.

1 In the M/E-1 DME WIPE menu or P/P DSK DME WIPE menu, select item 3 (BORDER).

The BORDER menu appears.



Function key indications in the BORDER menu

2 Press one of F1 through F4, and adjust the parameter settings as necessary.

F1 (OFF): unmodified edge.

F2 (BORDER): apply a border. A dedicated color matte is used as the edge fill signal.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Width	Set width (0.00 to 100.00)

F3 (SOFT): soft edge.

Knob	Parameter	Setting
1	Softness	Set the degree of edge softness (0.00 to 100.00)

F4 (SOFT BORDER): apply a soft border.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Width	Set width (0.00 to 100.00)
1	Inner Soft	Inner edge softness of the border (0.00 to 100.00)
2	Outer Soft	Outer edge softness of the border (0.00 to 100.00)
4	Width	Set width (0.00 to 100.00)

DME wipe snapshot operations

When you have finalized an M/E DME wipe pattern, complete with its various modifications, you can save the whole setting using a numeric key in the FlexiPad, for instant recall when required.

To save a DME wipe snapshot

For example, to save the DME wipe settings on the M/E-1 bank, hold down the DME button in the FlexiPad of the M/E-1 bank and press one of the numeric keys 1 to 9 which is not lit.
This saves the data in the register corresponding to the number of the numeric key which you have pressed.

Note

When a numeric key is lit, there is a DME wipe snapshot already stored in the corresponding register. If you hold down the DME button and press one of the numeric keys which is lit, the contents of the register are overwritten.

To recall a DME wipe snapshot

In the FlexiPad, press the DME button, turning it on, then press the numeric key corresponding to the required register.

To return to the state immediately before recalling a DME wipe snapshot ("LAST X" function)

In the FlexiPad, press the DME button, turning it on, then press the numeric 0 key.

Notes on Building a Key Frame Effect With User Programmable DME

A user programmable DME effect uses an effect built on the DME from key frames as a transition on the switcher. To obtain the required transition effect, it is important to note the following points.

Note

It is not possible to use a user programmable DME effect with the DME-3000.

Global channel and DME key frame effects

If the global (GLBL) channel has an effect with the same number as on the reference channel, executing a user DME will cause the effect on the global channel to be executed as well. When executing a user programmable DME effect, check for the presence of effects on the global channel.

Key frame effects for pattern numbers 1901 to 1912:

When using a key frame effect for a background transition:

- For the initial key frame, set the image size to full screen size.
- For the final key frame, move the image off the screen, or reduce the size to zero, so that it cannot be seen on the screen.

Key frame effect used for a key transition:

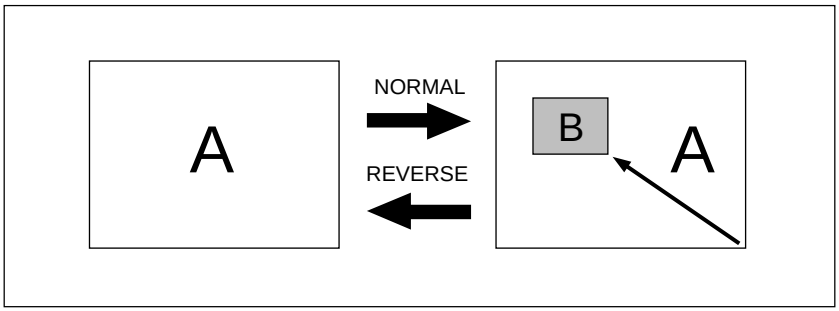
- For the initial key frame, set the image size to full screen size, and arrange that it can be seen in the screen (“key on” state).
- For the final key frame, move the image off the screen, or reduce the size to zero, so that it cannot be seen on the screen (“key off” state).

Key frame effects for pattern numbers 1951 to 1956 and 1961 to 1966

Normally, for DME wipe transitions with pattern numbers 1901 to 1912, at the end point of the transition the A bus image has been completely replaced by the B bus image. For pattern numbers 1951 to 1956 and 1961 to 1966, however, at the end of the transition the A bus image remains within the B bus image, rather than being completely replaced. Such effects are referred to as “picture-in-picture”.
With these effects, the transition directions are fixed as NORMAL/REVERSE, so that in principle the first occurrence of the transition results in a combined image including both the A bus and B bus images, and the next transition returns to the A bus image only. (It is possible to select whether to start with a “normal” transition or a “reverse” transition.)

Creating frame effects for pattern numbers 1951 to 1956

With pattern numbers 1951 to 1956, as the transition progresses the B bus image gradually appears.

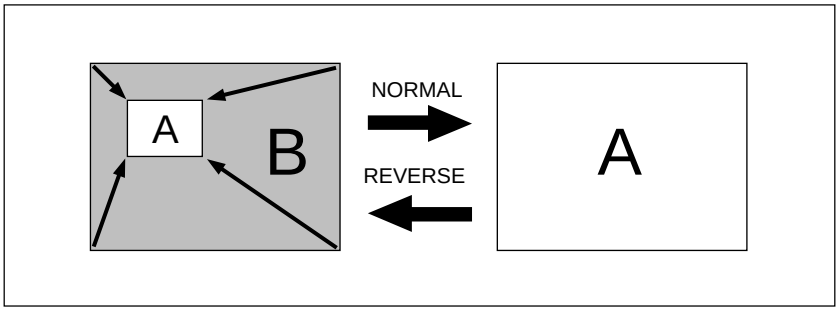


Create a key frame effect for the above patterns as follows.

- For the first key frame, adjust the insertion position and size for the picture-in-picture.
- For the last key frame, use a position outside the image area, or set the size to zero, so that the inserted picture is not visible.

Creating frame effects for pattern numbers 1961 to 1966

With pattern numbers 1961 to 1966, as the transition progresses the A bus image gradually shrinks, to reveal the B bus image from underneath.



Create a key frame effect for the above patterns as follows.

- For the first key frame, set the image size to full size.
- For the last key frame, adjust the insertion position and size for the picture-in-picture.

Color Backgrounds

This section describes the various settings which are possible for color backgrounds used on the M/E banks and PGM/PST bank (3.5-M/E systems only).

Overview

The M/E banks and PGM/PST bank have dedicated color matte generators for producing color backgrounds, which can then be used in creating video effects.
To select the output from a color matte generator on a particular bank, press the cross-point button in the column which has been allocated to the color background in a setup menu.

Color mix

Each M/E bank color matte generator can produce two outputs (matte 1 and matte 2) simultaneously. Using either the dedicated pattern generator or a pattern produced by the wipe generator on the bank, you can combine mattes 1 and 2 to form a color gradation on the border of the pattern. This is called a "color mix". If you do not use the color mix function, the matte 1 is always used as the output.
The PGM/PST bank color matte generator produces only one matte, and the color mix function is not available.

Color Background Setting Operations

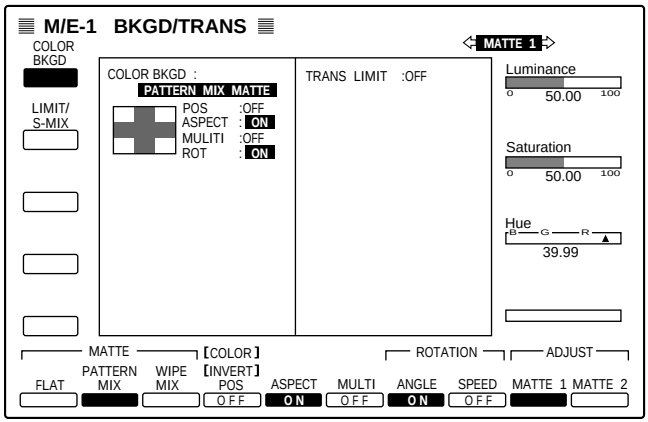
The color background settings are carried out in a dedicated color background setting menu for the bank concerned.

M/E bank color background settings

Accessing the M/E bank color background setting menus

For example, to access the M/E-1 color background setting menu (COLOR BKGD), use either of the following operations:

- In the M/E-1 bank, press the cross-point button to which the color background is assigned, twice in rapid succession.
- In the M/E-1 group of the menu control section, press the BKGD/TRANS top menu button to display the BKGD/TRANS menu, then select item 1 (COLOR BKGD).



Example M/E-1 COLOR BKGD menu display

To adjust matte 1 (when not using the color mix function)

In the COLOR BKGD menu, press F1 (FLAT), turning it on, and adjust the parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

To carry out a color mix

In the COLOR BKGD menu, press F2 (PATTERN MIX) or F3 (WIPE MIX), turning it on.

The remainder of the procedure and the function key indications are basically the same as when carrying out a color mix for a wipe pattern edge (border or soft border). *See the operation in the section "Using a color mix matte for the edge fill" (page 4-110).*

PGM/PST bank color background settings

To adjust the color matte (one only) produced by the color matte generator for the PGM/PST bank, use the following procedure.

1 In the PGM/PST bank, press the cross-point button allocated to the color background twice in rapid succession.

The setting screen for the PGM/PST color background appears.
Note that you can also access this screen by selecting item 5 (COLOR BKGD) in the PGM/PST WIPE menu.

For details of how to display the PGM/PST WIPE menu and an example of the menu screen, see page 4-115.

2 Adjust the color matte parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

Status Display

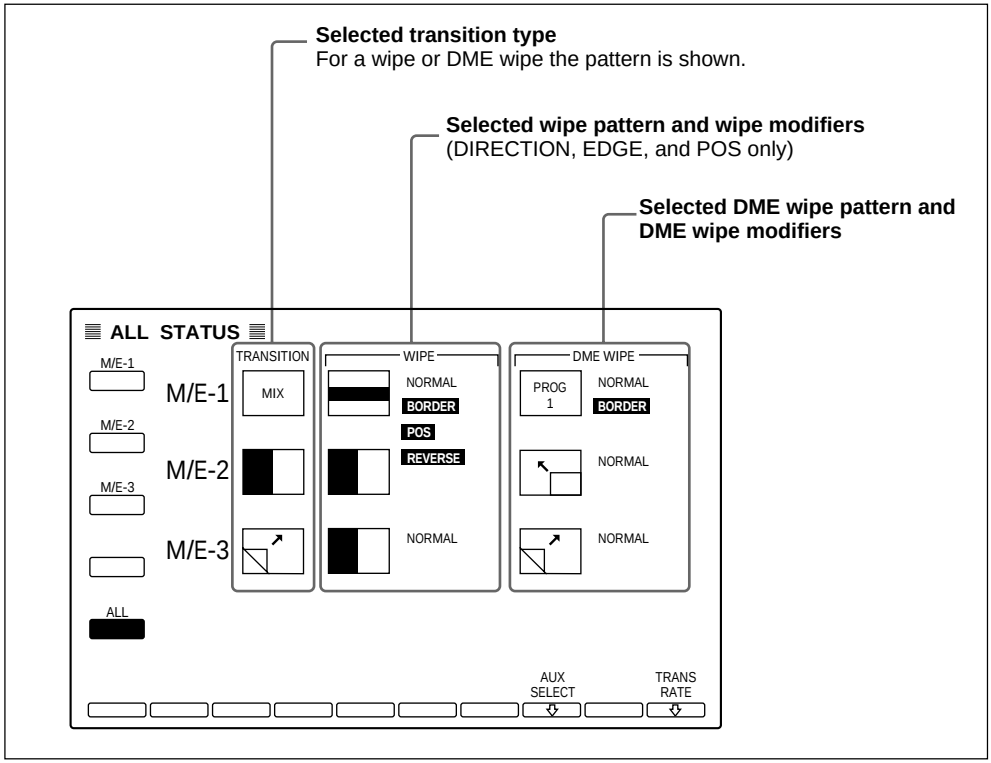
This section describes the function for displaying the current status of the selections for transitions and wipes on the M/E banks.
It also describes how to change signal selections on the auxiliary buses, and how to set the transition rate.

Basic Status Display Operation

Displaying the ALL STATUS menu

From among the top menu selection buttons in the menu block, press the STATS button in the SYSTEM group, and then select the item 5 (ALL).

The ALL STATUS menu appears.



ALL STATUS menu (in a 3-M/E system)

To display the status for a single bank

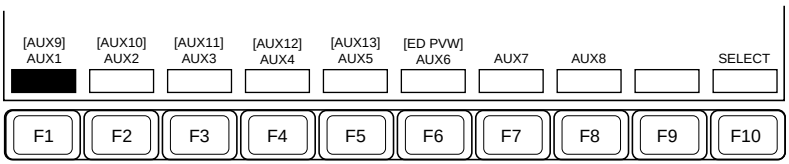
Select one of items 1 to 3 (M/E-1 to M/E-3) to display the status of the snapshot or wipe information stored in the FlexiPad for the bank. For example, selecting item 1 displays the M/E-1 STATUS menu.
The status information displayed depends on which of F1 (SNAPSHOT) to F3 (DME WIPE) is selected.
It is also possible to display these status screens by pressing the button in the FlexiPad twice in rapid succession. *For details, see page 4-146.*

Selecting an auxiliary bus signal

To select an auxiliary bus signal in the ALL STATUS menu, use the following procedure.

1 Press F8 (AUX SELECT).

The function key indications change as follows.



Function key indications in the ALL STATUS menu (when F1 is selected)

2 Press the function key corresponding to the desired auxiliary bus.
To select AUX9 to ED PVW, press F1 to F6 while holding down the SHIFT button in the menu control section.

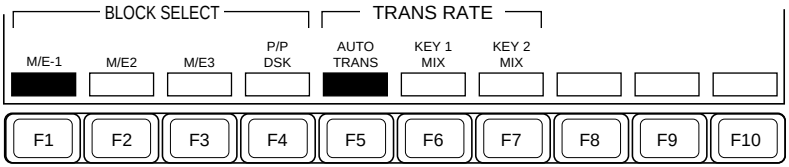
3 Enter the button number corresponding to the desired signal from the numeric keypad, or use the cursor movement buttons (↑ ↓ ← →) to align the cursor with the required signal display, then press F10 (SELECT).

Setting the transition rate

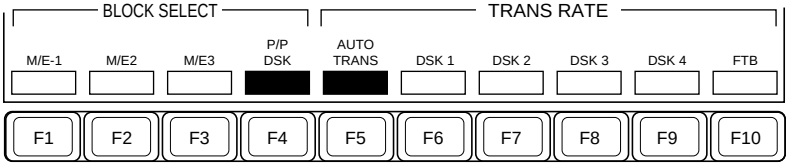
To set the transition rate in the ALL STATUS menu *(see page 4-143)*, use the following procedure.

1 Press F10 (TRANS RATE).

The function key indications change as follows. The indications for F5 to F10 depend on the selections of F1 to F4.



Function key indications in the ALL STATUS menu
(when one of F1 to F3 is selected)



Function key indications in the ALL STATUS menu (when F4 is selected)

2 Press one of F1 (M/E-1) to F4 (P/P DSK), to select the corresponding block (bank).

3 • If you pressed one of F1 to F3 in step **2**, now press one of F5 to F7, to select the transition rate setting from the following:

F5 (AUTO TRANS): The auto transition rate set in the M/E transition control section

F6 (KEY1 MIX): The mix rate for key 1 in the M/E key control section

F7 (KEY2 MIX): The mix rate for key 2 in the M/E key control section

• If you pressed F4 (P/P DSK) in step **2**, now press one of F5 to F10, to select the transition rate setting from the following:

F5 (AUTO TRANS): The auto transition rate set in the PGM/PST transition control section

F6 (DSK1) to F9 (DSK4) : The auto transition rate for downstream key 1 to 4 set in the DSK control section

F10 (FTB): The rate set for a fade-to-black in the DSK control section

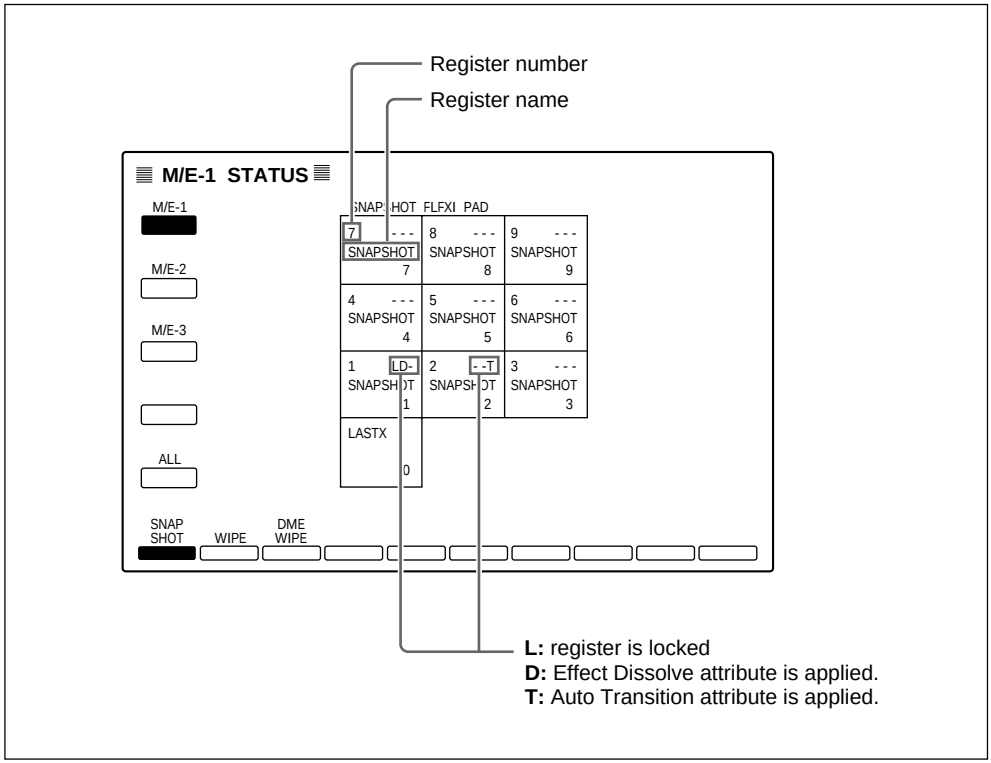
4 Enter the transition rate (duration) from the numeric keypad, and press the ENTER button.

Displaying the status of snapshot or wipe information stored in the FlexiPad

To display the status of snapshot information stored in the FlexiPad

In the required M/E bank, press the SNAPSHOT button in the FlexiPad twice in rapid succession.
Alternatively, display the status for the corresponding bank (e.g. for the M/E-1 bank, display the M/E-1 STATUS menu), and press F1 (SNAPSHOT).

The menu appears as follows.
In this menu, the status of the snapshot saved in each of the ten buttons in the FlexiPad appears.



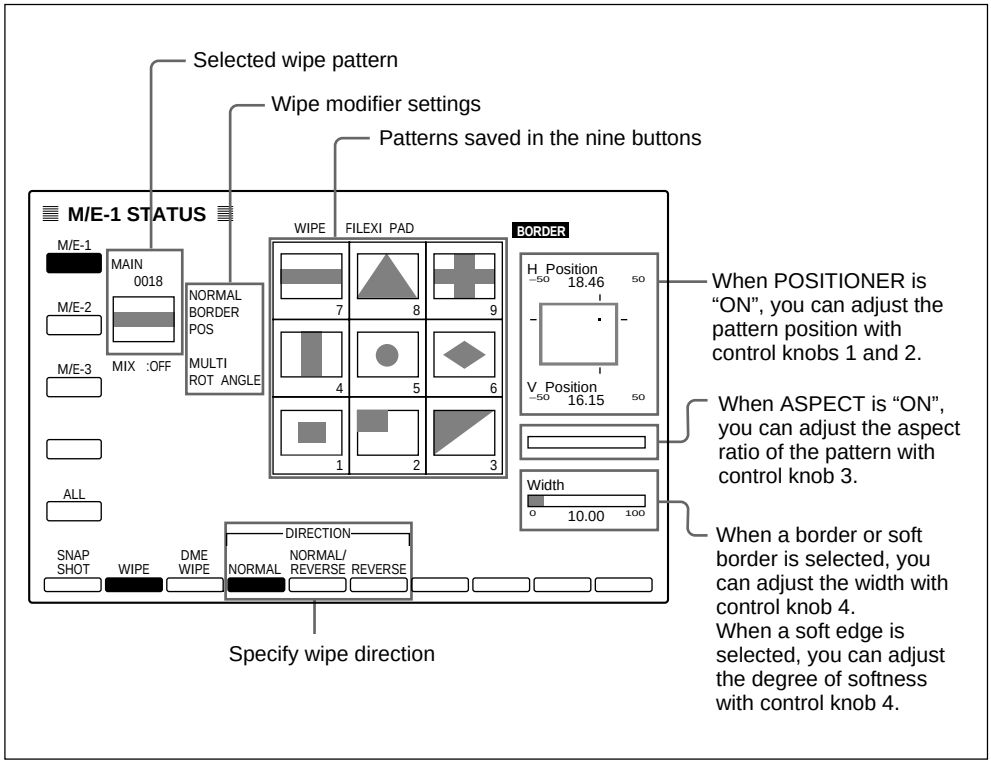
M/E-1 STATUS screen (with SNAPSHOT selected)

To display the status of wipe snapshot information stored in the FlexiPad

In the required M/E bank, press the WIPE button in the FlexiPad twice in rapid succession.

Alternatively, display the status for the corresponding bank (e.g. for the M/E-1 bank, display the M/E-1 STATUS menu), and press F2 (WIPE).

In this menu, the status of the wipe snapshot saved in each of the nine buttons in the FlexiPad appears, and it is also possible to change some of the modifier settings.



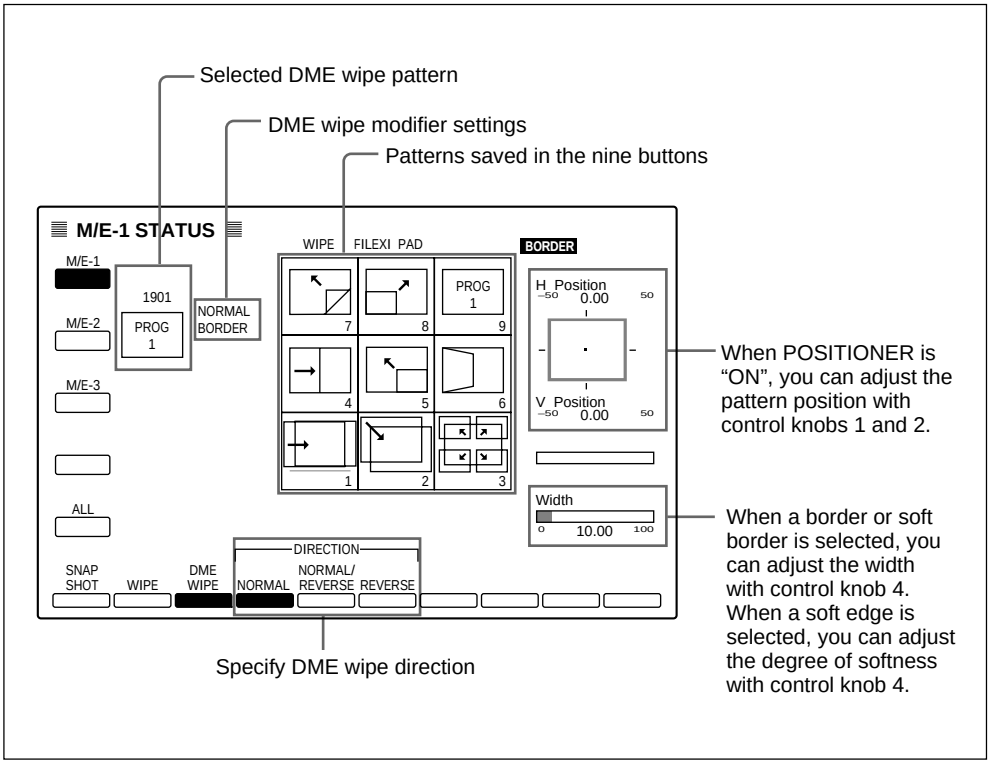
M/E-1 STATUS screen (with WIPE selected)

To display the status of DME wipe snapshot information stored in the FlexiPad

In the required M/E bank, press the DME button in the FlexiPad twice in rapid succession.

Alternatively, display the status for the corresponding bank (e.g. for the M/E-1 bank, display the M/E-1 STATUS menu), and press F3 (DME WIPE).

In this menu, the status of the DME wipe snapshot saved in each of the nine buttons in the FlexiPad appears, and it is also possible to change some of the modifier settings.



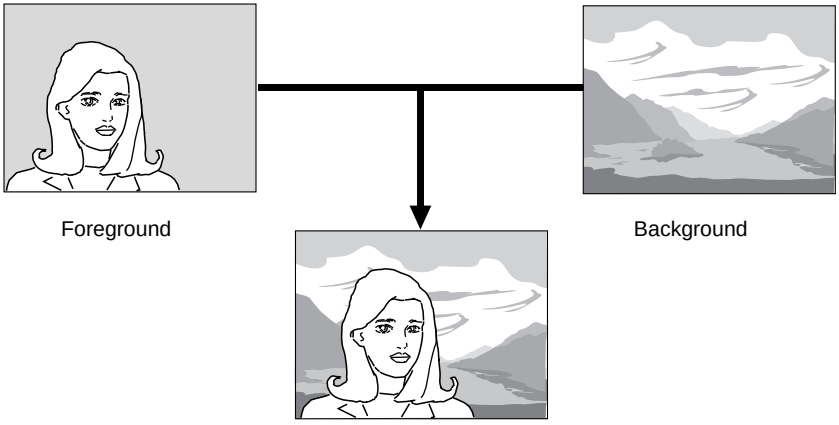
M/E-1 STATUS screen (with DME WIPE selected)

Chapter 5
Chroma Keying

Overview

Chroma keying uses a specific color in a foreground image to create a key signal, which is then used to combine another image by keying.

The following figure illustrates this combination of a foreground image and background image to create a chroma key combined image.



Option

To use chroma keying on the requires the following optional boards.

BKDS-2031 Chromakey Board: Required for standard chroma keying. This provides one chroma keyer on the M/E banks.

BKDS-2032 Chromakey Upgrade Board: Fitting this board together with the BKDS-2031 provides the option of a considerable enhancement to the chroma key function or the use of two chroma keyers.

BKDS-7133 Chroma Key Analog Component Input Board: Required for input of analog component signals for chroma keying, and always required for a D2 system.
Even in a D1 system, to use a clean chroma key this board is required in addition to the BKDS-2031 and BKDS-2032 boards above.

Single mode and dual mode

When both the BKDS-2031 and BKDS-2032 are fitted, you can select the enhanced chroma key function (single mode) or the use of two chroma keyers (dual mode). In dual mode, however, the enhanced chroma key function is no longer available. For details of how to select the mode, see the section "Upgrade Board Mode Selection" *(page 5-15)*.

Basic Chroma Key Operations

This section describes chroma key operations with the BKDS-2031 board only installed.
Note that the operation is slightly different in D1 and D2 systems.

Preparations

Dedicated chroma key inputs and settings

- In a D2 system, since one of four analog component signals (the signals input to the CRK INPUTS connectors on the rear panel of the processor) is used as the foreground video, inputs and settings for these signals are required.

Option

The chroma key dedicated inputs requires the BKDS-7133 board. One board provides for two inputs.

- In a D1 system, since you can select the signal for the foreground on the key bus, a special chroma key input is not essential.

Option

In a D1 system, however, to select a chroma key foreground signal with a cross-point button requires the BKDS-7133.

Signal allocation and selection

In order to display the signals for chroma keying (the foreground signal for chroma keying or the chroma key signal) on a monitor, it is first necessary to allocate them to cross-point buttons on the control panel.
You carry out this allocation in a setup menu *(see page 14-68)*.

CHROMA KEY Menu

For most chroma key operations, you use a dedicated chroma key menu for the keyer concerned.

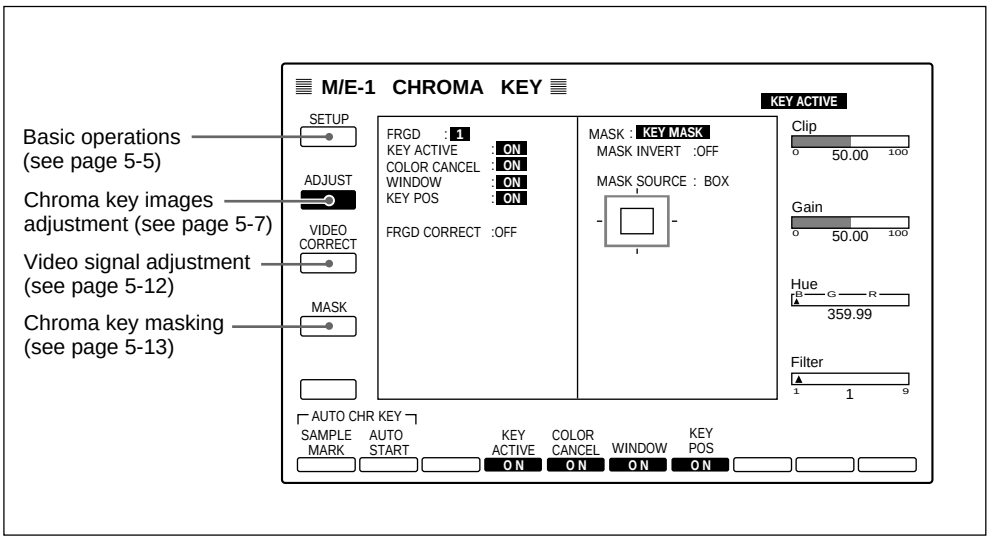
Accessing the chroma key menu

For example, to access the M/E-1 CHROMA KEY menu, use any of the following operations:

- Press the CHR KEY top menu button in the M/E-1 group of the menu control section.
- In the M/E-1 bank, press the cross-point button to which the CRK FILL 1 signal is allocated, twice in rapid succession.
- In the M/E-1 bank, press the CHR key type selection button twice in rapid succession.

If the BKDS-2031 only is installed, the menu appears as shown below.

If the BKDS-2032 is also installed, for details of the dual mode menu see page 5-16, and for details of the single mode menu see page 5-18.



Example M/E-1 CHROMA KEY menu display (with BKDS-2031 only installed)

Basic Operations

You select the foreground from the dedicated chroma key signals, and select the background on the cross-point buttons, then combine them by means of a key transition. In a D1 system only, you can also select the foreground with a cross-point button.

Carry out the following procedure on one of the M/E banks.

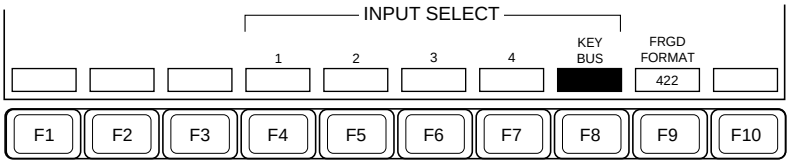
1 In the key control section, press the KEY 1 or KEY 2 button.

2 Using a menu (KEY 1, KEY 2) or key control section button (CHR), select chroma key as the key type.

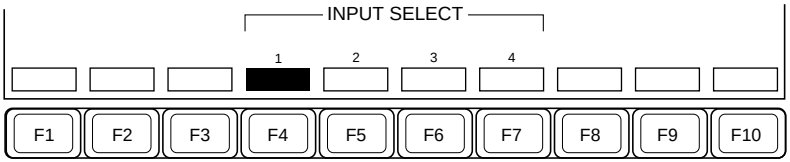
3 Press the CHR KEY button (or use any other method) to display the CHROMA KEY menu. *(See the previous page.)*

4 Select item 1 (SETUP).

The SETUP menu appears.



Function key indications in the CHROMA KEY SETUP menu (D1 system)
(F9(FRGD FORMAT) appears only when F8(KEY BUS) is selected.)



Function key indications in the CHROMA KEY SETUP menu (D2 system)

(Continued)

5 Press any of F4 to F8 to select the foreground video. In a D2 system, however, F8 (KEY BUS) does not appear.

F4 (1) to F7 (4): input signal to one of the CRK INPUT connectors (CH 1 to CH 4) on the rear panel of the processor.
F8 (KEY BUS): signal selected on the key bus.

6 In a D1 system, if you selected F8 (KEY BUS), press F9 (FRGD FORMAT) and select the format of the foreground signal.

422: 4:2:2 digital component signal
444: 4:4:4 digital component signal

Note

When using a key bus 4:4:4 format signal for the foreground, you must first use a setup menu operation to allow two signals (a 4:2:2 format signal ("LINK A") and a 0:2:2 format signal ("LINK B")) to be combined and selected together by the cross-point button.

For details of the setup menu operation, see page 14-72.

7 Make the same preparations as for an ordinary key transition.

Select "KEY BUS" for both of the key fill and the key source, to carry out self-keying.
In a D1 system, if you set F9 (FRGD FORMAT) to "444", select "KEY BUS" for the key fill, and select "AUTO SELECT" for the key source. Selecting the LINK A signal on the key fill bus automatically selects the LINK B signal on the key source bus.

8 Carry out the transition, to insert the key.

9 For an optimum result carry out the adjustments in the next section "Adjusting the Chroma Key Image" *(next page)*. If necessary, see also the sections "Video Signal Adjustment" *(page 5-12)* and "Chroma Key Masking" *(page 5-13)*

Adjusting the Chroma Key Image

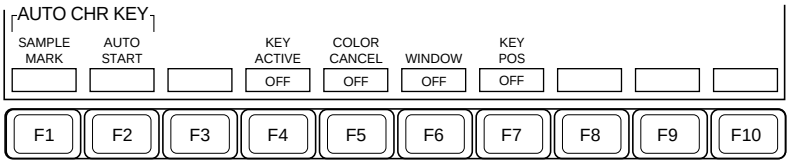
There are two ways of adjusting the output from chroma keying: automatically, using the auto chroma key function, or manually, making individual adjustments from the menu.
In general the most effective and time-efficient method is to use the auto chroma key function for the initial adjustment, and then only if further adjustment is still required, use the manual facilities.
The following procedures are the same in both D1 and D2 systems.

Using the auto chroma key function

The auto chroma key function automatically derives the color to be used for chroma keying from a sample area of the foreground signal identified by the operator. Use the following procedure.

1 In the CHROMA KEY menu, select item 2 (ADJUST).

The ADJUST menu appears.



Function key indications in the ADJUST menu

2 Press F1 (SAMPLE MARK), turning it on.

This displays just the foreground signal, and a white frame marking the sample area. If you are applying color cancel *(see page 5-9)*, video adjustment *(see page 5-12)*, or chroma key masking *(see page 5-13)*, these processes will be temporarily suspended while the auto chroma key function is in effect, and restored afterwards.

(Continued)

3 Adjust the parameter settings so that the sample frame is entirely within the area being used for chroma keying (usually the blue background).

Knob	Parameter	Setting
1	H Pos	Set the horizontal position of the frame (–50.00 to +50.00)
2	V Pos	Set the vertical position of the frame (–50.00 to +50.00)
3	Size	Set size (0.00 to 100.00)

4 Press F2 (AUTO START).

This starts the auto chroma key function and F4 (KEY ACTIVE) turns on; the combined picture then appears on the monitor.

Using manual adjustment

Activating the "key active" function displays the combined chroma key image on the monitor. You can then make manual adjustments to the chroma key parameters, using the following procedure.

1 In the ADJUST menu, set F4 (KEY ACTIVE) to "ON".

2 Adjust the parameters as follows.

Knob	Parameter	Setting
1	Clip	Set clip level on the key signal (0.00 to 100.00)
2	Gain	Set key sharpness (0.00 to 100.00)
3	Hue	Set key hue (0.00 to 359.99)
4	Filter	Select filter coefficient (1 to 9)

Making manual color cancel adjustment

If the background color is affecting the foreground image, by turning the color cancel function on you can eliminate this effect.
Use the following procedure.

1 In the ADJUST menu, set F4 (KEY ACTIVE) to “OFF”.

The foreground only appears on the monitor.

2 Set F5 (COLOR CANCEL) to “ON”.

3 Adjust the parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

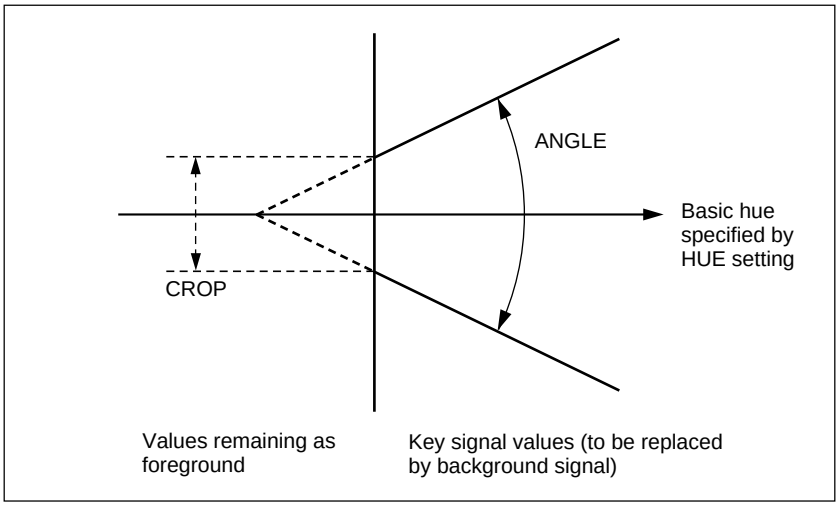
4 Set F4 (KEY ACTIVE) to “ON”.

The combined chroma key image reappears.

Making the window adjustment

You can adjust the detection range of the information used to produce the key signal. When this function is off, the default range is used for image adjustment.

Chroma keying uses a particular hue (typically a blue background color) in the foreground signal to produce the key signal, and the window function specifies the range of signal values to be regarded as this background hue. On the DVS-7000, the range for this background hue corresponds to a truncated sector as seen on a vectorscope (see illustration below). This range is specified by two parameters: the "ANGLE" parameter, which determines the range of the hue parameter, and the "CROP" parameter, which determines the degree of truncation.



Window adjustment

- The default values (and the values when the window function is off) are: CROP 37.5 and ANGLE 93.7.

- The values for CROP and ANGLE are not affected by the auto chroma key function.

Before adjusting the window parameters, it is essential to have adjusted the clip, gain and hue parameters correctly. After doing this, use the following procedure.

1 In the ADJUST menu, press F4 (KEY ACTIVE), F5 (COLOR CANCEL) and F6 (WINDOW) to turn them on.

2 Turn control knobs 1 and 2 clockwise.

Knob	Parameter	Setting
1	Crop	Set the CROP value (0.00 to 100.00)
2	Angle	Set the ANGLE value (0.00 to 180.00)

This sets the CROP and ANGLE values to zero. In this state, the background color area is at a minimum, and almost the entire image is foreground.

3 Turn knob 1 counterclockwise until the background image replaces the background color.

4 Turn knob 2 counterclockwise until immediately before the key signal level in the foreground area begins to drop.

Adjusting the key position

You can adjust the horizontal position of the key source (foreground video). Use the following procedure.

1 In the ADJUST menu, set F7 (KEY POS) to “ON”.

2 Adjust the key source position parameters.

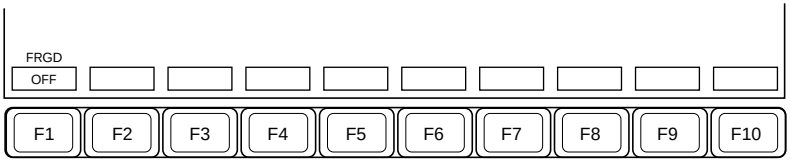
Knob	Parameter	Setting
1	Left Pos	Set position of key left edge (–3.00 to +3.00)
2	Right Pos	Set position of key right edge (–3.00 to +3.00)
3	H Phase	Move the key

Video Signal Adjustment

You can adjust the gain and hue delay (offset) of the foreground video signal. You can either adjust the overall gain of the signal or adjust the Y and C components separately.
The following procedure is the same in both D1 and D2 systems.

1 In the CHROMA KEY menu, select item 3 (VIDEO CORRECT).

The VIDEO CORRECT menu appears.



Function key indications in the VIDEO CORRECT menu

2 Press F1 (FRGD), turning it on.

3 Adjust the parameters.

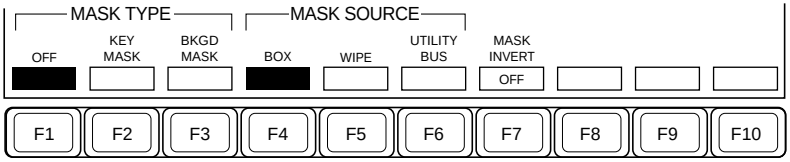
Knob	Parameter	Setting
1	Video Gain	Set video signal overall gain (0.00 to 200.00)
2	Y Gain	Set Y signal gain (0.00 to 200.00) (Actual Y gain is video gain × Y gain setting.)
3	C Gain	Set chrominance signal gain (0.00 to 20.00) (Actual C gain is video gain × C gain setting.)
4	Hue Delay	Set hue offset (–180.00 to +180.00)

Chroma Key Masking

If there are unwanted background “holes” in the chroma key image, you can mask these areas off. For chroma key masking you can use the main and subsidiary masks independently or simultaneously on the selected keyer (KEY 1 or KEY 2). The following procedures are thus the same in both D1 and D2 systems.

1 In the CHROMA KEY menu, select item 4 (MASK).

The MASK menu appears.



Function key indications in the MASK menu

2 Press F2 or F3 to select the mask type.

F2 (KEY MASK): key masking
F3 (BKGD MASK): background masking

3 Press one of F4 (BOX) to F6 (UTILITY BUS), turning it on, to select the mask source.

F4 (BOX): rectangular mask generated by the internal box generator
F5 (WIPE): wipe pattern from the wipe generator.
When you make this selection, make the wipe pattern selection and modifier settings in the WIPE menu *(see page 4-102)* and then return to the CHROMA KEY menu.
When you select a wipe pattern for masking, the EDGE and DIRECTION modifier settings in the WIPE menu become invalid.
F6 (UTILITY BUS): signal selected on the utility bus.
For example, to select the signal on the M/E-1 utility bus, press the M/E-1 UTIL button in the auxiliary delegation section, and select the cross-point assigned to the required signal.

(Continued)

4 Adjust the mask source parameters.

When you have selected a box mask:

Knob	Parameter	Setting
1	Top	Top edge position of box (0.00 to 100.00)
2	Left	Left edge position of box (0.00 to 100.00)
3	Right	Right edge position of box (0.00 to 100.00)
4	Bottom	Bottom edge position of box (0.00 to 100.00)
1	Softness	Set the degree of edge softness (0.00 to 100.00)

When you have selected a wipe pattern:

Knob	Parameter	Setting
1	Size	Set pattern size (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)

When you have selected a signal on the utility bus:

Knob	Parameter	Setting
1	Clip	Set clip level on the mask signal (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)

5 To invert the sense of the mask source, press F7 (MASK INVERT), turning it on.

Upgrade Board Mode Selection

Single mode and dual mode

Option

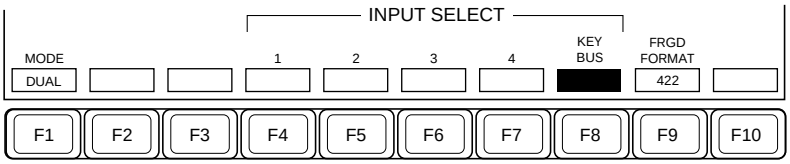
By fitting both the BKDS-2031 and BKDS-2032 options, you can upgrade the chroma key function in either of the following ways:

- By adding an extra chroma keyer, allowing you to use two chroma keys on the M/E banks. This is called dual mode.
- Using the enhanced chroma key function for a single chroma key. This is called single mode.

Selecting the mode

With both the BKDS-2031 and BKDS-2032 fitted, in the CHROMA KEY menu select item 1 (SETUP).

The SETUP menu appears, as follows.



Function key indications in the CHROMA KEY SETUP menu
(dual mode in a D1 system)
(In a D2 system, the F8 (KEY BUS) and F9 (FRGD FORMAT) indications do not appear.)

Switching between single mode and dual mode

Press F1 (MODE) to toggle between “SINGLE” and “DUAL”.

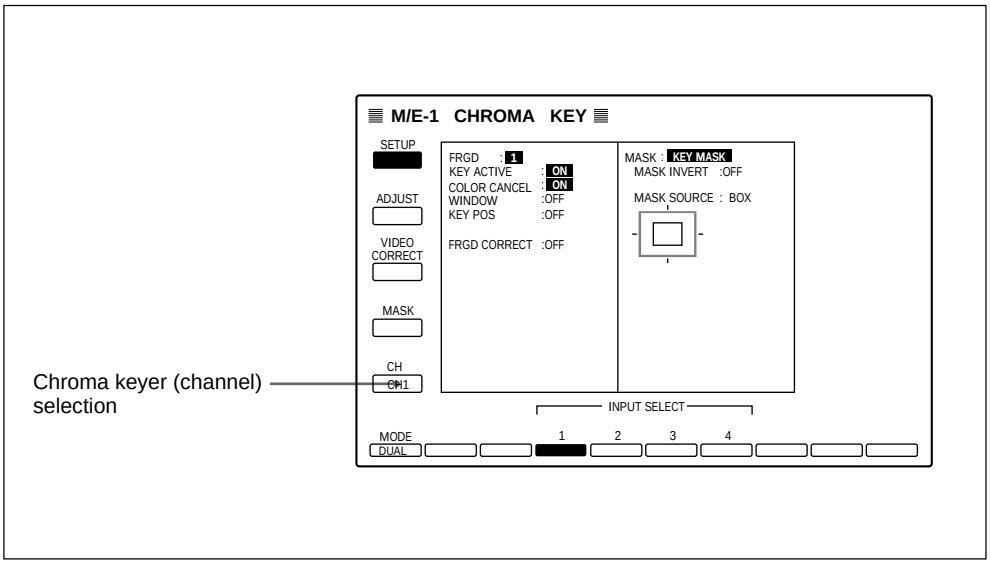
For details of the dual mode, see the next section, “Dual Mode Chroma Keying”, and for details of the single mode, see the section, “Enhanced Chroma Keying” (page 5-17).

Dual Mode Chroma Keying

Dual Mode CHROMA KEY Menu

When you have selected dual mode, the CHROMA KEY menu appears as shown below.
In this menu, select item 5 (CH) to select the appropriate chroma key.
Key 1 is identified as channel (“CH”) 1, and key 2 is identified as channel 2.
The other items, 1 to 4, are the same as described in the section “Basic Chroma Key Operations” *(page 5-3)*.
Note, however, the following restrictions.

- In a D1 system, when carrying out dual chroma keying, for the foreground of key 2 (“channel 2”) it is not possible to use one of the input signals to the CRK INPUT connectors (CH 1 to CH 4) on the rear panel of the processor. You can only use the signal selected on the key bus.
- In a D2 system, the foreground is common to the two channels (i.e. keys). The foreground selected for channel 1 (i.e. key 1) is also used for channel 2 (i.e. key 2).



Example M/E-1 CHROMA KEY menu display (dual mode)

Enhanced Chroma Keying (Single Mode)

This section describes the principal extra functions gained by adding a BKDS-2032 upgrade board.

Overview

The enhanced chroma key function is made possible by adding the BKDS-2032 option, and adds the following functions:

- Clean chroma key function
- Additive mix function
- Plane function
- Dual key function
- Color cancel key adjustment
- Y balance function
- Chroma key shadow function
- Overall color adjustment for the background when using a clean chroma key
- Spot color adjustment for the foreground
- Dual masking function

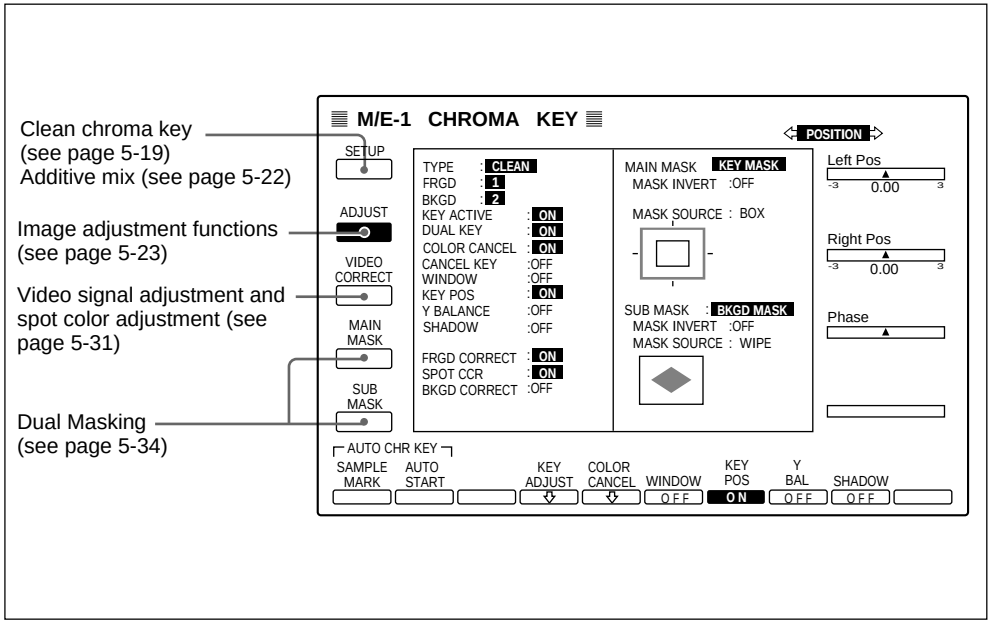
Using the enhanced chroma key function, operations for the basic functions are the same. This section describes only the extra items and function key indications which appear when using the enhanced function.

Option

To use the enhanced chroma key function requires both the optional BKDS-2031 Chromakey Board and the optional BKDS-2032 Chromakey Upgrade Board.

Single Mode CHROMA KEY Menu

When you have selected the chroma key single mode, each of the CHROMA KEY menus appears as below. See the page numbers in parenthesis for details of the additional functions.



Example M/E-1 CHROMA KEY menu display (single mode)

Clean Chroma Key

When you are using the enhanced chroma key function, in the SETUP (CHROMA KEY) menu a clean chroma key is possible.
Using 4:4:4 format signals for the background and foreground enables you to obtain a higher quality keyed image than with conventional chroma keying. Clean chroma keying produces an already combined image, so it is not possible to carry out a key transition.

Option

The background for clean chroma keying is always selected from the analog component signals (CH 1 to CH 4). Therefore, in a D1 system, a BKDS-7133 board is always required.

Allocating signals for clean chroma key

Using the clean chroma key function, in order to be able to select the combined chroma key image using cross-point buttons, it is first necessary to allocate signals such as “M/E-1 CHR KEY FRGD”, “M/E-2 CHR KEY FRGD”, and “M/E-3 CHR KEY FRGD” in a setup menu.

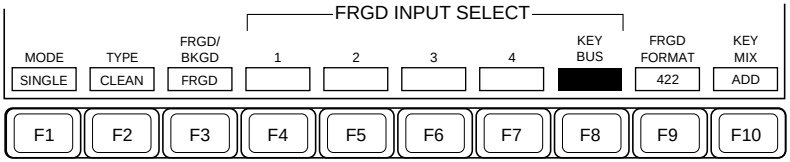
For details of the allocation, see page 14-68.

Forming a combined image using clean chroma key

Use the following procedure.

1 In the CHROMA KEY menu, select item 1 (SETUP).

The SETUP menu appears.



Function key indications in the CHROMA KEY SETUP menu
(using the enhanced chroma key function)
(In a D2 system, the F8 (KEY BUS) and F9 (FRGD FORMAT) indications do not appear.)

2 Press F2 (TYPE), to select “CLEAN”.
If you select “RGB”, then as when the BKDS-2032 board is not installed (standard chroma keying), after selecting chroma key as the key type on the M/E bank, the combination is carried out by a key transition.

For details of the operation when you select “RGB”, see the section “Basic Operations” (page 5-5).

3 Press F3 (FRGD/BKGD) to select “FRGD”.

4 Press one of F4 (1) to F7 (4) to select the foreground signal.

In a D1 system, you can select F8 (KEY BUS). In this case, select “CHR” as the key type for the same keyer as the key bus on which the foreground is selected. (For example, when the foreground is selected on the key 1 bus, set the key type for keyer 1 to be “CHR”.)
Again, if F9 (FRGD FORMAT) is set to 4:2:2, although the combination will be performed with a clean chroma key, the combined image quality will be the same as an RGB chroma key.

5 Press F3 (FRGD/BKGD) to select “BKGD”.

6 Press one of F4 (1) to F7 (4) to select the background signal.

Note

The background signals are common to M/E-1 to M/E-3. Whichever M/E bank you select the background on, the same background will also be used on other M/E banks.

7 On background bus A, select the cross-point button to which the clean chroma key output such as “M/E-1 CHR KEY FRGD” is allocated.

An image formed by clean chroma key combination appears on the monitor.

Notes

- Since clean chroma key combination does not use an M/E bank, it is not possible to use the modifiers for the selected keyer (KEY1 or KEY2).
- When using clean chroma key, setting the key type to “CHR” and the key to “ON” the whole of the image formed by chroma key combination becomes an overall key for the background.
  Again, in this state, using the key modifiers results in overall modification of the chroma key image.

Additive Mix

When you are using the enhanced chroma key function, in the SETUP (CHROMA KEY) menu an additive mix is possible.

Using an additive mix to combine images

In normal chroma keying, a key signal is used to cut a hole in a background, and this is combined with a foreground cut out by the key signal. In an additive mix, however, the foreground is combined unaltered (without the effects of a key signal).
In practice it is necessary to replace the blue background of the foreground signal by black, and for this purpose the color cancel function *(see page 5-9)* is used.
This additive mix is effective to provide a realistic combined image when it includes translucent objects such as objects made of glass.

To use an additive mix to combine images, in the SETUP menu, press F10 (KEY MIX), to select “ADD”.

Note

When using an additive mix to combine images, be sure to use the color cancel function to change the blue background to black.

Using the plane function

In an additive mix, since no key is applied to the foreground, any variations in the blue background show up in the combined image. To avoid this, a particular intensity level for the blue background can be set, and the portions of lower intensity forcibly changed to black.

Use the following procedure.

1 In the CHROMA KEY menu, select item 2 (ADJUST).

The ADJUST menu appears.

2 In the ADJUST menu, press F10 (PLANE), turning it on.

This enables the plane function.

3 Adjust the parameter.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 10.00)

Within the blue background, portions of intensity lower than the specified value are changed to black.

Image Adjustment Functions

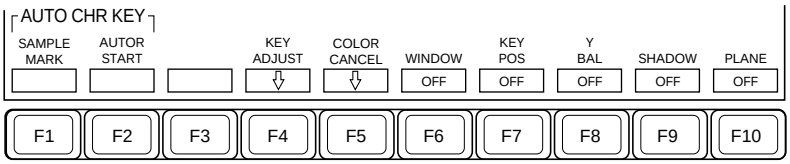
When you are using the enhanced chroma key function, the following image adjustment functions are the same as when the BKDS-2032 board is not fitted: auto chroma key, window, and key position functions. *For the operation of these functions, see page 5-7.*
The following procedures are the same in both D1 and D2 systems.

Using a dual key for combining images

By dividing the image into two areas, this function uses two key signals (main key and subsidiary key) for the different areas.
This allows two different sets of key adjustment values in the same image, which makes it easier to avoid undesirable effects of variations in the intensity of the blue background.
Use the following procedure.

1 In the CHROMA KEY menu, select item 2 (ADJUST).

The ADJUST menu appears.

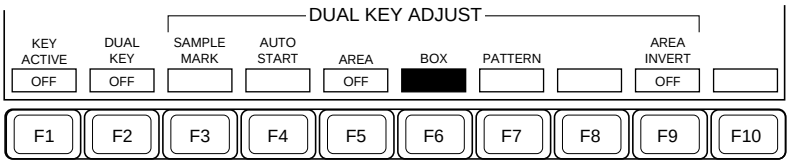


Function key indications in the ADJUST menu
(using the enhanced chroma key function)

(Continued)

2 Select F4 (KEY ADJUST).

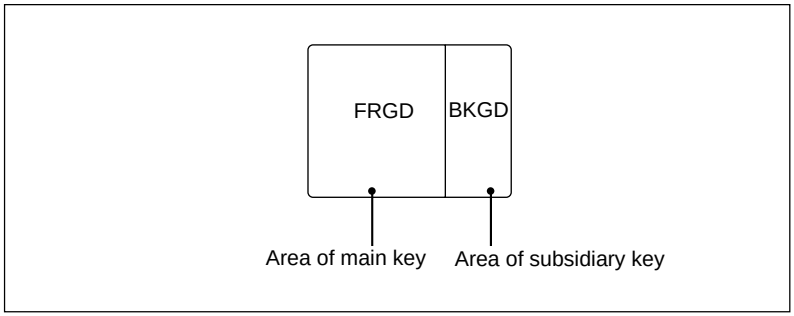
The KEY ADJUST menu appears.



Function key indications in the KEY ADJUST menu
(using the enhanced chroma key function)

3 Press F5 (AREA), turning it on.

A screen appears for adjusting the areas associated with the main key and subsidiary key.
At this point, both the main key and subsidiary key signals temporarily disappear from the screen, and the area for the main key appears as the foreground and the area for the subsidiary key appears as the background. It is therefore possible to adjust the position of the boundary between the areas and the degree of edge blurring.



4 Press F6 or F7, turning it on, to select the signal determining the boundary between the main key and subsidiary key areas.

F6 (BOX): signal generated by a dedicated box generator
F7 (PATTERN): signal generated by a dedicated pattern generator

5 Set the parameters for the boundary between the main key and subsidiary key areas.

When you have selected BOX:

Knob	Parameter	Setting
1	Top	Top edge position of box (0.00 to 100.00)
2	Left	Left edge position of box (0.00 to 100.00)
3	Right	Right edge position of box (0.00 to 100.00)
4	Bottom	Bottom edge position of box (0.00 to 100.00)
1	Softness	Set the degree of edge softness (0.00 to 100.00)

When you have selected PATTERN:

Knob	Parameter	Setting
1	Size	Set pattern size (0.00 to 100.00)
2	Softness	Set the degree of edge softness (0.00 to 100.00)
4	Pattern No.	Select pattern number (1 to 23)[a)]

a) The patterns are the same as wipe patterns 1 through 23 *(see the Appendix "Wipe patterns" (page A-2)).*

6 Make the following settings as required.

- If in step **4** you selected F7 (PATTERN), if necessary press F8 (AREA MODIFY).
  The AREA MODIFY menu appears: refer to the MASK MODIFY menu *(see page 4-62)* for details of the operations.
- To invert the areas of the main and subsidiary keys, press F9 (AREA INVERT). This inversion is not possible if you selected F7 (PATTERN) in step **4**.

7 Press F5 (AREA), turning it off.

Note

While F5 (AREA) is on, the video is in a special state for the purpose of setting the boundary between the main and subsidiary keys. When you have finished setting the boundary between the main and subsidiary keys, therefore, be sure to return F5 to the off state, returning to the normal chroma key combined video.

(Continued)

8 Press EXIT button to return to the ADJUST menu, and using F1 (SAMPLE MARK) and F2 (AUTO START) to adjust the main key with the auto chroma key function.

For details, see page 5-7.

9 Press F4 (KEY ADJUST), to display the KEY ADJUST menu.

10 Press F1 (KEY ACTIVE), turning it on, and adjust the parameters for the main key as required.

Knob	Parameter	Setting
1	M Clip	Set the reference level for the cut out color (0.00 to 100.00)
2	M Gain	Set the key gain (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Filter	Select filter coefficient (1 to 9)

- To adjust the subsidiary key manually, go to step **11**.
- To adjust the subsidiary key automatically, go to step **12**.

11 Press F2 (DUAL KEY), turning it on to adjust the parameters for the subsidiary key.

Knob	Parameter	Setting
1	S Clip	Set the reference level for the cut out color (0.00 to 100.00)
2	S Gain	Set the key gain (0.00 to 100.00)

12 Press F3 (SAMPLE MARK), turning it on.

A white frame appears, marking the sample area for the subsidiary key.

13 Adjust the parameter settings so that the sample frame is entirely within the area being used for chroma keying for by the subsidiary key.

Knob	Parameter	Setting
1	H Pos	Set the horizontal position of the frame (–50.00 to +50.00)
2	V Pos	Set the vertical position of the frame (–50.00 to +50.00)
3	Size	Set size (0.00 to 100.00)

14 Press F4 (AUTO START).

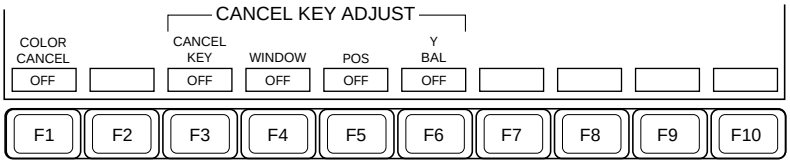
The subsidiary key is adjusted automatically, and F2 (DUAL KEY) turns on. The combined picture then appears on the monitor.

Adjusting the color cancel key

It is possible to adjust the key signal for the color cancel function.
Use the following procedure.

1 In the ADJUST menu, select F5 (COLOR CANCEL).

The COLOR CANCEL menu appears.



Function key indications in the COLOR CANCEL menu
(using the enhanced chroma key function)

2 Press F1 (COLOR CANCEL), turning it on.

This turns the color cancel function on.

3 Adjust the parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Filter	Select filter coefficient (1 to 9)

4 Press F3 (CANCEL KEY), turning it on.

This turns the cancel key function on.

(Continued)

5 Adjust the color cancel key parameters.

Knob	Parameter	Setting
1	Clip	Set clip level on the color cancel key signal (0.00 to 100.00)
2	Gain	Set color cancel key gain (0.00 to 100.00)

6 Press any of F4 to F6 as necessary and adjust the parameters.

F4 (WINDOW): Adjust the detection range for the key signal.

Knob	Parameter	Setting
1	Crop	Set the CROP value (see page 5-10) (0.00 to 100.00)
2	Angle	Set the ANGLE value (see page 5-10) (0.00 to 180.00)

F5 (POS): Adjust the color cancel key edge position.

Knob	Parameter	Setting
1	Left Pos	Set position of key left edge (–3.00 to +3.00)
2	Right Pos	Set position of key right edge (–3.00 to +3.00)
3	H Phase	Move the key

F6 (Y BAL): Adjust the degree to which a Y balance is added to the color cancel key.

Knob	Parameter	Setting
1	Mixtur	Proportion of Y balance key (0.00 to 100.00)

Adjusting the Y balance

In conventional chroma keying, the key signal is formed using the chroma component alone, and therefore if there are portions of the foreground of the same hue they will all be replaced by the background video. Using the Y balance function, however, it is possible to restrict the replacement to a specified intensity range even for the matching hue.
It is possible to use the Y balance function separately for the key signal for combination and to the key signal for the color cancel function. When used for the key signal for combination, the foreground becomes such that the color cancel effect has been applied to it. This is therefore useful when, for example, there is smoke in the video image.
When the Y balance function is used for the color cancel key, the original color of the relevant portions is not canceled and appears, so that foreground colors akin to the background color (blue) can be combined with the background.

For the Y balance adjustment for the color cancel key, see the previous page.

Use the following procedure to adjust the Y balance for the key signal for combination.

1 In the ADJUST menu, press F8 (Y BAL), turning it on.

This turns the Y balance function on.

2 Adjust the parameters.

Knob	Parameter	Setting
1	Clip	Set the reference level for the cut out color (0.00 to 100.00)
2	Gain	Set the key gain (0.00 to 100.00)
3	Luminance	Set luminance (0.00 to 100.00)

Adjusting the chroma key shadow

This function provides a more realistic treatment when the shadow of an object in the field of view falls on the blue background. Since parts of the blue background darker than a specified intensity are treated as shadows, there is no effect on cutting out of the foreground.
Use the following procedure.

1 In the ADJUST menu, press F9 (SHADOW), turning it on.

This turns the chroma key shadow function on.

2 Adjust the parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Gain	Set the shadow key gain (0.00 to 100.00)
3	Density	Set shadow density (0.00 to 100.00)
4	Softness	Set the degree of shadow blurring (0.00 to 100.00)

Video Signal Adjustment and Spot Color Adjustment

When you are using the enhanced chroma key function, it is possible to carry out both overall and localized adjustments to the video signal.

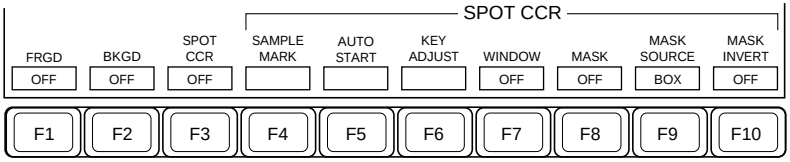
The following procedures are the same in both D1 and D2 systems.

Making overall color adjustment for the foreground and the background

You can change the gain and hue for the whole foreground, and for the whole background when using a clean chroma key.
Use the following procedure.

1 In the CHROMA KEY menu, select item 3 (VIDEO CORRECT).

The VIDEO CORRECT menu appears.



Function key indications in the VIDEO CORRECT menu
(using the enhanced chroma key function)

2 To adjust the foreground video, press F1 (FRGD), or to adjust the background video, press F2 (BKGD), turning it on.

3 Adjust the parameters.

Knob	Parameter	Setting
1	Video Gain	Set video signal overall gain (0.00 to 200.00)
2	Y Gain	Set Y signal gain (0.00 to 200.00) (Actual Y gain is video gain × Y gain setting.)
3	C Gain	Set chrominance signal gain (0.00 to 20.00) (Actual C gain is video gain × C gain setting.)
4	Hue Delay	Set hue offset (–180.00 to +180.00)

Making spot color adjustment for the foreground

You can make video adjustments for a portion of a specified color (for example red) within the foreground, changing it to a different color (for example yellow), without affecting portions of other colors.
Use the following procedure.

1 In the VIDEO CORRECT menu, press F3 (SPOT CCR), turning it on.

- To select the portion for which the color is changed automatically, go to step **2**.
- To select the portion for which the color is changed manually, go to step **5**.

2 Press F4 (SAMPLE MARK), turning it on.

3 Adjust the parameter settings so that the sample frame is entirely within an area of the color which you wish to change.

Knob	Parameter	Setting
1	H Pos	Set the horizontal position of the frame (–50.00 to +50.00)
2	V Pos	Set the vertical position of the frame (–50.00 to +50.00)
3	Size	Set size (0.00 to 100.00)

4 Press F5 (AUTO START).

In automatic selection, no key gain adjustment is carried out. If necessary refer to step **5** to adjust the key gain.

5 Press F6 (KEY ADJUST), turning it on, and adjust the parameters.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)
4	Gain	Set the key gain (0.00 to 100.00)

6 Press F7 (WINDOW), turning it on, and adjust the detection range for the spot color key.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set the range of hue (0.00 to 100.00)

7 Press any of F8 to F10 as necessary, to restrict the area for spot color adjustment.

F8 (MASK): Toggle the spot color mask on and off.
F9 (MASK SOURCE): Select the mask source, and adjust the parameters. The types of mask source available are the same as in the section "Chroma Key Masking" *(page 5-13)*.
F10 (MASK INVERT): Press to invert the sense of the mask.

8 Press F3 (SPOT CCR), turning it on, and select the replacement color.

Knob	Parameter	Setting
1	Luminance	Set luminance (0.00 to 100.00)
2	Saturation	Set saturation (0.00 to 100.00)
3	Hue	Set hue (0.00 to 359.99)

Dual Masking

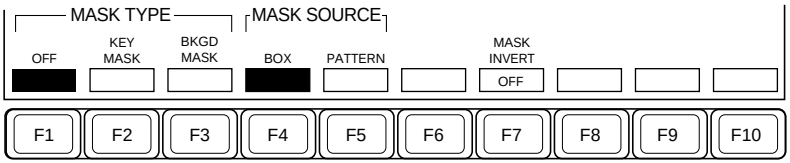
With the enhanced chroma key function, you can use two masks, main and subsidiary, simultaneously. You can also use these masks simultaneously with the main mask and subsidiary mask set for the selected keyer (KEY 1 or KEY 2).

The following procedures are the same in both D1 and D2 systems.

To use the chroma key main mask

In the CHROMA KEY menu, select item 4 (MAIN MASK).

The MAIN MASK menu appears.



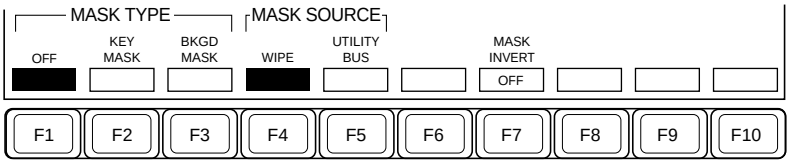
CHROMA KEY MAIN MASK menu

The operation of this menu is the same as for the MAIN MASK menu used for other keys (for example a luminance key). For the remainder of the operating procedure, see the section "Using the main mask" *(page 4-61)*. However, if you select F5 (PATTERN) as the mask source, F7 (MASK INVERT) is not displayed, and inversion is not possible.

To use the chroma key subsidiary mask

In the CHROMA KEY menu, select item 5 (SUB MASK).

The SUB MASK menu appears.



CHROMA KEY SUB MASK menu

The operation of this menu is the same as for the SUB MASK menu used for other keys (for example a luminance key). For the remainder of the operating procedure, see the section "Using the subsidiary mask" *(page 4-64)*.

Chapter 6
Frame Memory

Overview

The frame memory function, as its name suggests, captures a frame of video input (whether movie or still), and holds it in memory for use in effects. In a D2 system, it is also possible to carry out a field freeze, by use of Y/C separation of the input signals.
It is also possible to use a mask to write only a part of a frame to memory, or to combine a frame from memory with the input frame by a non-additive mix (NAM) and write the result to memory.

Option

To use the frame memory function requires both a BKDS-2041 Frame Memory Board and a BKDS-7445 Frame Memory Adaptor Board. However, in a component system, when a BKDS-7420 Color Correction Board is used, the BKDS-7445 is not required.

Each pair of option boards provides memory for two frames, and these are called frame memory 1 and frame memory 2.

Frame Memory Functions

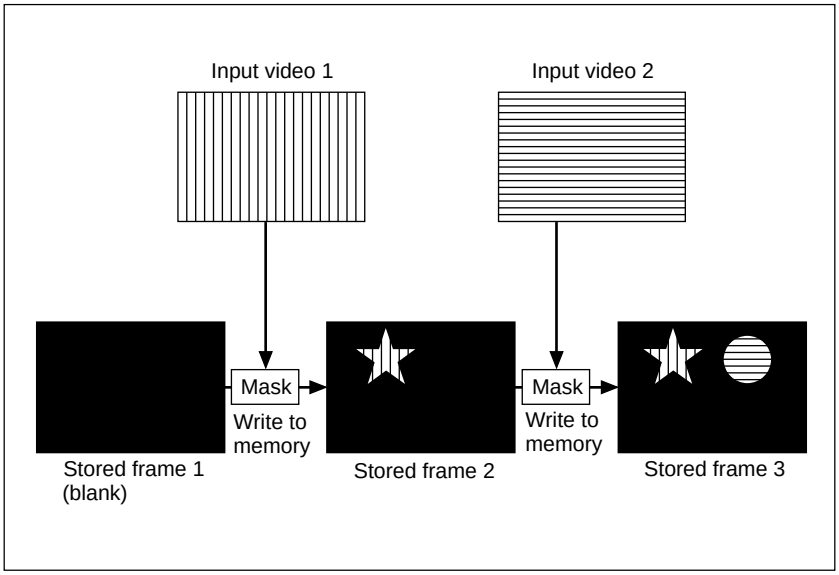
The following are the principal frame memory functions, organized according to the menu used.
In the following description, the term “input video” is used to refer to the video being input to the frame memory, and “stored frame” to refer to the frame already stored in the frame memory.

Manual mode

This mode is used for writing any of the following to memory. When the (movie) input video is selected, the frame is frozen at the instant of writing to memory.

- Input video
- Input video masked by a dedicated pattern
- Frame made by a NAM combination of the input video and stored frame
- Frame made by combination with a dedicated mask pattern of the input video and stored frame.

The following figure illustrates how to build up a freeze frame progressively using a variety of mask patterns to combine the input video with the stored frame. The example uses the dedicated patterns, but you can also use a box frame.

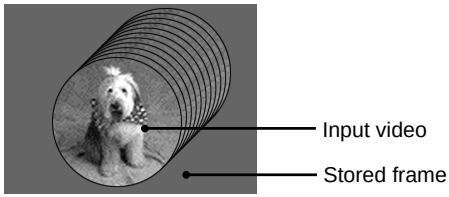


Example of completed freeze frame

At the end of a sequence of operations like those shown above, you will produce a completed freeze frame like that shown below.

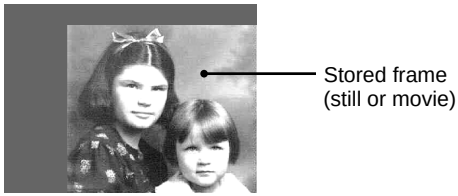
Paint mode

In this mode you can move the masked input video, leaving a trail, and writing the result to memory. In this case, use the dedicated pattern for the mask.
It is not possible to use this mode concurrently with the manual mode.



Move mode

In this mode, you can move the whole stored frame with respect to the video space.
You can use this function on a still frame (STILL) created using either the manual mode or paint mode, or on the (movie) input video (LIVE). When you select the input video, it is also possible to apply a mask so as to move only part of the input video image.



Link mode

In this mode, frame memory 2 is linked to frame memory 1, and the two frame memories can be moved in the same way. It is also possible to link mask patterns.

Lock function

To protect a frame written to memory, and prevent it from being overwritten, it is possible to write-protect the frame memory. This is referred to as the “lock function”.

Basic Frame Memory Operations

Preparations

Assigning the output signal to a cross-point button

Before you can see the output of frame memory on a monitor, for example, it is necessary to assign the output signals of frame memory 1 and frame memory 2 (FM1 and FM2) to cross-point buttons.
This assignment is carried out from a SETUP menu *(see page 14-68)*.

Selecting the output signal from the operating block

In one of the M/E-1, M/E-2, M/E-3, and PGM/PST blocks, press the cross-point button allocated to the output signal from the frame memory.
This allows you to check the output video from the frame memory on a monitor, for example.

The following description assumes that the above two preparatory steps have been taken.

Using the frame memory menu, it is possible to select whether the signal output from the frame memory is the stored frame in memory (MEM) or the input video signal about to be written to the frame memory (IN). This setting is described in the procedure below.

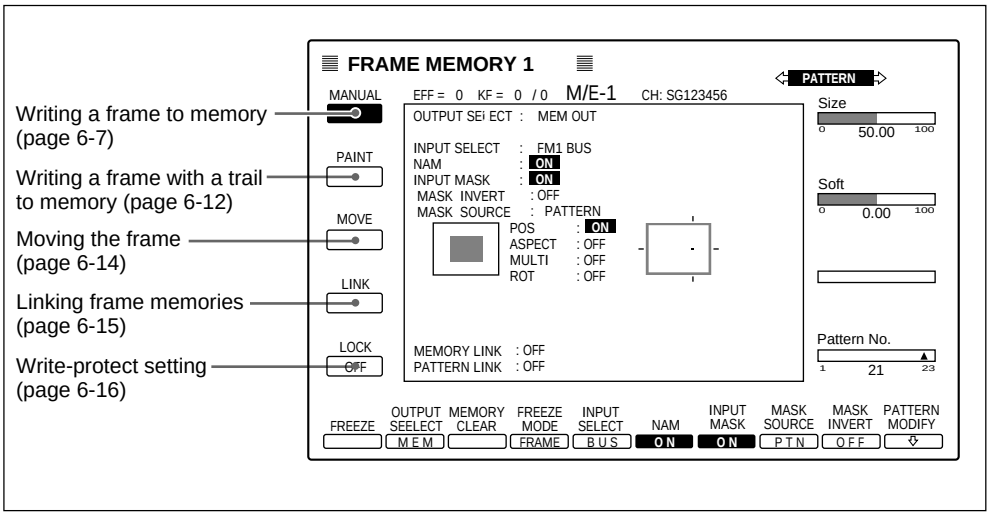
FRAME MEMORY Menus

Operations on frame memory 1 are carried out from the FRAME MEMORY 1 menu.
Operations on frame memory 2 are carried out from the FRAME MEMORY 2 menu.
The following description applies mainly to frame memory 1, but the operations for frame memory 2 are similar.

Accessing the frame memory setting menu

For example, to access the FRAME MEMORY 1 menu, use either of the following operations:

- In the SYSTEM group of the menu control section, press the FRAME MEM 1 button.
- In the M/E bank or PGM/PST bank, press the cross-point button allocated to frame memory 1 (FM 1) twice in rapid succession.



Example of FRAME MEMORY 1 menu display (D2 system)

Selecting the Input Video

For the input video to frame memory, you can select either a signal selected on the frame memory bus, or a dedicated color matte signal.
To select a frame memory bus signal as input video, use the following procedure to select the signal. The procedure for using a color matte signal is described in the main procedure below.

Selecting a frame memory bus signal

To select a FRAME MEM 1 bus signal, use the following procedure.

1 Press the FRAME MEM 1 button in the auxiliary bus block, turning it on.

2 Press the cross-point button in the auxiliary bus block to select the desired signal.
You can also select a (movie) video signal as input.

Writing a Frame to Memory – MANUAL

Creating a new video image and writing it to frame memory

Use the following procedure to combine the input video with the stored image or to freeze the input video and then write it to frame memory.

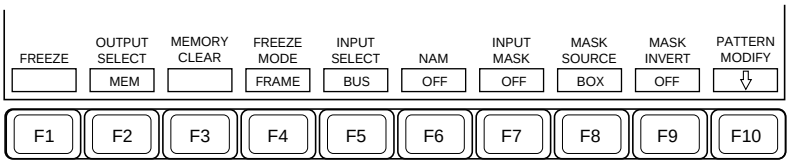
1 Press the FRAME MEM 1 button in the SYSTEM group of the top menu section.

The FRAME MEMORY 1 menu appears.

(Continued)

2 Select item 1 (MANUAL).

The MANUAL menu appears.



Function key indications in the MANUAL menu

3 Set F2 (OUTPUT SELECT) to “IN”.

The input video about to be written to the frame memory is now output from the frame memory.

4 Press F5 (INPUT SELECT), to select the type of input video (MATTE or BUS).

MATTE: dedicated color matte signal
When this is selected, adjust the parameters with the control knobs.

Knob	Parameter name	Setting
1	Luminance	Luminance (0.00 to 100.00)
2	Saturation	Saturation (0.00 to 100.00)
3	Hue	Hue (0.00 to 359.99)

Note

When F6 (NAM) is set to “ON”, it is not possible to select “MATTE”.

BUS: FRAME MEM 1 bus signal
When this is selected, select the appropriate signal on the FRAME MEM 1 bus.

For details, see “Selecting a frame memory bus signal” on the previous page.

5 Select the method of combining the stored frame with the input video. There are four possibilities, involving a non-additive mix (NAM) and a mask; select the appropriate combination of settings of F6 (NAM) and F7 (INPUT MASK) as shown in the table below.

Note

When F5 (INPUT SELECT) is set to "MATTE", it is not possible to set F6 (NAM) to "ON".

F6 (NAM) setting	F7 (INPUT MASK) setting	Combination effect
OFF	ON	The input video is masked, and combined with the stored frame. As mask you can select either the BOX option or a dedicated pattern.
ON	ON	The input video is masked, and combined in a non-additive mix with the stored frame. As mask you can select either the BOX option or a dedicated pattern.
OFF	OFF	The input video is written unaltered to frame memory.
ON	OFF	The whole of the input video and the stored frame are combined in a non-additive mix.

For a masking operation, to make the background (i.e. the stored frame) black, press F3 (MEMORY CLEAR).

If you set F7 (INPUT MASK) to "ON", carry out the following steps **6** to **9**. If you selected "OFF", skip to step **10**.

6 Use F8 (MASK SOURCE) to select the mask source.

BOX: signal generated by a dedicated box generator
PATTERN: signal generated by a dedicated pattern generator

(Continued)

7 Adjust the mask source parameters.

When you have selected BOX:

Knob	Parameter name	Setting
1	Top	Top edge position of box (0.00 to 100.00)
2	Left	Left edge position of box (0.00 to 100.00)
3	Right	Right edge position of box (0.00 to 100.00)
4	Bottom	Bottom edge position of box (0.00 to 100.00)
1	Softness	Set the degree of edge softness (0.00 to 100.00)

When you have selected PATTERN:

Knob	Parameter name	Setting
1	Size	Size of pattern (0.00 to 100.00)
2	Softness	Degree of edge softness (0.00 to 100.00)
4	Pattern No.	Pattern number (1 to 27)

Note

Patterns 24 (“circle”), 26 (“heart”) and 27 (“star”) are common to frame memories 1 and 2. They cannot be used for the two frame memories simultaneously.

8 To apply a pattern modifier to the selected pattern, press F10 (PATTERN MODIFY).

The PATTERN MODIFY menu appears.

For details of the operation, see step **7** *of the procedure in the section “Using the main mask” (page 4-63).*

9 To invert the mask, set F9 (MASK INVERT) to “ON”.

10 Press F4 (FREEZE MODE) to select the freeze timing.

FRAME: 1 frame (2 fields)
FIELD: 1 field

11 When you are ready to freeze the frame, press F1 (FREEZE).

This writes the freeze frame to memory.

Outputting the stored frame only

To output the frame currently stored in frame memory to a monitor, for example, use the following procedure.

1 In the FRAME MEMORY 1 menu, select item 1 (MANUAL).

2 Set F2 (OUTPUT SELECT) to “MEM”.

Making the stored frame black

To clear the current contents of frame memory to black, press F3 (MEMORY CLEAR).

This function operates not only in manual mode, but also in paint mode, in the same way.

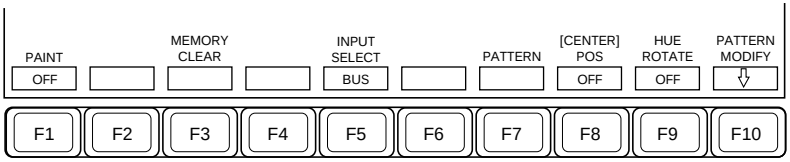
Writing a Frame With a Trail to Memory – PAINT

Writing a frame with a trail to memory

To freeze an image with a trail and write it to memory, use the following procedure.

1 In the FRAME MEMORY 1 menu, select item 2 (PAINT).

The PAINT menu appears. This automatically selects a dedicated pattern as the mask source.



Function key indications in the PAINT menu
(F4 (FREEZE MODE) does not appear on a D2 system.)

2 Press F5 (INPUT SELECT), to select the type of input video (MATTE or BUS).

*For details, see step **4** in the section "Creating a new video image and writing it to frame memory" (page 6-7).*

Note

If F6 (NAM) in the MANUAL menu is set to "ON", it is not possible to select "MATTE". In this case, set F6 (NAM) to "OFF" in the MANUAL menu.

3 Press F7 (PATTERN), and adjust the parameters.

Knob	Parameter name	Setting
1	Size	Size of pattern (0.00 to 100.00)
2	Softness	Degree of edge softness (0.00 to 100.00)
4	Pattern No.	Pattern number (1 to 27)

To apply a pattern modifier to the selected pattern, press F10 (PATTERN MODIFY), displaying the PATTERN MODIFY menu.

For details of the operation, see step **7** *of the procedure in the section "Using the main mask" (page 4-63).*

4 Press F8 (POS), setting it to "ON", and adjust the parameters to move the pattern to the start position of the trail.

Knob	Parameter name	Setting
1	H Pos	Horizontal position (–50.00 to +50.00)
2	V Pos	Vertical position (–50.00 to +50.00)

5 When you are ready to freeze the input video, press F1 (PAINT), turning it on.

Writing to frame memory begins at this point.

6 Turn control knobs 1 and 2 to create the required trail.

7 Press F1 (PAINT) again, turning it off.

The image with trail is now written to memory.

Using a rotating hue for the paint color

When "MATTE" was selected as the input video, you can make the hue of the matte color rotate as the trail is created; to do this, set F9 (HUE ROTATE) to "ON".

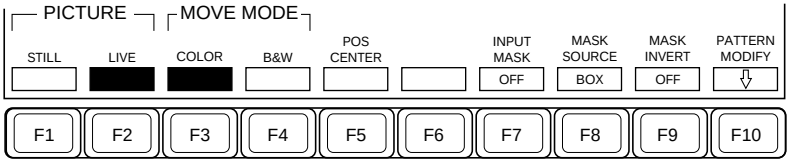
Moving the Frame – MOVE

Moving the stored frame

To move the stored frame horizontally or vertically, use the following procedure.

1 In the FRAME MEMORY 1 menu, select item 3 (MOVE).

The MOVE menu appears.



Function key indications in the MOVE menu
(When F1 (STILL) is set to “ON”, F7 to F10 do not appear.)

2 Press F1 or F2 to select the image to move.

F1 (STILL): Move a freeze frame created in the manual or paint mode.
F2 (LIVE): Move the input video as it is.

Note

Selecting F2 deletes the existing freeze frame from memory.

3 Press F3 or F4 to select the mode of movement of the image.

F3 (COLOR): The color of the image does not change as you move it. In a D2 system, the minimum movements are 4 clock pulses horizontally and 2 scan lines vertically. In a D1 system, the minimum movements are 2 clock pulses horizontally and 1 scan line vertically.
F4 (B & W): The color of the image does change as you move it. The minimum movements are 1 clock pulse horizontally and 1 scan line vertically.

4 Adjust the parameters to move the selected image to the desired position.

Knob	Parameter name	Setting
1	H Move	Amount of horizontal movement (–50.00 to +50.00)
2	V Move	Amount of vertical movement (–50.00 to +50.00)

5 If you selected F2 (LIVE) in step **2**, press F7 (INPUT MASK) to select whether or not to mask the input video.

OFF: Move the whole input video frame.
ON: Move only the portion of the input video frame defined by a rectangular frame (BOX) or a dedicated pattern. If you choose this selection, continue to select the mask source type and parameters.

For details, see steps **6** *to* **9** *in the section "Creating a new video image and writing it to frame memory" (page 6-7).*

To return to the moved frame to the center position
Press F5 (POS CENTER).

Linking Frame Memories – LINK

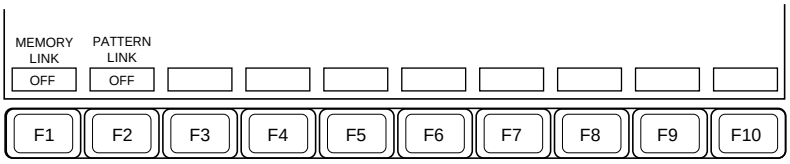
It is possible to link frame memory 2 to frame memory 1.

Linking two frame memories

Use the following procedure.

1 In the FRAME MEMORY 1 menu, select item 4 (LINK).

The LINK menu appears.



Function key indications in the LINK menu

(Continued)

2 Set F1 (MEMORY LINK) to “ON”.

Frame memory 2 is now linked to frame memory 1.

3 To link the dedicated patterns, set F2 (PATTERN LINK) to “ON”.

This makes all of the pattern settings for frame memory 2 the same as those for frame memory 1.

Note

The pattern link function does not operate, however, if you have selected pattern 24, 26, or 27 for either of frame memories 1 and 2.

Write-Protect Setting – LOCK

You can write-protect the frame memory. This setting is common to the manual, paint, and move modes.

Making the write-protect setting

In the FRAME MEMORY 1 menu, set item 5 (LOCK) to “ON”.
This prevents frame memory 1 from being written to.

Chapter 7
Snapshots

Overview

Taking a snapshot means making a copy of the current settings of the system, and saving it in memory so that you can instantly restore the same setting state at a later time.

Types of snapshot

Snapshots can be divided into the following two types:

- Snapshots which apply to the switcher system as a whole
  The term “snapshot” alone normally refers to this type. However, for snapshots restricted to one of the M/E banks or the PGM/PST bank but falling in this category the terms “M/E-1 snapshot” and so forth are used.
- Snapshots which apply only to specific functions
  These include the snapshots listed in the following table.

	Settings included	See page
Key snapshot	M/E bank settings for key 1 or key 2 only, excluding the key on/off setting.	4-70
Wipe snapshot	M/E bank wipe settings only.	4-114
DME wipe snapshot	M/E bank DME wipe settings only.	4-136

Key snapshots, wipe snapshots and DME wipe snapshots cannot be manipulated in the REGISTER menu, but it is possible to save them to floppy disk by using the DISK menu.

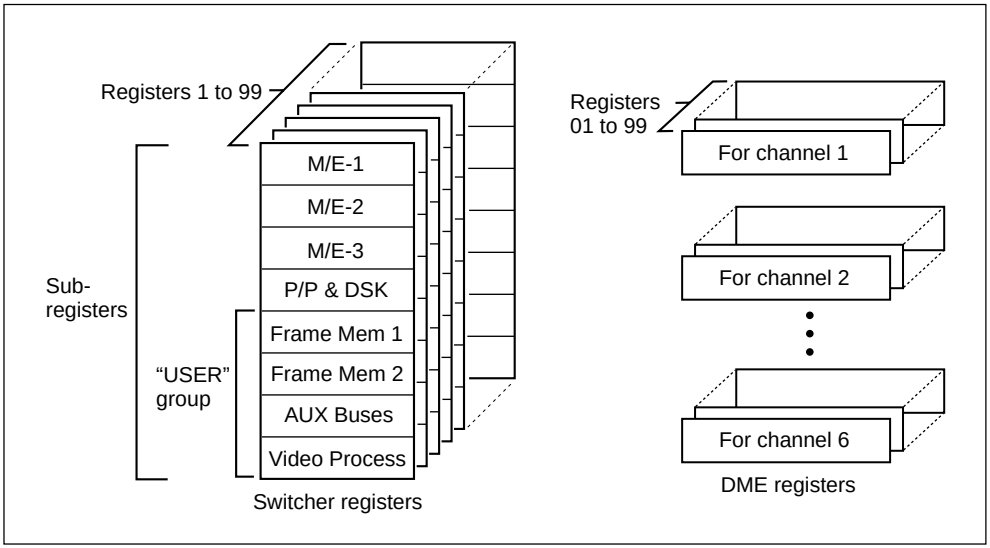
The rest of this section gives an overview of the snapshots on which register manipulation and saving to floppy disk are possible.

Note

If snapshots including DME wipes and snapshots including processed keys are recalled alternately, normal video reproduction may not possible.

Snapshots and Registers

Snapshots are held in units of memory termed registers, numbered from 1 to 99. As shown below, each register comprises eight sub-registers.



Arrangement of snapshot registers

Significance of sub-registers

The settings held in each sub-register of a snapshot are as follows.

M/E-1, M/E-2, M/E-3: Settings on the corresponding M/E bank. This includes the color background settings and chroma key settings.

Frame Mem 1 and 2: Settings for frame memories 1 and 2.

AUX Buses: Settings in the auxiliary bus bank and in the routing switcher which can be operated by the switcher.

Video Process: Settings for the video process function and color correction function.

P/P & DSK: On a 3.5-M/E system, the settings on the PGM/PST bank, including those for the downstream keyer. On a 3-M/E system equipped with a downstream keyer, the downstream keyer settings only.

Four of these eight sub-registers – Frame Mem 1 and 2, AUX Buses, and Video Process – are grouped together in what is known as the USER group. For manipulating the USER group, however, it is possible to select which of these four are actually included, by using a setting in the REGISTER menu. You can use REGISTER menu to list the contents of the registers, and to manipulate them (copy, swap, move and delete functions).

For details of the REGISTER menu, see Chapter 9.

Settings not saved in snapshots

Settings relating to the following switcher functions cannot be saved in snapshots:

- Port enable *(see page 12-3)*
- Safe title *(see page 12-8)*
- Key memory *(see page 4-44)*
- Setup data *(see Chapter 14)*

Snapshot attributes

There are also a number of attributes you can attach when saving a snapshot. These control the system behavior when a snapshot is recalled. There are five different attributes, as follows.

"EFFECT DISSOLVE" attribute: When the snapshot is recalled, the new settings are faded in gradually in a dissolve transition. The auto transition rate settings included in the snapshot are used for the dissolve transition.

"AUTO TRANSITION" attribute: When the snapshot is recalled, an auto transition is automatically started.

"XPT DISABLE" attribute: When the snapshot is recalled, the cross-point button selections are not changed. In other words this recalls the settings independent of the signal selections.

"KEY DISABLE" attribute: When the snapshot is recalled the key settings are not changed.

"GPI OUT" attribute: Recalling the snapshot automatically trigger the preset GPI outputs.
The "GPI OUT" attribute applies to a whole register, and cannot be set independently for sub-registers. You can set this attribute from the REGISTER menu *(see page 9-15)*.

You can use the REGISTER menu to check which attributes are assigned to which snapshots.

Attribute restrictions

Not all attributes can be applied to all sub-registers. The following table shows which combinations are possible.

Sub-register		Attribute			
		"EFFECT DISSOLVE"	**"AUTO TRANSITION"**	**"XPT DISABLE"**	**"KEY DISABLE"[a)]**
M/E-1, M/E-2, M/E-3		Yes	Yes	Yes	Yes
USER group	Frame Mem 1 and 2	No	No	No	No
	AUX Buses	No	No	Yes	No
	Video Process	No	No	No	No
P/P & DSK		Yes	Yes	Yes	No

a) The "KEY DISABLE" attribute can only be applied from the FlexiPad.

Snapshot Operations

You can use the numeric keypad section or the FlexiPad in one of the M/E banks for saving and recalling snapshots.
Using the numeric keypad section you can carry out all snapshot operations except applying (or removing) the “KEY DISABLE” attribute.
Using the FlexiPad in an M/E bank, you can carry out snapshot operations for this particular M/E bank.

Snapshot Operations Using the Numeric Keypad Section

This section describes how to carry out snapshot operations using the numeric keypad section.

Saving a snapshot

To save a snapshot using the numeric keypad section, use the following procedure.

Note

If you specify the number of a register which already holds a snapshot, then the saving operation overwrites the previous snapshot. Before specifying the number of the register in which you wish to save the snapshot, check that the register is empty, or contains a snapshot which is no longer needed. You can check the contents of registers using the REGISTER menu *(see page 9-3)*.

1 Set up the switcher in the state you wish to save in the snapshot.

2 In the numeric keypad section, press the SNAPSHOT button.

This delegates the numeric keypad section to snapshot operations.

3 Select the sub-register or sub-registers. You can press any combination of the sub-register selection buttons, turning them on, as follows.

M/E1, M/E2, M/E3 button: Select sub-registers M/E-1, M/E-2, and M/E-3, respectively.
P/P DSK button: Select the P/P & DSK sub-register.
USER button: Select the currently selected sub-registers of the USER group (Frame Mem 1 and 2, AUX Buses, and Video Process). You can specify which of the sub-registers of the USER group this button selects, using the REGISTER menu *(see page 9-16)*.

Pressing the ALL button selects all sub-registers, and lights the other buttons.

4 Press the STORE/LEARN button, turning it on.

The display in the numeric keypad section shows the number of the register for which you carried out a snapshot saving operation last time.

5 Use the numeric keypad to enter the register number where you want to save the snapshot.
To use the first available empty register, enter a decimal point only.

The display shows the word "LEARN" followed by the register number you have entered.
When the sub-registers which you specified in step **3** above are empty, a lowercase "e" appears after the register number. When all sub-registers of a register are empty, a capital "E" appears after the register number.

6 To apply attributes, press the required combination of the attribute buttons, turning them on.

The correspondence between buttons and attributes is as follows:
+/–/EFF DIS button: "EFFECT DISSOLVE" attribute
CLR/AUTO TRANS button: "AUTO TRANSITION" attribute
TRIM/XPT DSBL button: "XPT DISABLE" attribute

7 Press the ENTER button.

This saves the snapshot in memory, and the STORE/LEARN button goes off.

Recalling a snapshot

To recall a snapshot using the numeric keypad section, use the following procedure.

1 Press the SNAPSHOT button, turning it on.

2 Select the sub-register or sub-registers, using the sub-register selection buttons.

*For details, see step **3** in the previous section "Saving a snapshot" (page 7-7).*

3 Press the RCALL button, turning it on.

The display in the numeric keypad section shows the number of the last register which you recalled.

4 Use the numeric keypad to enter the register number from which you want to recall the snapshot.

The display shows the legend "RECALL" followed by the register number you have entered.
If the sub-registers of the snapshot selected in step **2** have attributes applied, the corresponding attribute selection buttons light. For example, if the M/E-1 sub-register of the snapshot has the "AUTO TRANSITION" attribute, and the M/E-2 sub-register has the "XPT DISABLE" attribute, the CLR/AUTO TRANS button and TRIM/XPT DSBL buttons light simultaneously.

5 To apply attributes, press the required combination of the attribute buttons, turning them on.
To remove an attribute which is already applied, press the corresponding attribute selection button, turning it off.

The correspondence between buttons and attributes is as follows:
+/–/EFF DIS button: "EFFECT DISSOLVE" attribute
CLR/AUTO TRANS button: "AUTO TRANSITION" attribute
TRIM/XPT DSBL button: "XPT DISABLE" attribute

6 Press the ENTER button.

This recalls the specified snapshot, restoring the relevant sections of the control panel to their states when the snapshot was saved. This only affects settings relating to the signals, however, and does not change the currently displayed menu, for example.
After recalling the snapshot, the RCALL button remains on, and you can recall a different snapshot immediately by repeating from step **2** above.

Restoring the state before a snapshot was recalled

When you recall a snapshot, the immediately previous settings are saved in a register which is known as “LAST X”. By recalling the settings from this register, you can return to the state immediately before recalling a snapshot; this is known as the “LAST X” function.
In the numeric keypad section, press the LAST X button.

M/E Snapshot Operations Using the FlexiPad

Overview

You can use the FlexiPad for M/E snapshot operations.
Since each M/E bank is equipped with its own FlexiPad, there is no need to specify the corresponding sub-register (M/E-1, M/E-2, or M/E-3).

By changing the FlexiPad operating mode, you can carry out operations by a different procedure from that described below.

For details of changing the operating mode, see the section "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

Attributes and the FlexiPad

Using the FlexiPad, you can handle all attributes that can be applied to an M/E snapshot ("EFFECT DISSOLVE", "AUTO TRANSITION", "XPT DISABLE", and "KEY DISABLE"). However, in contradistinction to the operations using the numeric keypad section, here the snapshots are divided into two classes: those which can only be applied when saving, and those which can only be applied when recalling.

Snapshots which can only be applied when saving:
• "EFFECT DISSOLVE"
• "AUTO TRANSITION"

Snapshots which can only be applied when recalling:
• "KEY DISABLE"
• "XPT DISABLE"

Saving an M/E snapshot

To save an M/E snapshot using the FlexiPad, use the following procedure.

Note

If you specify the number of a register which already holds a snapshot, then the saving operation overwrites the previous snapshot. Before specifying the number of the register in which you wish to save the snapshot, check that the register is empty, or contains a snapshot which is no longer needed.
You can check the contents of registers using the REGISTER menu *(see page 9-3)*.

1 Set up the M/E bank in the state you wish to save in the snapshot.

2 To apply the “EFFECT DISSOLVE” attribute press the EFF DISS button in the FlexiPad, turning it on, and to apply the “AUTO TRANSITION” attribute press the AUTO TRANS button, turning it on.

3 Use the following method to select the number of the register in which you wish to save the snapshot.

1) If the tens digit of the number currently displayed is different from the tens digit of the register number you wish to enter, press the SHIFT button, turning it on, and press the tens digit using the numeric keypad.

The number you have entered appears in the tens digit of the display, and the units digit appears blank.

2) Hold down the SNAPSHOT button, and press the units digit of the required register number.

When you enter the units digit, a beep sound occurs, and this saves the M/E snapshot.

While the SNAPSHOT button is held down, the buttons in the numeric keypad corresponding to the units digit of numbers of registers which hold snapshots light amber. Thus for example, if the display currently shows “25”, and registers 20, 25, and 28 hold snapshots, then the 0, 5 and 8 buttons light amber. You can use this function to check whether there is or is not a snapshot held in a particular register.

Recalling an M/E snapshot

To recall an M/E snapshot using the FlexiPad, use the following procedure.

1 Press the SNAPSHOT button in the FlexiPad of the M/E bank concerned.

2 To apply the “XPT DISABLE” attribute press the XPT DSBL button in the FlexiPad, turning it on, and to apply the “KEY DISABLE” attribute press the KEY DSBL button, turning it on.

3 Use the following method to select the number of the register from which you wish to recall the snapshot.

1) If the tens digit of the number currently displayed is different from the tens digit of the register number you wish to enter, press the SHIFT button, turning it on, and press the tens digit using the numeric keypad.

The number you have entered appears in the tens digit of the display, and the units digit appears blank.

2) Press the units digit of the required register number.

When you press the units digit, the numeric button lights green, and the specified snapshot is recalled, restoring the relevant sections of the control panel to their states when the snapshot was saved. If the snapshot has attributes applied, the corresponding attribute buttons in the FlexiPad (AUTO TRANS and EFF DISS) light.

Restoring the state before an M/E snapshot was recalled

When you recall an M/E snapshot, the immediately previous settings are saved in a register which is known as "LAST X". By recalling the settings from this register, you can return to the state immediately before recalling an M/E snapshot; this is known as the "LAST X" function.

To return to the state immediately before recalling an M/E snapshot using the LAST X function, use the following procedure.

1 In the FlexiPad, press the SNAPSHOT button, turning it on.

2 In the numeric keypad, enter 00 as the register number.

- If the tens digit of the number currently displayed is other than zero, press the SHIFT button, turning it on (the display indication flashes), and press the 0 key twice.
  The first time you press the 0 key, the tens digit displayed changes to zero, and the SHIFT button goes off. The second time you press the 0 key, the units digit displayed changes to zero, and the LAST X function is activated.
- If the tens digit of the number currently displayed is zero, press the 0 key once.

You can select whether or not disable the LAST X function above.
For details see the section "Changing switcher fucntions" (page 14-73).

DME Snapshot Operations

From the control panel of the switcher, you can save and recall DME snapshots on up to six channels.
Each DME has registers for 99 snapshots, numbered 01 to 99 as on the switcher.

To save or recall a DME snapshot

In the numeric keypad section press one of the DME 1 to DME 6 sub-register selection buttons, to select the corresponding DME. Otherwise, the procedure is the same as when saving or recalling a switcher snapshot.

Notes

- It is not possible to use the global channel for snapshot operations.
- It is not possible to execute key frames and recall snapshots at the same time.
- It is not possible to save and recall snapshots in DME-3000.
  When you recall a DME snapshot, the key frame effect of the specified number is recalled.

Chapter 8
Key Frame Effects

Overview

Fitting the optional BKDS-7030 Key Frame Control Panel Unit (also referred to in the following description as the “key frame control section”) in the control panel allows you to build key frame effects.

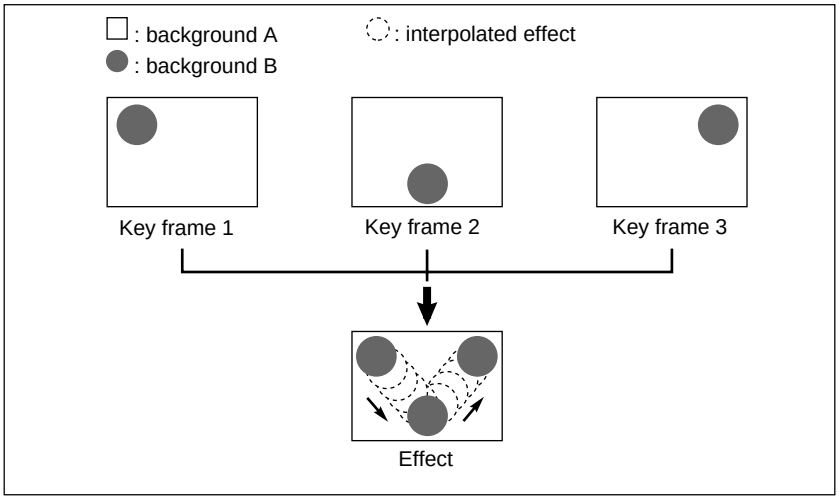
This section gives an overview of key frame effects and the associated operations.

Key Frames and Effects

A key frame is a set of data which determines the instantaneous state of an image which varies with time.

An effect, in turn, is obtained from a sequence of key frames, interpolated along the time axis so as to appear continuous.

The following figure illustrates the creation of three key frames with a circular wipe pattern in three different positions, and the resulting interpolated effect.



Example of key frame effect creation

A series of key frames for producing an effect can be held in memory, identified by a register number. You can then recall the effect, and play it back.

Control of DME Effects

From the key frame control section you can also control key frames and effects held DME-7000/3000 units (up to six channels) connected to the switcher.

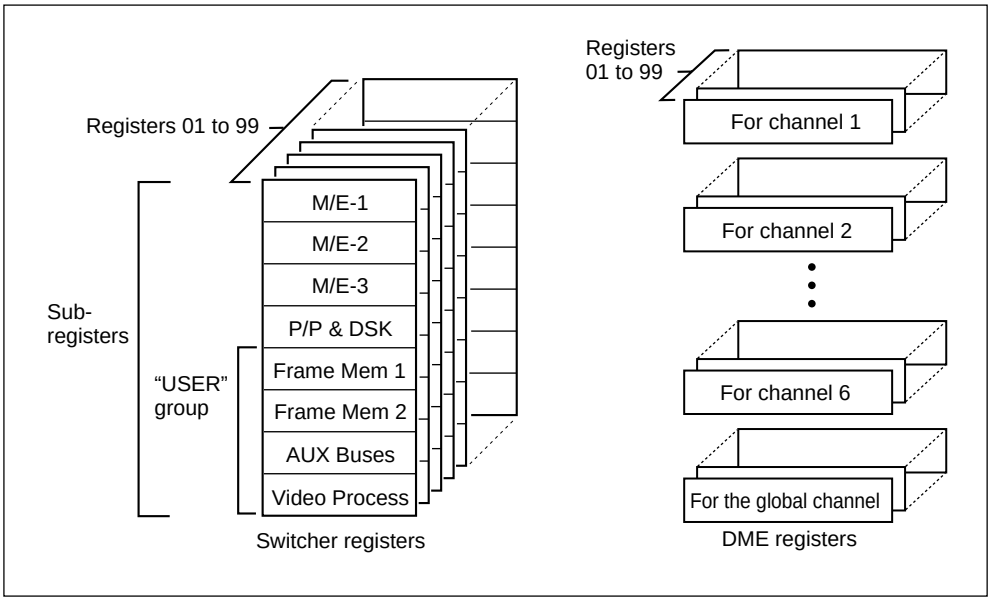
Basically operations, from the creation of key frames to the execution of effects, are the same as on the switcher. The menus used for path settings are different, however, and for this refer to the BZDM-7720/3720 User's Guide.

Notes on operation

When you are using a BKDM-3010 DME Control Panel, then you can carry out DME effect operations either on the DME control panel or on the switcher control panel, but effects are executed using the settings (particularly the reference channel settings) of the control panel used. Thus an effect may execute differently on the two control panels.

Organization of Registers for Key Frame Effects

The collection of key frames making up an effect is stored in memory, and identified by a register number from 01 to 99. On the switcher each register is divided into eight sub-registers, each holding its allotted data. In a switcher register, the four sub-registers for frame memory 1, frame memory 2, the AUX buses, and for video processing are handled together under the name “USER”.
For the DME registers, each DME channel (including the global channel) has registers 01 to 99, each of which can be saved and recalled individually.



Registers for key frame effects

Once an effect is saved in a register, you can copy or move the effect from one register to another *(see Chapter 9)* or save it to a floppy disk *(see Chapter 10)*.

Operation Sequence

The following diagram shows the principal steps in the process from creating the key frames to the execution of the effect.

Selecting a register ***(see page 8-6)***
When creating a new effect, select an empty register; to edit an existing effect, select the corresponding register.

⬇

Specifying sub-registers and edit points ***(see page 8-7)***
Select the sub-register or channel to which the editing applies and specify the edit points.

⬇

Creating and editing key frames ***(see page 8-8)***
Use insertion, deletion and modification to create the necessary key frames.

⬇

Time settings ***(see page 8-15)***
Set the overall length of the effect and the time intervals between key frames.

⬇

Path settings ***(see page 8-20)***
Select the manner in which the interpolation between key frames is carried out.

⬇

Effect execution ***(see page 8-26)***
A smooth effect transition is obtained, according to the time and path settings.

⬇

Saving the effect ***(see page 8-30)***
When the effect is completed, you can save it in a register.

Accessing a Register

To recall the contents of a register, use the following procedure.

1 Press the EFF button in the numeric keypad section, turning it on.

This delegates the numeric keypad section to key frame operations.

2 In the sub-register selection section, press the button or buttons corresponding to the sub-register or DME channel(s) you wish to use.

Note

It is not possible to access switcher sub-registers individually. Whichever of the five sub-register selection buttons (M/E-1, M/E-2, M/E-3, P/P DSK, and USER) is lit, all of the switcher sub-registers are recalled.

3 Press the RCALL button, turning it on.

4 Enter the number of the register you wish to access.
- When creating a completely new effect, enter the number of an empty register.
- To access the first empty register after the currently accessed register, without making an explicit specification, enter a period only as the number.

5 Press the ENTER button.

This accesses the specified register, and recalls its contents.

Specifying Sub-Registers and Edit Points

Selecting the sub-register to which editing applies

To select the sub-register (or channel) to which key frame editing applies, press one of the sub-register selection buttons (M/E-1 to M/E-3, P/P DSK, USER, DME 1 to DME 6, and DME GLBL).

Specifying edit points

To insert, modify, or delete a key frame, it is necessary to stop the effect at the appropriate point on the time axis. This is referred to as an edit point. It is possible to carry out editing at any key frame in the effect, or between two key frames.
To specify an edit point, carry out the following operation on the key frame control section.

For details of the component parts of the key frame control section, see page 2-33.

1 Press the EDIT ENBL button, turning it on.

2 Carry out any of the following operations.
- Move the fader lever and stop the effect at the desired point.
- Press the NEXT KF button to specify the next key frame after the current position.
- Press the PREV KF button to specify the last key frame before the current position.
- To move to a specified key frame, press the GO TO KF button, and enter the number of the key frame from the numeric keypad.
- To move to a specified time code position, press the GO TO TC button, and enter the time code value from the numeric keypad.

Changing the reference channel

When for example you use the NEXT KF button to move a key frame, one sub-register is used to determine where the next key frame is, and the other sub-registers follow suit. The sub-register used for reference is termed the reference channel, and only the corresponding sub-register selection button lights green. The reference channel is determined according to the following fixed order of precedence.

M/E-1 > M/E-2 > M/E-3 > P/P DSK > USER > DME1 > ... DME6 > DME GLBL

To change the reference channel, holding down the EFF button in the numeric keypad block, press the required sub-register selection button. The sub-register selection button which you have pressed lights green.
By means of a SETUP menu setting, you can change the method of selecting the reference channel.

For details, see the section "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

Creation

Creating a new key frame effect

To create a new key frame effect, first access an empty register, then use the following procedure to create and insert the frames one by one. In this case it is not necessary to specify the edit points.

1 Press the EDIT ENBL button, turning it on.

The system switches to edit mode, allowing key frames to be created and edited.

2 Create the image for the first key frame.

3 Press the INS button.

This saves the current image as the first key frame.

4 Create the image for the next key frame.

5 Press the INS button.

This inserts the new key frame (key frame 2) after key frame 1.

Repeat steps **4** and **5** as necessary, until the required number of key frames are created.

Insertion

Inserting a key frame

Use the following procedure to insert a key frame in an existing effect.

1 Press the EDIT ENBL button, turning it on.

2 Stop the effect at the required edit point.

3 Create the key frame to be inserted.

4 Press the INS button.

When the edit point is on a key frame, to insert the new key frame before, hold down the SHIFT button while pressing the INS button.

This inserts the new key frame.

When you insert a new key frame, the total effect duration may change.

For details see the section "Changes in Effect Duration Due to Inserted Key Frames" (page 8-17).

Modification

Modifying key frames

Use the following procedure to modify already created key frames.

1 Press the EDIT ENBL button, turning it on.

2 Stop the effect at the required edit point.

If the edit point is on a key frame, that key frame will be modified; if the edit point is between key frames, the previous key frame will be modified.

3 Create the required new form of the key frame.

4 Press the MOD button.

This modifies the key frame.

Modifying more than one key frame simultaneously

It is also possible to modify a number of created key frames simultaneously. There are three slightly different procedures for doing this, corresponding to the following cases.

- Modifying all key frames including and after a specified key frame
- Modifying all of the key frames
- Modifying all key frames in a specified range

The following description covers the procedures for carrying out these modifications.

Modifying all key frames including and after a specified key frame

1 Press the EDIT ENBL button, turning it on.

2 Stop the effect at the first key frame to be modified.

3 Carry out the necessary changes.

4 Press the FROM TO button, turning it on.

5 Press the MOD button.

This simultaneously modifies all key frames including and after the specified key frame.

Modifying all of the key frames

1 Press the EDIT ENBL button, turning it on.

2 Carry out the necessary changes on any key frame.

3 Press the FROM TO button, turning it on.

4 Press the decimal point button in the numeric keypad.

The legend “FT ALL” appears in the display in the numeric keypad block.

5 Press the MOD button.

This simultaneously modifies all key frames.

Modifying all key frames in a specified range

1 Press the EDIT ENBL button, turning it on.

2 Stop the effect on any of the key frames to be modified.

3 Carry out the necessary changes.

4 Press the FROM TO button, turning it on.

5 Enter the number of the first key frame to be modified, using the numeric keypad, and press the ENTER button.

6 Enter the number of the last key frame to be modified, using the numeric keypad, and press the ENTER button.

(Continued)

7 Press the MOD button.

This simultaneously modifies all key frames in the specified range.

Deletion

Deleting key frames

Use the following procedure to delete key frames.

1 Press the EDIT ENBL button, turning it on.

2 Stop the effect at the required edit point.

If the edit point is on a key frame, that key frame will be deleted; if the edit point is between key frames, the previous key frame will be deleted.

3 To delete a number of key frames together, press the FROM TO button.

For details of the procedure for specifying the key frames, see the section "Modifying more than one key frame simultaneously" (page 8-10).

4 Press the DEL button.

This deletes the key frame or frames.

When you delete key frames, the total effect duration changes.

For details see the section "Changes in Effect Duration Due to Key Frame Deletion" (page 8-18).

Movement

Moving key frames

Use the following procedure to move key frames.

1 Stop the effect on the key frame to be moved.

2 To move a number of key frames together, press the FROM TO button, and specify the key frames.

For details of the procedure for specifying the key frames, see the section "Modifying more than one key frame simultaneously" (page 8-10).

3 Press the DEL button, temporarily deleting the current key frame.

This saves the deleted key frame or frames in the paste buffer.

4 Reposition the effect at the destination position for the moved key frame or frames.

5 Press the PASTE button.

When the destination position is on a key frame, to insert the new key frame before, hold the SHIFT button down while pressing the PASTE button.

This inserts the key frame or frames from the paste buffer.

Copying

Copying key frames

Use the following procedure to copy key frames.

1 Press the EDIT ENBL button, turning it on.

2 Stop the effect on the key frame you wish to copy.

3 To copy more than one key frame, press the FROM TO button, and specify the key frames to be copied.

For details of the procedure for specifying the key frames, see the section "Modifying more than one key frame simultaneously" (page 8-10).

4 Press the COPY button.

This copies the key frame or frames specified in steps **2** and **3** into the paste buffer.

5 Move to the edit point where you wish to insert the copy.

6 Press the PASTE button.

When the destination position is on a key frame, to insert the new key frame before, hold the SHIFT button down while pressing the PASTE button.

This copies the key frame or frames from the paste buffer.

Undoing the Effect of an Edit

When you press the INS, DEL or MOD button, the previous state is saved in an area of memory known as the "LAST X buffer". After an erroneous operation, you can return to the previous key frame state by pressing the LAST X button in the numeric keypad block.

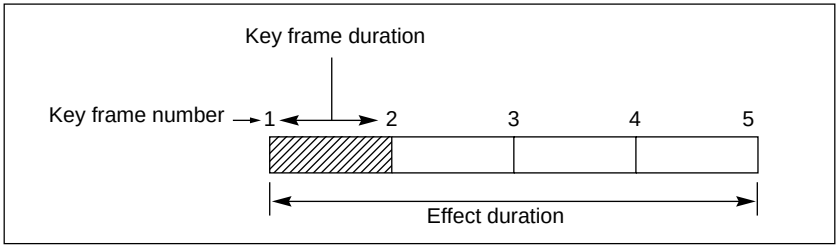
Time Settings

Key Frame Duration and Effect Duration

Effect execution times are determined by the effect duration and the key frame durations.

- A key frame duration is the execution time from a key frame until the next key frame.
- The effect duration is the total execution time from the first key frame of the effect to the last key frame.

If you change the effect duration, the key frame durations within the effect are all automatically changed in proportion.



Schematic of key frame durations and effect duration

Setting a key frame duration

The default key frame duration is one second. You can change the duration of an individual key frame using the following procedure.

1 Press the EDIT ENBL button, turning it on.

2 Stop the effect on the key frame whose duration you wish to change.

3 Press the KF DUR button.

4 Enter the numerical value in seconds and frames (ss.ff) from the numeric keypad, and press the ENTER button.

For example, enter 9.20 to set a duration of 9 seconds and 20 frames.

Notes

- Key frame durations may change not only by explicit setting as here, but also if the overall effect duration is changed.
- When a transition executed with the AUTO TRANS button on is inserted in a key frame, the transition rate setting does not apply to the key frame. When the key frame is executed, the key frame duration applies to the transition.

Setting the effect duration

Use the following procedure.

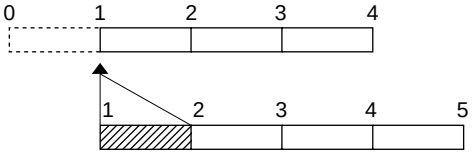
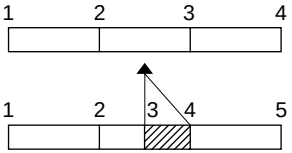
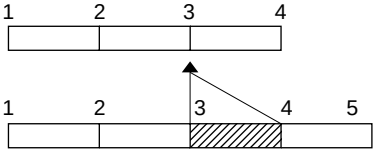
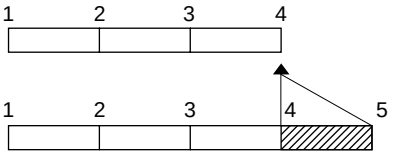
1. Press the EDIT ENBL button, turning it on.
2. Press the EFF DUR button.
3. Enter the numerical value in minutes, seconds and frames (mm.ss.ff) from the numeric keypad, and press the ENTER button.

   For example, enter 3.7.15 to set a duration of 3 minutes, 7 seconds and 15 frames.

The effect duration also changes when you insert or delete key frames, as described in the following items.

Changes in Effect Duration Due to Inserted Key Frames

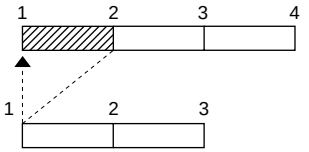
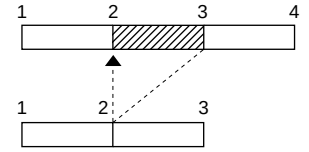
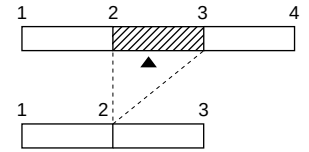
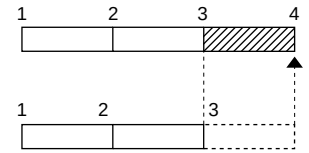
- When the effect is stopped on a key frame, then if you insert a key frame, the effect duration is increased by the duration of the inserted key frame.
- When the effect is stopped between key frames, then inserting a key frame does not change the effect duration.

Insertion before the first key frame	
Insertion between two key frames	
Insertion at a key frame	
Insertion after the last key frame	

Changes in effect duration and key frame insertion position

Changes in Effect Duration Due to Key Frame Deletion

When you delete a key frame, regardless of where the effect is stopped, the effect duration is always decreased by the duration of the deleted key frame.

Deletion on the first key frame	
Deletion on an intermediate key frame	
Deletion between two key frames	
Deletion on the last key frame	

Key frame deletion position and changes in effect duration

Delay Setting

Setting the delay time

The delay time is the delay from the beginning of effect execution until the first key frame, that is, until the effect proper begins. The delay is not included in the effect duration, which therefore does not change when you change the delay. Use the following procedure to change the delay time.

1 Press the EDIT ENBL button, turning it on.

2 Press the DELAY button.

3 Enter the numerical value in minutes, seconds and frames (mm.ss.ff) from the numeric keypad, and press the ENTER button.

For example, enter 1.15 to set a delay of 1 second and 15 frames.

Path Settings

These settings determine the way in which interpolation from one key frame to the next is carried out, or in other words the nature of the path followed between key frames.

Displaying the PATH Menu

Make the path settings for key frames created on the switcher by using the SWER KF PATH menu. Make the path settings for key frames created on the DME by using the DME KF PATH menu.

For details of the DME KF PATH menu, refer to the BZDM-7720/3720 User's Guide.

To display the SWER KF PATH menu, use the following procedure.

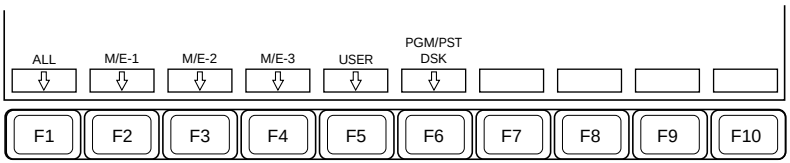
1 In the menu control section, press the KEY FRAME top menu button in the SYSTEM group.

The KEY FRAME menu appears.

For details of the KEY FRAME menu display, see page 8-31.

2 Press F9 (SWER PATH).

The SWER KF PATH menu appears.



Function key indications in the SWER KF PATH menu

3 Stop the effect at the required edit point.

The setting applies to the transition from that key frame to the next.

4 Press one of F1 (ALL) to F6 (PGM/PST DSK), to select the sub-register to which the settings apply.

For example, selecting F2 (M/E-1) allows you to make path settings separately for the items (KEY 1, KEY 2, WIPE, etc.) on the M/E-1 bank. To make path settings for the whole M/E-1 bank without separating items, press F1 (ALL).

Depending on the sub-register selection, different function key indications appear. For further details, read the following sections.

Basic Path Setting Operations

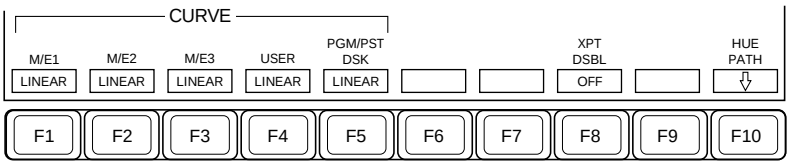
Settings when F1 (ALL) is selected

Setting the paths for all banks

Use the following procedure.

1 In the SWER KF PATH menu, press F1 (ALL).

The function key indications change as follows.



2 Press one of F1 (M/E1) to F5 (PGM/PST DSK) to select the curve path type for the corresponding bank.

Pressing each of F1 to F5 cycles through the following settings:

OFF: Make no change as the effect proceeds.

STEP: Change stepwise at each key frame. In other words, there is no interpolation in the interval between key frames.

LINEAR: Interpolate linearly between key frames. This maintains a constant speed of movement.

S-CURVE: Accelerate and decelerate around each key frame, so that the speed is maximum at the mid-point between two key frames.

(Continued)

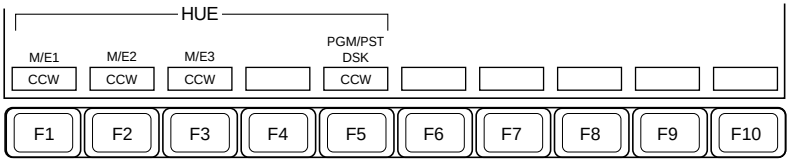
SPLINE: Use a spline curve to provide a smooth interpolation.

The selected interpolation path type is shown on the menu display by an icon.

3 In order not to switch the input signals, set F8 (XPT DSBL) to “ON”.

4 Press F10 (HUE PATH).

The function key indications change as follows.



5 Press one of F1 (M/E1) to F5 (PGM/PST DSK) to select the HUE path type for the corresponding bank.

Pressing each of F1 to F5 cycles through the following settings:
CW: The hue rotates clockwise as viewed on a Vectorscope.
CCW: The hue rotates counterclockwise as viewed on a Vectorscope.
LONG: The hue changes by the maximum amount. If there is no difference of hue between two key frames, the hue rotates clockwise through 360 degrees.
SHORT: The hue changes by the minimum amount.

The selected hue interpolation curve is shown on the menu display by an icon.

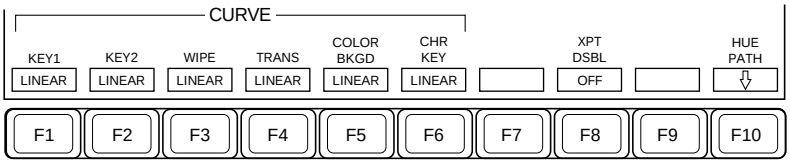
Path settings within an M/E bank

Making path settings for individual items within an M/E bank

For example, in the case of the M/E-1 bank, use the following procedure. For the M/E-2 and M/E-3 banks, use a corresponding procedure.

1 In the SWER KF PATH menu, press F2 (M/E-1).

The function key indications change as follows.



2 Press one of F1 (KEY1) to F6 (CHR KEY) to select the corresponding curve path type.

Pressing each of F1 to F6 cycles through the settings in the order shown below. F1 (KEY1), F2 (KEY2), F4 (TRANS), and F6 (CHR KEY) cycle through four settings excluding “SPLINE”.

OFF → STEP → LINEAR → S-CURVE → SPLINE

The selected path type is shown on the menu display by an icon.

3 If you selected “SPLINE” in step **2**, adjust control knobs 1 to 3 as follows.

Knob	Parameter	Setting
1	Tension	Degree of tension between points (–4.000 to +4.000)
2	Bias	Degree of inclination of tangent at point (–4.000 to +4.000)
3	Continuity	Degree of continuity at point (–4.000 to +4.000)

4 Press F10 (HUE PATH), then select the HUE path type.

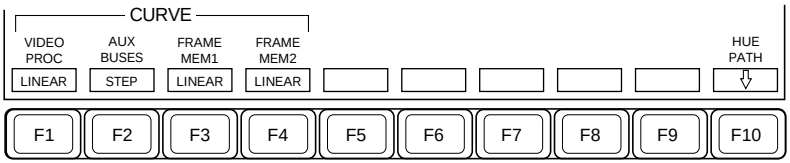
*For details, see steps **4** and **5** in the previous section “Setting the paths for all banks”.*

Path settings within the “USER” group

Making detailed settings for individual items within the “USER” group

1 In the SWER KF PATH menu, press F5 (USER).

The function key indications change as follows.



2 Press the required one of F1 (VIDEO PROC) to F4 (FRAME MEM2).

Every time you press the key, the path type changes as follows, causing the symbol for the selected path type to appear on the menu screen.

F1 (VIDEO PROC): The selection cycles through OFF, STEP, LINEAR and S-CURVE.

F2 (AUX BUSES): The selection toggles between OFF and STEP.

F3 (FRAME MEM1)/F4 (FRAME MEM2): The selection cycles through OFF, STEP and LINEAR.

3 Press F10 (HUE PATH), then select the HUE path type.

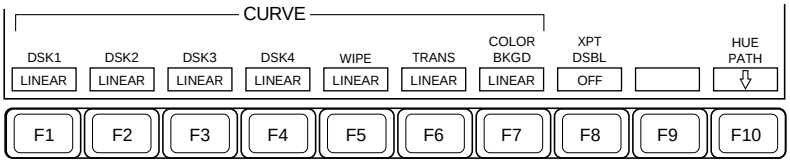
*For details, see steps **4** and **5** (page 8-22) in the section “Setting the paths for all banks”.*

Path settings within the PGM/PST bank or downstream keyer (DSK)

Making detailed settings for individual items within PGM/PST or DSK

1 In the SWER KF PATH menu, press F6 (PGM/PST DSK).

The function key indications change as follows.



(F5 to F8 do not appear on a 3-M/E system.)

2 Press one of F1 (DSK1) to F7 (COLOR BKGD) to select the corresponding curve path type.

Pressing each of F1 to F7 cycles through the settings in the order shown below. F6 (TRANS) and F7 (COLOR BKGD) cycle through four settings excluding “SPLINE”.

OFF → STEP → LINEAR → S-CURVE → SPLINE

The selected path type is shown on the menu display by an icon.

Hereafter, carry out operations with reference to steps **3** and **4** of the section “Making path settings for individual items within an M/E bank” *(page 8-23)*.

Executing and Saving Effects

Executing Effects

You can execute, or play back, the currently recalled effect, using either the RUN button or the fader lever, to obtain a continuous segment of video. Use the following procedures.

Note

For the following operations, first press and light the appropriate buttons for the sub-registers to which execution is to apply.

Execution with the fader lever (manual mode)

To execute the whole effect manually, move the fader lever smoothly from one end of its travel to the other.

- When the REV button is lit: the effect executes in the reverse direction.
- When the STOP NEXT KF button is lit: the effect stops at the next key frame.
  In this case, wait at least 0.5 second before executing the next key frame. If you move the fader lever in the reverse direction immediately, the next key frame may not be executed correctly.
- When a pause time point is set: the effect executes up to the pause point.

To execute the effect up to an intermediate point, stop moving the fader lever at the intermediate point. If you then move the fader lever again, the effect resumes execution. By moving the fader lever in the reverse direction you can execute the effect in the reverse direction.

Execution with the RUN button (auto mode)

To execute the effect automatically, press the RUN button. If any of the REV, STOP NEXT KF, and PAUSE buttons are lit, the effect is the same as in manual mode.

To execute the effect up to an intermediate point, press the RUN button again during execution. Press the RUN button once more to resume execution.

Execution with a combination of the fader lever and the RUN button

Fader lever operation during execution in auto mode

If at an intermediate point of execution of an effect started by pressing the RUN button you operate the fader lever, when the fader lever reaches the position corresponding to the current position of the effect execution, the auto mode ends, the RUN button goes off, and the fader lever takes over control of the execution of the effect.

Execution in auto mode during fader lever operation

After executing part of the effect with the fader lever, if you stop moving the fader lever then press the RUN button, the effect execution resumes. At this point the effect duration setting applies to the duration of the whole effect. Therefore if set to 100 frames, for example, and if a portion of the effect corresponding to 25 frames has been executed with the fader lever, the remaining 75 frames are executed in auto mode.

Note

If you stop the fader lever in an intermediate position and complete the effect, the position of the fader lever no longer agrees with the current position of the effect. All the LEDs of the effect progress indicator either light or go off, and in this state the fader lever does not function. To use the fader lever again, first move it to either end of its travel.

Moving to the first key frame of the effect

Press the REWIND button to move to the first key frame of the effect.

Pausing an effect at a desired point – PAUSE

It is possible to set a pause point so that an effect always pauses at that point. To restart the paused effect, move the fader lever once again or press the RUN button. Up to eight pause points can be set within the duration of the effect.

When more than one sub-register is recalled, the effect execution follows the pause setting of the reference channel.

Note

A pause setting does not take effect if you start the effect by using an editor.

Setting a pause point

Use the following procedure.

1 Stop the effect at the desired pause point.

2 In the KEY FRAME menu, press F5 (PAUSE).

The function key indication switches to reverse video, and the current position of the current effect is set as the pause point.

Thereafter, if you execute this effect by using the RUN button, it pauses at the set point.

Canceling the pause setting

Stop the effect at the pause point, then in the KEY FRAME menu, press F5 (PAUSE).
The function key indication reverts to normal video, and the pause point setting is canceled.

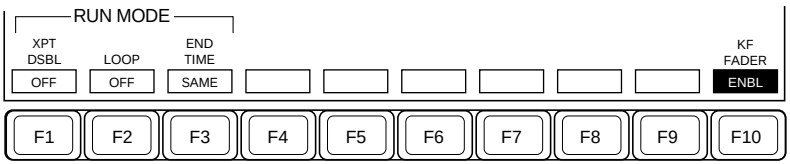
Run Mode Settings

Executing an effect repeatedly

To execute the same effect repeatedly, use the following procedure.

1 In the KEY FRAME menu, press F4 (RUN MODE).

The RUN MODE menu appears.



Function key indications in the RUN MODE menu

2 Set F2 (LOOP) to “ON”.

3 Press the RUN button to execute the effect.

The effect execution loops around from the last key frame to the first key frame, and repeats the effect indefinitely.
There is no interpolation between the last key frame and the first key frame. If the REV button is lit, the effect is repeated in the reverse direction.
To stop the repeated execution, set F2 (LOOP) to "OFF", or press the REWIND button.

Executing an effect without cross-point changes

Key frames normally include cross-point selection information, but if you set F1 (XPT DSBL) in the RUN MODE menu to "ON", the effect is executed with the current input signal selection state unchanged.

Setting the execution timing of several channels

To operate according to the reference channel

When executing effects in a number of channels simultaneously, to carry out the operations of all channels according to the reference channel settings (STOP NEXT KF, NEXT KF, PREV KF, etc.), set F3 (END TIME) to "SAME".
Additionally, if the completion times on the channels are different, in this mode the effects on all channels will continue to be executed until the latest time. When the REV button is lit, execution starts from the channel with the latest completion time.

Operating the channels independently

When executing effects in a number of channels simultaneously, to carry out the operations of all channels independently of the reference channel, set F3 (END TIME) to "INDPND".

Additionally, if the completion times on the channels are different, in this mode the effects on all channels will continue to be executed until their respective times. When the REV button is lit, the channels start execution simultaneously, and finish in the order of increasing time.

Notes

- In INDPND mode, even when completion times in different channels are different, moving the fader lever through its complete travel causes a simultaneous completion of execution, and the effect is thus different from that of using the RUN button.
- It is not possible to make switcher subregisters operate independently of each other even when F3 is set to “INDPND”.

Disabling the keyframe fader lever

Setting F10 (KF FADER) to “DSBL” disables the keyframe fader lever.

Saving Effects

When you recall another effect, the current effect is automatically saved in the currently recalled register. In place of this automatic saving, it is also possible to save an effect in a specified register.
The automatic effect saving function can be disabled using a setup menu operation.

For more details, see the section “Changing switcher functions (OPERATION MODE menu)” (page 14-73).

Saving an effect in a specified register

Use the following procedure.

1 In the numeric keypad block, press the STORE/LEARN button, turning it on.

2 Enter the register number in which you wish to save the effect.

To save the effect in the first empty register after the currently recalled register, enter a period only.

3 Press the ENTER button.

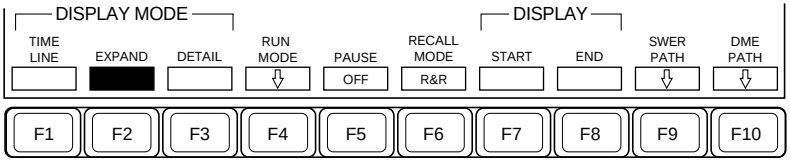
This saves the current effect in the specified register.

Displaying Effect Information

You can check the key frame and effect state, using the menu screen.

Displaying the KEY FRAME menu

Press the KEY FRAME top menu button in the SYSTEM group of the menu control section.
The KEY FRAME menu appears.



Function key indications in the KEY FRAME menu

For details of the following KEY FRAME menu functions, see the pages shown in parenthesis.
F4 (RUN MODE): page 8-28
F5 (PAUSE): page 8-28
F6 (RECALL MODE): page 8-33
F9 (SWER PATH): page 8-20
F10 (DME PATH): refer to the BZDM-7720/3720 User's Guide.

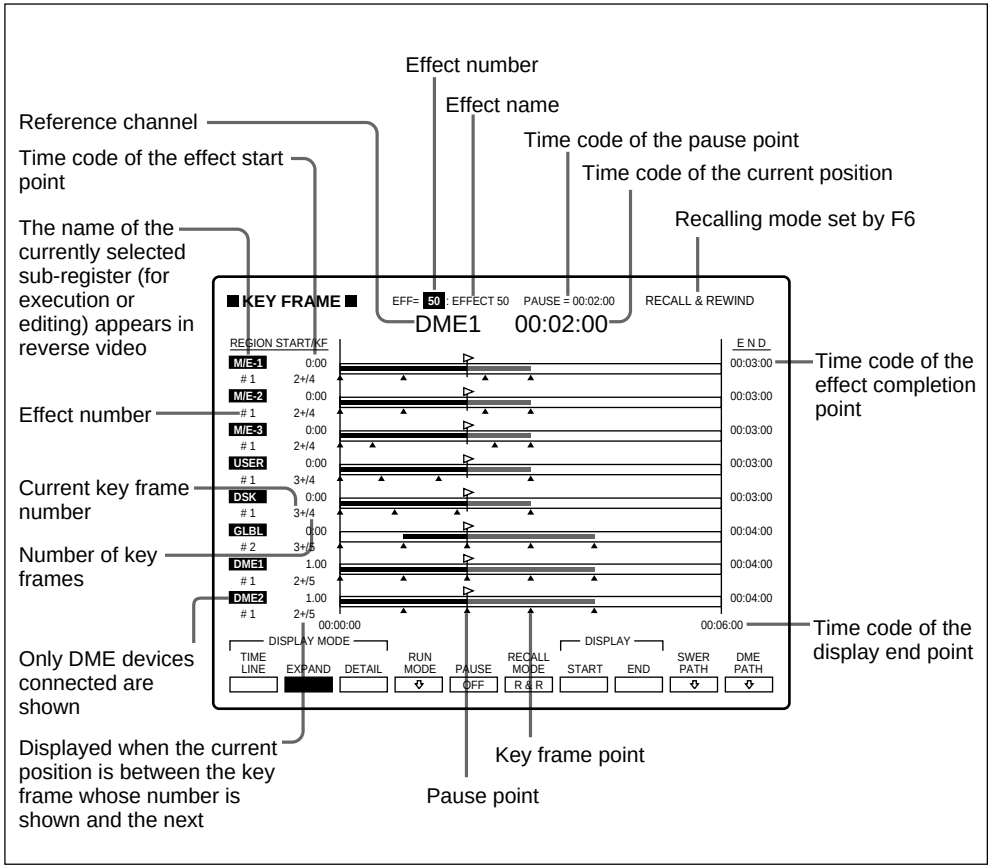
The following are some of the operations carried out in this menu.

Time line display

Displaying the time line screen

In the KEY FRAME menu, press F1 (TIME LINE).

This screen displays the state of the currently recalled effect, with a time line for each of the sub-registers or channels.



Example KEY FRAME menu time line display

Enlarging the time line display

Use the following procedure.

1 In the KEY FRAME menu, press F2 (EXPAND).

F7 (START) and F8 (END) appear. *(See page 8-31.)*

2 Press F7 (START), then turn knob 4 to set the start point.

3 Press F8 (END), then turn knob 4 to set the end point.

Setting the mode in which an effect is recalled

When an effect is recalled, you can select whether or not the first key frame image is reproduced.

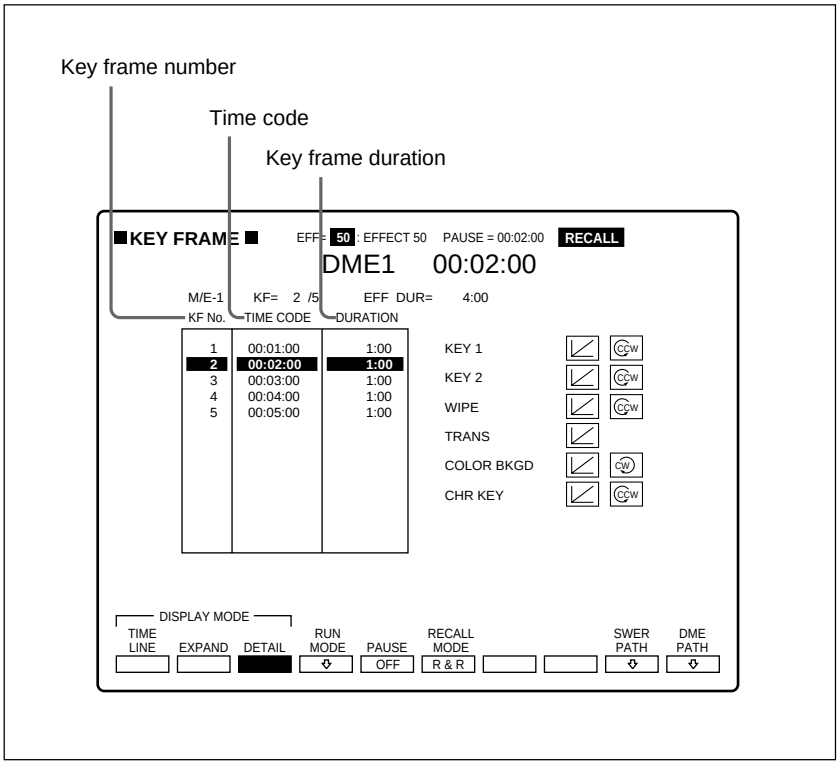
Pressing F6 (RECALL MODE) toggles between “RECALL” and “R & R” (“Recall & Rewind”) settings.

RECALL: At the moment at which the effect is recalled, the first key frame is not reproduced.

R & R: At the moment at which the effect is recalled, the first key frame is reproduced.

Displaying the detailed screen

Pressing F3 (DETAIL) displays the screen shown in the figure below. This screen gives detailed information for each key frame on the reference sub-register.

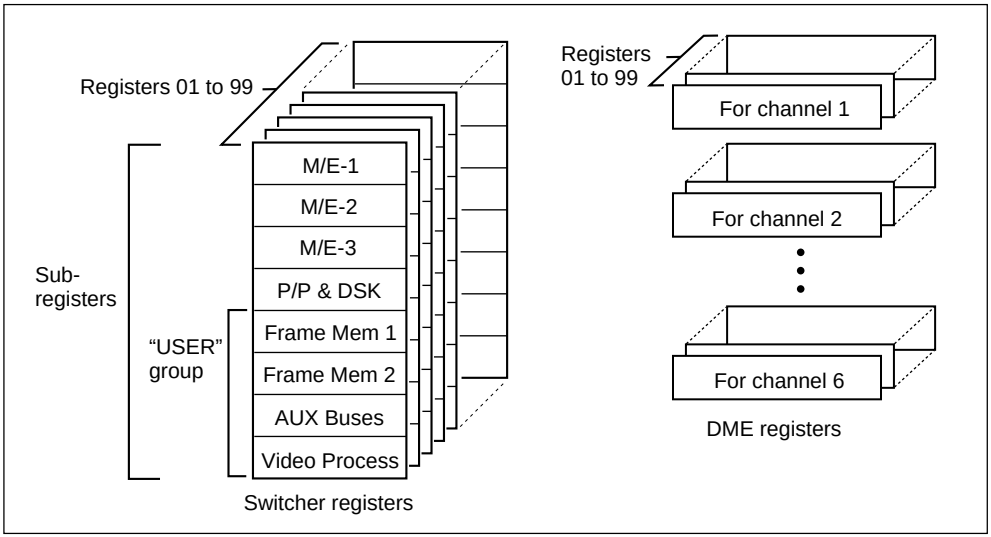


KEY FRAME menu (detailed screen)

Chapter 9
Registers

Overview

Registers are areas of memory (RAM) in the switcher used to hold snapshots and key frame effects; there are 99 registers for each of these purposes, numbered from 01 to 99. Each register is further divided into eight sub-registers (note, however, that a "P/P & DSK" sub-register to hold a PGM/PST bank and downstream keyer snapshot exists in a RAM area in the DMK-7000, but this one is also controlled via the switcher).
The DME has 99 registers each for snapshots and key frame effects for each channel. You can carry out operations such as saving, recalling, and manipulating these registers for each channel separately.
The illustration below shows the configuration of the snapshot registers.



Arrangement of snapshot registers

You can use the "USER" group to save and recall data pertaining to its constituent sub-registers.
For the snapshot registers, you can select the "USER" group to contain any combination of the Frame Mem (Memory) 1, Frame Mem 2, AUX Buses, and Video Process sub-registers.

For details of the data you can save in the different sub-registers of a snapshot register, see the section "Snapshots and Registers" (page 7-3).

Functions Relating to Registers

To carry out operations on registers, you use the REGISTER menu. This section describes the functions of the REGISTER menu.

Note

The REGISTER menu does not provide functions for manipulating the registers used to hold the key snapshots controlled from the key control section, and the wipe and DME wipe snapshots controlled from the the FlexiPad.

Listing the registers

In the REGISTER menu, select item 1 (EFFECT) to display a list of the key frame effect registers, and item 2 (SNAPSHOT) to display a list of the snapshot registers.

For an example register listing, see page 9-6.

Selecting item 3 (ATTRIB EDIT) or item 4 (CONFIG USER) displays the following information about the snapshot registers.

Registers used: The display shows which registers contain data (" * ") and which are empty (" – ").

Attributes: The snapshot registers can have a number of different attributes, indicated by the following abbreviations.

D: Effect dissolve
T: Auto transition
X: Cross-point disable
1 to 8: GPI output (number refers to GPI port)

For details of the attributes, see the section "Snapshot attributes" (page 7-4).

Write-protect setting: This shows whether the contents of a register can be overwritten or not. An "L" (for "Locked") is shown for a register whose contents connot be overwritten.

Register name: You can use the NAME function to set any desired register name.

Register manipulation functions

You can use the following functions to manipulate the data within registers. (It is not possible to apply these to separate switcher sub-registers, but you can manipulate DME channels separately.)

MOVE: Move the contents of one register to another.
SWAP: Swap the contents of two registers. It is not possible to apply this operation to the DME.
COPY: Copy the contents of one register to another.
DELETE: Delete the contents of a register.
NAME: Assign a name to a register.
MERGE: Append ("merge") the contents of another register to the end of the currently selected register. This function is only available for key frame registers.
LOCK: Write-protect the contents of a register.
UNLOCK: End write-protection of a register.

You can also apply the MOVE, SWAP, COPY, DELETE, LOCK, and UNLOCK functions to contiguous blocks of registers.

Setting snapshot attributes

You can change the attributes applied when a snapshot is saved in or recalled from a register, and can also apply GPI output attributes.

Selecting the sub-registers in the "USER" group

For the snapshot registers, you can select the "USER" group to contain any combination of the Frame Mem 1, Frame Mem 2, AUX Buses, and Video Process sub-registers.
Regardless of this setting, for the register manipulation functions, the "USER" group always includes all four of these sub-registers.
Again, for key frame registers, the "USER" group always includes all four of these sub-registers.

Channel-to-channel copying of DME registers

You can copy registers from one channel to another.

For details of the operation, see page 9-17.

Displaying and setting VTR control registers

For VTRs (a maximum of two) connected to the control panel, you can save and recall sets of data including the start point, stop point, and start offset point (the time from pressing the RUN button in the key frame section until the VTR starts), in the same way as saving and recalling key frame effects. Here the registers in which this data is saved are termed “VTR control registers.”

In the REGISTER menu, you can display the contents of VTR control registers. You can also enter a timecode value from the numeric keypad, and set the contents of a register.

For details of the operation, see page 9-18.

Basic Register Operations

This section describes the basic register operations carried out from the REGISTER menu.

Accessing the REGISTER menu

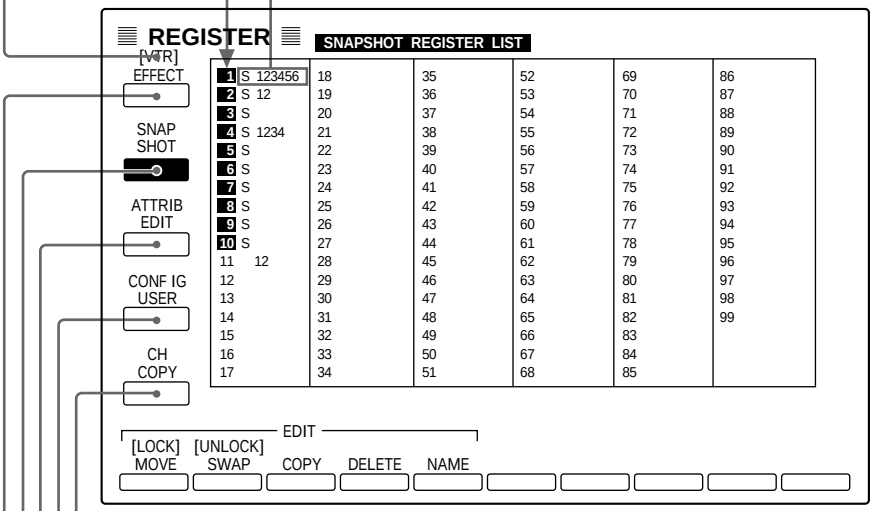
To access the REGISTER menu, press the REGS top menu button in the SYSTEM group of the menu control section.

When item 2 is selected, the register numbers and names appear as shown below.

If any of the switcher and DME channels 1 to 6 have data saved, the number appears in reverse video.

S: switcher
1 - 6: DME channels 1 to 6
G: DME global channel
Holding down the SNAPSHOT button in the numeric keypad section displays snapshot register names instead of "S,1-6,G". When item 1 (EFFECT) is selected, holding down the EFF button in the numeric keypad section displays key frame register names. You can also press F5 (NAME) to display the names.

VTR control register display and settings (see page 9-18)



Channel-to-channel copying of DME registers (see page 9-17)

Selection of the sub-registers in the "USER" group (see page 9-16)

Snapshot attribute settings (see page 9-14)

Manipulation of snapshot registers (see page 9-7)

Manipulation of key frame effect registers (see page 9-7)

Example of REGISTER menu display

Manipulating Snapshot and Key Frame Effect Registers

This section describes how to manipulate snapshot and key frame effect registers, and how to apply a name to a register.

Selecting the channels to which operations apply

When manipulating registers, with the EFF button or SNAPSHOT button in the numeric keypad section lit, it is necessary to press the sub-register selection buttons, and select the channels to which the manipulations apply. However, for the switcher it is not possible to carry out operations on individual sub-registers. If one or more of the five buttons (M/E 1, M/E 2, M/E 3, P/P DSK, and USER) is lit, all of switcher registers are selected. The following operations assume that the objects to which the manipulations apply have already been selected.

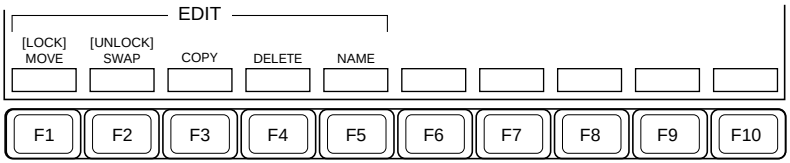
Carrying out move, swap, copy, delete, lock and unlock operations

To carry out move, swap, copy, delete, lock and unlock operations on registers, use the following procedure.

1 In the REGISTER menu, select either of the following items, depending on the type of register you wish to operate on.

Item 1 (EFFECT): key frame effect registers
Item 2 (SNAPSHOT): snapshot registers

Depending on the item you select, the EFFECT or SNAPSHOT menu appears.



Function key indications in the EFFECT and SNAPSHOT menus

The EFFECT menu also shows F6 (MERGE), the function for combining two key frame effect registers.

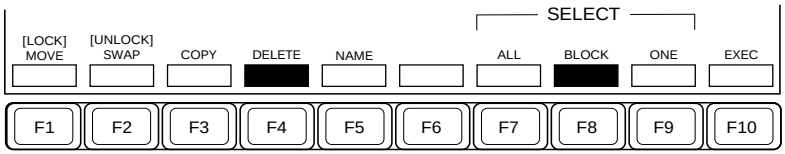
For details of the merge function for key frame effects, see page 9-12.

(Continued)

2 Press one of F1 to F4, F11, and F12 according to the operation you wish to carry out, turning it on.

F1 (MOVE): Move the contents of one register to another.
F2 (SWAP): Swap the contents of two registers.
F3 (COPY): Copy the contents of one register to another.
F4 (DELETE): Delete the contents of a register.
F11 (LOCK) (hold down the SHIFT button and press F1): Lock a register or registers.
F12 (UNLOCK) (hold down the SHIFT button and press F2): Unlock a register or registers.

Function key indications for F7 to F10 now appear.



The F7 (ALL) indication only appears when you selected F4 (DELETE), F5 (NAME), F11 (LOCK), or F12 (UNLOCK).

For details of the procedure for applying a name to a register using F5 (NAME), see page 9-11.

3 Press one of F7 to F9 to select the way in which you specify the register or registers to which the operation applies.

F7 (ALL): Specify all registers.
F8 (BLOCK): Specify a block of contiguous registers.
F9 (ONE): Specify a single register.

- If you pressed F7 (ALL), proceed to step **6**.
- If you pressed F8 (BLOCK) or F9 (ONE), the register number input position switches to reverse video, and for move, swap and copy operations, “FROM” and “TO” also appear. In this case continue to step **4**.

4 Depending on the operation you are carrying out, enter a register number using the numeric keypad (using the numeric keys, then pressing the ENTER button) as shown in the following table.

Operation	Register number	Input position
Move	Register whose contents are to be moved	Reverse video position to the right of “FROM”
Swap	One of the registers to be swapped	
Copy	Register whose contents are to be copied	
Lock	Register to be locked	Reverse video position
Unlock	Register to be unlocked	
Delete	Register whose contents are to be deleted	

- If in step **3** you pressed F8 (BLOCK), enter the first and last registers in the block of registers to which the operation applies.
- After pressing the ENTER button to confirm the setting, continue to step **5** for a move, copy, or swap and skip to step **6** for a lock, unlock, or delete.

5 Enter the number of the destination register for a copy or move, or the other register in a swap, in the reverse video position to the right of “TO”, using the numeric keypad.
If in step **3** you pressed F8 (BLOCK), enter the first register number only.

6 Press F10 (EXEC).

The function key indications change, and F9 (YES) and F10 (NO) functions appear.

7 To carry out the required operation, press F9 (YES).
To abandon carrying out the operation, press F10 (NO).

Deleting Individual Sub-registers Not in the “USER” Group from Snapshot Registers

For snapshot registers, by using the following operation you can delete the data of individual M/E-1, M/E-2, M/E-3, and P/P & DSK sub-registers.

1 In the REGISTER menu, select item 3 (ATTRIB EDIT).

The ATTRIB EDIT menu appears.

2 Use the cursor movement buttons (↑ ↓ ← →) to align the cursor with the sub-register you wish to delete.

3 Hold down the SHIFT button and press F10 (CLEAR).

Assigning a name to a register

Use the following procedure to assign a name to a register.

1 In the REGISTER menu, select either of the following items, depending on the type of register you wish to name.

Item 1 (EFFECT): key frame effect registers
Item 2 (SNAPSHOT): snapshot registers

Depending on the item you select, the EFFECT or SNAPSHOT menu appears.

2 Press F5 (NAME), turning it on.

Function key indications for F7 to F10 now appear.

3 Press one of F7 to F9 to select whether to apply a name to one or more registers.

F7 (ALL): Apply the same name to all registers.
F8 (BLOCK): Apply a name to a block of contiguous registers.
F9 (ONE): Apply a name to a single register.

- If you pressed F7 (ALL), proceed to step **5**.
- If you pressed F8 (BLOCK) or F9 (ONE), the register number input position switches to reverse video. In this case continue to step **4**.

4 Enter the number of the register to which you wish to assign a name, using the numeric keypad.
If in step **3** you pressed F8 (BLOCK), enter the first and last registers in the block of registers to which you wish to apply the name.

5 Press F10 (EXEC).

The function key indications change, and a text input screen appears.

(Continued)

6 Using the keyboard displayed on the screen and the numeric keys in the numeric keypad section, enter a name of up to eight characters, and press the F9 (ENTER) or the ENTER button in the numeric keypad section to confirm the name.

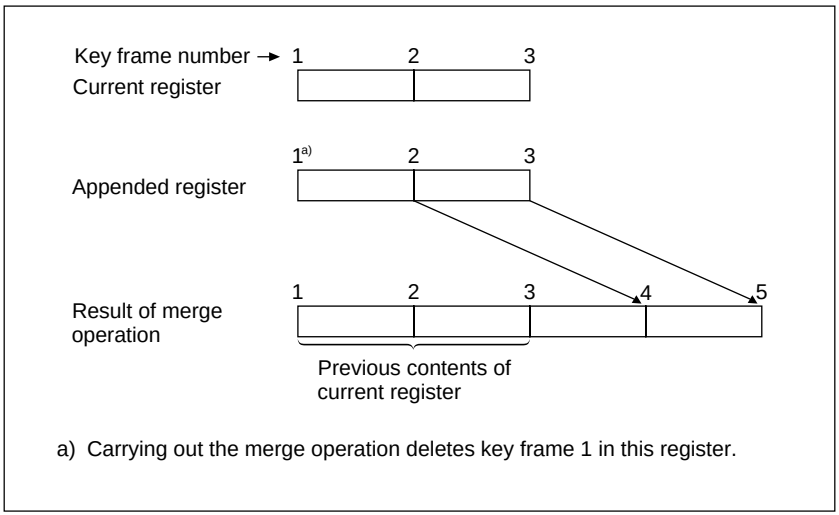
This assigns the name to the register.

For details of the input method, see page 3-11.

Combining key frame effects with the merge function

Note

The merge function allows you to append the contents of one key frame effect register to the current register. The first key frame of the appended register is overlaid by the last key frame of the current register, and disappears. It is therefore important to ensure that these two key frames are the same before applying the merge function.

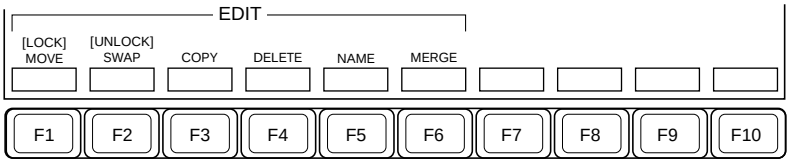


Merge function for two key frame effect registers

To combine two key frame effect registers the merge function, use the following procedure.

1 In the REGISTER menu, select item 1 (EFFECT).

The EFFECT menu appears.



Function key indications in the EFFECT menu

2 Press F6 (MERGE), turning it on.

Function key indication “EXEC” for F10 now appears.

3 Enter the number of the register which you wish to append to the end of the current register, using the numeric keypad.
The current register number is specified automatically, and there is no need to enter it.

4 Press F10 (EXEC).

The function key indications change, and F9 (YES) and F10 (NO) functions appear.

5 To carry out the merge, press F9 (YES).
To abandon the merge, press F10 (NO).

Setting Snapshot Attributes

Except for the GPI output attributes, you can apply attributes to a snapshot when saving or recalling the snapshot. In the REGISTER menu you can set these attributes separately for each sub-register.

Since the sub-registers within the "USER" group are saved and recalled together, it is not possible to make separate attribute settings for them, except that this is possible when using the REGISTER menu.

In the REGISTER menu, you can apply GPI output attributes, but in this case the attributes apply to the whole register, and it is not possible to make separate settings for sub-registers.

Setting attributes

To set an attribute other than a GPI output attribute, use the following procedure.

1 In the REGISTER menu, select item 3 (ATTRIB EDIT).

The ATTRIB EDIT menu appears, and a cursor appears over the list of registers. The function key indications in the ATTRIB EDIT menu depend on where the cursor lies in the list of registers.

The list of registers is divided into three pages: page 1/3 shows information relating to the M/E-1, M/E-2, M/E-3 and P/P DSK sub-registers, page 2/3 shows information relating to the "USER" group, and page 3/3 shows information relating to the DME.
To switch among the three pages, use the cursor movement buttons (← or →) to move the cursor to the right or left edge of the current page, then press the cursor movement button once more.

2 Use the cursor movement buttons (↑ ↓ ← →) to align the cursor with the sub-register for which you wish to make the setting.

The function key indications change according to the sub-register selected with the cursor.

3 Press the function key for the attribute you wish to change.

- To operate F11 to F16 to display the attributes of auxiliary bus sub-registers, hold down the SHIFT button in the menu control section and press F1 to F6.
- To display the attributes of a routing switcher controlled by this switcher, press F9 (EXT) to display the setting menu, then press the cursor movement buttons (← or →) to align the cursor with the bus for the routing switcher whose attributes you wish to change, and press F7 (XPT DISABLE).
- To attach the dissolve attribute to a DME snapshot, press F6 (DURATION), and enter the dissolve duration from the numeric keypad.

Setting a GPI output attribute

To set a GPI output attribute, use the following procedure.

1 Use the cursor movement buttons (↑ ↓ ← →) to align the cursor with the "GPI" column of the register to which you wish to apply the GPI output attribute.

Function key indications for GPI output setting appear.

2 Press F1 to F8 to select the corresponding GPI port to apply the GPI output attribute.
To delete a setting, press F9 (OFF).

Selecting the Sub-Registers in the “USER” Group

To select the sub-registers in the “USER” group, use the following procedure.

1 In the REGISTER menu, select item 4 (CONFIG USER).

The function key indications change to correspond to the sub-registers which can be included in the “USER” group.

2 Use F1 to F4 to select the sub-registers in the “USER” group.
The sub-registers selected are shown in reverse video.

F1 (FRAME MEM 1): frame memory 1
F2 (FRAME MEM 2): frame memory 2
F3 (VIDEO PROC): video process and color correction
F4 (AUX BUSES): auxiliary buses 1 to 13, edit preview bus, or destinations for the routing switcher to be controlled via the BKDS-7700.

Channel-to-Channel Copying of DME Registers

To copy DME registers from one channel to another, use the following procedure.

1 In the REGISTER menu, select item 5 (CH COPY).

A menu for the channel-to-channel copy appears.

2 Depending on what you wish to copy, press one of F1 to F3, turning it on (reverse video).

F1 (EFFECT): key frame effect registers
F2 (SNAPSHOT): snapshot registers
F3 (SETUP): currently used setup data

3 Press F4 (FROM CH), to select the source DME channel.

4 Press F6 (TO CH), to select the destination DME channel.

- If in step **2** you selected F1 (EFFECT) or F2 (SNAPSHOT), proceed to step **5**.
- If in step **2** you selected F3 (SETUP), skip to step **8**.

5 Depending on how you wish to select the register or registers to be copied, press one of F7 to F9.

F7 (ALL): Specify all registers.
F8 (BLOCK): Specify a block of registers.
F9 (ONE): Specify a single register.

- If you pressed F7 (ALL), skip to step **8**.
- If you pressed F8 (BLOCK) or F9 (ONE), the register number input area switches to reverse video, and “FROM” and “TO” are displayed. In this case proceed to step **6**.

6 Enter the source register number in the position to the right of “FROM”, using the numeric keypad, then press the ENTER button.
If in step **5** you pressed the F8 (BLOCK) button, first enter the number of the first register in the block (the reverse video area moves to the right of the “—”, then enter the last register number.

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7 Enter the destination register number in the reverse video area to the right of “TO”.

If in step **5** you pressed the F8 (BLOCK) button, enter the number of the first destination register.

8 Press F10 (EXEC).

The function key indications change, and F9 (YES) and F10 (NO) functions appear.

9 To carry out the copy, press F9 (YES).
To abandon the copy, press F10 (NO).

Displaying and Setting VTR Control Registers

To set a VTR control register, use the following procedure.

1 In the REGISTER menu, hold down the SHIFT button (the indication for item 1 changes to “VTR”), and select item 1 (VTR).

This displays the VTR control register menu.

2 Press F1 (VTR1) or F2 (VTR2) to select the VTR for which to make the following settings.

3 Using the cursor movement buttons (↑ ↓ ← →), move the cursor to the item you want to change.

4 Press F4 (TC INPT), then enter a timecode value from the numeric keypad, and press the ENTER button.

Chapter 10
Floppy Disk Operations

Overview

You can use the floppy disk drive to save the contents of registers and setup data, for reloading when required.
This chapter describes the procedures for saving and loading data, and other floppy disk operations.

Disks and Data Held

The floppy disk drive uses 3.5-inch 2HD disks. The term “disk” here always refers to this type of disk.
It is possible to save to disk the following eight types of data created on the switcher:
• Contents of key frame effect registers
• Contents of snapshot registers
• The current values of the setup data
• Key memory data (including default values)
• Chroma key memory data
• Contents of wipe snapshot registers
• Contents of DME wipe snapshot registers
• Contents of key snapshot registers
• Current setup data related with control panel operations
• Contents of VTR control registers
For the location of the floppy disk drive, see the section “Menu Control Section and Floppy Disk Drive” *(page 2-31)*.

Notes

• For wipe snapshots, DME wipe snapshots, and key snapshots, it is only possible to save the complete set of the particular snapshot type in one operation. It is not possible to save specifying a particular register on a particular M/E bank.
The key memory data can only be saved as a complete set, that is, all key memory data for all keyers together.
• For switcher data it is not possible to carry out operations on individual sub-registers.

Saving DME data

There are three types of DME data saved on disk:
• Key frame effect register data
• Snapshot register data
• Currently used setup data
It is also possible to load and save data for each DME channel separately.

Disk Functions

The following disk operations are provided by the system.

SAVE: Transferring register contents or the current setup data to files on the floppy disk. One floppy disk can hold up to 99 files containing snapshot or key frame effect register contents, or up to four files of setup data, key memory data, chroma key memory data, wipe snapshots, DME wipe snapshots, key snapshots, or VTR control data.

LOAD: Loading data from the floppy disk.

- Loading a snapshot, key frame effect, wipe snapshot, DME wipe snapshot, key snapshot, or VTR control data file transfers the data to a register.
- Loading a key memory file or chroma key memory file overwrites the current memory contents.
- Loading a setup data file or control panel setup data file sets up the system according to the settings in the file.

COPY: Copying a file on the same disk.

DELETE: Deleting a file.

RENAME: Attaching a name to a file on the disk.

FORMAT: Formatting a disk for use.

LABEL: Attaching a label to the disk.

The SAVE, LOAD, COPY and DELETE functions can also be applied to a block of consecutive registers or files.

Notes

- It is necessary to format a new disk before using it.
- Carrying out a RENAME operation applies the same name to all files of the same number, even on different channels.

Disk Operations

To carry out disk operations, first access the DISK menu, then depending on the type of data you wish to carry out operations on, access the EFFECT, SNAPSHOT, SETUP, MISC, UTILITY, or VTR menu from the DISK menu. This section first describes how to access the DISK menu and gives an example of the DISK menu display, then describes the disk operations in the following four groups, according to the type of data being handled.

Data handled by disk operations in the EFFECT and SNAPSHOT menus

- Key frame effect data (EFFECT menu)
- Snapshot data (SNAPSHOT menu)

Data handled by disk operations in the SETUP and MISC menus

- The current setup data (SETUP menu)
- Key memory data (SETUP menu)
  Saving or loading the key memory data also saves or loads the default values.
- Chroma key memory data (SETUP menu)
- Contents of wipe snapshot registers (MISC menu)
- Contents of DME wipe snapshot registers (MISC menu)
- Contents of key snapshot registers (MISC menu)

Data handled by disk operations in the UTILITY menu

- Current setup data related with control panel operations
- All types of data that can be handled by disk operations

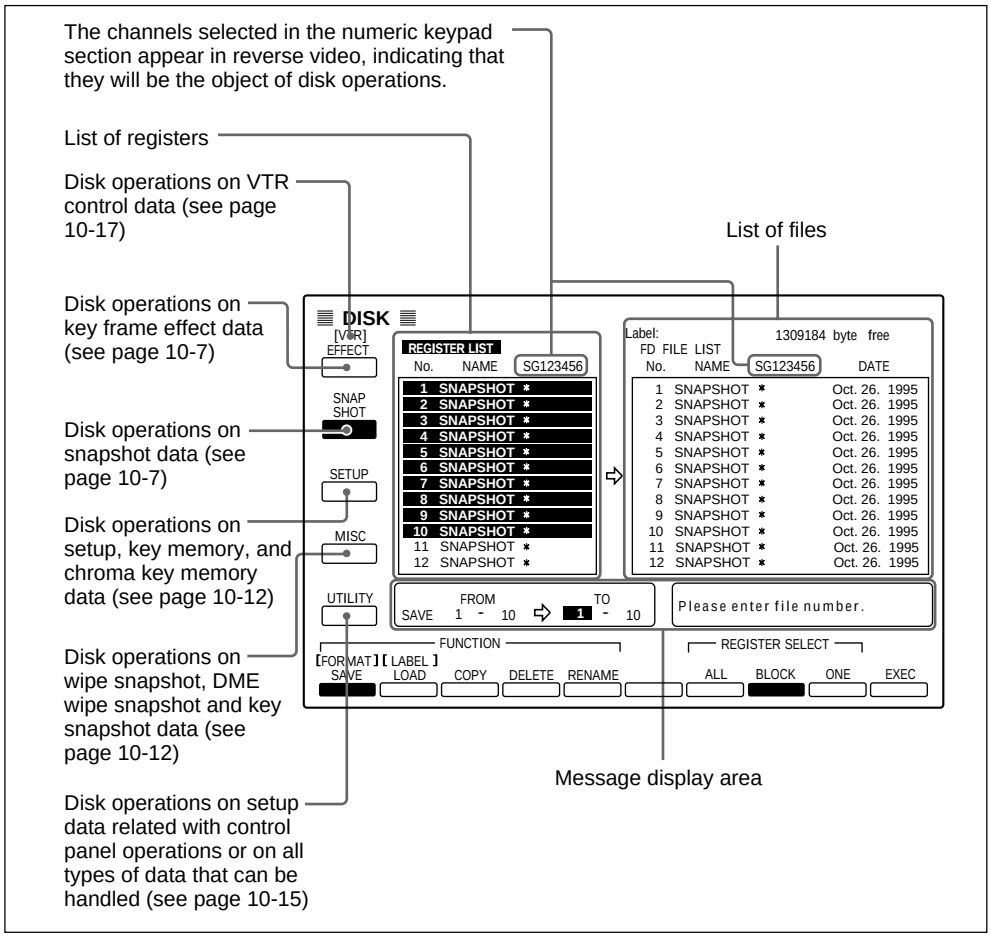
Data handled by disk operations in the VTR menu

- VTR control data

The following description assumes that a floppy disk is already present in the drive.

Accessing the DISK menu

To access the DISK menu, press the DISK top menu button in the menu control section.



Example of DISK menu display

Note

If you remove the floppy disk from the drive while the DISK menu is displayed, it is necessary to redisplay the list of files. After inserting a disk, always press one of the item selection buttons 1 to 4 to select the list of files to be displayed.

Selecting the channels to which operations apply

You can apply disk operations to the data of more than one channel at a time. The FORMAT and LABEL functions, however, do not require a channel specification. The RENAME operation applies the same name to all files of the same number, even on different channels; there is therefore again no need to make a channel specification.

To select the channels to which operations apply, with the EFF button or SNAPSHOT button in the numeric keypad section lit, press the DME 1 to 6 and DME GLBL sub-register selection buttons.

However, for the switcher it is not possible to carry out operations on individual sub-registers. If one or more of the five buttons (M/E 1, M/E 2, M/E 3, P/P DSK, and USER) is lit, all of switcher registers are selected.

The following operations assume that the objects to which the manipulations apply have already been selected.

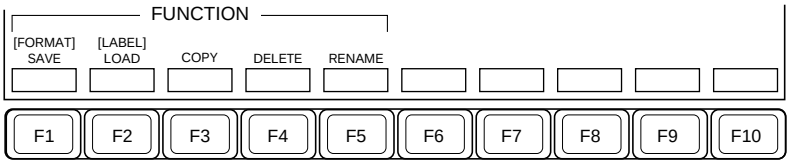
Disk operations on key frame effect and snapshot data

To carry out a disk operation on key frame effect or snapshot data, use the following procedure.

1 In the DISK menu, select either of the following items, depending on the type of data you wish to operate on.

Item 1 (EFFECT): key frame effect data
Item 2 (SNAPSHOT): snapshot data

Depending on the item you select, the EFFECT or SNAPSHOT menu appears.



Function key indications in the EFFECT and SNAPSHOT menus

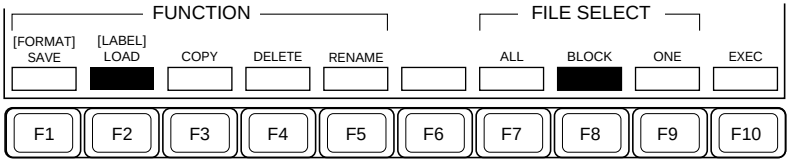
If you first wish to format a disk or apply a label to the disk
Use the procedure in the next item, "Formatting a disk and applying a label to a disk" *(page 10-10)*.

2 Press one of F1 to F5 according to the operation you wish to carry out, turning it on.

F1 (SAVE): Save the contents of a key frame effect or snapshot register to the disk.
F2 (LOAD): Load the contents of a key frame effect or snapshot file on the disk into a register.
F3 (COPY): Copy the contents of a key frame effect or snapshot file to another file on the same disk.
F4 (DELETE): Delete a key frame effect or snapshot file.
F5 (RENAME): Apply a name to a key frame effect or snapshot file.

(Continued)

Function key indications for F7 to F10 now appear. (If you selected F3 (COPY), the indication for F7 (ALL) does not appear.)



Function key indications after selecting one of F1 to F5

3 Press one of F7 to F9 to select the way in which you specify the registers or files to which the operation applies.

F7 (ALL): Specify all registers or files.
F8 (BLOCK): Specify a block of contiguous registers or files.
F9 (ONE): Specify a single register or file.

- If you pressed F7 (ALL), proceed to step **6**.
  When you select F7 (ALL), a save or load operation transfers the contents of each register to the same numbered file or vice versa.
- If you pressed F8 (BLOCK) or F9 (ONE), the input position for the register or file number switches to reverse video, and for save, load and copy operations, “FROM” (source) and “TO” (destination) also appear. In this case continue to step **4**.

4 Depending on the operation you are carrying out, enter a register or file number, as shown in the following table, in the reverse video position using the numeric keypad, then press the ENTER button.

Operation	Register or file to be specified
Save	Register whose contents are to be saved
Load	File to be loaded
Copy	File to be copied
Delete	File to be deleted
Applying a name to a file	File to which the name is to be applied

- If you pressed F8 (BLOCK) in step **3**, enter the first register or file number, and then the last register or file number in the block of registers or files to which the operation applies.
- After pressing the ENTER button to confirm the setting, continue to step **5** for a save, load, or copy, and skip to step **6** for a delete or file naming operation.

5 In a similar way to step **4**, enter the number of the register or file, as shown in the following table, in the reverse video position using the numeric keypad, then press the ENTER button.

Operation	Register or file to be specified
Save	Destination file
Load	Destination register
Copy	Destination file

- If you pressed F8 (BLOCK) in step **3**, enter the first destination register or file number only.

6 Press F10 (EXEC).

- If you selected F5 (RENAME) in step **2**, the function key indications change, and a text input screen appears. In this case, go to step **8**.
- In other cases, the function key indications change, and functions keys F9 (YES) and F10 (NO) appear. In this case continue to step **7**.

(Continued)

7 To execute the operation, press F9 (YES).
To abandon the operation without executing it, press F10 (NO).

8 Using the keyboard displayed on the screen and the numeric keys in the numeric keypad section, enter a name of up to eight characters, and press F9 (ENTER) or the ENTER button in the numeric keypad section to confirm the name.

If you selected F7 (ALL) in step **3**, this applies the same name to all files, and if you selected F8 (BLOCK), it applies the same name to all files in the block.

For details of the input method, see page 3-11.

Formatting a disk and applying a label to a disk

Use the following procedure.

1 In the menu display obtained in step **1** of the previous procedure (the section "Disk operations on key frame effect and snapshot data"), hold down the SHIFT button and press F1 (FORMAT) or F2 (LABEL) to select the operation you wish to carry out.

F11 (FORMAT) (hold down the SHIFT button and press F1): Format the disk.
F12 (LABEL) (hold down the SHIFT button and press F2): Apply a label to the disk.

Note

Formatting a disk destroys any data already stored on the disk. Check carefully that existing data is not required before reformatting a disk which you have previously used.

2 Press F10 (EXEC).

- If you selected F11 (FORMAT) in step **1**, the function key indications change, and function keys F9 (YES) and F10 (NO) appear. In this case go to step **3**.
- If you selected F12 (LABEL) in step **1**, the function key indications change, and a text input screen appears. In this case go to step **4**.

3 To execute the formatting, press F9 (YES).
To abandon the formatting without executing it, press F10 (NO).

The formatting begins.

4 Using the keyboard displayed on the screen and the numeric keys in the numeric keypad section, enter a label of up to eight characters, and press F9 (ENTER) or the ENTER button in the numeric keypad section to confirm the name.

For details of the input method, see page 3-11.

Disk operations on setup, key memory, chroma key memory, wipe snapshot, DME wipe snapshot, and key snapshot data

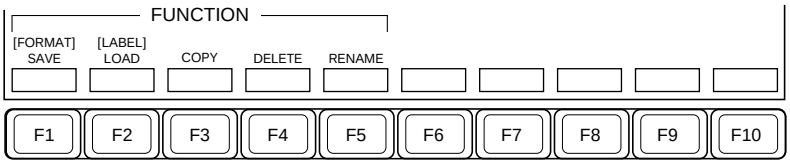
To carry out a disk operation on any of these data types, use the following procedure.

1 In the DISK menu, select either of the following items depending on the type of data you wish to operate on.

Item 3 (SETUP): setup data, key memory data, and chroma key memory data

Item 4 (MISC): wipe snapshot, DME wipe snapshot, and key snapshot data

Depending on the item you select, the SETUP or MISC menu appears.



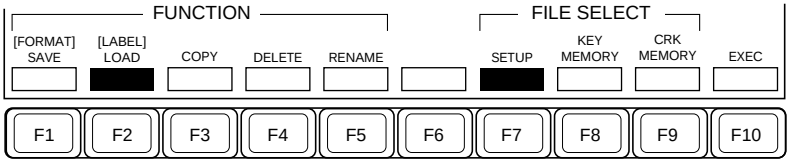
Function key indications in the SETUP and MISC menus

If you first wish to format a disk or apply a label to the disk
Use the procedure in the item, “Formatting a disk and applying a label to a disk” *(page 10-10)*.

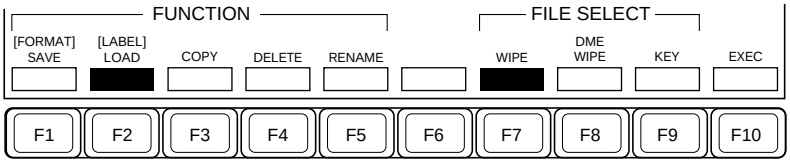
2 Press one of F1 to F5 according to the operation you wish to carry out, turning it on.

F1 (SAVE): Save data to the disk.
F2 (LOAD): Load the contents of a data file from the disk.
F3 (COPY): Copy the contents of a data file to another file on the same disk.
F4 (DELETE): Delete a data file.
F5 (RENAME): Apply a name to a data file.

The function key indications change as follows.



Function key indications after selecting item 3 (SETUP) in step **1**



Function key indications after selecting 4 (MISC) in step **1**

3 Depending on the operation you are carrying out, enter a file number (or file numbers for a copy operation), as shown in the following table, in the reverse video position using the numeric keypad, then press the ENTER button.

Operation	**File to be specified**
Save	File in which the data is to be saved
Load	File to be loaded
Copy	**1** Source file (FROM) for the copy **2** Destination file (TO) for the copy
Delete	File to be deleted
Applying a name to a file	File to which the name is to be applied

4 Press F10 (EXEC).

- If you selected F5 (RENAME) in step **2**, the function key indications change, and a text input screen appears. In this case go to step **6**.
- In other cases, the function key indications change, and function keys F9 (YES) and F10 (NO) appear. In this case continue to step **5**.

(Continued)

5 To execute the operation, press F9 (YES).
To abandon the operation without executing it, press F10 (NO).

6 Using the keyboard displayed on the screen and the numeric keys in the numeric keypad section, enter a name of up to eight characters, and press F9 (ENTER) or the ENTER button in the numeric keypad section to confirm the name.

For details of the input method, see page 3-11.

5 • To carry out the operation, press F9 (YES).
• To abandon carrying out the operation, press F10 (NO).

6 Using the keyboard displayed on the screen and the numeric keys in the numeric keypad section, enter a name of up to eight characters, and press F9 (ENTER) or the ENTER button in the numeric keypad section to confirm the name.

For details of the input method, see page 3-11.

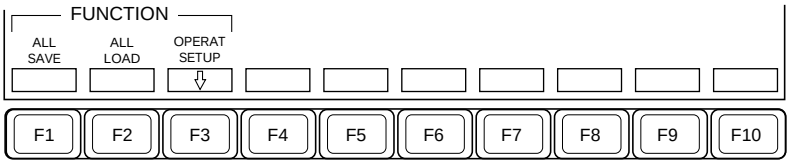
Disk operations on setup data related with control panel operations

It is possible to carry out disk operations selecting only the setup data related with control panel operations. Such data (control panel setup data) comprises the data that has been set using the following menus.
• OPERATION MODE menu
• PANEL ENABLE menu
• TRACK BALL menu
• UTILITY menu
• SHOTBOX menu

To carry out a disk operation on the control panel setup data, use the following procedure.

1 In the DISK menu, select item 5 (UTILITY).

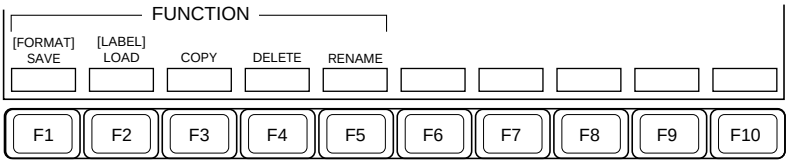
The UTILITY menu appears.



Function key indications in the UTILITY menu

2 Press F3 (OPERAT SETUP).

The OPERATION SETUP menu appears.



Function key indications in the OPERATION SETUP menu

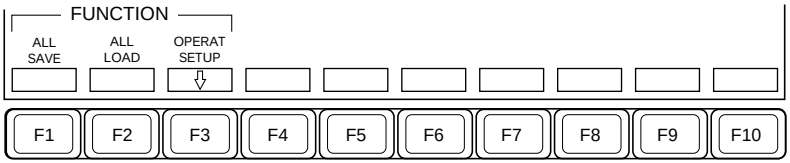
For the subsequent operating procedure, see steps ***2*** *to* ***6*** *of the disk operation procedure described on page 10-12.*

Disk operations on all types of data that can be handled

To save all selected types of data that can be handled by disk operations at a time or to load such data from a disk at a time, use the following procedure.

1 In the DISK menu, select item 5 (UTILITY).

The UTILITY menu appears.



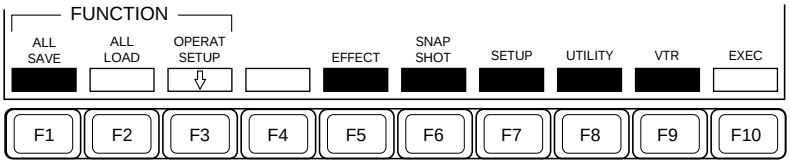
Function key indications in the UTILITY menu

(Continued)

2 Press F1 or F2 according to the operation you wish to carry out, turning it on.

F1 (ALL SAVE): Save all selected types of data to a disk at a time.
F2 (ALL LOAD): Load all selected types of data from a disk at a time.

The function key indications change as follows.



Function key indications after selecting F1 (ALL SAVE)

3 Press one or more of F5 (EFFECT) to F9 (VTR) to select the data you wish to save or load.

4 If you pressed F7 (SETUP) to F9 (VTR) in step **3**, enter the required file numbers and press the ENTER button.
For the other types of data, the source register numbers are automatically assigned as the file numbers for saving or the source file numbers are automatically assigned as the register numbers for loading.

5 Press F10 (EXEC)

The function key indications change, and function keys F9 (YES) and F10 (NO) appear.

6 To carry out the operation, press F9 (YES).

The data selected in step **3** is saved or loaded in the following order.

SETUP→MISC→EFFECT→SNAPSHOT→VTR

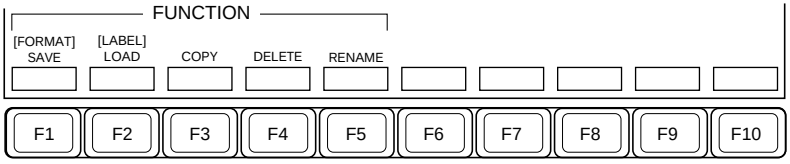
To abandon carrying out the operation
Press F10 (NO).

Disk operations on VTR control data

To carry out a disk operation on the VTR control data, use the following procedure.

In the DISK menu, hold down the SHIFT button (item 1 changes to “VTR”), then select item 1.

The VTR menu appears.



Function key indications in the VTR menu

*For the subsequent operating procedure, see steps **2** to **6** of the disk operation procedure described on page 10-12.*

Chapter 11
Copy and Swap Operations

Overview

It is possible to copy the settings on one M/E bank or keyer to another, or to swap the settings between a pair of M/E banks or keyers.
There are four different ways you can make a copy or swap to affect different sets of settings, as follows:
• M/E copy and M/E swap
• Keyer copy and keyer swap
• Wipe copy and wipe swap
• Matte copy and matte swap

M/E copy and M/E swap

Banks copied or swapped

All of the current settings on any of M/E-1 to M/E-3 are copied or swapped. It is not, however, possible to apply an M/E copy or swap to the settings on the PGM/PST bank of a 3.5-M/E panel.

Data not copied or swapped

The following data is not copied or swapped:
• Setup data
• Key memory

Note

When the copy/swap source has chroma key selected as the key type, but a chroma key is not possible on the destination bank, the key type is not copied. However, other key data (key edge, etc.) is copied.
Whether or not chroma keying is possible depends on the options (BKDS-2031/2032) fitted on the destination bank, and the mode setting (single/dual). For example, for a copy/swap of an enhanced chroma key setting, the destination bank must have two options installed, and single mode selected.

For details of the chroma key mode, see page 5-2.

Keyer copy and keyer swap

Keyers copied or swapped

The following 10 keyers can be copied or swapped:

- M/E-1 bank keys 1 and 2
- M/E-2 bank keys 1 and 2
- M/E-3 bank keys 1 and 2
- Downstream keyers 1 to 4

It is not, however, possible to copy or swap between an M/E keyer and a downstream keyer.

Data not copied or swapped

The following data is not copied or swapped:

- Key memory
- Setup data

Note

When the copy/swap source has chroma key selected as the key type, but a chroma key is not possible on the destination bank, the key type is not copied. However, other key data (key edge, etc.) is copied.
Whether or not chroma keying is possible depends on the options (BKDS-2031/2032) fitted on the destination bank, and the mode setting (single/dual). For example, for a copy/swap of keyers on the same M/E bank, the bank must have two options installed, and dual mode selected.

For details of the chroma key mode, see page 5-2.

Wipe copy and wipe swap

Wipe generators copied or swapped

The settings of the following eight wipe generators can be copied or swapped:

- The wipe generator for each of M/E-1 banks 1 to 3
- The wipe generator for the PGM/PST bank
- The wipe generator for each of downstream keyers 1 to 4

It is not, however, possible to copy or swap between an M/E bank wipe generator and any other wipe generator.

Matte copy and matte swap

Mattes copied or swapped

The settings of the following matte color generators can be copied or swapped:

- The six matte colors for each of M/E-1 banks 1 to 3 (total 18)
  Key 1 key fill, key 1 key edge, key 2 key fill, key 2 key edge, wipe border, and color background
- The following 10 matte colors for the PGM/PST bank
  DSK 1 to DSK 4 key fill, DSK 1 to DSK 4 key edge, wipe border, and color background

It is not, however, possible to copy or swap between an M/E bank and the PGM/PST bank.

Note

The matte generators for the key fill for each of the M/E banks do not support the color mix function; only the data for matte 1 is copied or swapped.

Basic Copy and Swap Operations

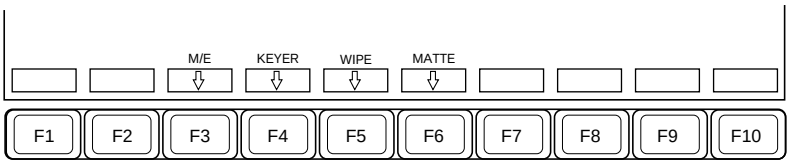
Copy and Swap Using Menu Operations

For copy and swap operations, use the COPY menu. The basic menu operation is as follows.

1 Press the MISC button in the SYSTEM group of the menu control section.

2 Select item 5 (COPY).

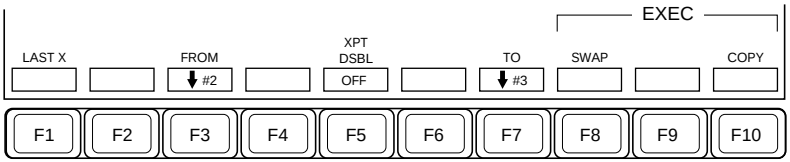
The COPY menu appears.



Function key indications in the COPY menu

3 Press one of F3 (M/E) to F6 (MATTE) to select the type of data to be copied or swapped.

The function key indications change as follows, except that F5 (XPT DSBL) appears only if you selected F3 (M/E) or F4 (KEYER).



4 Press F3 (FROM) or turn control knob 2 to align the cursor on the "FROM" side with the source of the copy or swap. You can also use the cursor keys (↑ ↓ ← →).

Depending on the keyer you select for the source, a list of the destination selections appears on the "TO" side.

(Continued)

5 Press F7 (TO) or turn control knob 3 to align the cursor on the "TO" side with the destination of the copy or swap. You can also use the cursor keys (↑ ↓ ← →).

6 When you selected F3 (M/E) or F4 (KEYER) in step **1**, set F5 (XPT DSBL) to ON or OFF. To copy or swap the cross-point button selections, set this to OFF; in order not to copy or swap the cross-point button selections, set this to ON.

7 To carry out a swap, press F8 (SWAP); to carry out a copy, press F10 (COPY).

This carries out the swap or copy.

To restore the state before a copy or swap

Press F1 (LAST X).

Copying Using Button Operations

There are simple button operations for the following copy operations:
- M/E copy
- M/E keyer copy
- M/E wipe copy
- DSK copy
- Color background copy

Basic button operation

The basic button operation is to hold down the button assigned to the source, then press the button assigned to the destination.

M/E copy button operation

For each M/E bank, use the SNAPSHOT button in the FlexiPad™ *(see page 2-14)*.

Copying from the M/E-1 bank to the M/E-2 bank (example operation)

Hold down the SNAPSHOT button in the M/E-1 bank, then press the SNAPSHOT button in the M/E-2 bank.

M/E keyer copy button operation

For each M/E bank, use the keyer delegation buttons (KEY 1 and KEY 2) in the key control section *(see page 2-16)*.

Copying from M/E-1 key 1 to M/E-2 key 2 (example operation)

Hold down the KEY 1 button in the M/E-1 bank, then press the KEY 2 button in the M/E-2 bank.

M/E wipe copy button operation

For each M/E bank, use the WIPE button in the FlexiPad™ *(see page 2-14)*.

Copying wipe data from the M/E-1 bank to the M/E-2 bank (example operation)

Hold down the WIPE button in the M/E-1 bank, then press the WIPE button in the M/E-2 bank.

Downstream keyer copy button operation

Use the keyer delegation buttons (DSK 1 to DSK 4) in the downstream keyer control section *(see page 2-24)*.

Copying from DSK 1 to DSK 2 (example operation)

Hold down the DSK 1 button, then press the DSK 2 button.

Color background copy button operation

For each M/E bank, use the COLOR BKGD button of the cross-point buttons *(see page 2-8)*.

Copying a color background from the M/E-1 bank to the M/E-2 bank (example operation)

Hold down the COLOR BKGD button in the M/E-1 bank bus A, then press the COLOR BKGD button in the M/E-2 bank bus A.

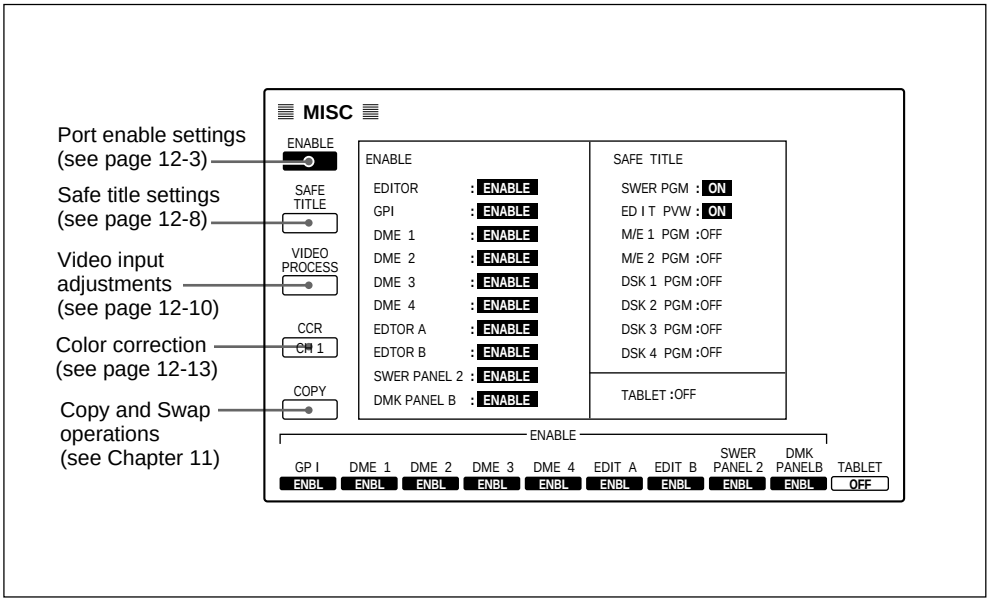
Chapter 12
MISC Menu Operations

Overview

This section describes the functions controlled from the MISC (for “miscellaneous”) menu: the port enable function, the safe title function, the video process function, the color correction function and the copy and swap function.

Accessing the MISC menu

To access the MISC menu, press the MISC top menu button in the SYSTEM group of the menu control section.



Example MISC menu display

Port Enable Settings

Overview

The port enable function controls the enabling and disabling of ports on the switcher from external devices. You can make these settings for the following ports.

Switcher ports:

- GPI (parallel port, D-sub 25-pin)
  You can carry out the GPI input/output settings in a setup menu *(see pages 14-57 and 14-60)*.
- DME1 to DME4 (serial, RS-422A, D-sub 9-pin)
- EDITOR A/REMOTE 1/DME 5 (serial, RS-422A, D-sub 9-pin)
- EDITOR B/REMOTE 2/DME 6 (serial, RS-422A, D-sub 9-pin)
- PANEL 2/REMOTE 3 (serial, RS-422A, D-sub 9-pin)

DMK ports:

- GPI (parallel, D-sub 25-pin)
  For GPI input/output settings, use the SETUP menu. *(See pages 14-57 and 14-60.)*
- EDITOR (serial, D-sub 25-pin)
- PANEL B (serial, RS-422A, D-sub 9-pin)

Note

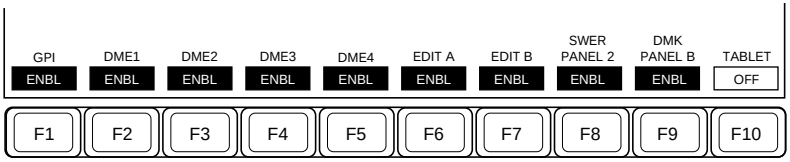
For the control of the auxiliary buses from ports other than GPI, the setting (ENBL/DSBL/MANUAL) in the setup menu *(see page 14-53)* takes precedence. The MISC menu setting is only effective when this setup menu item is set to MANUAL.

Carrying out port enable settings

Use the following procedure to enable and disable ports.

1 In the MISC menu, select item 1 (ENABLE).

The ENABLE menu appears.



Function key indications in the ENABLE menu

2 Press any of F1 to F7, toggling it between "ENBL" (for enable) and "DSBL" (for disable).

F1 (GPI): switcher and DMK GPI ports
F2 (DME1) to F5 (DME4): switcher ports DME1 to DME4
F6 (EDIT A): switcher EDITOR A or DMK EDITOR port
F7 (EDIT B): switcher EDITOR B port
F8 (SWER PANEL 2): switcher PANEL 2/REMOTE 3 port
F9 (DMK PANEL B): DMK PANEL B port

The F6 and F7 indications depend on the settings in the PORT ASSIGN menu *(see page 14-50)*. In particular, when the F6 indication is "DME5" or "REMOTE1", it is not possible to make settings for the DMK EDITOR port.

Note

When you save setup data, the port enable settings are saved as part of the setup data in the non-volatile memory or on a floppy disk. Therefore, when the unit is powered on or reset with the resume functon being "off", the port enable settings are read from the memory before the system starts. Note that it is not possible to save port enable settings in a snapshot data.

For details of saving and recalling setup data, see page 14-2.

Controlling the Positioner Function With a Tablet

By connecting a tablet to the control panel, it is possible to control the positioner function using an electronic stylus in place of the trackball in the BKDS-7031 DME Control Panel Unit. This gives finer control of the positioner movement, and improves operation quality for the frame memory paint function for example.

For details of the operation of the tablet, refer to the documentation supplied with the tablet.

Recommended tablet

The following tablet and stylus manufactured by WACOM are recommended.

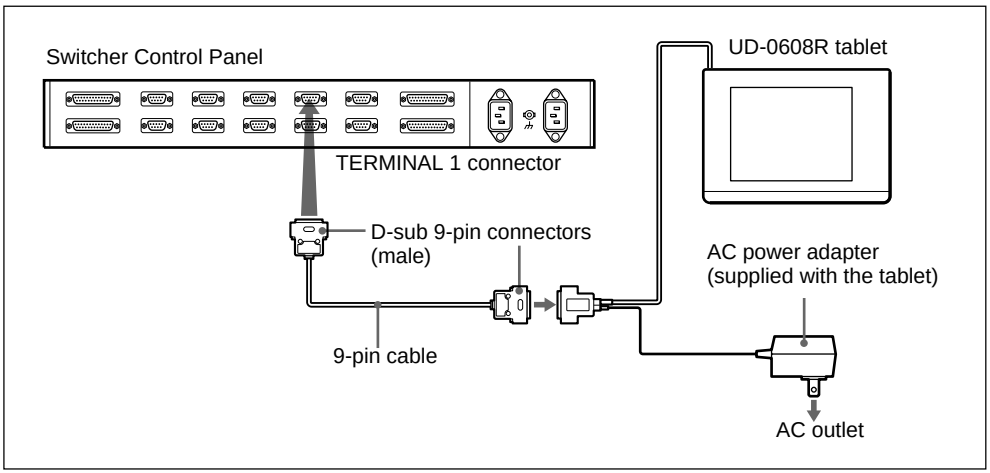
Tablet: UD-0608R
Stylus: UP-801E

Option Using a tablet requires the BKDS-7031 DME Control Panel Unit to be installed.

Connecting the tablet

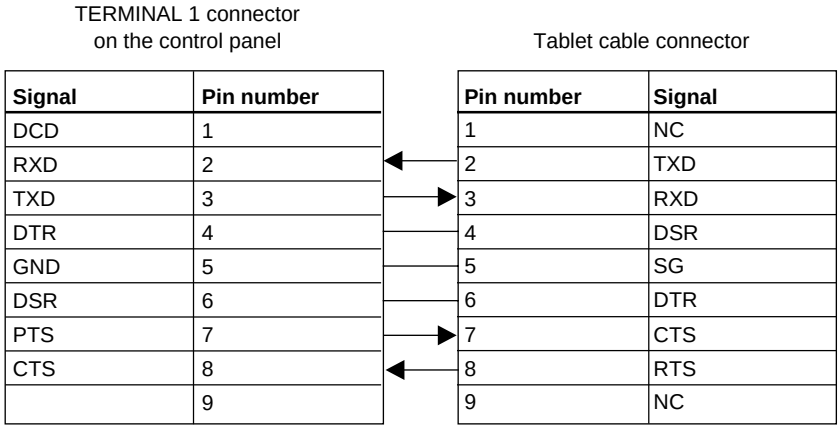
Using a 9-pin cable, connect the tablet to the switcher control panel as follows.

For details of the connection, refer also to the documentation supplied with the tablet.



Connector pin assignments

The connector pin assignments are as follows.



Signal	Pin number
DCD	1
RXD	2
TXD	3
DTR	4
GND	5
DSR	6
PTS	7
CTS	8
	9

Pin number	Signal
1	NC
2	TXD
3	RXD
4	DSR
5	SG
6	DTR
7	CTS
8	RTS
9	NC

Tablet settings

Using the menu sheet supplied with the tablet, make the following settings.

For more details of the settings, refer to the documentation supplied with the tablet.

Item	Setting
Commands	WACOM Ⅱ
Baud rate	9600
Parity	None
Data length	8 bits
Stop bits	1
Monitor	None
Resolution	508
Coordinate content	Absolute

Item	Setting
Format	Binary
Terminator	CR
Operating mode	Stream
Always transmit	On
Origin	Upper left corner
Report rate	Maximum
Remote	Off
Tablet orientation	Landscape
Cursor SW	1234

Functions which can be controlled from the tablet

You can use the tablet for the following purposes.

- As the wipe positioner for the wipe generator currently selected in the wipe control block.

  Note

  In this case, the entire tablet area corresponds to the positioner range, and the absolute stylus position is input as the data value. Therefore when you switch the wipe generator selection, the pattern on the newly selected wipe generator jumps instantaneously to the position corresponding to the stylus position.

- When you have selected item 2 (PAINT) in the FRAME MEMORY 1 or FRAME MEMORY 2 menu, the pressure switch on the end of the stylus toggles F1 (PAINT) on and off.

Controlling the positioner function with the tablet

To assign the tablet to the positioner function for a particular menu, use the following procedure.

1 In the MISC menu, select item 1 (ENABLE).

2 Set F10 (TABLET) to “ON”.

3 Display the menu whose positioner function you wish to use.

4 Press the MENU button in the DME control panel unit, turning it on.

The MENU button lights amber, and the tablet can now be used for the positioner function.
In this state, changing the menu ends this assignment, but it is possible to keep the tablet assigned to the positioner function by the following method.

Assigning the tablet permanently to the positioner function

In step **4** above, press the MENU button twice in rapid succession, lighting it green.
In this state, switching to another menu leaves the tablet assigned to the positioner function for the menu selected in step **3**.

Safe Title Settings

Overview

The safe title display provides an indication on a monitor of the maximum area in which it is safe to put titling, to guarantee that it can be seen on a domestic television.
You can independently enable or disable the display on the video output set in a setup menu.
This function provides two different indications, a box outlining the safe title area, and a cross indicating the center of the screen, and you can select either or both, and also adjust the dimensions of the box indication in a setup menu.

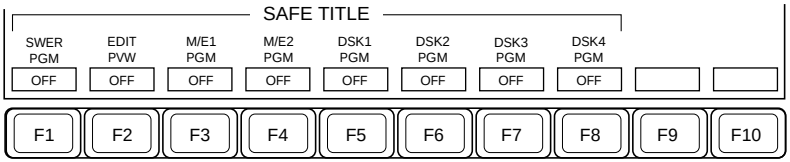
For details of the safe title settings in the setup menu, see page 14-48.

Enabling and disabling the safe title display

Use the following procedure to enable and disable the safe title display.

1 In the MISC menu, select item 2 (SAFE TITLE).

The SAFE TITLE menu appears.



Function key indications in the SAFE TITLE menu

2 Press any of F1 (SWER PGM) to F8 (DSK4 PGM), toggling the safe title display on or off on the respective video output.

Video Input Adjustments (Video Process Function)

Overview

The video process function allows you to make separate adjustments of brightness, hue, and so forth, for each input video signal.

Adjustments in a D1 system

In a D1 system, you can adjust the following five parameters:

- Video signal overall gain
- Y signal gain
- Chrominance signal gain
- Hue delay
- Y signal black level

Adjustments in a D2 system

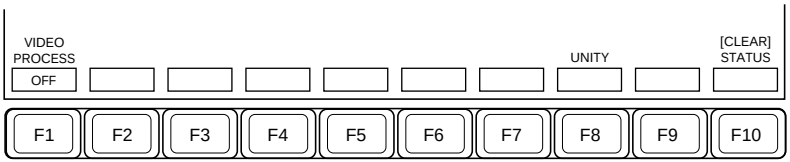
In a D2 system, you can only adjust the video signal overall gain and black level.

Video process function operation

To carry out a video process function operation, use the following procedure.

1 In the MISC menu, select item 3 (VIDEO PROCESS).

The VIDEO PROCESS menu appears.



Function key indications in the VIDEO PROCESS menu

The menu screen shows the input signal names currently selected on the buses, and whether the video process function is on or off for each signal.

(Continued)

2 Press a cross-point button for the signal you wish to adjust.
As long as the cross-point button is assigned to the same signal, it can be in any bank.

The current settings for this signal appear on the screen in a pop-up, and you can now adjust them as required.
Note that you can press more than one cross-point buttons (up to a maximum of eight), and display the settings for the respective signals simultaneously. In this case, however, any adjustments using the video process function apply only to the last signal you selected.

3 Press F1 (VIDEO PROCESS), turning it on, and adjust the parameters.

In a D1 system:

Knob	Parameter	Setting
1	Video Gain	Set video signal overall gain (–200.00 to +200.00)
2	Y Gain	Set Y signal gain (–200.00 to +200.00)
3	C Gain	Set chrominance signal gain (–200.00 to +200.00)
4	Hue Delay	Set hue delay (–180.00 to +180.00)
3	Black Level	Set Y signal black level (–7.30 to +109.58)

In a D2 system:

Knob	Parameter	Setting
1	Video Gain	Set video signal overall gain (–200.00 to +200.00)
3	Black Level	Set Y signal black level (–42.86 to +140.00)

Note

The video process function operates at the input signal level. Therefore, when you select the same signal on two different buses, the effect of an adjustment on one bus is naturally reflected on the other bus.
The menu screen indicates by reverse video the names of all the buses to which the adjustment applies, so you can check beforehand.

To return the parameters to their default settings

Press F8 (UNITY).
All the parameter values return to their default settings, and the indication for F9 changes to “UNDO”. In this state, pressing F9 again returns the parameters to their previous settings.

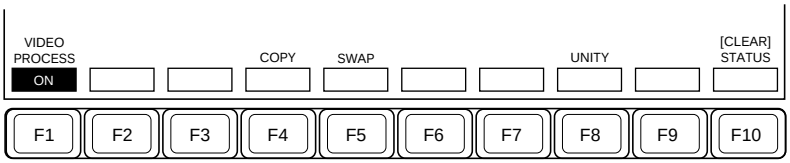
Copying and swapping settings

You can select two signals, then copy or swap the parameter settings between the two signals.

Use the following procedure.

1 With the VIDEO PROCESS menu displayed, select the two signals on which you wish to carry out the copy or swap. For a copy operation, select the source signal first.

The current settings for the two signals appear in pop-ups, and the F4 and F5 function key indications appear as follows.



Function key indications in the VIDEO PROCESS menu (with two signals selected)

Note

If it is not possible to carry out a copy or swap on the particular two signals currently selected, the functions for F4 and F5 do not appear.

2 To carry out a copy press F4 (COPY), and to carry out a swap press F5 (SWAP).

This executes the copy or swap; F4 (COPY) changes to F4 (UNDO), and F5 (SWAP) changes to F5 (UNDO).
In this state, pressing F4 or F5 undoes the effect of the copy or swap operation, returning to the previous state.

Displaying the status

Hold down F10 (STATUS).
This uses the cross-point buttons in the auxiliary bus bank to display the status of the video process function. The buttons corresponding to signals for which the video process function is currently on all light. By pressing the SHIFT button in the axiliary bus block you can also display the status for the second set of signals in the same way.

To turn the video process function off for all signals

Hold down the SHIFT button (the indication above F10 changes to "CLEAR"), and press F10 (CLEAR).
This turns the video process function off for all signals.

Color Correction

Overview

Color correction refers to various adjustments to the color video signal (including black/white level, gamma, and knee values). With the DVS-7300/7350 system, you can carry out the following operations.

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

Option

To carry out color correction, the BKDS-7420 Color Correction Board is required. It provides color correction for two channels.

Selecting signals for color correction and color-corrected signals

To select signals for color correction

To carry out color correction on a signal on channel 1 or channel 2, assign the signal to the frame memory 1 (FRAME MEM 1) or frame memory 2 (FRAME MEM 2) bus, correspondingly.

To select color-corrected signals

To use the channel 1 or channel 2 signal to which color correction has been applied, select the frame memory 1 or frame memory 2 output using the corresponding cross-point button on the required cross-point button row.

Note

When chroma key is selected as the key type for an M/E keyer, you cannot select a frame memory output signal on the cross-point button row for the M/E keyer. Conversely, when a frame memory output signal is selected on the cross-point button row for an M/E keyer, you cannot select chroma key as the key type for the M/E keyer.

Setting the color correction and frame memory function configuration

When the BKDS-7420 Color Correction Board and BKDS-2041 Frame Memory Board are both installed, you can use their functions in the following two ways.

• Using the color correction function along with the frame memory function.
• Using the color correction function alone.

When using the color correction function along with the frame memory function, you can determine which function to apply first.

• Applying the color correction function before the frame memory function.
• Applying the color correction function after the frame memory function.

These settings can be made in a setup menu *(see page 14-10)*.

Note

When using the color correction function alone, the signal to be selected with a frame memory bus must be a primary input signal. Conversely, when using the color correction function along with the frame memory function with the selected signal not being a primary input signal, you cannot switch to the setting for using the color correction function alone.

Assigning signals to cross-point buttons

To monitor signals after color correction, it is necessary to assign frame memory 1 (FM1) and frame memory 2 (FM2) to cross-point buttons beforehand using a setup menu *(see page 14-68)*.

Operation Using the COLOR CORRECTION Menu

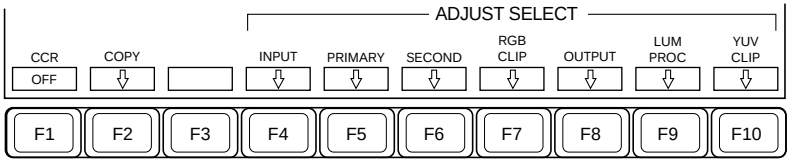
Selecting the operation to carry out

Use the following procedure.

1 In the MISC menu, press item 4 (CCR) to display the COLOR CORRECTION menu for channel 1 or channel 2.

Item selection button 4 allows you to toggle between the COLOR CORRECTION menu for channel 1 and that for channel 2.

The COLOR CORRECTION menu appears. The function key indications are the same whether the menu is for channel 1 or for channel 2.



Function key indications in the COLOR CORRECTION menu

(Continued)

2 Press one of the following function keys according to the operation you wish to carry out, turning it on.

F1 (CCR): Toggle on and off the color correction function.
F2 (COPY): Copy the color correction data set on either of the two channels to the other channel, or swap the color correction data between the two channels *(see page 12-30)*.
F4 (INPUT): Select input video processing to apply color correction to the Y, U, and V signals before conversion to the R, G, and B signals *(see page 12-17)*.
F5 (PRIMARY): Select primary color correction to apply color correction, including output level adjustments, to the R, G, and B signals *(see page 12-18)*.
F6 (SECOND): Select secondary color correction to adjust the luminance, saturation and hue for six colors: red, green, blue, yellow, cyan, and magenta *(see page 12-22)*.
F7 (RGB CLIP): Adjust the dark clip and white clip values for the R, G, and B signals *(see page 12-24)*.
F8 (OUTPUT): Select output video processing to convert the color-corrected R, G, and B signals to the Y, U, and V signals and carry out gain adjustments, etc. *(see page 12-25)*.
F9 (LUM PROC): Select luminance processing to adjust the video signal for different sections of the luminance range *(see page 12-26)*.
F10 (YUV CLIP): Select YUV clipping to adjust the clip values for the luminance and color difference signals *(see page 12-30)*.

Settings for Input Video Processing

Input video processing effects the following adjustments on the Y, U, and V signals before conversion to the R, G, and B signals.

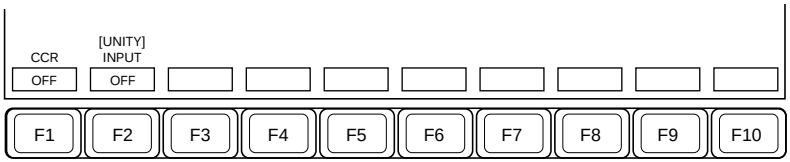
- Video signal overall gain adjustment
- Luminance (Y) signal gain adjustment
- Luminance (Y) signal offset adjustment
- Color difference (C) signal gain adjustment
- Color difference (C) signal hue adjustment

To set the parameters for input video processing

Use the following procedure.

1 In the COLOR CORRECTION menu, press F4 (INPUT).

The INPUT VIDEO PROCESS menu appears.



Function key indications in the INPUT VIDEO PROCESS menu

2 Press F1 (CCR) and F2 (INPUT), turning them on.

3 Set the following parameters.

Knob	Parameter	Setting
1	Video Gain	Video signal overall gain
2	Y Gain	Luminance gain/–200.00 to +200.00
3	C Gain	Color difference gain/–200.00 to +200.00
4	Hue	Hue delay/–180.00 to +180.00
3	Black Level	Black level/–116.90 to +116.90

To reset the parameters

Holding down the SHIFT button (the function display for F2 changes to “UNITY”), press F2 (UNITY).

Settings for Primary Color Correction

Primary color correction effects the following adjustments on the R, G, and B signals.

Black balance adjustment: Sets the output level for a 0% input signal level.

White balance adjustment: Sets the output level for a 100% input signal level.

Gamma correction: Sets the offset (gamma) with respect to the input signal luminance specified by the knee correction.

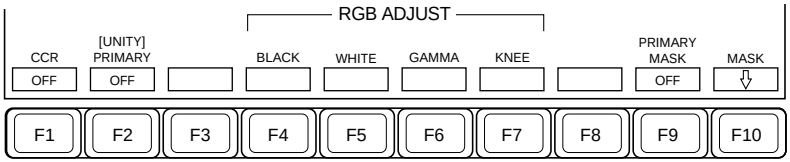
Knee correction: Sets the luminance at which gamma correction applies.

To set the parameters for primary color correction

Use the following procedure.

1 In the COLOR CORRECTION menu, press F5 (PRIMARY).

The PRIMARY COLOR CORRECTION menu appears.



Function key indications in the PRIMARY COLOR CORRECTION menu

2 Press F1 (CCR) and F2 (PRIMARY), turning them on.

3 Press one of F4 (BLACK) to F7 (KNEE) to select the parameter to change.

F4 (BLACK): Black adjustment
F5 (WHITE): White adjustment
F6 (GAMMA): Gamma correction
F7 (KNEE): Knee correction

4 Set the following parameters.

When you selected F4 (BLACK) or F6 (GAMMA):

Knob	Parameter	Setting
1	Red	R signal adjustment/–100.00 to +100.00
2	Green	G signal adjustment/–100.00 to +100.00
3	Blue	B signal adjustment/–100.00 to +100.00
4	All	RGB simultaneous adjustment

When you selected F5 (WHITE):

Knob	Parameter	Setting
1	Red	R signal adjustment/0.00 to 200.00
2	Green	G signal adjustment/0.00 to 200.00
3	Blue	B signal adjustment/0.00 to 200.00
4	All	RGB simultaneous adjustment

When you selected F7 (KNEE):

Knob	Parameter	Setting
1	Red	R signal adjustment/20.00 to 75.00
2	Green	G signal adjustment/20.00 to 75.00
3	Blue	B signal adjustment/20.00 to 75.00
4	All	RGB simultaneous adjustment

To reset the parameters

Holding down the SHIFT button (the function display for F2 changes to “UNITY”), press F2 (UNITY).

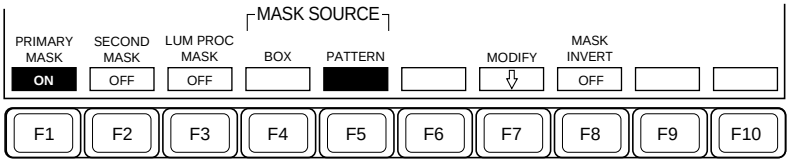
To partly mask primary color correction

Use the following procedure.

1 In the PRIMARY COLOR CORRECTION menu, press F9 (PRIMARY MASK), turning it on.

2 Press F10 (MASK).

The COLOR CORRECTION MASK menu appears.



Function key indications in the COLOR CORRECTION MASK menu

3 Press F4 (BOX) or F5 (PATTERN) to select the required mask source.

F4 (BOX): Signal generated by a dedicated box generator
F5 (PATTERN): Signal generated by a dedicated pattern generator

4 Set the mask source parameters.

When you selected F4 (BOX):

Knob	Parameter	Setting
1	Top	Top edge position/0.00 to 100.00
2	Left	Left edge position/0.00 to 100.00
3	Right	Right edge position/0.00 to 100.00
4	Bottom	Bottom edge position/0.00 to 100.00
1	Softness	Degree of edge softness/0.00 to 100.00

When you selected F5 (PATTERN):

Knob	Parameter	Setting
1	Size	Pattern size/0.00 to 100.00
2	Softness	Degree of pattern edge softness/0.00 to 100.00
3	Pattern No.	Pattern number/1 to 23[a)]

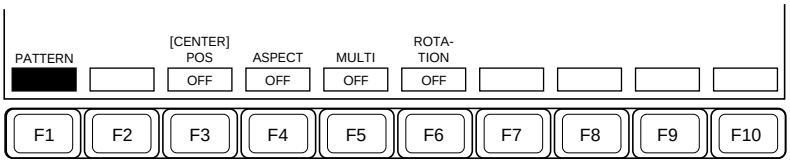
a) The patterns are the same as wipe patterns 1 through 23.

For details of the wipe patterns, see the appendix "Wipe Patterns" (page A2).

5 To invert the sense of the mask source, press F8 (MASK INVERT), turning it on.

6 If you pressed F5 (PATTERN) in step **3**, press F7 (MODIFY) to adjust the pattern modifiers.

The MASK MODIFY menu appears.



Function key indications in the MASK MODIFY menu

*For information about how to adjust the pattern modifiers, see step **7** (page 4-63) in the section "Masking".*

Settings for Secondary Color Correction

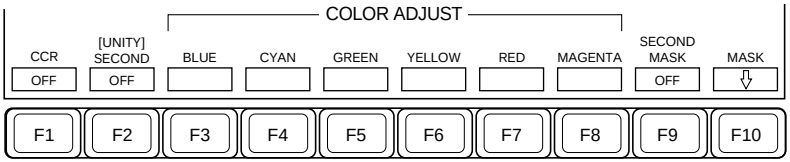
Secondary color correction adjusts the luminance, saturation and hue for six colors: red, green, blue, yellow, cyan, and magenta.

To set the parameters for secondary color correction

Use the following procedure.

1 In the COLOR CORRECTION menu, press F6 (SECOND).

The SECONDARY COLOR CORRECTION menu appears.



Function key indications in the SECONDARY COLOR CORRECTION menu

2 Press F1 (CCR) and F2 (SECOND), turning them on.

3 Press one of F3 (BLUE) to F8 (MAGENTA) to select the color to adjust.

4 Set the following parameters.

Secondary color correction applies to the ±30° range of color space for the selected color.

Knob	Parameter	Setting
1	Luminance	Luminance/–100.00 to +100.00
2	Saturation	Saturation/0.00 to 200.00
3	Hue	Hue/–180.00 to +180.00

To reset the parameters

Holding down the SHIFT button (the function display for F2 changes to “UNITY”), press F2 (UNITY).

To partly mask secondary color correction

Use the following procedure.

1 In the SECONDARY COLOR CORRECTION menu, press F9 (SECOND MASK), turning it on.

2 Press F10 (MASK).

The COLOR CORRECTION MASK menu appears.

For the subsequent procedure, see the section “To partly mask primary color correction” (page 12-20).

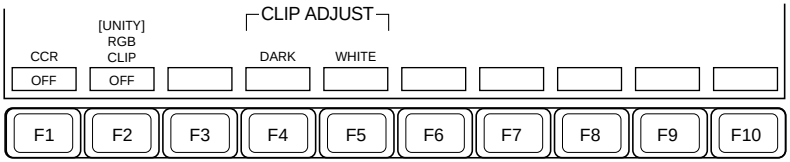
Adjusting RGB Clip Values

To adjust the RGB clip values

To adjust the dark clip and white clip values for the R, G, and B signals, use the following procedure.

1 In the COLOR CORRECTION menu, press F7 (RGB CLIP).

The RGB CLIP menu appears.



Function key indications in the RGB CLIP menu

2 Press F1 (CCR) and F2 (RGB CLIP), turning them on.

3 Press F4 (DARK) or F5 (WHITE) to select the parameter to adjust.

F4 (DARK): Dark clip
F5 (WHITE): White clip

4 Set the following parameters.

Knob	Parameter	Setting
1	Red	R signal adjustment/–50.00 to +150.00
2	Green	G signal adjustment/–50.00 to +150.00
3	Blue	B signal adjustment/–50.00 to +150.00
4	All	RGB simultaneous adjustment

To reset the parameters

Holding down the SHIFT button (the function display for F2 changes to “UNITY”), press F2 (UNITY).

Settings for Output Video Processing

Output video processing effects the following adjustments on the Y, U, and V signals converted from the color-corrected R, G, and B signals.

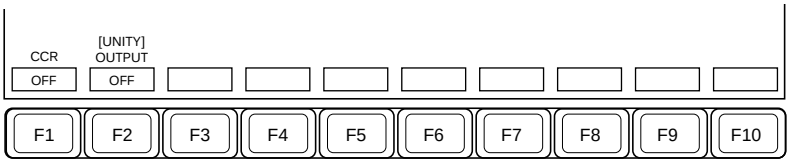
- Video signal overall gain adjustment
- Luminance (Y) signal gain adjustment
- Luminance (Y) signal offset adjustment
- Color difference (C) signal gain adjustment
- Color difference (C) signal hue adjustment

To set the parameters for input video processing

Use the following procedure.

1 In the COLOR CORRECTION menu, press F8 (OUTPUT).

The OUTPUT VIDEO PROCESS menu appears.



Function key indications in the OUTPUT VIDEO PROCESS menu

2 Press F1 (CCR) and F2 (OUTPUT), turning them on.

3 Set the following parameters.

Knob	Parameter	Setting
1	Video Gain	Video signal overall gain
2	Y Gain	Luminance gain/–200.00 to +200.00
3	C Gain	Color difference gain/–200.00 to +200.00
4	Hue	Hue delay/–180.00 to +180.00
3	Black Level	Black level/–116.90 to +116.90

To reset the parameters

Holding down the SHIFT button (the function display for F2 changes to “UNITY”), press F2 (UNITY).

Settings for Luminance Processing

Luminance processing allows the video signal to be adjusted for different sections of the luminance range. For luminance processing, the following two modes are available.
Tint mode: Adds a specified matte color to the original video signal.
Color modify mode: Adjusts the original video signal.

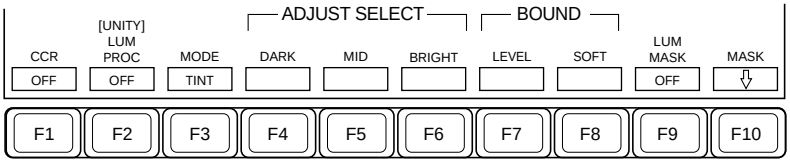
In both modes, the luminance range is divided into three sections, referred to as “Dark”, “Middle”, and “Bright”. You can carry out adjustment for each of the three sections.

To set the parameters for luminance processing

Use the following procedure.

1 In the COLOR CORRECTION menu, press F9 (LUM PROC).

The LUMINANCE PROCESS menu appears.



Function key indications in the LUMINANCE PROCESS menu

2 Press F1 (CCR) and F2 (LUM PROC), turning them on.

3 Press F3 (MODE) to select the required luminance processing mode.

TINT: Tint mode
COLMOD: Color modify mode

4 Press one of F4 (BRIGHT) to F7 (BOUND) to select the required function.

For TINT mode:

F4 (DARK): Add a matte color to the “Dark” section of the luminance range.

F5 (MID): Add a matte color to the “Middle”" section of the luminance range.

F6 (BRIGHT): Add a matte color to the “Bright” section of the luminance range.

F7 (LEVEL): Set the luminance levels on the boundaries of the three sections.

F8 (SOFT): Set the degree of edge softness on the boundaries of the three sections.

For COLMOD mode:

F4 (DARK): Adjust the color corresponding to the “Dark” section of the luminance range.

F5 (MID): Adjust the color corresponding to the “Middle” section of the luminance range.

F6 (BRIGHT): Adjust the color corresponding to the “Bright” section of the luminance range.

F7 (LEVEL): Set the luminance levels on the boundaries of the three sections.

F8 (SOFT): Set the degree of edge softness on the boundaries of the three sections.

(Continued)

5 Set the following parameters.

When you selected one of F4 (DARK) to F6 (BRIGHT) in TINT mode:

Knob	Parameter	Setting
1	Luminance	Luminance/–100.00 to +100.00
2	Saturation	Saturation/0.00 to 100.00
3	Hue	Hue/0.00 to 359.99

When you selected one of F4 (DARK) to F6 (BRIGHT) in COLMOD mode:

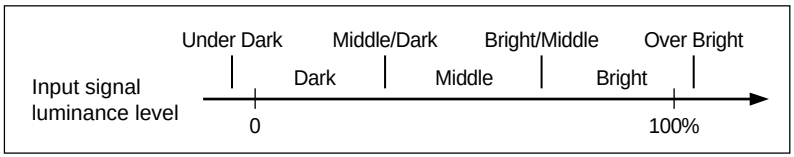
Knob	Parameter	Setting
1	Luminance	Luminance/–100.00 to +100.00
2	Chroma	Chroma/0.00 to 100.00
3	Hue Delay	Hue delay/–180.00 to +180.00

When you selected F7 (LEVEL):

Knob	Parameter	Setting
1	Under D Level	Luminance level at point “Under Dark”/ –50.00 to +50.00
2	Dark Mid Level	Luminance level at point “Middle/Dark”/–20.00 to +90.00
3	Mid B Level	Luminance level at point “Bright/Middle”/10.00 to 120.00
4	Over B Level	Luminance level at point “Over Bright”/50.00 to 150.00”

When you selected F8 (SOFT):

Knob	Parameter	Setting
1	Under D Soft	Softness at point “Under Dark”/15.00 to 70.00
2	Dark Mid Soft	Softness at point “Middle/Dark”/15.00 to 42.50
3	Mid B Soft	Softness at point “Bright/Middle”15.00 to 42.50
4	Over B Soft	Softness at point “Over Bright”/15.00 to 70.00



To reset the parameters

Holding down the SHIFT button (the function display for F2 changes to “UNITY”), press F2 (UNITY).

To partly mask luminance processing

Use the following procedure.

1 In the LUMINANCE PROCESS menu, press F9 (LUMPROC MASK), turning it on.

2 Press F10 (MASK).

The COLOR CORRECTION MASK menu appears.

For the subsequent procedure, see the section “To partly mask primary color correction” (page12-20).

Adjusting YUV Clip Values

The following clip values for the luminance and color difference signals can be adjusted.

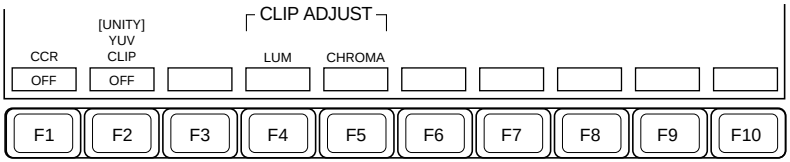
White clip: Sets the maximum level of the luminance signal.
Dark clip: Sets the minimum level of the luminance signal.
Positive clip: Sets the maximum amplitude in the positive direction of the color difference signal.
Negative clip: Sets the maximum amplitude in the negative direction of the color difference signal.

To adjust the YUV clip values

Use the following procedure.

1 In the COLOR CORRECTION menu, press F10 (YUV CLIP).

The YUV CLIP menu appears.



Function key indications in the YUV CLIP menu

2 Press F1 (CCR) and F2 (YUV CLIP), turning them on.

3 Press F4 (LUM) or F5 (CHROMA) to select the signal for which to adjust clip values.

F4 (LUM): Luminance signal
F5 (CHROMA): Color difference signal

4 Set the following parameters.

When you selected F4 (LUM):

Knob	Parameter	Setting
1	Dark	Dark clip value/–6.85 to +109.13
2	White	White clip value/–6.85 to +109.13

When you selected F5 (CHROMA):

Knob	Parameter	Setting
1	U Nega	Negative clip value for the U signal/–111.39 to +111.39
2	U Posi	Positive clip value for the U signal/–111.39 to +111.39
3	V Nega	Negative clip value for the V signal/–111.39 to +111.39
4	V Posi	Positive clip value for the V signal/–111.39 to +111.39

To reset the parameters

Holding down the SHIFT button (the function display for F2 changes to "UNITY"), press F2 (UNITY).

Copying/Swapping Color Correction Data

It is possible to copy color correction data set on a channel to the other channel, or to swap color correction data between the two channels.

Note

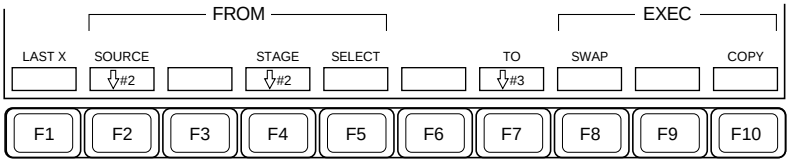
In color correction copy operations, only the adjustment parameters are copied. Such settings as effect on/off settings and mask settings are not copied.

To copy of swap primary color correction data

Use the following procedure.

1 In the COLOR CORRECTION menu, press F2 (COPY).

The COLOR CORRECTION COPY menu appears.



Function key indications in the COLOR CORRECTION COPY menu

2 Press F2 (SOURCE) or turn control knob 2 to align the cursor on the "FROM" side with the copy/swap source channel.

When the "FROM" channel is selected, the "TO" channel is selected automatically. (You may select the "TO" channel first; then the "FROM" channel will be selected automatically.)

3 Press F4 (STAGE) or turn control knob 3 to align the cursor with an item to copy or swap, then press F5 (SELECT).

Repeat this until all items to copy or swap have been selected.

4 To carry out a swap, press F8 (SWAP); to carry out a copy, press F10 (COPY).

This carries out the swap or copy.

To restore the state before a copy or swap
Press F1 (LAST X).

Chapter 13
Interfacing With External Devices

Overview

In a DVS-7300/7350 system, you can control DME, editor, VTR, and other devices connected to the switcher as though they were part of it.
You can also control the switcher from a remote control panel.
This section describes the interface between the DVS-7300/7350 system and external devices.

Interface between the switcher and a DME-7000/3000 Digital Multi Effects

You can use combined operations of the switcher functions and DME processes, such as DME wipes and processed keys.
You can also handle DME snapshots and key frames as though they were switcher operations.

For details of the procedures involved, see Chapters 4, and 7 to 10 of this manual. For details of the DME operations, refer to the BZDM-7720/3720 User's Guide.

Controlling the switcher from a BVE-9100 Editing Control Unit

For details, refer to the Operation Manual for the BVE-9100.

Carrying out M/E bank operations from a BKDS-2010 Switcher Control Panel

By connecting a BKDS-2010 to the switcher unit, you can control the M/E banks on the switcher.

Option

For M/E remote operations using the BKDS-2010, the BZS-7220 Operation Software is required.

For details, refer to the User's Guide for the BZS-7220.

Keyer operations using the BKDS-7060 Keyer Remote Control Panel

By connecting a BKDS-7060 to the switcher unit, you can control the switcher keyers from the BKDS-7060.

Option

For keyer remote operations using the BKDS-7060, the BZS-7360 Operation Software is required.

For details, refer to the User's Guide for the BZS-7360.

Cross-point switching and other operations from a routing switcher

For details, see the section "Interface With Routing Switcher" (next page).

Tape transport control of a DVW-A500 Digital Cassette Recorder or similar

For details, see the section "Interface With VTR" (page 13-7).

Interface With Routing Switcher

By connecting a routing switcher (DVS-V6464B or similar) to the DVS-7300/7350 system, each can change cross-point settings on the other.

Functions enabled when the routing switcher is connected

When a DVS-B series routing switcher is connected to the switcher via the BKDS-7700 Tally Interface Unit, the following functions are enabled besides signal names set on the routing switcher are automatically displayed on the switcher control panel.

- Switching cross-points on the routing switcher from the switcher panel. *(See page 13-6)*
- Switching cross-points on the switcher buses from the routing switcher remote control panel.
- Generating tally information for the system as a whole, including the routing switcher, and distributing it to the various devices.

For details, see the BZS-7720 manual.

Note

When using the above function, in the MULTI XPT ASSIGN menu *(page 14-13)*, it is necessary to assign a different cross-point assignment table to the SERIAL TALLY port from that assigned to other ports.
Additionally, set the table data as shown on the following page. If these settings are not made correctly the function will not operate correctly.

Serial port cross-point assignment for the routing switcher interface

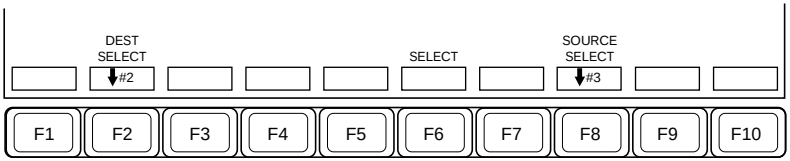
Button number	Source	Button number	Source
0	INHIBIT	32	PRIMARY32
1	PRIMARY1	33	PRIMARY33
2	PRIMARY2	34	PRIMARY34
3	PRIMARY3	35	PRIMARY35
4	PRIMARY4	36	PRIMARY36
5	PRIMARY5	37	INHIBIT
6	PRIMARY6	38	INHIBIT
7	PRIMARY7	39	INHIBIT
8	PRIMARY8	40	INHIBIT
9	PRIMARY9	41	INHIBIT
10	PRIMARY10	42	INHIBIT
11	PRIMARY11	43	INHIBIT
12	PRIMARY12	44	INHIBIT
13	PRIMARY13	45	INHIBIT
14	PRIMARY14	46	INHIBIT
15	PRIMARY15	47	INHIBIT
16	PRIMARY16	48	INHIBIT
17	PRIMARY17	49	INHIBIT
18	PRIMARY18	50	M/E-2 CHR KEY KEY
19	PRIMARY19	51	INHIBIT
20	PRIMARY20	52	INHIBIT
21	PRIMARY21	53	INHIBIT
22	PRIMARY22	54	M/E-3 CHR KEY KEY
23	PRIMARY23	55	INHIBIT
24	PRIMARY24	56	M/E-2 KEY1 PROC VIDEO
25	PRIMARY25	57	M/E-2 KEY1 PROC KEY
26	PRIMARY26	58	M/E-2 KEY2 PROC VIDEO
27	PRIMARY27	59	M/E-2 KEY2 PROC KEY
28	PRIMARY28	60	M/E-3 KEY1 ROC VIDEO
29	PRIMARY29	61	M/E-3 KEY1 PROC KEY
30	PRIMARY30	62	M/E-3 KEY2 PROC VIDEO
31	PRIMARY31	63	M/E-3 KEY2 PROC KEY

To switch a cross-point on the routing switcher from the control panel

1 Press the top menu selection button assigned to the ROUTER menu.

To assign a menu to a top menu selection button, use the UTILITY menu (page 14-92).

The ROUTER menu appears.



Function key indications in the ROUTER menu

2 Press F2 (DEST SELECT), or turn control knob 2 to align the cursor with the bus name (DESTINATION) on the routing switcher.

3 Press F8 (SOURCE SELECT), or turn control knob 3 to align the cursor with the input signal name on the routing switcher.

4 Press F6 (SELECT).

This switches the cross-point on the routing switcher.

This operation can also be carried out using the auxiliary bus bank.

For more details, see the section "Setting the Programmable button function" (page 14-74).

Interface With VTR

In a DVS-7300/7350 system, you can carry out the following control on a maximum of two VTRs connected to the control panel.

- Controlling the VTR tape transport from the DME control panel
- Saving VTR control data (start point, stop point, and start offset point) in a register
- Recalling VTR control data from a register, and using the same operation as for a key frame, controlling the VTR tape transport

Option

The interface with a VTR requires an optional BKDS-7001 Control Port Extension Board to be installed in the control panel.

Tape Transport Control

To select a VTR

Using the sub-register selection buttons in the numeric keypad section, select the VTR to be controlled.
To select VTR 1, press the V1 button, and to select VTR 2, press the V2 button. If both buttons are lit, you can control the two VTRs simultaneously.

To control the tape transport

Use the buttons in the DME control panel to control the VTR tape transport.

ORTHG (VTR): Press this button, turning it on, to control the VTR from the DME control section. When this button is lit, the other buttons have the following functions.

To use the ORTHG button for VTR tape transport control, in the setup menus a setting is necessary for using this button as a VTR button. For more details, see the section "Changing switcher functions (OPERATION MODE menu)" (page 14-73).

X (REW): Rewinds the tape.
Y (PLAY): Plays back the tape.
Z (FF): Fast forwards the tape.
CLR WORK BUFR (STB OFF): Switches to "standby off" mode.
CTR (STOP): Stops the tape.
VELO HOLD (JOG): Moves the tape at a speed dependent on the rate of rotation of the search dial (jog mode).
Z-ring (search dial): In jog mode, acts as a search dial.

Saving VTR Control Data in Registers

To save the VTR start point and stop point timecode values in a register, use the following procedure.

1 In the numeric keypad section, recall the register in which you want to save the start point and stop point.

For details of the operation, see the section "Accessing a Register" (page 8-6).

2 Using the buttons in the DME control panel, search for the cue position for the start point.

3 Press the ASP SKEW PERS (MARK IN) button to save the current timecode as the start point.

4 In the same way as in step **2**, search for the stop point.

5 Press the LOC XYZ (MARK OUT) button to save the current timecode as the stop point.

To save the VTR start offset point

You can save the time from when you press the RUN button in the key frame control section, until the VTR starts playback as the start offset point. Carry out this setting in the REGISTER menu.

For details, see the section "Displaying and Setting VTR Control Registers" (page 9-18).

Tape Transport Control by Same Operation as Effect Execution

If you have first saved the three timecode values for the VTR start point, stop point, and start offset point in a register, then you can control the VTR in the same way as for a key frame effect.

To recall a register

To recall a register in which you have first saved the VTR start point, stop point, and start offset point, in the numeric keypad section press the RCALL button, then enter the number of the register. When the register is recalled, the VTR is cued up to the start point.

To play the tape

To play the tape, press the RUN button in the key frame control panel.

To cue up to the start point

To cue up the VTR to the start point in the currently recalled register, press the REWIND button in the key frame control panel.

Chapter 14
Setup

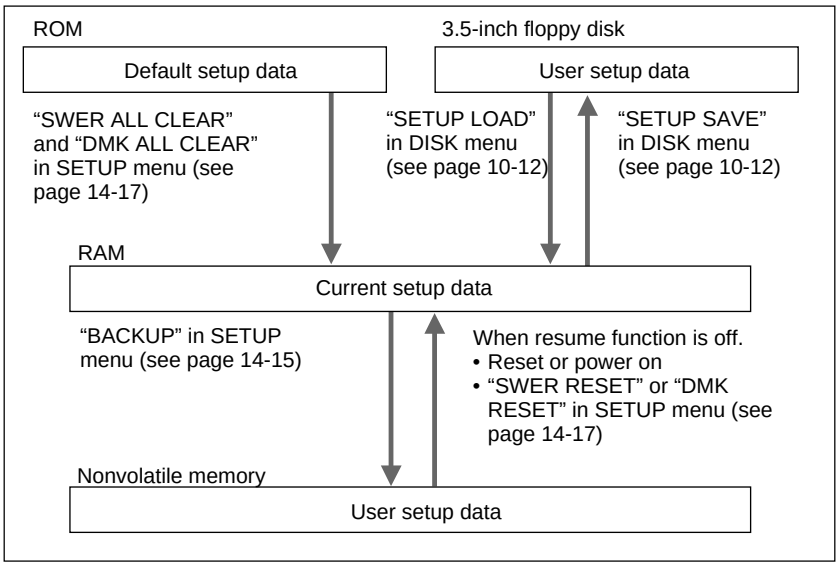
Overview

To operate a system comprising a switcher unit, control panel and DMK-7000 connected together, it is necessary to access the various setup menus, and make various settings. These settings are referred to as setup data.

For details of menu operation, see the section "Basic Menu Operations" (page 3-6).

Saving and Recalling Setup Data

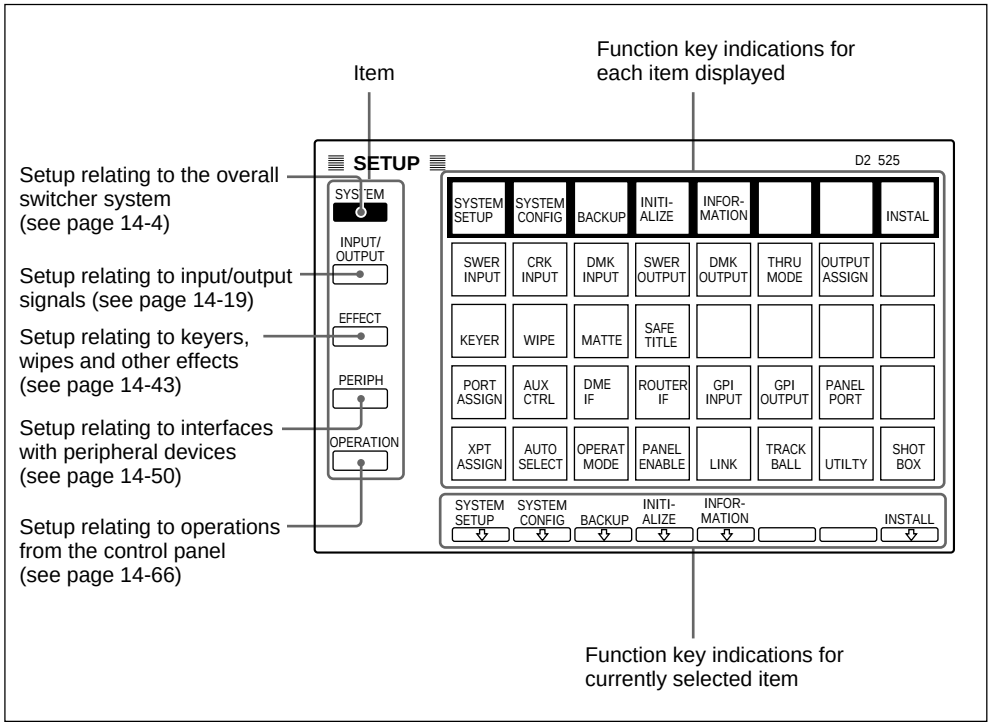
Default values for all settings on the switcher unit, control panel and DMK-7000 (default setup data) are held in ROM in the individual units.
Using the setup menus, you can create a set of customized setup data (user setup data) held in RAM. The setup data in RAM in each unit is lost when the unit is powered off or reset, but you can also save the user setup data in nonvolatile memory or on a 3.5-inch floppy disk (using the floppy disk drive in the control panel).
The setup data in nonvolatile memory in each unit is automatically loaded into RAM when the unit is powered on or reset.
If the resume function is on (F7 or F8 set to ON in the SYSTEM SETUP menu *(see page 14-7)*), the setup data held in RAM is saved when the unit is reset or powered off and it is used again after the unit is reset or next powered on.



Saving and recalling setup data

Displaying the SETUP Menu

To carry out a setup operation, first press the SETUP button in the SYSTEM group of the menu control section of the control panel to display the SETUP menu.



Example SETUP menu display

The rest of this section describes the setup operations which you can carry out from items selected in the SETUP menu.

Note

If the setup data is write-protected, you cannot change it through menu operations, even though it is possible to change the settings by loading setup data from a floppy disk.

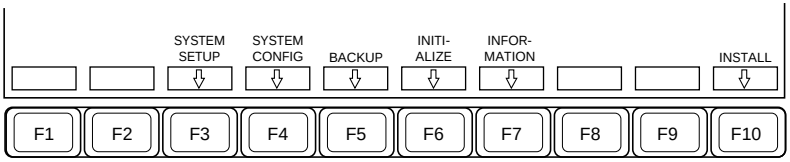
For details of how to write-protect the setup data and how to release the write-protect state, see page 14-15.

Setup Relating to the Overall Switcher System (SYSTEM Menu)

To carry out setup operations relating to the overall switcher system, access the SYSTEM menu.

Accessing the SYSTEM menu

In the SETUP menu, select item 1 (SYSTEM).
The SYSTEM menu appears.



Function key indications in the SYSTEM menu

Selecting the next menu

When you have displayed the SYSTEM menu, access the next menu according to the data item you wish to set.
The menus you can access from the SYSTEM menu are listed in the following table, together with their functions, and the function keys you need to press to access them.

Menus accessed from the SYSTEM menu

Menu	Functions	Function key	See page
INSTALL	Installing software	F10 (INSTALL)	14-6
SYSTEM SETUP	• Setting the date • Setting the time • Selecting the signal format • Toggling the 7.5 IRE setup on or off (D2-525 systems only) • Setting the screen aspect ratio • Selecting the video switching timing • Selecting the state at power on • Setting the alarm	F3 (SYSTEM SETUP)	14-7

(Continued)

Menus accessed from the SYSTEM menu (Continued)

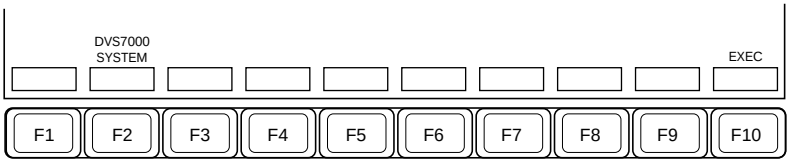
Menu	Functions	Function key	See page
SYSTEM CONFIGU-RAION	• Setting the system configuration • Setting the DMK-7000 configuration • Setting the switcher program output (3M/E system only) • Setting the final bank controlled from the remote panel • Setting the phase relation between the external sync signal input to the switcher and the output signals of the switcher • Making multiple cross-point assignments	F4(SYSTEM CONFIG)	14-10
BACKUP	• Saving the setup data in nonvolatile memory • Making the setup data write-protected or not	F5 (BACKUP)	14-15
INITIALIZE	• Resetting the switcher and control panel to the state at power on • Resetting the DMK-7000 to the state at power on • Clearing the switcher memory and control panel memory and initializing the switcher and control panel based on the default setup data • Clearing the DMK-7000 memory and initializing the DMK-7000 based on the default setup data	F6 (INITIALIZE)	14-17
INFORMATION	Displaying the software version numbers	F7 (INFORMATION)	14-18

Installing software (INSTALL menu)

To install the BZS-7020A operation software, which is supplied on three floppy disks, use the following procedure.

1 In the SYSTEM menu, press F10 (INSTALL).

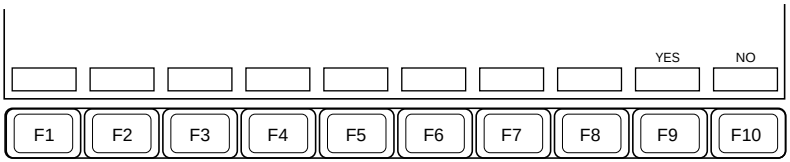
The INSTALL menu appears.



Function key indications in the INSTALL menu

2 Press F2 (DVS7000 SYSTEM) and F10 (EXEC), in that order.

The function key indications change as follows.



Function key indications in the INSTALL menu (after pressing F10)

3 To carry out the software installation, press F9 (YES), and to cancel the installation press F10 (NO).

If you press F9 (YES), carry out the installation following the messages on the screen.

Making various system settings (SYSTEM SETUP menu)

You can use the SYSTEM SETUP menu for the following settings.

- **Setting the date:** Set the calendar in the switcher.
- **Setting the time:** Set the clock in the switcher.
- **Selecting the signal format:** Select the signal format as one of D2-525, D1-525 and D1-625.
- **Toggling the 7.5 IRE setup on or off (D2-525 systems only)**
- **Setting the screen aspect ratio:** Select 4:3 or 16:9 as the screen aspect ratio.
- **Selecting the video switching timing:** Select the fields on which video switching occurs from among ANY, EVEN and ODD (for D2 systems)/ ANY, F1 (1st field) and F2 (2nd field) (for D1 systems).
- **Selecting the state at power on:** Specify whether the switcher and control panel settings at power on are the settings when the unit was last powered off (resume function ON) or the settings saved using the BACKUP menu (resume function OFF).

  Regardless of this selection, the signal format setting at power on is always the same as when the unit was last powered off.
- **Alarm setting:** Select whether to sound (ON), or not (OFF) an audible alarm when an error state occurs. Even when this is set to OFF, error messages still appear on the menu screen.

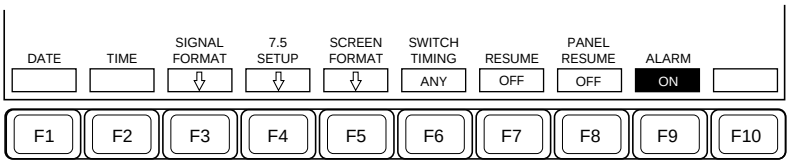
Note

Of the above, the settings relating to the signal format, the 7.5 IRE setup, and the screen aspect ratio also apply to the DME automatically.

To carry out these settings, use the following procedure.

1 In the SYSTEM menu, press F3 (SYSTEM SETUP).

The SYSTEM SETUP menu appears.



Function key indications in the SYSTEM SETUP menu

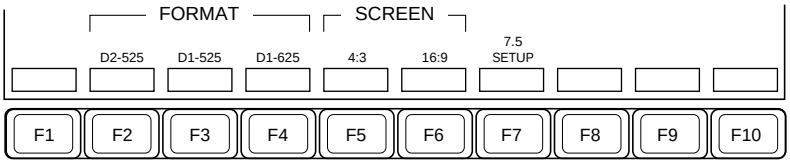
(Continued)

2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Setting the date	Press F1 (DATE), then enter the date from the numeric keypad, in the American order (mm-dd-yy), but separating the items by periods. For example, to set the date to 5th December 1995, enter “12.5.1995” then press the ENTER button.
Setting the time	Press F2 (TIME), then enter the time (hh:mm:ss) from the numeric keypad, using the 24-hour clock and separating the items by periods. For example, to set the time to 14:25:20, enter “14.25.20” then press the ENTER button.
Selecting the signal format	Go to step **3**.
Toggling the 7.5 IRE setup on or off (D2-525 systems only)	Go to step **3**.
Setting the screen aspect ratio	Go to step **3**.
Selecting the video switching timing	Press F6 (SWITCH TIMING). This cycles the setting through ANY, EVEN and ODD (D2 systems)/ANY, F1 and F2 (D1 systems).
Selecting the state at power on	Press F7 (RESUME) or F8 (PANEL RESUME). This toggles the setting on and off.
Alarm setting	Press F9 (ALARM). This toggles the setting on and off.

3 Press F3 (SIGNAL FORMAT), F4 (7.5 SETUP) or F5 (SCREEN FORMAT).

The SIGNAL FORMAT menu appears.



Function key indications in the SIGNAL FORMAT menu

4 • To select a required signal format, press the corresponding function key (F2, F3 or F4).

Signal format	Function key to press
D2-525	F2 (D2-525)
D1-525	F3 (D1-525)
D1-625	F4 (D1-625)

• To set the screen aspect ratio, press F5 (4:3) or F6 (16:9).
• To toggle the 7.5 IRE setup on or off, press F7 (7.5 SETUP).
In this case, toggling takes place immediately.

5 Press F10 (EXEC).

If the operation selected in step **4** is changing the signal format, the system is reset to the state at power on and the signal format is changed. The new signal format setting is immediately saved in nonvolatile memory.
If the operation selected in step **4** is changing the screen aspect ratio, the control panel and DME settings are reset to the state at power on and the screen aspect ratio changes. The switcher settings are not reset.

Setting the system configuration (SYSTEM CONFIGURATION menu)

You can use the SYSTEM CONFIGURATION menu for the following settings.

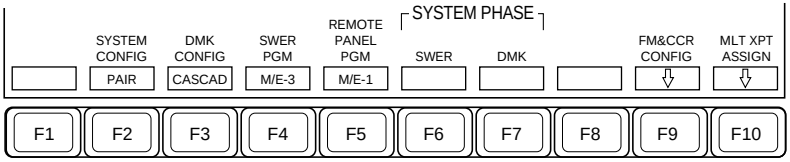
- **Selecting the system configuration:** Select a switcher system configuration, SEPA (switcher system without including the DMK-7000) or PAIR (switcher system including the DMK-7000).
  Always select PAIR for a 3.5-M/E system.
- **Selecting the DMK-7000 configuration:** Select a DMK-7000 keyer configuration, CASCAD (cascade), PARA (parallel), INDPND (independent), or DUAL (dual cascade).
  You cannot select INDPND for a 3.5-M/E system.
- **Setting the switcher program output (SWER PGM) (3-M/E systems only):** Select one of the following three signals for output from the switcher's PGM OUTPUTS connectors.
  M/E-1 PGM (program), M/E-2 PGM, and M/E-3 PGM.
- **Setting the final bank controlled from the remote panel:** Select which of the banks controlled from a remote panel connected to the PANEL 2 connector on the main switcher unit is the final bank. The high tally indications on the remote panel follow this setting.
- **Setting the phase relation between the external sync signal input to the switcher and the switcher and DMK-7000 output signals:** Adjust in the range –28 to +70 µs.
  When the system configuration is set to PAIR, adjust the switcher and DMK-7000 outputs to the same phase value.
- **Setting the color correction and frame memory function configuration:**
  When the BKDS-7420 Color Correction Board and BKDS-2041 Frame Memory Board are both installed, determine how to use them.
  - Use the color correction function along with the frame memory function.
  - Use the color correction function alone.

  When using the color correction function along with the frame memory function, determine which function to apply first.
  - Apply the color correction function before the frame memory function.
  - Apply the color correction function after the frame memory function.
- **Multiple cross-point assignment:** Set up to five sets of different signal assignments to cross-point buttons (assignment tables). Also select the assignment table currently used.

To carry out these settings, use the following procedure.

1 In the SYSTEM menu, press F4 (SYSTEM CONFIG).

The SYSTEM CONFIGURATION menu appears.



Function key indications in the SYSTEM CONFIGURATION menu

2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Selecting the system configuration	Press F2 (SYSTEM CONFIG). This toggles the setting between SEPA and PAIR.
Selecting the DMK-7000 configuration	Press F3 (DMK CONFIG). This cycles the setting through CASCAD, PARA, INDPND and DUAL.
Setting the switcher program output	Press F4 (SWER PGM). This cycles the setting through M/E-1, M/E-2 and M/E-3.
Setting the final bank controlled through the PANEL 2 connector of the switcher	Press F5 (REMOTE PANEL PGM). Pressing this button cycles through M/E-1, M/E-2, M/E-3, P/P, and AUX. When you selected AUX, set an AUX bus number with control knob 3.
Adjusting the switcher output signal phase	Press F6 (SWER), turning it to reverse video, and adjust control knob 4.
Adjusting the DMK-7000 output signal phase	Press F7 (DMK), turning it to reverse video, and adjust control knob 4.
Setting the color correction and frame memory function configuration	Press F9 (FM&CCR CONFIG) to display the CCR CONFIGURATION menu. For details, see the next section.
Multiple cross-point assignment	Press F10 (MLT XPT ASSIGN) to display the MULTI XPT ASSIGN menu. For details see page 14-13.

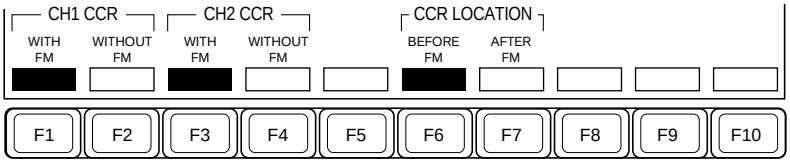
You may press F6 and F7 together to adjust the switcher and DMK-7000 output signal phases simultaneously.

Setting the color correction and frame memory function configuration

Use the following procedure.

1 In the SYSTEM CONFIGURATION menu, press F9 (FM&CCR CONFIG).

The FM & CCR CONFIGURATION menu appears.



Function key indications in the FM & CCR CONFIGURATION menu

2 Press F1 or F2 (for channel 1) or F3 or F4 (for channel 2) to determine whether to use the color correction function alone or along with the frame memory function.

F1 (WITH FM) or F3 (WITH FM): Use the color correction function along with the frame memory function.
F2 (WITHOUT FM) or F4 (WITHOUT FM): Use the color correction function alone.

3 When you selected F1 or F3 in step **2**, determine which function to apply first.

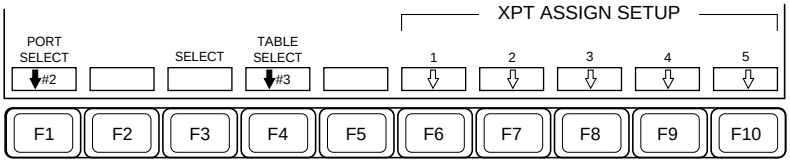
F6 (BEFORE FM): Apply the color correction function before the frame memory function.
F7 (AFTER FM): Apply the color correction function after the frame memory function.

Assigning a cross-point assignment table to a port

You can assign any of the five cross-point assignment tables to each of the 9-pin ports on the rear panel. By default table 1 is assigned to all of the 9-pin ports. Use the following procedure.

1 In the SYSTEM CONFIGURATION menu, press F10 (MLT XPT ASSIGN).

The MULTI XPT ASSIGN menu appears.



Function key indications in the MULTI XPT ASSIGN menu

2 Press F1 (PORT SELECT) or turn control knob 2 to align the cursor with the required 9-pin port.

3 Press F4 (TABLE SELECT) or turn control knob 3 to align the cursor with the required table number.

4 Press F3 (SELECT).

This assigns the table to the port.

Repeat steps **2** to **4** as required to assign tables to all of the ports.

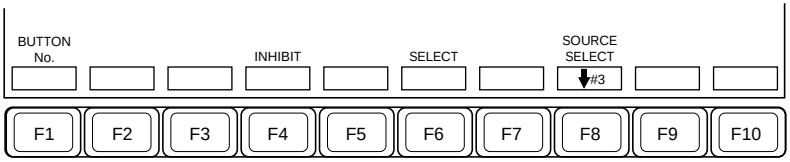
Creating different cross-point assignment tables

To create the data for the five cross-point assignment tables, use the following procedure.

Note that for the cross-point assignment table of the PANEL1 port, you can also make assignments in the XPT ASSIGN menu *(see page 14-69)*.

1 In the MULTI XPT ASSIGN menu, press one of F6 (1) to F10 (5), to select the table to which the settings apply.

The XPT ASSIGN menu appears.



Function key indications in the XPT ASSIGN menu

2 Referring to the section "Carrying out setup relating to assigning an input signal to a cross-point button" *(page 14-68)*, carry out the assignments. For the input signal identifiers, use the separate XPT ASSIGN menu *(see page 14-69)*. It is not possible to set these in this menu.

Repeat steps **1** and **2** as required to create all of the tables.

Saving setup data and making data write-protected or not (BACKUP menu)

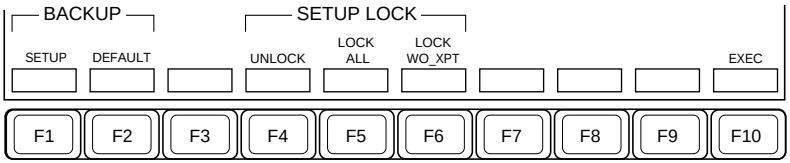
You can use the BACKUP menu for the following settings.

- **Saving the setup data:** Save the setup data to be restored when the switcher is next powered on with F7(RESUME) and F8(PANEL RESUME) off in the SYSTEM SETUP menu.
- **Saving the default settings:** Save the default settings to be restored when the switcher is next powered on with F7 (RESUME) off in the SYSTEM SETUP menu. The saved default settings are applied when the key modifiers or wipe modifiers are reset altogether.
- **Making the setup data write-protected or not:** You can write-protect the setup data. When the setup data is write-protected, it is not possible to change any settings with the exception of releasing the write-protected state. The settings in the XPT ASSIGN menu and system resetting can also be made exceptions.

To carry out these settings, use the following procedure.

1 In the SYSTEM menu, press F5 (BACKUP).

The BACKUP menu appears.



Function key indications in the BACKUP menu

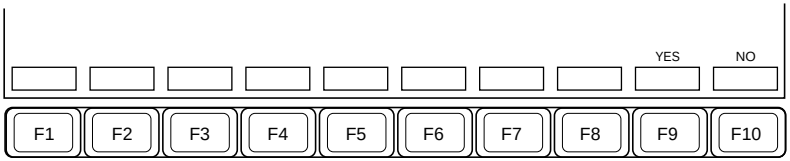
2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Saving the setup data	Press F1 (SETUP).
Saving the default settings.	Press F2(DEFAULT).
Making the setup data write-protected or not	Press F4, F5 or F6. F4 (UNLOCK): Release the write-protected state. F5 (LOCK ALL): Write-protect all setup data. F6 (LOCK WO_XPT): Write-protect the setup data with the exception of the settings in the XPT ASSIGN menu and system resetting.

(Continued)

3 Press F10 (EXEC).

The function key indications change as follows.



Function key indications in the BACKUP menu (after pressing F10)

4 To carry out the operation you selected in step **2**, press F9 (YES), and to cancel the operation press F10 (NO).

Resetting and initializing the switcher, control panel, and DMK-7000 (INITIALIZE menu)

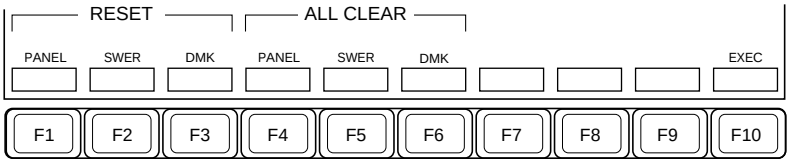
You can use the INITIALIZE menu for the following settings.

- **Resetting the switcher and control panel:** Reset the switcher and control panel to the state at power on.
- **Resetting the DMK-7000:** Reset the DMK-7000 to the state at power on.
- **Initializing the switcher and control panel:** Clear the switcher memory and control panel memory and initialize the switcher and control panel based on the default setup data.
- **Initializing the DMK-7000:** Clear the DMK-7000 memory and initialize the DMK-7000 based on the default setup data.

To carry out these settings, use the following procedure.

1 In the SYSTEM menu, press F6 (INITIALIZE).

The INITIALIZE menu appears.



Function key indications in the INITIALIZE menu

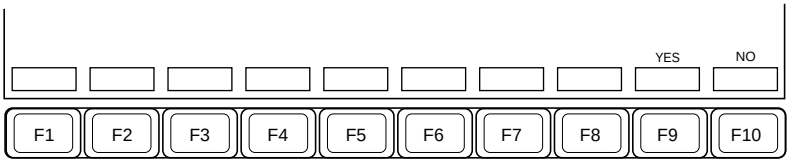
2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Resetting the control panel	Press F1 (PANEL).
Resetting the switcher	Press F2 (SWER).
Resetting the DMK-7000	Press F3 (DMK).
Initializing the control panel	Press F4 (PANEL).
Initializing the switcher	Press F5 (SWER).
Initializing the DMK-7000	Press F6 (DMK).

(Continued)

3 Press F10 (EXEC).

The function key indications change as follows.



Function key indications in the INITIALIZE menu (after pressing F10)

4 To carry out the reset or initialization you selected in step **2**, press F9 (YES), and to cancel the reset or initialization press F10 (NO).

Displaying the software version numbers (INFORMATION menu)

To display the software version numbers, press F7 (INFORMATION) in the SYSTEM menu.

The version numbers of the software installed in the DVS-7000A, DMK-7000, and the control panel appear.

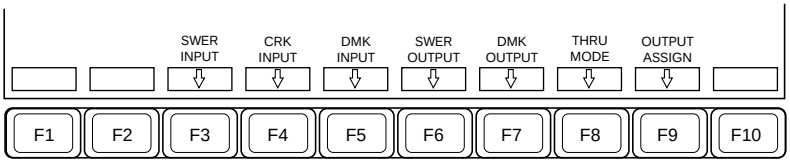
Setup Relating to Input/Output Signals (INPUT/OUTPUT Menu)

To carry out setup operations relating to input/output signals, access the INPUT/OUTPUT menu.

Accessing the INPUT/OUTPUT menu

In the SETUP menu, select item 2 (INPUT/OUTPUT).

The INPUT/OUTPUT menu appears.



Function key indications in the INPUT/OUTPUT menu

Selecting the next menu

When you have displayed the INPUT/OUTPUT menu, access the next menu according to the data item you wish to set.
The menus you can access from the INPUT/OUTPUT menu are listed in the following table, together with their functions, and the function keys you need to press to access them.

Menus accessed from the INPUT/OUTPUT menu

Menu	Functions	Function key	See page
SWITCHER INPUT	**For D2 systems** Making the following settings relating to switcher input signals • Selecting the GEN LOCK mode for an analog input signal • Adjusting the hue of an analog input signal • Adjusting the SCH (subcarrier-to-horizontal) phase of an analog input signal • Adjusting the horizontal phase of an input signal • Selecting automatic color framing correction by video shifting	F3 (SWER INPUT)	14-22
	For D1 systems Adjusting the horizontal phase of a switcher input signal		14-25

(Continued)

Menus accessed from the INPUT/OUTPUT menu (Continued)

Menu	Functions	Function key	See page
CHROMA KEYER INPUT	Making settings relating to chroma key input signals • Selecting the input signal format • Selecting the GEN LOCK mode • Adjusting the horizontal phase of an input signal	F4 (CRK INPUT)	14-26
DMK INPUT	**For D2 systems** Making the following settings relating to DMK-7000 input signals • Selecting the GEN LOCK mode for an analog input signal • Adjusting the hue of an analog input signal • Adjusting the SCH (subcarrier-to-horizontal) phase of an analog input signal • Adjusting the horizontal phase of an input signal • Selecting automatic color framing correction by video shifting	F5 (DMK INPUT)	14-28
	For D1 systems Adjusting the horizontal phase of a DMK-7000 input signal		14-29

Menus accessed from the INPUT/OUTPUT menu (Continued)

Menu	Functions	Function key	See page
SWITCH-ER OUTPUT	Making settings relating to switcher output signals • Setting the phase relation between the external sync input signal and the output reference signal • Selecting the output reference signal format (The following settings must be done separately for each selected output signal.) • Determining use of a switcher output for input to the DMK-7000 • Clip adjustment (white clip and dark clip for luminance signal, video signal clip for D2 systems, chrominance signal clip for D1 systems) • Adjusting the vertical blanking interval • Selecting the bit rounding function for 10- to 8-bit conversion (D2 systems only) • Selecting the bit rounding function for luminance signal 10- to 8-bit conversion (D1 systems only) • Selecting the bit rounding function for chrominance signal 10- to 8-bit conversion (D1 systems only)	F6 (SWER OUTPUT)	14-30
DMK OUTPUT	Making settings relating to DMK-7000 output signals • Setting the phase relation between the external sync input signal and the output reference signal • Selecting the output reference signal format (The following settings must be done separately for each selected output signal.) • Clip adjustment (white clip and dark clip for luminance signal, video signal clip for D2 systems, chrominance signal clip for D1 systems) • Adjusting the vertical blanking interval • Selecting the bit rounding function for 10- to 8-bit conversion (D2 systems only) • Selecting the bit rounding function for luminance signal 10- to 8-bit conversion (D1 systems only) • Selecting the bit rounding function for chrominance signal 10- to 8-bit conversion (D1 systems only)	F7 (DMK OUTPUT)	14-34

(Continued)

Menus accessed from the INPUT/OUTPUT menu (Continued)

Menu	Functions	Function key	See page
THROUGH MODE	Making settings relating to through mode (the mode in which sync signals included in output signals are passed through unchanged, instead of being replaced by an internally generated sync signal) • Input through mode setting • Output through mode setting	F8 (THRU MODE)	14-35
OUTPUT ASSIGN	Assigning switcher and DMK-7000 output signals • Selecting the clean output of the switcher or DMK-7000. • Selecting the preview outputs of the switcher M/E banks and DMK-7000 • Defining the switcher and DMK-7000 preview outputs • Setting the auto clean function • Setting the auto preview function • Setting the auto preview 2 function	F9 (OUTPUT ASSIGN)	14-37

Carrying out setup relating to switcher input signals (SWITCHER INPUT menu) (in a D2 system)

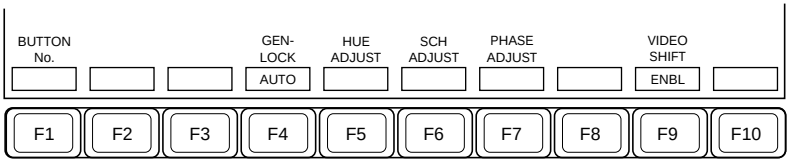
You can use the SWITCHER INPUT menu for the following settings.

- **Selecting the GEN LOCK mode for an analog input signal:** Select AUTO, SYNC or REF.
  AUTO: Lock, using the color burst signal as reference. If there is no color burst signal, use the horizontal sync signal as reference.
  SYNC: Lock, using the horizontal sync signal as reference.
  REF: Lock, using the external sync signal input to the switcher as reference. When the input signal is accompanied with no sync signal, select this mode.
- **Adjusting the hue of an analog input signal:** Adjust the hue of the analog input signal in the range –45.0 to +45.0 degrees.
- **Adjusting the SCH (subcarrier-to-horizontal) phase of an analog input signal**
- **Adjusting the horizontal phase of an input signal:** Adjust the horizontal phase of the input signal in the range –16 to +16 CK (clock cycles).
- **Selecting automatic color framing correction by video shifting:** If the color framing phase of the input signal is inverted, the automatic color framing correction function shifts the image horizontally to maintain color framing continuity.

To carry out these settings, use the following procedure.

1 In the INPUT/OUTPUT menu, press F3 (SWER INPUT).

The SWITCHER INPUT menu appears.



Function key indications in the SWITCHER INPUT menu

For details of indications other than for the function keys in the SWITCHER INPUT menu, see the next item "Indications in the SWITCHER INPUT menu".

2 Select the cross-point button to which the settings apply, using either of the following methods.

- Hold down F1 (BUTTON No.) and press the required cross-point button in the auxiliary bus bank.
- Hold down F1 (BUTTON No.) and use the cursor movement keys to select the required cross-point button.
- Hold down F1(BUTTON No.) and turn control knob 2.
- Hold down F1(BUTTON No.) and enter the required cross-point button number using the numeric keypd.

(Continued)

3 Carry out the operation in the following table to make the required setting.

Setting	Operation
Selecting the GEN LOCK mode for an analog input signal	Press F4 (GEN LOCK). This cycles the setting through AUTO, SYNC and REF.
Adjusting the hue of an analog input signal	Press F5 (HUE ADJUST), turning it to reverse video, and adjust control knob 4.
Adjusting the SCH phase of an analog input signal	Press F6 (SCH ADJUST), turning it to reverse video, and adjust control knob 4 so that the SCH indication is a black square (■).
Adjusting the horizontal phase of an input signal	Press F7 (PHASE ADJUST), turning it to reverse video, and adjust control knob 4.
Selecting automatic color framing correction by video shifting	Press F9 (VIDEO SHIFT). This toggles the setting between ENBL (automatic color framing correction enabled) and DSBL (automatic color framing correction disabled).

Indications in the SWITCHER INPUT menu

NO: cross-point button number
NAME: signal name
TYPE: input signal type
- **DIG:** digital
- **COL:** analog color
- **MONO:** analog monochrome

BITS: number of digital input signal data bits (8 or 10)
GENLOCK: GEN LOCK mode for analog input (AUTO, SYNC or REF)
HUE: hue adjustment value for an analog signal
SCH: subcarrier-to-horizontal phase state
- ◀: phase lagging
- ■: phase correct
- ▶: phase leading

PHASE ADJUST: input signal phase adjustment value
VIDEO SHIFT: indication of whether the input signal has been shifted horizontally by the video shifting function.
- **NORM:** not shifted
- **SHIFT:** shifted

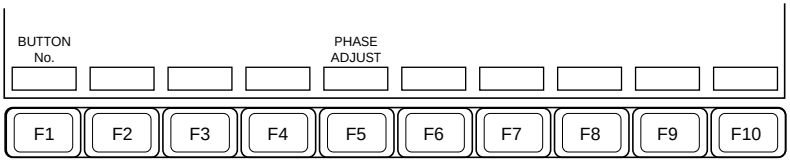
Carrying out setup relating to switcher input signals (SWITCHER INPUT menu) (in a D1 system)

You can use the SWITCHER INPUT menu to adjust the horizontal phase of the input signal in the range –16 to +16 CK (clock cycles).

To carry out these settings, use the following procedure.

1 In the INPUT/OUTPUT menu, press F3 (SWER INPUT).

The SWITCHER INPUT menu appears.



Function key indications in the SWITCHER INPUT menu

For details of indications other than for the function keys in the SWITCHER INPUT menu, see the next item "Indications in the SWITCHER INPUT menu".

2 Select the cross-point button to which the settings apply, using either of the following methods.

- Hold down F1 (BUTTON No.) and press the required cross-point button in the auxiliary bus bank.
- Hold down F1 (BUTTON No.) and use the cursor movement keys to select the required cross-point button.
- Hold down F1(BUTTON No.) and turn control knob 2.
- Hold down F1(BUTTON No.) and enter the required cross-point button number using the numeric keypad.

(Continued)

3 Press F5 (PHASE ADJUST), turning it to reverse video, and adjust control knob 4.

Indications in the SWITCHER INPUT menu

NO: cross-point button number
NAME: signal name
BITS: number of digital input signal data bits (8 or 10)
PHASE ADJUST: input signal phase adjustment value

Carrying out setup relating to chroma key input signals (CHROMA KEYER INPUT menu)

You can use the CHROMA KEYER INPUT menu for the following settings.

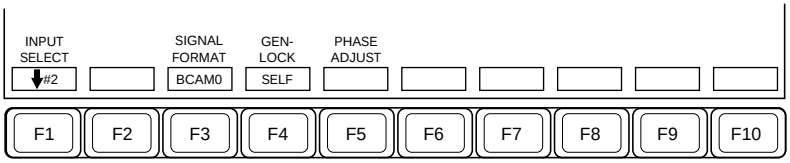
- **Selecting the input signal format:** You can select the following formats:
  In a 525-line system
  - **B-CAM(0):** Betacam format (setup 0)
  - **B-CAM(7.5):** Betacam format (setup 7.5 IRE)
  - **SMPTE:** SMPTE format
  - **RGB:** RGB format

  In a 625-line system
  - **EBU:** EBU format
  - **RGB:** RGB format
- **Selecting the GEN LOCK mode for analog input:** Select SELF, REF, or SYNC.
  SELF: Lock, using the horizontal sync signal included in the luminance signal or the G signal as reference.
  REF: Lock, using the external sync signal input to the switcher as reference. Select this mode for an input with no sync signal.
  SYNC: Lock, using the input sync signal as reference.
- **Adjusting the horizontal phase of an input signal:** Adjust the horizontal phase of the input signal in the range –16 to +16 CK (clock cycles).

To carry out these settings, use the following procedure.

1 In the INPUT/OUTPUT menu, press F4 (CRK INPUT).

The CHROMA KEYER INPUT menu appears.



Function key indications in the CHROMA KEYER INPUT menu

For details of indications other than for the function keys in the CHROMA KEYER INPUT menu, see the next item "Indications in the CHROMA KEYER INPUT menu".

2 Press F1 (INPUT SELECT) or turn control knob 2 to move the cursor and select the input signal to which the settings apply.

3 Carry out the operation in the following table to make the required setting.

Setting	Operation
Selecting the input signal format	Press F3 (SIGNAL FORMAT). This cycles through the following settings: In a 525-line system: B-CAM(0), B-CAM(7.5), RGB, SMPTE In a 625-line system: EBU, RGB
Selecting the GEN LOCK mode for an analog input signal	Press F4 (GENLOCK). This cycles the setting through SELF, SYNC, and REF.
Adjusting the horizontal phase of an input signal	Press F5 (PHASE ADJUST), turning it to reverse video, and adjust control knob 4.

Indications in the CHROMA KEYER INPUT menu

INPUT: input signal

SIGNAL FORMAT: input signal format

- 525-line system: B-CAM(0), B-CAM(7.5), RGB, SMPTE
- 625-line system: EBU, RGB

GENLOCK: GEN LOCK mode for analog input (SELF, SYNC, or REF)

PHASE ADJUST: input signal phase adjustment value

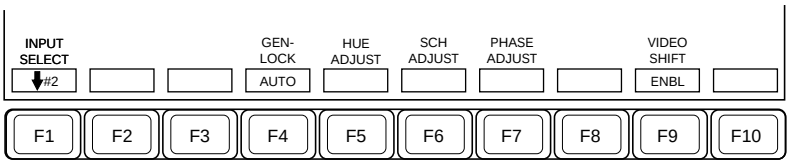
Carrying out setup relating to DMK-7000 input signals (DMK INPUT menu) (in a D2 system)

You can use the DMK INPUT menu to make the same settings as the SWITCHER INPUT menu *(see page 14-20)* relating to the DMK-7000 input signals.

To carry out the settings using the DMK INPUT menu, proceed as follows.

1 In the INPUT/OUTPUT menu, press F5 (DMK INPUT).

The DMK INPUT menu appears.



Function key indications in the DMK INPUT menu

2 Press F1 (INPUT SELECT) or turn control knob 2 to move the cursor and select the input signal to which the settings apply.

Selectable input signals
DSK-1 VIDEO INPUTS to DSK-4 VIDEO INPUTS,
DSK-1 KEY INPUTS to DSK-4 KEY INPUTS, PGM/BKGD1, PRESET/BKGD2, EMG/BKGD3, BKGD4, DME-I/F VIDEO INPUT, DME-I/F KEY INPUT

3 Carry out the operation in the same way as for step **3** of the operating procedure under the section “Carrying out setup relating to switcher input signals (SWITCHER INPUT menu) (in a D2 system)” *(see page 14-22)*.

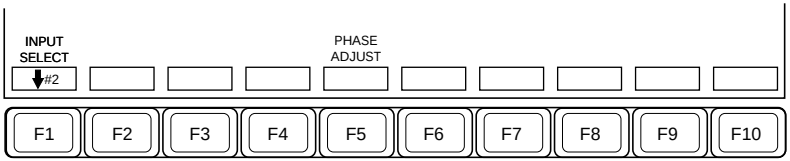
Carrying out setup relating to DMK-7000 input signals (DMK INPUT menu) (in a D1 system)

You can use the DMK INPUT menu to adjust the horizontal phase of the input signal in the range –16 to +16 CK (clock cycles).

To carry out the settings using the DMK INPUT menu, proceed as follows.

1 In the INPUT/OUTPUT menu, press F5 (DMK INPUT).

The DMK INPUT menu appears.



Function key indications in the DMK INPUT menu

2 Carry out the operation in the same way as for step **2** of the operating procedure under the preceding section “Carrying out setup relating to DMK-7000 input signals (DMK INPUT menu) (in a D2 system)” *(see the previous page)*.

3 Press F7 (PHASE ADJUST), turning it to reverse video, and adjust control knob 4.

Carrying out setup relating to switcher output signals (SWITCHER OUTPUT menu)

You can use the two menu screens accessible from the SWITCHER OUTPUT menu for the following settings.

Settings in screen 1

- **Setting the phase relation between the external sync input signal and the output reference signal:** Adjust in the range –28 to +84 μs.
- **Selecting the output reference signal format (D1-625 systems excluded):** Select the signal output from the REF OUTPUT connector on the switcher to be a sync (SYNC) signal or black burst (B.B.) signal.

Settings in screen 2

- **Determining use of a switcher output for input to the DMK-7000:** When inputting a switcher output signal to the DMK-7000, determine its use from among the following.
  - **V/K:** Input the switcher output signal to the DMK-7000 as a video or key signal, using a DMK-7000's input connector among the DSK1 to DSK4 VIDEO INPUTS or DSK1 to DSK4 KEY INPUTS.
  - **BKGD:** Input the switcher output signal to the DMK-7000 as a downstream key background signal, using a DMK-7000's input connector among the PGM/BKGD1, PRESET/BKGD2, EMG/BKGD3, and BKGD4.
  - **NO USE:** The switcher output signal is not input to the DMK-7000.

  Note

  In 3.5-M/E systems, always select "BKGD" for the PGM and PST output.

- **Clip adjustment:** Make the following clip adjustments.
  - **White clip value for luminance signal:** Adjust in the range 0.0 to 140.0 IRE (for D2 systems) or 0.0 to 110.0% (for D1 systems).
  - **Dark clip value for luminance signal:** Adjust in the range –43.0 to 7.5 IRE (for D2 systems) or –7.0 to 0.0% (for D1 systems).
  - **Video signal clip values (D2 systems only):** Adjust the upper clip in the range 0.0 to 140.0 IRE and lower clip in the range –43.0 to 7.5 IRE.
  - **Chrominance signal clip value (D1 systems only):** Adjust in the range 0.0 to 114.0%.

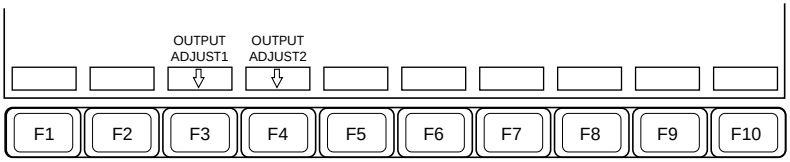
- **Adjusting the vertical blanking interval:** Adjust the vertical blanking interval in the range 10H to 20H (lines) (525-line systems) or 13H to 25H (lines) (625-line systems).
  Depending on the output signal selection, the vertical blanking interval setting applies to the signals from the following three groups of connectors:
  - PGM OUTPUTS, PST OUTPUT, ME-1 OUTPUT, ME-2 OUTPUT, ME-3 OUTPUT, CLEAN OUTPUT
  - EDIT PVW OUTPUT
  - AUX BUS OUTPUT 1 to AUX BUS OUTPUT 13

  Thus, for example, selecting M/E-1 OUTPUT as the output signal applies the same vertical blanking interval setting to all members of the group (PGM OUTPUTS, PST OUTPUT, ME-2 OUTPUT, ME-3 OUTPUT, and CLEAN OUTPUT).
- **Selecting the bit rounding function for 10- to 8-bit conversion (D2 systems only):** Set the bit rounding function on or off.
- **Selecting the bit rounding function for luminance signal 10- to 8-bit conversion (D1 systems only):** Set the luminance signal bit rounding function on or off.
- **Selecting the bit rounding function for chrominance signal 10- to 8-bit conversion (D1 systems only):** Set the chrominance signal bit rounding function on or off.

To carry out these settings, use the following procedure.

1 In the INPUT/OUTPUT menu, press F6 (SWER OUTPUT).

The SWITCHER OUTPUT menu appears.

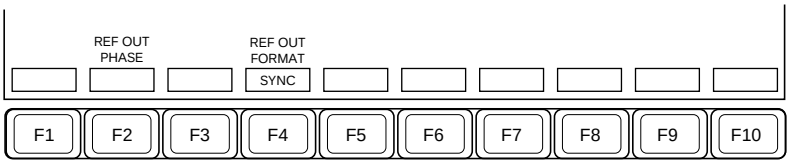


Function key indications in the SWITCHER OUTPUT menu

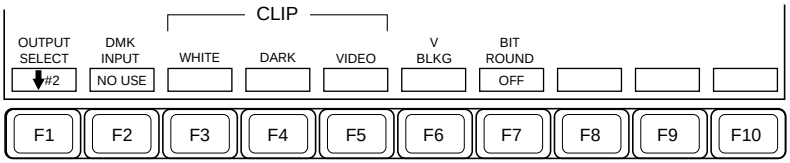
(Continued)

2 Carry out the operation in the following table according to the type of setting you wish to make.

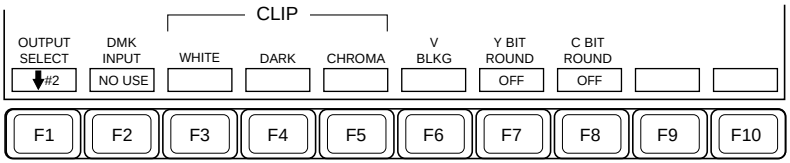
Setting	Operation
Setting made in adjustment screen 1	Press F3 (OUTPUT ADJUST1) to switch to adjustment screen 1, then continue to step **3**.
Setting made in adjustment screen 2	Press F4 (OUTPUT ADJUST2) to switch to adjustment screen 2, then continue to step **3**.



Function key indications in adjustment screen 1



Function key indications in adjustment screen 2 (D2 systems)



Function key indications in adjustment screen 2 (D1 systems)

3 Carry out the operation in the following tables to make the required setting.

Settings in adjustment screen 1

Setting	Operation
Setting the phase relation between the external sync input signal and the output reference signal	Press F3 (REF OUT PHASE), turning it to reverse video, and adjust with control knob 4.
Selecting the output reference signal format	Press F4 (REF OUT FORMAT). This toggles the setting between SYNC and B.B.

Settings in adjustment screen 2

Before proceding to the operation in the following table to make the required setting, press F1 (OUTPUT SELECT) or turn control knob 2 to move the cursor and select the input signal to which the settings apply.

Selectable output signals

PGM OUTPUTS, PST OUTPUT, ME-1 OUTPUT, ME-2 OUTPUT, ME-3 OUTPUT, CLEAN OUTPUT, AUX BUS OUTPUT 1 to AUX BUS OUTPUT 13, EDIT PVW OUTPUT

Setting	Operation
Determining use of a switcher output for input to the DMK-7000	Press F2 (DMK INPUT). This cycles the setting through BKGD, V/K, and NO USE.
White clip value for luminance signal	Press F3 (WHITE), turning it to reverse video, and adjust with control knob 4.
Dark clip value for luminance signal	Press F4 (DARK), turning it to reverse video, and adjust with control knob 4.
Video signal clip values (D2 systems only)	Press F5 (VIDEO), turning it to reverse video, and adjust the upper clip with control knob 3 and the lower clip with control knob 4.
Chrominance signal clip value (D1 systems only)	Press F5 (CHROMA), turning it to reverse video, and adjust with control knob 4.
Adjusting the vertical blanking interval	Press F6 (V BLKG), turning it to reverse video, and adjust with control knob 4.
Selecting the bit rounding function for 10- to 8-bit conversion (D2 systems only)	Press F7 (BIT ROUND). This toggles the setting on and off.
Selecting the bit rounding function for luminance signal 10- to 8-bit conversion (D1 systems only)	Press F7 (Y BIT ROUND). This toggles the setting on and off.
Selecting the bit rounding function for chrominance signal 10- to 8-bit conversion (D1 systems only)	Press F8 (C BIT ROUND). This toggles the setting on and off.

Carrying out setup relating to DMK-7000 output signals (DMK OUTPUT menu)

You can use the two menu screens accessible from the DMK OUTPUT menu for the following settings.

Settings in screen 1

You can make the same settings as in screen 1 of the SWITCHER OUTPUT menu *(see page 13-30)* relating to the DMK-7000 output signals.

Settings in screen 2

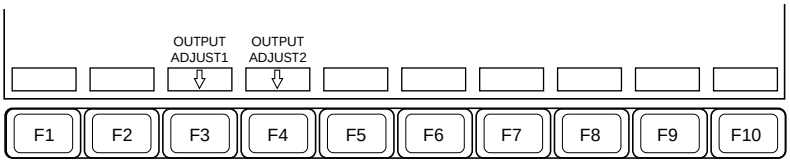
You can make the same settings as in screen 2 of the SWITCHER OUTPUT menu *(see page 13-30)* relating to the DMK-7000 output signals.
Note, however, there are the following differences between the two menus.

- Setting to determine use of a switcher output for input to the DMK-7000 does not apply to the DMK OUTPUT menu.
- In the DMK OUTPUT menu, you can set the vertical blanking interval for each output signal individually.

To carry out the settings using the DMK OUTPUT menu, proceed as follows.

1 In the INPUT/OUTPUT menu, press F7 (DMK OUTPUT).

The DMK OUTPUT menu appears.



Function key indications in the DMK OUTPUT menu

2 Carry out the operation in the same way as for steps **2** and **3** of the operating procedure under the section “Carrying out setup relating to switcher output signals (SWITCHER OUTPUT menu)” *(see page 14-30)*.

Output signals selectable for the settings made in screen 2

DSK1 to DSK4 PROGRAM OUTPUTS,
DSK1 to DSK4 PREVIEW/KEY OUTPUT, CLEAN OUT,
DME-I/F VIDEO OUTPUT, DME-I/F KEY OUTPUT

Carrying out setup relating to through mode (THROUGH MODE menu)

You can use the THROUGH MODE menu for the following settings relating to through mode (the mode in which sync signals included in output signals are passed through unchanged, instead of being replaced by an internally generated sync signal).

- **Input through mode setting:** Set the input through mode on or off.
- **Output through mode setting:** Set the output through mode on or off.

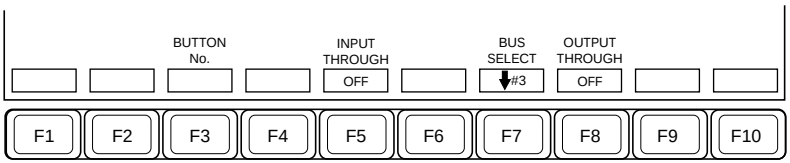
Notes

- The sync signal in the input signal is passed through on the output signal only if the input through mode and the output through mode are both on.
- The through mode function does not apply to internally generated sync signals.

To carry out these settings, use the following procedure.

1 In the INPUT/OUTPUT menu, press F8 (THRU MODE).

The THROUGH MODE menu appears.



Function key indications in the THROUGH MODE menu

2 Select the cross-point button to which the input through mode setting applies, using either of the following methods:

- Hold down F3 (BUTTON No.) and press the required cross-point button in the auxiliary bus bank.
- Hold down F3 (BUTTON No.) and use the cursor movement keys to select the required cross-point button.
- Hold down F3(BUTTON No.) and turn control knob 2.
- Hold down F3(BUTTON No.) and enter the required cross-point button number using the numeric keypad.

(Continued)

3 Press F5 (INPUT THROUGH) to set the input through mode on or off.

Pressing F5 toggles the setting on and off.

4 Press F7 (BUS SELECT) to move the cursor and select the output bus to which the output through mode setting applies.

5 Press F8 (OUTPUT THROUGH) to set the output through mode on or off.

Pressing F8 toggles the setting on and off.

Carrying out setup relating to switcher and DMK-7000 output signal assignment (OUTPUT ASSIGN menu)

You can use the OUTPUT ASSIGN menu for the following settings.

• **Output signal selection:** Assign the following two groups of signals.

Switcher clean output (SWER CLEAN): Select one of the following nine signals for output from the switcher's CLEAN OUTPUT connector.

M/E-1 CLEAN, M/E-1 PVW (preview), M/E-1 KEY, M/E-2 CLEAN, M/E-2 PVW, M/E-2 KEY, M/E-3 CLEAN, M/E-3 PVW, and M/E-3 KEY.

The M/E preview or key preview is output according to the preview output definition made by F9 (DEFINE PVW).

DMK-7000 clean output (DMK CLEAN): Select one of the following 6 signals for output from the DMK-7000's CLEAN OUTPUT connector.

P/P (program/preset), PGM (program), PST (preset), EMG (emergency), BKGD4 (background 4) and EDPVW (edit preview).

About EDIT PVW signal assigned to the DMK-7000 clean output

By assigning the EDIT PVW signal to the DMK-7000 clean output, you can select the final program output which has passed through the DMK-7000 on the EDIT PVW bus.

In order to do this, the following preparations are necessary.

(1) Connect the EDIT PVW output of the DVS-7000A to the BKGD4 input of the DMK-7000.

(2) Connect the DSK4 PGM output (final DSK PGM output) of the DMK-7000 to the BKGD3 input of the DMK-7000.

(3) In the XPT ASSIGN menu *(see page 14-68)*, assign "DSK PGM" to a cross-point button.

Notes

The following restrictions apply to the above method of selecting the final program output.

• It is not available to use in a D2 system.

• It is only valid when the DMK-7000 keyer configuration is set to CASCAD (cascade) mode.

• The output image is lowered by one line.

• It is not possible to use through mode *(see page 14-35)*.

• The DSK PGM selection state on the EDIT PVW bus is not reflected in key frames and snapshots.

- The above signal selection operation can only be carried out from a switcher control panel (BKDS-7011/7012/7021/7022/7023) or editor which can be directly connected to both the DVS-7000A and DMK-7000 processors. It cannot be carried out from other controllers (such as an M/E remote panel using the BKDS-2010).

- **Switching the preview output for a switcher M/E bank or DMK-7000's downstream keyer:** Select PVW, KEY or CLEAN as the preview output of a switcher M/E bank or DMK-7000's downstream keyer.

- **Defining the PVW output of a switcher M/E bank or DMK-7000's downstream keyer:**

  For M/E banks 1 to 3: Select L-PVW (look-ahead preview) or K-PVW (key preview).
  To carry out K-PVW in an M/E block, you require the optional BKDS-7280 M/E PVW board.

Option

  For DSK1 to 4:
  - When the DMK-7000's keyer configuration is set to CASCAD (cascade) in the SYSTEM CONFIGURATION menu, select L-PVW, K-PVW, or F-PVW (full-key preview).
  - When the DMK-7000's keyer configuration is set to PARA (parallel), INDPND (independent), or DUAL (dual cascade) in the SYSTEM CONFIGURATION menu, K-PVW is selected automatically.

About L-PVW, K-PVW, and F-PVW

- L-PVW (look-ahead preview)
  The L-PVW output consists of the output video after a transition executed according to the settings made with the next transition selection buttons in the transition control section has been applied.
  For the downstream keyers (DSK1 to DSK4), L-PVW can be selected only for a 3.5-M/E system with the keyer configuration set to CASCAD (cascade).
- K-PVW (key preview)
  For the M/E-1 to M/E-3 banks, the K-PVW output consists of background video in which both key 1 and key 2 have been inserted.
  For the downstream keyers (DSK1 to DSK4), the K-PVW output consists of background video in which the key has been inserted. If the keyer configuration is set to CASCAD (cascade), the program output of the preceding downstream keyer is used as the background video.

• F-PVW (full-key preview)
F-PVW can be selected only when the keyer configuration is set to CASCAD.
The F-PVW output consists of the preview output of the preceding downstream keyer in which the keys of the preceding and current downstream keyers have been inserted. For DSK4, therefore, you can obtain F-PVW output with four keys inserted.

• **Auto clean function:** In a 3.5-M/E system, by connecting the CLEAN output of the DVS-7000A to BKGD4 on the DMK-7000, signals corresponding as shown below to the signals selected on the PGM and PST buses are output from the CLEAN OUT connectors of the DMK-7000.

Signals selected on the PGM bus	**Signals selected on the PST bus**	**Signals output from the CLEAN OUT connectors of the DMK-7000**
M/E-1, M/E-2, M/E-3	Any signal	M/E-1, M/E-2, M/E-3 CLEAN signals
Other than M/E-1, M/E-2, M/E-3	M/E-1, M/E-2, M/E-3	Signals selected on the PGM bus
Other than M/E-1, M/E-2, M/E-3	Other than M/E-1, M/E-2, M/E-3	PGM/PST CLEAN signals

In a 3-M/E system, if M/E-1 and M/E-2 are selected on the A bus of the M/E specified as the last (for example M/E-3), then the respective M/E clean signals are output from the CLEAN OUT connectors of the DVS-7000A. If signals other than M/E-1 and M/E-2 are selected on the A bus of M/E-3, then the M/E-3 clean signals are output from the CLEAN OUT connectors of the DVS-7000A.

When the auto clean function is enabled (“ENBL”), the settings of F1, F3, and F5 are ignored in relation to the output signals from the CLEAN OUT connectors of the DVS-7000A and DMK-7000. Furthermore, the auto preview function enabled with F4 (AUTO PVW) does not operate.

• **Auto preview function:** When you press the NEXT TRANSITION button in the transition control section of an M/E bank, the preview signal for that M/E bank is output from the CLEAN OUT connector of the DVS-7000A.
At this point the NEXT TRANSITION button lights green, to indicate that the preview for the M/E bank is being output.

• **Auto preview 2 function:** With this function the EDIT PVW bus operates as follows.
In a 3.5-M/E system, with the final preview output of the DMK-7000 connected to the DIRECT IN input of the DVS-7000A, when you select the M/E1 PVW, M/E2 PVW, M/E3 PVW, or PRESET signal on the EDIT PVW bus, then depending on the signal which is on air, the output signal from the EDIT PVW bus is switched as shown in the following table.

Signal selected on the EDIT PVW bus	Condition	Output signal from the EDIT PVW bus
M/E1 PVW	M/E1 on air	M/E1 PVW
	Not on air	M/E1 PGM
M/E2 PVW	M/E2 on air	M/E2 PVW
	Not on air	M/E2 PGM
M/E3 PVW	M/E3 on air	M/E3 PVW
	Not on air	M/E3 PGM
PRESET	When the same M/E is selected on the PGM and PST buses	M/E1 PVW, M/E2 PVW, M/E3 PVW
	Other cases	PGM/PST PVW

In a 3-M/E system, the effect depends on the final M/E setting. For example, if M/E-3 is the final M/E, when you select the M/E1 PVW, M/E2 PVW, or PRESET signal on the EDIT PVW bus, then depending on the signal which is on air, the output signal from the EDIT PVW bus is switched as shown in the following table.

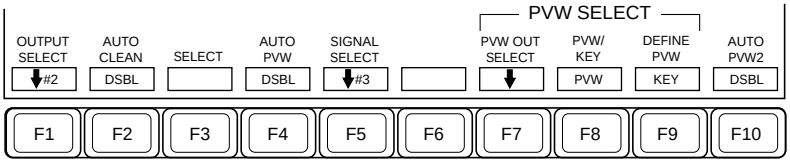
Signal selected on the EDIT PVW bus	Condition	Output signal from the EDIT PVW bus
M/E1 PVW	M/E1 on air	M/E1 PVW
	Not on air	M/E1 PGM
M/E2 PVW	M/E2 on air	M/E2 PVW
	Not on air	M/E2 PGM
PRESET	When the same M/E is selected on the M/E-3 A and B buses	M/E1 PVW, M/E2 PVW
	Other cases	M/E3 PVW

If M/E-1 or M/E-2 is the final M/E, then the above table applies, with the appropriate bank interchanged with M/E-3.

To carry out these settings, use the following procedure.

1 In the INPUT/OUTPUT menu, press F9 (OUTPUT ASSIGN).

The OUTPUT ASSIGN menu appears.



Function key indications in the OUTPUT ASSIGN menu

(Continued)

2 Carry out the operation in the following table to make the required setting.

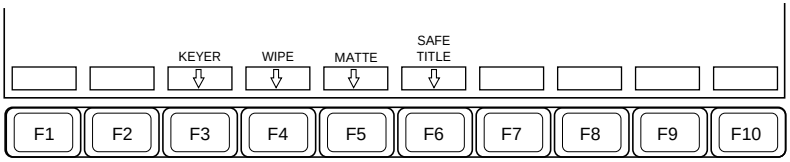
Setting	Operation
Output signal selection	Use the following procedure. **1** Press F1 (OUTPUT SELECT), and move the cursor to select the output signal group from SWER CLEAN (switcher clean output), and DMK CLEAN (DMK-7000 clean output). (The list of output signals changes according to the selection.) **2** Press F5 (SIGNAL SELECT), and move the cursor to select the output signal from the list. **3** Press F3 (SELECT), to confirm the selection of the output signal.
Switching the preview output for a switcher M/E bank or DSK 1 to 4	Use the following procedure. **1** Press F7 (PVW OUT SELECT), and move the cursor to select the PVW output, to which the subsequent setting applies, from among M/E-1 to M/E-3 and DSK1 to DSK4. **2** Press F8 (PVW/KEY). This cycles the setting through PVW, KEY, and CLEAN for the M/E, or toggles between PVW and KEY for the DSK.
Defining the PVW output of a switcher	Use the following procedure. **1** Press F7 (PVW OUT SELECT), and move the cursor to select the PVW output, to which the subsequent setting applies, from among M/E-1 to M/E-3 and DSK1 to DSK4. **2** Press F9 (DEFINE PVW). This toggles between L-PVW and K-PVW for the M/E, or cycles the setting through L-PVW, K-PVW, and F-PVW for the DSK.
Setting the auto clean function	Press F2 (AUTO CLEAN) to toggle between ENBL and DSBL. ENBL: The auto clean function is enabled. DSBL: The auto clean function is disabled.
Auto preview setting	Press F4 (AUTO PVW), to toggle between “ENBL” and “DSBL”. ENBL: The auto preview function is enabled. DSBL: The auto preview function is disabled.
Setting the auto preview 2 function	Press F10 (AUTO PVW2) to toggle between ENBL and DSBL. ENBL: The auto preview 2 function is enabled. DSBL: The auto preview 2 function is disabled.

Setup Relating to Keyers, Wipes and Other Effects (EFFECT Menu)

To carry out setup operations relating to keyers, wipes and other effects, access the EFFECT menu.

Accessing the EFFECT menu

In the SETUP menu, select item 3 (EFFECT).
The EFFECT menu appears.



Function key indications in the EFFECT menu

Selecting the next menu

When you have displayed the EFFECT menu, access the next menu according to the data item you wish to set.
The menus you can access from the EFFECT menu are listed in the following table, together with their functions, and the function keys you need to press to access them.

Menus accessed from the EFFECT menu

Menu	Functions	Function key	See page
KEYER	Making the following settings relating to keyers. • Toggling the key memory function on and off • Saving default values of clip, gain and density for individual keyers • Toggling the chroma key memory on or off, and making chroma key memory settings • Determining which to carry out first, masking or border processing.	F3 (KEYER)	14-44
WIPE	Making the following settings relating to wipes. • Adjusting the wipe pattern center position • Adjusting the softness of the wipe edge	F4 (WIPE)	14-46
MATTE	Making the following settings relating to matte generators. • Toggling the illegal color limiter function on and off • Setting the luminance level maximum value • Setting the luminance level minimum value	F5 (MATTE)	14-47
SAFE TITLE	Making the following settings relating to the safe title function. • Selecting an output to which to add a safe title. • Toggling the safe title box on and off • Toggling the safe title cross on and off	F6 (SAFE TITLE)	14-48

Carrying out setup relating to keyers (KEYER menu)

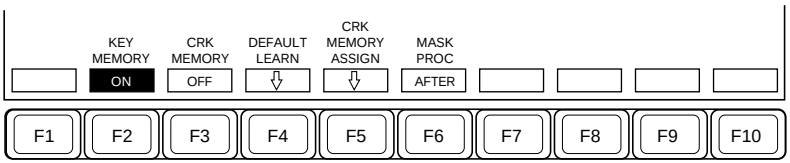
You can use the KEYER menu for the following settings.

- **Toggling the key memory function on and off**
- **Saving default values of clip, gain and density for individual keyers**
- **Toggling the chroma key memory function on and off**
- **Setting input signals for the six chroma key memories**
- **Determining which to carry out first, masking or border processing:**
  Determine whether to carry out masking after border processing (factory default setting) or before border processing.

To carry out these settings, use the following procedure.

1 In the EFFECT menu, press F3 (KEYER).

The KEYER menu appears.



Function key indications in the KEYER menu

2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Toggling the key memory function on and off	Press F2 (KEY MEMORY). This toggles the setting on and off.
Saving default values of clip, gain and density	Use the following procedure. **1** Press F4(DEFAULT LEARN) to display the function key indications for saving default values. **2** According to the keyer for which you wish to save default values, press one of F1 (M/E-1 KEY1) to F10 (DSK4). The current settings on the selected keyer are saved as the default values.
Toggling the chroma key memory on and off	Press F3 (CRK MEMORY). This toggles the setting on and off.

(Continued)

(Continued)

Setting	Operation
Making the chroma key memory settings	Use the following procedure. **1** Press F5 (CRK MEMORY ASSIGN), to display the CHROMA KEY MEMORY ASSIGN menu. **2** Either press F1 (MEMORY SELECT) or turn control knob 2 to align the cursor with one of the six chroma key memories. **3** To assign one of the chroma key analog component inputs 1 to 4 as the chroma key memory, press the corresponding one of function keys F4 (1) to F7 (4). To assign an input signal assigned to the key bus in a D1 system, hold down F8 (KEY BUS) and press the corresponding cross-point button in the auxiliary bus bank, or hold down F8 and turn control knob 3 to select the input signal. To assign nothing, press F3 (OFF).
Determining whether to carry out masking after or before border processing	Press F6 (MASK PROC). This toggles the setting between AFTER and BEFORE.

Carrying out setup relating to wipes (WIPE menu)

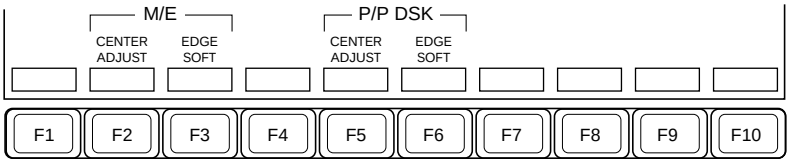
You can use the WIPE menu for the following settings.

- **Adjusting the wipe pattern center position:** For the three types of wipe listed below, you can adjust the center position of the wipe pattern horizontally and vertically in the range –15.0 to +15.0 pixels.
  M/E wipes
  PGM/PST wipes (3.5-M/E systems only)
  Downstream key wipes (3.5-M/E systems and 3-M/E systems equipped with a downstream keyer only)
- **Adjusting the softness of the wipe edge:** For the above three types of wipe, you can adjust the softness of the wipe edge in the range –50.00 to +50.00%.

To carry out these settings, use the following procedure.

1 In the EFFECT menu, press F4 (WIPE).

The WIPE menu appears.



Function key indications in the WIPE menu

2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Adjusting an M/E wipe pattern center position	Press F2 (CENTER ADJUST), turning it to reverse video, and adjust the horizontal position with control knob 3 and the vertical position with control knob 4.
Adjusting a PGM/PST or downstream keyer wipe pattern center position	Press F5 (CENTER ADJUST), turning it to reverse video, and adjust the horizontal position with control knob 3 and the vertical position with control knob 4.
Adjusting the softness of an M/E wipe edge	Press F3 (EDGE SOFT), turning it to reverse video, and adjust with control knob 4.
Adjusting the softness of a PGM/PST or downstream keyer wipe edge	Press F6 (EDGE SOFT), turning it to reverse video, and adjust with control knob 4.

Carrying out setup relating to matte generators (MATTE menu)

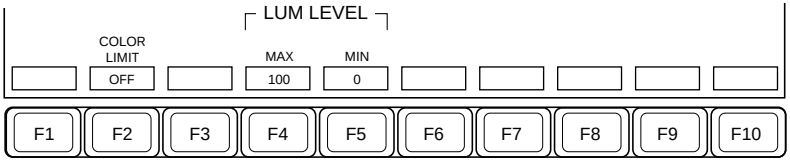
You can use the MATTE menu for the following settings relating to the matte generators built into the switcher and DMK-7000.

- **Toggling the illegal color limiter function on and off**
- **Setting the luminance level maximum value:** Toggle the luminance level maximum value between 100 IRE and 120 IRE (D2 systems) or 100% and 107% (D1 systems).
- **Setting the luminance level minimum value:** Toggle the luminance level minimum value between 0 IRE and –10 IRE (D2 systems) or 0% and –7% (D1 systems).

To carry out these settings, use the following procedure.

1 In the EFFECT menu, press F5 (MATTE).

The MATTE menu appears.



Function key indications in the MATTE menu

2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Toggling the illegal color limiter function on and off	Press F2 (COLOR LIMIT). This toggles the setting on and off.
Setting the luminance level maximum value	Press F4 (MAX). This toggles the setting.
Setting the luminance level minimum value	Press F5 (MIN). This toggles the setting.

Carrying out setup relating to the safe title function (SAFE TITLE menu)

You can use the SAFE TITLE menu for the following settings.

- **Selecting the outputs to which to add a safe title:** Select up to four outputs to which to add a safe title for each of the switcher and DMK-7000.

  Note

  To add a safe title to any of the following switcher or DMK-7000 outputs requires the BKDS-7163 Digital Output Board installed for the output.

  Switcher outputs: PRESET, CLEAN, M/E1 PGM, M/E2 PGM, M/E3 PGM, and AUX1 to AUX13

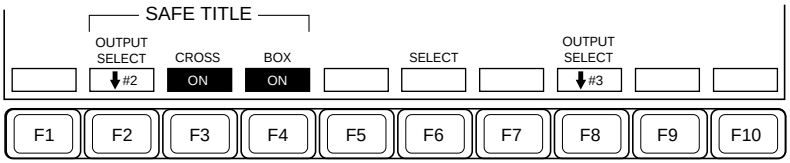
  DMK-7000 outputs: DSK1 PVW, DSK2 PVW, DSK3 PVW, and DSK4 PVW

- **Toggling the safe title box on and off:** Toggle on and off the superimposition of the safe title box on the output video. When set on, set the box size.
- **Toggling the safe title cross on and off:** Toggle on and off the superimposition of the safe title cross on the output video.

To carry out these settings, use the following procedure.

1 In the EFFECT menu, press F6 (SAFE TITLE).

The SAFE TITLE menu appears.



Function key indications in the SAFE TITLE menu

2 Press F2 (OUTPUT SELECT) or turn control knob 2 to move the cursor and select one of the switcher outputs 1 to 4 or DMK-7000 outputs 5 to 8.

3 Press F8 (OUTPUT SELECT) or turn control knob 3 to move the cursor and select an output signal to which to add a safe title.

4 Press F6 (SELECT).

5 Carry out the operation in the following table to make the required setting.

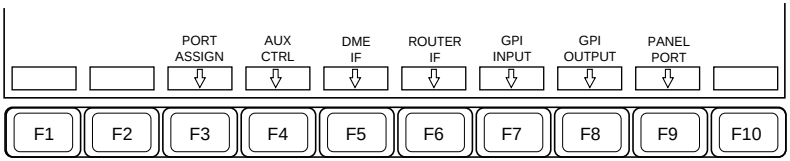
Setting	Operation
Toggling the safe title cross on and off	Press F3 (CROSS). This toggles the setting on and off.
Toggling the safe title box on and off	Press F4 (BOX). This toggles the setting on and off. If set on, adjust control knob 4 to set the box size.

Setup Relating to Interfaces With Peripheral Devices (PERIPH Menu)

To carry out setup operations relating to interfaces with peripheral devices, access the PERIPH menu.

To access the PERIPH menu

In the SETUP menu, select item 4 (PERIPH).
The PERIPH menu appears.



Function key indications in the PERIPH menu

Selecting the next menu

When you have displayed the PERIPH menu, access the next menu according to the data item you wish to set.
The menus you can access from the PERIPH menu are listed in the following table, together with their functions, and the function keys you need to press to access them.

Menus accessed from the PERIPH menu

Menu	Functions	Function key	See page
PORT ASSIGN	Selecting the type of device connected to an RS-422A port of the switcher	F3 (PORT ASSIGN)	14-52
AUX CONTROL	Making the following settings relating to auxiliary bus control from an RS-422A port of the switcher. • Setting the control function for bus control from an RS-422A port • Setting the function for recalling auxiliary bus settings when executing a key frame or snapshot	F4 (AUX CTRL)	14-53
DME INTERFACE	Making the following settings relating to interface settings for a digital multi effects • Making the reentry cross-point button setting • Setting the on-air tally function • Making the auxiliary bus setting for output to DMEs • Assigning DMEs for DME wipes	F5 (DME IF)	14-54

(Continued)

Menus accessed from the PERIPH menu (Continued)

Menu	Functions	Function key	See page
ROUTER INTERFACE	Making settings relating to the interface to the routing switcher	F6 (ROUTER IF)	14-56
GPI INPUT	Making the following settings relating to switcher and DMK-7000 GPI inputs • Selecting the trigger polarity • Selecting the trigger action	F7 (GPI INPUT)	14-57
GPI OUTPUT	Making the following settings relating to switcher and DMK-7000 GPI outputs • Selecting the operation to cause the GPI output • Making the trigger selection	F8(GPI OUTPUT)	14-60
PANEL PORT ASSIGN	Making the following settings • Selecting the communications ports for use by DME 3 to DME 6 buttons. • GPI output port settings • Setting the time code mode for VTR control.	F9 (PANEL PORT)	14-62

Selecting the type of device connected to an RS-422A port of the switcher (PORT ASSIGN menu)

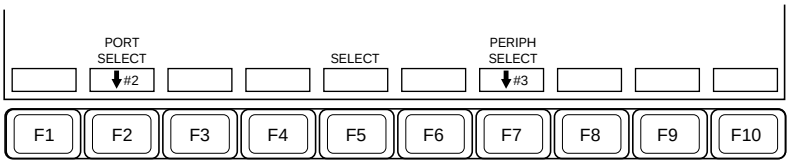
You can use the PORT ASSIGN menu to select the type of device connected to an RS-422A port of the switcher.
Select the type of device from the following.

- **When the port is EDITOR A/REMOTE 1:** editor A, the fifth digital multi effects channel (DME5), or the remote control panel.
- **When the port is EDITOR B/REMOTE 2:** editor B, the sixth digital multi effects channel (DME6) or the remote control panel.

To carry out these settings, use the following procedure.

1 In the PERIPH menu, press F3 (PORT ASSIGN).

The PORT ASSIGN menu appears.



Function key indications in the PORT ASSIGN menu

2 Press F2 (PORT SELECT) or turn control knob 2 to move the cursor and select EDITOR A/REMOTE 1 or EDITOR B/REMOTE 2 as the port to which the setting applies.

3 Press F7 (PERIPH SELECT) to move the cursor and select the connected device.

4 Press F5 (SELECT) to confirm the selection.

Carrying out setup relating to auxiliary bus control from an RS-422A port of the switcher (AUX CONTROL menu)

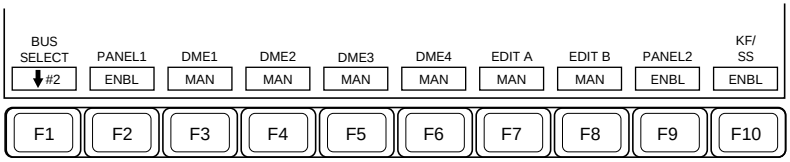
You can use the AUX CONTROL menu for the following settings.

- **Setting the control function for bus control from an RS-422A port:** For the control of the bus outputs from each of the following switcher ports, select ENBL (control enabled), DSBL (control disabled) or MANUAL (status determined by the ENABLE menu setting *(see page 12-4)*).
  PANEL 1, DME 1 to DME 4, EDITOR A/REMOTE 1, EDITOR B/REMOTE 2, PANEL 2/REMOTE 3
- **Selecting the function setting for recalling auxiliary bus settings when executing a key frame or snapshot:** Select whether when executing a key frame or snapshot to recall the saved auxiliary bus settings (ENBL) or keep the current settings unchanged (DSBL).

To carry out these settings, use the following procedure.

1 In the PERIPH menu, press F4 (AUX CTRL).

The AUX CONTROL menu appears.



Function key indications in the AUX CONTROL menu

2 Press F1 (BUS SELECT) or turn control knob 2 to move the cursor and select the bus to which the settings apply from buses AUX 1 to AUX 13, the edit preview (EDIT PVW) bus, or the routing switcher buses (EXT 1 to EXT 36) controlled by the switcher.

(Continued)

3 Carry out the operation in the following table to make the required setting.

Setting	Operation
Setting the control function for bus control from an RS-422A port	According to the switcher port for which you wish to make the setting, press one of F2 (PANEL1) to F9 (PANEL2). • F2 toggles the setting between ENBL and DSBL. • F3 to F9 cycle the setting through ENBL, DSBL and MANUAL.
Setting the function for recalling auxiliary bus settings when executing a key frame or snapshot	Press F10 (KF/SS). This toggles the setting between ENBL and DSBL.

Carrying out setup relating to interface settings for a digital multi effects (DME INTERFACE menu)

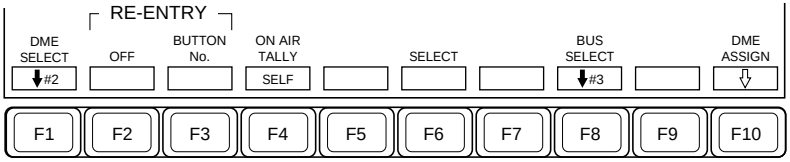
You can use the DME INTERFACE menu for the following settings.

- **Making the reentry cross-point button setting:** Select the cross-point button number for the required auxiliary bus output which is connected to a DME and reinput to the switcher from a DME output.
- **Setting the on-air tally function:** Select the tally output mode to be applied when a DME output is selected on the switcher.
  SELF: When a DME output is selected on the switcher, a tally for the signal used in the DME is output regardless of the DME state.
  OFF: An on-air tally signal for the signals used by the DME is not output from the SERIAL TALLY connector of the switcher.
  By processing DME tally information output by the DME-7000 with a BKDS-7700 Tally Interface Unit, you can obtain more accurate tally information about the signals used by the DME.
- **Making the auxiliary bus setting for output to DMEs:** Select the required auxiliary bus from AUX 1 to AUX 13 connected as video/key input to DMEs.
- **Assigning DMEs for DME wipes:** Select the DMEs used for DME wipes on an M/E bank and the PGM/PST (DSK) bank.

To carry out these settings, use the following procedure.

1 In the PERIPH menu, press F5 (DME IF).

The DME INTERFACE menu appears.



Function key indications in the DME INTERFACE menu

2 Press F1 (DME SELECT) or turn conrol knob 2 to move the cursor and select the required DME input to which the settings apply.

3 Make the required settings in the order of (1) to (4) as shown in the table below.

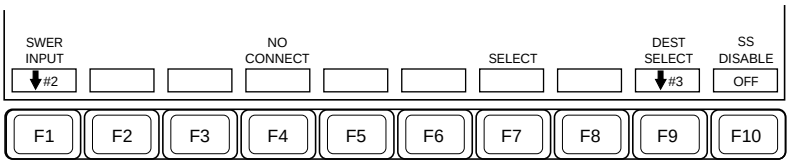
Setting	Operation
(1) Making the reentry cross-point button setting	Hold down F3 (BUTTON No.) and press the required cross-point button in the auxiliary bus bank. Alternatively, hold down F3 and turn control knob 2 to make the selection. **When not using reinput to the switcher** Press F2 (OFF), switching the REENTRY indication to OFF.
(2) Making the auxiliary bus setting for output to DMEs	Use the following procedure. **1** Press F8 (BUS SELECT) or turn control knob 3 to move the cursor and select the required auxiliary bus output. **2** Press F6 (SELECT) to confirm the selection.
(3) Setting the on-air tally function	Press F4 (ON AIR TALLY). This toggles the setting between SELF and OFF.
(4) Assigning DMEs for DME wipes	Use the following procedure. **1** Press F10 (DME ASSIGN), to display the function key indications for DME assignment. **2** Press F2 (M/E SELECT) or turn control knob 2 to move the cursor and select one of the following banks: M/E-1, M/E-2, M/E-3 or P/P DSK. **3** Press F6 (DME SELECT) or turn control knob 3 to move the cursor and select the required DME. If not using the DME wipe function, select “NO ASSIGN”. **4** Press F4 (SELECT) to confirm the DME selection.

Carrying out setup relating to the interface to a routing switcher (ROUTER INTERFACE menu)

When the output of a DVS-B series routing switcher is input to the switcher, you can set the correspondence in a menu. In this way, for example, the signal names assigned on the routing switcher can be displayed on the control panel.
Use the following procedure.

1 In the PERIPH menu, press F6 (ROUTER IF).

The ROUTER INTERFACE menu appears.



Function key indications in the ROUTER INTERFACE menu

2 Press F1 (SWER INPUT), or turn control knob 2 to select the switcher input.

3 Press F9 (DEST SELECT), or turn control knob 3 to align the cursor with the name of the routing switcher bus (DESTINATION).

4 Press F7 (SELECT).

This confirms the correspondence between the routing switcher output and the switcher input.
To end the connection, press F4 (NO CONNECT).

5 To inhibit cross-point switching by the routing switcher when recalling a snapshot, press F10 (SS DISABLE), turning it on.

Carrying out setup relating to GPI inputs (GPI INPUT menu)

You can use the GPI INPUT menu for the following settings relating to switcher and DMK-7000 GPI inputs.

• **Selecting the trigger polarity:** Select the trigger polarity from the following five kinds.

⎍: Trigger on the rising edge of an input pulse.

⎎: Trigger on the falling edge of an input pulse.

⨯: Trigger when the input changes polarity.

NOP: No triggering by input pulse.

LEVEL: When the input level goes low, the specified mode switching occurs. Unlike other types of trigger polarity, in this case you can only select from the screen aspect ratio (4:3/16:9), the signal format (D1/D2), the number of scan lines (525/625), and in the case of the DMK-7000 the EMG input selection, as the operation controlled.

Toggling of settings with trigger polarity set to LEVEL

Item	No input or input level high	Input level low
Aspect ratio	4:3	16:9
Signal format	D1 component	D2 composite
Number of scanning lines	525	625
EMG input selection	PGM input	EMG input

Note

Changing the signal format or the number of scanning lines using a GPI input resets the entire system.

• **Selecting the trigger action:** Select the action triggered by the GPI input.

When the trigger polarity is set to “LEVEL”, you can only select from the operations listed above under “Selecting the trigger polarity”.

When the trigger polarity is set to other than LEVEL, select the required action from the following.

For the switcher:

- On each M/E bank: CUT, AUTO TRANS (auto transition), KEY 1 CUT, KEY 2 CUT, KEY 1 MIX, KEY 2 MIX
- For frame memories 1 and 2: FREEZE, CLEAR
- SS RECALL (recall snapshot), EFF RECALL (recall effect), RECALL & RUN (recall and run effect), KF RUN (run key frame), KF STOP (stop key frame), KF REWIND (rewind key frame)

For the DMK-7000:

- On the PGM/PST bank: CUT, AUTO TRANS (auto transition)
- On each DSK: CUT, AUTO TRANS (auto transition), FTB CUT (cut-to-black), FTB (fade-to-black)
- SS RECALL (recall snapshot), EFF RECALL (recall effect), RECALL & RUN (recall and run effect), KF RUN (run key frame), KF STOP (stop key frame), KF REWIND (rewind key frame)

Combinations of operating bank/function and trigger action

In this menu you can select different trigger actions from the GPI input for each operating bank or function, but not all combinations are possible. Only those combinations which are available appear on the menu screen.
For snapshot and key frame actions, it is not possible to make different settings for different banks or functions. If you make different settings for different banks or functions, the most recent setting applies to all banks or functions.

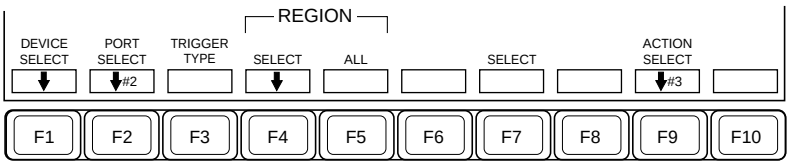
To carry out these settings, use the following procedure.

Note

Disable the GPI ports using the port enable function of the MISC menu *(see page 12-2)* beforehand. After completing the settings with the GPI INPUT menu, enable the GPI ports using the MISC menu.

1 In the PERIPH menu, press F7 (GPI INPUT).

The GPI INPUT menu appears.



Function key indications in the GPI INPUT menu

2 Press F1 (DEVICE SELECT) to move the cursor and select the switcher (SWER) or DMK-7000 (DMK) as the device to which the settings apply.

The menu display changes according to the selection you make.

3 Press F2 (PORT SELECT) or turn control knob 2 to move the cursor and select the required GPI input port of the device selected in step **2**.

4 Press F3 (TRIGGER TYPE), and select the trigger polarity.

Pressing F3 cycles the setting through ⎍, ⎎, ⨯, NOP, and LEVEL.

If you selected LEVEL in this step or DMK in step **2**, continue to step **6**.

5 Press F4 (SELECT) to move the cursor and select the operating bank of the selected device on which the GPI input trigger action is to be carried out.

To apply the same action to all selectable banks
Press F5 (ALL).

6 Press F9 (ACTION SELECT) or turn control knob 3 to move the cursor and select the action to be carried out when the trigger occurs.

To delete a selected action
Select “NO USE” with the cursor.

7 Press F7 (SELECT) to confirm the action selection.

When you have selected any of SS RECALL?, EFF RECALL?, and RECALL?&RUN?
Further specify register numbers using the numeric keypad and press the ENTER button.

8 To trigger actions on more than one operating bank from the GPI input from the same GPI input port, repeat steps **5** to **7** for each bank.

9 To trigger actions from the GPI input from a different GPI input port on the same device, repeat steps **3** to **8** for each GPI input port.

Carrying out setup relating to GPI outputs (GPI OUTPUT menu)

You can use the GPI OUTPUT menu for the following settings relating to switcher and DMK-7000 GPI outputs.

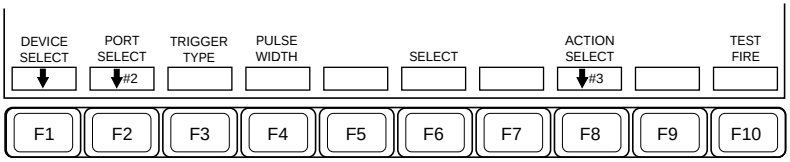
- **Selecting the operation to cause the GPI output:** Select the operation to cause the GPI output from the following.
  For the switcher: any of the combinations of cut, auto transition, key 1 on (tally), or key 2 on (tally), on any of M/E-1, M/E-2 and M/E-3.
  For the DMK-7000: any of the combinations of PGM/PST cut or auto transition, or downstream keyer 1, 2, 3, or 4, cut, auto transition, on (tally), cut-to-black (FTB CUT), or fade-to-black auto transition.
- **Making the trigger selection:** Select the trigger polarity and output pulse width for a GPI output.
  Trigger polarity: Select from the following five kinds.
  - ⎍ : When the trigger occurs, the relay contact opens or the output level turns high, and then that state is maintained for the specified pulse width.
  - ⎎ : When the trigger occurs, the relay contact closes or the output level turns low, and then that state is maintained for the specified pulse width.
  - ⨯ : When the trigger occurs, the relay contact state or output level alternately switches between closed and open or between high and low.
  - **NOP:** The trigger has no effect on the output relay state/output level.
  - **TALLY:** The trigger is used as a key tally. When the key is switched on, the relay contact closes or the output level turns low.

  Output pulse width: Set in the range 1 to 60 fields.

To carry out these settings, use the following procedure.

1 In the PERIPH menu, press F8(GPI OUTPUT).

The GPI OUTPUT menu appears.



Function key indications in the GPI OUTPUT menu

2 Press F1 (DEVICE SELECT) to move the cursor and select the switcher (SWER) or DMK-7000 (DMK) as the device to which the settings apply.

The menu display changes according to the selection you make.

3 Press F2 (PORT SELECT) or turn control knob 2 to move the cursor and select the required GPI output port of the device selected in step **2**.

4 Press F3 (TRIGGER TYPE), and select the trigger polarity.

Pressing F3 cycles the setting through ⎍, ⎎, ⨯, NOP, and TALLY.

If you selected TALLY, continue to step **6**.

5 Press F4 (PULSE WIDTH), then turn control knob 4 to adjust the output pulse width.

6 Press F8 (ACTION SELECT) or turn control knob to move the cursor and select the action causing the GPI output.

7 Press F6 (SELECT) to confirm the selection of the action causing the GPI output.

The action you have selected appears in the row for the output port selected in step **3**.

8 To make settings for more than one GPI output port, repeat steps **3** to **7** for each GPI output port.

9 To test the operation of a trigger, press F10 (TEST FIRE).

This outputs a trigger from the GPI output port selected in step **3**.

Carrying out setup relating to external devices controlled using the control panel DME 3 to DME 6 buttons and also relating to VTR control time data (PANEL PORT ASSIGN menu)

Normally, the DME 3 to DME 6 buttons in the numeric keypad section are used to control a DME-7000/3000. These buttons can also be used to control external devices compatible with the PERIPHERAL II protocol or VTR protocol.

External devices controllable using DME 3 or DME 4 button

Device	Protocol	Interface port
DME 3 or DME 4	DME	REMOTE2
Devices compatible with PERIPHERAL II protocol	PERIPHERAL II	REMOTE2
GPI-compatible devices	—	GPI

External devices controllable using DME 5 or DME 6 button

Device	Protocol	Interface port
DME 5 or DME 6	DME	REMOTE3
Devices compatible with PERIPHERAL II protocol	PERIPHERAL II	REMOTE3
GPI-compatible devices	—	GPI
VTR1 and VTR2	VTR	REMOTE 4 and REMOTE 5

Option

Using the REMOTE 2 to REMOTE 5 ports requires the optional BKDS-7001.

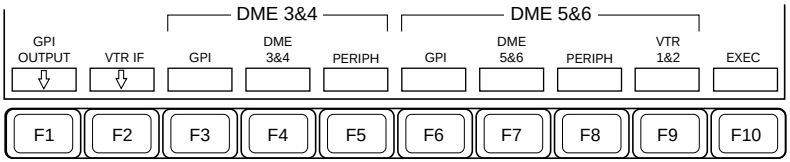
The following describes how to make these settings in the PANEL PORT ASSIGN menu.

Setting external devices controlled using DME 3 to DME 6 buttons

Use the following procedure.

1 In the PERIPH menu, press F9 (PANEL PORT).

The PANEL PORT ASSIGN menu appears.



Function key indications in the PANEL PORT ASSIGN menu

2 Press F3 (GPI), F4 (DME 3&4) or F5 (PERIPH) for the DME 3 or DME 4 button, or press F6 (GPI), F7 (DME 5&6), F8 (PERIPH) or F9 (VTR 1&2) for the DME 5 or DME 6 button.

F3/F6 (GPI): Control the external device connected to a GPI port of the control panel.
When this is selected, press F1 (GPI OUTPUT) and make the required GPI output port settings (*see the next section for details*).
F4 (DME 3&4)/F7 (DME 5&6): Control a DME-7000/3000.
F5/F8 (PERIPH): Control an external device compatible with the PERIPHERAL II protocol.
F9 (VTR 1&2): Control a VTR.

3 Press F10 (EXEC).

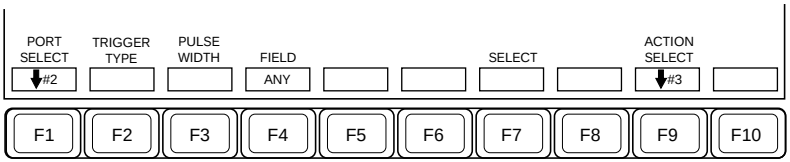
The control panel is reset and the selected interface is set.

Setting the GPI output ports

When the DME3 to DME6 buttons are linked to the GPI output ports, use the following procedure to set the GPI output ports.

1 In the PANEL PORT ASSIGN menu, press F1 (GPI OUTPUT).

The GPI OUTPUT menu appears.



Function key indications in the GPI OUTPUT menu

2 Either press F1 (PORT SELECT) or turn knob 2 to align the cursor with the one of the GPI output ports (1 to 8) for which you wish to make the selection.

3 Press F2 (TRIGGER TYPE) to select the trigger signal polarity.

Pressing F2 cycles through the settings: ⎍, ⎎, ⨯, and NOP.

⎍: When the trigger occurs, the relay contact opens or the output level turns high, and then that state is maintained for the specified pulse width.

⎎ : When the trigger occurs, the relay contact closes or the output level turns low, and then that state is maintained for the specified pulse width.

⨯: When the trigger occurs, relay contact state or output level alternately switches between closed and open or between high and low.

NOP: The trigger has no effect on the relay state or output level.

4 Press F3 (PULSE WIDTH), then turn knob 4 to adjust the pulse width (1 to 60 fields).

5 Press F4 (FIELD) to select the GPI trigger output timing.

Pressing this button cycles through the settings: ANY (arbitrary timing), F1 (first field), and F2 (second field).

6 Press F9 (ACTION SELECT) or turn control knob 3 to align the cursor with the desired action causing the GPI output.

7 Press F7 (SELECT) to confirm the selection of the action causing the GPI output.

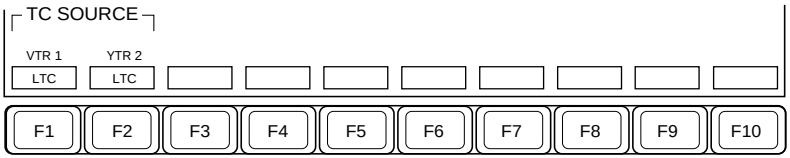
8 Repeat steps **2** to **7** to make the settings for the other output ports.

Setting the VTR control time code

To set the VTR control time code used in the control panel, use the following procedure.

1 In the PANEL PORT ASSIGN menu, press F2 (VTR IF).

The VTR INTERFACE menu appears.



Function key indications in the VTR INTERFACE menu

2 Press F1 for VTR1 or F2 for VTR2.

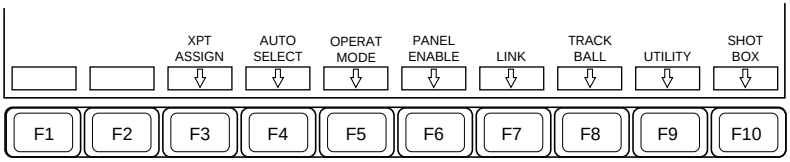
The selection cycles through LTC, VITC, L/VI (LTC/VITC) and CTL.

Setup Relating to Operations From the Control Panel (OPERATION Menu)

To carry out setup operations relating to operations from the control panel, access the OPERATION menu.

Accessing the OPERATION menu

In the SETUP menu, select item 5 (OPERATION).
The OPERATION menu appears.



Function key indications in the OPERATION menu

Selecting the next menu

When you have displayed the OPERATION menu, access the next menu according to the data item you wish to set.
The menus you can access from the OPERATION menu are listed in the following table, together with their functions, and the function keys you need to press to access them.

Menus accessed from the OPERATION menu

Menu	Functions	Function key	See page
XPT ASSIGN	Making the following settings relating to assigning an input signal to a cross-point button • Input signal assignment • Allocating a name to an input signal	F3 (XPT ASSIGN)	14-68
AUTO SELECT ASSIGN	Allocating a key source signal to a key fill	F4 (AUTO SELECT)	14-72
OPERATION MODE	• Setting the background transition flip-flop mode • Setting the downstream keyer auto drop function • Setting the cross-point button shift function • Setting the cross-point shift button lock/unlock function • Settings relating to key frame operations • Setting the programmable button function • Setting custom modes	F5 (OPERAT MODE)	14-73

(Continued)

Menus accessed from the OPERATION menu (Continued)

Menu	Functions	Function key	See page
PANEL ENABLE	• Setting the screen saver delay time • Selecting the control over banks given to the control panel • Setting the fade-to-black function on the DMK-7000	F6 (PANEL ENABLE)	14-83
LINK	Making the following settings for linking two functions • Linking two buses • Linking a particular button to a GPI output port • Linking a number of DSKs	F7 (LINK)	14-85
TRACK BALL	Making the following settings relating to the trackball • Selecting the speed of image movement • Selecting the sensitivity of fine mode • Selecting the speed of image movement with the VELO HOLD button • Selecting the change of sensitivity with depth (z-direction)	F8 (TRACK BALL)	14-90
UTILITY	Assigning functions to the UTILITY buttons	F9 (UTILITY)	14-92
SHOT BOX	Settings relating to the assignment of registers to the SHOT BOX buttons	F10 (SHOT BOX)	14-94

Carrying out setup relating to assigning an input signal to a cross-point button (XPT ASSIGN menu)

You can use the XPT ASSIGN menu for the following settings.

- **Input signal assignment:** Select the input signal which you wish to assign to the selected cross-point button number.
- **Allocating a name to an input signal:** You can allocate a name of up to eight alphanumeric characters to the signal assigned to a cross-point button. (If the name has more than four characters, the first two and last two appear in the source name indications on the control panel.)

Relationship between input signals assigned to cross-point buttons and buses

The input signals assigned to cross-point buttons can be separated into three groups, according to which buses they can be selected on.

- **Signals which can be selected on any bus**
  PRIMARY 1 to 36, BLACK, FM-1, FM-2,
  M/E-1 PGM, M/E-2 PGM, M/E-3 PGM
  M/E-1 CHR KEY FRGD, M/E-1 CHR KEY KEY, M/E-2 CHR KEY FRGD, M/E-2 CHR KEY KEY, M/E-3 CHR KEY FRGD, M/E-3 CHR KEY KEY
- **Signals which can be selected on auxiliary buses AUX 1 to AUX 13, edit preview bus, frame memory 1 bus, and frame memory 2 bus**
  M/E-1 COLOR BKGD, KEY1 PROC[a)] VIDEO, KEY1 PROC[a)] KEY, KEY2 PROC[a)] VIDEO, KEY2 PROC[a)] KEY, CRK KEY, PVW (KEY, CLEAN)
  M/E-2 COLOR BKGD, KEY1 PROC[a)] VIDEO, KEY1 PROC[a)] KEY, KEY2 PROC[a)] VIDEO, KEY2 PROC[a)] KEY, CRK KEY, PVW (KEY, CLEAN)
  M/E-3 COLOR BKGD, KEY1 PROC[a)] VIDEO, KEY1 PROC[a)] KEY, KEY2 PROC[a)] VIDEO, KEY2 PROC[a)] KEY, CRK KEY, PVW (KEY, CLEAN)
  PGM, PST, CLEAN

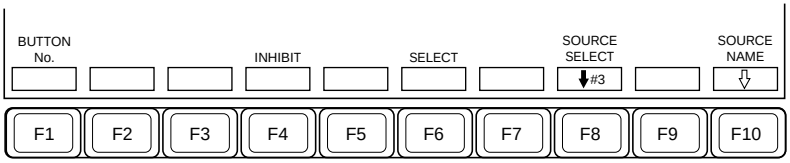
  a) PROC (processed key)

- **Signal which can be selected on the EDIT PVW bus**
  DIRECT IN, DSK PGM
- **Signal which can be selected on the M/E-1 to M/E-3 buses and PGM/PST buses**
  SELF BKGD
  (Example: M/E-1 COLOR BKGD for the M/E-1 block)

To carry out these settings, use the following procedure.

1 In the OPERATION menu, press F3 (XPT ASSIGN).

The XPT ASSIGN menu appears.



Function key indications in the XPT ASSIGN menu

2 Select the cross-point button to which you wish to assign an input signal, using either of the following methods.

- Hold down F1 (BUTTON No.) and press the required cross-point button in the auxiliary bus bank.
- Hold down F1 (BUTTON No.) and use the cursor movement keys to select the required cross-point button.
- Hold down F1 (BUTTON No.) and turn control knob 2.
- Hold down F1 (BUTTON No.) and enter the required cross-point button number using the numeric keypad.

The indication of the button you have pressed switches to reverse video.

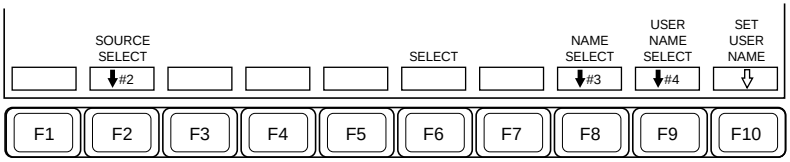
3 Press F8 (SOURCE SELECT) or turn control knob 3 to move the cursor and select the required input signal.
To inhibit a cross-point button so that no signal is assigned to it, press F4 (INHIBIT).

4 Press F6 (SELECT) to confirm the input signal selection.

(Continued)

5 Press F10 (SOURCE NAME).

The SOURCE NAME menu appears.



Function key indications in the SOURCE NAME menu

6 Press F2 (SOURCE SELECT) or turn control knob 2 to move the cursor and select the signal to which you wish to assign a name.

7 Either press F8 (NAME SELECT) or turn control knob 3 to move the cursor; or either press F9 (USER NAME SELECT) or turn control knob 4 to move the cursor, and then select the required signal name.

To enter a new signal name
Press F8(NAME SELECT), and then select USER in the list of example signal names.

8 Press F6 (SELECT).
When you have selected a signal name attached with "?" in step **7**, further specify the required number and press the ENTER button.

- If you selected USER in step **7**, a text input screen appears. In this case, advanc to step **9**.
- In other cases, the name selection is confirmed.

9 Using the keyboard displayed on the screen and the numeric keys in the numeric keypad section, enter a name of up to eight characters, and press the F9 (ENTER) or the ENTER button in the numeric keypad section to confirm the name.

For details of the input method, see page 3-11.

To create or change the signal name selected with F9 (USER NAME SELECT)

Use the following procedure.

1 Press F10 (SET USER NAME).

A text input screen appears.

2 Press F1 (SET USER NAME) or turn control knob 2 to move the cursor and select free space for creating a new signal name or select the existing signal name to be corrected.

3 Enter a new signal name as in step **9** of the foregoing procedure.

To enable the setting of a signal name using steps **7** and **8** of the foregoing procedure, press F6 (?) to postfix "?" to the signal name.

Allocating a key source signal to a key fill (AUTO SELECT ASSIGN menu)

You can use the AUTO SELECT ASSIGN menu to allocate a key source signal to a key fill.
When you carry out a key operation on an M/E bank in AUTO SELECT mode, this key source signal is automatically used.

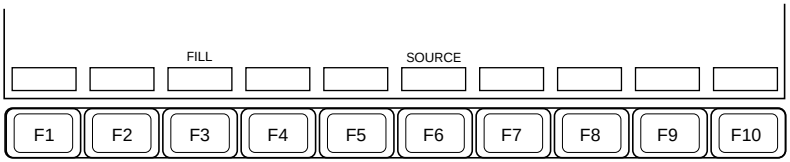
Selecting a 4:4:4 format digital component signal as a chroma key foreground in a D1 system

A key fill signal and key source signal selected in this menu are treated as a 4:2:2 format signal (“LINK A”) and a 0:2:2 format signal (“LINK B”) to be combined as a 4:4:4 format signal and used as a foreground signal.

To carry out these settings, use the following procedure.

1 In the OPERATION menu, press F4 (AUTO SELECT).

The AUTO SELECT ASSIGN menu appears.



Function key indications in the AUTO SELECT ASSIGN menu

2 Select the key fill signal to which you wish to allocate a key source signal, using either of the following methods:

- Hold down F3 (FILL) and press the required cross-point button in the auxiliary bus bank.
- Hold down F3 (FILL) and use the cursor movement keys to select the required cross-point button.
- Hold down F3(FILL) and turn control knob 2.
- Hold down F3(FILL) and enter the required cross-point button number using the numeric keypad.

3 Select the key source signal you wish to allocate to the key fill, using either of the following methods.

- Hold down F6 (SOURCE) and press the required cross-point button in the auxiliary bus bank.
- Hold down F6 (SOURCE) and use the cursor movement keys to select the required cross-point button.
- Hold down F6(SOURCE) and turn control knob 3.
- Hold down F6(SOURCE) and enter the required cross-point button number using the numeric keypad.

Changing switcher functions (OPERATION MODE menu)

You can use the OPERATION (operation) MODE menu for the following settings.

- **Setting the background transition flip-flop mode:** Toggle between the bus flip-flop mode ("ON" setting) and bus fixed mode ("OFF" setting) for carrying out background transitions.
- **Setting the downstream keyer auto drop function:** Select whether the downstream keyer (DSK1/2/3/4) specified in the menu is automatically switched off when a cross-point button in the PGM row of the PGM/PST bank of 3.5 M/E system is pressed.
  - **OFF:** Pressing a cross-point button in the PGM row does not of itself turn the downstream keyer off.
  - **ON:** The downstream keyer auto drop function is enabled. Simply pressing a cross-point button in the PGM row automatically turns the corresponding downstream keyer off.
- **Setting the cross-point button shift function:** Select the cross-point button shift function setting from the following.
  - **RIGHT:** The shift function is enabled with the rightmost button (button 28) as the shift button.
  - **LEFT:** The shift function is enabled with the leftmost button (button 0) as the shift button.
  - **OFF:** The shift function is disabled.
- **Settintg the cross-point shift button lock/unlock function:** Whether or not the shift button locks when pressed.
  - **OFF:** The shift button does not lock. That is, to shift a cross-point button selection, you must always hold down the shift button.

ON: When you press the shift button it lights, and locks, shifting the cross-point button selection. To release the lock, press the shift button once more.
When the signal selection in the bank changes with the progress of the transition, the state of the shift button automatically changes so that the cross-point button for the currently selected signal lights.

HOLD: The shift button locks as described above for the ON setting, but the state of the shift button does not change with the progress of the transition.

- **Settings for key frame operations:** The following settings can be made for key frame operations..
  a) Auto save: Select whether or not, when an effect register is recalled, the previously recalled effect is automatically saved in its original register.
  ENBL: Save.
  DSBL: Do not save.
  b) Edit enable auto off: Select whether or not, when an effect register is recalled, the EDIT ENABLE button is automatically turned off, and key frame editing disabled.
  ENBL: Enable auto off to disable key frame editing automatically.
  DSBL: Disable auto off not to disable key frame editing.
- **Setting the programmable button function:** You can assign functions to the programmable buttons on the control panel. The programmable buttons and functions available for allocation are as follows.

Programmable button	Functions available for allocation
KEY INV: The KEY INV button in the key control section of each M/E bank (see page 2-16)	NO ASSIGN: No function allocated. KEY INVERT ON/OFF: Switches the key invert function on or off. (Factory default setting) MAIN MASK ON/OFF: Switches the main mask on or off. SUB MASK ON/OFF: Switches the subsidiary mask on or off. EDGE MATTE ON/OFF: Set this to ON to insert a signal from the dedicated matte generator as key edge fill. When this is set to OFF, the signal selected on the utility bus is used for edge fill. Press the button, turning it on, then adjust matte 1 with knobs 1 to 3: Luminance (0.00 to 100.00), Saturation (0.00 to 100.00), and Hue (0.00 to 359.99). 4H DROP ON/OFF: Toggle on and off the “4H DROP” mode for key fill and key source. **Note** These settings are common to all M/E banks. (It is not possible to make independent settings for different banks.)
P/P NEXT TRANSITION BLANK: Unlabeled button to the right of the DSK2 button (above the WIPE button) in the transition control section of the PGM/PST bank (3.5-M/E panel) (see page 2-22)	NO ASSIGN: No function allocated. (Factory default setting) NEXT TRANS ALL: When you press the button, as the image for the next transition on the PGM/PST bank, the background, and downstream keys 1, 2, 3, and 4 are simultaneously selected (the BKGD, and DSK1 to DSK4 next transition buttons all light).

(Continued)

(Continued)

Programmable button	Functions available for allocation
AUX BLANK: Unlabeled button to the right of the M/E-3 UTIL button (above the shift button) in the auxiliary bus bank (see page 2-27)	NO ASSIGN: No function allocated. (Factory default setting) AUX/ROUTER: When you press the button, turning it on, the auxiliary bus bank control switches to the routing switcher. **Operation when "AUX/ROUTER" is selected** To switch the 16 destinations of a routing switcher which can be controlled from the switcher, use the 16 delegation buttons (AUX1 to AUX13, EDIT PVW, FRAME MEM 1, and FRAME MEM 2) in the auxiliary bus bank. For source switching, use the cross-point buttons. The button (button number 0) at the left end of the cross-point button row corresponds to source 1 controlled from the switcher, and using the shift function a maximum of 59 sources can be switched.
ORTHG: ORTHG button in the DME control section	ORTHG: The trackball functions as a positioner only in the one of the X- and Y-directions in which it is moved more. (Factory default setting) VTR: The DME control section functions as a VTR tape transport controller.
ALL: ALL button in the numeric keypad section	Specify one of the 12 sub-register selection buttons as the button to be selected when the ALL button is pressed.

• **Setting custom modes:** You can make the following custom settings for the operating mode of parts of the control panel.

a) Switching the operating mode of the FlexiPad: You can switch the operating mode of the FlexiPad in each of the M/E banks.
MODE1: Factory default operating mode. *For details see page 7-10.*
MODE2: This changes the operation of snapshot recall as follows.

To specify register numbers 1 to 9

1 Press the SNAPSHOT button, which lights amber.

2 Press one of the numeric keys 1 to 9.

To specify register numbers 10 to 19

1 Press the SNAPSHOT button, which lights amber.

2 Press the SHIFT button, which lights amber.

3 Press one of the numeric keys 0 to 9; the SHIFT button goes off.

To specify register numbers 20 to 99

1 Press the SNAPSHOT button, which lights amber.

2 Hold down the SHIFT button, and press the 2 numeric key; the SHIFT button lights green.

3 Press one of the numeric keys 0 to 9.

4 To subsequently specify another register in the range 20 to 29, with the SHIFT button lit green, press one of the numeric keys 0 to 9 again.

In step **2**, press 3 to 9 in place of 2 in order to specify a register in the range 30 to 99.
To return to the state in which one of registers 1 to 19 can be specified, press the SHIFT button lit green, turning it off.

b) Setting the linkage of the transition type selection buttons and the FlexiPad: Select whether or not pressing one of the WIPE, DME1, and DME2 transition type selection buttons in the transition control section of an M/E bank causes the WIPE button or DME button in the FlexiPad of the same M/E bank to light automatically.
MODE1: Lights automatically. (Factory default setting)
MODE2: Does not light.

c) Setting the method of selecting the reference channel in the numeric keypad section: Select the method of making the corresponding sub-register selection button light green when selecting the reference channel in the numeric keypad section.
MODE1: Hold down the SNAPSHOT button or EFF button, and press the corresponding sub-register selection button to cause it to light green. (Factory default setting)
MODE2: Press a sub-register selection button which is off or lit amber to select the corresponding sub-register as the reference channel. To cancel the reference channel selection, press the button lit green, turning it off.

d) Setting the linkage between snapshot recall from the numeric keypad section and the FlexiPad: After a snapshot has been recalled using the numeric keypad section, select whether or not the register number selection is reflected in the FlexiPad of the corresponding M/E bank.
MODE1: Not reflected. (Factory default setting)
MODE2: Reflected.

e) Making the settings relating to the lighting of buttons when the same signal is assigned to more than one cross-point button: Select the mode of button lighting to be used when one of the buttons to which the same signal has been assigned is pressed.
MODE1: Of the buttons to which the same signal has been assigned, only the button of the smallest number lights. (Factory default setting)
MODE2: All the buttons to which the same signal has been assigned light.

f) LAST X function setting for FlexiPad snapshot recall: Select whether or not to disable the LAST X function, activated on each of the M/E banks, when using the FlexiPad to recall a snapshot, by entering 00 then pressing.
ENBL: Enable the “LAST X” function. (Factory default setting)
DSBL: Disable the “LAST X” function.

g) Fader lever operation settings: Select the way in which the lever position and the progress of the transition are related.
MODE1: The transition progression is linear, according to the position of the lever. (Factory default setting)
MODE2: The lever position and the transition progression are related by an S-curve. The transition is more gradual when the lever is close to the end of its travel.

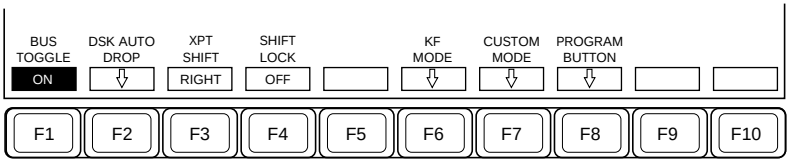
h) Setting for bus tally indicator operation: Select whether the bus tally indicator at the right hand end of each bus is used as a bus tally or as an indicator for the video process function.
TALLY: Use as a bus tally.
V-PROC: Use as an indicator for the video process function. That is to say, the bus tally indicator lights when video processing for the signal selected on this bus is on.

i) Setting for the LAST X button in the numeric keypad section: Select whether to enable or disable the LAST X function.
ENBL: Enable the LAST X function. (Factory default setting)
DSBL: Disable the LAST X function.

To carry out these settings, use the following procedure.

1 In the OPERATION menu, press F5 (OPERAT MODE).

The OPERATION MODE menu appears.



Function key indications in the OPERATION MODE menu

2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Setting the background transition flip-flop mode	Press F1 (BUS TOGGLE). This toggles the setting between ON and OFF.
Setting the downstream keyer auto drop function	Carry out the following procedure. **1** Press F2 (DSK AUTO DROP). The DSK AUTO DROP menu appears. **2** Press one of F1 (DSK1) to F4 (DSK4) according to the downstream keyer to which the setting applies. Pressing the button toggles the auto drop function on and off.
Setting the cross-point button shift function	Press F3 (XPT SHIFT). This cycles the setting through OFF, RIGHT and LEFT.
Setting the cross-point shift button lock/ unlock function	Press F4 (SHIFT LOCK). This cycles the setting through OFF, ON and HOLD.
Settings for key frame operations	Carry out the following procedure. **1** Press F6 (KF MODE). The KEY FRAME MODE menu appears. **2** Press F1 (AUTO SAVE) or F2 (EDIT ENABLE AT OFF). This toggles the setting between ENBL and DSBL.
Setting custom modes	Skip to step **3**.

(Continued)

(Continued)

Setting	Operation
Setting the programmable button function (for other than the ALL button in the numeric keypad section)	Carry out the following procedure. **1** Press F8 (PROGRAM BUTTON). The PROGRAMMABLE BUTTON menu appears. **2** Hold down F1 (PROGRAM BUTTON), and from the flashing programmable buttons, press the desired one. The selected button name in the list on the screen changes to reverse video. **3** Either press F8 (FUNC SELECT) or turn control knob 3 to align the cursor with the desired function from the list. **4** Press F6 (SELECT). This assigns the function selected in step **3** to the button selected in step **2**.
Setting the function of the ALL button in the numeric keypad section	Carry out the following procedure. **1** Press F8 (PROGRAM BUTTON). The PROGRAMMABLE BUTTON menu appears. **2** Press F10 (DEFINE ALL). The ALL BUTTON DEFINE menu appears. **3** Press F1 (SELECT) and align the cursor with the block that contains the desired button. Depending on the selected block, the button names that can be assigned to other function keys than F1 appear. **4** Press the function keys as required to highlight the function key indications for the required functions while not highlighting the function key indications for the functions not required.

(Continued)

3 Press F7 (CUSTOM MODE).

The CUSTOM MODE menu appears.

4 Carry out the operation shown in the following table corresponding to the desired setting.

Setting	Operation
Setting the operating mode for the FlexiPad	Press F1 (FLX PAD MODE). This toggles the setting between MODE1 and MODE2.
Setting the linkage between the transition type selection buttons and the FlexiPad	Press F2 (FLX PAD AUTO SELECT). This toggles the setting between MODE1 and MODE2.
Setting the method of reference channel selection using the numeric keypad section	Press F3 (REF SEL MODE). This toggles the setting between MODE1 and MODE2.
Setting the linkage between snapshot recall from the numeric keypad section and the FlexiPad	Press F4 (SS RECALL MODE). This toggles the setting between MODE1 and MODE2.
Making the settings relating to the lighting of buttons when the same signal is assigned to more than one cross-point button	Press F5 (XPT TALLY). This toggles the setting between MODE1 and MODE2.
Setting for the FlexiPad snapshot recall LAST X function	Press F6 (FLX PAD SS LASTX). This toggles the setting between ENBL and DSBL.
Setting for the fader lever operation	Press F7 (FADER CURVE). This toggles the setting between MODE1 and MODE2.
Setting for bus tally indicator operation	Press F8 (BUS TALLY). This toggles the setting between TALLY and V-PROC.
Setting for the LAST X button in the numeric keypad section	Press F9 (KEY PAD LAST X). This toggles the setting between ENBL and DSBL.

Making settings relating to control panel operation, screen saver and fade-to-black function (PANEL ENABLE menu)

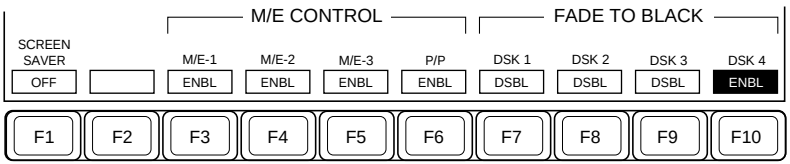
You can use the PANEL ENABLE menu for the following settings.

- **Setting the screen saver delay time:** Select the delay time until the screen saver comes into operation after the last control panel operation. The settings are: OFF (no screen saver function), 1, 3, 5, or 10 minutes.
- **Selecting the control over M/E banks and PGM/PST bank given to the control panel:** Select the control given to the control panel over each of the M/E banks individually.
  INHBT: Control is disabled. The display functions of the particular bank also do not operate.
  DSBL: Control is disabled. The display functions of the particular bank, however, do operate.
  ENBL: Control is enabled. The display functions of the particular bank also operate.
- **Setting the fade-to-black function on the DMK-7000:** Select whether to enable (ENBL) or disable (DSBL) the fade-to-black function on each of the keyer outputs from the DMK-7000.
  The fade-to-black is carried out simultaneously on all keyers for which it is enabled.

To carry out these settings, use the following procedure.

1 In the OPERATION menu, press F6 (PANEL ENABLE).

The PANEL ENABLE menu appears.



Function key indications in the PANEL ENABLE menu

(Continued)

2 Carry out the operation in the following table to make the required setting.

Setting	Operation
Setting the screen saver delay time	Press F1 (SCREEN SAVER). This cycles the setting through OFF, 1, 3, 5, and 10.
Selecting the control over each of banks given to the control panel	Press one of F3 (M/E-1), F4 (M/E-2), F5 (M/E-3), and F6 (P/P). This cycles the setting through INHBT, DSBL, and ENBL.
Setting the fade-to-black function	Press F7 (DSK1) to F10 (DSK4) for the corresponding downstream keyer. This toggles the setting between ENBL and DSBL. **Note** When two or more DSKs are enabled, the same transition rate is used for all of them. When the DMK-7000 cascade mode is used, enable only the last DSK. If more than one DSK is enabled when in cascade mode, the fade-to-black will not be executed at the correct transition rate.

Linking two functions (LINK menu)

You can make the following settings in the LINK menu.

- **Linking operations on two buses:** You can set up one bus (the master bus) so that operations on another bus are linked to it. You can set up a maximum of 16 such linkages.
- **Linking a specified button to a GPI output port:** You can set up a button on the switcher control panel (the master button) so that when it is pressed a GPI trigger is output from a particular GPI output port.
- **Linking a number of downstream keyers:** You can link the AUTO TRANS and DSK ON buttons of one downstream keyer (the master) to the AUTO TRANS and DSK ON buttons of another downstream keyer. You can use this setting so that, for example, pressing the AUTO TRANS button of downstream keyer 1 causes a simultaneous auto transition on downstream keyers 2 to 4.

Linking operations on two buses

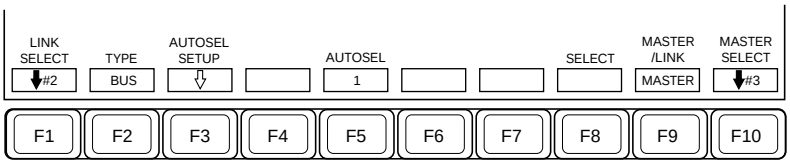
Use the following procedure.

1 In the OPERATION menu press F7 (LINK).

The LINK menu appears.

2 Press F1 (LINK).

The BUS/GPI LINK menu appears.



Function key indications in the BUS/GPI LINK menu (when F2 is set to BUS)

3 Press F1 (LINK SELECT) or turn control knob 2 to align the cursor with the link you wish to select from the list.

(Continued)

4 Press F2 (TYPE) to select the type of link.

OFF: No operation.
BUS: Link two buses.
GPI: Link a button on the control panel to a GPI output port.

- When you select “BUS”, proceed to step **5**.
- If you select “GPI”, continue with the procedure in the next section, “Linking a button to a GPI output port”.

5 Press F9 (MASTER/LINK) to set F9 to “MASTER”.

The indication for F10 changes to “MASTER SELECT”.

6 Press F10 (MASTER SELECT) or turn control knob 3 to align the cursor with the bus you wish to select as the master.

This selects the bus with which the cursor is aligned as the master bus.

7 Press F9 (MASTER/LINK) to set F9 to “LINK”.

The indication for F10 changes to “LINK SELECT”.

8 Press F10 (LINK SELECT) or turn control knob 3 to align the cursor with the bus you wish to link to the master bus selected in step **6**, then press F8 (SELECT).

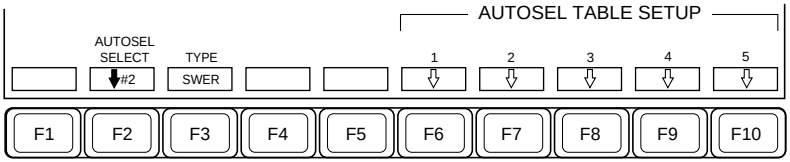
This confirms the selection of the bus with which the cursor is aligned.

9 Press F5 (AUTOSEL) to select one of the five “auto select tables” in which are set the correspondences of cross-point buttons between the two buses.

To change the auto select table setting, proceed to step **10**.

10 Press F3 (AUTOSEL SETUP).

The AUTOSEL SETUP menu appears.



Function key indications in the AUTOSEL SETUP menu

11 Press F2 (AUTOSEL SELECT), or turn control konb 2 to align the cursor with the auto select table you wish to select.

12 Press F3 (TYPE) to select whether the cross-point auto select function applies to the internal bus (the DVS-7000A switcher bus) or only to the external bus (the bus of the routing switcher connected to the DVS-7000A).

SWER: The auto select function applies only to the internal bus.
ROUTER: The auto select function applies only to the external bus.

13 Press F6 (1) to F10 (5).

The AUTOSEL TABLE SETUP (1/2/3/4/5) menu appears.
The method of using this menu is the same as that of the AUTO SELECT ASSIGN menu. *See the section "Allocating a key source signal to a key fill" (page 14-72).*

Linking a button to a GPI output port

After carrying out steps **1** to **4** of the procedure in the previous section, "Linking operations on two buses", continue with the following steps.

5 Press F9 (MASTER/LINK) to set F9 to "MASTER".

The indication for F10 changes to "MASTER SELECT".

(Continued)

6 Press F10 (MASTER SELECT) or turn control knob 3 to align the cursor with the button you wish to select as the master button (the button causing the GPI output), then press F8 (SELECT).

This selects the button with which the cursor is aligned as the “master button”.

7 Press F9 (MASTER/LINK) to set F9 to “LINK”.

The indication for F10 changes to “LINK SELECT”.

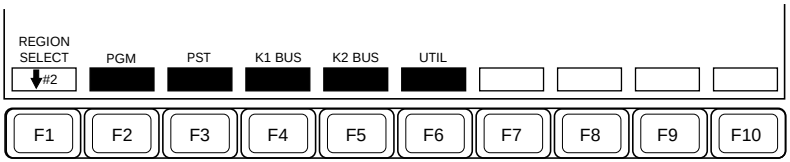
8 Press F10 (LINK SELECT) or turn control knob 3 to align the cursor with the GPI port (1 to 8) you wish to link to the “master button” selected in step **5**, then press F8 (SELECT).

This confirms the selection of the GPI port with which the cursor is aligned.

9 To set the time delay (0 to 300 fields) between the output of the GPI trigger and the execution of the function allocated to the “master button”, press F6 (DELAY) and turn knob 4 to set the value.

10 Press F4 (ENABLE BUS).

The ENABLE BUS menu appears.



Function key indications in the ENABLE BUS menu (when M/E-1/2/3 is selected)

11 Press F1 (REGION SELECT) or turn control knob 2 to align the cursor with the bank (M/E-1, M/E-2, etc.) you wish to select.

The function key indications for F2 and subsequent keys change to show the bus names, according to the bank with which the cursor is aligned.

12 Press the function keys corresponding to the buses, making the keys be displayed in reverse video to enable the link to the GPI output port, or making them be displayed in normal video to disable the link.

Linking a number of downstream keyers

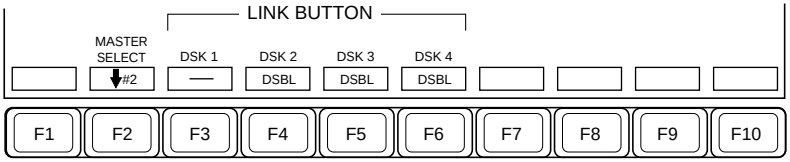
Use the following procedure.

1 In the OPERATION menu press F7 (LINK).

The LINK menu appears.

2 Press F2 (DSK BUTTON).

The DSK BUTTON LINK menu appears.



Function key indications in the DSK BUTTON LINK menu (with cursor on “DSK 1”)

3 Press F2 (MASTER SELECT) or turn control knob 2 to align the cursor with the downstream keyer you wish to select as the master.

4 Press F3 (DSK1) to F6 (DSK4) to enable (“ENBL”) or disable (“DSBL”) the link to the master downstream keyer selected in step **2**.

Adjusting the trackball and Z-ring (TRACK BALL menu)

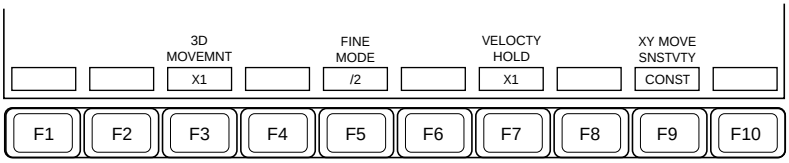
This menu adjusts various functions of the trackball and Z-ring on the BKDS-7031 DME Control Panel Unit.

Selecting the speed of image movement

This selects the speed of movement of the image under trackball and Z-ring control. Use the follwing procedure.

1 In the OPERATION menu press F8 (TRACK BALL).

The TRACK BALL menu appears.



TRACK BALL menu

2 Press F3 (3D MOVEMENT) to change the setting.

Pressing F3 cycles through the following three settings:
×**1:** Standard speed
×**2:** Double speed
×**4:** Quadruple speed

Selecting the fineness of image movement produced by the MENU, SRCE, or TRGT button

There are three options for the degree of fineness of control provided by holding down the MENU, SRCE, or TRGT button during a trackball or Z-ring operation, selected by pressing F5 (FINE MODE) as follows.
/2: 1/2 of speed when the button is not held down
/4: 1/4 of speed when the button is not held down
/8: 1/8 of speed when the button is not held down

Selecting the speed of image movement produced by the VELO HOLD button

There are three options for the maintained speed of image movement produced by the VELO HOLD button, selected by pressing F7 (VELOCTY HOLD) as follows.

×**1:**The image continues moving at the detected speed (the speed before you removed your hand from the trackball or Z-ring)

/2: The image continues moving at 1/2 of the detected speed.

/4: The image continues moving at 1/4 of the detected speed.

Selecting the z-coordinate-dependent trackball response

There are two options for the relation between trackball response and the position on the z-axis, selected by pressing F9 (XY MOVE SNSTVTY) as follows.

CNSTNT (CONSTANT): The speed of image movement in response to the trackball does not depend on the position along the z-axis.

DPNDZ (DEPEND ON Z): The speed of image movement in response to the trackball increases as the position recedes into the distance (i.e. as the z-coordinate increases).

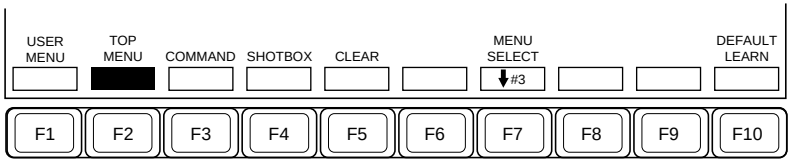
This mode provides a lighter operating touch when carrying out a transformation in the x- and y-directions on an image positioned well into the screen (i.e. with a large z-coordinate).

Assigning functions to the UTILITY buttons (UTILITY menu)

To assign menu recall or command execution functions to the 14 UTILITY buttons and 32 buttons on BKDS-7033 Memory Recall Control Panel Unit installed in the switcher control panel, use the following procedure.

1 In the OPERATION menu press F9 (UTILITY).

The UTILITY menu appears.



Function key indications in the UTILITY menu

2 Press one of F1 to F5 to select the type of function to be assigned.

F1 (USER MENU): Access a frequently used submenu.
F2 (TOP MENU): Access the DME or other top menu.
F3 (COMMAND): Toggle a particular function on and off.
F4 (SHOT BOX): Memory recall
F5 (CLEAR): Cancel the function assignment.

All of the UTILITY buttons and 32 buttons on BKDS-7033 flash.

If you selected F5 (CLEAR), skip to step **4**; otherwise advance to step **3**.

3 Depending on the function you selected in step **2**, operate as follows.

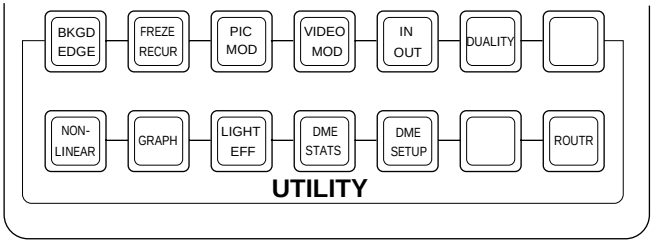
- If in step **2** you selected F1 (USER MENU), display the submenu you wish to assign.
- If in step **2** you selected F2 (TOP MENU), press F7 (MENU SELECT) or turn control knob 3 to align the cursor with the top menu you wish to assign.
- If in step **2** you selected F3 (COMMAND), press F7 (COMMAND SELECT) or turn control knob 3 to align the cursor with the command you wish to assign.
- If in step **2** you selected F4 (SHOT BOX), press F7 (SHOT BOX SELECT) or turn control knob 3 to align the cursor with the SHOT BOX number you wish to assign.

4 Press the one of the buttons to which you wish to assign the function.

The buttons which were lit continuously go off, and the assignment is complete.

Returning the top menu assignment to the default state (only when F2 is selected)

In the default state, the top menus shown below are assigned to the UTILITY buttons. To select this state, press F10 (DEFAULT LEARN).



To assign SHOT BOX numbers 1 to 32 to the 32 extra UTILITY buttons in one operation

Press F4 (SHOT BOX) to select it, then press F10 (DEFAULT LEARN).

Assigning registers to the SHOT BOX buttons (SHOT BOX menu)

You can assign switcher or DME registers storing such data as snapshots and key frame effects to the 14 UTILITY button or the 32 buttons on BKDS-7033 Memory Recall Control Panel Unit. The VTR control data set for the VTRs connected to the control panel can also be assigned to the buttons. Pressing one of the buttons to which such a register has been assigned then recalls the snapshot, key frame effect, or VTR control data stored in the register assigned to the button (shot box function).
To use the BKDS-7033 as the SHOT BOX, it is necessary to assign the shot box function to the buttons of the BKDS-7033 using the UTILITY menu.
(See page 14-92.)
The shot box function can also be realized by connecting the optional BKDS-8061 Memory Recall Remote Panel Unit to the switcher control panel, instead of using the optional BKDS-7033. Up to two BKDS-8061 units can be connected to the switcher control panel. When two BKDS-8061 units are connected to the switcher control panel, you can assign up to 40 registers to their buttons.

Option

To connect the BKDS-8061 to a control panel, the BKDS-7001 Control Panel Expansion Board is required.

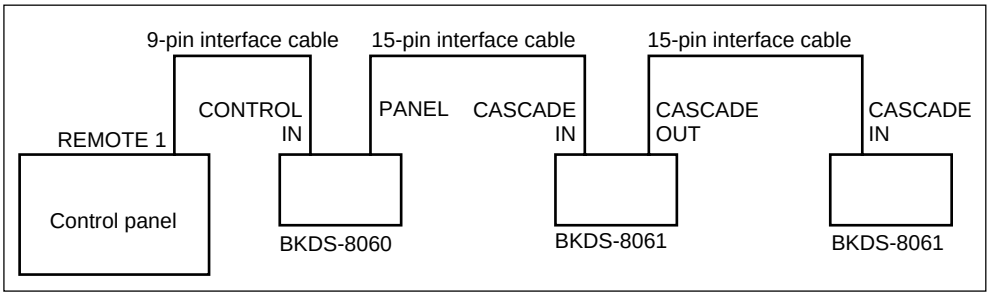
Note

When both the BKDS-7033 and the BKDS-8061 are used, the registers assigned to the buttons of either of the two panels are also assigned to the correspondindg buttons on the other panel. You cannot assign different registers to the buttons same-numbered on the two panels.

Connecting BKDS-8061 Memory Recall Remote Panel Units to the switcher control panel

You can connect up to two BKDS-8061 units to the switcher control panel; with one unit there are 20 buttons, and with two units a maximum of 40 buttons.

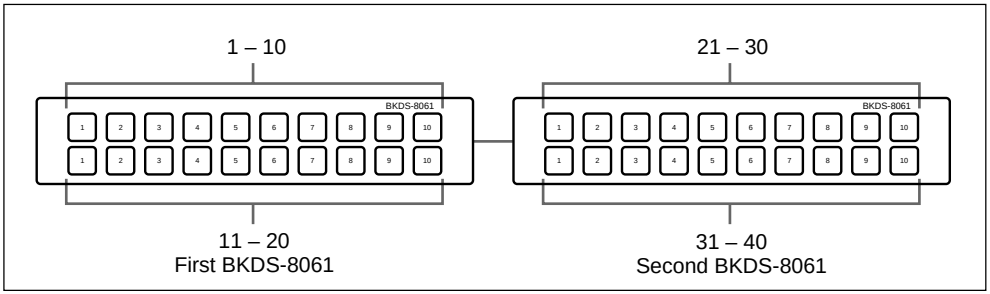
Using the BKDS-8061 requires a BKDS-8060 Interface Unit. Connect these devices as shown in the following figure.



BKDS-8061 memory recall remote panel connections to control panel

Remote panel button numbers

The button numbers of the remote panels used for the shotbox function are fixed, as follows.



To assign switcher registers to buttons

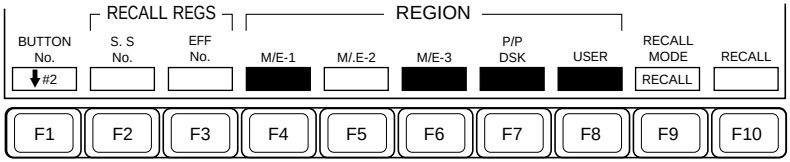
Use the following procedure.

1 In the OPERATION menu, press F10 (SHOTBOX).

The SHOTBOX menu appears.

2 If in the screen “SWITCHER” is not selected, press the cursor movement button (←) to select it.

The menu appears as follows.



Function key indications in the SHOTBOX menu (with “SWITCHER” selected)

3 Press F1 (BUTTON No.) or turn control knob 2 to align the cursor with the number of the button to be assigned.

4
- To assign a snapshot register, press F2 (S.S No.), then enter the register number with the numeric keypad.
- To assign a key frame effect register, press F3 (EFF No.), then enter the register number with the numeric keypad.

5 If in step **4** you selected a snapshot register, press F4 (M/E-1) to F8 (USER) to select the sub-registers used.

When a key frame effect register is selected, the object of the selection is not the recall, but the execution after the recall.

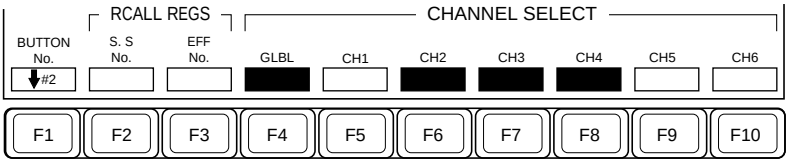
Repeat steps **3** to **5** as required, to assign the buttons.

To assign DME registers to buttons

Use the following procedure.

1 If in the SHOTBOX menu “DME” is not selected, press the cursor movement button (➡) to select it.

The menu appears as follows.



Function key indications in the SHOTBOX menu (with “DME” selected)

2 Press F1 (BUTTON No.) or turn control knob 2 to align the cursor with the number of the button to be assigned.

3
- To assign a snapshot register, press F2 (S.S No.), then enter the register number with the numeric keypad.
- To assign a key frame effect register, press F3 (EFF No.), then enter the register number with the numeric keypad.

4 Press F4 (GLBL) to F10 (CH6) to select the channel used.

Repeat steps **2** to **4** as required, to assign the buttons.

Note

For the same button number, it is not possible to assign different snapshot register numbers on the switcher and DME. It is also not possible to assign different key frame effect register numbers.

Setting the recall mode when recalling a key frame register

With “SWITCHER” selected, press F9 (RECALL MODE) to make the selection.

RECALL: Carry out a recall only.

R & R: After the recall, carry out a rewind.

Carrying out a recall test

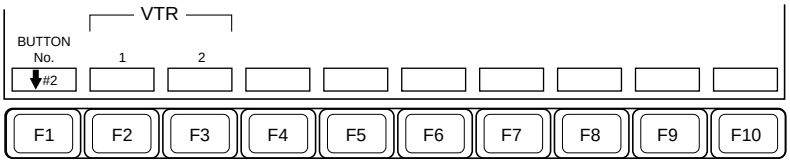
With “SWITCHER” selected, press F10 (RECALL).

To assign VTR control data to buttons

Use the following procedure.

1 If in the SHOTBOX menu “VTR” is not selected, press the cursor movement button (➡) to select it.

The menu appears as follows.



Function key indications in the SHOTBOX menu (with “VTR” selected)

2 Press F1 (BUTTON No.), or turn control knob 2 to align the cursor with the number of the button to be assigned.

3 To assign the register storing VTR1 or VTR2 control data, press F2 (VTR1) or F3 (VTR2), then enter the register number with the numeric keypad.

Repeat steps **2** and **3** as required, to assign the buttons.

Chapter 15
DIAGNOSIS Menu Operations

Overview

The DIAGNOSIS menu supports the following functions.

- Gain and offset adjustments for optional analog output and input boards
- Display of the board configuration installed in the switcher and the DMK-7000.
- Displaying Error Messages

Operations

This section describes the operations carried out from the DIAGNOSIS menu.

Analog Output Board Adjustments

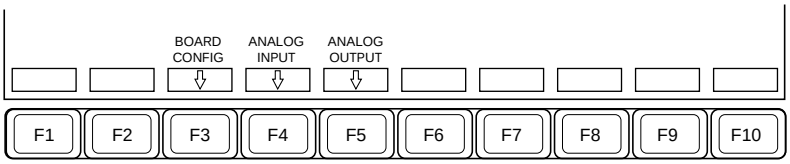
In a D2 system, when using an optional BKDS-7161 Analog Composite Output Board, use the following procedure to adjust the gain and offset of the output signal.

1 In the menu control section, press the DIAG top menu button.

The DIAGNOSIS menu appears.

2 Select item 1 (SWER PROC) to adjust an analog output board installed in the switcher, or select item 2 (DMK PROC) to adjust an analog output board installed in the DMK-7000.

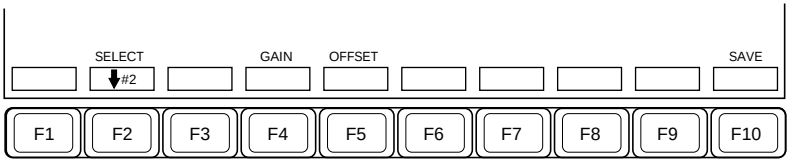
The PROC ADJUST menu appears.



Function key indications in the PROC ADJUST menu

3 Press F5 (ANALOG OUTPUT).

The function key indications change as follows, and a list of output signals and parameter settings appears.



(Continued)

4 Press F2 (SELECT) or turn control knob 2 to align the cursor with the output signal for which you wish to make the adjustment.

5 Press F4 (GAIN).

The indication “100 IRE” appears for F8, and you can now adjust the gain using control knob 4.

6 If required, press F8 (100 IRE), turning it on, to output a 100 IRE test signal (white signal).
(When F8 is off, an external input signal is output.)

Note

Once you have set F8 to ON, it is not possible to return it to OFF. A system reset is necessary.

7 Turn control knob 4 to adjust the gain.

Knob	Parameter	Setting
4	Gain	Set gain (0 to 255)

8 Press F5 (OFFSET).

The indication “0 IRE” appears for F7, and you can now adjust the offset using control knob 4.

9 If required, press F7 (0 IRE), turning it on, to output a 0 IRE signal (black signal).
(When F7 is off, an external input signal is output.)

Note

Once you have set F7 to ON, it is not possible to return it to OFF. A system reset is necessary.

10 Turn control knob 4 to adjust the offset.

Knob	Parameter	Setting
4	Offset	Set offset (0 to 255)

11 Repeat steps **5** to **10** until both the gain and offset are at appropriate levels.

12 Press F10 (SAVE).

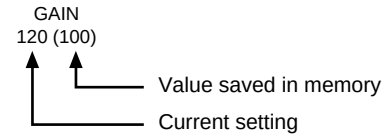
This writes the adjustment values to non-volatile memory on the output board.
The settings are now maintained by the BKDS-7161 board even when the power is turned off and on.

13 Repeat steps **4** to **12** to make the adjustments for all outputs.

Parameter indications

In the DIAGNOSIS menu screen, in addition to the current settings of parameters, the values saved in non-volatile memory are also shown in parenthesis. Executing step **12**, therefore, makes the values in parenthesis the same as the current values.

Example display:



Note

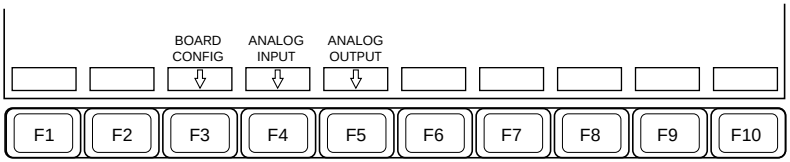
Unlike the settings in the SETUP menu, the DIAGNOSIS menu settings cannot be saved to floppy disk.

Analog Input Board Adjustments

In a D2 system, when using an optional BKDS-7111 Analog Composite Input board, use the following procedure to adjust the gain of the input signal.

1 In the DIAGNOSIS menu, select item 1 (SWER PROC) to adjust an analog input board installed in the switcher, or select item 2 (DMK PROC) to adjust an analog input board installed in the DMK-7000.

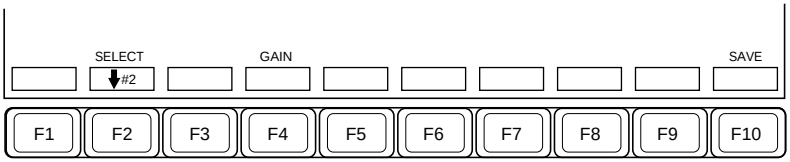
The PROC ADJUST menu appears.



Function key indications in the PROC ADJUST menu

2 Press F4 (ANALOG INPUT).

The function key indications change as follows, and a list of input signals and parameter settings appears.



3 Press F2 (SELECT) or turn control knob 2 to align the cursor with the input signal for which you wish to make the adjustment.

4 Press F4 (GAIN), then turn control knob 4 to adjust the gain.

Knob	Parameter	Setting
4	Gain	Set gain (0 to 255)

5 Press F10 (SAVE).

This writes the adjustment values to non-volatile memory on the input board.
The settings are now maintained by the BKDS-7111 board even when the power is turned off and on.

6 Repeat steps **3** to **5** to make the adjustments for all inputs.

About the parameter indications in the DIAGNOSIS menu screen, see page 15-5.

Note

Unlike the settings in the SETUP menu, the DIAGNOSIS menu settings cannot be saved to floppy disk.

Checking the Board Configuration

Checking the configuration of the boards installed in the switcher

In the DIAGNOSIS menu, select item 1 (SWER PROC), then press F3 (BOARD CONFIG).
The board configuration appears in the menu display.

Checking the configuration of the boards installed in the DMK-7000

In the DIAGNOSIS menu, select item 2 (DMK PROC), then press F3 (BOARD CONFIG).
The board configuration appears in the menu display.

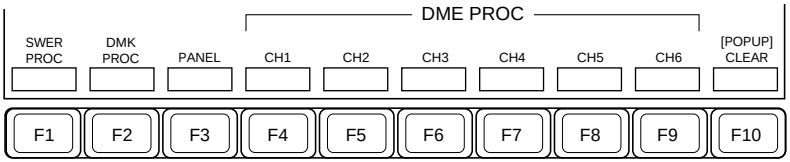
Displaying Error Messages

You can use the ERROR MESSAGE menu to display error messages for the switcher and DME connected to the control panel.

To display error messages, use the following procedure.

1 In the DIAGNOSIS menu, select item 5 (ERROR), and then press F3 (ERROR MESSAGE).

The ERROR MESSAGE menu appears.



Function key indications in the ERROR MESSAGE menu

If any function key is flashing, it indicates an error has occurred on the corresponding equipment.

2 Press the flashing function key to display the error message.

To clear the error message if displayed even after correction of the error

Even after the error is corrected, the error message may remain displayed. To clear the error message in such a case, press F10 (CLEAR).
If the error is no longer present, the error message will disappear.

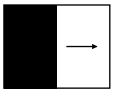
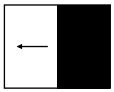
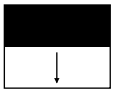
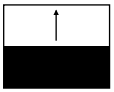
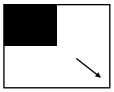
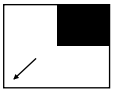
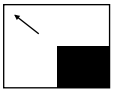
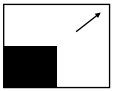
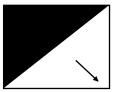
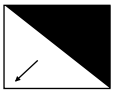
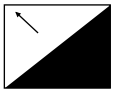
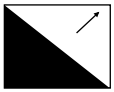
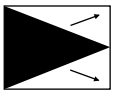
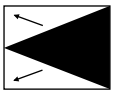
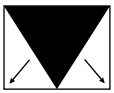
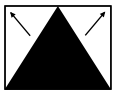
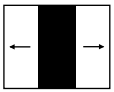
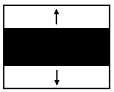
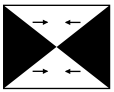
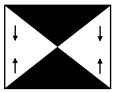
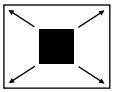
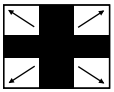
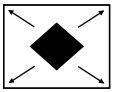
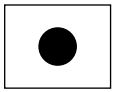
To temporarily clear an error message and turn off the alarm buzzer

When an error is detected causing the corresponding error message to appear and the alarm buzzer to sound, you can temporarily clear the error message and turn off the alarm buzzer by holding down the SHIFT button and pressing F10 (POPUP) in the ERROR MESSAGE menu.
In this case, resetting the control panel before correcting the error will cause the same error message to appear and the alarm buzzer to sound again.

Appendixes

Wipe Patterns

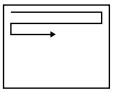
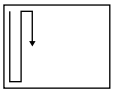
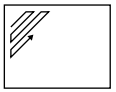
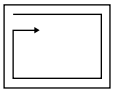
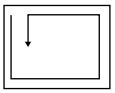
Standard Wipes

1		2		3		4	
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
21		22		23		24	

Enhanced Wipes

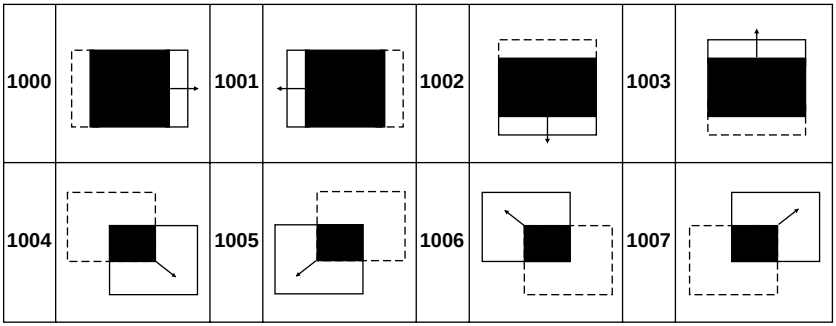
26		27	

Mosaic Wipes (including diamond dust wipe)

200		201		202		206	
210		270	RANDOM	271	RANDOM2	272	RANDOM3
274	DIAMOND DUST						

DME Wipe Patterns

Slide



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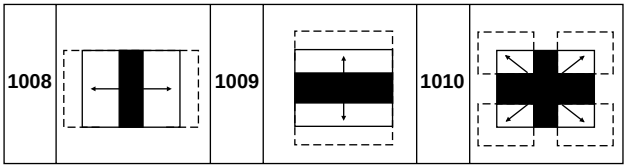
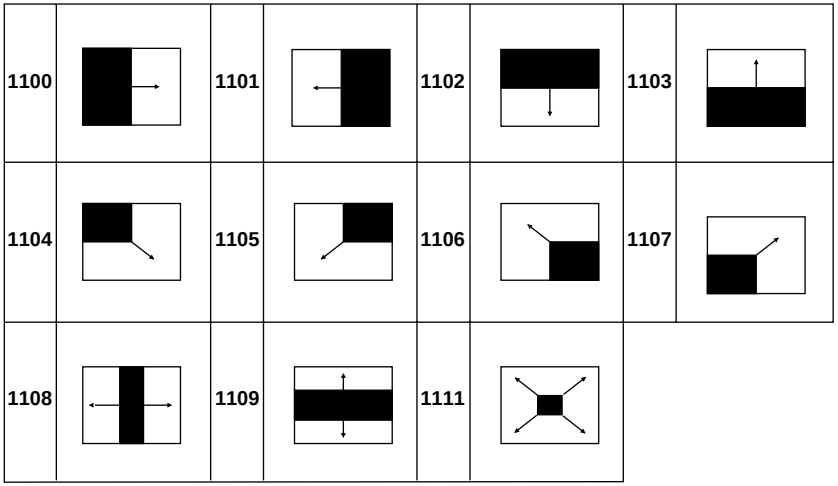
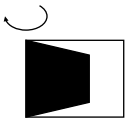
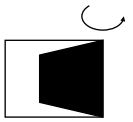
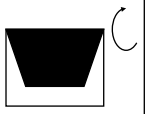
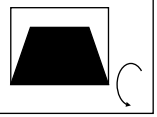
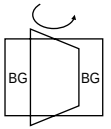
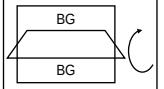


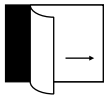
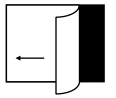
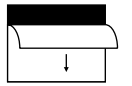
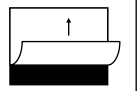
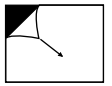
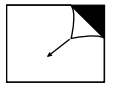
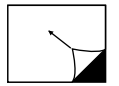
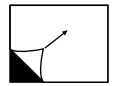
Squeeze



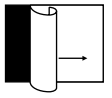
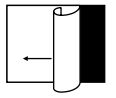
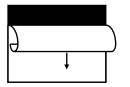
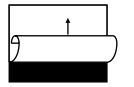
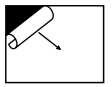
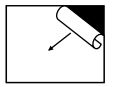
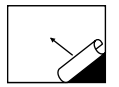
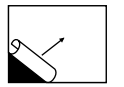
Door (BG: Background color)

1200		1201		1202		1203	
1204		1205					

Page turn

1300		1301		1302		1303	
1304		1305		1306		1307	

Page roll

1400		1401		1402		1403	
1404		1405		1406		1407	

User programmable

1901	PROG 1	**1902**	PROG 2	**1903**	PROG 3	**1904**	PROG 4
1905	PROG 5	**1906**	PROG 6	**1907**	PROG 7	**1908**	PROG 8
1909	PROG 9	**1910**	PROG 10	**1911**	PROG 11	**1912**	PROG 12
1951	PROG 51	**1952**	PROG 52	**1953**	PROG 53	**1954**	PROG 54
1955	PROG 55	**1956**	PROG 56				
1961	PROG 61	**1962**	PROG 62	**1963**	PROG 63	**1964**	PROG 64
1965	PROG 65	**1966**	PROG 66				

Menu System

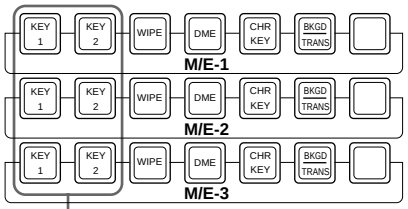
This Appendix shows the organization of each menu, and the top menu buttons in the menu control section used to recall each menu.

In addition to the top menu buttons, for some menus there are particular buttons which recall the menu when pressed twice in rapid succession.

For details of menus accessed by pressing a button twice, see page 3-4.

M/E-1, M/E-2, and M/E-3 KEY 1 Menus, and M/E-1, M/E-2, and M/E-3 KEY 2 Menus

Top menu buttons:



Item	
1	TYPE
2	FILL/SOURCE
3	EDGE
4	MAIN MASK
5	SUB MASK

KEY TYPE

F1	LUM
F2	LINEAR
F3	CLEAN
F4	CHROMA
F5	PATTERN
F6	KEY POS
F7	FINE KEY[a)]
F8	KEY INVERT
F9	KEY PRIORTY

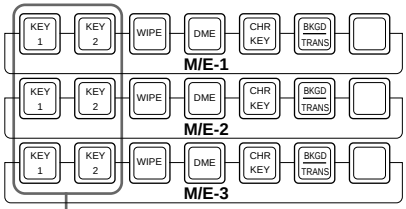
a) Displayed only when BKDS-7271 is installed.

KEY FILL / KEY SOURCE / PROCESSED KEY

F1	KEY BUS
F2	MATTE
F4	KEY BUS
F5	AUTO SELECT
F6	SPLIT
F8	PROC KEY
F9	CLEAN KEY
F10	KEY ADJUST

See the next page.

Top menu buttons:



Item	
1	TYPE
2	FILL/SOURCE
3	EDGE
4	MAIN MASK
5	SUB MASK

EDGE TYPE / EDGE FILL

F1	NORMAL
F2	BORDER
F3	DROP BORDER
F4	SHADOW
F5	OUTLINE
F6	4H DROP
F7	SOFT EDGE
F8	UTILITY BUS
F9	MATTE
F10	MATTE ADJUST

MATTE

F1	FLAT
F2	PATTERN MIX

(F1 selected)

MATTE / ROTATION / ADJUST

F1	FLAT
F2	PATTERN MIX
F4	POS
F5	ASPECT
F6	MULTI
F7	ANGLE
F8	SPEED
F9	MATTE1
F10	MATTE2
F14	COLOR INVERT

(F2 selected)

MASK TYPE / MASK SOURCE

F1	OFF
F2	KEY MASK
F3	BKGD MASK
F4	BOX
F5	PATTERN
F6	MASK MODIFY
F7	MASK INVERT

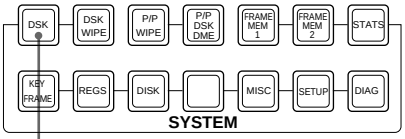
F1	PATTERN
F3	POS
F4	ASPECT
F5	MULTI
F6	ROTATION
F13	CENTER

MASK TYPE / MASK SOURCE

F1	OFF
F2	KEY MASK
F3	BKGD MASK
F4	WIPE
F5	UTILITY BUS
F7	MASK INVERT

DSK Menu

Top menu button:



Item	
1	TYPE
2	FILL/SOURCE
3	EDGE
4	MASK
5	ZABTON/SHADOW

KEY TYPE

F1	LUM
F2	LINEAR
F3	CLEAN
F4	COLOR VECTOR
F5	COLOR VECTOR ADJUST
F6	KEY POS
F7	FINE KEY
F8	KEY INVERT

BLINK

F9	KEY
F10	EDGE

F1	CLEAN VECTOR
F2	Y INVERT
F3	CHROMA POS

KEY FILL

F1	VIDEO
F2	MATTE
F3	MATTE ADJUST

KEY SOURCE

F4	VIDEO
F5	KEY
F7	FILL MEMORY
F8	SOURCE MEMORY
F9	MEMORY LOCK
F10	MEMORY

(F1 selected)

MATTE

F1	FLAT
F2	MIX

(F2 selected)

MATTE

F1	FLAT
F2	MIX
F3	COLOR INVERT
F4	POS
F5	ASPECT
F6	MULTI

ROTATION

F7	ANGLE
F8	SPEED

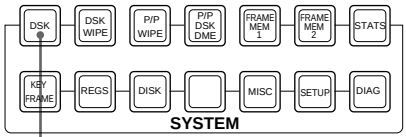
ADJUST

F9	MATTE1
F10	MATTE2

See the next page.

See the next page.

Top menu button:



Item	
1	TYPE
2	FILL/SOURCE
3	EDGE
4	MASK
5	ZABTON/SHADOW

EDGE TYPE

F1	NORMAL
F2	BORDER
F3	DROP BORDER
F4	SHADOW
F5	OUTLINE
F6	4H DROP
F7	SOFT EDGE
F8	SEP EDGE
F10	MATTE ADJUST

MATTE

F1	FLAT
F2	MIX

(F1 selected)

MATTE

F1	FLAT
F2	MIX
F3	COLOR INVERT
F4	POS
F5	ASPECT
F6	MULTI
F7	ANGLE
F8	SPEED
F9	MATTE1
F10	MATTE2

(F2 selected)

ZABTON SOURCE

F1	ZABTON
F2	BOX
F3	PATTERN
F4	POS
F5	ASPECT
F6	MULITI
F7	ROTATION
F10	FLYING SHADOW
F14	CENTER

MASK TYPE / MASK SOURCE

F1	OFF
F2	KEY MASK
F3	BKGD MASK
F4	BOX
F5	PATTERN
F6	MASK MODIFY
F7	MASK INVERT

ROTATION / ADJUST

F1	PATTERN
F3	POS
F4	ASPECT
F5	MULTI
F6	ROTATION
F13	CENTER

Continued from the previous page, F10 (MEMORY).

FREEZE MODE

F1	FREEZE
F2	OUTPUT SELECT
F3	FREEZE SIGNAL
F4	NAM
F5	INPUT MASK
F6	MASK SOURCE
F7	MASK INVERT
F8	PATTERN MODIFY
F9	MANUAL
F10	MOVE
F11	CLEAR
F15	VIEWER

(F9 selected)

PICTURE / FREEZE MODE

F1	STILL
F2	LIVE
F3	MOVE MODE
F4	POS CENTER
F5	INPUT MASK[a)]
F6	MASK SOURCE[a)]
F7	MASK INVERT[a)]
F8	PATTERN MODIFY[a)]
F9	MANUAL
F10	MOVE

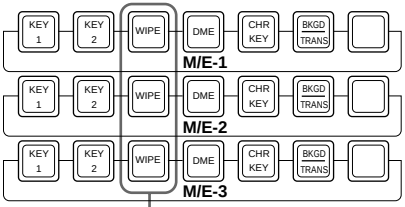
(F10 selected)

a) Displayed only when F2 is selected.

F1	PATTERN
F3	POS
F4	ASPECT
F6	ROTATION
F13	CENTER

M/E-1, M/E-2, and M/E-3 WIPE Menus

Top menu buttons:



Item	
1	PATTERN
2	DIRECT/POS
3	EDGE
4	MAIN MODIFY
5	SUB MODIFY

DIRECTION

F1	NORMAL
F2	NORMAL/ REVERSE
F3	REVERSE

MAIN POSITIONER

F4	POS
F5	NORMAL
F6	AUTO CENTER

SUB POSITIONER

F7	POS
F8	NORMAL
F9	AUTO CENTER
F14	CENTER
F17	CENTER

PATTERN / PAGE

F1	MIX
F2	MAIN
F3	SUB
F5	PAGE1
F6	PAGE2
F10	ENTER

(F2 selected)

PATTERN / MAIN/SUB LINK

F1	MIX
F2	MAIN
F3	SUB
F5	OFF
F6	SEMI
F7	FULL

(F1 selected)

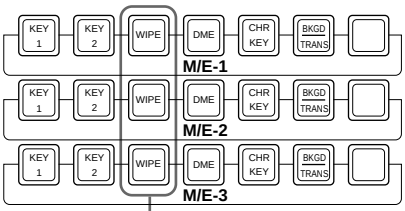
PATTERN / PAGE

F1	MIX
F2	MAIN
F3	SUB
F5	PAGE1
F6	PAGE2
F10	ENTER

(F3 selected)

See the next page.

Top menu buttons:



Item	
1	PATTERN
2	DIRECT/POS
3	EDGE
4	MAIN MODIFY
5	SUB MODIFY

EDGE TYPE / EDGE FILL

F1	OFF
F2	BORDER
F3	SOFT
F4	SOFT BORDER
F5	UTILITY BUS
F6	MATTE
F7	MATTE ADJUST

MATTE

F1	FLAT
F2	PATTERN MIX
F3	WIPE MIX

(F1 selected)

MATTE / ROTATION / ADJUST

F1	FLAT
F2	PATTERN MIX
F3	WIPE MIX
F4	POS
F5	ASPECT
F6	MULTI
F7	ANGLE
F8	SPEED
F9	MATTE1
F10	MATTE2
F14	COLOR INVERT

(F2 selected)

ROTATION

F1	ASPECT
F2	MULTI
F3	OFF
F4	ANGLE
F5	SPEED
F6	MAG
F7	H MOD
F8	V MOD

MATTE / ADJUST

F1	FLAT
F2	PATTERN MIX
F3	WIPE MIX
F4	COLOR INVERT
F9	MATTE1
F10	MATTE2

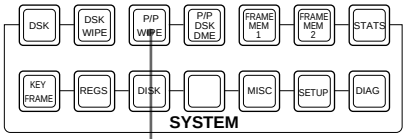
(F3 selected)

ROTATION

F1	ASPECT
F2	MULTI
F3	OFF
F4	ANGLE
F5	SPEED
F6	MAG
F7	H MOD
F8	V MOD

PGM/PST WIPE Menu

Top menu button:

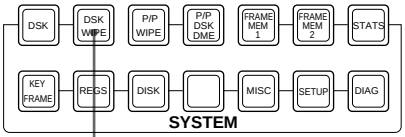


Item	
1	PATTERN
2	DIRECT/POS
3	EDGE
4	MODIFY
5	COLOR BKGD

	F10	ENTER
DIRECTION	F1	NORMAL
	F2	NORMAL/ REVERSE
	F3	REVERSE
POSITIONER	F4	POS
	F5	NORMAL
	F6	AUTO CENTER
	F14	CENTER
EDGE TYPE	F1	OFF
	F2	BORDER
	F3	SOFT
	F4	SOFT BORDER
ROTATION	F1	ASPECT
	F2	MULTI
	F3	OFF
	F4	ANGLE
	F5	SPEED
	F6	MAG

DSK WIPE Menu

Top menu button:



Item	
1	PATTERN
2	DIRECT/POS
3	MODIFY

F10	ENTER

DIRECTION

F1	NORMAL
F2	NORMAL/ REVERSE
F3	REVERSE

POSITIONER

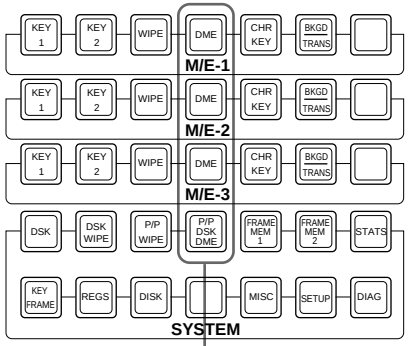
F4	POS
F5	NORMAL
F6	AUTO CENTER
F14	CENTER

ROTATION

F1	ASPECT
F2	MULTI
F3	OFF
F4	ANGLE
F5	SPEED
F6	MAG
F8	SOFT

M/E-1, M/E-2, and M/E-3 DME WIPE Menus, and P/P DSK DME WIPE Menu

Top menu buttons:



Item	
1	PATTERN
2	DIRECT/POS
3	EDGE

PAGE

F5	SL/SQ
F6	DOOR
F7	P-TURN
F8	P-ROLL
F9	PROG
F10	ENTER

DIRECTION

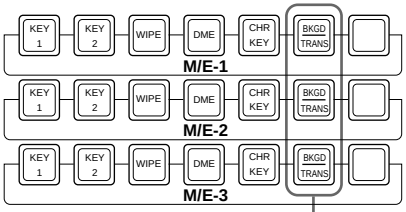
F1	NORMAL
F2	NORMAL/ REVERSE
F3	REVERSE
F5	POS
F15	CENTER

EDGE TYPE

F1	OFF
F2	BORDER
F3	SOFT
F4	SOFT BORDER

M/E-1, M/E-2, and M/E-3 BKGD/TRANS Menus

Top menu buttons:



Item	
1	COLOR BKGD
2	LIMIT/S-MIX

MATTE

F1	FLAT
F2	PATTERN MIX
F3	WIPE MIX

(F1 selected)

MATTE

ROTATION

ADJUST

F1	FLAT
F2	PATTERN MIX
F3	WIPE MIX
F4	POS
F5	ASPECT
F6	MULTI
F7	ANGLE
F8	SPEED
F9	MATTE1
F10	MATTE2
F14	COLOR INVERT

(F2 selected)

MATTE

ADJUST

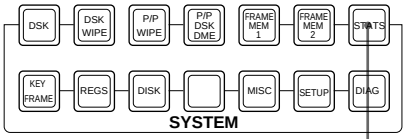
F1	FLAT
F2	PATTERN MIX
F3	WIPE MIX
F4	COLOR INVERT
F9	MATTE1
F10	MATTE2

(F3 selected)

F1	TRANS LIMIT

STATUS Menu

Top menu button:



Item	
1	M/E-1
2	M/E-2
3	M/E-3
5	ALL

DIRECTION

F1	SNAPSHOT
F2	WIPE
F3	DME WIPE
F4	NORMAL[a)]
F5	NORMAL/REVERSE[a)]
F6	REVERSE[a)]

a) Displayed only when F2 or F3 is selected.

F8	AUX SELECT
F10	TRANS RATE

F1	AUX1
F2	AUX2
F3	AUX3
F4	AUX4
F5	AUX5
F6	AUX6
F7	AUX7
F8	AUX8
F10	SELECT
F11	AUX9
F12	AUX10
F13	AUX11
F14	AUX12
F15	AUX13
F16	ED PVW

BLOCK SELECT / TRANS RATE

F1	M/E-1
F2	M/E-2
F3	M/E-3
F4	P/P DSK
F5	AUTO TRANS
F6	KEY1 MIX
F7	KEY2 MIX

(F1, F2 or F3 selected)

BLOCK SELECT / TRANS RATE

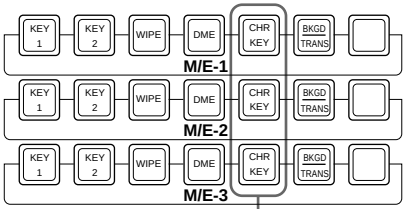
F1	M/E-1
F2	M/E-2
F3	M/E-3
F4	P/P DSK
F5	AUTO TRANS
F6	DSK1
F7	DSK2
F8	DSK3
F9	DSK4
F10	FTB

(F4 selected)

M/E-1, M/E-2, and M/E-3 CHROMA KEY Menus

- **Chroma keying using only a BKDS-2031, and**
- **Chroma keying using a BKDS-2032 as a second chroma key channel (dual mode)**

Top menu buttons:



Item	
1	SETUP
2	ADJUST
3	VIDEO CORRECT
4	MASK

INPUT SELECT	F1	MODE[a]
	F4	1[b]
	F5	2[b]
	F6	3[b]
	F7	4[b]
	F8	KEY BUS[b, c]
	F9	FRGD FORMAT[c]

AUTO CHR KEY	F1	SAMPLE MARK
	F2	AUTO START
	F4	KEY ACTIVE
	F5	COLOR CANCEL
	F6	WINDOW
	F7	KEY POS

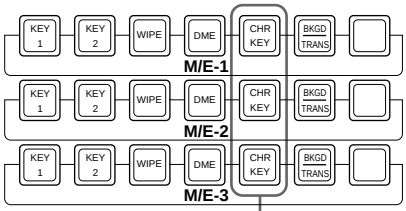
	F1	FRGD

MASK TYPE	F1	OFF
	F2	KEY MASK
	F3	BKGD MASK
MASK SOURCE	F4	BOX
	F5	WIPE
	F6	UTILITY BUS
	F7	MASK INVERT

a) Only when BKDS-2032 is fitted.
b) When BKDS-2032 is fitted, does not appear for channel 2.
c) D1 systems only.

• Chroma keying using a BKDS-2031 and BKDS-2032 for the enhanced chroma key function (single mode)

Top menu buttons:



	Item
1	SETUP
2	ADJUST
3	VIDEO CORRECT
4	MAIN MASK
5	SUB MASK

INPUT SELECT

F1	MODE
F2	TYPE
F3	FRGD/BKGD
F4	1
F5	2
F6	3
F7	4
F8	KEY BUS[a)]
F9	FRGD FORMAT[a)]
F10	KEY MIX

a) D1 systems only.

AUTO KEY

F1	SAMPLE MARK
F2	AUTO START
F3	KEY ADJUST
F5	COLOR CANCEL
F6	WINDOW
F7	KEY POS
F8	Y BAL
F9	SHADOW
F10	PLANE

DUAL KEY ADJUST

F1	KEY ACTIVE
F2	DUAL KEY
F3	SAMPLE MARK
F4	AUTO START
F5	AREA
F6	BOX
F7	PATTERN
F8	AREA MODIFY
F9	AREA INVERT

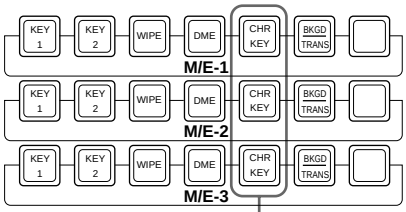
F1	PATTERN
F3	POS
F4	ASPECT
F5	MULTI
F6	ROTATION
F13	CENTER

CANCEL KEY ADJUST

F1	COLOR CANCEL
F3	CANCEL KEY
F4	WINDOW
F5	POS
F6	Y BAL

See the next page.

Top menu buttons:



Item	
1	SETUP
2	ADJUST
3	VIDEO CORRECT
4	MAIN MASK
5	SUB MASK

SPOT CCR

F1	FRGD
F2	BKGD
F3	SPOT CCR
F4	SAMPLE MARK
F5	AUTO START
F6	KEY ADJUST
F7	WINDOW
F8	MASK
F9	MASK SOURCE
F10	MASK INVERT

MASK TYPE
MASK SOURCE

F1	OFF
F2	KEY MASK
F3	BKGD MASK
F4	BOX
F5	PATTERN
F6	MASK MODIFY
F7	MASK INVERT[a)]

a) Displayed only when F4 is selected.

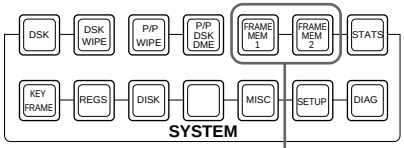
F1	PATTERN
F3	POS
F4	ASPECT
F5	MULTI
F6	ROTATION
F13	CENTER

MASK TYPE
MASK SOURCE

F1	OFF
F2	KEY MASK
F3	BKGD MASK
F4	WIPE
F5	UTILITY BUS
F7	MASK INVERT

FRAME MEMORY 1 and FRAME MEMORY 2 Menus

Top menu button:



Item	
1	MANUAL
2	PAINT
3	MOVE
4	LINK[a)]
5	LOCK

a) FRAME MEMORY 1 only

F1	MEMORY LINK
F2	PATTERN LINK

F1	FREEZE
F2	OUTPUT SELECT
F3	MEMORY CLEAR
F4	FREEZE MODE
F5	INPUT SELECT
F6	NAM
F7	INPUT MASK
F8	MASK SOURCE
F9	MASK INVERT
F10	PATTERN MODIFY

F1	PATTERN
F3	POS
F4	ASPECT
F6	ROTATION
F13	CENTER

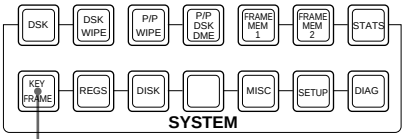
F1	PAINT
F3	MEMORY CLEAR
F5	INPUT SELECT
F7	PATTERN
F8	POS
F9	HUE ROTATE
F10	PATTERN MODIFY
F18	CENTER

PICTURE	F1	STILL
	F2	LIVE
MOVE MODE	F3	COLOR
	F4	B&W
	F5	POS CENTER
	F7	INPUT MASK[b)]
	F8	MASK SOURCE[b)]
	F9	MASK INVERT[b)]
	F10	PATTERN MODIFY[b)]

b) Displayed only when F2 is selected.

KEY FRAME Menu

Top menu button:



DISPLAY MODE

F1	TIME LINE
F2	EXPAND
F3	DETAIL
F4	RUN MODE
F5	PAUSE
F6	RECALL MODE
F7	START[a)]
F8	END[a)]
F9	SWER PATH
F10	DME PATH

DISPLAY

RUN MODE

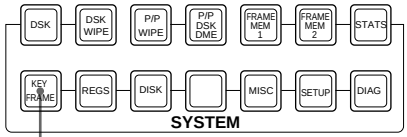
F1	XPT DSBL
F2	LOOP
F3	END TIME
F10	KF FADER

See the next page.

See page A-24.

a) Displayed only when F2 is selected.

Top menu button:



DISPLAY MODE

F1	TIME LINE
F2	EXPAND
F3	DETAIL
F4	RUN MODE
F5	PAUSE
F6	RECALL MODE

DISPLAY

F7	START
F8	END
F9	SWER PATH
F10	DME PATH

F1	ALL
F2	M/E-1
F3	M/E-2
F4	M/E-3
F5	USER
F6	PGM/PST DSK

CURVE

F1	M/E-1
F2	M/E-2
F3	M/E-3
F4	USER
F5	PGM/PST DSK
F8	XPT DSBL
F10	HUE PATH

HUE

F1	M/E-1
F2	M/E-2
F3	M/E-3
F4	USER
F5	PGM/PST DSK

CURVE

F1	KEY1
F2	KEY2
F3	WIPE
F4	TRANS
F5	COLOR BKGD
F6	CHR KEY
F8	XPT DSBL
F10	HUE PATH

HUE

F1	KEY 1
F2	KEY 2
F3	WIPE
F5	COLOR BKGD
F6	CHR KEY

CURVE

F1	VIDEO PROC
F2	AUX BUSES
F3	FRAME MEM 1
F4	FRAME MEM 2
F10	HUE PATH

HUE

F1	VIDEO PROC
F3	FRAME MEM1
F4	FRAME MEM2

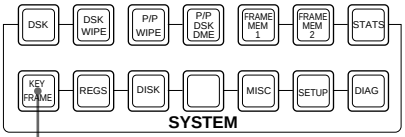
CURVE

F1	DSK1
F2	DSK2
F3	DSK3
F4	DSK4
F5	WIPE
F6	TRANS
F7	COLOR BKGD
F8	XPT DSBL
F10	HUE PATH

HUE

F1	DSK1
F2	DSK2
F3	DSK3
F4	DSK4
F5	WIPE
F7	COLOR BKGD

Top menu button:



DISPLAY MODE

F1	TIME LINE
F2	EXPAND
F3	DETAIL
F4	RUN MODE
F5	PAUSE
F6	RECALL MODE

DISPLAY

F7	START
F8	END
F9	SWER PATH
F10	DME PATH

See the next page.

F1	ALL
F2	TRANS ALL
F3	BKGD EDGE
F4	FREEZE RECUR
F5	PIC MODIFY
F6	VIDEO MODIFY
F7	IN/OUT
F8	MATTE
F9	3D SHDW

F1	BORDER
F2	SOFT
F3	CROP
F4	SHADOW
F5	WIPE CROP

F1	TRANSFORM
F2	BKGD EDGE
F3	FREEZE RECUR
F4	PIC MODIFY
F5	VIDEO MODIFY
F6	IN/OUT
F7	MATTE
F8	NON LINEAR
F9	3D SHDW

F1	TIMING
F2	CONSTNT

F1	POST CONTRST
F2	MOSAIC
F3	MASK
F4	SKETCH
F5	METAL
F6	CCR

F1	MULTI MOVE
F2	DEFOCUS BLUR
F3	DIM FADE
F4	LIGHTING
F5	GROW
F6	BRICK

SOURCE

F1	LIGHT
F2	LOC
F3	ROT

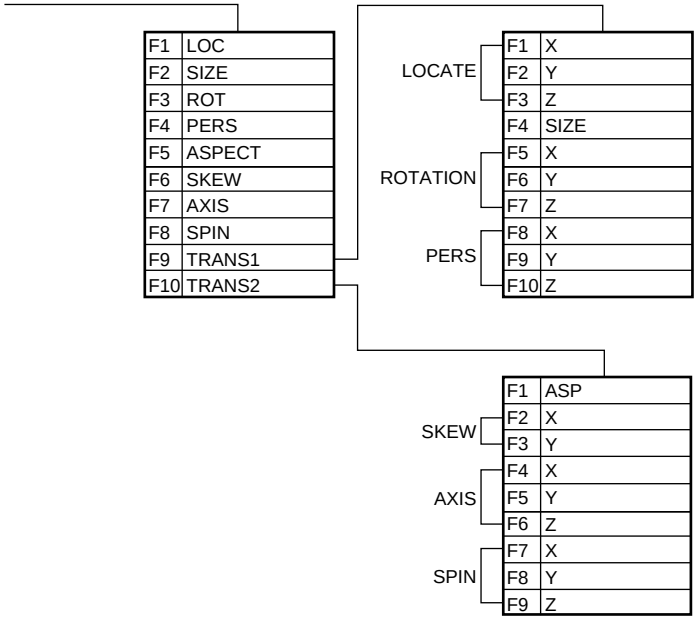
TARGET

F4	LIGHT
F5	LOC
F6	ROT

F1	BKGD
F2	BORDER
F3	SHADOW
F4	SEPIA
F5	LIGHTING
F6	TRAIL
F7	DIM
F8	WIPE

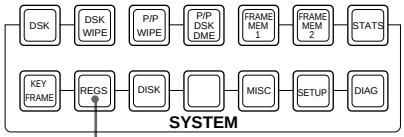
F1	COMBINE
F2	XPT ANALOG

Continued from the previous page, F2(TRANS ALL).



REGISTER Menu

Top menu button:



Item	
1	EFFECT
2	SNAPSHOT
3	ATTRIB EDIT
4	CONFIG USER
5	CH COPY
6	VTR

EDIT	F1	MOVE
	F2	SWAP
	F3	COPY
	F4	DELETE
	F5	NAME
	F6	MERGE
SELECT	F7	ALL
	F8	BLOCK
	F9	ONE
	F10	EXEC
	F11	LOCK
	F12	UNLOCK

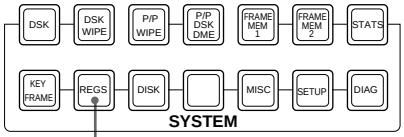
F9	YES
F10	NO

EDIT	F1	MOVE
	F2	SWAP
	F3	COPY
	F4	DELETE
	F5	NAME
SELECT	F7	ALL
	F8	BLOCK
	F9	ONE
	F10	EXEC
	F11	LOCK
	F12	UNLOCK

F9	YES
F10	NO

See the next page.

Top menu button:



Item	
1	EFFECT
2	SNAPSHOT
3	ATTRIB EDIT
4	CONFIG USER
5	CH COPY
6	VTR

F1	VTR1
F2	VTR2
F4	TC INPUT

F1	EFFECT
F2	SNAP SHOT
F3	SETUP
F4	FROM CH
F6	TO CH
F7	ALL
F8	BLOCK
F9	ONE
F10	EXEC

F9	YES
F10	NO

F1	FRAME MEM1
F2	FRAME MEM2
F3	VIDEO PROCESS
F4	AUX BUSES

With cursor on “GPI”

GPI OUTPUT PORT No.

F1	PORT1
F2	PORT2
F3	PORT3
F4	PORT4
F5	PORT5
F6	PORT6
F7	PORT7
F8	PORT8
F9	OFF

With cursor on “M/E-1”, “M/E-2”, or “M/E-3”

F3	EFF DISS
F4	AUTO TRANS
F5	XPT DISABLE
F20	CLEAR

With cursor on “AUX BUSES”

XPT DISABLE

F1	AUX 1
F2	AUX 2
F3	AUX 3
F4	AUX 4
F5	AUX 5
F6	AUX 6
F7	AUX 7
F8	AUX 8
F11	AUX 9
F12	AUX 10
F13	AUX 11
F14	AUX 12
F15	AUX 13
F16	EDIT PVW

With cursor on “P/P DSK”

F3	EFF DISS
F4	AUTO TRANS
F5	XPT DISABLE
F20	CLEAR

With cursor on “EXT”

F9	EXT

F7	XPT DISABLE

With cursor on “DME-1” to “DME-6”

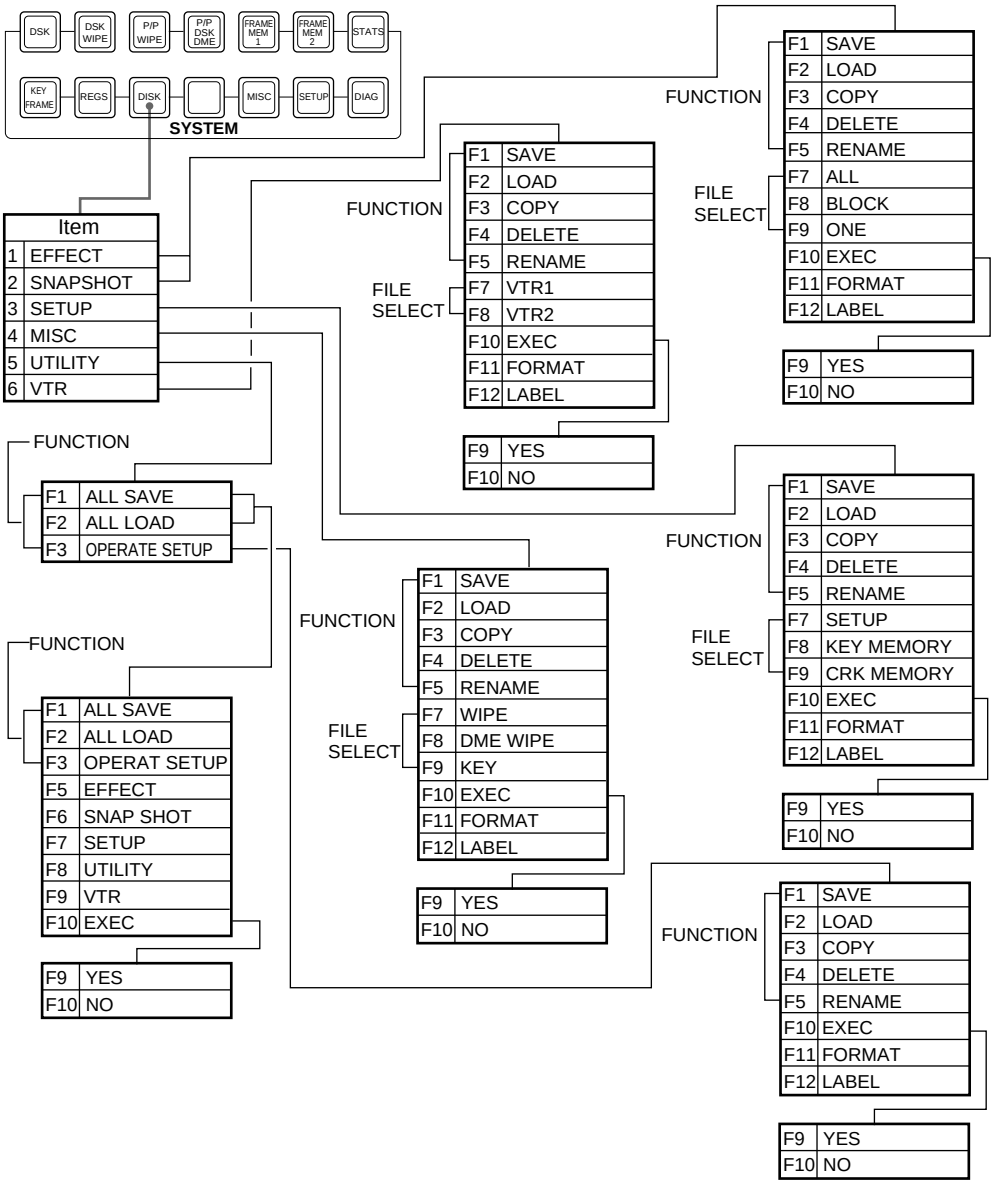
F3	EFF DISS
F5	XPT DISABLE
F6	DURATION

With cursor on “VIDEO PROC”

F4	EFF DISS

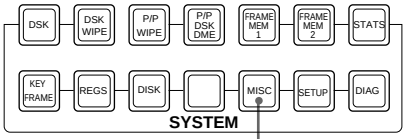
DISK Menu

Top menu button:



MISC Menu

Top menu button:



Item	
1	ENABLE
2	SAFE TITLE
3	VIDEO PROCESS
4	CCR
5	COPY

F1	GPI
F2	DME1
F3	DME2
F4	DME3
F5	DME4
F6	EDIT A[a)]
F7	EDIT B[a)]
F8	SWER PANEL 2
F9	DMK PANEL B
F10	TABLET

a) Display depends on setup.

SAFE TITLE

F1	SWER PGM[b)]
F2	EDIT PVW[b)]
F3	M/E1 PGM[b)]
F4	M/E2 PGM[b)]
F5	DSK1 PGM[b)]
F6	DSK2 PGM[b)]
F7	DSK3 PGM[b)]
F8	DKS4 PGM[b)]

b) Display depends on setup.

F1	VIDEO PROCESS
F4	COPY[c)]
F5	SWAP[c)]
F8	UNITY[c)]
F10	STATUS
F20	CLEAR

c) Display may or may not appear, depending on the operation.

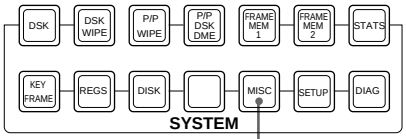
See the next page.

F3	M/E
F4	KEYER
F5	WIPE
F6	MATTE

F1	LAST X
F3	FROM
F5	XPT DSBL[d)]
F7	TO
F8	SWAP
F10	COPY

d) For WIPE and MATTE, F5 is not displayed.

Top menu button:



Item	
1	ENABLE
2	SAFE TITLE
3	VIDEO PROCESS
4	CCR
5	COPY

FROM	F1	LAST X
	F2	SOURCE
	F4	STAGE
	F5	SELECT
	F7	TO
EXEC	F8	SWAP
	F10	COPY

	F1	CCR
	F2	INPUT
	F12	UNITY

	F1	CCR
	F2	COPY
	F4	INPUT
	F5	PRIMARY
	F6	SECOND
	F7	RGB CLIP
	F8	OUTPUT
	F9	LUM PROC
	F10	YUV CLIP

RGB ADJUST	F1	CCR
	F2	PRIMARY
	F4	BLACK
	F5	WHITE
	F6	GAMMA
	F7	KNEE
	F9	PRIMARY MASK
	F10	MASK
	F12	UNITY

COLOR ADJUST	F1	CCR
	F2	SECOND
	F3	BLUE
	F4	CYAN
	F5	GREEN
	F6	YELLOW
	F7	RED
	F8	MAGENTA
	F9	SECOND MASK
	F10	MASK
	F12	UNITY

CLIP ADJUST	F1	CCR
	F2	RGB CLIP
	F4	DARK
	F5	WHITE
	F12	UNITY

	F1	CCR
	F2	OUTPUT
	F12	UNITY

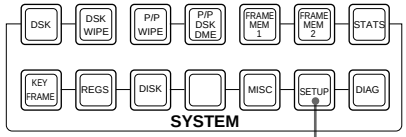
ADJUST SELECT	F1	CCR
	F2	LUM PROC
	F3	MODE
	F4	DARK
	F5	MID
	F6	BRIGHT
	F7	LEVEL
	F8	SOFT
	F9	LUM MASK
	F10	MASK
	F12	UNITY

CLIP ADJUST	F1	CCR
	F2	YUV CLIP
	F4	LUM
	F5	CHROMA
	F12	UNITY

MASK SOURCE	F1	PRIMARY MASK
	F2	SECOND MASK
	F3	LUM PROC MASK
	F4	BOX
	F5	PATTERN
	F7	MODIFY
	F8	MASK INVERT

SETUP Menu

Top menu button:



Item	
1	SYSTEM
2	INPUT/OUTPUT
3	EFFECT
4	PERIPH
5	OPERATION

See the next page.
See page A-34.
See page A-35.
See page A-36.

F3	SYSTEM SETUP
F4	SYSTEM CONFIG
F5	BACKUP
F6	INITIALIZE
F7	INFORMATION
F10	INSTALL

F1	DATE
F2	TIME
F3	SIGNAL FORMAT
F4	7.5 IRE[a)]
F5	SCREEN FORMAT
F6	SWITCH TIMING
F7	RESUME
F8	PANEL RESUME
F9	ALARM

a) D2 systems only.

FORMAT	F2	D2-525
	F3	D1-525
	F4	D1-625
SCREEN	F5	4:3
	F6	16:9
	F7	7.5 IRE SETUP[b)]
	F10	EXEC

b) D2 systems only.

F2	DVS7000 SYSTEM
F10	EXEC

F9	YES
F10	NO

RESET	F1	PANEL
	F2	SWER
	F3	DMK
ALL CLEAR	F4	PANEL
	F5	SWER
	F6	DMK
	F10	EXEC

	F2	SYSTEM CONFIG
	F3	DMK CONFIG
	F4	SWER PGM[c)]
	F5	REMOTE PANEL PGM
SYSTEM DELAY	F6	SWER
	F7	DMK
	F9	FM&CCR CONFIG
	F10	MLT XPT ASSIGN

c) 3-M/E systems only.

F9	YES
F10	NO

BACKUP	F1	SETUP
	F2	DEFAULT
SETUP LOCK	F4	UNLOCK
	F5	LOCK ALL
	F6	LOCK WO_XPT
	F10	EXEC

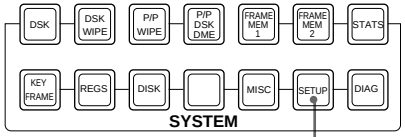
F9	YES
F10	NO

XPT ASSIGN SETUP	F1	PORT SELECT
	F3	SELECT
	F4	TABLE SELECT
	F6	1
	F7	2
	F8	3
	F9	4
	F10	5

CH1 CCR	F1	WITH FM
	F2	WITHOUT FM
CH2 CCR	F3	WITH FM
	F4	WITHOUT FM
CCR LOCATION	F6	BEFORE FM
	F7	AFTER FM

F1	BUTTON NO.
F4	INHIBIT
F6	SELECT
F8	SOUCE SELECT

Top menu button:



Item	
1	SYSTEM
2	INPUT/OUTPUT
3	EFFECT
4	PERIPH
5	OPERATION

F3	SWER INPUT
F4	CRK INPUT
F5	DMK INPUT
F6	SWER OUTPUT
F7	DMK OUTPUT
F8	THRU MODE
F9	OUTPUT ASSIGN

D2 systems

F1	BUTTON No.
F4	GENLOCK
F5	HUE ADJUST
F6	SCH ADJUST
F7	PHASE ADJUST
F9	VIDEO SHIFT

D1 systems

F1	BUTTON No.
F5	PHASE ADJUST

F3	OUTPUT ADJUST1
F4	OUTPUT ADJUST2

F2	REF OUT PHASE
F4	REF OUT FORMAT

D2 systems

F1	INPUT SELECT
F3	SIGNAL FORMAT
F4	GENLOCK
F5	PHASE ADJUST

D2 systems

F1	OUTPUT SELECT
F2	DMK INPUT
F3	WHITE
F4	DARK
F5	VIDEO
F6	V BLKG
F7	BIT ROUND

CLIP

D2 systems

F1	INPUT SELECT
F4	GENLOCK
F5	HUE ADJUST
F6	SCH ADJUST
F7	PHASE ADJUST
F9	VIDEO SHIFT

D1 systems

F1	OUTPUT SELECT
F2	DMK INPUT
F3	WHITE
F4	DARK
F5	CHROMA
F6	V BLKG
F7	Y BIT ROUND
F8	C BIT ROUND

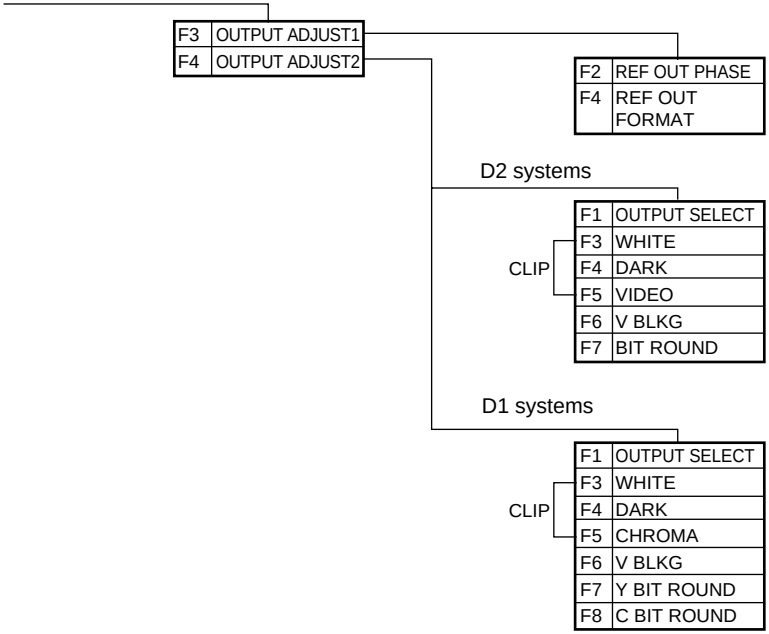
CLIP

D1 systems

F1	INPUT SELECT
F5	PHASE ADJUST

See the next page.

Continued from the previous page, F7 (DMK OUTPUT).



Continued from the previous page, F8 (THRU MODE).

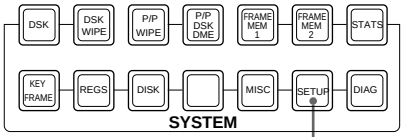
F3	BUTTON No.
F5	INPUT THROUGH
F7	BUS SELECT
F8	OUTPUT THROUGH

Continued from the previous page, F9 (OUTPUT ASSIGN).

PVW SELECT

F1	OUTPUT SELECT
F2	AUTO CLEAN
F3	SELECT
F4	AUTO PVW
F5	SIGNAL SELECT
F7	PVW OUT SELECT
F8	PVW/KEY
F9	DEFINE PVW
F10	AUTO PVW2

Top menu button:



Item	
1	SYSTEM
2	INPUT/OUTPUT
3	EFFECT
4	PERIPH
5	OPERATION

F3	KEYER
F4	WIPE
F5	MATTE
F6	SAFE TITLE

F2	KEY MEMORY
F3	CRK MEMORY
F4	DEFAULT LEARN
F5	CRK MEMORY ASSIGN
F6	MASK PROC

F1	M/E-1 KEY1
F2	M/E-1 KEY2
F3	M/E-2 KEY1
F4	M/E-2 KEY2
F5	M/E-3 KEY1
F6	M/E-3 KEY2
F7	DSK1
F8	DSK2
F9	DSK3
F10	DSK4

MEMORY SELECT

F1	MEMORY SELECT
F3	OFF
F4	1
F5	2
F6	3
F7	4
F8	KEY BUS

M/E

P/P DSK

F2	CENTER ADJUST
F3	EDGE SOFT
F5	CENTER ADJUST
F6	EDGE SOFT

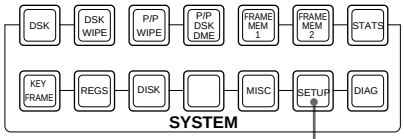
LUM LEVEL

F2	COLOR LIMIT
F4	MAX
F5	MIN

SAFE TITLE

F2	OUTPUT SELECT
F3	CROSS
F4	BOX
F6	SELECT
F8	OUTPUT SELECT

Top menu button:



Item	
1	SYSTEM
2	INPUT/OUTPUT
3	EFFECT
4	PERIPH
5	OPERATION

F3	PORT ASSIGN
F4	AUX CTRL
F5	DME IF
F6	ROUTER IF
F7	GPI INPUT
F8	GPI OUTPUT
F9	PANEL PORT

F2	PORT SELECT
F5	SELECT
F7	PERIPH SELECT

F1	BUS SELECT
F2	PANEL1
F3	DME1
F4	DME2
F5	DME3
F6	DME4
F7	EDIT A
F8	EDIT B
F9	PANEL2
F10	KF/SS

F1	GPI OUTPUT
F2	VTR IF
F3	GPI
F4	DME 3&4
F5	PERIPH
F6	GPI
F7	DME 5&6
F8	PERIPH
F9	VTR 1&2
F10	EXEC

DME 3&4

DME 5&6

F1	DME SELECT
F2	OFF
F3	BUTTON No.
F4	ON AIR TALLY
F6	SELECT
F8	BUS SELECT
F10	DME ASSIGN

RE-ENTRY

F2	M/E SELECT
F4	SELECT
F6	DME SELECT

F1	VTR 1
F2	VTR 2

TC SOURCE

F1	PORT SELECT
F2	TRIGGER TYPE
F3	PULSE WIDTH
F4	FIELD
F7	SELECT
F9	ACTION SELECT

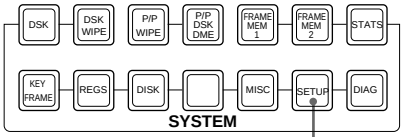
F1	SWER INPUT
F4	NO CONNECT
F7	SELECT
F9	DEST SELECT
F10	SS DISABLE

F1	DEVICE SELECT
F2	PORT SELECT
F3	TRIGGER TYPE
F4	PULSE WIDTH
F6	SELECT
F8	ACTION SELECT
F10	TEST FIRE

F1	DEVICE SELECT
F2	PORT SELECT
F3	TRIGGER TYPE
F4	SELECT
F5	ALL
F7	SELECT
F9	ACTION SELECT

REGION

Top menu button:



Item	
1	SYSTEM
2	INPUT/OUTPUT
3	EFFECT
4	PERIPH
5	OPERATION

F3	XPT ASIGN
F4	AUTO SELECT
F5	OPERAT MODE
F6	PANEL ENABLE
F7	LINK
F8	TRACK BALL
F9	UTILITY
F10	SHOT BOX

F1	BUTTON No.
F4	INHIBIT
F6	SELECT
F8	SOURCE SELECT
F10	SOURCE NAME

F2	SOURCE SELECT
F6	SELECT
F8	NAME SELECT
F9	USERNAME SELECT
F10	SET USER NAME

F1	SET USER NAME
F6	?
F7	CLEAR
F8	BACK SPACE
F9	ENTER
F10	SELECT

F3	FILL
F6	SOURCE

AUTO DROP

F1	DSK 1
F2	DSK 2
F3	DSK 3
F4	DSK 4

F1	BUS TOGGLE
F2	DSK AUTO DROP
F3	XPT SHIFT
F4	SHIFT LOCK
F6	KF MODE
F7	CUSTOM MODE
F8	PROGRAM BUTTON

F1	AUTO SAVE
F2	EDIT ENABLE AT OFF

F1	FLXI PAD MODE
F2	FLXI PAD AUTO SELECT
F3	REF SEL MODE
F4	SS RECALL MODE
F5	XPT TALLY
F6	FLX PAD SS LASTX
F7	FADER CURVE
F8	BUS TALLY
F9	KEY PAD LASTX

F1	SCREEN SAVER
F3	M/E-1
F4	M/E-2
F5	M/E-3
F6	P/P
F7	DSK 1
F8	DSK 2
F9	DSK 3
F10	DSK 4

M/E CONTROL

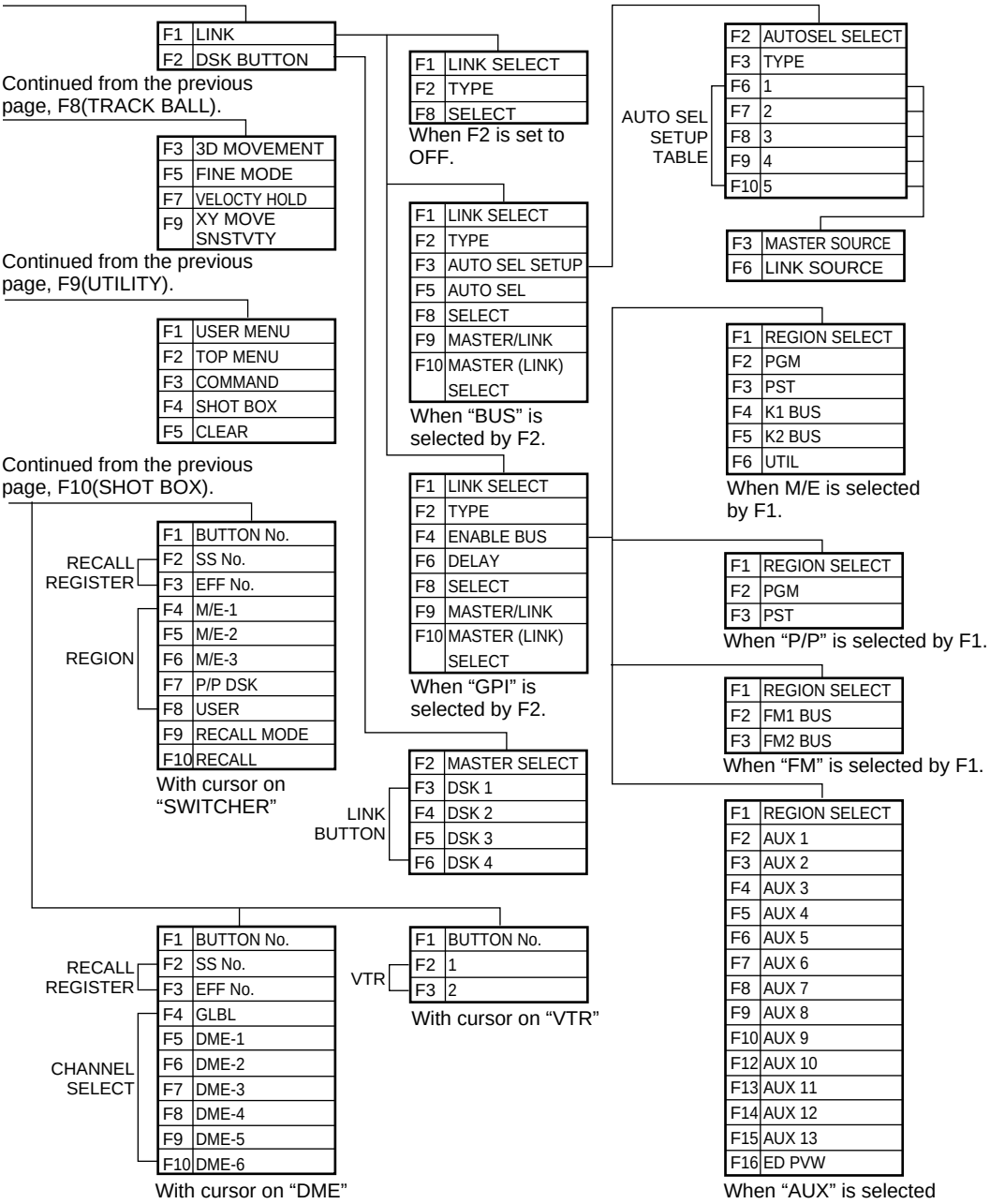
FADE TO BLACK

F2	PROGRAM BUTTON
F6	SELECT
F8	FUNC SELECT
F10	DEFINE ALL

F1	SELECT
F2	M/E-1
F3	M/E-2
F4	M/E-3
F5	P/P
F6	USER

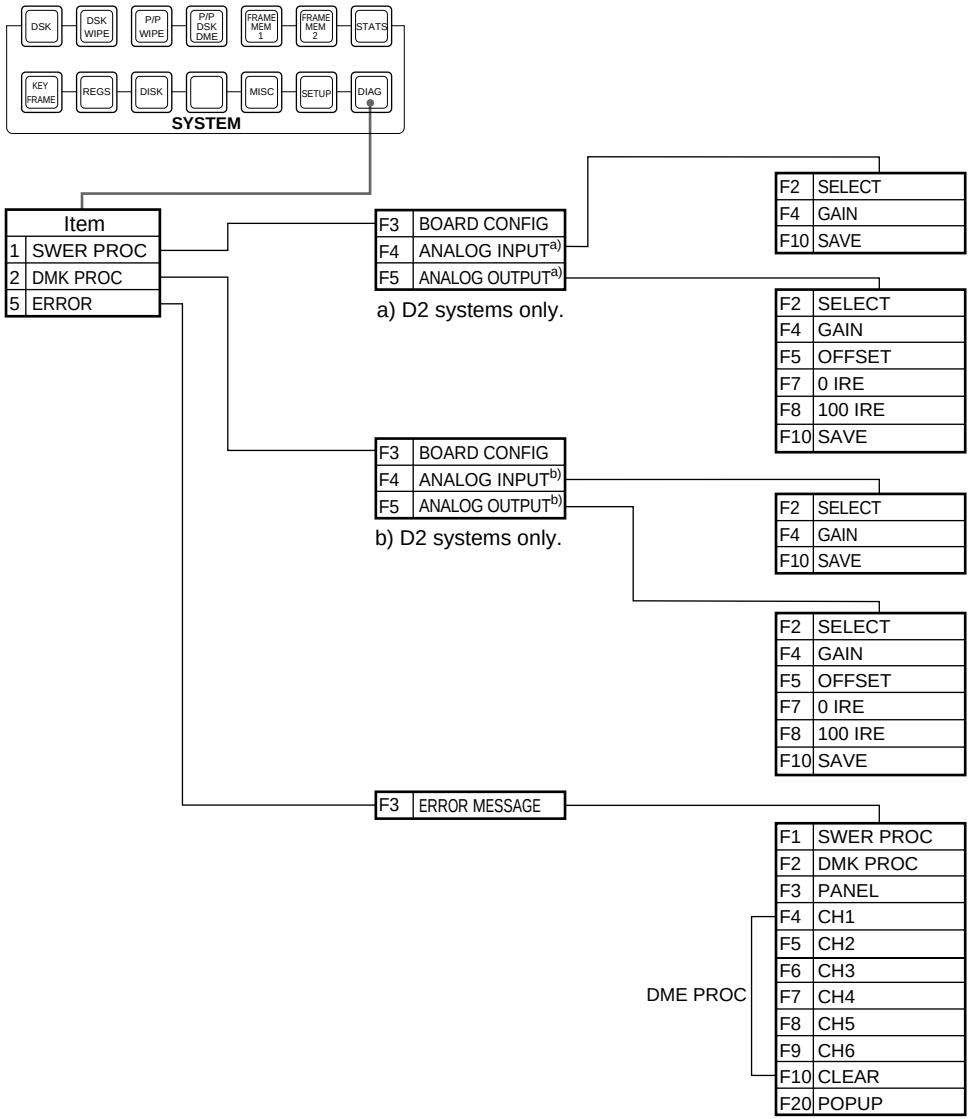
See the next page.

Continued from the previous page, F7(LINK).



DIAGNOSIS Menu

Top menu button:



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