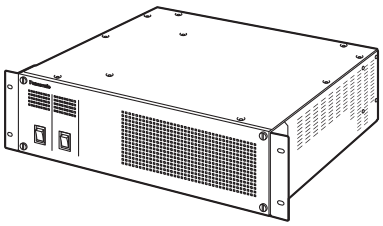
Operating Guide
(Included Installation Instructions)

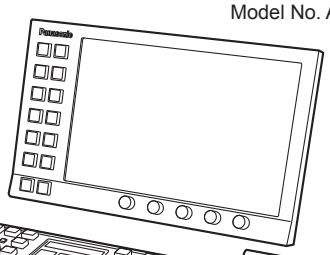
2ME Live Switcher

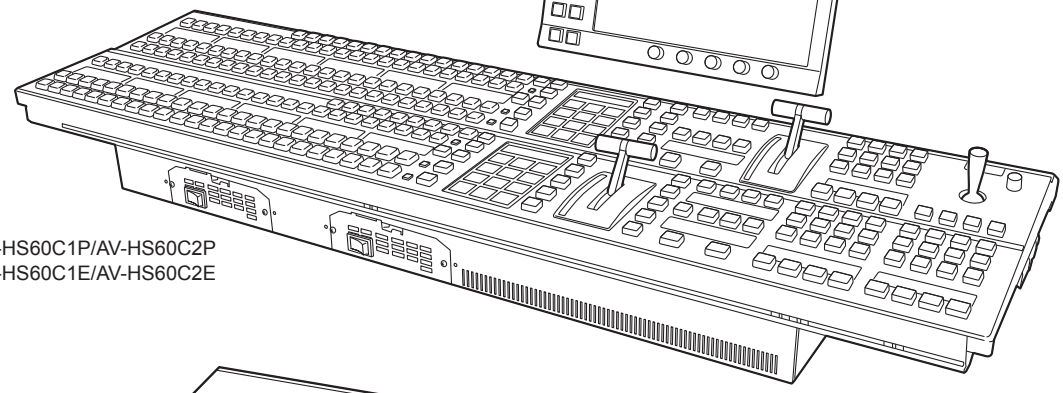
AV-HS6000 Series

Main Frame
Model No. AV-HS60U1P/AV-HS60U2P
Model No. AV-HS60U1E/AV-HS60U2E

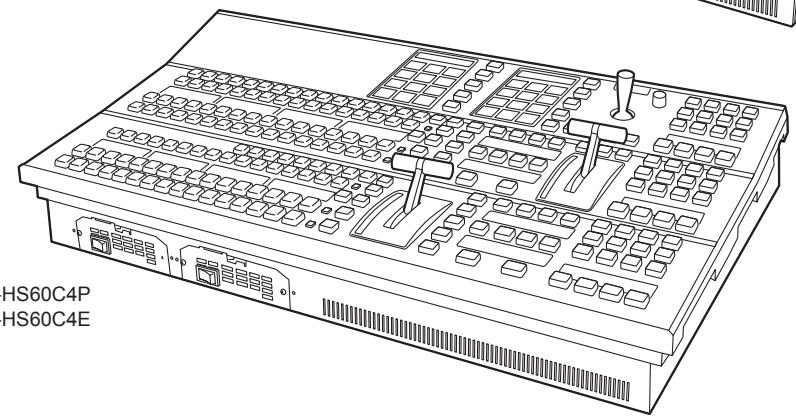


Menu Panel
Model No. AV-HS60C3G





Control Panel
Model No. AV-HS60C1P/AV-HS60C2P
Model No. AV-HS60C1E/AV-HS60C2E



Control Panel
Model No. AV-HS60C4P
Model No. AV-HS60C4E

Panasonic

W0214HM4066 -YI

ENGLISH

VQT5J51A-4(E)

Information on software for this product

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To obtain the source codes, visit the following website.

http://pro-av.panasonic.net/

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How to read this document

■ Abbreviations

The following abbreviations are used in this document.

- Microsoft® Windows® 7 Professional SP1 32/64-bit is abbreviated to Windows 7.
- Windows® Internet Explorer® 8.0, Windows® Internet Explorer® 9.0, and Windows® Internet Explorer® 11.0 are abbreviated as Internet Explorer.
- The model numbers of the Main Frames AV-HS60U1P/AV-HS60U2P, AV-HS60U1E/AV-HS60U2E are described as “AV-HS60U1”/“AV-HS60U2”.
- The model numbers of the Control Panels AV-HS60C1P/AV-HS60C2P, AV-HS60C1E/AV-HS60C2E are described as “AV-HS60C1”/“AV-HS60C2”.
- The model numbers of the Control Panels AV-HS60C4P and AV-HS60C4E are described as “AV-HS60C4”.
- The model number of the Menu Panel AV-HS60C3G is described as “AV-HS60C3”.
- The model number of the optional Storage Module AV-HS60D1G is described as “AV-HS60D1”.
- The model number of the optional Chromakey Software AV-SFU60G is described as “AV-SFU60”.
- Both SD memory cards and SDHC memory cards are described as “memory cards”.
  When individual descriptions are provided, they are featured individually.
- Personal computers are described as “computers”.

■ Illustrations and screen displays featured in this document

- What is shown in this document’s illustrations and screen displays may differ from how it is actually appears.

■ Conventions used in this document

- Words and phrases in [ ] brackets indicate descriptions displayed in the Menu Panel AV-HS60C3 or the multi-selection menu panel, source name display panel, status display area of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.
- Words and phrases in < > brackets indicate design text used on this unit, such as button names.

■ Reference pages

- In this document, reference pages are described as (page 00).

Contents

Chapter 1 Overview

Please read this chapter, and check the accessories before use.

Before use

■ Overview

Live Switcher AV-HS6000 employs a newly designed, easy-to-use UI graphical Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to support accurate switching.

And even with a 3U size compact design, it is equipped with abundant inputs and outputs for great system integration as seen by its 32 SDI and 2 DVI inputs plus 16 SDI outputs.

To top it all off, situations where creative video production is demanded alongside fast response are handled by providing 4 DVEs per ME to enable diverse transitions.

■ Precautions

- Be sure to perform validation of the unit before use.
- Should displaying or recording of the video fail due to a malfunction of the unit or memory cards used, we will not assume liability for such failure.

■ Network security

The unit also has functions which are used when it is connected to a network. Using the unit when it has been connected to a network may possibly give rise to the following issues.

- Leakage or theft of information through this unit
- Use of this unit for illegal operations by persons with malicious intent
- Interference with or stoppage of this unit by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this unit in a network secured by a firewall, etc.
- If this unit is connected to a network that includes computers, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated antivirus program, anti-spyware program, etc.).

The following points should be borne in mind as well.

- Use with the same segment is recommended for the devices which are connected to the unit. If the unit is connected to the devices whose segments are different, events dependent upon the settings inherent to the network equipment, for instance, may occur. Thoroughly check the connections with the devices to which the unit will be connected prior to the start of operation.
- Do not choose an installation location where the unit, cables and other parts will be easily damaged.

■ Concerning differences in the system versions

This document describes the functions of the models with system version 4.00-00-0.00 or later.

Some functions cannot be operated in the models with system version earlier than 4.00-00-0.00.

To check the system version of this unit, select the <SYS> button on the top menu → [MAINTENANCE] → [Status] tab → [System Version] in the [System Version] column. (page 156)

For the latest information, visit the following website.

http://pro-av.panasonic.net/ (English only)

■ Concerning the switcher mode

There are three operation modes of Standard mode, 3G mode, and 4K mode for this unit. The video formats that can be selected are different for each mode.

- The HD format and the SD format can be selected for the Standard mode.
  - HD format: [1080/59.94i], [1080/50i], [1080/29.97PsF], [1080/25PsF], [1080/24PsF], [1080/23.98PsF], [720/59.94p], [720/50p].
  - SD format: [480/59.94i], [576/50i].
- Following formats can be selected for the 3G mode.
  [1080/59.94p], [1080/50p]
- Following formats can be selected for the 4K mode.
  [2160/59.94p], [2160/50p]

This document describes the operation of the Standard mode unless it is specifically noted. For details on operation of the 3G mode or the 4K mode, refer to “Difference of function for each mode” (page 164).

Features

■ Graphical Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

- The multi-selection panel is set up for each ME for quick access to various functions such as wipe patterns, shot memory, and event memory.
- Tactile color LCD switch: The multi-selection panel employs switch so that you can make sure keys being pressed, supporting reliable operation.
- Crosspoint buttons: Crosspoint buttons can be grouped by buttons lights with multiple color.
- Source name display panel: The monochrome source name display panel is set up for each ME so that graphics can be displayed on the crosspoint buttons.

■ Rich array of inputs/outputs with standard 34 inputs

- The unit is equipped with SDI×32 inputs/DVI×2 inputs and SDI×16 outputs.
- All inputs have built-in frame synchronizers.
- Color correctors are installed in 8 inputs and 4 outputs.
- Up-converters are installed in 4 inputs and down-converters are installed in 2 outputs.

■ Diverse transitions and a full array of keyers

- The unit is equipped with 4 DVE and 2 DVE (2D) per ME to handle backgrounds and keys.
- AUX1 to AUX4 buses are equipped with MIX transitions.
- The unit is equipped with real-time high-quality chroma keying that employs Primatte®* algorithms. Standard 1 channel per ME is expandable up to 4 channels per ME.
- The unit is equipped with 4 channels per ME (total 8 channels) of keyer which is capable of PinP.
- The unit is equipped with 4 channels of downstream keyers.
- The unit is equipped with 4 channels of upstream keyers.

* Primatte® is a registered trademark of IMAGICA DIGIX Inc. The copyrights of Primatte® belong to IMAGICA DIGIX Inc. The patents for Primatte® belong to IMAGICA DIGIX Inc.

■ MultiViewer output

- The unit is equipped with 4 independent MultiViewer displays.
- Single MultiViewer can display a maximum of 16 video sources.
- Source names, tallies, audio level meters, and safety markers are displayable.

■ Network function

- Web server function: Enables menu operation from a Web browser of a computer which is connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.

■ Redundant operation system for peace of mind

- The Main Frame AV-HS60U2 and the Control Panel AV-HS60C2/AV-HS60C4 have separate power sources. (The single power supply model is also available.)
- Operation with two additional panels is possible by IP connection.

■ Wide range of functions to increase operability

- Shot memory, event memory, and macro memory allow you to preset and recall frequently used effects easily.
- Video clips and still images can be registered up to 4ch each, allowing them to be easily used for CG wipes.
- The switcher can be set by the 10.1-inch touch-operated Menu Panel AV-HS60C3 (optional) or by a PC monitor and USB mouse.
- With plug-in software, external device control capability can be added in accordance with the operation workflow.

Configuration of the AV-HS6000 series

Configuration list of the AV-HS6000 series

Series product name		AV-HS6000 series
Main Frame	Single Power Supply model	AV-HS60U1
	Redundant Power Supply model	AV-HS60U2
Control Panel (24XPT)	Single Power Supply model	AV-HS60C1
	Redundant Power Supply model	AV-HS60C2
Control Panel (16XPT)	Redundant Power Supply model	AV-HS60C4
Menu Panel		AV-HS60C3
Storage Module		AV-HS60D1
Chromakey Software		AV-SFU60

Accessories of the AV-HS6000 series

■ Main Frame AV-HS60U1/AV-HS60U2

- AC cable
  - AV-HS60U1P: 1 cable, AV-HS60U2P: 2 cables
  - AV-HS60U1E: 2 cables, AV-HS60U2E: 4 cables
- Rack-mounted rear panel support bracket
- Screws for the rack-mounted rear panel support bracket: 8 screws
- Operating Guide of the AV-HS6000 series (Excerpted Version)
- AV-HS60U1/AV-HS60U2 Operating Instructions (Excerpted Version)

■ Control Panel AV-HS60C1/AV-HS60C2

- AC cable
  - AV-HS60C1P: 1 cable, AV-HS60C2P: 2 cables
  - AV-HS60C1E: 2 cables, AV-HS60C2E: 4 cables
- LAN cable: 1 cable (used to connect with the Main Frame AV-HS60U1/AV-HS60U2)
- Switch blank cap (large): 24 caps
- Switch blank cap (small): 12 caps
- AV-HS60C1/AV-HS60C2 Operating Instructions

■ Control Panel AV-HS60C4

- AC cable
  - AV-HS60C4P: 2 cables
  - AV-HS60C4E: 4 cables
- LAN cable: 1 cable (used to connect with the Main Frame AV-HS60U1/AV-HS60U2)
- Switch blank cap (large): 16 caps
- Switch blank cap (small): 8 caps
- AV-HS60C4 Operating Instructions (Excerpted Version)

■ Menu Panel AV-HS60C3

- Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 connection cable (with ferrite core): 1 cable
- Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 mounting bracket
- Screw for the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 mounting bracket: 6 screws
- AV-HS60C3 Operating Instructions (Excerpted Version)

■ Storage Module (AV-HS60D1)

- AV-HS60D1 Installation Guide

■ Chromakey Software (AV-SFU60)

- Read before use
- Software Licensing Agreement
- Pouch containing the key code

NOTE

・ After removing the product from its container, dispose of the AC cable cap and packing materials in an appropriate manner.

Required computer environment

NOTE

- For the host computer to be connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2, use a computer which meets the following conditions:

CPU	Intel® Core™ 2 DUO 2.4 GHz or more recommended
Memory	2 GB or more recommended
Network function	100Base-TX
Image display function	Resolution: 1024×768 pixels or more Color generation: True Color (24 bits or more)
Compatible OS	Microsoft Windows 7: Internet Explorer 9.0, Internet Explorer 11.0 • Internet Explorer 8.0 cannot be used.
Hard disk drive	50 MB or more free memory
Other	Adobe® Reader® (For viewing the Operating Guide)

Precautions for use

■ Handle carefully.

Do not drop the product, or subject it to strong impact or vibration. Do not carry or move the product by the fader lever. This is important to prevent malfunction or accidents.

■ Use the product at a temperature of 0 °C to 40 °C (32 °F to 104 °F).

Avoid using the product at a cold place below 0 °C (32 °F) or at a hot place above 40 °C (104 °F), because extremely low or high temperature may adversely affect the parts inside.

■ Turn off the power before connecting or disconnecting cables.

Before connecting or disconnecting the cables, be sure to turn off the power.

■ Avoid humidity and dust.

Avoid using the product at a humid, dusty place because much humidity and dust will cause damage to the parts inside.

■ Maintenance

Turn off the power and wipe the product using a dry cloth. To remove stubborn dirt, dip a cloth into a diluted solution of kitchen detergent (neutral), wring it out well, and wipe the product gently. Then, after wiping the product with a moist cloth, wipe it again with a dry cloth.

NOTE

- Avoid using benzine, paint thinners and other volatile fluids.
- If a chemical cleaning cloth is to be used, carefully read through the precautions for its use.

■ Precaution to be observed during production

Video switching and video effect functions of this unit can be used to produce videos which flicker rapidly or videos which change rapidly.

However, bear in mind when using these functions in production that the kinds of videos produced may have an adverse effect on the viewer's physical well-being.

■ Built-in display

Leaving the organic EL panel of the source display panel, multi-selection menu panel, and LCD panel of the Menu Panel AV-HS60C3 on with the same image over a long period of time may result in afterimage (burn-in). Use after configuring the screensaver settings.

The liquid crystal parts are highly precise with more than 99.99% of the pixels effective. This leaves less than 0.01% of pixels that may not light or may remain on all the time.

These phenomena are normal and will have no effect on the images you shoot.

Condensation may form on the LCD panel if you use the unit where temperatures fluctuate. Wipe it with a soft, dry cloth.

When the unit has completely cooled down, the display on the LCD monitor appears slightly darker than usual immediately after the power has been turned on. Once the internal temperature of the unit rises, the display returns to the normal brightness.

■ Touch screen

Operate with your fingers on the touch screen of the Menu Panel AV-HS60C3. Do not touch the panel with sharp-pointed, hard object such as a ballpoint pen.

■ When the product is to be discarded

When the product is to be discarded at the end of its service life, ask a specialized contractor to dispose of it properly in order to protect the environment.

■ Consumable parts

- **Cooling fan:**
  This is a consumable part.
  As a general rule, replace it every 5 years or so (when the unit has been operated for 15 hours a day).
- **Power supply unit:**
  This is a consumable part.
  As a general rule, replace it every 5 years or so (when the unit has been operated for 15 hours a day).

The period when the consumable parts need to be replaced will differ depending on the operating conditions.

When the time comes to replace one of these parts, be sure to ask your dealer to do the job.

Chapter 2 Installation and Connection (To installation personnel)

This chapter describes installation and connection.

Installation (To installation personnel)

CAUTION:
These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

indicates safety information.

Installing the Main Frame AV-HS60U1/AV-HS60U2

When installing or connecting the unit, be sure to ask your dealer. When you want to add the redundant power supply on the Main Frame AV-HS60U1, consult your dealer.

■ Connecting the power supply

- Connect the <SIGNAL GND> terminal on the rear panel of the unit to the ground of the system.
- Use the Main Frame AV-HS60U2 with both the power supply 1 and the power supply 2.
  An alarm is displayed when there is no AC power input to the power supply 1 and the power supply 2 or when the power switch is set to <OFF>.
  (An alarm will not be displayed on the Main Frame AV-HS60U1, because it has only the power supply 1.)

■ Handle carefully.

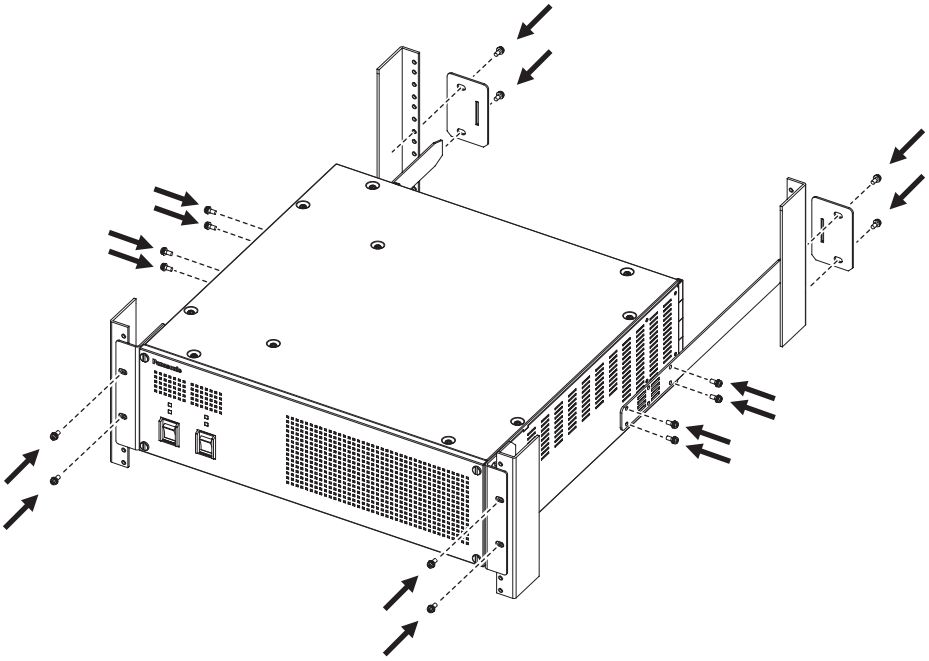
- Dropping the unit or subjecting it to strong impact or vibration may cause trouble and/or malfunctioning.

■ Do not allow any foreign objects to enter inside the unit.

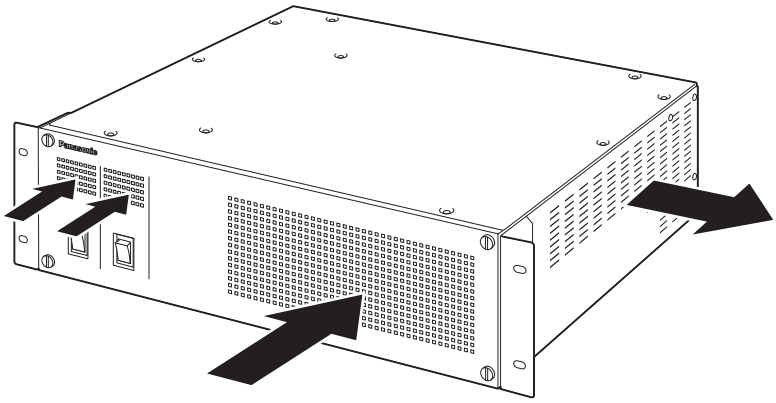
- Allowing water, metal items, scraps of food or other foreign objects inside the unit may cause a fire and/or electric shocks.

■ Choosing the best installation location

- This unit is a device for indoor use only.
- Securely mount the unit on the 19-inch standard rack that complies with the EIA standards (overall depth: 600 mm (23-5/8 inches) or more).



- Securely affixed with screws that match an appropriately sized rack.
- Be sure to attach the rack-mounted rear panel support bracket (accessory) that supports the back part of the Main Frame AV-HS60U1/AV-HS60U2.
  (Prepare a support bracket appropriate for the rack if the supplied bracket cannot be attached.)
- Secure sufficient space around the ventilation holes at the front and side of the front cover.



- Do not install the unit in a manner in which the unit or cables can be easily damaged.
- Avoid installing the unit where it will be exposed to direct sunlight or to the hot air that is blown out from other products.
- Installing the unit in a very humid, dusty, or vibration-prone location may cause malfunction.

Installing the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

When installing or connecting the unit, be sure to ask your dealer. When you want to add the redundant power supply on the Control Panel AV-HS60C1, consult your dealer.

■ Connecting the power supply

- Connect the <SIGNAL GND> terminal on the rear panel of the unit to the ground of the system.
- Use the Control Panel AV-HS60C2/AV-HS60C4 with both the power supply 1 and the power supply 2.
  An alarm is displayed when there is no AC power input to the power supply 1 and the power supply 2 or when the power switch is set to <OFF>.
  (An alarm will not be displayed on the Control Panel AV-HS60C1, because it has only the power supply 1.)

■ Handle carefully.

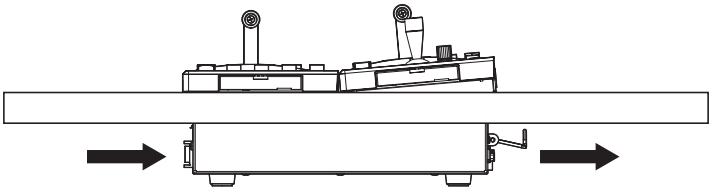
- Dropping the unit or subjecting it to strong impact or vibration may cause trouble and/or malfunctioning.

■ Do not allow any foreign objects to enter inside the unit.

- Allowing water, metal items, scraps of food or other foreign objects inside the unit may cause a fire and/or electric shocks.

■ Choosing the best installation location

- This unit is a device for indoor use only.
- Install the unit on a sufficiently strong, stable, and level surface for use.
- Secure a space surrounding the ventilation holes on the front panel of the power supply unit and on the rear panel of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 so that air circulation is not impeded.
  In particular, ensure sufficient space between ventilation and wiring when using mounted in a panel or table.



- Avoid installing the unit where it will be exposed to direct sunlight or to the hot air that is blown out from other products.
- Installing the unit in a very humid, dusty or vibration-prone location may cause malfunction.

Installing the Menu Panel AV-HS60C3

Attach the panel using 4 mounting holes (M4 screw ×4, 75 mm (2-15/16 inches) pitch) on the rear panel of the Menu Panel AV-HS60C3.
For details, refer to “Dimensions of the Menu Panel AV-HS60C3” (page 177).

Attaching the Storage Module AV-HS60D1 (SSD)

If attached inside the Main Frame AV-HS60U1/AV-HS60U2, register memories of Still and Clip, and project data can be saved in the Main Frame AV-HS60U1/AV-HS60U2.
For details, refer to the “Installation Guide” of the Storage Module AV-HS60D1 (optional).

NOTE

- When attaching or removing the module, be sure to ask your dealer.
- Before attaching or removing the module, turn off the power, and disconnect the power plug.
- Before coming into physical contact with the Storage Module AV-HS60D1 (optional), touch a grounded metal object with your hand to discharge the static electricity in your body. A safe way to proceed is to wear an anti-static wrist strap. Touching the option board with static still in your body may cause malfunction.
- Do not drop the Storage Module AV-HS60D1 (optional) or subject it to strong impact or vibration.
- When attaching or removing the Storage Module AV-HS60D1 (optional), take care not to hurt yourself on the edges or metal parts of the Main Frame AV-HS60U1/AV-HS60U2.

Installing the Chromakey Software AV-SFU60

If the activation operation is performed using the key code attached to the Chromakey Software AV-SFU60 (optional), chroma key functions of KEY2, KEY3, and KEY4 can be added. One package contains a single keyer for ME1 and ME2, so three packages are required when adding chroma key functions to all keyers.

For details, refer to “Expansion of the chroma key function” (page 158).

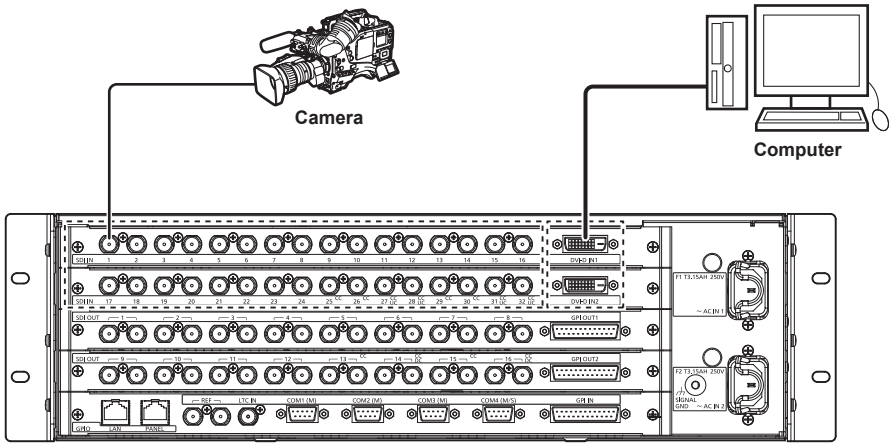
Connection (To installation personnel)

Connecting the imaging systems

<SDI IN 1> to <SDI IN 32>/<DVI-D IN1>/<DVI-D IN2> terminals

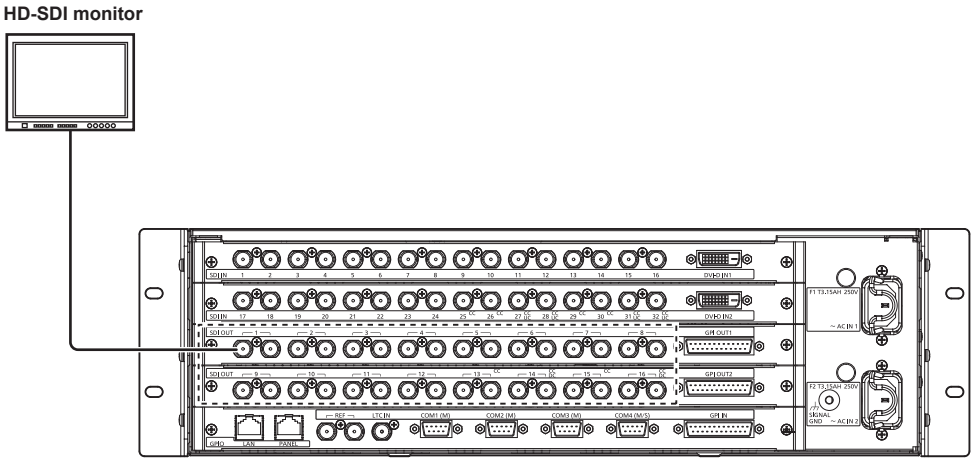
Connect cameras, VTR, and other external sources.

The SDI input of the Main Frame AV-HS60U1/AV-HS60U2 has a frame synchronizer function, and a non-synchronized SDI signal can be input. To reduce image delay, set the frame synchronizer function to [Off], send a sync signal to the unit and the input device, and configure a synchronized system.



<SDI OUT 1> to <SDI OUT 16> terminals

Connect the switcher output signal to monitors and other external devices.

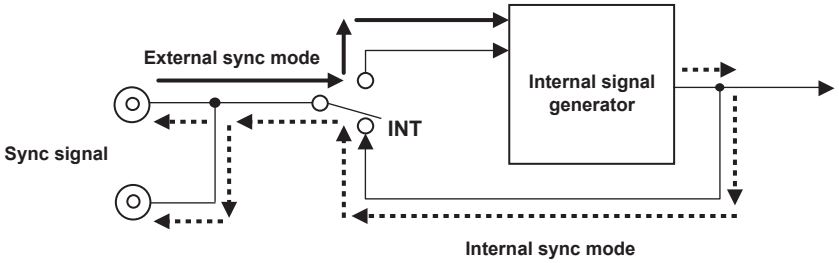


<REF> terminal

Connect the system sync signal from the sync signal generator.

The loop-through output is performed in the external sync mode. If the loop-through output is not going to be used, provide a 75 Ω termination.

Black burst signals are output from both terminals in the internal sync mode.



Connecting the control systems

Connect the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4, computer for menu operation, or external devices to the Main Frame AV-HS60U1/AV-HS60U2.

The connection of the main control panel and the sub control panel is described here using the illustration of AV-HS60C1/AV-HS60C2.

AV-HS60C4 can also be connected in the same manner.

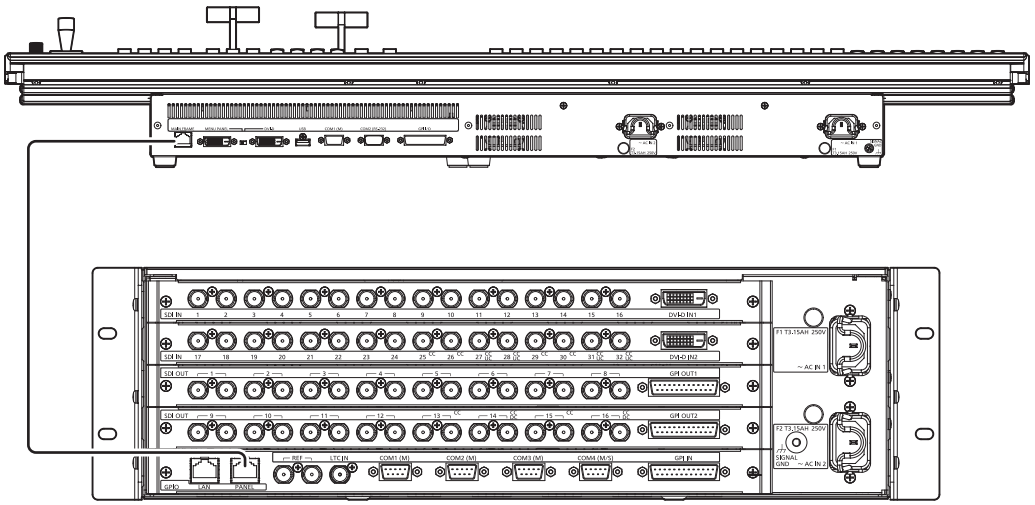
NOTE

- Prepare a cable in the following cases.
  - When connecting a computer for menu operation or external devices to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.
  - When installing in a location out of reach of the supplied LAN cable (CAT5E) length (10 m (32.8 ft)).
  - Recommended cable: LAN cable (CAT5E), straight or crossover cable, STP (Shielded Twisted Pair), max. 100 m (328 ft)

Connecting the Main Frame AV-HS60U1/AV-HS60U2 and the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

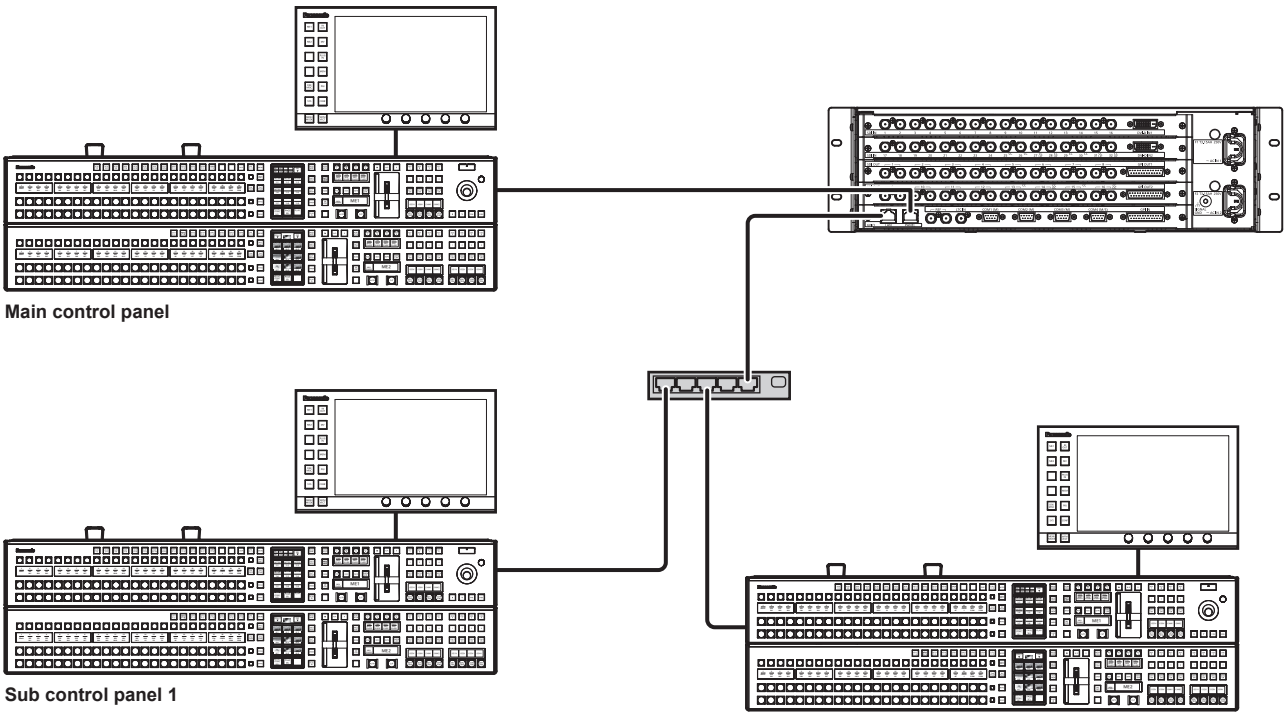
Connect the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2 and the <MAIN FRAME> terminal of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 using the supplied LAN cable (CAT5E).

Supplied cable: LAN cable (CAT5E), straight cable, STP (Shielded Twisted Pair), 10 m (32.8 ft)



■ Connecting the sub control panel

The second and the third sub control panels (sub control panel 1, sub control panel 2) can be connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.



Main control panel

Sub control panel 1

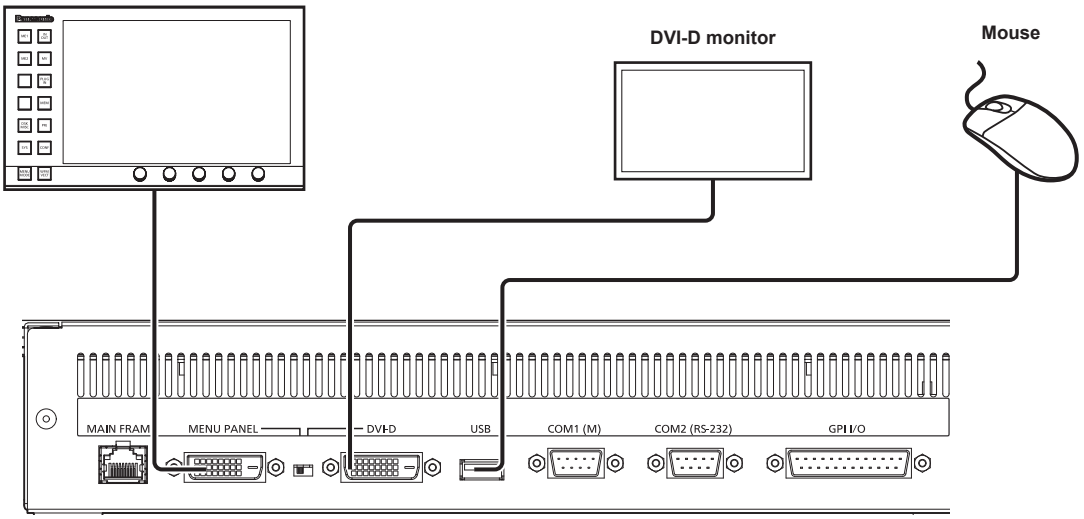
Sub control panel 2

NOTE

- The memory card cannot be used with the sub control panel.
- The serial port cannot be used with the sub control panel.
- Image, WFM, or VECTOR are not displayed in the Menu Panel AV-HS60C3 connected to the sub control panel.
- Depending on the combination of the purchased Main Frame AV-HS60U1/AV-HS60U2 and the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4, the version of the firmware for each may not match. When using the sub control panel for the first time, connect to the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2, turn on the power, and match the firmware version of each. For details, refer to “Notification when the power is turned on for the first time” (page 33).
- Changing the network setting is necessary when using the sub control panel. For details, refer to “Configuring the network for the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4” (page 47).

Connecting the Menu Panel AV-HS60C3

Connect the optional Menu Panel AV-HS60C3 or DVI-D monitor with resolution 1366×768 and USB mouse.

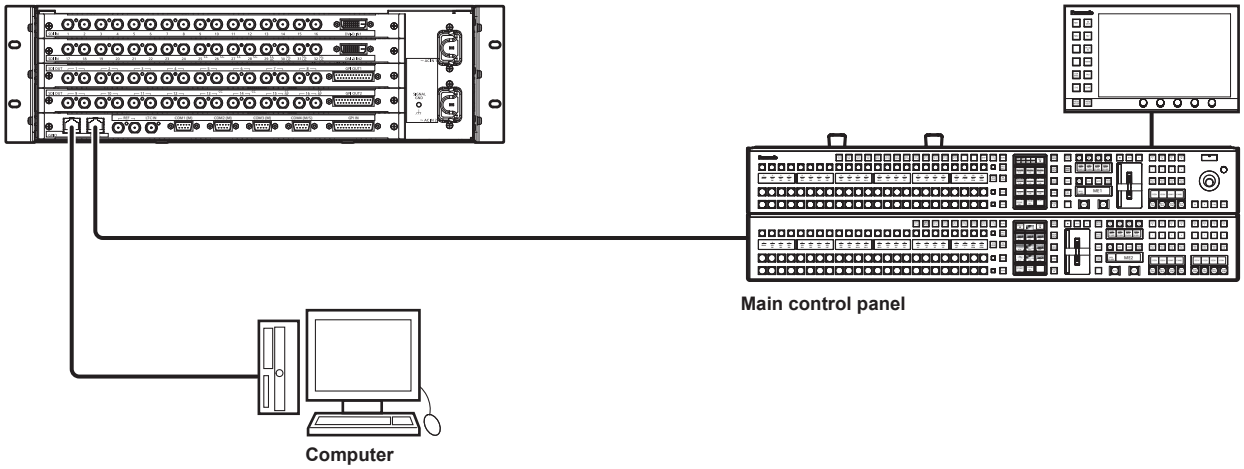


■ Connecting a computer

Connect to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 and control from the Web browser of the computer.

If using Internet Explorer, IE8 or earlier browser versions cannot be used.

For details on the compatible OS and browser, refer to “Required computer environment” (page 9).



- **Computer settings**

  The IP address of the computer to connect is set to a different address from the Main Frame AV-HS60U1/AV-HS60U2 within the private address range, and the subnet mask is set to the same address as the Main Frame AV-HS60U1/AV-HS60U2.

  For details of network setting of the Main Frame AV-HS60U1/AV-HS60U2, refer to “Configuring the network for the Main Frame AV-HS60U1/AV-HS60U2” (page 48).

- **Web browser settings**
  - Start the Web browser in the computer, and enter the IP address of the Main Frame AV-HS60U1/AV-HS60U2 (default value: 192.168.0.5).
  - When the Web browser launches, enter the following user name and password.
    User name: admin
    Password: admin

External device control

For details on the connection with external devices, refer to “External Interfaces” (page 168).

■ GPI I/O

Connect the <GPI IN> terminal, <GPI OUT1> terminal, and <GPI OUT2> terminal of the Main Frame AV-HS60U1/AV-HS60U2, and the <GPI I/O> terminal of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to external devices.

■ LAN

Connect the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 to external devices such as a computer.

- It supports plug-in software.

■ Serial port

Connect the serial ports (RS-422×4) of the Main Frame AV-HS60U1/AV-HS60U2, or the serial ports (RS-422×1, RS-232×1) of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to external devices.

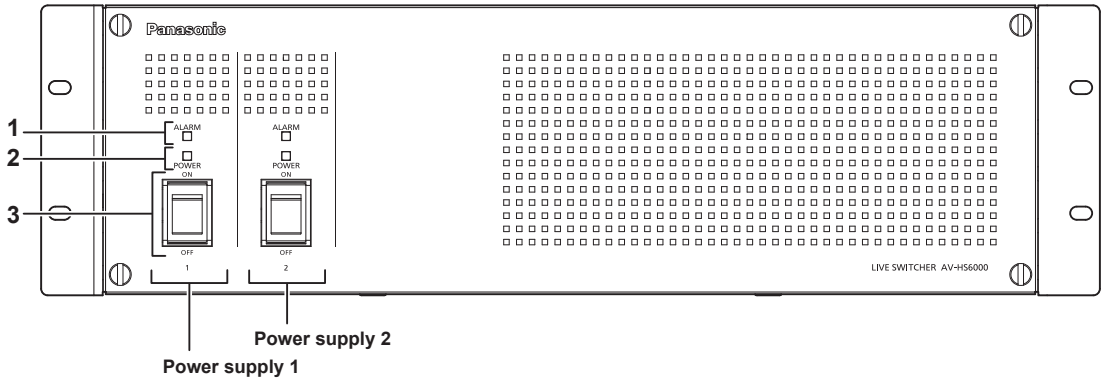
- It supports plug-in software.
- The serial port cannot be used with the sub control panel.

Chapter 3 Part Names and Functions

This chapter describes the names, functions, and operations of each part of the unit.

Main Frame AV-HS60U1/AV-HS60U2

Front panel



1 Alarm indicator <ALARM>

Lights up when the cooling fan of the Main Frame AV-HS60U1/AV-HS60U2 has stopped or when there are problems (voltage declines) with the power supply. In such cases, an alarm message is displayed on the Menu Panel AV-HS60C3. For the redundant power supply model (AV-HS60U2), an alarm will be displayed if both <POWER> switches of the power supply 1 and the power supply 2 have not turned on.

When an alarm has occurred, details of the problem can be checked from the <SYS> button on the top menu → [MAINTENANCE] → [Alarm] tab. (page 156)

Alarm status can be output from the alarm output port of the <GPI IN> terminal on the Main Frame AV-HS60U1/AV-HS60U2 to external devices.

- AV-HS60U1 does not have the alarm indicator for the power supply 2.

2 Power indicator <POWER>

Lights up when power is input into the <AC IN 1>/<AC IN 2> terminal and also when the <POWER> switches of the power supply 1 and the power supply 2 are set to <ON>.

- AV-HS60U1 does not have the power indicator for the power supply 2.

3 <POWER> switch

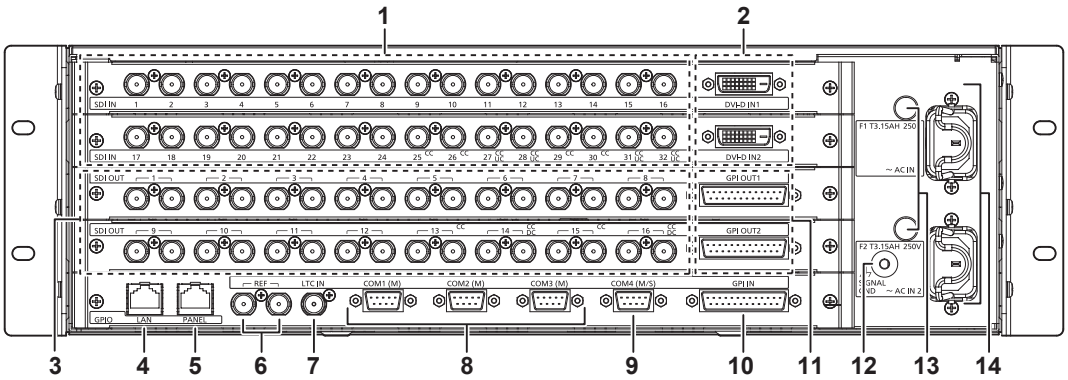
Turns power on/off.

- The single power supply model (AV-HS60U1) does not have the <POWER> switch for the power supply 2.
- When turning off the power of the redundant power supply model (AV-HS60U2), set both <POWER> switches for the power supply 1 and the power supply 2 to <OFF>.

NOTE

- When an alarm has occurred, stop using the unit immediately, and be sure to contact your dealer.

Rear panel



1 <SDI IN 1> to <SDI IN 32> terminals (connector: BNC×32/signal: SDI IN)

<SDI IN 25> to <SDI IN 32> terminals are equipped with color correctors.

The <SDI IN 27>/<SDI IN 28>/<SDI IN 31>/<SDI IN 32> terminals are equipped with up-converters.

2 <DVI-D IN1>/<DVI-D IN2> terminals (connector: DVI-D×2/signal: DVI-D IN)

Connects DVI-D output devices such as a computer using DVI-D cables.

- The DVI-I connector cable cannot be used.

3 <SDI OUT 1> to <SDI OUT 16> terminals (connector: BNC×32/signal: SDI OUT)

Assigns SDI OUT signals from the <IN OUT> button on the top menu → [SDI OUT] → [Assign] tab. (2 distributions each) (page 125)

<SDI OUT 13> to <SDI OUT 16> terminals are equipped with color correctors.

<SDI OUT 14>/<SDI OUT 16> terminals are equipped with down-converters.

4 <LAN> terminal (connector: RJ-45/signal: 100Base-TX)

Connects second and further Control Panels AV-HS60C1/AV-HS60C2/AV-HS60C4, menu operation computers, and external devices.

- Images from the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 connected to this terminal cannot be displayed on the Menu Panel AV-HS60C3.

5 <PANEL> terminal (connector: RJ-45/signal: 100Base-TX)
Connects the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

6 <REF> terminal (connector: BNC×2/signal: Genlock)
Loop-through output in the external sync mode. If the loop-through output is not going to be used, provide a 75 Ω termination.
Black burst signals are output from both terminals in the internal sync mode.

7 <LTC IN> terminal (connector: BNC/signal:LTC)
This is the LTC (linear time code) input terminal.

8 <COM1 (M)>/<COM2 (M)>/<COM3 (M)> terminals (connector: D-sub 9-pin (female) ×3, inch screw/signal: RS-422)
Used for master connection of external devices. (page 171)

9 <COM4 (M/S)> terminal (connector: D-sub 9-pin (female), inch screw/signal: RS-422)
Used for master connection/slave connection of external devices. (page 171)
- Master connection and the slave connection can be switched from the <SYS> button on the top menu → [PERIPHERAL] → [General] tab → [MF COM4] column → [Master/Slave]. (page 153)

10 <GPI IN> terminal (connector: D-sub 25-pin (female), inch screw/signal: GPI IN)
Equipped with 18 contact input ports (GPI IN) that control the unit externally, and an alarm output port (ALARM OUT). (page 170)

11 <GPI OUT1>/<GPI OUT2> terminals (connector: D-sub 25-pin (female) ×2, inch screw/signal: GPI OUT)
Equipped with 48 output ports (GPI OUT) that output tallies and status information from the unit. (page 169)

12 <SIGNAL GND> terminal (signal: SG)
Connects to the ground of the system.

13 <F1>/<F2> terminals
(Fuse)

14 <AC IN 1>/<AC IN 2> terminals (signal: AC)
Connects one end of the supplied AC cable to this terminal and the other end to the AC outlet. (AC 100 V to 240 V, 50 Hz/60 Hz)
- The supplied AC cable has a 3-pin plug with a grounding terminal. Connect to a 3-pin power outlet which is equipped with a grounding terminal.
- If a 3-point power outlet is not available, be sure to consult your dealer.

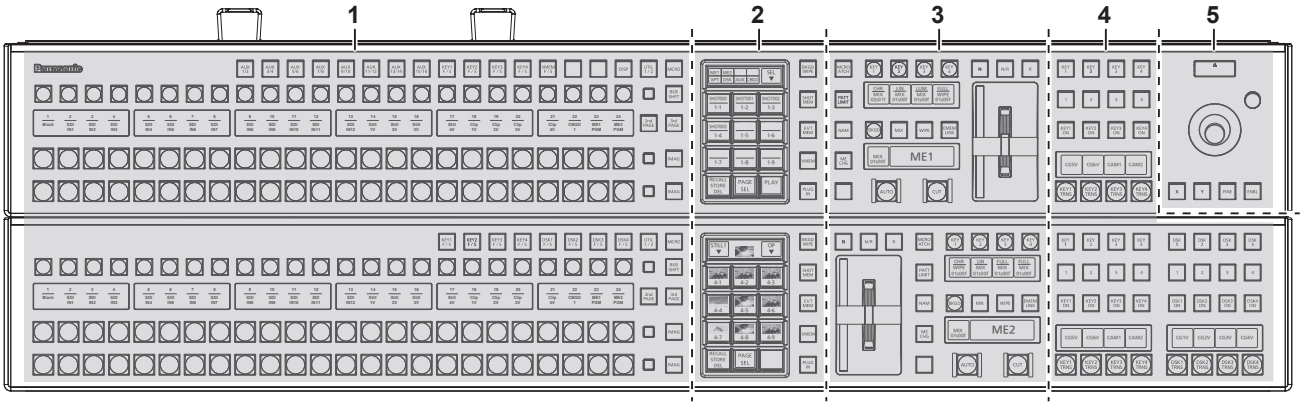
NOTE

- For the cable connecting to the <SDI IN 1> to <SDI IN 32> terminals, <SDI OUT 1> to <SDI OUT 16> terminals, <REF> terminal, or <LTC IN> terminal, use a 5C-FB compliant double-shielded cable.
- For the cable connecting to the <DVI-D IN1>/<DVI-D IN2> terminals, use a double-shielded cable.
- For the cable connecting to the <LAN> terminal, <PANEL> terminal, <COM1 (M)>/<COM2 (M)>/<COM3 (M)>/<COM4 (M/S)> terminals, <GPI IN> terminal, or <GPI OUT1>/<GPI OUT2> terminals, use a shielded cable.

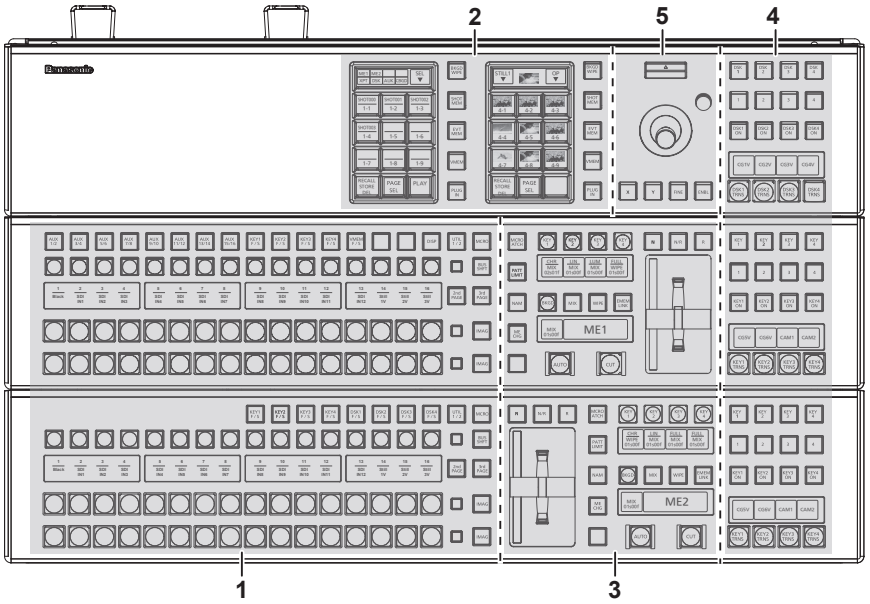
Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

Operation panel

■ **AV-HS60C1/AV-HS60C2**



■ **AV-HS60C4**



1 Crosspoint area

2 Multi-selection panel area

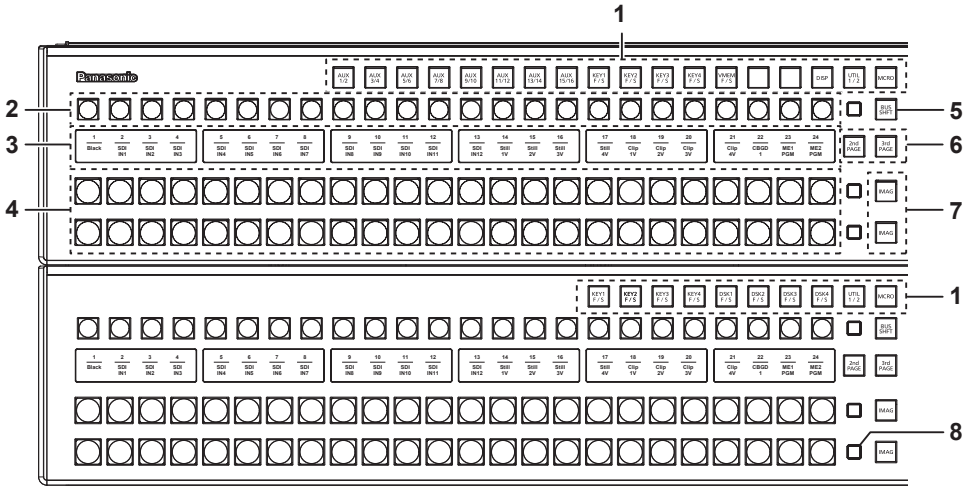
3 Transition area

4 KEY/DSK operation area

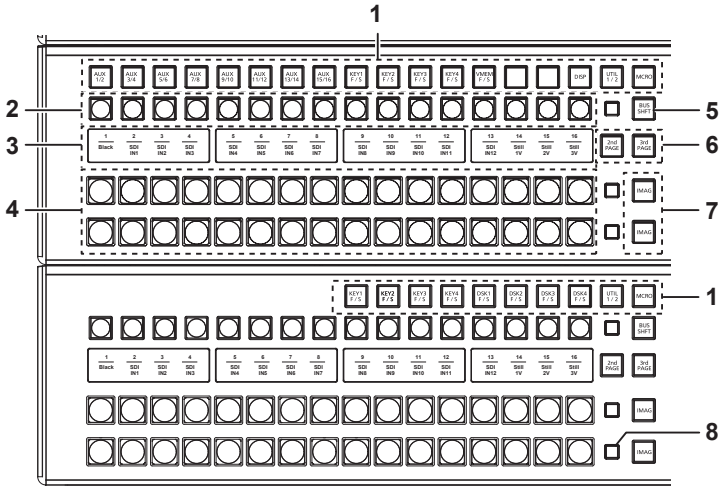
5 Positioner area

Crosspoint area

■ **AV-HS60C1/AV-HS60C2**



■ **AV-HS60C4**



1 KEY bus selector buttons (KEY BUS DELEGATION)

Switches functions that can be operated using the KEY bus crosspoint buttons.

<AUX 1/2> to <AUX 15/16> buttons	Switches to the source selector buttons for the AUX buses. • If you press the same buttons again while the <AUX 1/2> to <AUX 15/16> buttons are selected, the bus in the background is selected. Example) If you press the <AUX 1/2> button again while the AUX1 bus is selected, the AUX2 bus is selected. • The <AUX 1/2> to <AUX 3/4> buttons have the MIX transition function. (page 136) • The <AUX 1/2> to <AUX 15/16> buttons have the crosspoint link coupling function. (page 134)
<KEY1 F/S> to <KEY4 F/S> buttons	Switches to the source selector buttons for the key fill buses or key source buses. • If you select key fill signal or key source signal using the KEY bus crosspoint buttons, the signals are linked and another signal is automatically selected. The unit's linking operation has two modes. The mode setting can be made from the <CONF> button on the top menu → [SOURCE LINK] → [Key Assign] tab → [Master/Slave]. (page 134)
<VMEM F/S> button	Switches the source selector buttons for the fill buses or source buses of [CLIP1] through [CLIP4] (video memory) and [STILL1] through [STILL4] (still image memory) input buses.
<DISP> button	Switches to the source selector buttons for the DISP buses to be displayed on the Menu Panel AV-HS60C3.
<UTIL 1/2> button	Switches to the source selector buttons for the utility 1 bus/utility 2 bus that can be inserted to background wipe borders and key edges.
<MCRO> button	Switches to the start button to play back the macro memory assigned to the KEY bus crosspoint buttons. The assignment can be made from the <MEM> button on the top menu → [MACRO] → [XPT Assign] tab. (page 101)
<DSK1 F/S> to <DSK4 F/S> buttons	Switches to the source selector buttons for the DSK fill buses or DSK source buses. • If you select key fill signal or key source signal using the KEY bus crosspoint buttons, the signals are linked and another signal is automatically selected. The unit's linking operation has two modes. The mode setting can be made from the <CONF> button on the top menu → [SOURCE LINK] → [Key Assign] tab → [Master/Slave]. (page 134)

2 KEY bus crosspoint buttons (AV-HS60C1/AV-HS60C2: 1 to 24, AV-HS60C4: 1 to 16)

Selects the source of the bus which was selected by the KEY bus selector buttons.

Source can be selected using the <2nd PAGE>/<3rd PAGE> button. (AV-HS60C1/AV-HS60C2: Maximum of 96, AV-HS60C4: Maximum of 64) (page 24)

3 Source name display panels

Displays applications of the crosspoint buttons. The display settings of the source name display panels can be made from the <CONF> button on the top menu → [SOURCE NAME] → [Panel Name] tab. (page 132)

When operating other than macro bus: “crosspoint number” on the upper line, “input source name” on the lower line

When operating macro bus: “macro name” on the upper line, “input source name” on the lower line

4 PGM/A bus crosspoint buttons (AV-HS60C1/AV-HS60C2: 1 to 24, AV-HS60C4: 1 to 16), PST/B bus crosspoint buttons (AV-HS60C1/AV-HS60C2: 1 to 24, AV-HS60C4: 1 to 16)

Selects the video signals of the PGM/A bus and PST/B bus.

Source can be selected using the <2nd PAGE>/<3rd PAGE> button. (AV-HS60C1/AV-HS60C2: Maximum of 96, AV-HS60C4: Maximum of 64) (page 24)

- Bus mode can be selected from the <CONF> button on the top menu → [OPERATE] → [Transition] tab → [Bus Mode] column → [Bus Mode]. (page 53)

5 <BUS SHFT> button

Press the <AUX 1/2> to <AUX 15/16>/<KEY1 F/S> to <KEY4 F/S>/<VMEM F/S>/<UTIL 1/2>/<DSK1 F/S> to <DSK4 F/S> buttons while holding down the <BUS SHFT> button to switch the bus selection applications. For the <AUX 1/2> to <AUX 15/16> buttons, the bus selection applications can be switched even when the selected button is pressed again.

Example) <KEY1 F/S> button

When only the <KEY1 F/S> button is pressed, the KEY bus crosspoint buttons are switched to the source selector buttons of the KEY1 fill bus.

When the <KEY1 F/S> button is pressed while the <BUS SHFT> button is held down, the KEY bus crosspoint buttons are switched to the source selector buttons of the KEY1 source bus.

6 <2nd PAGE>/<3rd PAGE> buttons

Switch the page to select the source with the KEY bus crosspoint buttons, PGM/A bus crosspoint buttons, or PST/B bus crosspoint buttons.

- The pages of the buses included in the corresponding ME can be switched at once. To switch pages at individual buses, assign the <2nd PAGE>/<3rd PAGE> button to the KEY bus crosspoint buttons, PGM/A bus crosspoint buttons, and the PST/B bus crosspoint buttons. (page 131)

Button status		Displayed page
<2nd PAGE> button	<3rd PAGE> button	
Off	Off	First page
Lit	Off	Second page
Off	Lit	Third page
Lit	Lit	Fourth page

7 <IMAG> button

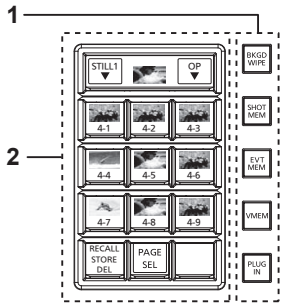
Enables/disables image effects (paint, mono colors, mosaics, defocusing, etc.) to be added to images selected at the PGM/A bus and PST/B bus.

- The setting to enable/disable image effects to be added to images selected in the KEY bus can be made from the <ME1>/<ME2> button on the top menu → [IMAGE] → [Key1]/[Key2] tab → [Mosaic/Defocus] column. (page 85)

8 Bus tally

Indicates the output status of the buses. The buses that comprise the on-air tallies will light up.

Multi-selection panel area



1 Mode selection button

Switches functions that can be operated on the multi-selection panel.

<BKGD WIPE> button	Selects background wipe preset.
<SHOT MEM> button	Registers/recalls/deletes register memories of the shot memory.
<EVT MEM> button	Recalls register memories of the event memory. This button is also used to select register memories during EMEM-LINK transition. • Registration/editing are performed using the menu.
<VMEM> button	Records [CLIP1] through [CLIP4] (video memory) and [STILL1] through [STILL4] (still image memory) to the current frame memories and plays them back. • When using the Storage Module AV-HS60D1 (optional), register memories can be registered/recalled/deleted on SSD installed in the Main Frame AV-HS60U1/AV-HS60U2.
<PLUG IN> button*	Used as a plug-in software menu.

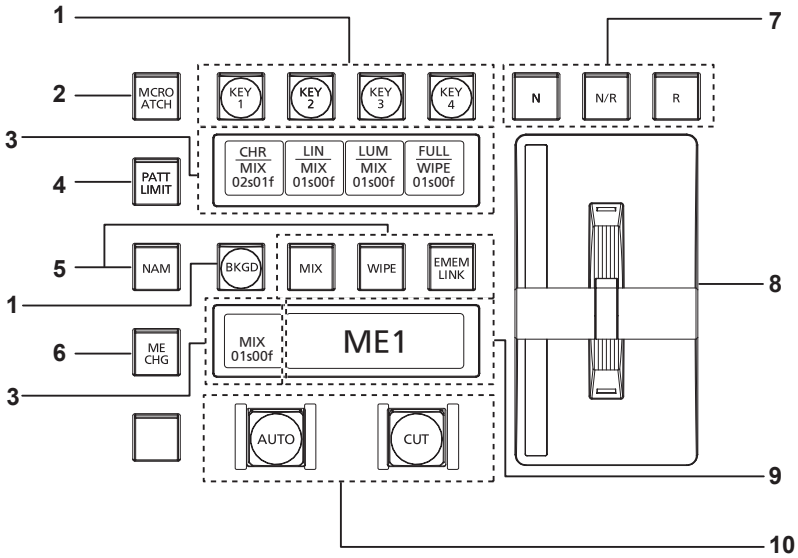
* This is a function to be supported in the future.

2 Multi-selection menu panel

When the mode selection button is pressed, the menu to be displayed is switched.

For details, refer to “Basic operations for the multi-selection panel area” (page 40).

Transition area



1 Transition target selection buttons (<BKGD>/<KEY1>/<KEY2>/<KEY3>/<KEY4>)
Sets the operation target for the next transition to be executed when the fader lever or <AUTO>/<CUT> button is operated.

2 <MCRO ATCH> button
Switches between enabling/disabling macro attach functions assigned to the button of the corresponding ME.
- When set to on, the macro attach function is enabled.
- The button to which the macro attach function is assigned is illuminated in a specific color while it is on. The light color setting can be made from the <SYS> button on the top menu → [CTRL PANEL] → [Button Color] tab → [Macro Attach] in the [No Sel Other] column.

3 Status display
Displays the key type (KEY only)/transition type/transition time.

4 <PATT LIMIT> button
Restricts the amount of the background wipe transition for the corresponding ME.
- When set to on, the pattern limit function is enabled.
- Set pattern limit details from the <ME1>/<ME2> button on the top menu → [BKGD] → [Position] tab → [Pattern Limit] column. (page 56)

5 Transition type selection buttons (<NAM>/<MIX>/<WIPE>/<EMEM LINK>)

<MIX> button	Switches images while overlapping. During the transition, the output total of the A bus and B bus is kept at 100%. In background transition, the above operation is applied when the <NAM> button is off. It will perform non-additive mixing or color mix mixing depending on the setting of the top menu <ME1>/<ME2> button → [BKGD] → [Transition] tab → [Trans Type] column when the <NAM> button is on. For details, refer to "<NAM> button setting" (page 54).
<WIPE> button	Performs transition according to the patterns set in the menu or selected at the wipe preset on the multi-selection panel area.
<EMEM LINK> button	Performs transition according to the patterns registered in the event memory. (page 92)

6 <ME CHG> button
Switches the display of the multi-selection panel area to the menu for changing ME which is the operation target. (page 137)

7 Wipe direction selection buttons
Selects the wipe direction when executing the background transition. The operation is not performed when the transition is a key.

<N> button	Wiping proceeds in the normal direction.
<R> button	Wiping proceeds in the reverse direction.
<N/R> button	The normal direction is replaced with the reverse direction (or vice versa) when the transition is completed. • On/off of the <N>/<R> button is also switched according to the wipe direction.

8 Fader lever/transition status
Used to execute background or key transitions. When the lever is moved as far as it will go, the transition is completed. If the fader lever has been operated during auto transition, auto transition will be switched to manual operation as soon as the fader lever position overtakes the amount of the transition being executed.
For details on the transition status display, refer to "Transition status display" (page 26).

9 ME status area
Displays the ME of the operations target. Use the <ME CHG> button to switch the ME of the operation target.

10 transition execution button

<AUTO> button	Automatically executes transition. (Auto transition) • To set the transition time, select the <ME1>/<ME2> button on the top menu → [BKGD] → [Transition] tab → [Transition] column → [Time]. (page 54)
<CUT> button	Executes transition instantly.

■ **Transition status display**

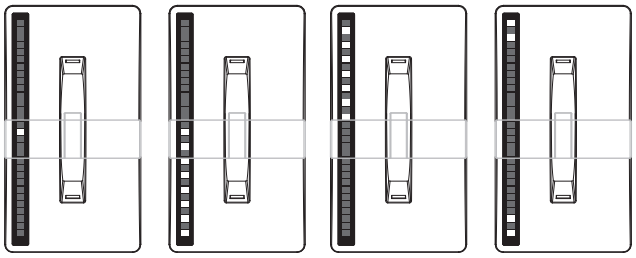


Fig. 1 **Fig. 2** **Fig. 3** **Fig. 4**

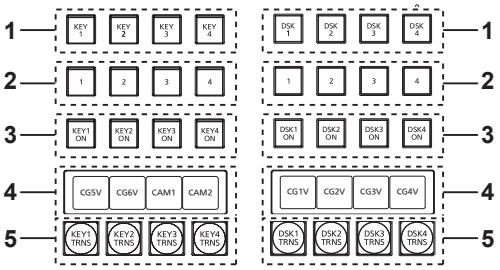
The transition status display at the left side of the fader lever indicates not the lever position but the amount of transition, and also works during auto transition.

During pattern limitation, the amount of limitation will also be displayed. (Fig. 1)

If the fader lever position and the amount of images do not match after memory playback or auto transition execution, every other display will be displayed. When displayed at one side (Fig. 2, Fig. 3), push the lever towards the displayed side to make the lever position recognize.

If multiple operations of BKGD and KEY1 to KEY4 are performed in the next transition, both sides may become unmatched. In such a case, the display will be like Fig. 4, so move the fader lever back and forth to make the lever position recognize.

KEY/DSK operation areas



KEY operation area **DSK operation area**

1 Operation target selection buttons (<KEY1>/<KEY2>/<KEY3>/<KEY4>/<DSK1>/<DSK2>/<DSK3>/<DSK4>)
Selects the operation target for key/DSK preset memory.
Switches target to be displayed in the SEL KEYPVW output. (page 150)

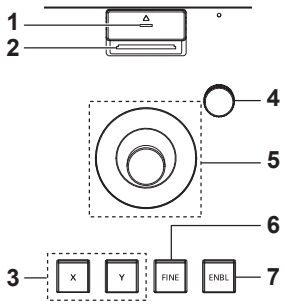
2 Key/DSK preset memory buttons (<1>/<2>/<3>/<4>)
Recalls/stores the key preset memory. (page 102)
- Short press: Recalls data saved to the corresponding button. (Recall)
- Long press: Stores the current key settings to the corresponding button. (Store)
  Current key setting can be deleted (Delete) by press and holding. For details, refer to “Key preset” (page 102).

3 <KEY1 ON>/<KEY2 ON>/<KEY3 ON>/<KEY4 ON>/<DSK1 ON>/<DSK2 ON>/<DSK3 ON>/<DSK4 ON> buttons
Executes/cancels each key with a cut transition.

4 Source name display panels
Displays the source name selected for each key.

5 <KEY1 TRNS>/<KEY2 TRNS>/<KEY3 TRNS>/<KEY4 TRNS>/<DSK1 TRNS>/<DSK2 TRNS>/<DSK3 TRNS>/<DSK4 TRNS> buttons
Executes transition with the transition type and transition time for each key set in the menu. (pages 63, 77)

Positioner area



1 Memory card access LED
Lights up while accessing the memory card.
Do not turn off the power of the unit or eject the memory card while lit. The memory card or data in the memory card may be damaged.

2 Memory card slot
Insert an SD memory card (optional) or an SDHC memory card (optional).

3 Positioner buttons (<X>/<Y>)

<X> button	Enables/disables the X-axis operation of the positioner (horizontal direction). When set to on, operation is enabled.
<Y> button	Enables/disables the Y-axis operation of the positioner (vertical direction).

4 Z-axis dial

Used to set the numeric values at the numeric entry items on the Menu Panel AV-HS60C3.
It corresponds to the third from the left of the rotary encoders on the Menu Panel AV-HS60C3.

5 Positioner

Used to set the numeric values at the numeric entry items on the Menu Panel AV-HS60C3.

- X axis (horizontal direction): Corresponds to the leftmost of the rotary encoders on the Menu Panel AV-HS60C3.
- Y axis (vertical direction): Corresponds to the second from the left of the rotary encoders on the Menu Panel AV-HS60C3.

6 <FINE> button

Changes the amount of change in parameter for the positioner operation.
When set to on, finer adjustments can be made.

7 <ENBL> button

Lit: Enables operations of the positioner and Z-axis dial.
Off: Disables operations of the positioner and Z-axis dial.

NOTE

- This unit detects the position of the positioner and sets the position to the center by the time when the startup is completed after power is turned on. Do not touch the positioner until the startup of the unit is completed.

■ Memory cards

Memory cards used with the unit should conform to SD or SDHC standards.

Be sure to format memory cards using the unit.

Memory cards with the following capacity can be used for the unit. The unit does not support SDXC memory cards.

SD memory card: 8 MB to 2 GB

SDHC memory card: 4 GB to 32 GB

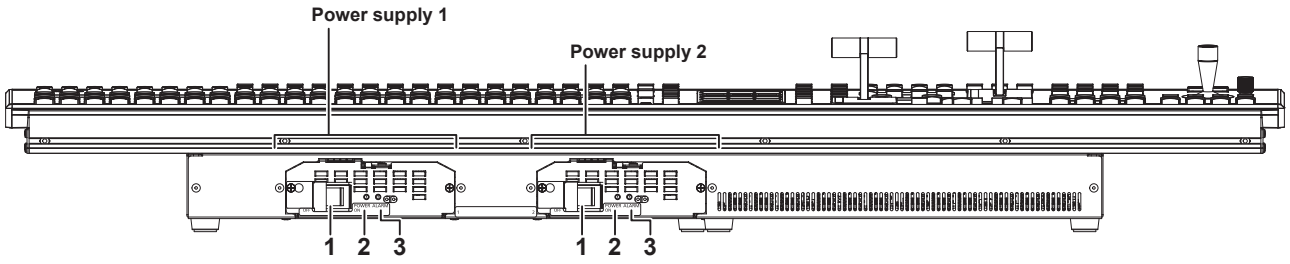
For the latest information not available in the Operating Guide, visit the following website.

http://pro-av.panasonic.net/ (English only)

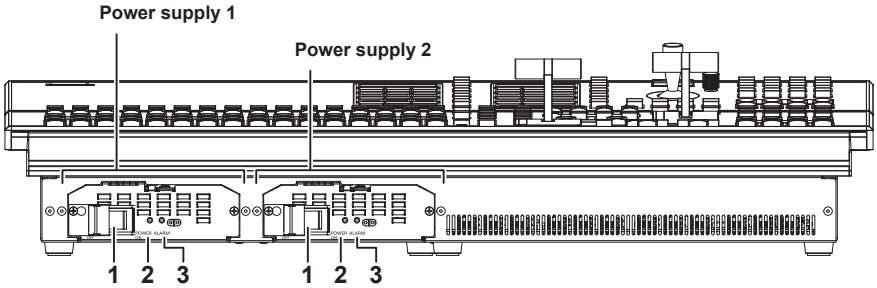
- Keep the following points in mind when using or storing memory cards.
  - Avoid high temperatures/humidities.
  - Do not expose to water droplets.
  - Avoid electrical charges.

Front panel

■ AV-HS60C1/AV-HS60C2



■ AV-HS60C4



1 <POWER> switch (with safety guard)

Turns power on/off.

- The single power supply model (AV-HS60C1) does not have the <POWER> switch for the power supply 2.
- When turning off the power of the redundant power supply model (AV-HS60C2 /AV-HS60C4), set both the <POWER> switch for the power supply 1 and the <POWER> switch for the power supply 2 to <OFF>.

2 Power indicator

When power is input into the <AC IN 1>/<AC IN 2> terminal, both <POWER> switches of the power supply 1 and the power supply 2 will light up when they are set to <ON>.

- AV-HS60C1 does not have the power indicator for the power supply 2.

3 Alarm indicator <ALARM>

Lights up when there is a problem (voltage decrease) in the power supply of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4. At this time, an alarm message is displayed on the Menu Panel AV-HS60C3.

For the redundant power supply model (AV-HS60C2 /AV-HS60C4), an alarm will be displayed if both <POWER> switches of the power supply 1 and the power supply 2 have not turned on.

When an alarm has occurred, details of the problem can be checked from the <SYS> button on the top menu → [MAINTENANCE] → [Alarm] tab. (page 156)

The alarm status can be output from the <GPI I/O> terminal of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to external devices.

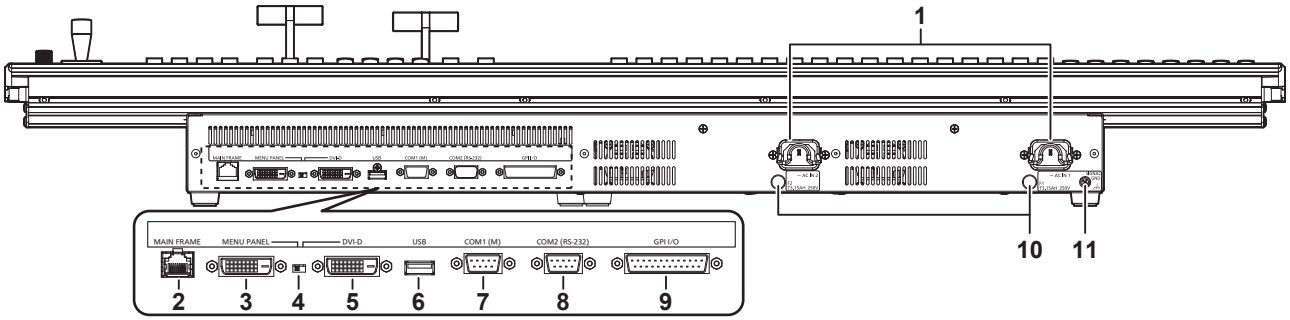
- AV-HS60C1 does not have the alarm indicator for the power supply 2.

NOTE

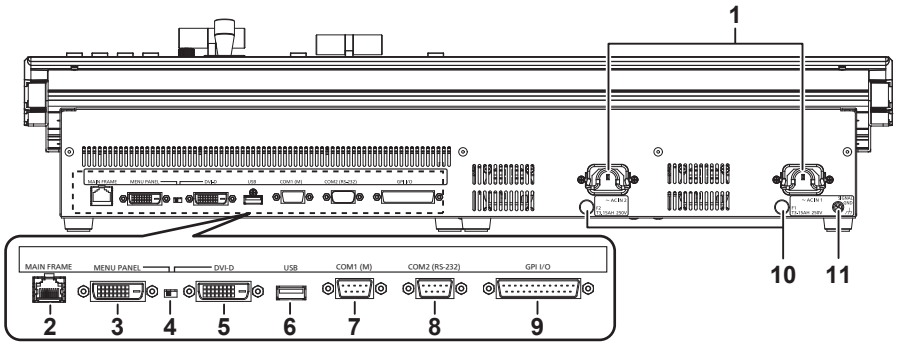
- When an alarm has occurred, stop using the unit immediately, and be sure to contact your dealer. Continuous use of the unit even after an alarm has occurred could damage the unit.

Rear panel

■ **AV-HS60C1/AV-HS60C2**



■ **AV-HS60C4**



1 <AC IN 1>/<AC IN 2> terminals (signal: AC)

Connects one end of the supplied AC cable to this terminal and the other end to the AC outlet. (AC 100 V to 240 V, 50 Hz/60 Hz)

- The supplied AC cable has a 3-pin plug with a grounding terminal. Connect to a 3-pin power outlet which is equipped with a grounding terminal.
- If a 3-point power outlet is not available, be sure to consult your dealer.

2 <MAIN FRAME> terminal (connector: RJ-45/signal: 100Base-TX)

Connects to the <PANEL> terminal or <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.

- When connected to the <LAN> terminal, no video will be displayed on the Menu Panel AV-HS60C3.

3 <MENU PANEL> terminal (connector: DVI-D/signal: independent signal)

Connects the Menu Panel AV-HS60C3.

- Cannot be used concurrently with a DVI monitor (computer) connected to the <DVI-D> terminal. Select with the display selector switch.
- This is the dedicated interface for the Menu Panel AV-HS60C3. Do not connect with DVI output devices.

4 Display selector switch

Switches the terminal to be used to the <MENU PANEL> terminal or <DVI-D> terminal depending on the connected device.

Switch this when the power is off. Output will not be performed properly if switched with the power turned on. Restarting of the unit will be necessary. Set the power to <OFF>, and then set it back to <ON>.

5 <DVI-D> terminal (connector: DVI-D/signal:DVI OUT)

Connects the DVI monitor (computer) used for the menu display.

- Monitor resolution: 1366×768 compatible monitor
- Cannot be used concurrently with the <MENU PANEL> terminal. Select with the display selector switch.

6 <USB> terminal (connector: USB (type A, female)/signal: USB)

Used for the menu operation of the DVI monitor (computer).

- Cannot be used for the Menu Panel AV-HS60C3.

7 <COM1 (M)> terminal (connector: D-sub 9-pin (female), inch screw/signal: RS-422)

Used for master connection of external devices. (page 171)

8 <COM2 (RS-232)> terminal (connector: D-sub 9-pin (male), inch screw/signal: RS-232)
Used to control external device. (page 171)

9 <GPI I/O> terminal (connector: D-sub 25-pin (female), inch screw/signal: GPI)
Equipped with 8 contact input ports (GPI IN) that control the unit externally, 10 output ports (GPI OUT) that output tallies or status information from the unit, and an alarm output port (ALARM OUT). (page 170)

10 <F1>/<F2> terminals
(Fuse)

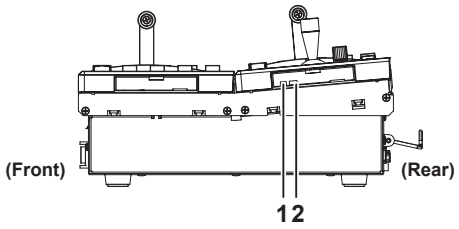
11 <SIGNAL GND> terminal (signal: SG)
Connects to the ground of the system.

NOTE

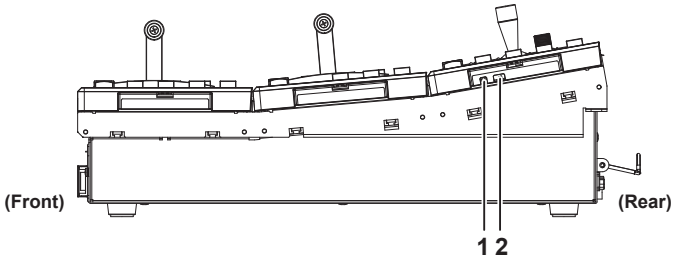
- For the cable connecting to the <DVI-D> terminal, use a double-shielded cable.
- For the cable connecting to the <MAIN FRAME> terminal, <COM1 (M)>/<COM2 (RS-232)> terminal, and <GPI I/O> terminal, use a shielded cable.
- The <COM1 (M)> terminal and the <COM2 (RS-232)> terminal cannot be used with the sub control panel.

Side (right)

■ **AV-HS60C1/AV-HS60C2**



■ **AV-HS60C4**

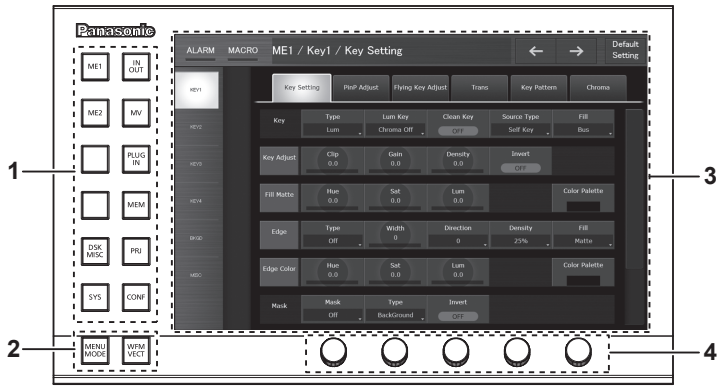


1 Reset switch
The reset switch for the Control Panel. (For maintenance)

2 Service switch
The switch for maintenance. Normally use it by setting to forward.

Menu Panel AV-HS60C3

Operation panel



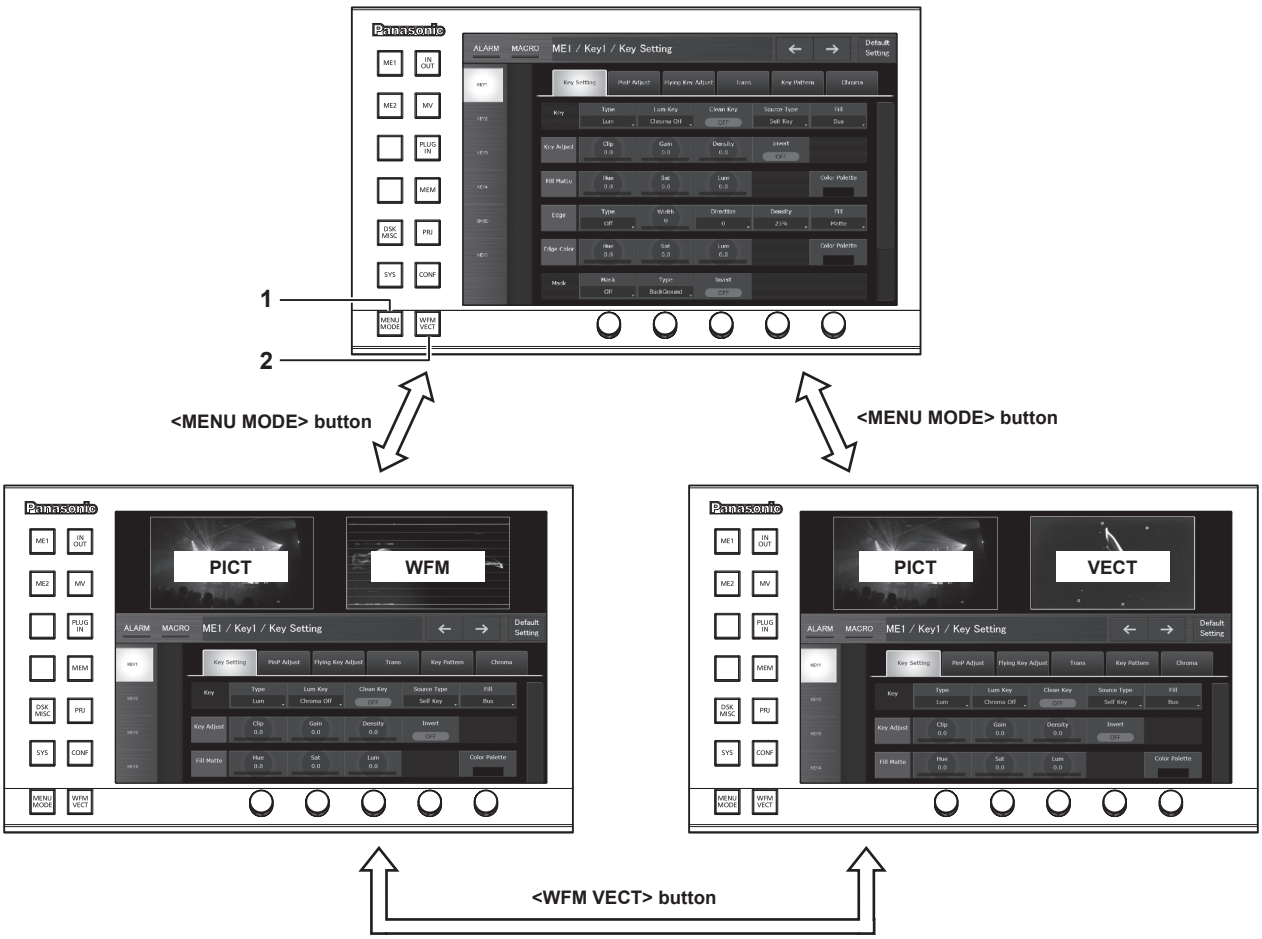
1 Top menu buttons (<ME1>, <ME2>, <DSK MISC>, <SYS>, <IN OUT>, <MV>, <PLUG IN>, <MEM>, <PRJ>, <CONF>)
Selects the first hierarchy of the menu.

2 Split-screen buttons (<MENU MODE>, <WFM VECT>)
Switches the display of the menu screen.
For details, refer to “Split display of the menu screen” (page 30).

3 Menu screen

4 Rotary encoders
When the rotary encoder is turned, the numeric values of the number button focused on the menu can be changed.
When the rotary encoder is double-clicked or held down, the numeric values of the number button focused on the menu will return to the default settings.

Split display of the menu screen



1 <MENU MODE> button
Each time this button is pressed, the full screen display and split display (PICT, WFM/VECT, menu) of the menu are switched.
The display content is as follows when the menu screen is split.

Display position	Display content
Upper left	Images selected in the DISP bus are displayed.

Display position	Display content
Upper right	The WFM (waveform monitor) or VECTOR (vectorscope) for the video selected in the DISP bus is displayed.
Bottom	The menu will be displayed.

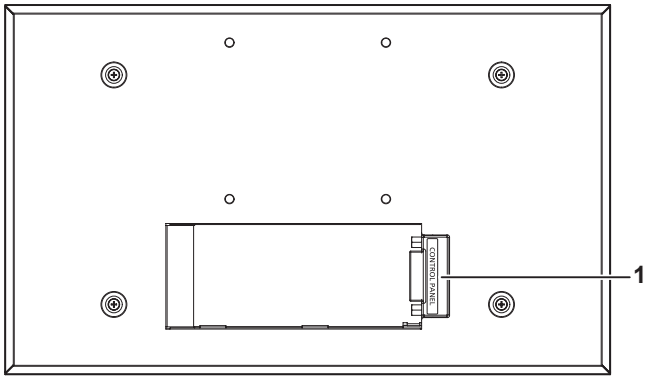
2 <WFM VECT> button

Each time the button is pressed when the menu display is split, the WFM (waveform monitor) and VECTOR (vectorscope) displayed at the upper right of the screen are switched.

NOTE

- When anything other than [DISP] is selected using the <SYS> button → [SYSTEM] → [Display] tab → [Video Codec] column → [Target] item, the image selected in the DISP bus, the WFM, or the VECTOR is not displayed.
- Image, WFM, and VECTOR are not displayed on a computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.
- Image, WFM, and VECTOR are not displayed in the Menu Panel AV-HS60C3 connected to the sub control panel.

Rear panel



1 <CONTROL PANEL> terminal (connector: DVI-D/signal: independent signal)

Connects the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

- This is the dedicated interface for connection with the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 (optional). Do not connect with DVI output devices.

Chapter 4 Preparations

This chapter describes basic operations and matters to be performed prior to use.

Turning power on/off

Turning power on

1 Set the <POWER> switches of the Main Frame AV-HS60U1/AV-HS60U2 and the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to <ON>.

- For the redundant power supply model (AV-HS60U2, AV-HS60C2, AV-HS60C4), set both <POWER> switches of the power supply 1 and the power supply 2 to <ON>.
- The power indicator will light up when power is supplied.

Notification when the power is turned on for the first time

When using the products for the first time, connect the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2, and then turn on the power.

Depending on the combination of the purchased Main Frame and the Control Panel, the version of the firmware for each may not match.

When the version of the firmware for the Main Frame and the Control Panel does not match, the Control Panel will not correctly boot when the power is turned on.

Boot status when the versions do not match

Two buttons out of PST/B bus crosspoint buttons in the ME line in front will blink. One button will blink in green, and the other will blink in red. (Fig. 1)

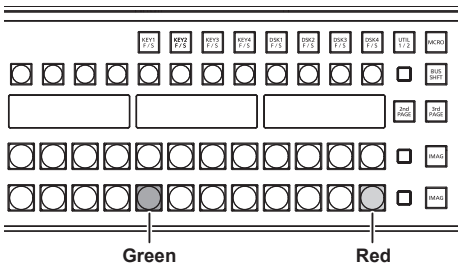


Fig. 1

- When it goes into this status, it is necessary to match the firmware version of the Control Panel to the Main Frame.
- If it does not go into this status and the Control Panel boots normally, the firmware versions of the Main Frame and the Control Panel do match.
- Check the latest software information and perform the version update of the software if necessary. For details, refer to “To perform the version update of the software” (page 34).

■ To match the firmware version of the Control Panel to the Main Frame

The firmware of the Control Panel is updated when the following operation is performed. Once the update is correctly performed, the firmware version of the Control Panel will match with the firmware version of the Main Frame, and it will boot in normal status.

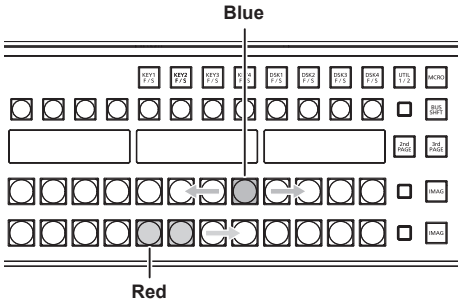


Fig. 2

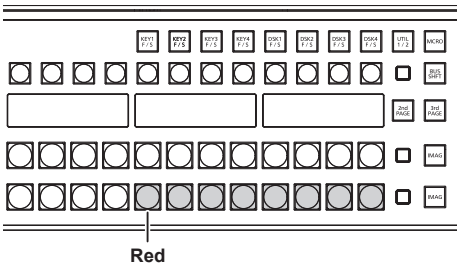


Fig. 3

1 Press the button blinking in red (Fig. 1).

Update of the firmware is started.

- Status when the firmware of the Control Panel is being updated (Fig. 2)
  - Eight buttons out of the PGM/A bus crosspoint buttons in the ME line in front will repeatedly blink in blue from left to right.
  - Eight buttons out of the PST/B bus crosspoint buttons in the ME line in front will blink in red sequentially from left to right.

Update of the firmware will complete after approximately two minutes.

- Status when the update of the firmware of the Control Panel is completed
  - Eight buttons out of the PST/B bus crosspoint buttons in the ME in front will continue to blink in red. (Fig. 3)
  - Depending on the version of the firmware of the Main Frame, the Control Panel may automatically reboot. The firmware of the Control Panel is updated correctly for this too.

2 Turn off the power of the Main Frame and the Control Panel.

- Turn off the power after completing the update of the firmware of the Control Panel.
- Do not turn off the power of the Main Frame and the Control Panel while the firmware of the Control Panel is still updating (Fig. 2).

3 Turn on the power of the Main Frame and the Control Panel.

Control Panel is booted and the menu screen is displayed in the menu panel when the firmware is correctly updated.

4 Select the <SYS> button → [MAINTENANCE] → [Boot] tab → [Initial] column → [Initial] button.

5 Select [OK] in the confirmation screen.

The AV-HS6000 is initialized.
Go on to the procedure in “To perform the version update of the software” (page 34).

■ **To perform the version update of the software**

Check the latest software information and perform the version update of the software if necessary.

1 Check the <SYS> button → [MAINTENANCE] → [Status] tab → [System Version] column → [System Version].

2 Perform the version update of the software if necessary.

Check the latest software information in the following website, and perform the software version update if necessary.
http://pro-av.panasonic.net/ (English only)

- The Control Panel AV-HS60C4 operates normally only when the version of the software is 3.10-00-0.00 or later.
  Be sure to perform the version update if the version of the software checked in step **1** is earlier than 3.10-00-0.00.

Turning power off

1 Set the <POWER> switches of the Main Frame AV-HS60U1/AV-HS60U2 and the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to <OFF>.

- For the redundant power supply model (AV-HS60U2, AV-HS60C2/AV-HS60C4), set both <POWER> switches of the power supply 1 and the power supply 2 to <OFF>.
- The power indicator will go off when power is cut off.

NOTE

- Do not turn off the power when accessing the memory card or the Storage Module AV-HS60D1 (optional). Data in the memory card may be damaged.
- When turning off the power and turning it on again, the unit is started with the settings at the time when the power is turned off except for the image data of VMEM (video memory). (page 157)
  Note that, in the following items, the changed settings will be backed up at approximately 60-second intervals in the non-volatile memory, and the settings at the time of shutdown will be restored, but the settings changed within approximately 60 seconds before turning off the power may not be updated. To update securely, do not change settings within approximately 60 seconds before turning off the power.
  - Background wipe preset
  - Key source preset

Basic menu operations

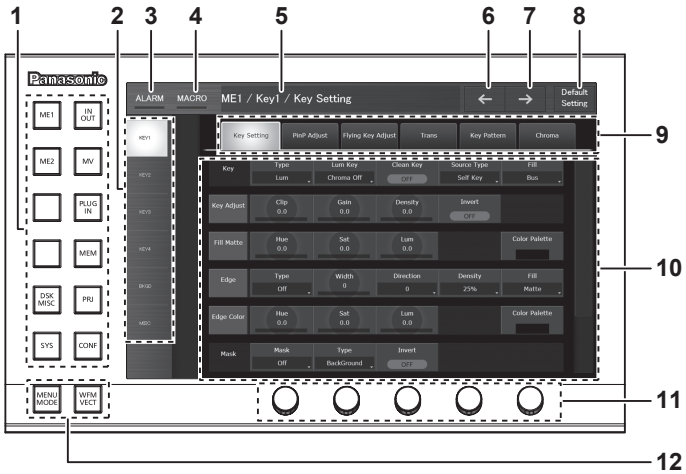
This section describes basic operations of the menu. Connect with the Menu Panel AV-HS60C3 or general-purpose DVI monitor to perform menu operations. This document is written based on the operations with the Menu Panel AV-HS60C3. Operations may differ depending on the connected devices.

For configuration of the menu, refer to “Setting menu table” (page 185).

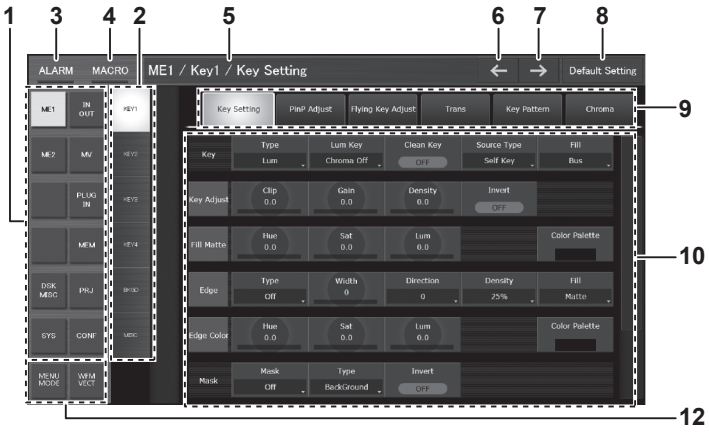
Menu configuration and operations

Menu display

■ **Menu Panel AV-HS60C3**



■ **General-purpose DVI monitor, LAN connected computer**



1 Top menu
Selects the first hierarchy of the menu.

2 Function menu
Selects the second hierarchy of the menu. When items you want to set are not displayed, move the scrollbar to display them.

3 [ALARM]
When an alarm has occurred, the [ALARM] indicator area will light up red.
If [ALARM] is selected, the same page as displayed with the <SYS> button on the top menu → [MAINTENANCE] → [Alarm] tab will appear.

4 [MACRO]
The status for the [MACRO] indicator is as follows.
- Lights up red during macro recording.
- Lights up green during macro execution.
- Lights up orange when the macro playback is paused.

If [MACRO] is selected, the same page as displayed from the <MEM> button on the top menu → [MACRO] → [Macro] tab page will appear. Check [Status] in the [Macro] tab.

5 Page title
Displays the title of the displayed page. As a page title, the top menu/function menu/menu tab of the displayed page will be displayed.

6 Previous screen
Returns to the page of up to last 10 operations.

7 Next screen
Moves to the next page from the returned page.

8 [Default Setting] button
Initializes the corresponding pages when the menu tab or the function menu is selected while the button is selected.

9 Menu tab
Selects the third hierarchy of the menu.

10 Page
Makes various settings. When items you want to set are not displayed, move the scrollbar to display them.
One line within a page is called a column.

11 Rotary encoders
Used for entering numeric values. They are not equipped with a general-purpose DVI monitor or LAN connected computer.
For details, refer to “Entering numeric values using the rotary encoders or the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4” (page 37).

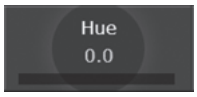
12 Split-screen buttons (<MENU MODE>, <WFM VECT>)
Switches the display of the menu screen.
For details, refer to “Split display of the menu screen” (page 30).

Numeric entry item operations

In numeric entry items, numeric values can be entered using the following two methods.

The contents displayed on the screen will differ depending on the item to be input, such as time.

- Operations using the on-screen numerical keypad
- Operations using the rotary encoders

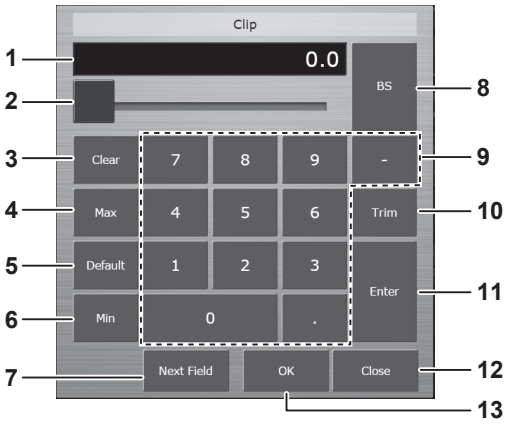


Entering numeric values using the on-screen numerical keypad

When numeric entry items are selected, the on-screen numerical keypad appears. If set the values and closed the keypad, the numeric values set for the items and the numeric bar will be displayed.

The contents displayed on the screen will differ depending on the item to be input, such as time.

■ **On-screen numerical keypad**



1 Entry field
The entered numeric values are displayed. After selecting [Enter], the numeric values are displayed in the display format corresponding to the item.
Immediately after displaying the on-screen numerical keypad, the current numeric values are displayed.

2 Slider
Move the slider to change the numeric values in the entry field, and then the value is confirmed.

3 [Clear]
Clears all numeric values in the entry field.

4 [Max]
Reflects the maximum setting values for the item in the entry field.

5 [Default]
Reflects the default values in the entry field.

6 [Min]
Reflects the minimum setting values for the item in the entry field.

7 [Next Field]
Fixes the changed value without closing the on-screen numerical keypad and moves to the next numeric entry item in the same column, when selected [Next Field] and then [OK]. This item is not displayed for the time entry.

8 [BS]
Erases the last digit of the numeric values in the entry field.

9 [0] - [9], [.], [:], [–]
Selects the values you want to enter in the entry field in sequence. For the time entry, [.] is replaced with [:], and [–] is not displayed.

10 [Trim]
Enters differential values to change the numeric values. This item is not displayed for the time entry.
Select [Trim], and then enter the “numeric value” or “minus” + “numeric value” after the current numeric values display. After entering the differential values, press [Enter] to reflect the numeric values converted in the display format corresponding to the item in the entry field.

11 [Enter]
Displays the entered value in the display format of the item, and set the value.
Example) Conversion display of the entered numeric values (when the setting range is between [–10.0] and [10.0])
[1] + [0] + [Enter] = [10.0]
[1] + [Enter] = [1.0]
[.] + [1] + [Enter] = [0.1]
[–] + [.] + [1] + [Enter] = [–0.1]

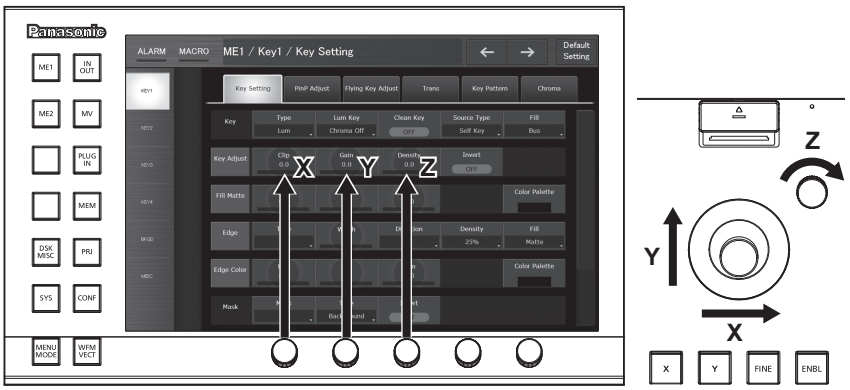
12 [Close]
Closes the on-screen numerical keypad.

13 [OK]
Fixes the changes and closes the on-screen numerical keypad.

Entering numeric values using the rotary encoders or the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

If the numeric entry item or title area of the column is selected, the corresponding column will become a selected state (focus state). When the column is in a focus state, numeric values can be changed by turning the dial of the rotary encoder corresponding to the item to be set. The three items from the left of the column can be operated using the positioner of the positioner area (X axis, Y axis) or the Z-axis dial.

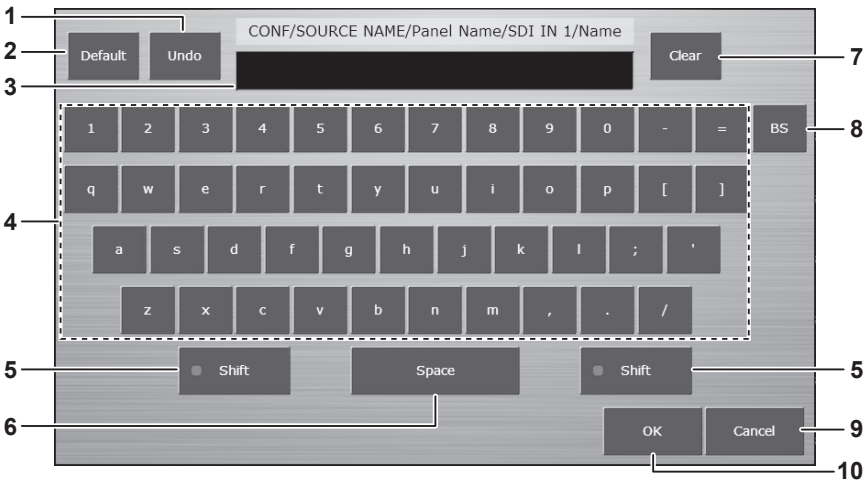
The rotary encoders have a push switch function. When double-clicked, the items will be restored to the default numeric values.



Text entry item operations

When text entry items are selected, the on-screen keyboard appears. If set the values and closed the keyboard, the text set for the items will be displayed.

■ **On-screen keyboard**



1 [Undo]
Reflects the values entered before the on-screen keyboard is displayed in the entry field.

2 [Default]
Reflects the default values in the entry field.

3 Entry field
Displays the entered text. Immediately after displaying the on-screen keyboard, the current text strings are displayed.

4 Alphanumerics, symbols
Selects the alphanumerics or symbols you want to enter in the entry field.

5 [Shift]
Switches the keyboard display. (Uppercase, lowercase)

6 [Space]
Enters a space in the entry field.

7 [Clear]
Erases all characters in the entry field.

8 [BS]
Erases the last character in the entry field.

9 [Cancel]
Closes the on-screen keyboard.

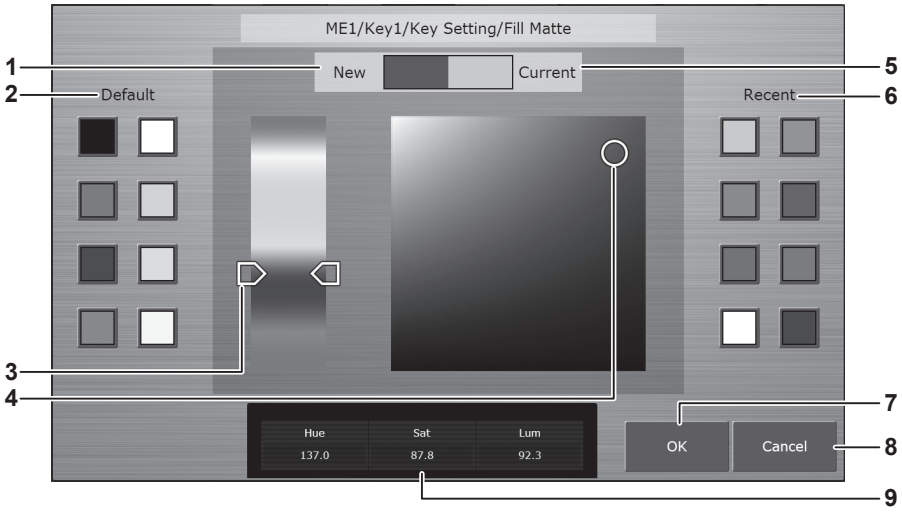
10 [OK]
Fixes the changes and closes the on-screen keyboard.

Color settings menu operations

The various colors generated by the switcher can be set using the following two methods.

- Directly enter numeric values into each item for [Hue], [Sat], and [Lum]. (page 36)
- Select [Color Palette] in the same column as [Hue], [Sat], and [Lum], and use the color palette screen.

■ **Color palette screen**



1 [New]
Displays the colors being changed on the color palette screen.

2 [Default]
Displays 8 default colors. The same colors are set when selected.

3 Hue Pad
Tap any color to set hue.
Vertical axis: Color tone (Hue)

4 Sat/Lum Pad
Tap any color to set saturation and luminance.
Horizontal axis: Saturation (Sat)
Vertical axis: Luminance (Lum)

5 [Current]
Displays the color set before the color palette screen is displayed.

6 [Recent]
Displays the recently set colors. The same colors are set when selected.
Just like the color palette screen for the other items, this cannot be resumed.

7 [OK]
Closes the color palette screen.

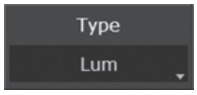
8 [Cancel]
Closes the color palette screen.

9 [Hue], [Sat], [Lum]
Displays the color being changed in numeric values.

Other buttons

List box

The selection screen opens. When the item is selected, the screen closes, and the item is displayed at the lower part of the list box. Depending on the function, after selecting the item, select [OK] to close the screen.



Radio button

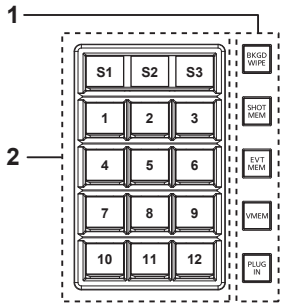
Select an item from multiple options.

Check button

Set items to on/off. On and off will switch whenever selected.

Basic operations for the multi-selection panel area

The multi-selection panel area is a color liquid crystal panel with buttons, which integrates wipe pattern selection and various memory operations.



1 Mode selection button

Switches the mode using the buttons at the right side of the multi-selection panel area.

2 Multi-selection menu panel

S1 - S3	This is the status area of the menu. Displays and functions differ by menu. Depending on the menu, perform operations with the button which appear on S1 or S3 area.
1 - 12	Consists of 12 button sets of 3×4. Displays and functions differ by menu.

NOTE

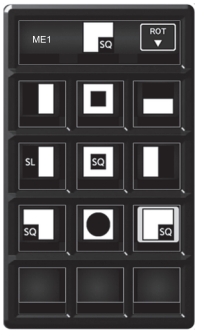
- You can also swap ME areas through the multi-selection panel area. For details, refer to “Switching the ME area in the Control Panel AV-HS60C1/ AV-HS60C2/AV-HS60C4” (page 137).

Background wipe preset menu

Press the <BKGD WIPE> button on the multi-selection panel area to display the background wipe preset menu.

Nine background wipe preset patterns can be stored for each ME.

The wipe setting used in the corresponding ME is always stored to the pattern button selected in the pattern selection menu. If another pattern button is selected, the wipe pattern and setting values stored previously are retrieved.



Pattern selection menu

■ Pattern selection menu

Press the <BKGD WIPE> button on the multi-selection panel area to display the pattern selection menu.

S1	[ME1], [ME2]	Displays the ME of the operations target.
S2	Current pattern	Displays the current background wipe pattern.
S3	[ROT]	Rotates the wipe pattern by 90° or 180°. There will not be any changes if you selected a rotation-disabled pattern.
1 - 9	Pattern 1 to pattern 9	Selects the background wipe preset pattern.

NOTE

- The selection button for the background wipe preset menu in the multi-selection panel will move to top left (pattern 1) when shot memory or event memory is played back.

Shot memory menu

Press the <SHOT MEM> button on the multi-selection panel area to display the shot memory menu.
Register and play back the 81 register memories (9 pages×9 memories).
Pages 1 to 9 can be specified for the page numbers of the memories.
Numbers 1 to 9 can be specified as the respective memory numbers for the specified page numbers.

Operation menu for the register memory

[TARGET SELECT] menu

[PAGE SELECT] menu

■ Operation menu for the register memory

Press the <SHOT MEM> button on the multi-selection panel area to display the operation menu for the register memory.

S1, S2	Status display field of the [TARGET SELECT] menu	Displays the items selected in the [TARGET SELECT] menu.
S3	[SEL]	Moves to the [TARGET SELECT] menu.
1 - 9	Register memory for operation target	Selects the register memory for the operation target. Shows the shot memory name on the upper line and the shot memory number on the lower line.
10	[RECALL/STORE/DEL]	Switches the operation mode.
11	[PAGE SEL]	Moves to the [PAGE SELECT] menu.
12	—	—

■ [TARGET SELECT] menu

Select [SEL] in the operation menu of the register memory to display the [TARGET SELECT] menu.

S1 - S3	[TARGET SELECT]	Displays the menu title.
1	[ME1]	Select the registration target of the shot memory (for [STORE] mode) or playback target (for [RECALL] mode).
2	[ME2]	
3	—	
4	—	
5	[XPT]	
6	[DSK]	
7	[AUX]	
8	[CBGD]	
9	—	
10	—	—
11	[EXIT]	Moves to the operation menu for the register memory.
12	—	—

■ [PAGE SELECT] menu

Select [PAGE SEL] in the operation menu of the register memory to display the [PAGE SELECT] menu.

S1 - S3	[PAGE SELECT]	Displays the menu title.
1 - 9	[PAGE1] - [PAGE9]	Selects the page number of the register memory.
10	—	—
11	[EXIT]	Moves to the operation menu for the register memory.
12	—	—

Event memory menu

Press the <EVT MEM> button on the multi-selection panel area to display the event memory menu.

Play back the 81 register memories (9 pages×9 memories).

Pages 1 to 9 can be specified for the page numbers of the memories.

Numbers 1 to 9 can be specified as the respective memory numbers for the specified page numbers.

Operation menu for the register memory

[TARGET SELECT] menu

[PAGE SELECT] menu

■ Operation menu for the register memory

Press the <EVT MEM> button on the multi-selection panel area to display the operation menu for the register memory.

S1, S2	Status display field of the [TARGET SELECT] menu	Displays the items selected in the [TARGET SELECT] menu. • [CLP+]: Lights up when [CLIP] or [CBGD] is selected in the [TARGET SELECT] menu.
S3	[SEL]	Moves to the [TARGET SELECT] menu.
1 - 9	Register memory for operation target	Selects the register memory for the operation target. Page numbers, sub-numbers, etc. are displayed in each item.
10	—	—
11	[PAGE SEL]	Moves to the [PAGE SELECT] menu.
12	[PLAY]	Starts playback when awaiting or pausing playback.

■ [TARGET SELECT] menu

Select [SEL] in the operation menu of the register memory to display the [TARGET SELECT] menu.

S1 - S3	[TARGET SELECT]	Displays the menu title.
1	[ME1]	Selects the event memory playback target.
2	[ME2]	
3	—	
4	—	
5	[XPT]	
6	[DSK]	
7	[AUX]	
8	[CBGD]	
9	[CLIP]	
10	—	—
11	[EXIT]	Moves to the operation menu for the register memory.
12	—	—

■ [PAGE SELECT] menu

Select [PAGE SEL] in the operation menu of the register memory to display the [PAGE SELECT] menu.

S1 - S3	[PAGE SELECT]	Displays the menu title.
1 - 9	[PAGE1] - [PAGE9]	Selects the page number of the register memory.
10	—	—
11	[EXIT]	Moves to the operation menu for the register memory.
12	—	—

Video memory menu

Press the <VMEM> button on the multi-selection panel area to display the video memory menu.

Record or play back the moving image memories (Clip) and still image memories (Still), and save or recall the register memories.

Operation menu for the register memory

[PLAY] menu

[REC] menu

[CHANNEL SELECT] menu

[OPERATION SELECT] menu

[PAGE SELECT] menu

■ Operation menu for the register memory

Press the <VMEM> button on the multi-selection panel area to display the operation menu for the register memory.

S1	[STILL1] - [STILL4], [CLIP1] - [CLIP4]	Moves to the [CHANNEL SELECT] menu. • Among [STILL1] to [STILL4] and [CLIP1] to [CLIP4], the buttons for the operation target will be displayed.
S2	Current thumbnails	Displays the thumbnails stored as the operation target among [STILL1] to [STILL4] and [CLIP1] to [CLIP4].
S3	[OP]	Moves to the [OPERATION SELECT] menu.
1 - 9	Register memory for operation target	Selects the register memory for the operation target. Page numbers, sub-numbers, etc. are displayed in each item.
10	[RECALL/STORE/DEL]	Switches the operation mode.
11	[PAGE SEL]	Moves to the [PAGE SELECT] menu.

■ [PLAY] menu (only when operating [CLIP1] to [CLIP4])

Select [PLAY] in the [OPERATION SELECT] menu to display the [PLAY] menu.

S1	[CLIP1] - [CLIP4]	Moves to the [CHANNEL SELECT] menu. • Among [CLIP1] to [CLIP4], the buttons for the operation target will be displayed.
S2	Current thumbnails	Displays the thumbnails stored as the operation target among [STILL1] to [STILL4] and [CLIP1] to [CLIP4].
S3	[OP]	Moves to the [OPERATION SELECT] menu.
4	[LEAD]	Moves to the beginning of the Clip.
6	[LAST]	Moves to the end of the Clip.
8	[PAUSE]	Pauses playback of Clip for the operation target.
10	[STOP]	Stops playback of Clip for the operation target.
12	[PLAY]	Starts playback of Clip for the operation target.

■ [REC] menu

Select [REC] in the [OPERATION SELECT] menu to display the [REC] menu.

S1	[STILL1] - [STILL4], [CLIP1] - [CLIP4]	Moves to the [CHANNEL SELECT] menu. • Among [STILL1] to [STILL4] and [CLIP1] to [CLIP4], the buttons for the operation target will be displayed.
S2	Current thumbnails	Displays the thumbnails stored as the operation target among [STILL1] to [STILL4] and [CLIP1] to [CLIP4].
S3	[OP]	Moves to the [CHANNEL SELECT] menu.

10	[STOP]	Stops recording Clip for the operation target. • Operations are impossible for [STILL1] to [STILL4].
12	[REC]	Records the source selected with the VMEM bus in the video memory for the operation target.

■ [CHANNEL SELECT] menu

Select [STILL1] to [STILL4] or [CLIP1] to [CLIP4] in the operation menu of the register memory to display the [CHANNEL SELECT] menu.

S1 - S3	[CHANNEL SELECT]	Displays the menu title.
1 - 4	[STILL1] - [STILL4]	Selects the operations target. Returns to the original menu when selected.
5 - 8	[CLIP1] - [CLIP4]	
11	[EXIT]	Returns to the original menu.

■ [OPERATION SELECT] menu

Select [OP] in the operation menu of the register memory to display the [OPERATION SELECT] menu.

S1 - S3	[OPERATION SELECT]	Displays the menu title.
1	[REG SEL]	Moves to the operation menu for the register memory.
2	[PLAY]	Moves to the [PLAY] menu. • Operations are impossible for [STILL1] to [STILL4].
3	[REC]	Moves to the [REC] menu.
11	[EXIT]	Returns to the original menu.

■ [PAGE SELECT] menu

Select [PAGE SEL] in the operation menu of the register memory to display the [PAGE SELECT] menu.

S1 - S3	[PAGE SELECT]	Displays the menu title.
1 - 9	[PAGE1] - [PAGE9]	Selects the page number of the register memory.
11	[EXIT]	Returns to the original menu.

Plug-in menu

Press the <PLUG IN> button on the multi-selection panel area to display the plug-in menu.

Used as a plug-in software menu.

Content differs depending on plug-in software specifications.

NOTE

- The operation using the plug-in software of the multi-selection panel is a function to be supported in the future.

Menu delegation function

When a button on the Control Panel is double-clicked, the menu screen displayed on the Menu Panel AV-HS60C3 or the multi-selection panel area can be switched.

At the same time, the normal operation activated when the button is pressed is also executed.

Enabling/disabling the menu delegation function

Enable/disable the menu delegation function at the Menu Panel AV-HS60C3 and the multi-selection panel area separately.

1 Select the <SYS> button → [CTRL PANEL] → [Main Panel]/[SubPanel1]/[SubPanel2] tab.

2 Select an item in [MenuPanel] or [Select Panel] in the [Delegation] column.

[On] button	Enables the menu delegation function.
[Off] button	Disables the menu delegation function.

Menu delegation function list

Button		Transition menu of the Menu Panel AV-HS60C3	Transition menu of the multi-selection panel area
Button position	**Operation target button**		
Crosspoint area	<KEY1 F/S>, <KEY2 F/S>, <KEY3 F/S>, <KEY4 F/S>	• When the key type is [Lum]/[Linear]/[Full] The <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Key Setting] tab • When the key type is [Chroma] The <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Chroma] tab • When PinP is enabled The <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [PinP Adjust] tab	—
	<MCRO>	The <MEM> button on the top menu → [MACRO] → [XPT Assign] tab	—
	<IMAG> of A bus	The <ME1>/<ME2> button on the top menu → [IMAGE] → [BKGD] tab → [A Effect1] column	—
	<IMAG> of B bus	The <ME1>/<ME2> button on the top menu → [IMAGE] → [BKGD] tab → [B Effect1] column	—
	<CBGD1>*, <CBGD2>*	The <DSK MISC> button on the top menu → [CBGD] → [CBGD1]/[CBGD2] tab → [Main Color] column	—
	<DSK1 F/S> - <DSK4 F/S>	The <DSK MISC> button on the top menu → [DSK1] to [DSK4] → [Setting] tab → [DSK Adjust] column	—
	<VMEM F/S>	The <MEM> button on the top menu → [STILL] → [Still] tab	—
	<DISP>	Switches to the split display in which the image selected in the DISP bus and the WFM/VECT are displayed.	—
	<STILL1 V/K> - <STILL4 V/K>*	The <MEM> button on the top menu → [STILL] → [Still] tab	Selection of the register memories ([STILL1] to [STILL4])
	<CLIP1 V/K> - <CLIP4 V/K>*	The <MEM> button on the top menu → [CLIP] → [Play Clip1] to [Play Clip4] tabs	Selection of the register memories ([CLIP1] to [CLIP4])
Transition area	<KEY1> - <KEY4>	The <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Transition] tab → [In Type] column	—
	<BKGD>	The <ME1>/<ME2> button on the top menu → [BKGD] → [Transition] tab	—
	<WIPE>	The <ME1>/<ME2> button on the top menu → [BKGD] → [Edge Border] tab	Selection of the BKGD WIPE waveform
	<EMEM LINK>	The <MEM> button on the top menu → [EVENT MEMORY] → [Register] tab	Selection of the event memories
	<MCRO ATCH>	The <MEM> button on the top menu → [MACRO] → [Macro Attach] screen	—
	<PATT LIMIT>	The <ME1>/<ME2> button on the top menu → [BKGD] → [Position] tab → [Pattern Limit] column	—
	<AUTO>	The <ME1>/<ME2> button on the top menu → [BKGD] → [Transition] tab	—
KEY operation area	<KEY1> - <KEY4>	• When the key type is [Lum]/[Linear]/[Full] The <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Key Setting] tab • When the key type is [Chroma] The <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Chroma] tab • When PinP is enabled The <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [PinP Adjust] tab	—
DSK operation area	<DSK1> - <DSK4>	The <DSK MISC> button on the top menu → [DSK1] to [DSK4] → [Setting] tab	—

* Can be used when assigned to the PGM/A bus crosspoint buttons or PST/B bus crosspoint buttons.

Various settings

Network settings

Configure the network for the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 and the Main Frame AV-HS60U1/AV-HS60U2.

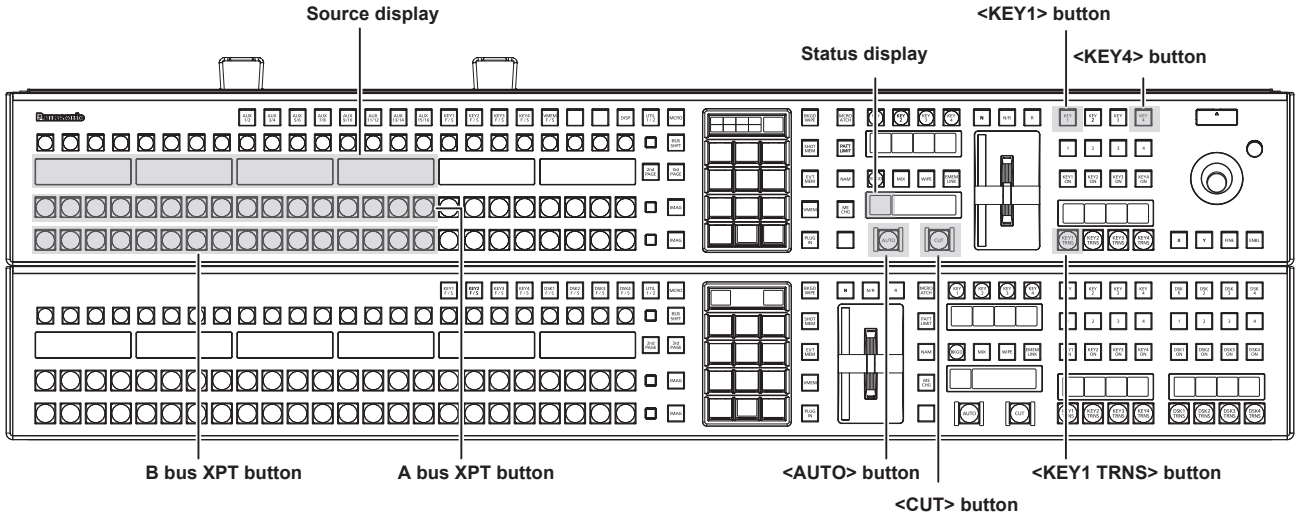
Configuring the network for the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

Configure the network for the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

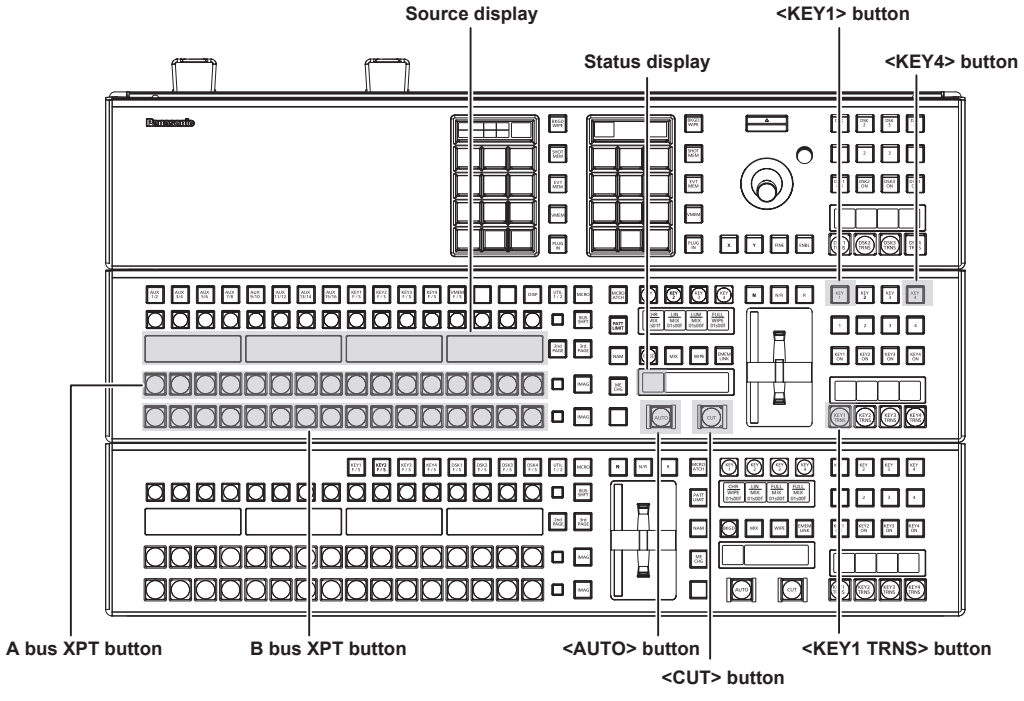
- The terminals connected to the Main Frame AV-HS60U1/AV-HS60U2 differ depending on the number of Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.
  - When only one panel is connected
    Connect the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2. It is not necessary to perform the network setting of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.
  - When two or more panels are connected
    Connect the first Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 (main control panel) to the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2.

    Connect the second and subsequent Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 (sub control panel) to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2. It is necessary to change the network setting of sub control panel before connecting.
- The default setting is as follows: IP address: 10.0.0.2, subnet mask: 255.255.255.248, IP address of the connecting Main Frame: 10.0.0.1, and default gateway: 0.0.0.0

■ **AV-HS60C1/AV-HS60C2**



■ **AV-HS60C4**



1 **Turn off the power of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.**

2 Turn on the power of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 while pressing the <KEY1> button, <KEY4> button, and <KEY1 TRNS> button in the KEY operation section of the ME line at the top.

The Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 is booted in the network setting mode.
Part of the status display and the source display in the ME line at the top will become as follows when it goes into the network setting mode.

- Status display: Setting item is displayed.

  The setting item is switched every time the <AUTO> button in the ME line at the top is pressed.

Display	Setting item	Setting example
IP	IP address	192.168.0.8
MSK	Subnet mask	255.255.255.0
GTW	Default gateway	0.0.0.0
MIP	IP address of the connecting Main Frame AV-HS60U1/AV-HS60U2	192.168.0.5

- Source display: Setting value is displayed.

  The value will increase by pressing the A bus XPT button under the setting value.

  The value will decrease by pressing the B bus XPT button under the setting value.

3 Set each item.

Change the setting value for each setting item, and confirm by pressing the <CUT> button in the ME line at the top.

- The <CUT> button will light up in green when the setting is correctly made.
- The <CUT> button will light up in red when the setting is not correctly made.
- The changed setting value is not confirmed when the setting item is switched without pressing the <CUT> button.
- When the value of the IP address is changed and the <CUT> button is pressed, the value is checked against the value of the subnet mask. At this time, if the binary of the host address is changed to 0 or 1, the changed value is not confirmed. The <CUT> button lights up in red. In this case, change the value of the subnet mask, and then change the value of the IP address.

4 Turn off the power of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

NOTE

- For the subnet mask, use the same address as the address set for the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.
- Set the IP address that does not overlap with the following IP address.
  - The IP address set to other device that is connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2
  - The IP address set for the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2
- If the default setting for the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 is not changed, it can be connected as the sub control panel when the value described in the setting example is set.
- For details on the network setting for the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2, refer to “Configuring the network for the Main Frame AV-HS60U1/AV-HS60U2” (page 48).

Configuring the network for the Main Frame AV-HS60U1/AV-HS60U2

Configure the network for the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.

- The default setting is as follows: IP address: 192.168.0.5, subnet mask: 255.255.255.0, default gateway: No setting

1 Select the <SYS> button → [SYSTEM] → [Network] tab.

2 Set [IP Address] and [Subnet Mask] in the [Network1] column.

[IP Address]	Sets the IP address. (Setting example: 192.168.0.5)
[Subnet Mask]	Sets the subnet mask. (Setting example: 255.255.255.0)

- When the value of the IP address is changed, the value is checked against the value of the subnet mask. At this time, if the binary of the host address is changed to 0 or 1, the changed value is not confirmed. In this case, change the value of the subnet mask, and then change the value of the IP address.

3 Set/check [Default Gateway] and [MAC Address] in the [Network2] column.

[Default Gateway]	Sets the default gateway.
[MAC Address]	Checks the MAC address.

4 Select the <SYS> button → [CTRL PANEL] → [SubPanel1] tab → [Network] column, and set the IP address of the sub control panel 1 to be connected.

[IP Address]: Sets the IP address of the sub control panel 1 to be connected. (Setting example: 192.168.0.8)
Set this only when the sub control panel is connected.

5 Select the <SYS> button → [CTRL PANEL] → [SubPanel2] tab → [Network] column, and set the IP address of the sub control panel 2 to be connected.

[IP Address]: Sets the IP address of the sub control panel 2 to be connected. (Setting example: 192.168.0.9)
Set this only when the sub control panel is connected.

NOTE

- A network with the IP address between 10.0.0.0 and 10.0.0.7 is used for the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2. The setting cannot be changed.
- The <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 cannot be connected to a network containing the IP address between 10.0.0.0 and 10.0.0.7. Do not configure the setting of sub network containing the IP address between 10.0.0.0 and 10.0.0.7.

- To enable the settings, the system must be rebooted. Set the power to <OFF>, and then set it back to <ON>.
- If you do not connect the control panel or computer to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2, it is not necessary to set up via the menu.
- If you use the device to be connected with the settings matching the default settings of the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2, it is not necessary to set up via the menu.

Setting signal formats

Select the system format.

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Set [Video Format] in the [Video Format] column.

- Select from [1080/59.94i], [1080/50i], [1080/24PsF], [1080/23.98PsF], [720/59.94p], [720/50p], [480/59.94i], [576/50i], [1080/29.97PsF], and [1080/25PsF].
- [1080/59.94p] or [1080/50p] can be selected when the switcher mode is set to 3G, and [2160/59.94p] or [2160/50p] can be selected when set to 4K. For details on the 3G mode or the 4K mode, refer to “Difference of function for each mode” (page 164).

Setting sync signals

Set the external sync signals supplied to the <REF> terminal of the Main Frame AV-HS60U1/AV-HS60U2 and output phase.

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Set the output phase in the [Output Phase] column.

3 Select a sync signal in [Sync] in the [Reference] column.

- Selects from [BB], [BB Advanced], [Tri-level sync], and [Internal].

Setting input signals

Various input signal settings

Make various settings for SDI input signals and DVI input signals.

- For details, refer to “Setting input signals” (page 119).

1 Select the <IN OUT> button → [SDI IN] → [Frame Buffer]/[Status]/[Up Converter] tab, and make the following settings.

[Frame Buffer] tab	Sets the mode, frame synchronizer, freeze effects, and frame delays.
[Status] tab	Displays the information on the images for SDI input signals.
[Up Converter] tab	Make the settings for built-in up-converters at the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column.

2 Select the <IN OUT> button → [DVI IN] → [Frame Buffer]/[Status] tab, and make the following settings.

[Frame Buffer] tab	Make the settings for DVI-D input signals.
[Status] tab	Displays the information on the images for DVI-D input signals.

3 Select the <IN OUT> button → [C/C IN 25-30], [C/C IN 31-32] → [SDI IN 25] to [SDI IN 32] tabs, and make the color corrector settings.

- Make the settings for color correctors built into the <SDI IN 25> to <SDI IN 32> terminals.

Setting video source names

Set source names displayed on the source name display panels of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 and the MultiView display.

- For details, refer to “Setting the source name” (page 132).

1 Select the <CONF> button → [SOURCE NAME] → [Panel Name]/[MV Name], and make the settings for source names, etc.

Setting video source links

Make the settings for links of key fills and key sources handled as keys. When key fills (key sources) are selected with the KEY bus crosspoint buttons, the linked key sources (key fills) are selected automatically. Select which of key fill and key source to be set as a master from the menu. The same setting can be used for the AUX bus link setting.

- For details, refer to “Selecting the key source” (page 62).

1 Select the <CONF> button → [SOURCE LINK] → [Key Assign] tab.

2 Assign the items in the slave list at the right row to the items in the master list at the left row.

- With that, key fill and key source link settings are complete.
- When enabling/disabling link settings with the AUX bus link settings, proceed to the step **3**.

3 Select the [AUX Bus Link] tab.

4 Select an item in [AUX1/2 Link] to [AUX15/16 Link] in the [Link 1]/[Link 2] column.

[On]	Enables link settings.
[Off]	Disables link settings.

Button settings

Assigning video sources to buttons

External video input signals and internally generated signals can be assigned to the crosspoint buttons (the PGM/A, PST/B, and KEY bus crosspoint buttons) in the crosspoint area.

- For details, refer to “Assigning signals to buttons” (page 131).

1 Select the <CONF> button → [XPT ASSIGN] → [MainPanel]/[SubPanel1]/[SubPanel2] tab, and make the following settings.

[MainPanel] tab	Assigns the main control panel.
[SubPanel1] tab	Assigns the sub control panel 1 (second Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).
[SubPanel2] tab	Assigns the sub control panel 2 (third Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).

Disabling button/block operations

Operations can be disabled for each button or block.

- For details, refer to “Disabling button operations” (page 130).

1 Select the <CONF> button → [BUTTON INHIBIT] → [MainPanel]/[SubPanel1]/[SubPanel2] tab, and make the following settings.

[MainPanel] tab	Assigns the main control panel.
[SubPanel1] tab	Assigns the sub control panel 1 (second Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).
[SubPanel2] tab	Assigns the sub control panel 2 (third Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).

Setting button colors

For details on the button color settings, refer to “Setting the button color” (page 151).

Setting output signals

Make various settings for SDI output signals.

- For details, refer to “Setting output signals” (page 125).

1 Select the <IN OUT> button → [SDI OUT] → [Assign]/[Down Converter] tab, and make the following settings.

[Assign] tab	Assigns output matrix.
[Down Converter] tab	Makes the settings for down-converters built into the <SDI OUT 14>/<SDI OUT 16> terminals.

2 Select the <IN OUT> button → [C/C OUT] → [SDI OUT 13] to [SDI OUT 16] tabs, and make the color corrector settings.

- Make the settings for color correctors built into the <SDI OUT 13> to <SDI OUT 16> terminals.
- For details on the settings output from the ME/DSK block such as ME1CLN and ME2CLN, refer to “Setting the ME output and DSK output” (page 148).

Setting MultiView displays

If the output signal is set to MV1 to MV4, multiple images can be simultaneously displayed on a maximum of 16 split screens.

- For details, refer to “Setting MultiView displays” (page 127).

1 Select the <MV> button → [MV1-4] → [MV1] to [MV4] tabs.

2 In the [Pattern] column, make the settings for the split pattern of the MultiView display.

- When [Assign] is selected, the source settings screen will be displayed on a sub-screen.

3 In the [MV Frame]/[Tally Box]/[Tally Label L]/[Tally Label R]/[Display] column, set the information displayed on the sub-screen.

Setting a tally

Setting reference outputs

For details on the tally group settings, refer to “Setting a tally” (page 153).

1 Select the <SYS> button → [PERIPHERAL] → [Tally] tab.

2 Select an item in [Target A], [+Target B], [+Target C], and [+Target D] of the [Tally Group1-1 (On-Air)] column, and select an item in [+Target E], [+Target F], [+Target G], and [+Target H] of the [Tally Group1-2 (On-Air)] column.

- Select up to eight reference outputs to be used for the on-air tally.

3 Select an item in [Target A], [+Target B], [+Target C], [+Target D] of the [Tally Group2-1] to [Tally Group4-1] columns, and select an item in [+Target E], [+Target F], [+Target G], and [+Target H] of the [Tally Group2-2] to [Tally Group4-2] columns.

- Aside from [Tally Group1-1 (On-Air)]/[Tally Group1-2 (On-Air)], additional three tally groups can be set. When [Color] is selected, colors to be used for the tally in the MultiView display can also be set.

Setting the parallel tally

1 Select the <SYS> button → [PERIPHERAL] → [GPI IN]/[GPI OUT] tab, and make the following settings.

[GPI IN] tab	Assigns Tally G1 DSBL through Tally G4 DSBL to externally control enabling/disabling of each tally group.
[GPI OUT] tab	Assigns source tally outputs by tally group.

Setting date and time

Set the date and time to be used as a timestamp when saving files to the memory card or the Storage Module AV-HS60D1 (optional). It can also be displayed on the split screen of the MultiView display.

1 Select the <SYS> button → [MAINTENANCE] → [Misc] tab.

2 Set the date and time in the [Date]/[Time]/[LTC] columns.

[Date] column	Sets the year, month, and date in [Year], [Month], and [Date].
[Time] column	Sets the hour, minute, and second in [Hour], [Minute], and [Second].
[LTC] column	Displays the information input to the <LTC IN> terminal and reflects it in the [Time] column.

Chapter 5 Basic Operations

This chapter describes menu operations.

Background transition

Selecting a bus

Select sources to be used for background transitions.

1 Press the crosspoint buttons.

- Depending on the operating status, the buttons pressed will light in one of three color patterns.

Type	Color when lit*	Description
High tally	[Red]	Lights when the selected source is included in the on-air output.
Low tally	[Yellow]	Lights when the selected source is not included in the on-air output but included in the program output.
Preset tally	[Green]	Lights when the selected source is included in neither the on-air output nor the program output.

* Indicates the default colors. To change the colors, select the <SYS> button on the top menu → [CTRL PANEL] → [Button Color] tab → [Select Button] column.

- The color when lit for the buttons not selected can also be set by source or by block. (page 152)

Selecting a bus using the SHIFT function

The SHIFT function is to switch pages of the crosspoint buttons with the <2nd PAGE>/<3rd PAGE> button.
There are two ways to perform the SHIFT function.

All SHIFT	Use the <2nd PAGE>/<3rd PAGE> button to switch all pages of buses included in the corresponding ME at once. (page 24)
Single SHIFT	Assign the <2nd PAGE>/<3rd PAGE> button to the crosspoint buttons to switch pages. (page 131) Using the assigned button, only the pages of individual bas can be switched.

The <2nd PAGE>/<3rd PAGE> buttons are available in two modes. The setting can be changed using the menu. (page 135)

[Normal]	The buttons are turned on only while they are pressed.
[Page Lock]	The buttons are turned on and off each time they are pressed.

Selecting the bus mode

Select the A/B bus system or the flip-flop system (PGM/PST system).

1 Select the <CONF> button → [OPERATE] → [Transition] tab.

2 Set an item in [Bus Mode Type] in the [Bus Mode] column.

[Common]	Set the same bus mode in ME1 and ME2. Setting of the [Bus Mode] column → [Bus Mode] is applied to both ME1 and ME2.
[Each]	Different bus modes can be set for ME1 and ME2. Settings of the [Each Bus Mode1] column → [Bus Mode ME1] and [Bus Mode ME2] are applied to ME1 and ME2 respectively.

3 Select an item in [Bus Mode] in the [Bus Mode] column, and [Bus Mode ME1]/[Bus Mode ME2] in the [Each Bus Mode1] column.

[A/B]	When the fader lever is at side A, the signals selected on the A bus are used as the source of the PGM bus. When the fader lever is at side B, the signals selected on the B bus are used as the source of the PGM bus.
[PGM-A/PST-B]	Using a flip-flop system, the signals selected on the A bus are always used as the source of the PGM bus, and the signals selected on the B bus are always used as the source of the PST bus.
[PGM-B/PST-A]	Using a flip-flop system, the signals selected on the B bus are always used as the source of the PGM bus, and the signals selected on the A bus are always used as the source of the PST bus.

Transition operations

Operate transitions using the transition area on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

1 Press the <BKGD> button.

- Select the transition target.
  Multiple targets can be selected by pressing the <KEY1>/<KEY2>/<KEY3>/<KEY4> buttons simultaneously.

2 Select the transition type.

- Use the transition type selection buttons. (page 25)

3 Execute the transition using the fader lever or the transition execution button.

Manual transition	Move the fader lever to execute the transition.
Auto transition	Press the <AUTO> button to execute the transition automatically.
Cut transition	Press the <CUT> button to execute the transition instantaneously.

- The bus tallies on the right of the PGM/A bus crosspoint buttons and the PST/B bus crosspoint buttons indicate the output status of the program bus.

Lighting color	Description
Red	Lights when the relevant bus is included in the on-air output.
Amber	Lights when the relevant bus is not included in the on-air output but included in the program output.
Off	Lights when the relevant bus is included in neither the on-air output nor the program output.

■ Setting the transition time

1 Select the <ME1>/<ME2> button → [BKGD] → [Transition] tab.

2 Set [Time] in the [Transition] column.

- Set the transition time.

NOTE

- The units used for time display of the unit can be set to either in seconds/frame or in frames. (page 136)

■ Setting the start and end points of a transition

1 Select the <ME1>/<ME2> button → [BKGD] → [Transition] tab.

2 Set [Start Point] and [End Point] in the [Transition] column.

[Start Point]	Sets the start point for the background transition. The background transition will start after the start point of the manual transition or the auto transition when a value larger than 0 is set for [Start Point]. At this time, the lamp for start point of the fader lever will blink in the transition status display.
[End Point]	Sets the end point for background transition. The background transition will complete before the end point of the manual transition or the auto transition when a value larger than 0 is set for [End Point]. At this time, the lamp for end point of the fader lever will blink in the transition status display.

- While the <PATT LIMIT> is lighting up, the settings of [Start Point] and [End Point] are disabled.

■ <NAM> button setting

Sets the operation of the background transition when both the <MIX> button and the <NAM> button are set ON.

1 Select the <ME1>/<ME2> button → [BKGD] → [Transition] tab.

2 Set [NAM]/[CMIX] in the [Trans Type] column.

[NAM]	Switches the images in the A bus/B bus with non-additive mixing. It will be high luminance with the A bus at 100% and the B bus at 100% when the fader lever is positioned midway.
[CMIX]	It will perform the MIX mixing (color mix mixing) set in the [CMIX Color] column at the midway of the images of A bus/B bus.

3 Adjust the color.

[Hue], [Sat], [Lum] or [Color Palette] is set in the [CMIX Color] column.

Wipe

Selecting the wipe pattern for background transition

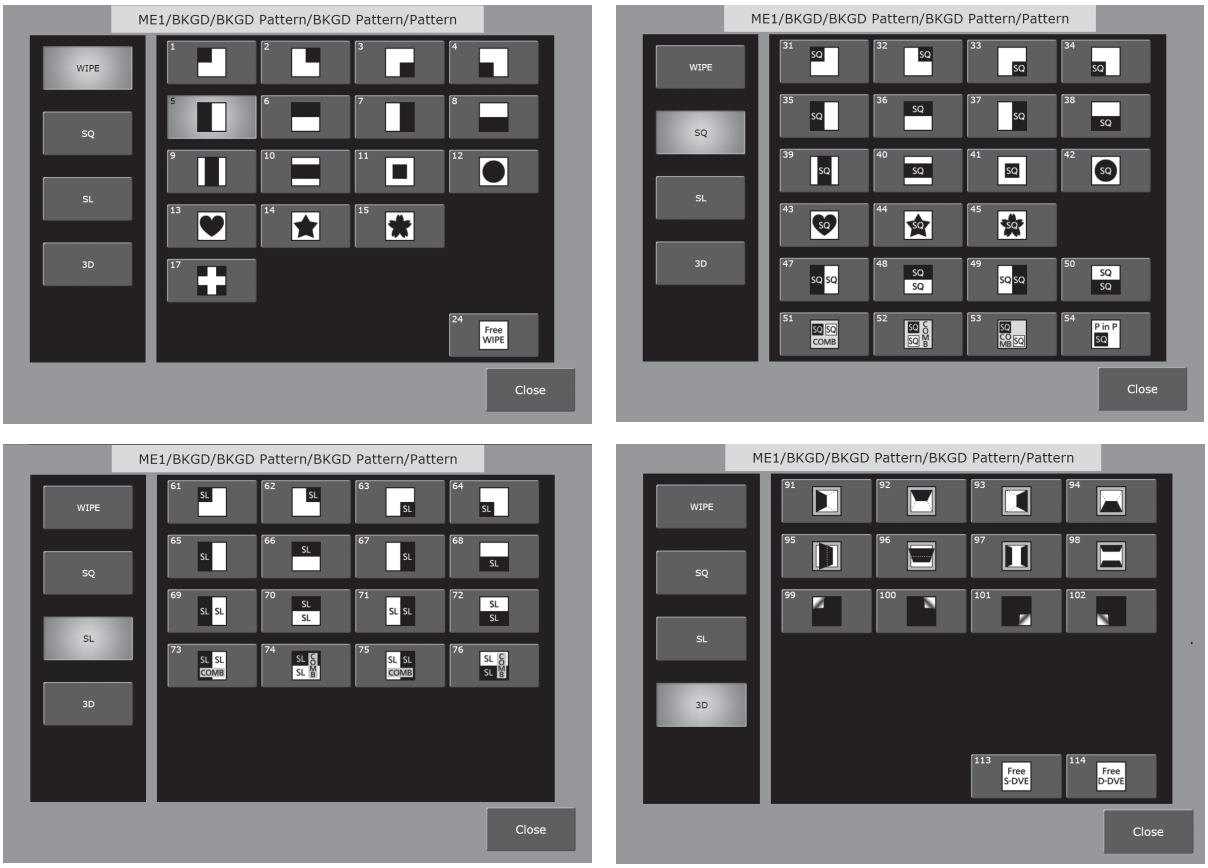
Set the wipe pattern for background transition.

1 Select the <ME1>/<ME2> button → [BKGD] → [BKGD Pattern] tab.

2 Set an item in [Pattern] in the [BKGD Pattern] column.

- Select the wipe pattern for background transition.

■ **Wipe pattern screens for background transition**



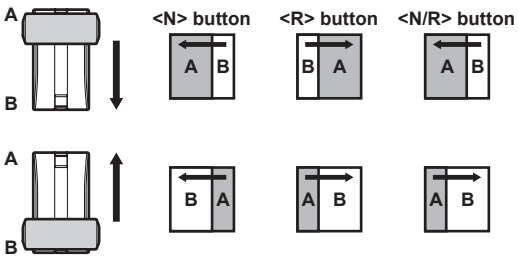
- The following patterns will have dead band.
  - SQ: 51, 52, 53, 54
  - SL: 73, 74, 75, 76

  It is making so the shape does not change when the transition amount is in the range of 40% to 60%.

Selecting the wipe direction

Press a wipe direction selection button to select the wipe direction for the background transition.
For details, refer to “Transition area” (page 25).

■ **Fader lever operations and wipe directions (when WIPE: 7 is selected as a wipe pattern)**



Wipe decorations (border, soft effect)

Add a border effect or soft effect to the wiping of background transitions.

1 Select the <ME1>/<ME2> button → [BKGD] → [Edge Border] tab.

2 Select an item in [Border] in the [Border] column.

[Off]	Does not add the border effect.
[On]	Adds the border effect.

3 Set [Width], [Soft], and [Fill] in the [Border] column.

[Width]	Sets the border width.
[Soft]	Sets the amount of soft effect.
[Fill]	Select the image to fill in the border area from [Matte], [UTIL1], or [UTIL2]. When [Matte] is selected, the border color can be set using [Hue], [Sat], [Lum], or [Color Palette] in the [Border Color] column.

NOTE

- When [Border] in the [Border] column is set to [On], the amount of soft effect set using [Soft] in the [Border] column is indicated as the ratio of soft effect to the border width. To add only soft effect to a wipe, set [Border] in the [Border] column to [Off].
- When a waveform other than [WIPE] is selected from the <ME1>/<ME2> button on the top menu → [BKGD] → [BKGD Pattern] tab, the color set in the [Border Color] column is applied even if [UTIL1] or [UTIL2] is selected in [Fill].
- When the following waveforms are selected, a border is not applied even if [Border] in the [Border] column is set to [ON].
  - SQ: 47, 48, 49, 50

Setting the border color

When [Matte] is selected in the [Fill] column, the border color can be set.

1 Select the <ME1>/<ME2> button → [BKGD] → [Edge Border] tab.

2 Adjust the color.

- Set [Hue], [Sat], [Lum], or [Color Palette] in the [Border Color] column.

Setting the background image

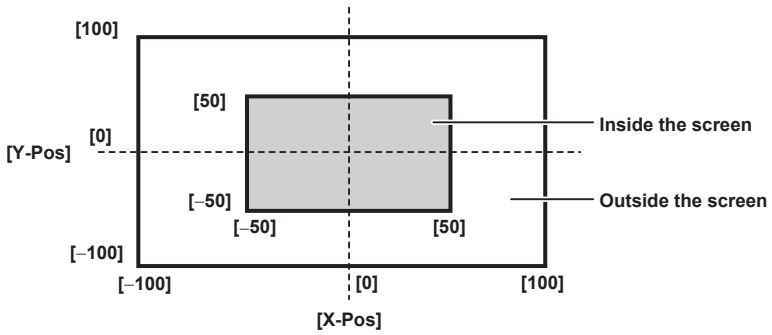
- Set the background image when the following pattern waveforms are selected.
  - SQ: 47, 49, 51, 52, 53, 114
- The background image is output only when [4:3] or [4:3 Smooth] is selected on the top menu <ME1>/<ME2> button → [BKGD] → [Position] tab → [Trim] column → [Trim] when SQ is set to 47 or 49.

1 Select the <ME1>/<ME2> button → [BKGD] → [Edge Border] tab.

2 Set [Base Video] in the [Base Video] column.

- Select an item from [Off] (black), [UTIL1], and [UTIL2].

Modifying wipe



1 Select the <ME1>/<ME2> button → [BKGD] → [Position] tab.

2 Select [Normal] or [Reverse] in the [Direction] column.

- This setting is linked with the <N>/<R> button. (page 25)

3 Select an item in [Normal/Reverse] in the [Direction] column.

- This setting is linked with the <N/R> button. (page 25)

[On]	Wipes in the direction of the setting item.
[Off]	Does not wipe in the direction of the setting item.

4 Select an item in [Pattern Limit] in the [Pattern Limit] column.

- This setting is linked with the <PATT LIMIT> button.

[Off]	Does not restrict the amount of wipe transition for background transition. If the setting is changed from [On] to [Off], transition is made according to the position of the fader lever at the time specified in [Return Time].
[On]	Restricts the amount of wipe transition for background transition.

5 Set [Size] in the [Pattern Limit] column.

- Set the size restriction on the amount of transition.

6 Set [Return Time] in the [Pattern Limit] column.

- Set the transition time to the position of the fader lever when [Pattern Limit] is set to [Off] from [On].

7 Set [X-Pos] and [Y-Pos] in the [Position] column.

- Set the start position of the next pattern waveforms.
  - WIPE: 11, 12, 13, 14, 15
  - SQ: 41, 42, 43, 44, 45, 51, 52, 53, 54
- These can be set only when the target pattern is selected in the background.
  Either operate the fader lever or press the <AUTO> button to check the wipe operation.
  Example) When [X-Pos] is set to [–50], and [Y-Pos] is set to [–50]
  The next screen (or key) appears from the bottom left, and wipes in towards the center of the screen.

8 Set [Size] in the [Position] column.

- Set the start size of the next pattern waveforms.
  - SQ: 51, 52, 53, 54

Setting trimming, aspect ratio

Set the behavior for the trimming and aspect ratio. This is applied to the background transition.

1 Select the <ME1>/<ME2> button → [BKGD] → [Position] tab.

2 Select an item in [Trim] in the [Trim] column.

- Set the trimming for the pattern waveforms of SQ, SL, and 3D.

[Off]	Does not perform trimming.
[16:9]	Trims the edges around a source at a certain amount. This setting is used when a black border is seen around the source. The edges are trimmed at a certain amount when SD is selected as the system format.
[4:3]*1	Performs trimming in the 4:3 aspect ratio and releases the trimming when the transition is completed.
[4:3 Smooth]*1	Performs trimming in the 4:3 aspect ratio, and smoothly executes transition to the 16:9 video.
[Manual]*2	Trims the waveform using the values set in [Trim Adjust1] and [Trim Adjust2].

*1 Disabled when SD is selected as the system format.
*2 Enabled when the following pattern waveforms are selected.
SQ: 41, 51 - 54

3 Select an item in [Manual] in the [Trim] column.

[Free]	Sets the amount of trimming for [Left], [Right], [Top], and [Bottom] separately.
[Pair]	Changes the settings in such a way that the [Left] and [Right] trimming amounts, and the [Top] and [Bottom] trimming amounts are the same. (This makes for a top-bottom and left-right symmetry.)

4 Select an item in [4:3 Auto] in the [Trim] column.

- Set the target sources for automatic trimming ([4:3] or [4:3 Smooth]). Enabled when HD is selected as the system format.

[Off]	All input sources are targeted for automatic trimming.
[On]	The input sources for which [Edge Crop] is selected in the up-converter setting are targeted for automatic trimming. Input sources for which an item other than [Edge Crop] is selected are trimmed in [16:9].

5 Set [WipeAspect] in the [Trim] column.

- Adjust the aspect ratio of the wipe pattern.
- The following pattern waveforms are changed.
  - WIPE: 11 - 15
  - SQ: 42 - 45
- SQ41 and 51 to 54 are not applicable. The aspect ratio is adjusted with [Trim], [Trim Adjust1], or [Trim Adjust2].

6 Select an item in [Smooth] in the [Trim] column.

[OFF]	The aspect ratio for set wipe pattern will be constant regardless of the transition. For SQ waveform, it may become discontinuous at the edge of transition.
[ON]	The aspect ratio is changed from the aspect ratio of the preset wipe pattern to the standard ratio in accordance with the transition.

- Modifies the next pattern waveforms.
  - WIPE: 11 - 15
  - SQ: 42 - 45
- SQ41 and 51 to 54 are also applicable. [Trim Adjust1] and [Trim Adjust2] will change to the standard ratio when [Trim] is set to [Manual].

Setting the 3D (turn page) effect

A lighting effect can be added to a wipe pattern. Alternatively, the parameters for turn page effect can be set.

- These effects can be set for background transitions and key transitions.

• Modify the following pattern waveforms.
- 3D: 99, 100, 101, 102

1 Select the <ME1>/<ME2> button → [BKGD] → [Modify] tab.

2 Select an item in [Light] in the [Pageturn] column.

[Off]	Does not add the lighting effect.
[On]	Adds the lighting effect.

3 Set [Size] in the [Pageturn] column.
• Set the size for reduction.

4 Set [Radius] in the [Pageturn] column.
• Set the radius for the turn page effect.

5 Set [Angle] in the [Pageturn] column.
• Set the direction for the turn page effect.

Setting spin effects

A spin effect can be added during the background transition.

1 Select the <ME1>/<ME2> button → [BKGD] → [Modify] tab.

2 Set [X-Spin], [Y-Spin], and [Z-Spin] in the [Spin] column.
• This sets the amount of rotation of the spin effect during background transition.
• An effect can be added to the following pattern waveforms.
- [Z-Spin]
  WIPE: 1 - 15, 17
  SQ: 42 - 45
- [X-Spin], [Y-Spin], [Z-Spin]
  SQ: 41, 51 - 54

• The pattern waveform SQ46 (spin waveform) with the system version earlier than 3.00-00-0.00 is integrated to SQ41 with the system version 3.00-00-0.00 or later. It is converted to the pattern waveform WIPE1 when a project file set in SQ46 with the system earlier than 3.00-00-0.00 is loaded.

3 Select the [Spin Mode] item in the [Spin] column.

[Off]	Does not spin regardless of setting value of [X-Spin], [Y-Spin], and [Z-Spin].
[Trans Spin]	Spins in specified amount of spin depending on the transition.
[Auto Spin]*	Spins in speed in accordance with specified amount of spin regardless of the transition.
[Manual Spin]*	Tilts in specified amount of spin regardless of the transition.

* It may become discontinuous at the edge of transition in the [Auto Spin] or [Manual Spin] modes.

Setting the Multi Pattern effect

The wipe pattern can be divided to the specified number.
• Enabled when the following pattern waveform is selected.
- WIPE

1 Select the <ME1>/<ME2> button → [BKGD] → [Modify] tab.

2 Set the specification method of the number of division in [H/V Sync] of the [Multi] column.

[On]	Makes the number of division the same in horizontal and vertical directions.
[Off]	Different number of division can be specified for horizontal and vertical directions.

3 Set the number of division in horizontal and vertical direction in [H] and [V] of the [Multi] column.

Setting the Modulation effect

An effect to ripple the wipe edge can be added.
• Enabled when the following pattern waveforms are selected.
- WIPE: Except 24 (Free Wipe)
- SQ: 42, 43, 44, 45

1 Select the <ME1>/<ME2> button → [BKGD] → [Modify] tab.

2 Set [Amplitude], [Frequency], and [Speed] in [H Modulation] and [V Modulation].

[Amplitude]	Sets the amplitude of the wave.
[Frequency]	Sets the frequency of the wave.
[Speed]	Sets the speed of the wave movement.

3 Select an item in [Pattern] in the [H Modulation]/[V Modulation] column.

[Sine]	Selects sine waves.
[Delta]	Selects delta wave.

Setting the transition MID Position

Adjusts the position and size of the pattern waveform when the transition amount is in the range of 40% to 60% (mid position).

- Enabled when the following pattern waveforms are selected.
  - SQ: 51, 52, 53, 54

1 Select the <ME1>/<ME2> button → [BKGD] → [Modify] tab.

2 Set [X] and [Y] in the [MID Position] column.

Sets the position of the pattern waveform.

- SQ: 51 will place two sub-screens symmetrical to the Y axis.
- SQ: 52 will place two sub-screens symmetrical to the X axis.
- SQ: 53 will place two sub-screens symmetrical to the center point.

3 Set [Size] in the [MID Position] column.

Sets the size of the pattern waveform.

Setting the free pattern

Selecting the following pattern waveform allows to arbitrarily change some parameters such as the wipe shape, and position and size of the image in PGM bus or PST bus.

- WIPE: 24 (Free Wipe)

  Combines the images in the PGM bus and the PST bus with the window wipe.
- 3D: 113 (Free S-DVE)

  Combines the images in the PGM bus and the PST bus using 1ch of DVE.
- 3D: 114 (Free D-DVE)

  Combines the images in the PGM bus and the PST bus using 2ch of DVE.

The transition amount by the <AUTO> button or the fader lever is disabled when these waveforms are selected and the <WIPE> button is pressed.

1 Press the <WIPE> button.

2 Select the <ME1>/<ME2> button → [BKGD] → [BKGD Pattern] tab.

3 Set an item in [Pattern] of the [BKGD Pattern] column.

- Select one of WIPE: 24, 3D: 113, or 3D: 114.

4 Operate the fader lever.

- Set to a position other than the end point.

5 Select the <ME1>/<ME2> button → [BKGD] → [Free PATT] tab.

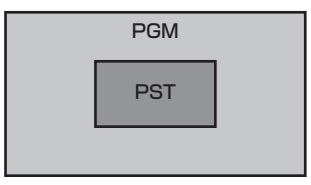
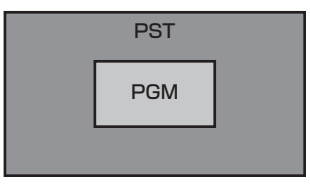
- Set the parameter in item of each column.

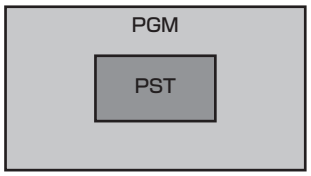
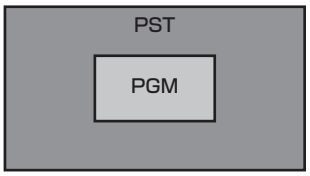
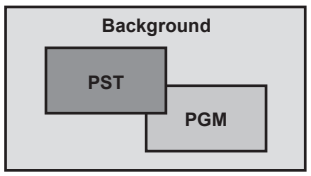
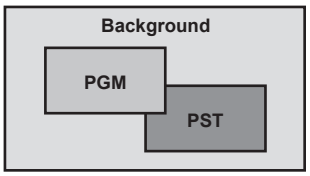
■ Parameters that can be adjusted in each pattern

	Free Wipe	Free S-DVE	Free D-DVE	Description
CH1 Reset, CH2 Reset	CH1 only	CH1 only	✓	Initializes the parameter
CH1 to CH2, CH2 to CH1	—	—	✓	Copies the parameter
Prio INV	—	—	✓	Changing the CH1, CH2 priority
Position X, Y, Size	✓	✓	✓	Position and size of CH1
2nd Position X, Y, Size	—	—	✓	Position and size of CH2
Rotation X, Y, Z	Z only	✓	✓	Rotation of CH1
2nd Rotation X, Y, Z	—	—	✓	Rotation of CH2
Trim Left, Top, Right, Bottom	—	✓	✓	Trimming of CH1
2nd Trim Left, Top, Right, Bottom	—	—	✓	Trimming of CH2

■ Relationship between the wipe direction <N>, <R> and PGM bus, PGM bus

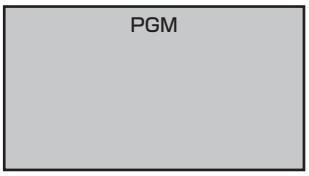
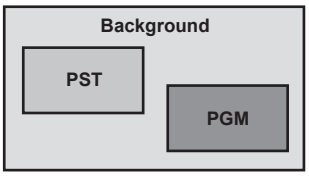
Relationship between the wipe direction <N>, <R> and PGM bus, PGM bus is as follows.

	<N>	<R>
Free Wipe		

	<N>	<R>
Free S-DVE		
Free D-DVE		

■ **Examples of registration of the event memory using the free pattern**

Examples of registration of the event memory using the Free D-DVE pattern are described.

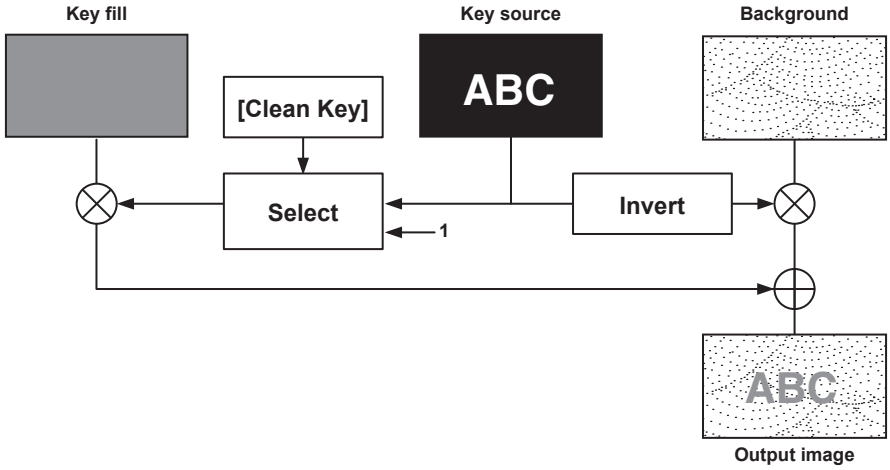
	Fader		Prio INV	CH1 (PGM)	CH2 (PST)	Description
Event 1	<R> mid position		Off	Full size	Arbitrary	
Event 2	<R> mid position		On	Arbitrary	Arbitrary	Changes the priority and bring CH2 (PST) to front.
Event 3	<R> mid position		On	Arbitrary	Full size	

KEY

Combine the background image with another image. The key definition can be adjusted, and an edge can be added to the combined image.
The unit comes with four keys for each ME.
The functional differences between <KEY1>/<KEY2>/<KEY3>/<KEY4> buttons and <DSK1>/<DSK2>/<DSK3>/<DSK4> buttons are as follows.

Tab	<KEY1> button	<KEY2> button	<KEY3> button	<KEY4> button	<DSK1> to <DSK4> buttons
[PinP Adjust] (page 71)	3D compatible	3D compatible	2D compatible	2D compatible	Not possible
[Transition] (pages 63, 77)	[MIX]/[WIPE]	[MIX]/[WIPE]	[MIX]/[WIPE]	[MIX]/[WIPE]	[MIX]
[Key Pattern] (page 63)	[WIPE]/[SQ]/[SL]/[3D]	[WIPE]/[SQ]/[SL]/[3D]	[WIPE]	[WIPE]	[MIX] only
[Chroma] (page 65)	Standard	Option	Option	Option	Not possible

The following shows how key combinations work.



Selecting the key type

Set the key type on the Menu Panel AV-HS60C3.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Select an item in [Type] in the [Key] column.

- Select the method to generate key signals.

[Lum] (luminance key/self key)	Creates key signals from luminance components or luminance and chroma components of key fill signals. • Since the luminance key is operated as a self key, the key fill signals are used as the key source signals. The key signals do not change even when the key source signals are switched.
[Linear] (linear key)	Creates key signals from luminance components of key source signals. It is used when the key source signal and key fill signal are different. Use source with a black background and white characters or shape to be combined by the key as the key source signal. Source which is not black and white may not be combined clearly. Source with white background and black characters can be used by inverting the keys with the key invert function.
[Chroma] (chroma key)	Creates key signals using a specific hue of key source signals as the reference.
[Full] (full key)	Creates key signals using the images on the full screen as the key source signals. • For the full key, the images on the full screen are used as the key source signals. The key signals do not change even when the key source signals are switched.

3 Select an item in [Lum Key] in the [Key] column.

[Chroma Off]	Generates the key signals only from the luminance components.
[Chroma On]	Generates the key signals considering the chroma components in addition to the luminance components. This item is set when a low luminance component color is used for key signals such as when cutting blue characters.

4 Select an item in [Clean Key] in the [Key] column.

[Off]	Cuts key fill with a key signal.
[On]	Does not cut key fill with a key signal. The part of key fill not cut out with the key signal is superimposed on the background image. This item is used when key fill source has been cut with a key signal beforehand using an external device.

Selecting the source type

Select the mode to link selection of key source signal with key fill selection. The selection status is stored for each source signal.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Select an item in [Source Type] in the [Key] column.

[Self Key]	Uses the source selected in the key fill bus column as the key source signal.
[External Key]	Always uses an external key. The source signal for fill is set using [Fill] in the [Key] column.

Selecting the fill type

Select the fill type.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Select an item in [Fill] in the [Key] column.

[Bus]	Uses the bus signal for the key fill signal.
[Matte]	Uses the internal fill matte for the key fill signal. The color set in the [Fill Matte] column is used for the fill matte color.

Setting the matte color

Set the fill matte color.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Adjust the color.

- Set [Hue], [Sat], [Lum], or [Color Palette] in the [Fill Matte] column.

Selecting the key source

Use the KEY bus crosspoint buttons to select key sources for the keys specified using the KEY bus selector buttons.

Setting the link between key fill signal and key source signal

To link the selection of key fill signal and key source signal, select the <CONF> button on the top menu → [SOURCE LINK] → [Key Assign] tab → [Master/Slave], and set [Fill to Source] or [Source to Fill].

For details, refer to “Setting the key coupling” (page 134).

- [Fill to Source]: When the key fill signal (master) is selected, the key source signal (slave) changes automatically.
- [Source to Fill]: When the key source signal (master) is selected, the key fill signal (slave) changes automatically.

Selecting the key fill signal and the key source signal separately

Use the <BUS SHFT> button to temporarily enable selection of a source different from the link setting using the KEY bus crosspoint buttons.

■ When [Fill to Source] is set

Key fill signal: When the KEY bus crosspoint buttons are selected without pressing the <BUS SHFT> button, a key fill signal can be selected. At this time, the KEY but selector buttons light in Low tally color.

Key source signal: When the KEY bus selector buttons are pressed while the <BUS SHFT> button is held down, the KEY bus selector buttons light in the Preset tally color, and key source different from the link setting can be selected using the KEY bus crosspoint buttons. The changed key source is not stored as the link setting, and the source returns to the linked source when another key fill source is selected.

■ When [Source to Fill] is set

Key source signal: When the KEY bus crosspoint buttons are selected without pressing the <BUS SHFT> button, a key source signal can be selected. At this time, the KEY but selector buttons light in Preset tally color.

Key fill signal: When the KEY bus selector buttons are pressed while the <BUS SHFT> button is held down, the KEY bus selector buttons light in the Low tally color. A key fill source different from the link setting can be selected using the KEY bus crosspoint buttons. The changed key fill source is not stored as the link setting, and the source returns to the linked source when another key source is selected.

Key transitions

Operating in the transition area

1 Select the transition target.

- Use the <KEY1> to <KEY4> buttons to select a transition target. To select multiple targets, press the <BKGD> button and the <KEY1> to <KEY4> buttons simultaneously.

2 Select the transition mode.

- Press the <MIX> button to MIX the background image with a key.
- Press the <WIPE> button to execute transition in the pattern selected as the wipe pattern on the menu.
- Transition mode can be set separately for key in and key out.

  For details, refer to “Setting the key transition mode” (page 63).

3 Execute the transition.

- Auto transition:

  Press the <AUTO> button to automatically execute the transition using the transition time which has been set. If the <AUTO> button is pressed while the fader lever is being operated, the transition is executed in the remaining time.

  For details on the settings of auto transition time, refer to “Setting the transition time” (page 54).

- Manual transition:
  Operate the fader lever to execute transitions manually. If the fader lever is operated during auto transition, auto transition will be switched to manual operation when the fader lever position overtakes the amount of the transition being executed.
- Cut transition:
  Press the <CUT> button to execute the transition instantaneously.

Setting the key transition mode

Transition mode and transition time can be set separately for key in and key out.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Transition] tab.

2 Select [MIX] or [WIPE] in the [In Type]/[Out Type] column.

- Select the transition mode.

3 Select an item in [Transition] in the [In Type]/[Out Type] column.

[Off]	Disables the transition mode of key in or key out except manual transition.
[On]	Enables the transition mode of key in or key out.

4 Set [Time] in the [In Type]/[Out Type] column.

- Set the transition time. Set the transition time as with background transitions.

5 Select an item in [In=Out] in the [Out Type] column.

[Off]	Sets the [In Type] column and the [Out Type] column separately.
[On]	The [In Type] column setting becomes the same as the [Out Type] column setting.

Operating in the KEY operation area

■ Operating the <KEY1 TRNS> to <KEY4 TRNS> buttons

Press the <KEY1 TRNS> to <KEY4 TRNS> buttons to execute a transition with the transition type and transition time of respective keys which have been set on the menu.

The <KEY1 TRNS> to <KEY4 TRNS> buttons flicker during key in, and light when the transition is complete. If the <KEY1 TRNS> to <KEY4 TRNS> buttons are pressed while key in is complete, transition of the key image (key out) is executed.

The <KEY1 TRNS> to <KEY4 TRNS> buttons light during key out, and go off when the transition is complete. If the <KEY1 TRNS> to <KEY4 TRNS> buttons are pressed during the transition, the transition direction is reversed.

■ Operating the <KEY1 ON> to <KEY4 ON> buttons

Press the <KEY1 ON> to <KEY4 ON> buttons to turn on/off respective keys with cut transition.

Key wipe transition

Set the pattern and position of key wipe transition on the menu.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Pattern] tab.

2 Set [In] and [Out] in the [Key Pattern] column.

- This setting is not reflected when PinP is enabled.

[In]	Select the wipe pattern for key in.
[Out]	Select the wipe pattern for key out.

3 Select an item in [Sync] in the [Key Pattern] column.

[Separate]	Sets the wipe patterns for [In] and [Out] separately.
[Link]	Matches the wipe pattern of [Out] to the wipe pattern of [In].

4 Set [X-Pos] and [Y-Pos] in the [In Position]/[Out Position] column.

- Set the start position of the next pattern waveform.
  - WIPE: 11, 12, 13, 14, 15
  - SQ: 41, 42, 43, 44, 45, 46

5 Select an item in [In=Out] in the [Out Position] column.

[Off]	Sets the start position of pattern waveform separately for key in and key out.
[On]	Sets the start position of pattern waveform for key out to the start position of pattern waveform for key in.

■ **Pattern examples for wipe transition**

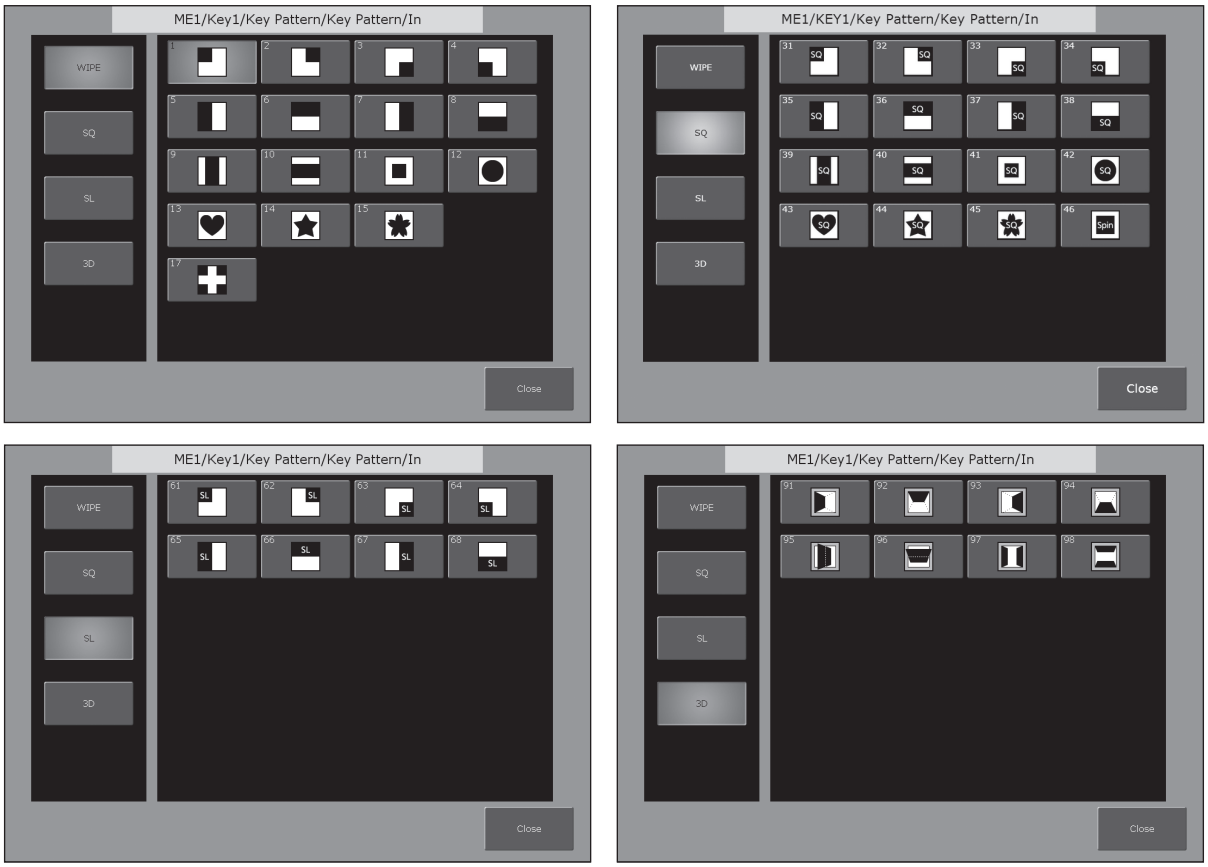
	Pattern example 1	Pattern example 2	Pattern example 3	Pattern example 4
Key in				
Key out				

NOTE

- The <N>/<R>/<N/R> buttons are dedicated to the background transition.

■ **Wipe pattern screens for key transition**

- The following wipe patterns are available only for [KEY1] and [KEY2].
  - SQ: 31 to 46
  - SL: 61 to 68
  - 3D: 91 to 98



Setting the Multi Pattern effect

The wipe pattern can be divided to the specified number.

- Enabled when the following pattern waveform is selected.
  - WIPE

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Modify] tab.

2 Set the specification method of the number of division in [H/V Sync] of the [Multi] column.

[On]	Makes the number of division the same in horizontal and vertical directions.
[Off]	Different number of division can be specified for horizontal and vertical directions.

3 Set the number of division in horizontal and vertical direction in [H] and [V] of the [Multi] column.

Setting the Modulation effect

An effect to ripple the wipe edge can be added.

- Enabled when the following pattern waveforms are selected.
  - WIPE

- SQ: 42, 43, 44, 45

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Modify] tab.

2 Set [Amplitude], [Frequency], and [Speed] in [H Modulation] and [V Modulation] column.

[Amplitude]	Sets the amplitude of the wave.
[Frequency]	Sets the frequency of the wave.
[Speed]	Sets the speed of the wave movement.

3 Select an item in [Pattern] in the [H Modulation]/[V Modulation] column.

[Sine]	Selects sine waves.
[Delta]	Selects delta wave.

Key output

ME1 and ME2 output the following signals.

For details, refer to “System Menu” (page 140).

- ME1PGM, ME2PGM: Outputs program signals combined according to the transition setting.
- ME1PVW, ME2PVW: Outputs preview signals of BKGD and KEY1 to KEY4 selected in next transition. To switch the screen to the preview screen for chroma key adjustment of the relevant keyer, use the <ME1>/<ME2> buttons → [KEY1] to [KEY4] → [Chroma] tab → [Sample] column → [Chroma PVW], and select any key from [Key1] to [Key4].

  To set not to always combine for each key, use the <SYS> button on the top menu → [MAIN FRAME] → [ME1,2] tab → [ME1 KEYPVW]/[ME2 KEYPVW] columns.
- ME1KEYPVW, ME2KEYPVW: Preview output dedicated for key. A key combined image is always output even when the key is not combined.To switch the screen to the preview screen for chroma key adjustment of the relevant keyer, use the <ME1>/<ME2> buttons on the top menu → [Key1] to [Key4] → [Chroma] tab → [Sample] column → [Chroma PVW], and select any key from [Key1] to [Key4].

  The key set to [On] using the <SYS> button on the top menu → [MAIN FRAME] → [ME1,2] tab → [ME1 KEYPVW]/[ME2 KEYPVW] column is combined.
- ME1CLN, ME2CLN: Outputs clean signals before adding key effects. These can also output key out signals used for key compositions.
- SEL KEYPVW: Outputs the preview of the key relevant to the operation of <KEY1> to <KEY4> buttons in the KEY operation section of each ME, and <DSK1> to <DSK4> buttons. To switch the screen to the preview screen for chroma key adjustment of the relevant keyer, use the <ME1>/<ME2> buttons on the top menu → [Key1] to [Key4] → [Chroma] tab → [Sample] column → [Chroma PVW], and select any key from [Key1] to [Key4]. The image combined with the key where the <SYS> button on the top menu → [MAIN FRAME] → [Sel KeyPVW] tab is set to [On] is output. If the button for the key set to [Off] is selected, the image is output without the key combined.

Adjusting the luminance key/linear key

Adjust the luminance key and linear key definition.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Set [Clip], [Gain], and [Density] in the [Key Adjust] column.

[Clip]	Sets the reference level for creating key signals.
[Gain]	Sets the key amplitude.
[Density]	Sets the key density.

3 Select an item in [Invert] in the [Key Adjust] column.

[Off]	Does not invert the key signals generated internally.
[On]	Inverts the key signals generated internally.

Adjusting the chroma key

Execute sampling for the selected key source to adjust the key definition. The chroma keys KEY2, KEY3, and KEY4 require the Chromakey Software AV-SFU60 (optional).

1 Execute sampling of the selected key source. (page 66)

2 Remove the noise in the background image. (page 66)

3 Remove the noise in the foreground image. (page 67)

4 Remove the noise in the detail areas. (page 67)

5 Fine-tune the noise or transparency of the image. (page 68)

6 Fine-tune the generated chroma key signal. (page 69)

Executing sampling of the selected key source

■ **To execute the sampling automatically**

1 **Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab.**

2 **Select an item in [Auto Compute] in the [Auto Compute] column.**

[Auto Compute]	Executes sampling automatically.
[Reset]	Resets the sampled content.

■ **To execute the sampling manually**

1 **Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab.**

2 **Set an item in [Chroma PVW] in the [Sample] column.**

- Set the preview monitor. Change the video signals from ME1PVW/ME2PVW outputs to those for chroma key preview.
  The chroma key preview image is output from the ME1KEYPVW/ME2KEYPVW outputs when the <SYS> button → [MAIN FRAME] → [ME1,2] tab → [ME1 KEYPVW] column → [Chroma PVW] item is set to [Enable].

[Off]	Displays the normal preview image. The sample marker is not displayed.
[Key1] - [Key4]	Displays the preview image selected using [View] in the [Sample] column. The sample marker is displayed. Because this is a common setting for [Key1] to [Key4], changing this setting for one key changes the setting of all the other keys.

3 **Select [Composite] in [View] in the [Sample] column.**

- The image for the chroma key preview becomes a composite image of the background and foreground images.

4 **Select [Select BG Color] in [Mode] in the [Sample] column.**

- This sets the reference color (background color) for extracting the foreground image from the key source.

5 **Set [X-Pos], [Y-Pos], and [Size] in the [Sample Area] column.**

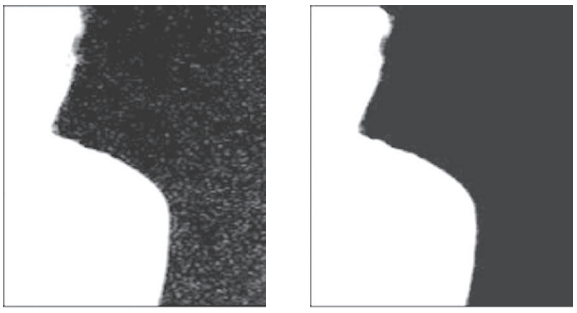
- Set the position and size of the sample marker.

6 **After setting the sample area, select [Sampling] in the [Sample Area] column.**

- The area that has been set is now sampled.
- If you select [Undo] in the [Sample] column after sampling is executed, the status returns to the pre-sampling status.
- Narrow color range is specified as the reference color when sampling is performed by selecting [Point BG Color] instead of selecting [Select BG Color] in Step **4**.

Removing noise in the background image

Remove the noise in the background image. Perform this operation several times to remove noise.



Before the noise is removed **After the noise is removed**

1 **Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab.**

2 **Select [Matte] in [View] in the [Sample] column.**

- The image for the chroma key preview becomes a matte image.

3 **Select [Clean BG Noise] in [Mode] in the [Sample] column.**

- Remove the noise in the background image.

4 **Set [X-Pos], [Y-Pos], and [Size] in the [Sample Area] column.**

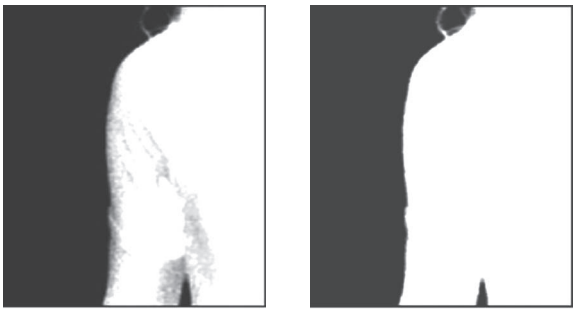
- Set the position and size of the sample marker at the position of noise (white dots) in the background image.

5 **After setting the sample area, select [Sampling] in the [Sample Area] column.**

- The noise in the area that has been set is now removed.
- If you select [Undo] in the [Sample] column after sampling is executed, the status returns to the pre-sampling status.

Removing noise in the foreground image

Remove the noise in the foreground image. Perform this operation several times to remove noise.



Before the noise is removed　　After the noise is removed

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab.

2 Select [Matte] in [View] in the [Sample] column.

- The image for the chroma key preview becomes a matte image.

3 Select [Clean FG Noise] in [Mode] in the [Sample] column.

- Remove the noise in the foreground image.

4 Set [X-Pos], [Y-Pos], and [Size] in the [Sample Area] column.

- Set the position and size of the sample marker at the position of noise (black dots) in the foreground image.

5 After setting the sample area, select [Sampling] in the [Sample Area] column.

- The noise in the area that has been set is now removed, and the foreground image is restored.
- If you select [Undo] in the [Sample] column after sampling is executed, the status returns to the pre-sampling status.

Removing color irregularity in the detail areas

After performing the procedures in “Executing sampling of the selected key source”, “Removing noise in the background image”, and “Removing noise in the foreground image”, there will still be some color irregularity in detail areas such as around hair in the following image. This step removes the color irregularity remaining in the detail areas.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab.

2 Select [Composite] in [View] in the [Sample] column.

- The image for the chroma key preview becomes a composite image of the background and foreground images.

3 Select [Spill Sponge] in [Mode] in the [Sample] column.

- The noise remaining in the detail areas of the image is removed.

4 Set [X-Pos], [Y-Pos], and [Size] in the [Sample Area] column.

- Set the position and size of the sample marker at the position of the remaining noise in the image.

5 After setting the sample area, select [Sampling] in the [Sample Area] column.

- The noise in the area that has been set is now removed, and the colors become more natural.
- If you select [Undo] in the [Sample] column after sampling is executed, the status returns to the pre-sampling status.

NOTE

- Execute sampling in both the light and dark areas as the sample area.
- If the noise cannot be completely removed from the foreground image even after performing noise removal, use the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab → [Fine Tuning] column to set the items.

Fine-tuning the noise or transparency of the image

Fine-tune the noise or transparency of the image.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab.

2 Select an item in [View] in the [Sample] column.

[Composite]	The image for the chroma key preview becomes a composite image of the background and foreground images. • Set [KEY1] through [KEY4] → [PinP Adjust] tab → [Mode] column → [PinP] to [OFF]. If [ON] is set, image for chroma key preview will be reduced and sampling will not be performed properly.
[Matte]	The image for the chroma key preview becomes a matte image.
[Proc.FG]	The image for the chroma key preview becomes the processed foreground image (image before combining with the background in which only color component processing was performed for the chroma key source).
[FG]	The image for the chroma key preview becomes the chroma key source image before processing.

3 Select an item in [Mode] in the [Sample] column.

- For details on the items, refer to “Setting items for image adjustment” (page 68).

4 Set [X-Pos], [Y-Pos], and [Size] in the [Sample Area] column.

- Set the position and size of the sample marker at the position of the remaining noise in the image.

5 After setting the sample area, select [Sampling] in the [Sample Area] column.

- The noise in the area that has been set is now removed.
- If you select [Undo] in the [Sample] column after sampling is executed, the status returns to the pre-sampling status.

Setting items for image adjustment

To adjust images, use the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab → [Sample] column → [Mode].

- For details of [Select BG Color] and [Point BG Color], refer to “Executing sampling of the selected key source” (page 66).
- For details on [Clean BG Noise], refer to “Removing noise in the background image” (page 66).
- For details on [Clean FG Noise], refer to “Removing noise in the foreground image” (page 67).
- For details on [Spill Sponge], refer to “Removing color irregularity in the detail areas” (page 67).

■ [Matte Sponge]

Select the semi-transparent parts of the subject in the foreground image and make them matte (non-transparent).

[Matte Sponge] makes the semi-transparent parts non-transparent, but does not change the color to the original color. (When the operation of [Clean FG Noise] is performed, the image returns to the original state including color information.)

■ [Make FG Trans]

Increase transparency of the low transparency area in the foreground image.

This is useful when making areas covered with thick smoke or clouds in the foreground image semi-transparent.

■ [Restore Detail]

Decrease transparency of the high transparency area in the background image.

This is useful when restoring the details of an image (such as stray hairs or smoke), which have been lost as a result of operations such as [Clean BG Noise].

■ [Fine Tuning]

Adjust detailed images.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab.

2 Select [Composite] in [View] in the [Sample] column.

- Select a composite image of the background image and key.

3 Select [Fine Tuning] in [Mode] in the [Sample] column.

4 Set [X-Pos], [Y-Pos], and [Size] in the [Sample Area] column.

- Set the position and size of the sample marker at the position to sample.

5 After setting the sample area, select [Sampling] in the [Sample Area] column.

6 Set [Spill] in the [Fine Tuning] column.

- Remove and restore noise.

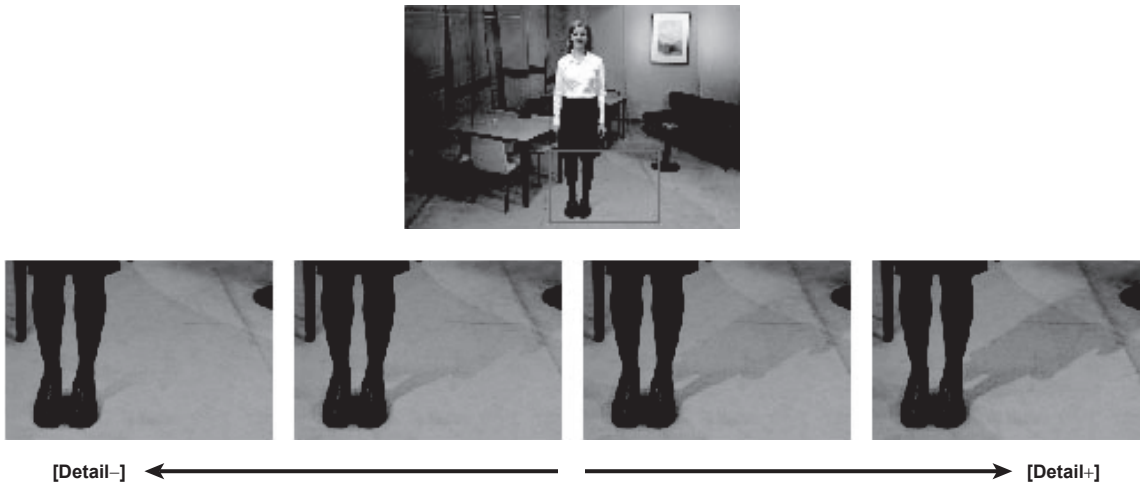
  Increase the value in the minus direction to remove a large amount of noise from the foreground image, and to make the image colors approach the complementary color (opposite color) of the blue screen. Increase the value in the plus direction to make the image colors approach the original foreground image.

7 Set [Trans] in the [Fine Tuning] column.

- Adjust the matte information for the color close to the color of the foreground image.
  This is useful when making areas covered with thick smoke or clouds in the foreground image semi-transparent.

8 Set [Detail] in the [Fine Tuning] column.

- Adjust the matte information for the color close to the color of the background image.
  This is useful when restoring the details of an image (such as stray hairs or smoke), which have been lost in the foreground image as a result of sampling.



Fine-tuning the generated chroma key signals

Fine-tune generated chroma key signals.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] tab.

2 Select an item in [Narrow] in the [Adjust] column.

[Off]	Does not adjust the width of the chroma key signal.
[0.5], [1.0], [1.5]	Adjusts the width of the chroma key signal. The key signal width can be adjusted horizontally in 0.5 (half-pixel) increments.

3 Set [Phase] in the [Adjust] column.

- Adjust the horizontal phase of the chroma key signal. The key signal position can be adjusted horizontally in 0.5 (half-pixel) increments.

Key decorations

Add a border, shadow, or other edge to the key.

Setting the key edge

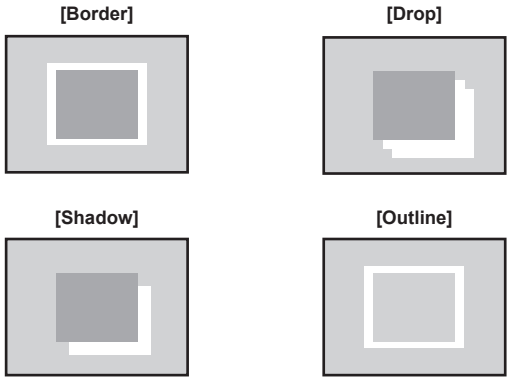


Fig. 1

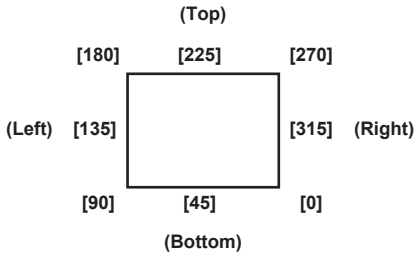


Fig. 2

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Select an item in [Type] in the [Edge] column. (Fig. 1)

[Off]	Does not add an edge.
[Border]	Adds a border around the entire edge.
[Drop]	Adds a diagonal border.
[Shadow]	Adds a shadow.
[Outline]	Adds an outline (only a border with no fill).

3 Set [Width] in the [Edge] column.

- Set the edge width.

4 Select an item in [Direction] in the [Edge] column. (Fig. 2)

- Set the direction to add [Drop] or [Shadow] effect in 45° increments.

5 Set [Density] in the [Edge] column.

- Set the edge density.

Setting the key edge fill

Set the source to be inserted as an edge.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Select an item in [Fill] in the [Edge] column.

[Matte]	Uses the color set in the [Edge Color] column.
[UTIL1]	Uses the image on the UTIL1 bus.
[UTIL2]	Uses the image on the UTIL2 bus.

Setting the key edge color

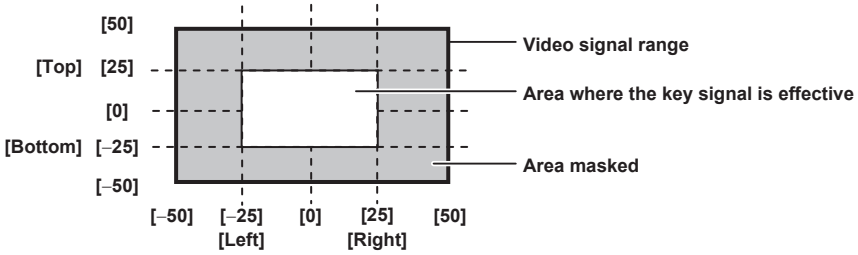
1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Adjust the color.

- Set [Hue], [Sat], [Lum], or [Color Palette] in the [Edge Color] column.

Masking the key signals

Mask the key signals using the mask signal of the box pattern. The following figure is the status when [Type] is set to [ForeGround], and [Invert] is set to [Off].



1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Setting] tab.

2 Select an item in [Mask] in the [Mask] column.

- Set the mask method.

[Off]	Does not mask the key signals.
[4:3]	Masks the signals in the 4:3 aspect ratio.
[Manual]	Masks the area set in the [Mask Adjust1]/[Mask Adjust2] columns.

3 Select an item in [Type] in the [Mask] column.

- Set the image to be masked.

[ForeGround]	Masks the foreground and displays the background.
[BackGround]	Masks the background and displays the foreground.

4 Select an item in [Invert] in the [Mask] column.

[On]	Inverts the mask signal.
[Off]	Does not invert the mask signal.

5 Set [Left], [Top], [Right], and [Bottom] in the [Mask Adjust1]/[Mask Adjust2] column.

- Set the area to be masked. The [Left] setting cannot exceed the [Right] setting (and vice versa), and the [Top] setting cannot exceed the [Bottom] setting (and vice versa).

[Left]	Masks the key left position.
[Top]	Masks the key top position.
[Right]	Masks the key right position.
[Bottom]	Masks the key bottom position.

Setting box matte

A matte can be added under the key.

1 Select the <ME1>/<ME2> → [KEY1] to [KEY4] → [Key Setting] tab.

2 Select an item in [BOX Matte] of the [BOX Matte] column.

[ON]	The box matte is added.
[OFF]	The box matte is not added.

3 Adjust the color.

Set [Hue], [Sat], [Lum] or [Color Palette] in the [BOX Matte] column.

4 Set the position and size.

Set [X], [Y], [H Size], and [V Size] in the [BOX Adjust] column.

5 Set the density.

Set [Density] in the [BOX Adjust] column.

PinP (Picture in Picture)

Entered key fill and key source signals are moved and expanded using DVE effects and are combined with the background image.
Since PinP uses DVE effects, the image is delayed by one frame.

Enabling PinP

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [PinP Adjust] tab.

2 Set [PinP] in the [Mode] column.

[OFF]	Disables PinP.
[ON]	Enables PinP. The transition effect is fixed to MIX regardless of the key transition mode settings.

Setting the PinP shape

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [PinP Adjust] tab.

2 Set [Full Key] in the [Mode] column.

[OFF]	Adds the DVE effect to the key signal generated based on key type settings and cuts out the key fill signal. (Flying key effect)
[ON]	Adds the DVE effect to the full key signal and cuts out the key fill signal regardless of the key type settings.

3 Select an item in [WipeMask] in the [Mode] column.

- Select [Off] (square), [Circle] (circle), [Heart] (heart), [Flower] (flower), or [Star] (star), for the PinP shape.
- This setting is enabled only when [Full Key] is set to [ON].

NOTE

- When [Chroma] is selected as the key type, the processed foreground image is output if [PinP] is set to [ON] and [Full Key] is set to [ON] in the [Mode] column. For details on the processed foreground image, refer to “Fine-tuning the noise or transparency of the image” (page 68).

Adjusting PinP

Adjusting the position and size

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [PinP Adjust] tab.

2 Set [X] and [Y] in the [Position] column.

- Set the PinP position.

3 Set [Size] in the [Position] column.

- Set the PinP size.
- Up to 400% can be set for [KEY1] and [KEY2]. 100% or above setting is disabled when an item other than [Off] is selected in [WipeMask] in the [Mode] column.
- Up to 100% can be set for [KEY3] and [KEY4].

4 Set [X], [Y], and [Z] in the [Rotation] column.

- Set the tilt for the PinP image.
- This setting is available only for [KEY1] and [KEY2].
- [X] and [Y] will be disabled when anything other than [Off] is selected in [WipeMask] in the [Mode] column.

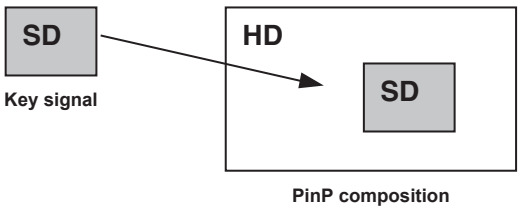
5 Set [X-Aspect] and [Y-Aspect] in the [Rotation] column.

- Set the aspect ratio for the PinP image.
- This can be set only for [KEY1] and [KEY2].

Setting [Dot by Dot]

Create an actual size composition if an SD format image is used as the PinP source when the system is set to HD format. In this mode, the SD format image will not be up-converted so image deterioration can be prevented.

- [Size] in the [Position] column is disabled.



1 Select the <IN OUT> button → [SDI IN] → [Frame Buffer] tab.

2 Select [Dot by Dot] in [Mode] in the [SDI IN 1] to [SDI IN 32] columns.

Setting the PinP link

When [PinP] effects are added by another keyed in the same ME, it is possible to set an image to the values symmetrical to the axis whose coordinates and rotation angle have been set. The image serving as the reference is the PinP image of the keyed being operated.

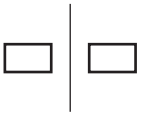
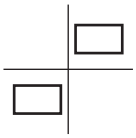
1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [PinP Adjust] tab.

2 Select an item in [Sync] in the [Mode] column.

- Specify the keyed to link. The keyed will not be linked when [Off] is selected. In addition, linking is possible only when the key type is PinP.

3 Select an item in [Sync Mode] in the [Mode] column.

- Select the position that served as the reference. The image serving as the reference is the PinP image of the keyed being operated.

Item	Description	
[Same]	The coordinates, size, and rotation angle will be the same.	
[Symmetry-X]	The coordinates, size, and rotation angle will be symmetrical to the X axis.	
[Symmetry-Y]	The coordinates, size, and rotation angle will be symmetrical to the Y axis.	
[Symmetry-C]	The coordinates, size, and rotation angle will be symmetrical to the center.	

NOTE

- Do not set each other, such as selecting [Key2] in [Key1] and selecting [Key1] in [Key2] at [Target] in the [Sync] column. Normal operation may not be performed if set each other.

PinP decorations

Add a border or soft effect to PinP.

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [PinP Adjust] tab.

2 Select an item in [Border] in the [Border] column.

[Off]	Does not add the border effect.
[On]	Adds the border effect.

3 Set [Width] in the [Border] column.

- Sets the border width.

4 Set [Soft] in the [Border] column.

- Sets the amount of soft effect. When set to [0.0], the soft effect is disabled.

5 Set an item in [Mode] in the [Border] column.

[Fix]	Keeps the border width constant.
[Variable]	Changes the border width to suit the PinP size.

NOTE

- When [Border] in the [Border] column is set to [On], the amount of soft effect set using [Soft] in the [Border] column is indicated as the ratio of soft effect to the border width. To add only soft effect to PinP, set [Border] in the [Border] column to [Off].

Setting the border color

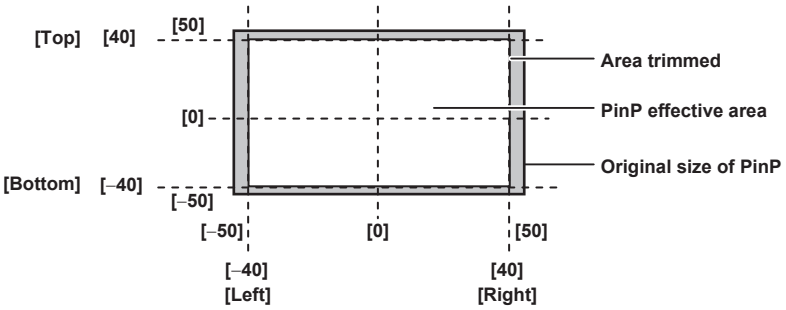
1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [PinP Adjust] tab.

2 Adjust the color.

- Set [Hue], [Sat], [Lum], or [Color Palette] in the [Border Color] column.

Setting the trimming

Set the trimming type and values as well as operation for when manual is set. The default setting is as shown in the following figure.



1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [PinP Adjust] tab.

2 Select an item in [Trim] in the [Trim] column.

[Off]	Does not perform trimming.
[4:3]	Trims automatically so that the aspect ratio is 4:3.
[Manual]	Trims using the values set with [Trim Adjust1] and [Trim Adjust2].

3 Select an item in [Manual] in the [Trim] column.

[Free]	Sets the amount of trimming for [Left], [Right], [Top], and [Bottom] separately.
[Pair]	Changes the settings in such a way that the [Left] and [Right] trimming amounts, and the [Top] and [Bottom] trimming amounts are the same. (This makes for a top-bottom and left-right symmetry.)

4 Set [Left], [Top], [Right], and [Bottom] in [Trim Adjust1]/[Trim Adjust2].

- Set the trimming value. The [Left] setting cannot exceed the [Right] setting (and vice versa), and the [Top] setting cannot exceed the [Bottom] setting (and vice versa).

[Left]	Sets the left trimming value.
[Top]	Sets the top trimming value.
[Right]	Sets the right trimming value.
[Bottom]	Sets the bottom trimming value.

5 Set [WipeAspect] in the [Trim] column.

- The aspect ration of the wipe pattern is changed when anything other than [Off] is selected in [WipeMask] in the [Mode] column.

Copying the PinP setting

The setting for PinP can be copied.

1 Select the <ME1>/<ME2> button → [MISC] → [Misc] tab.

2 Select an item in [Key1 From] to [Key4 From] in the [PinP Copy] column.

- Select the channel of the key to be the copy source of the PinP setting.

3 Select [Execute] in the [PinP Copy] column.

- Following the setting in Step **2**, settings of the PinP for each key are copied.
- Settings inside the <ME1>/<ME2> button → [KEY1] to [KEY4] → [PinP Adjust] are copied. However, the settings of [Sync] and [Sync Mode] in the [Mode] column are not copied.
- The copy is not executed to the channel of the key set to [No Assign] in Step **2**.

Wipe transition of PinP

SQ or SL can be set as the wipe transition effect when PinP is enabled.
The settings other than the wipe transition effect are the same as when PinP is disabled. Refer to “Setting the key transition mode” (page 63).

■ Setting the wipe transition of PinP

1 Select the <ME1>/<ME2> button → [KEY1] to [KEY4] → [Key Pattern] tab.

2 Select an item in [PinP Wipe Mode] of the [Key Pattern] column.

[Off]	Transitions with cut, mix.
[SQ]	Transitions from size 0 to size specified in the [PinP Adjust] tab → [Position] column → [Size].
[SL]	Transitions while moving without changing the size specified in the [PinP Adjust] tab → [Position] column → [Size]. It will key on/key off with the cut operation.

3 Set [X-Pos] and [Y-Pos] in the [In Position] column.

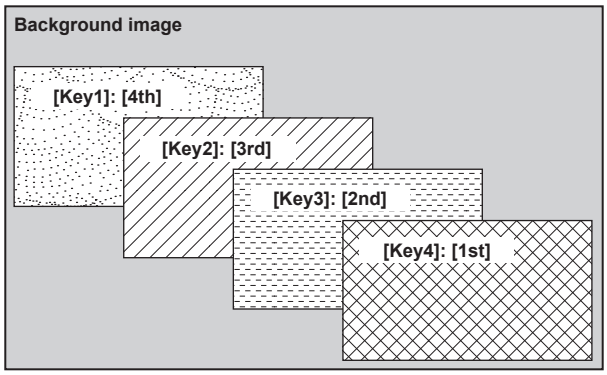
- Set the start position of the key on when SQ or SL is selected in Step **2**.

4 Set [X-Pos] and [Y-Pos] in the [Out Position] column.

- Set the end position of the key off when SQ or SL is selected in Step **2**.

Setting the priority

Set the priority (image positioning). The default setting is as shown in the following figure.



1 Select the <ME1>/<ME2> button → [MISC] → [Misc] tab.

2 Select an item in [Key1] to [Key4] in the [Key Priority] column.

- Select the priority for any key from [1st] to [4th].
- Changing the setting of one item will change the settings of other items accordingly. In the default setting, if [Key1] is changed from [4th] to [1st], then the settings of [Key2] to [Key4] also change as follows.
  - [Key2]: [3rd] → [4th]
  - [Key3]: [2nd] → [3rd]
  - [Key4]: [1st] → [2nd]

Setting [Key On Link]

Combine [Key1] to [Key4] in the same ME to start transitions simultaneously.

1 Select the <ME1>/<ME2> button → [MISC] → [Misc] tab.

2 Select an item in [Key1] to [Key4] in the [Key On Link] column.

- Select [Off] or [On] for any key.
  Example) When [Key1] and [Key3] are set to [On], and [Key2] and [Key4] are set to [Off]
  Pressing the <KEY1 TRNS> button starts transitions of [Key1] and [Key3] at the same time.

On/off of the key by the menu operation

Each key can be turned on/off with the cut transition by the menu operation.

1 Select the <ME1>/<ME2> button → [MISC] → [Misc] tab.

2 Select an item in [Key1] to [Key4] in the [KEY ON] column.

[Off]	Turns off the key.
[On]	Turns on the key.

NOTE

- The button operation (toggle operation) is recorded instead of recording the on/off status of the key when the macro for operation by the <KEY1 ON> to <KEY4 ON> buttons is recorded. The on/off status of the key is recorded when the on/off of the key is recorded to macro with the above menu operation.

DSK (Downstream key)

Combine characters or other images with the background image of ME1PGM or ME2PGM output.

The selection of the ME1PGM output or the ME2PGM output is performed on the top menu <SYS> button → [MAIN FRAME] → [DSK] tab → [DSK Assign] column. (page 149)

Selecting the DSK type

Set the key type on the Menu Panel AV-HS60C3.

1 Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.

2 Select an item in [Type] in the [DSK] column.

- Select the method to generate key signals. The selection status is stored for each source.

[Lum] (luminance key/self key)	Creates key signals from luminance components or luminance and chrome components of key fill signals. • Since the luminance key is operated as a self key, the key fill signals are used as the key source signals. The key signals do not change even when the key source signals are switched.
[Linear] (linear key)	Creates key signals from luminance components of key source signals. It is used when the key source signal and key fill signal are different. • Use source with a black background and white characters or shape to be combined by the key as the key source signal. Source which is not black and white may not be combined clearly. Source with white background and black characters can be used by inverting the keys with the key invert function.

3 Select an item in [Lum Key] in the [DSK] column.

[Chroma Off]	Generates the key signals only from the luminance components.
[Chroma On]	Generates the key signals considering the chrome components in addition to the luminance components. This item is set when a low luminance component color is used for key signals such as when cutting blue characters.

4 Select an item in [Clean Key] in the [DSK] column.

[Off]	Cuts key fill with a key signal.
[On]	Does not cut key fill with a key signal. The part of key fill not cut out with the key signal is superimposed on the background image.

Selecting the source type

1 Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.

2 Select an item in [Source Type] in the [DSK] column.

- Select the mode to link selection of key source signal with key fill selection.

[Self Key]	Uses the source selected in the key fill bus column as the key source signal.
[External Key]	Always uses an external key. The source signal for fill is set using [Fill] in the [DSK] column.

Selecting the fill type

Select the fill type.

1 Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.

2 Select an item in [Fill] in the [DSK] column.

[Bus]	Uses the bus signal for the key fill signal.
[Matte]	Uses the internal fill matte for the key fill signal. The color set in the [Fill Matte] column is used for the fill matte color.

Setting the matte color

Set the fill matte color.

1 Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.

2 Adjust the color.

- Set [Hue], [Sat], [Lum], or [Color Palette] in the [Fill Matte] column.

Selecting the DSK source

For details on selecting DSK sources, refer to “Selecting the key source” (page 62).

DSK transition

Operating in the DSK operation area

■ Operating the <DSK1 TRNS> to <DSK4 TRNS> buttons

Press the <DSK1 TRNS> to <DSK4 TRNS> buttons in the transition area to execute a transition automatically with the transition time of respective keys set on the menu.

The <DSK1 TRNS> to <DSK4 TRNS> buttons flicker during key in, and light when the transition is complete. If the <DSK1 TRNS> to <DSK4 TRNS> buttons are pressed while key in is complete, transition of the key image (key out) is executed.

The <DSK1 TRNS> to <DSK4 TRNS> buttons light during key out, and go off when the transition is complete. If the <DSK1 TRNS> to <DSK4 TRNS> buttons are pressed during the transition, the transition direction is reversed.

■ Operating the <DSK1 ON> to <DSK4 ON> buttons

Press the <DSK1 ON> to <DSK4 ON> buttons to turn on/off respective DSK with the cut transition.

Setting the DSK transition mode

Transition mode and transition time can be set separately for key in and key out.

1 Select the <DSK MISC> button → [DSK1] to [DSK4] → [Transition] tab.

2 Select an item in [Transition] in the [In Type]/[Out Type] column.

- The transition mode available is only [MIX].

[Off]	Disables the transition mode of key in or key out.
[On]	Enables the transition mode of key in or key out.

3 Set [Time] in the [In Type]/[Out Type] column.

- Set the transition time.

4 Select an item in [In=Out] in the [Out Type] column.

[Off]	Sets the [In Type] column and the [Out Type] column separately.
[On]	The [In Type] column setting becomes the same as the [Out Type] column setting.

DSK output

The DSK block outputs the following signals.

For details, refer to “System Menu” (page 140).

- DSKPGM1, DSKPGM2: Outputs program signals of DSK compositions.
  Select the <SYS> button on the top menu → [MAIN FRAME] → [DSK] tab → [Config] column → [DSK1] to [DSK4] and set them to either [DSKPGM1] or [DSKPGM2] to assign the signal to one of the outputs.
- DSKPVW1, DSKPVW2: Outputs DSK preview signals.
  Follow the setting of the <SYS> button on the top menu → [MAIN FRAME] → [DSK] tab → [Config] column → [DSK1] to [DSK4], and assign the signal to either DSKPVW1 or DSKPVW2 line.
  Keyers set to [Off] using the <SYS> button on the top menu → [MAIN FRAME] → [DSK] tab → [DSK PVW] column are not combined.
- DSK1CLN, DSK2CLN, DSK3CLN, DSK4CLN: Outputs clean signal before adding key effects from each keyer. It can also be switched to preview image of each DSK.
- SEL KEYPVW: Outputs the preview for the key for pressed <KEY1> to <KEY4> buttons in the KEY operation area of each ME, and <DSK1> to <DSK4> buttons. The image combined with the key where the <SYS> button on the top menu → [MAIN FRAME] → [Sel KeyPVW] tab → [ME1]/[ME2]/[DSK] column is set to [On] is output. If the button for the key set to [Off] is selected, the image is output without the key combined.

Adjusting the luminance key/linear key

Adjust the luminance key and linear key definition.

1 Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.

2 Set [Clip], [Gain], and [Density] in the [DSK Adjust] column.

[Clip]	Sets the reference level for creating key signals.
[Gain]	Sets the key amplitude.
[Density]	Sets the key density.

3 Select an item in [Invert] in the [DSK Adjust] column.

[Off]	Does not invert the key signals generated internally.
[On]	Inverts the key signals generated internally.

DSK decorations

Add a border, shadow, or other edge to the key.

Setting the DSK edge

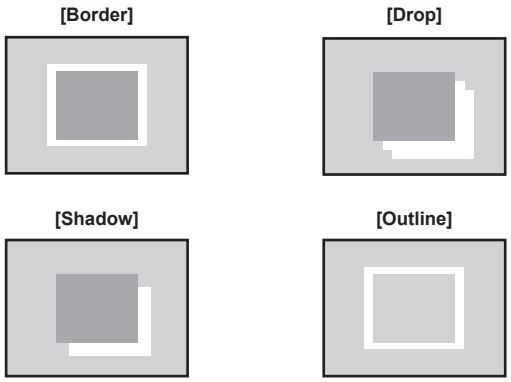


Fig. 1

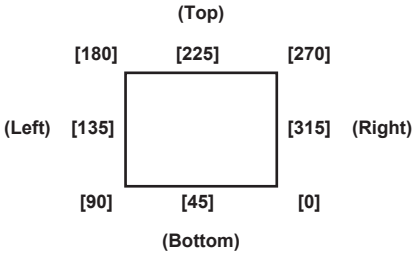


Fig. 2

1 **Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.**

2 **Select an item in [Type] in the [Edge] column. (Fig. 1)**

[Off]	Does not add an edge.
[Border]	Adds a border around the entire edge.
[Drop]	Adds a diagonal border.
[Shadow]	Adds a shadow.
[Outline]	Adds an outline (only a border with no fill).

3 **Set [Width] in the [Edge] column.**

- Set the edge width.

4 **Select an item in [Direction] in the [Edge] column. (Fig. 2)**

- Set the direction to add [Drop] or [Shadow] effect in 45° increments.

5 **Set [Density] in the [Edge] column.**

- Set the edge density.

Setting the DSK edge fill

Set the source to be inserted as an edge.

1 **Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.**

2 **Set [Fill] in the [Edge] column.**

[Matte]	Uses the color set in the [Edge Color] column.
[CBGD 1], [CBGD 2]	Uses the color background.
[Still1] - [Still4]	Uses the still image video memory.
[Clip1] - [Clip4]	Uses the moving image video memory.

Setting the DSK edge color

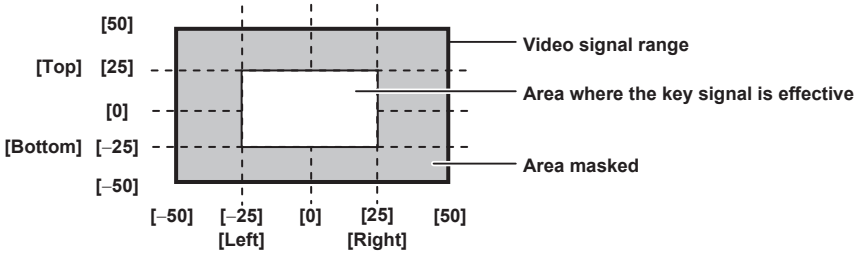
1 **Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.**

2 **Adjust the color.**

- Set [Hue], [Sat], [Lum], or [Color Palette] in the [Edge Color] column.

Masking the DSK

Mask the key signals using the mask signal of the box pattern. The following figure is the status when [Type] is set to [ForeGround], and [Invert] is set to [Off].



1 Select the <DSK MISC> button → [DSK1] to [DSK4] → [Setting] tab.

2 Select an item in [Mask] in the [Mask] column.

- Set the mask method.

[Off]	Does not mask the key signals.
[4:3]	Masks the signals in the 4:3 aspect ratio.
[Manual]	Masks the area set in [Mask Adjust1] or [Mask Adjust2].

3 Select an item in [Type] in the [Mask] column.

- Set the image to be masked.

[ForeGround]	Masks the foreground and displays the background.
[BackGround]	Masks the background and displays the foreground.

4 Select an item in [Invert] in the [Mask] column.

[Off]	Does not invert the mask signal.
[On]	Inverts the mask signal.

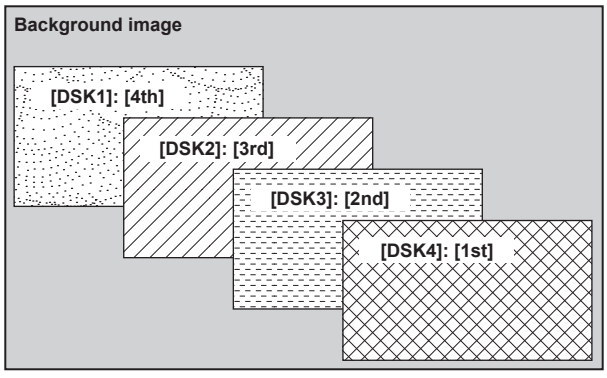
5 Set [Left], [Top], [Right], and [Bottom] in the [Mask Adjust1]/[Mask Adjust2] column.

- Set the area to be masked. The [Left] setting cannot exceed the [Right] setting (and vice versa), and the [Top] setting cannot exceed the [Bottom] setting (and vice versa).

[Left]	Masks the key left position.
[Top]	Masks the key top position.
[Right]	Masks the key right position.
[Bottom]	Masks the key bottom position.

Setting the priority

Set the priority (image positioning). The default setting is as shown in the following figure.



1 Select the <DSK MISC> button → [MISC] → [Misc] tab.

2 Select an item in [DSK1] to [DSK4] in the [DSK Priority] column.

- Select the priority for any key from [1st] to [4th].
- Changing the setting of one item will change the settings of other items accordingly. In the default setting, if [DSK1] is changed from [4th] to [1st], then the settings of [DSK2] to [DSK4] also change as follows.
  - [DSK2]: [3rd] → [4th]
  - [DSK3]: [2nd] → [3rd]
  - [DSK4]: [1st] → [2nd]

Setting [DSK On Link]

To perform transition with the <DSK1 TRNS> to <DSK4 TRNS> buttons, set [DSK1] through [DSK4] at the same time.

1 Select the <DSK MISC> button → [MISC] → [Misc] tab.

2 Select an item in [DSK1] to [DSK4] in the [DSK On Link] column.

- Select [Off] or [On] for any key.
- The following is an operation example when this setting is used.
  - When [DSK1] and [DSK3] are set to [On], and [DSK2] and [DSK4] are set to [Off]
    Pressing the <DSK1 TRNS> button starts transitions of [DSK1] and [DSK3] at the same time.

On/off of the DSK by the menu operation

Each DSK can be turned on/off with the cut transition by the menu operation.

1 Select the <DSK MISC> button → [MISC] → [Misc] tab.

2 Select an item in [DSK1] to [DSK4] in the [DSK ON] column.

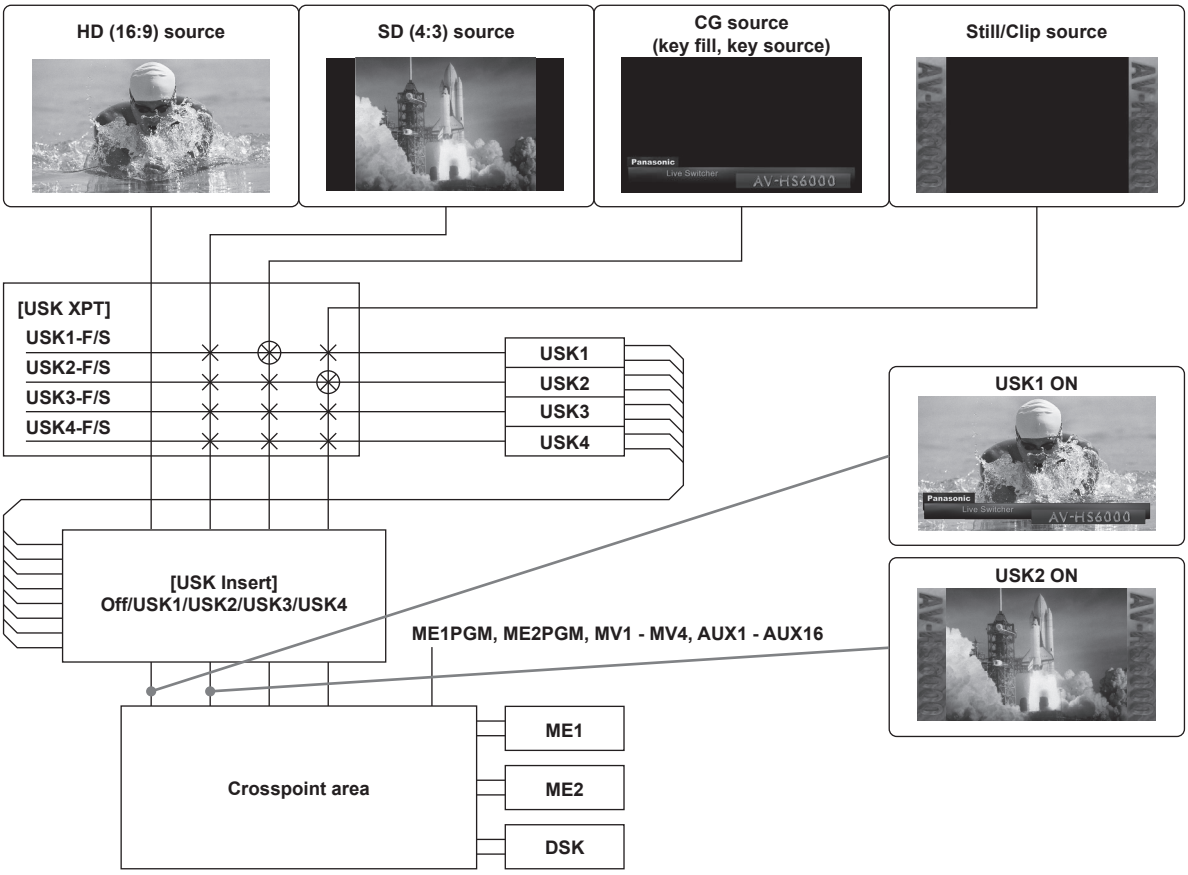
[Off]	The DSK is turned off.
[On]	The DSK is turned on.

NOTE

- The button operation (toggle operation) is recorded instead of recording the on/off status of the DSK when the macro for operation by the <DSK1 ON> to <DSK4 ON> buttons is recorded. The on/off status of the DSK is recorded when the on/off of the DSK is recorded to macro with the above menu operation.

USK (Upstream key)

Combine characters or other images with the input image in the input area.
Key sources generated using the four USK lines can be handled as sources with a telop without using ME by combining them with input images.
In addition, a 4:3 source of SD can be handled as a source by placing CG sources on both of its wings.



Selecting the USK type

Set the key type on the Menu Panel AV-HS60C3.

1 Select the <DSK MISC> button → [USK] → [USK1] to [USK4] tabs.

2 Select an item in [Type] in the [USK] column.

- Select the method to generate key signals. The selection status is stored for each source material.

[Lum] (luminance key/self key)	Creates key signals from luminance components or luminance and chrome components of key fill signals. • Since the luminance key is operated as a self key, the key fill signals are used as the key source signals. The key signals do not change even when the key source signals are switched.
[Linear] (linear key)	Creates key signals from luminance components of key source signals. It is used when the key source signal and key fill signal are different. • Use source with a black background and white characters or shape to be combined by the key as the key source signal. Source which is not black and white may not be combined clearly. Source with white background and black characters can be used by inverting the keys with the key invert function.
[Full] (full key/self key)	Creates key signals using the images on the full screen as the key source signals. • The key signals do not change even when the key source signals are switched.

3 Select an item in [Lum Key] in the [USK] column.

[Chroma Off]	Generates the key signals only from the luminance components.
[Chroma On]	Generates the key signals considering the chrome components in addition to the luminance components. This item is set when a low luminance component color is used for key signals such as when cutting blue characters.

4 Select an item in [Clean Key] in the [USK] column.

[Off]	Cuts key fill with a key signal.
[On]	Does not cut key fill with a key signal. The part of key fill not cut out with the key signal is superimposed on the background image.

Selecting the source type

1 Select the <DSK MISC> button → [USK] → [USK1] to [USK4] tabs.

2 Select an item in [Source Type] in the [USK] column.

- Select the mode to link selection of key source signal with key fill selection. The selection status is stored for each source signal.

[Self Key]	Uses the source selected in the key fill bus column as the key source signal.
[External Key]	Always uses an external key. The source signal for fill is set using [Fill] in the [Key] column.

Selecting the fill type

Select the fill type.

1 Select the <DSK MISC> button → [USK] → [USK1] to [USK4] tabs.

2 Select an item in [Fill] in the [USK] column.

[Bus]	Uses the bus signal for the key fill signal.
[Matte]	Uses the internal fill matte for the key fill signal. The color set in the [Fill Matte] column is used for the fill matte color.

Setting the matte color

Set the fill matte color.

1 Select the <DSK MISC> button → [USK] → [USK1] to [USK4] tabs.

2 Adjust the color.

- Set [Hue], [Sat], [Lum], or [Color Palette] in the [Fill Matte] column.

Selecting the USK source

Select the key fill and key source signals to be used as USK sources.

1 Select the <DSK MISC> button → [USK] → [USK XPT] tab.

2 Select USK bus from the USK bus list on the left column.

- Select [USK] to filter the bus list in the left column.

3 Select signals.

- Select a signal to be assigned to the USK bus from the signal list on the right column.
- Signals available on the USK bus are as follows.

Signal name	Description of signal
SDI IN1 - SDI IN32	SDI input signals 1 to 32
DVI IN1, DVI IN2	DVI-D input signals
Still 1V, Still 2V, Still 3V, Still 4V	Video memory (still image) 1 to 4 videos
Still 1K, Still 2K, Still 3K, Still 4K	Video memory (still image) 1 to 4 keys
Clip 1V, Clip 2V, Clip 3V, Clip 4V	Video memory (moving image) 1 to 4 videos
Clip 1K, Clip 2K, Clip 3K, Clip 4K	Video memory (moving image) 1 to 4 keys
CBGD1, CBGD2	Color background 1, 2
CBAR	Color bar
Black	Black image

- Select [Filter] to filter the signal list in the right column.

4 Select [Assign].

- The signal is assigned to the USK bus selected in the step **2**.

Setting the USK insert

Perform USK settings for each input signal.

1 Select the <DSK MISC> button → [USK] → [USK Insert] tab.

2 Select signals.

- Select the signal you want to perform USK settings on from the signal list on the left column.
- Select [Filter] to filter the signal list on the left column.
- Signals that can be combined with a USK source are as follows:

Signal name	Description of signal
SDI IN1 - SDI IN32	SDI input signals 1 to 32
DVI IN1, DVI IN2	DVI-D input signals
Still 1V, Still 2V, Still 3V, Still 4V	Video memory (still image) 1 to 4 videos
Still 1K, Still 2K, Still 3K, Still 4K	Video memory (still image) 1 to 4 keys
Clip 1V, Clip 2V, Clip 3V, Clip 4V	Video memory (moving image) 1 to 4 videos
Clip 1K, Clip 2K, Clip 3K, Clip 4K	Video memory (moving image) 1 to 4 keys

Signal name	Description of signal
CBGD1, CBGD2	Color background 1, 2
CBAR	Color bar
Black	Black image

3 Select a setting from the right column.

[No Assign]	• Clears the settings that are already assigned.
[USK1 On/Off] to [USK4 On/Off]	• The USK source is switched on/off by pressing the [USK1 On/Off] to [USK4On/Off] buttons in the [USK Insert] tab. • The USK source is switched on/off according to the signal input from the GPI input ports assigned with [USK1 ON] to [USK4 ON] using the <SYS> button → [PERIPHERAL] → [GPI IN] tab.
[USK1 On] to [USK4 On]	• Always combines USK sources.

4 Select [Assign].

• The setting selected in the step **3** is assigned to the signal selected in the step **2**.

Adjusting the luminance key/linear key

Adjust the luminance key and linear key definition.

1 Select the <DSK MISC> button → [USK] → [USK1] to [USK4] tabs.

2 Set [Clip], [Gain], and [Density] in the [Key Adjust] column.

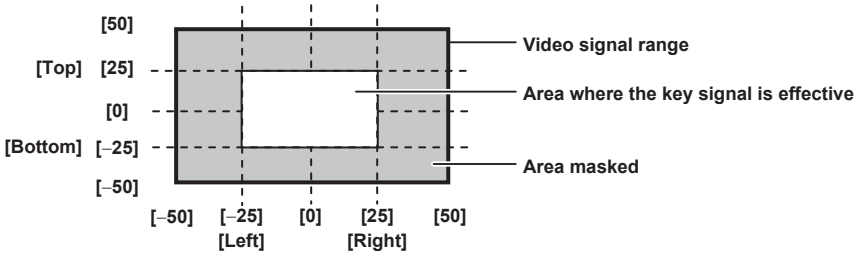
[Clip]	Sets the reference level for creating key signals.
[Gain]	Sets the key amplitude.
[Density]	Sets the key density.

3 Select an item in [Invert] in the [Key Adjust] column.

[Off]	Does not invert the key signals generated internally.
[On]	Inverts the key signals generated internally.

Masking the USK

Mask the key signals using the mask signal of the box pattern. The following figure is the status when [Type] is set to [ForeGround], and [Invert] is set to [Off].



1 Select the <DSK MISC> button → [USK] → [USK1] to [USK4] tabs.

2 Select an item in [Mask] in the [Mask] column.

• Set the mask method.

[Off]	Does not mask the key signals.
[4:3]	Masks the signals in the 4:3 aspect ratio.
[Manual]	Masks the area set in [Adjust1] or [Adjust2].

3 Select an item in [Type] in the [Mask] column.

• Set the image to be masked.

[Foreground]	Masks the foreground and displays the background.
[Background]	Masks the background and displays the foreground.

4 Select an item in [Invert] in the [Invert] column.

[Off]	Does not invert the mask signal.
[On]	Inverts the mask signal.

5 Set [Left], [Top], [Right], and [Bottom] in the [Adjust1]/[Adjust2] column.

• Set the area to be masked. The [Left] setting cannot exceed the [Right] setting (and vice versa), and the [Top] setting cannot exceed the [Bottom] setting (and vice versa).

[Left]	Masks the key left position.
[Top]	Masks the key top position.
[Right]	Masks the key right position.
[Bottom]	Masks the key bottom position.

IMAGE

Setting image effects

Four types of effects, paint, monochrome color, mosaic, and defocus can be set to the KEY1FILL, KEY2FILL, PGM/A, and PST/B bus sources.

- The [Key1] tab can set bus sources of KEY1FILL, the [Key2] tab can set bus sources of KEY2FILL, and the [BKGD] tab can set bus sources of PGM/A and PST/B.
- Press the <IMAG> button on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to enable the menu setting of the relevant bus.

Paint effect

Make the gradation of image level coarse in order to add painting like effect.

1 Select the <ME1>/<ME2> button → [IMAGE] → [Key1]/[Key2]/[BKGD] tab.

2 Select an item in [Paint] in the [Effect1]/[A Effect1]/[B Effect1] column.

[On]	Enables the paint effect.
[Off]	Disables the paint effect.

3 Set [Paint Y] and [Paint C] in the [Effect1]/[A Effect1]/[B Effect1] column.

[Y]	Adjusts the level gradation of luminance component. When set to [0], the paint effect is disabled.
[C]	Adjusts the level gradation of chrome component. When set to [0], the paint effect is disabled.

Monochrome color effect

Make the color components of an image monochrome color.

1 Select the <ME1>/<ME2> button → [IMAGE] → [Key1]/[Key2]/[BKGD] tab.

2 Select an item in [Mono] in the [Effect2]/[A Effect2]/[B Effect2] column.

[On]	Enables the monochrome color effect.
[Off]	Disables the monochrome color effect.

3 Set [Mono Hue] and [Mono Sat] in the [Effect2]/[A Effect2]/[B Effect2] column.

[Hue]	Adjusts the hue of the monochrome color effect.
[Sat]	Adjusts the saturation of the monochrome color effect.

Mosaic/defocus effect

Add the mosaic or defocus effect to an image.

1 Select the <ME1>/<ME2> button → [IMAGE] → [Key1]/[Key2]/[BKGD] tab.

2 Select a mode in the [Mosaic/Defocus]/[A Mosaic/Defocus]/[B Mosaic/Defocus] column.

[Off]	Disables the mosaic or defocus effect.
[Mosaic]	Enables the mosaic effect.
[Defocus]	Enables the defocus effect.

3 Set [Level] in the [Mosaic/Defocus]/[A Mosaic/Defocus]/[B Mosaic/Defocus] column.

- Adjust the amount of the mosaic effect and the defocus effect. When set to [0.0], the mosaic effect and the defocus effect are disabled.

NOTE

- If transitions are performed while [PGM-A/PST-B] (flip-flop system) is selected using the <CONF> button on the top menu → [OPERATE] → [Transition] tab → [Bus Mode] column → [Bus Mode], the PGM/A bus and the PST/B bus will swap. At this time, the buses with image effects will also swap.

Executing image effects

Output of image effects is delayed by one frame compared to normal output because they are created using DVE (Digital Video Effect).

Even if effects are enabled only for either the PGM/A bus or the PST/B bus by pressing the <IMAG> button, the output of both buses are delayed by one frame.

Color corrector

The unit can correct the colors of video signals because its terminals <SDI IN 25> to <SDI IN 32>, and <SDI OUT 13> to <SDI OUT 16> are equipped with the color corrector function.

Setting the color corrector

1 Select the <IN OUT> button → [C/C IN 25-30], [C/C IN 31-32], [C/C OUT] → the tab to be set.

- Select the tab to be set from the [SDI IN 25] tab to [SDI IN 32] tab, or the [SDI OUT 13] tab to [SDI OUT 16] tab.

2 Select an item in [Enable] in the [Operation] column.

[On]	Enables the color corrector of the relevant channel.
[Off]	Disables the color corrector.

3 Select an item in [Limit] in the [Operation] column.

[Off]	Does not restrict the color range of input signals.
[108]	Restricts the amplitude level of the colors (R, G, and B) to 0% to 108%.
[104]	Restricts the amplitude level of the colors (R, G, and B) to 0% to 104%.
[100]	Restricts the amplitude level of the colors (R, G, and B) to 0% to 100%.

Initializing the color corrector

1 Select the <IN OUT> button → [C/C IN 25-30], [C/C IN 31-32], [C/C OUT] → the tab to be set.

- Select the tab to be set from the [SDI IN 25] tab to [SDI IN 32] tab, or the [SDI OUT 13] tab to [SDI OUT 16] tab.

2 Select an item in [Init Target] in the [Setting] column.

[Process]	Initializes the setting value in the [Process] column.
[Tone]	Initializes the setting values in the [Tone1 Black]/[Tone2 Gray L]/[Tone3 Gray H]/[Tone4 White] column.
[RGB Matrix]	Initializes the setting values in the [Matrix R/G]/[Matrix B] column.
[All]	Initializes all.

3 Select [Initialize] in the [Setting] column.

- The corresponding item is initialized.

Copying the setting

1 Select the <IN OUT> button → [C/C IN 25-30], [C/C IN 31-32], [C/C OUT] → the tab to be set.

- Select the tab to be set from the [SDI IN 25] tab to [SDI IN 32] tab, or the [SDI OUT 13] tab to [SDI OUT 16] tab.

2 Select an item in [Copy Target] in the [Setting] column.

- Select the tab for the copy source of the setting.

3 Select [Copy From] in the [Setting] column.

- The setting of the selected tab is copied. However, the setting of the [Setting] column is not copied.

Process control

1 Select the <IN OUT> button → [C/C IN 25-30], [C/C IN 31-32], [C/C OUT] → the tab to be set.

- Select the tab to be set from the [SDI IN 25] tab to [SDI IN 32] tab, or the [SDI OUT 13] tab to [SDI OUT 16] tab.

2 Set [Y-Gain], [Pedestal], [C-Gain], and [Hue] in the [Process] column.

[Y-Gain]	Sets the gain value of the Y signal.
[Pedestal]	Sets the value of the pedestal level (black level).
[C-Gain]	Sets the gain value of the saturation (Sat).
[Hue]	Sets the amount of change of the hue (Hue).

3 Select an item in [Colorimetry] in the [Process] column.

- Set the colorimetry conversion for SD/HD conversion.

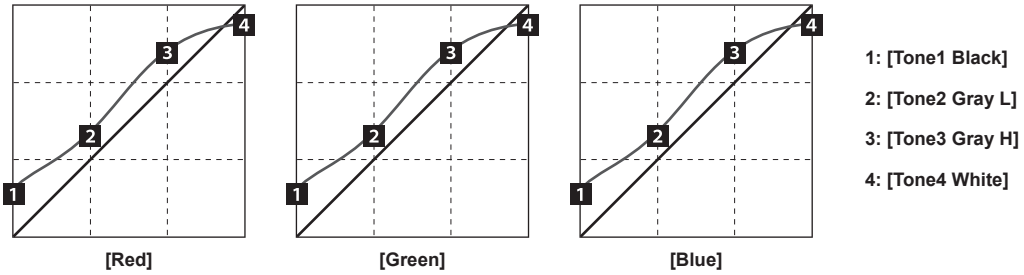
[On]	Converts the SD format to the HD format. • To enable this item, set the system to HD mode, and set the <IN OUT> button on the top menu → [SDI IN] → [Frame Buffer] tab → [Mode] in the [SDI IN 1] to [SDI IN 32] columns to [Dot by Dot] or [U/C].
[Off]	Does not perform conversion.

Tone curve

Correct the tone of input images.

Set the tone curve to adjust the screen brightness and contrast.

Adjust R, G, and B separately to adjust white balance or tone.



[Red] [Green] [Blue]

1: [Tone1 Black]

2: [Tone2 Gray L]

3: [Tone3 Gray H]

4: [Tone4 White]

1 Select the <IN OUT> button → [C/C IN 25-30], [C/C IN 31-32], [C/C OUT] → the tab to be set.

- Select the tab to be set from the [SDI IN 25] tab to [SDI IN 32] tab, or the [SDI OUT 13] tab to [SDI OUT 16] tab.

2 Set [Red], [Green], and [Blue] in the [Tone1 Black]/[Tone2 Gray L]/[Tone3 Gray H]/[Tone4 White] column.

[Tone1 Black]	Adjusts the black level.
[Tone2 Gray L]	Adjusts the gray Low level.
[Tone3 Gray H]	Adjusts the gray High level.
[Tone4 White]	Adjusts the white level.

3 Select an item in [RGB Link] in the [Tone1 Black] column.

[Off]	Enables setting of the [Tone1 Black]/[Tone2 Gray L]/[Tone3 Gray H]/[Tone4 White] column independently from RGB.
[On]	Uses the value of [Red] as the values of [Green] and [Blue] for the [Tone1 Black]/[Tone2 Gray L]/[Tone3 Gray H]/[Tone4 White] column.

NOTE

- The unit simply connects the set black level, gray Low level, gray High level, and white level to create a tone curve. Depending on the setting values, the tone curve might not be as desired.

Adjusting the gain of color matrix

1 Select the <IN OUT> button → [C/C IN 25-30], [C/C IN 31-32], [C/C OUT] → the tab to be set.

- Select the tab to be set from the [SDI IN 25] tab to [SDI IN 32] tab, or the [SDI OUT 13] tab to [SDI OUT 16] tab.

2 Set [R-G], [R-B], [G-R], [G-B], [B-R], and [B-G] in the [Matrix R/G]/[Matrix B] column.

[R-G]	Sets the gain value in the R-G axis direction.
[R-B]	Sets the gain value in the R-B axis direction.
[G-R]	Sets the gain value in the G-R axis direction.
[G-B]	Sets the gain value in the G-B axis direction.
[B-R]	Sets the gain value in the B-R axis direction.
[B-G]	Sets the gain value in the B-G axis direction.

Internal color signals

The unit supports two lines of internal color signals.

Setting the color background

Set the color of the color background to be used by the bus.

The color can be set by setting the hue (Hue), saturation (Sat), and luminance (Lum), or by recalling the preset eight colors. The recalled colors can also be adjusted using [Hue], [Sat], and [Lum].

Adjusting the colors

1 Select the <DSK MISC> button → [CBGD] → [CBGD1]/[CBGD2] tab.

2 Adjust the color.

- Set [Hue], [Sat], [Lum], or [Color Palette] in the [Main Color]/[Sub Color] column.

Setting the gradation

Set the gradation effect for color backgrounds.

Selecting the gradation effects and setting the colors

1 Select the <DSK MISC> button → [CBGD] → [CBGD1]/[CBGD2] tab.

2 Select an item in [Wash] in the [Wash] column.

[On]	Adds the gradation effect.
[Off]	Does not add the gradation effect.

3 Select an item in [Color Type] in the [Wash] column.

[Dual]	Adds the two color gradation effect set in the [Main Color] and [Sub Color] columns.
[Rainbow]	Adds the rainbow color gradation effect.

4 Adjust the color.

- When [Dual] is selected, set [Hue], [Sat], [Lum], or [Color Palette] in the [Sub Color] column.
- When [Rainbow] is selected, set [Rainbow Sat] and [Rainbow Lum] in the [Wash] column.

Adjusting the gradation waveforms

1 Select the <DSK MISC> button → [CBGD] → [CBGD1]/[CBGD2] tab.

2 Select an item in [Pattern] in the [Wave] column.

[Sine]	Selects sine waves.
[Saw]	Selects sawtooth waves.

3 Set [Cycle], [Phase], and [Angle] in the [Wave] column.

[Cycle]	Selects the gradation cycle.
[Phase]	Selects the gradation phase.
[Angle]	Selects the gradation angle.

Setting the gradation movement

1 Select the <DSK MISC> button → [CBGD] → [CBGD1]/[CBGD2] tab.

2 Select an item in [Type] in the [Move] column.

[Off]	Sets no movement.
[Roll]	Scrolls the gradations.
[Rotation]	Rotates the gradations.

3 Set [Speed] in the [Move] column.

- Set the speed of the gradation movement.

Switching the AUX output

Selecting the AUX output sources

Display the AUX output image on the monitor using the output settings or the settings of the MultiView display.

Press one of the KEY bus selector buttons <AUX 1/2> to <AUX 15/16> of ME1 to select odd number buses among the AUX1 bus to the AUX15 bus. To select even number buses among the AUX2 bus to the AUX16 bus, press <AUX 1/2> to <AUX 15/16> buttons while holding down the <BUS SHFT> button.

The source selected using the KEY bus crosspoint buttons is output.

■ Signals that can be selected on the AUX bus

Signal name	Description of signal
SDI IN1 - SDI IN32	SDI input signals 1 to 32
DVI IN1, DVI IN2	DVI-D input signals
Still 1V, Still 2V, Still 3V, Still 4V	Video memory (still image) 1 to 4 videos
Still 1K, Still 2K, Still 3K, Still 4K	Video memory (still image) 1 to 4 keys
Clip 1V, Clip 2V, Clip 3V, Clip 4V	Video memory (moving image) 1 to 4 videos
Clip 1K, Clip 2K, Clip 3K, Clip 4K	Video memory (moving image) 1 to 4 keys
CBGD1, CBGD2	Color background 1, 2
CBAR	Color bar
Black	Black image
ME1PGM, ME2PGM	Program video signal
ME1PVW, ME2PVW	Preview video signal
ME1CLN, ME2CLN	Clean signal
ME1KEYPVW, ME2KEYPVW	Key preview video signal
DSKPGM1, DSKPGM2	Program video signal
DSKPVW1, DSKPVW2	DSK preview video signal
DSK1CLN - DSK4CLN	Clean signal
SEL KEYPVW	Selected key preview video signal
MV1 - MV4	MultiView display output signal

NOTE

- When the AUX bus image for which the MultiView display output has been selected is displayed on the sub-screen of the MultiView display, the images are looped as if two mirrors were facing each other.

Transitions of AUX1 to AUX4 buses

AUX1 to AUX4 buses can perform MIX transitions.

For details, refer to “AUX1 to AUX4 bus transitions” (page 136).

Linking AUX buses

Set the <CONF> button on the top menu → [SOURCE LINK] → [AUX Bus Link] tab to link two AUX buses.

For details, refer to “Linking the AUX bus” (page 134).

Memory

The unit has the following memory functions to store setting data.

- Shot memory (page 90)
- Event memory (page 92)
- Macro memory (page 99)
- Key preset (page 102)
- Key source preset (page 138)
- Preset memory of background wipe (page 40)

Shot memory

The background transition pattern, PinP size, border width, and other video effects can be registered in the memory and recalled.

This is called shot memory, and a single memory is called a register memory.

By setting effect dissolve, it is possible to ensure a smooth change of the switching from the current images to the images or operations registered in the shot memory.

NOTE

- The number of memories that can be registered in the shot memory is 81 (9 pages × 9).
- Operate the shot memory on the Menu Panel AV-HS60C3 or the multi-selection panel.
  For details on operating the multi-selection panel, refer to “Shot memory menu” (page 41).

Registering register memories of the shot memory

Register the current image effect settings in the register memory.

1 Select the <MEM> button → [SHOT MEMORY] → [Register] tab.

2 Select [Store] in the [Register] column.

- The [Store] screen is displayed.

[ME1], [ME2], [DSK], [AUX], [CBGD], [XPT]	Select the registration target.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Cancel]	Closes the [Store] screen without registering the target.
[OK]	Closes the [Store] screen after registering the target.

NOTE

- A registered register memory can be overwritten.

Recalling register memories of the shot memory (playback)

Recall the image effect settings registered in the register memory.

1 Select the <MEM> button → [SHOT MEMORY] → [Register] tab.

2 Select [Recall] in the [Register] column.

- The [Recall] screen is displayed.

[ME1], [ME2], [DSK], [AUX], [CBGD], [XPT]	Select the target to recall.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Cancel]	Closes the [Recall] screen without recalling the target.
[OK]	Closes the [Recall] screen after recalling the target.

■ Resource conflicts

- The following is performed when a new register memory is recalled during shot memory effect dissolve playback or event memory playback.
  - When the target to recall does not overlap between the register memory that is currently playing and the register memory to be newly recalled, both memories are played independently.
  - When the target to recall overlaps between the register memory that is currently playing and the register memory to be newly recalled, playback of the originally playing memory stops and playback of the new memory starts.
- The following is performed when the shot memory effect dissolve playback is performed simultaneously with the transition operation by the fader, <AUTO> button, and <CUT> button.
  - When the recall target of the register memory to be played and the transition target do not overlap, register memory playback and transition each works independently.
  - When the recall target of the register memory to be played and the transition target overlap, register memory playback is prioritized.

■ **Playback target (when playing back with the multi-selection panel)**

- Playback of [ME1] and [ME2]

  The target selected at the start of playback is always played back.

  - When the target selected at registration is either one of [ME1] or [ME2]
    The target selected at registration is played back even when either [ME1] or [ME2] is selected at the start of playback.
  - When there is no target selected at registration
    [ME1] recorded at registration is played back even when either [ME1] or [ME2] is selected at the start of playback.
- Playback of [DSK], [AUX], and [CBGD]

  The target selected by both operations at registration and the start of playback is played back.

■ **Playback target (when playing back with the menu panel)**

- Playback of [ME1] and [ME2]

  The target selected at the start of playback is always played back.

  - When the target selected at registration is either one of [ME1] or [ME2]
    The target selected at registration is played back even when either [ME1] or [ME2] is selected at the start of playback.
  - When there is no target selected at registration
    [ME1] recorded at registration is played back even when either [ME1] or [ME2] is selected at the start of playback.
- Playback of [DSK], [AUX], and [CBGD]

  The target selected at the start of playback is always played back.

  For the target which is not selected at registration, playback is performed with the setting at registration.

NOTE

- The selection button for the background wipe preset menu in the multi-selection panel will move to top left (pattern 1) when shot memory is played back.
- Playback in selected mode is not possible for playback of [ME1] or [ME2] in the 3G mode or the 4K mode when the selection for playback is not selected at the time of registration.

Editing register memories of the shot memory

Delete a registered register memory or change file names.

1 Select the <MEM> button → [SHOT MEMORY] → [Register] tab.

2 Select [Misc] in the [Register] column.

- The [Misc] screen is displayed.

[Rename]	Select [Rename] after selecting a file icon to change the file name using the on-screen keyboard.
[Delete]	Select [Delete] after selecting a file icon to delete the register memory.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Close]	Closes the [Misc] screen.

Setting effect dissolve

Switching from the current image settings to the image settings stored in the shot memory can be performed smoothly.

1 Select the <MEM> button → [SHOT MEMORY] → [Register] tab.

2 Select an item in [Effect Dissolve] in the [Mode] column.

- Set the effect when switching images.

[On]	Switches the images using the dissolve effect.
[Off]	Switches the images using the cut effect.

3 Set the time for dissolve effect in [Dissolve Time] in the [Mode] column.

4 Select an item in [Hue Path] in the [Mode] column.

- Select the effect when switching colors. The following Hue becomes the target.
  - Colors of the color background
  - Colors of the borders
  - Colors of the edges
  - Colors of the fill matte

[Short]	Changes the colors in the direction where the variation of Hue is small on the vectorscope.
[Long]	Changes the colors in the direction where the variation of Hue is large on the vectorscope.
[CW]	Changes the Hue clockwise on the vectorscope.
[CCW]	Changes the Hue counterclockwise on the vectorscope.
[Step]	Changes with the cut effect.

NOTE

- When [Effect Dissolve] in the [Mode] column is changed from [On] to [Off] during effect dissolve playback, the dissolve effect is cancelled and the images are instantaneously switched to the images of the selected shot memory.

Setting the details of the shot memory

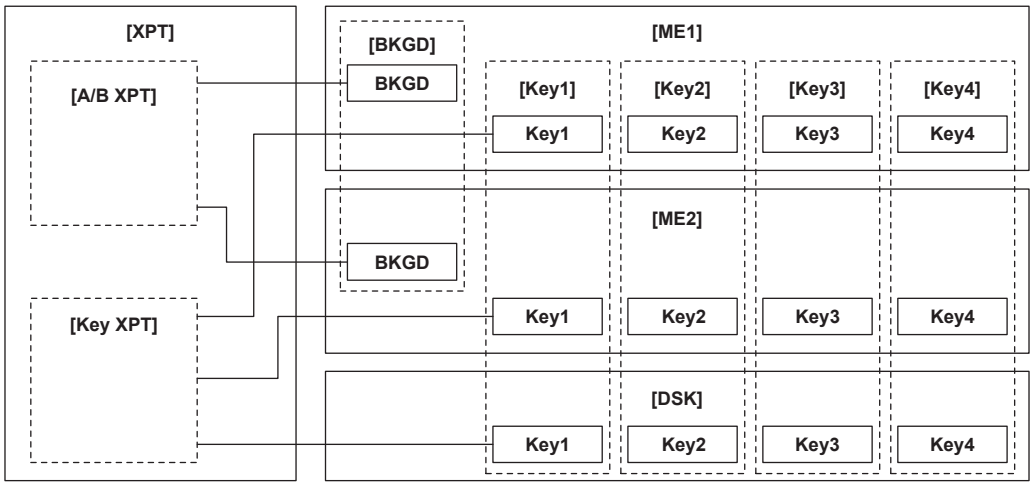
You can specify the register memory target to recall more precisely.

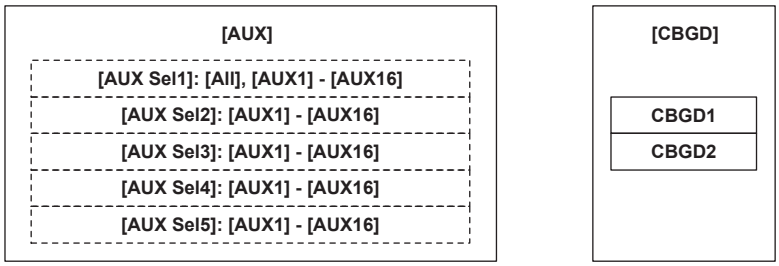
The following figure shows the relationship between the setting target of [Register] and the setting target of [Detail Select].

- In the following figure, two types of lines show the types of items.

  ▭ indicates an item to be selected in [Store]/[Recall] in the [Register] column.

  ▭ indicates an item to be set in the [Detail Select] tab.





1 Select the <MEM> button → [SHOT MEMORY] → [Detail Select] tab.

2 Select an item in [BKGD]/[Key1] to [Key4] in the [Detail ME] column.

[On]	Sets as a memory target.
[Off]	Does not set as a memory target.

3 Select an item in [A/B XPT]/[Key XPT] in the [Detail XPT] column.

[On]	Sets as a memory target.
[Off]	Does not set as a memory target.

4 Select an item in [AUX Sel1] to [AUX Sel5] in the [Detail AUX] column.

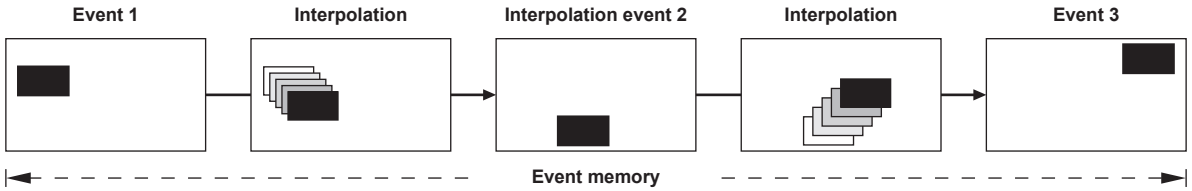
- Select an item from [AUX1] to [AUX16].

  To select all AUX buses, select [All] in [AUX Sel1].

Event memory

Register multiple image effects that can be registered in the shot memory as events. Smooth transitions can be achieved by playing back images continuously while interpolating between events. A group of these events are referred to as an event memory.

Maximum 64 events can be registered in one event memory.



NOTE

- Use the Menu Panel AV-HS60C3 to register and edit events in the work memory, and save the created event memory in a register memory.

- Use the multi-selection panel area of each ME or the EMEM LINK function to load event memories saved in the register memories and play them back. The number of register memories that can be registered is 81 (9 pages × 9).
  For details on operating the multi-selection panel, refer to “Event memory menu” (page 42).
- When operations such as playback of an event memory are performed in a system format different from the system format used when the event memory was registered, the operations will not be performed correctly.

■ Resource conflicts

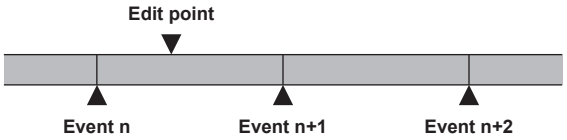
- The following is performed when a new register memory is played during shot memory effect dissolve playback or event memory playback.
  - When the target to recall does not overlap the register memory that is currently playing and the register memory to be newly played, both memories are played independently.
  - When the target to recall overlaps the register memory that is currently playing and the register memory to be newly played, playback of originally playing memory stops and playback of the new memory starts.
- The following is performed when the event memory playback is performed simultaneously with the transition operation by the fader, <AUTO> button, and <CUT> button.
  - When the register memory to be played and the transition target do not overlap, register memory playback and transition each works independently.
  - When the register memory to be played and the transition target overlap, register memory playback is prioritized.

■ Timeline

A timeline is a group of events which have been placed on the time axis.

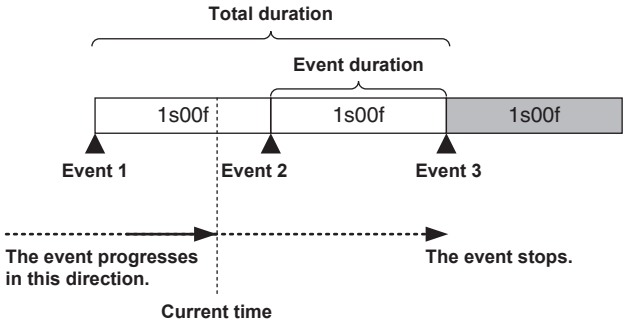
■ Event points and edit points

On a timeline, the position where an event has been registered is called the event point, and the event currently being edited is called the current event.
When the edit point is positioned between two event points, the event point before the edit point serves as the current event. (Event n in the figure)



■ Event duration and total duration

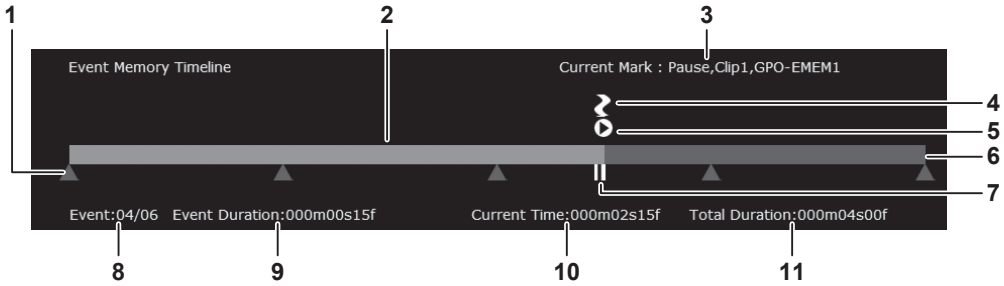
The length of time up to the next event is called the event duration.
The total of all the event durations is called the total duration.
The present point in time on the timeline is called the current time.



Displaying the timeline

1 Select the <MEM> button → [EVENT MEMORY] → [Edit] tab.

- The event memory timeline in the work memory is displayed on the upper area of the [Edit] tab.



1 Event point

2 Executed bar

3 Displays the current event mark setting.
Pause, Clip, GPO-Emem (omitted when [Off])

4 GPI-OUT mark

5 Clip mark

6 Execution scheduled bar

7 Pause point (displayed instead of the event point)

8 Current event number/Total number of events

9 Time to transition from the current event to the next event

10 Time elapsed up to the edit point

11 Total time of the event memory

Newly registering in the work memory

Newly register a timeline in the work memory.

1 Select the <MEM> button → [EVENT MEMORY] → [Edit] tab.

2 Select each item in the [Select1]/[Select2] column.

- Set whether to select each item of [ME1], [ME2], [DSK], [AUX], [CBGD], [CLIP], and [XPT] as registration target.

[ON]	Select as registration target.
[OFF]	Does not select as registration target.

3 Set [Edit] in the [Control1] column to [On] to enter the edit mode.

- When a resource conflict occurs while shot memory effect dissolve playback or event memory playback is performed, memory which is originally played back is stopped.
- When [Edit] is [On] and shot memory or event memory playback is performed, [Edit] automatically turns [Off], if a resource conflict occurs.

4 Select [New] in the [Edit1] column to initialize the work memory.

- When this operation is performed, the timeline currently in the work memory is deleted. If it is required, register the timeline in a register memory of the event memory.

5 Select an item in the [Mark] column.

- Set the marks used when linking the following functions in events.

[Pause]	When [On] is selected and the mark is registered in the event point, playback is paused at the mark position during event playback. The [II] mark appears on the timeline.
[Clip]	When [Clip1] to [Clip4] are selected and the mark is registered in the event point, the clip is played back at the mark position during event playback. The Clip mark appears on the timeline.
[GPI-Out]	When [EMEM-01] to [EMEM-20] are selected and the mark is registered in the event point, pulse signals are output from the GPI output port to which [EMEM-01] to [EMEM-20] are assigned at the mark position during event playback. The GPI-OUT mark appears on the timeline.

6 Set the transition time in [Event Duration] in the [Edit2] column.

[Event Duration]	Sets the time between events.

7 Set [Trans Path] in the [Path] column.

- Set the method to transition to the next event. The targets of transition are as follows.
  - Width of the borders
  - Soft effect of the borders
  - Positions of the images
  - Trimming values

[Linear]	Interpolates the switching from one image to another linearly.
[Spline]	Interpolates the switching from one image to another over a smooth curve (a cubic function curve).
[Step]	Updates the parameters when the events are passed through.

8 Select an item in [Hue Path] in the [Path] column.

- Select the effect when switching colors. The target Hue is as follows.
  - Colors of the color background
  - Colors of the borders
  - Colors of the edges
  - Colors of the fill matte

[Short]	Changes the colors in the direction where the variation of Hue is small on the vectorscope.
[Long]	Changes the colors in the direction where the variation of Hue is large on the vectorscope.
[CW]	Changes the Hue clockwise on the vectorscope.
[CCW]	Changes the Hue counterclockwise on the vectorscope.
[Step]	Updates the color changes when an event is passed through.

9 Set an item in [A/B XPT]/[Key XPT] in the [Path] column.

- Set the bus to switch crosspoints at events.

[On]	Registers all crosspoint switching on the A bus/B bus or KEY bus whose [Register]/[Detail Select] are enabled.
[Off]	Does not register crosspoint switching.

10 Select an item in [Insert] in the [Edit1] column to register an event.

- When [Modify] is selected in the [Edit1] column, the current event setting is modified without inserting an event.

11 Repeat the steps from 5 to 10 to register the series of operations.

12 When the registration is complete, set [Edit] in the [Control1] column to [Off].

- The edit mode ends.
- Event memory data that is registered in the work memory is deleted when the power of the unit is turned off. Make sure to save the event memory data stored in the work memory to the register memory.
  For details, refer to “Registering to the register memory” (page 96).
- For details on checking or modifying the registered memories, refer to “Editing the work memory” (page 95).

Editing the work memory

Edit the timeline in the work memory newly registered or loaded from the register memory.

1 Select the <MEM> button → [EVENT MEMORY] → [Edit] tab.

2 Select each item in the [Select1]/[Select2] column.

- Set whether to select each item of [ME1], [ME2], [DSK], [AUX], [CBGD], [CLIP], and [XPT] as edit target.

[ON]	Select as edit target.
[OFF]	Does not select as edit target.

3 Set [Edit] in the [Control1] column to [On] to enter the edit mode.

- When a resource conflict occurs while shot memory effect dissolve playback or event memory playback is performed, memory which is originally played back is stopped.
- When [Edit] is [On] and shot memory or event memory playback is performed, [Edit] automatically turns [Off], if a resource conflict occurs.

4 Select an item in the [Control1] column to move the edit point.

[<<Lead]	Moves to the first event point.
[<Step]	Moves to the previous event point.
[>Step]	Moves to the next event point.
[>>Last]	Moves to the last event point.

5 Play a timeline in [Play] or [Pause] in the [Control2] column.

[Play]	Plays back an event memory.
[Pause]	Stops the event memory.

6 Select an item in the [Edit1] column.

- Add or modify events.

[New]	Initializes the work memory.
[Insert]	Inserts events. If the edit point is an event point, the event is inserted after the event point. If the edit point is at any midway position in an event, the event is inserted at the edit point.
[Delete]	Deletes events.
[Modify]	Modifies events. This key cannot be operated if the edit point is not over the event point.

7 Select an item in the [Edit1]/[Edit2] column.

- Add or modify events.

[Copy]	Copies an event. The event is not copied if the edit point is not over the event.
[Paste]	Pastes the copied event. If the edit point is an event point, the copied event is inserted after the event point. If the edit point is at any midway position in an event, the event is inserted at the edit point.
[Undo]	Undoes the editing operation of the event. When the button is pressed, the operation performed last is canceled.

8 Repeat steps 4 to 7 to edit a series of operations.

9 Adjust the time in [Total Duration] in the [Edit2] column.

[Total Duration]	Sets the total duration. • If you change the total duration, the duration of each event included in the event memory is updated by computing the ratio of event duration before the change. The total duration may not match the set value since all updated event duration values are summed up and the total duration is recalculated. Also, each event duration will not be shorter than one frame.
[Execute]	The value set in [Total Duration] is reflected in the timeline.

10 When the editing is complete, set [Edit] in the [Control1] column to [Off].

- The edit mode ends.
- Event memory data that is registered in the work memory is deleted when the power of the unit is turned off. Make sure to save the event memory data stored in the work memory to the register memory.

  For details, refer to “Registering to the register memory” (page 96).

Playing back the work memory to check

Play back the timeline in the work memory newly registered or edited to check.

1 Select the <MEM> button → [EVENT MEMORY] → [Edit] tab.

2 Set [Edit] in the [Control1] column to [On] to enter the edit mode.

- When [Off] is selected, the timeline in the work memory cannot be played back.
- The items where [ME1], [ME2], [DSK], [AUX], [CBGD], [CLIP], and [XPT] in the [Select1]/[Select2] column are set to [ON] can be played back.

3 Select an item in the [Control1] column.

[<<Lead]	Moves to the first event point.
[<Step]	Moves to the previous event point.
[>Step]	Moves to the next event point.
[>>Last]	Moves to the last event point.

4 Select an item in [Play Mode] in the [Mark] column.

[Once]	Stops at the last event.
[Loop]	Transitions from the last event to the first event.

5 Set an item in [Reverse] in the [Control2] column.

[OFF]	Playback is performed in the positive direction (event numbers in ascending order).
[ON]	Playback is performed in the negative direction (event numbers in descending order).

6 Select an item in [Fader Link] in the [Control2] column.

- Playback of event memories can be linked with the fader lever operation.

[Off]	Does not play back an event memory according to the fader lever operation.
[ME1]*	Plays back an event memory according to the operation of the [ME1] fader lever.
[ME2]*	Plays back an event memory according to the operation of the [ME2] fader lever.

* ME selected as playback target in the [Select1]/[Select2] column is assumed by the event memory playback, so the button operation or fader operation will be disabled when set to anything other than [Off].

7 Select an item in [Fader Mode] in the [Control2] column.

- Set the mode for fader link.

[Total Event]	Assigns 0% to 100% of the fader lever operation to the total time of the event memory.
[Event Paddle]	Assigns 0% to 100% of the fader lever operation to one event in the event memory.

8 Play a timeline in [Play] or [Pause] in the [Control2] column.

- Operation is disabled when a setting other than [Off] is selected in [Fader Link] in the [Control2] column.

[Play]	Plays back an event memory.
[Pause]	Stops event memory playback.

Registering to the register memory

Register the event memory created on the work memory in the register memory.

1 Select the <MEM> button → [EVENT MEMORY] → [Register] tab.

2 Select [Store] in the [Register] column.

- The [Store] screen is displayed.

[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Cancel]	Closes the [Store] screen without registering the target.
[OK]	Closes the [Store] screen after registering the target.

NOTE

- A registered register memory can be overwritten.

- Items where the [Edit] tab → [ME1], [ME2], [DSK], [AUX], [CBGD], [CLIP], and [XPT] in the [Select1]/[Select2] column is set to [ON] are selected as registration target.

Recalling the register memory (playback)

Recall an event memory to the work memory from a registered register memory.

1 Select the <MEM> button → [EVENT MEMORY] → [Register] tab.

2 Select [Recall] in the [Register] column.

- The [Recall] screen is displayed.

[ME1], [ME2], [DSK], [AUX], [CLIP], [CBGD], [XPT]	Select the target to recall.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Cancel]	Closes the [Recall] screen without recalling the target.
[OK]	Closes the [Recall] screen after recalling the target.

■ Playback target (when playing back with the multi-selection panel)

- Playback of [ME1] and [ME2]

  The target selected at the start of playback is always played back.
  - When the target selected at registration is either one of [ME1] or [ME2]
    The target selected at registration is played back even when either [ME1] or [ME2] is selected at the start of playback.
  - When there is no target selected at registration
    [ME1] recorded at registration is played back even when either [ME1] or [ME2] is selected at the start of playback.
- Playback of [DSK], [CLIP], [AUX], and [CBGD]

  The target selected by both operations at registration and the start of playback is played back.

■ Playback target (when playing back with the menu panel)

- Playback of [ME1] and [ME2]

  The target selected at the start of playback is always played back in the work memory.
  - When the target selected at registration is either one of [ME1] or [ME2]
    The target selected at registration is played back in the work memory even when either [ME1] or [ME2] is selected at the start of playback.
  - When there is no target selected at registration
    [ME1] recorded at registration is played back in the work memory even when either [ME1] or [ME2] is selected at the start of playback.
- Playback of [DSK], [CLIP], [AUX], and [CBGD]

  The target selected at the start of playback is always played back in the work memory.

  For the target which is not selected at registration, playback is performed with the setting at registration.

NOTE

- The selection button for the background wipe preset menu in the multi-selection panel will move to top left (pattern 1) when event memory is played back.
- Playback in selected mode is not possible for playback of [ME1] or [ME2] in the 3G mode or the 4K mode when the selection for playback is not selected at the time of registration.

Editing register memories

Delete a registered register memory or change file names.

1 Select the <MEM> button → [EVENT MEMORY] → [Register] tab.

2 Select [Misc] in the [Register] column.

- The [Misc] screen is displayed.

[Rename]	Select [Rename] after selecting a file icon to change the file name using the on-screen keyboard.
[Delete]	Select [Delete] after selecting a file icon to delete the register memory.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Close]	Closes the [Misc] screen.

Setting the operation of the multi-selection panel area

Specify the operation when a register memory is selected with the <EVT MEM> button in the multi-selection panel area.

1 Select the <MEM> button → [EVENT MEMORY] → [Register] tab.

2 Select an item in [Direct/Next] in the [Select Panel] column.

[Direct]	Plays back the image when the register memory is selected.

[Next]	Plays back the image when the [PLAY] button is pressed after the register memory is selected.

Setting details of event memory

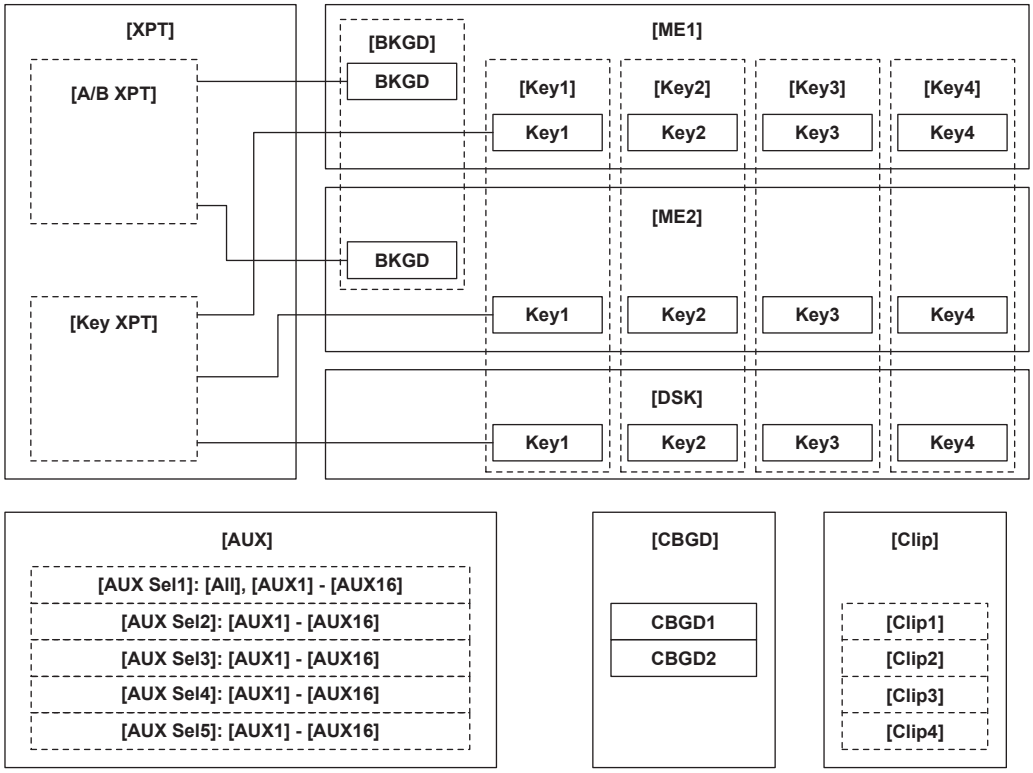
You can specify the register memory target to recall more precisely.

The following figure shows the relationship between the setting target of [Register] and the setting target of [Detail Select].

- In the following figure, two types of lines show the types of items.

  indicates an item to be selected in [Store]/[Recall] in the [Register] column.

  indicates an item to be set in the [Detail Select] tab.



1 Select the <MEM> button → [EVENT MEMORY] → [Detail Select] tab.

2 Select an item in [BKGD]/[Key1] to [Key4] in the [Detail ME] column.

[On]	Sets as a memory target.
[Off]	Does not set as a memory target.

3 Select an item in [A/B XPT]/[Key XPT] in the [Detail XPT] column.

[On]	Sets as a memory target.
[Off]	Does not set as a memory target.

4 Select an item in [Clip1] to [Clip4] in the [Detail Clip] column.

[On]	Sets as a memory target.
[Off]	Does not set as a memory target.

5 Select an item in [AUX Sel1] to [AUX Sel5] in the [Detail AUX] column.

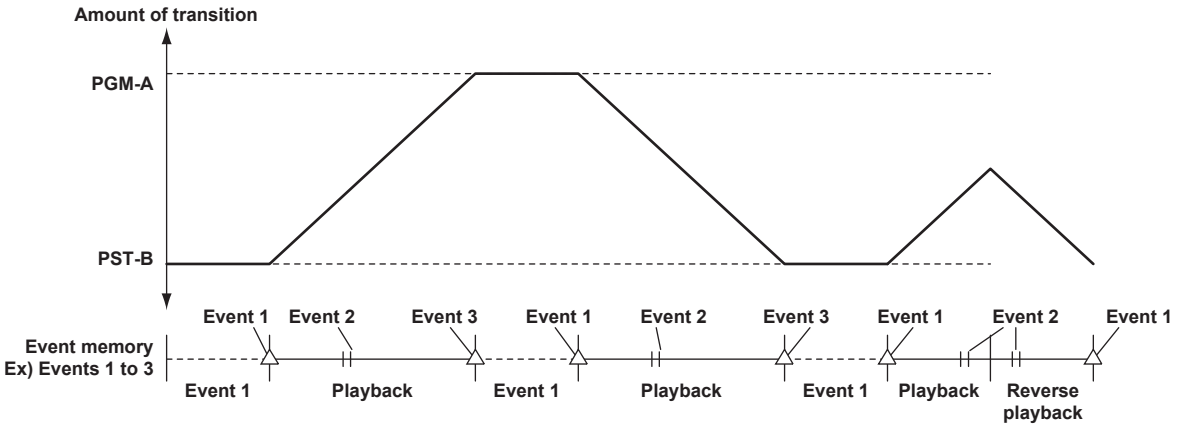
- Select items from [AUX1] to [AUX16].

  To select all AUX buses, select [All] in [AUX Sel1].

EMEM LINK function

Select the <EMEM LINK> button in the transition area to execute a transition according to the pattern registered in the event memory. The next transition operation by the fader lever or the <AUTO>/<CUT> buttons becomes the operation of the event memory.

- Pause set using the mark is disabled.



NOTE

- The target to be played back by EMEM LINK is the background transition for ME (ME1 or ME2) which is controlled by the ME line to which the corresponding <EMEM LINK> button belongs. KEY is not played back.
- DSK, AUX, Clip, CBGD, and XPT are not played back with the EMEM LINK operation.
- The register memory last played back for ME (ME1 or ME2) of the EMEM LINK target is played back with the fader lever.
  The register memory can be changed in the multi-selection panel area before the fader lever operation. The register memory to be played back with EMEM LINK lights in red in the multi-selection panel area.
- When the register memory is ready for playback by the fader lever, the <EMEM LINK> button lights in the High tally color.
- If the register memory cannot be played back by the fader lever, such as when the register memory to be played back is not selected, the <EMEM LINK> button lights in the Low tally color.
- The selection button for the background wipe preset menu in the multi-selection panel will move to top left (pattern 1) when event memory is played back by EMEM LINK.

Macro memory

The macro memory is a function to record and play back a series of operations performed on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 and Menu Panel AV-HS60C3.

It enables recording and playback of a more detailed range including functions which are not covered by the shot memory and the event memory (such as input setting, output setting, and USK setting).

Recorded macros can be played by pressing the macro bus crosspoint buttons or a specific button where macro is attached.

NOTE

- As many as 81 recorded macros (9 pages × 9) can be registered in the register memory.
- Each register memory of a macro has the capacity of 127 KB, and can store approximately 3000 steps of operations depending on the operation.
- When an operation that takes time to process is recorded, next operation may not playback correctly. Insert a delay between the two operations as necessary. For the procedure to insert a delay, refer to “Recording to the work memory” (page 100).
- Macros may not be played back correctly after deleting and registering the plug-in software in the following case.
  - When menu operation added by the plug-in software is recorded in the macro register memory
  Record and register the operation again if necessary after deleting the applicable macro register memory.
- Macros may not be played back correctly after updating the version of the software in the following case.
  - When menu operation under the <SYS> button/<CONF> button on the top menu is recorded in the macro register memory
  Record and register to the macro register memory again after performing the software version update for the applicable operation.

Status displays

The [MACRO] indicator at the top portion of the Menu Panel AV-HS60C3 lights in red during macro recording, lights in green during playback, and lights in orange when playback is paused.

1 Select the <MEM> button → [MACRO] → [Macro] tab.

2 Check the [Status] column display.

[Rec]	[Rec] is displayed during macro recording. This has a blank display except during macro recording.
[Play]	The name of the macro currently playing is displayed during macro playback. This has a blank display except during macro playback.
[Pause]	The name of paused macro is displayed when the macro playback is paused. The display other than when the macro playback is paused will be blank.

3 Check the [Work Status] column display.

[Current Event]	Displays the number of current events in the work memory.
[Total Event]	Displays the total number of events recorded in the work memory.
[Used]	Displays the usage of the work memory. (Unit: Byte)
[Remain]	Displays the remaining capacity of the work memory. (Unit: Byte)

Recording to the work memory

Record macros in the work memory.

1 Select the <MEM> button → [MACRO] → [Macro] tab.

2 Select [New] in the [Edit] column to initialize the work memory.

- When this operation is performed, the macro that is currently in the work memory is deleted. If necessary, perform register memory registration.

3 Select [Rec] in the [Rec] column to enter the recording mode.

- When the operations you want to record are performed, they are recorded sequentially in the work memory. Each time an operation is recorded, the number displayed in [Total Event] increases.
- When a series of operations are performed with the fader lever or positioner, the last setting value is stored.
- When [Back Delete] is selected in the [Rec] column, the latest event being recorded is deleted, reducing the number shown in [Total Event] by one.

4 Select [Insert Delay] in the [Edit] column.

- The time set in [Delay Time] in the [Edit] is recorded as non-operation period.

5 Select [Insert Pause] in the [Edit] column.

- The pause status is recorded.

6 When the registration is complete, select [Stop] in the [Rec] column.

- This ends the recording mode.
- Data registered in the work memory is deleted when the power of the unit is turned off. Make sure to save data in the register memory.

Playing macros recorded to the work memory

You can play and confirm recorded macros in the work memory.

1 Select the <MEM> button → [MACRO] → [Macro] tab.

2 Select [Play] in the [Play] column.

- This plays the macro in the work memory.

3 Select [Play Cancel] in the [Status] column.

- This suspends macro playback.

4 Select [Play Resume] in the [Status] column.

- The macro playback is paused if [Insert Pause] event is included in the recorded macro.
  Macro playback will resume when [Play Resume] is pressed while paused.

NOTE

- After macro playback is suspended, the mode changes to the macro recording mode if [Rec] is selected in the [Rec] column. A new operation performed after this is added after the last event currently recorded. A new event cannot be inserted in the middle of a series of recorded operations.

Registering the macro register memory

Register macros recorded in the work memory in the register memory.

1 Select the <MEM> button → [MACRO] → [Register] tab.

2 Select [Store] in the [Register] column.

- The [Store] screen is displayed.

[ME1], [ME2], [DSK], [AUX], [MENU], [XPT], [Other]	Select the target.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Cancel]	Closes the [Store] screen without registering the target.
[OK]	Closes the [Store] screen after registering the target.

NOTE

- When target selection is performed, you can limit the target of the operation to be played during macro bus playback and macro attach playback (all operations in the work memory are registered in the register memory).
  - [ME1], [ME2], [DSK], [AUX]:
    This targets operations in the ME1 line, ME2 line, DSK, and AUX.
  - [MENU]:
    This targets operations on the Menu Panel AV-HS60C3 and in the multi-selection panel area.
  - [XPT]:
    This targets XPT selected operations.
  - [Other]:
    This targets operations in the VMEM F/S bus and DISP bus.

・A registered register memory can be overwritten.

Recalling the macro register memory (playback)

Recall macros in the work memory from the registered register memory.

1 Select the <MEM> button → [MACRO] → [Register] tab.

2 Select [Recall] in the [Register] column.

- The [Recall] screen is displayed.
- When [Recall] is selected, playback target items cannot be selected.
- All registered operations are recalled to the work memory regardless of the registered target item selected during macro register memory registration.

[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Cancel]	Closes the [Recall] screen without recalling the target.
[OK]	Closes the [Recall] screen after recalling the target.

Editing macro register memories

Delete a registered register memory or change file names.

1 Select the <MEM> button → [MACRO] → [Register] tab.

2 Select [Misc] in the [Register] column.

- The [Misc] screen is displayed.

[Rename]	Select [Rename] after selecting a file icon to change the file name using the on-screen keyboard.
[Delete]	Select [Delete] after selecting a file icon to delete the register memory.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]	Switches pages.
[Close]	Closes the [Misc] screen.

Playing back a macro bus on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

The playback trigger of a macro can be assigned to the KEY bus crosspoint buttons.

Assign the register memory of the macro to the crosspoint buttons of the macro bus (AV-HS60C1/AV-HS60C2: 1 to 24, AV-HS60C4: 1 to 16).

The assignment is shared between the macro busses of the ME1 and the ME2 within single Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

1 Select the <MEM> button → [MACRO] → [XPT Assign] tab.

- The macro register memories in the right column are assigned to the crosspoints in the left column.

[Panel-ID]	Select the target Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 from the [MainPanel], [SubPanel1], or [SubPanel2].
[Button Group]	Switches the page of the macro bus.
[Assign]	Assigns the macro register memories selected in the right column to the crosspoint buttons selected in the left column.
[Page Select]	Switches pages.

NOTE

・Select the <MCRO> button using the KEY bus selector buttons in the crosspoint area on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to play back the register memory of the macro memory assigned to the KEY bus crosspoint buttons.
At this time, the assigned macro name is displayed at the top of the source name display panel. If the <MCRO> is pressed and held, the assigned macro name is displayed in the middle of the source name display panel.

・The following settings can be selected in addition to the macro register memory in the right column.
- [Play Cancel]: Canceling the macro playback
- [Play Resume]: Resuming of paused macro playback
- [No Assign]: Canceling the setting assigned to the crosspoint button

Playing back using macro attach on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

A trigger to play back each register memory of the macro memory can be assigned to the following buttons.

Crosspoint buttons of ME1/ME2 (PGM/A bus, PST/B bus, KEY1 to KEY4 buses, AUX1 to AUX8 buses), and the <AUTO>, <CUT>, <KEY1 TRNS> to <KEY4 TRNS> buttons of ME1/ME2

1 Select the <MEM> button → [MACRO] → [Macro Attach] tab.

- The playback trigger buttons in the right column are assigned to the macro register memories in the left column.

[Insert]	Inserts the copy of the macro same as that of the line selected in the left column in the next line. The number of buttons to which a macro can be attached is a maximum four per register memory.

[Delete]	Deletes the line copied and inserted using [Insert] selected in the left column. The line cannot be deleted if there is only one register memory.
[Page]	Switches pages.
[Assign]	Assigns the playback trigger buttons in the right column to the macro register memories in the left column.
[Panel-ID]	Select the target Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 from the [MainPanel], [SubPanel1], or [SubPanel2].
[Block]	Select the blocks to have attach settings from [ME1], [ME2], [AUX1] to [AUX8].
[Bus]	Specifies the bus to have attach settings from [Key1] to [Key4], [A], [B]. The selection here is disabled when [CUT], [AUTO], [KEY1TRNS] to [KEY4TRNS] is selected in the right column.
[Timing]	Specifies the macro playback timing when the macro attached button is pressed. [Pre]: Operates the button function after completing the playback of the macro register memory. [Post]:Plays back the macro register memory after operating the button function. [Replace]: Plays back the macro register memory without operating the button function.

NOTE

- The <MCRO ATCH> button in the transition area on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 switches the enabled/disabled status of the macro attach function assigned to the relevant buttons in the ME.
  - When it is turned on, the macro attach function is enabled.
  - The button to which the macro attach function is assigned is illuminated in a specific color while it is on. The light color setting can be made from the <SYS> button on the top menu → [CTRL PANEL] → [Button Color] tab → [Macro Attach] in the [No Sel Other] column.

Resuming the macro playback

The macro playback is paused if [Insert Pause] is included in the recorded macro. Perform the following operation to resume to the paused macro playback.

1 Select the <MEM> button → [MACRO] → [Macro] tab.

2 Select the [Play Resume] button in the [Status] column.

- The paused playback will resume.

Key preset

It is a preset memory to store various settings for keys.

Operate in the KEY/DSK operation area in the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

Operating in the KEY/DSK operation area on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

Call/register/delete the key preset memory with the KEY/DSK preset memory (<1>/<2>/<3>/<4>) buttons.

■ Button operation

Short press: Recalls the data saved on the relevant button. (Recall)

Press and hold: It will perform the following operations depending on the setting of the <MEM> button → [KEY PRESET] → [Register] tab → [Config] column → [Long Push].

- Store: The current key setting is registered to the applicable button. (Store)
- Delete: The setting of the key registered to the applicable button is deleted. (Delete)

■ Button display

Low tally: The button recalled last time or registered last time

Key preset playback target settings

Details of the playback target (XPT, Effect, Trans) can be selected. This setting is common to all keys.

1 Select the <MEM> button → [KEY PRESET] → [Register] tab.

2 Select [On]/[Off] in [XPT]/[Key Effect]/[Key Trans] in the [Recall Sel] column.

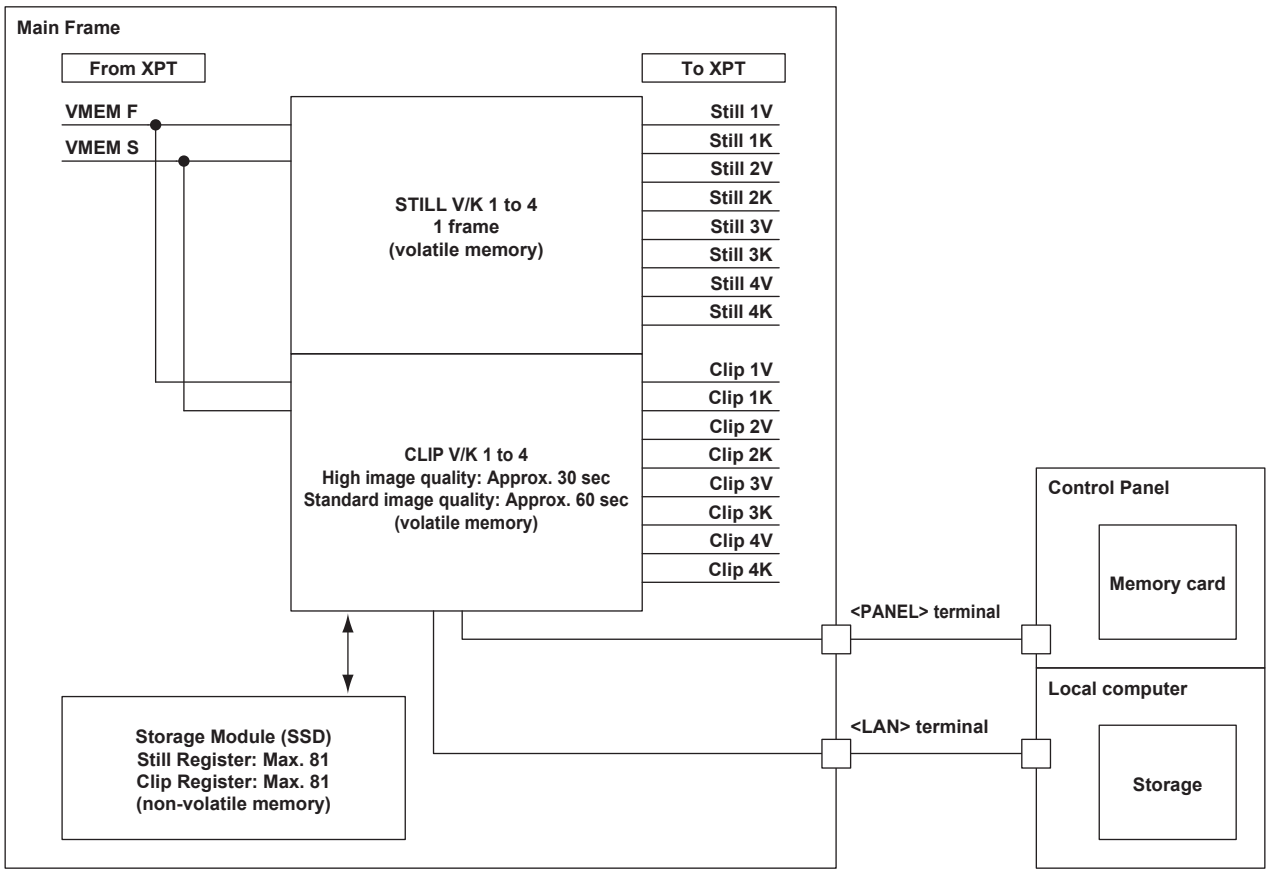
The items played when all settings are on are as follows:

[XPT]	Plays the source selection status in the key fill bus and key source bus when [On] is set.
[Key Effect]	Plays the following key decoration settings when [On] is set. • All settings of the <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Key Setting]/[PinP Adjust] tab • All settings of the <DSK MISC> button on the top menu → [DSK1] to [DSK4] → [Setting] tab • Settings of the <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Chroma] tab → [Adjust] column • Settings that disable the chroma key
[Key Trans]	Plays key transition settings when [On] is set. • All settings of the <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Transition]/[Key Pattern]/[Modify] tab • All settings of the <DSK MISC> button on the top menu → [DSK1] to [DSK4] → [Transition] tab

Video memory

The unit can store and use the still image memory (Still) and the moving image memory (Clip), each in four channels.

- Images with key signals can be saved in the video memory (still images and moving images).
- With the standard image quality, up to approximately 60 seconds of video (1800 frames in 1080/59.94i, 480/59.94i, 1500 frames in 1080/50i, 576/50i, 3600 frames in 720/59.94p, and 3000 frames in 720/50p) can be saved in the moving image memory per channel. With the high image quality mode, up to approximately 30 seconds of video (900 frames in 1080/59.94i, 480/59.94i, 750 frames in 1080/50i, 576/50i, 1800 frames in 720/59.94p, 1500 frames in 720/50p) can be saved in the moving image memory per channel.
- The number of seconds which can be saved in the moving image memory varies depending on the system format (frame rate).
- Audio data can be saved in the moving image memory.
- If the power is turned off or if the video format is changed, the data in the video memory will be deleted.
- Data of the video memory can be saved to and read from the Storage Module AV-HS60D1 (optional) installed on the Main Frame AV-HS60U1/ AV-HS60U2, a memory card of the control panel connected to the <PANEL> terminal, and computer connected to the <LAN> terminal.



NOTE

- There is a limitation on the function when the switcher mode is set to the 3G mode or the 4K mode. For details on the 3G mode or the 4K mode, refer to “Difference of function for each mode” (page 164).

Recording still images (Still)

Input images selected on the VMEM F/S buses can be recorded.

- Image data created using a computer can be loaded.
  For details, refer to “Operating the register memory” (page 105).
- This operation can be also performed in the multi-selection panel area.
  For details, refer to “Video memory menu” (page 43).

1 Select the <MEM> button → [STILL] → [Still] tab.

2 Select [Still1] to [Still4] in [Current Still], and select [Rec] in the [Rec1] column.

- When [Rec] is selected in the [Rec1] column, the source selected on the VMEM bus is recorded as still images for the selected channel.
  When the recording of the still images is completed, thumbnails of the still images are displayed on the thumbnail screen.

Various settings when recording still images (Still)

1 Select the <MEM> button → [STILL] → [Still] tab.

2 Select an item in [Key Enable] in the [Rec1] column.

- Set whether to record key signals at the same time.

[Off]	Does not record the key signals.

[On]	Records the key signals.

3 Select an item in [Input Disp] in the [Rec2] column.

- Set the video display method of the input bus for the output of the relevant channel.

[Input Disp]	[STILL] output
[Off]	The image recorded in the video memory is output.
[On]	The corresponding channel output becomes the selected image in the VMEM bus if [Input Disp] is set to [On]. If [Rec] in the [Rec1] column is pressed or if the channel is changed in [Current Still], this automatically turns [Off].

4 Select an item in [Still1] to [Still4] in the [Play Mode] column.

- Set the freeze mode when performing playback.

[Frame]	Plays back in frames. In case of interlace format, moving image sources flicker.
[Field]	Plays back in fields. In case of interlace format, the resolution is deteriorated.

Recording moving images (Clip)

Input images selected on the VMEM F/S bus can be recorded. The embedded audio data of the signal selected in the VMEM F bus can be recorded together with the recording of image.

- Image data created using a computer can be loaded.
  For details, refer to “Operating the register memory” (page 105).
- This operation can be also performed in the multi-selection panel area.
  For details, refer to “Video memory menu” (page 43).

1 Select the <MEM> button → [CLIP] → [Rec] tab.

2 Select [Clip1] to [Clip4] in [Current Clip], and then select [Rec] in the [Rec1] column.

- When [Rec] is selected in the [Rec1] column, the source selected on the VMEM bus is recorded as moving images for the selected channel.
  Recording completes when [Stop] is selected in the [Rec1] column, or the time set using [Limit Time] in the [Rec2] column has passed.
  When the recording of the moving images is completed, thumbnails of the moving images are displayed on the thumbnail screen.

Various settings when recording moving images (Clip)

1 Select the <MEM> button → [CLIP] → [Rec] tab.

2 Select an item in [Key Enable] in the [Rec1] column.

- Set whether to record key signals at the same time.

[On]	Records the key signals.
[Off]	Does not record the key signals.

3 Select an item in [Rec Enable] in the [Audio] column.

Set whether to record the embedded audio data of the signal selected in the VMEM F bus simultaneously.

[On]	Records the embedded audio data. • Sampling frequency: 48 kHz • Quantized bit: 16 bits • Recording channel: Ch1, Ch2
[Off]	Does not record the embedded audio data.

4 Select an item in [Input Disp] in the [Rec2] column.

- Switch the display mode of the output image of the corresponding channel.

[Input Disp]	[CLIP] output
[Off]	The image recorded in the video memory is output.
[On]	The corresponding channel output becomes the selected image in the VMEM bus if [Input Disp] is set to [On]. If [Rec] in the [Rec1] column is pressed or if the channel is changed in [Current Clip], this automatically turns [Off].

5 Select an item in [Loop] in the [Rec2] column.

- Set repeat of recording.

[Off]	Records moving images for the maximum recording time, and then stops the recording automatically. Set the maximum recording time using [Limit Time] in the [Rec2] column.
[On]	Continues recording moving images until the stop operation is performed. If either of the following operations is performed while recording is in progress, the moving images are recorded up to the last frame, after which recording stops. • Set [Loop] to [Off]. • Select [Stop] in the [Rec1] column.

6 Select an item in [Quality] in the [Rec2] column.

- Set the image quality of moving images to be recorded.

[High]	High image quality: Up to approximately 30 seconds (900 frames in 1080/59.94i and 750 frames in 1080/50i)
[Standard]	Standard image quality: Up to approximately 60 seconds (1800 frames in 1080/59.94i and 1500 frames in 1080/50i)

7 Set [Limit Time] in the [Rec2] column.

- Set the maximum recording time.

NOTE

- A discontinued sound is recorded when there is a fluctuation in the audio data in front and rear of the point the VMEM F bus signal is switched or the point where recording to moving image memory has stopped.
- If the signal selected in the VMEM F bus has the duration that the embedded data is not contained while recording a video, it is recorded as the data without audio.

Operating the register memory

Operate a register memory for the channel selected in [Current Still]/[Current Clip] from the <MEM> button on the top menu → [STILL], [CLIP] → [Register] tab.

- When the Storage Module AV-HS60D1 (optional) is mounted, 81 still images and 81 moving images can be saved ([Store]) and loaded ([Recall]) in the register memory area. Data saved in the Storage Module AV-HS60D1 (optional) is retained even if the power is turned off.
- This operation can be also performed in the multi-selection panel area.
  For details, refer to “Video memory menu” (page 43).
- Video memory can be saved and loaded in/from a memory card inserted in the memory card slot of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4
- Video memories can be saved and loaded in/from the internal storage of the local computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.

Loading image files

1 Select the <MEM> button → [STILL], [CLIP] → [Register] tab.

2 Select [Recall] in the [Register]/[SD] column.

- The [Recall] screen is displayed.

3 Change the screen display as necessary.

[Sort]	Sorts the file icon view in ascending or descending order by file number*1, file name, or date.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]*1	Switches pages.
[File Type]*2	Select the extension to display. For [STILL]: bmp, png, jpg (jpeg), tga, tiff (tif), gif For [CLIP]: clp
[Cancel]	Closes the [Recall] screen.

*1 Displayed only on the [Recall] screen in the [Register] column.

*2 Displayed only on the [Recall] screen in the [SD] column.

4 Select [OK].

- When [OK] is selected after selecting a file from the registered file icons, the image data is loaded in the relevant channel.

NOTE

- Operations with a local computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 are as follows:
  - If [Recall] is selected in the [Local] column, load operation can be performed by opening the file operation screen on the computer.
  - The communication between the Main Frame AV-HS60U1/AV-HS60U2 and the local computer may be disconnected when the file operation screen is left opened, and an error may be displayed in the browser. Perform the screen update in the browser if this occurs.
  - [SD] column operation cannot be performed. Loadable image type is png only.
- To load image files, set the <MEM> button → [STILL], [CLIP] → [Input Disp] in the [Rec2] column to [Off]. If [On] is set, the thumbnail image may not be displayed on the current icon properly.
- When [Create Thumbnail] is selected from the <MEM> button → [STILL], [CLIP] → [Register] tab → [SD] column, the thumbnail image is created in the memory card, and the thumbnail image will be displayed on the file icon in the [Recall] screen. Do not turn off the power of the unit or eject the memory card while the thumbnail image is being created.

Saving image files

1 Select the <MEM> button → [STILL], [CLIP] → [Register] tab.

2 Select [Store] in the [Register]/[SD] column.

- The [Store] screen is displayed.

3 Change the screen display as necessary.

[Sort]	Sorts the file icon view in ascending or descending order by file number*1, file name, or date.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]*1	Switches pages.
[File Type]*2	Select the extension to display. For [STILL]: bmp, png, jpg (jpeg), tga, tiff (tif), gif For [CLIP]: clp
[Cancel]	Closes the screen.

*1 Displayed only on the [Store] screen in the [Register] column.
*2 Displayed only on the [Store] screen in the [SD] column.

4 Select the icon for the register memory in which the image file will be saved.

5 Select [OK].

- The image data of the relevant channel is saved in a free register memory positioned after the selected file.
- A registered register memory cannot be overwritten. Delete the data on the [Misc] screen before registration.

NOTE

- Operations with a local computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 are as follows:
  - If [Store] is selected in the [Local] column, image files are saved in an internal storage of the computer.
  - [SD] column operation cannot be performed. Savable image format is png only.

Editing image files

Delete a register memory, or change file names.

1 Select the <MEM> button → [STILL], [CLIP] → [Register] tab.

2 Select [Misc] in the [Register]/[SD] column.

- The [Misc] screen is displayed.

3 Change the screen display as necessary.

[Rename]	Select [Rename] after selecting a file icon to change the file name using the on-screen keyboard.
[Delete]	Select [Delete] after selecting a file icon to delete the register memory.
[Protect]*1	Select [Protect] after selecting a file icon to switch on/off of the protection status for the corresponding file. Deleting the file or changing the file name cannot be performed for the protected file.
[Sort]	Sorts the file icon view in ascending or descending order by file number*1, file name, or date.
[View]	Select the display mode. [ALL]: Displays all the memory including the unregistered register memory. [Exist]: Displays only the registered register memory.
[Page]*1	Switches pages.
[File Type]*2	Select the extension to display. For [STILL]: bmp, png, jpg (jpeg), tga, tiff (tif), gif For [CLIP]: clp
[Close]	Closes the screen.

*1 Displayed only on the [Misc] screen in the [Register] column.
*2 Displayed only on the [Misc] screen in the [SD] column.

Using image files created on a computer

Appropriate image size

- Check the following appropriate sizes when creating a file.
  - HD/1080i: 1920×1080, HD/1080PsF: 1920×1080, HD/720p: 1280×720, SD/NTSC: 720×487, SD/PAL: 720×576
  - 3G/1080p: 1920×1080
- If the size of an image is not appropriate, the image is centered without resizing and is output from AV-HS6000. If the size is too large, then the image is displayed with the portion which does not fit the size cut out.

  If the size is too small, then the margin around the image is displayed with a black image.

  A file of the size which exceeds 1920×1080 pixels cannot be loaded.
- The pixels of images in SD format are not square, so the aspect ratio will be different when the images are displayed on the computer and when they are imported into the video memory. (The images will be vertically long in the NTSC system.)

  To keep the images true to their actual proportions, create the original image in 720×540 pixels, and for the NTSC system, use an image reduced to 720×487 pixels. For the PAL system, use images enlarged to 720×576 pixels.

Compatible file formats for still image data

The compatible file formats are as follows.

Bitmap (bmp), JPEG (jpg), TARGA (tga), TIFF (tif), GIF (gif), PNG (png)

Compatible file formats for moving image data

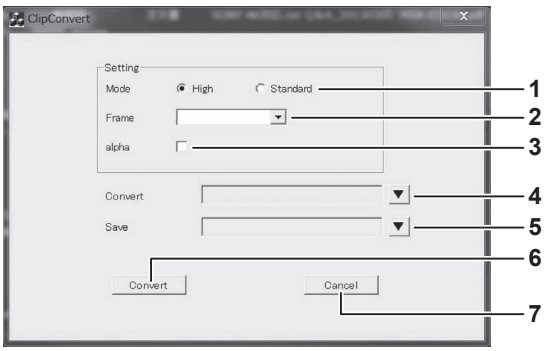
Moving image data handled by the unit is in the original format. “clp” is added to the extension of the file (clip file) for exchanging data using a memory card or a computer.

The sequential numbered still image files (TARGA format (tga)) can be converted to a clip file using a computer that has the AV-HS6000 ClipConvert software installed. Also, it can be made into a clip file with audio data when an audio file (WAV format (extension .wav)) is loaded at the time of conversion.

For the AV-HS6000 ClipConvert software,visit the following website.

http://pro-av.panasonic.net/ (English only)

■ Operation screen of the ClipConvert software



1 “High”/“Standard”

Select the image quality of the clip file to be generated.

High: Approximately 200 Mbps, Standard: Approximately 100 Mbps (other than 1080/59.94p, 1080/50p)

High: Approximately 400 Mbps, Standard:Approximately 200 Mbps (1080/59.94p, 1080/50p)

2 “Frame”

Select the frame rate of the clip file to be generated.

The clip file with different frame rate from the AV-HS6000 system format cannot be loaded by AV-HS6000.

In the interlace mode and PsF mode, one file is expanded into two fields; and in the progressive mode, one file is equivalent to one frame.

3 “alpha”

Select this check box when converting images with key signals.

4 “Convert”

Select a TARGA file.

- The TARGA files will be grouped when the TARGA files are in sequential number, and the name in front of the number will be displayed as the file name. To recognize as TARGA files in sequential number, add four digit numbers starting with 0001 in sequence after the file name excluding the file extension in advance.
- To generate a clip file with audio data, save the audio file (extension .wav) in the same folder as the folder where the TARGA files are saved. At this time, set the name of the audio file (part excluding the extension .wav) same as the name of the TARGA files (excluding the sequential number and extension .tga). The audio file with different name from the TARGA files is not loaded, and audio data will not be embedded in the clip file.
- Example) A clip file with audio data can be created by preparing following files and saving in the same folder.
  - picture0001.tga - picture0011.tga
  - picture.wav

5 “Save”

Specifies the destination and file name of the clip file to be generated.

The file name omitted in the display at the time the clip file is loaded to AV-HS6000 when a file name exceeding 8 characters (excluding file extension). It is recommended to specify the file name with 8 characters or less.

6 “Convert”

Executes the conversion. The clip file is generated when executed.

7 “Cancel”

Cancels the program.

NOTE

- TARGA files compressed in the RLE format cannot be used.
- Only the TARGA file in full color format can be used.
- To use in the 1080p format, prepare even number of TARGA files. The clip file with even number of frames by copying the last frame is generated when odd number of TARGA files are loaded.

■ Header formats of supported TARGA files

- Numbers with H are in hexadecimal notation.

Offset (bytes)	Length (bytes)	Header	Description of setting	Setting
0	1	ID field length	—	0H
1	1	Color map type	No color map	0H
2	1	Image type	Full color	2H
3	2	Color map origin	No restrictions	—
5	2	Color map length	No restrictions	—
7	1	Color map entry size	No restrictions	—

Offset (bytes)	Length (bytes)	Header	Description of setting	Setting
8	2	X coordinate of image	No restrictions	—
10	2	Y coordinate of image	No restrictions	—
12	2	Width of image	Varies depending on the image size.	—
14	2	Height of image	Varies depending on the image size.	—
16	1	Color depth	24 bits	18H
			32 bits	20H
17	1	Image descriptor	No restrictions	—

■ **Specification of audio file**

- Only the audio file that matches following specification can be used.
  - Sampling frequency: 48 kHz
  - Quantized: Linear PCM, 16 bits
  - Number of channels: 2 channels
  - WAV format (extension .wav)
- An audio data with silent data added to the end will be embedded to the clip file when the length of the audio data contained in the audio file is shorter than the length of the image data.
- An audio data with end deleted will be embedded to the clip file when the length of the audio data contained in the audio file is longer than the length of the image data.

Playing back moving images (Clip)

- Image data created using a computer can be loaded.
  For details, refer to “Operating the register memory” (page 105).
- This operation can be also performed in the multi-selection panel area.
  For details, refer to “Video memory menu” (page 43).

Playing back moving images

1 Select the <MEM> button → [CLIP] → [Play Clip1] to [Play Clip4] tabs.

2 Select [Play] in the [Play1] column.

- Playback of the moving images starts.
- [Current Time] displays the current playback position (time).
- When [Pause] is selected, playback of moving images is suspended. To resume playback, select [Play].

3 Select [Stop] in the [Play1] column.

- Playback stops.

Moving to the first frame or last frame

1 Select the <MEM> button → [CLIP] → [Play Clip1] to [Play Clip4] tabs.

2 Select [<<Lead]/[>>Last] in the [Play1] column.

[<<Lead]	Moves to the first frame.
[>>Last]	Moves to the last frame.

Setting the playback mode

1 Select the <MEM> button → [CLIP] → [Play Clip1] to [Play Clip4] tabs.

2 Select an item in [Link Target] in the [Play2] column.

- Set the link playback of Clip.

[Off]	Does not perform link playback.
[Auto]	Starts playback with the <AUTO> button in the transition area of ME set in [Link ME].
[KEY1] - [KEY4]	Starts playback with the <KEY1 ON> to <KEY4 ON> buttons, and <KEY1 TRNS> to <KEY4 TRNS> buttons of the ME set in [Link ME]. Starts playback only when the key corresponding to each button is off.
[Rec]	Playback starts if [Rec] is selected from the <MEM> button on the top menu → [CLIP] → [Rec] tab → [Rec1] column. Image data recorded in a different channel can be copied.
[Fader]	Links to the fader lever operation in the transition area of ME set in [Link ME], as well as the operation of the <AUTO> button. In this case, the playback speed of Clip changes according to the fader lever operation or the transition period from the operation of the <AUTO> button.

3 Select an item in [Link ME] in the [Play2] column.

- Select the ME where link playback of Clip is performed. Transitions can be executed using the fader lever or the <AUTO> button.

[ME1]	Links with ME1 transition operation.

[ME2]	Links with ME2 transition operation.

4 Select an item in [Mode] in the [Play3] column.

- Select the playback mode.

[Last]	Stops at the last frame after playback.
[Lead]	Returns to the first frame after playback.
[Loop]	Connects the last frame and the first frame to loop the playback.

5 Select an item in [Reverse] in the [Play3] column.

- Select the playback direction.

[Off]	Plays back moving images in the forward direction.
[On]	Plays back moving images in the reverse direction.

6 Select an item in [Variable] in the [Play3] column.

- Select the speed for variable speed playback. The available speeds are as follows.
  [×1], [×2], [×4], [×8], [×1/2], [×1/4], [×1/8]

7 Select an item in [Freeze Mode] in the [Play3] column.

- Select the image for when playback is stopped.

[Frame]	Stops at the frame image.
[Field]	Stops at the field image.

8 Select an item in [Play Enable] in the [Audio] column.

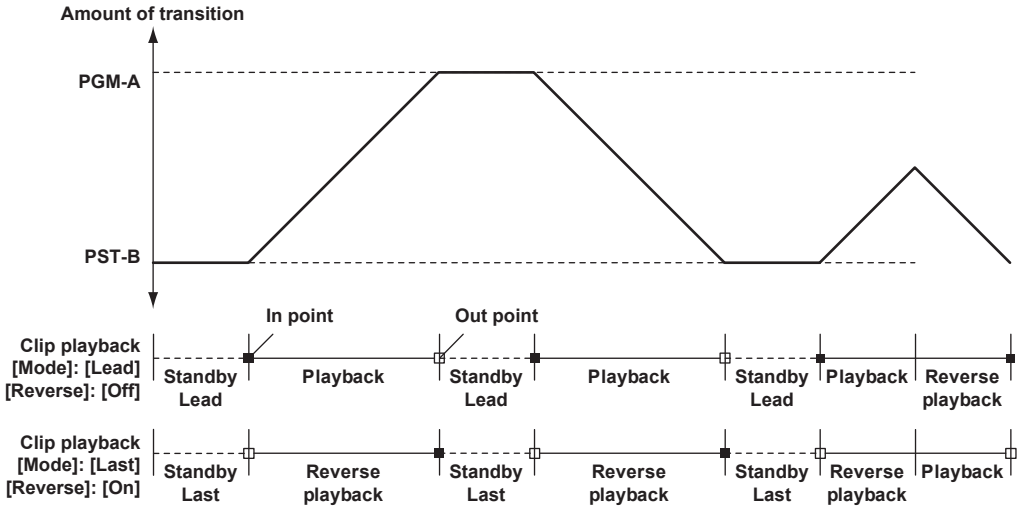
[On]	Plays back the audio data recorded in the moving image memory.
[Off]	Does not play back the audio data recorded in the moving image memory.

NOTE

- Audio data is not played back in the following cases.
  - When the playback of the moving image is stopped
  - When [Fader] is selected in [Link Target] in the [Play2] column
  - When [ON] is selected in [Reverse] in the [Play3] column
  - When anything other than [×1] is selected in [Variable] in the [Play3] column

■ **Relationship between the amount of transition by the fader lever and Clip playback**

- When [Fader] is selected in [Link Target], the following settings in the [Play1]/[Play2]/[Play3]/[Edit] column are disabled.
  [Play], [Pause], [Stop], [Variable], [<Step], [>Step]
- When [Mode] in the [Play3] column is set to [Loop], the operation of [Lead] is performed.



Trimming moving images

Set the position where the playback of the moving images is to start (IN point) and the position when it is to end (OUT point). Moving images that have been trimmed are played back from the IN point to the OUT point.

1 Select the <MEM> button → [CLIP] → [Play Clip1] to [Play Clip4] tabs.

2 Select an item in the [Play2]/[Edit] column.

- When [Pause] in the [Play1] column is selected after playback, moving images can be stopped at any frame.

[<Step]	Moves one frame back from the current frame.

[>Step]	Moves one frame forward from the current frame.
[Trim In]	Sets the current frame as the IN point of trimming.
[Trim Out]	Sets the current frame as the OUT point of trimming.
[Trim In CLR]	Releases the trimming settings of the IN point.
[Trim Out CLR]	Releases the trimming settings of the OUT point.

NOTE

- When a moving image is saved to a memory card or a local computer, and when a moving image is saved to a project file, only the trimmed portion is saved.
- When a moving image is saved in the register memory, the video before trimming and the trimming position are recorded.
- The same position cannot be specified for the IN point and the OUT point. The minimum unit for trimming is two frames.

Layout of display icons

Current icons

■ Current icon of still image

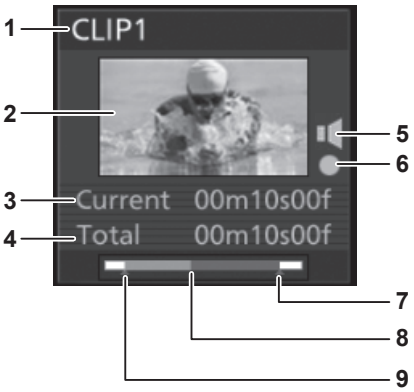
Select the <MEM> button on the top menu → [STILL] → [Still] tab, then the following icon is displayed at the top of the page. The icon is used for channel selection.

1 Channel name
Displays channels from [Still1] to [Still4].

2 Source with key mark
Indicates a source with key. This mark is displayed only for sources with key.

■ Current icon of moving image

Select the <MEM> button on the top menu → [CLIP] → [Play Clip1] to [Play Clip4]/[Rec] tabs, then the following icon is displayed at the top of the page. This icon is used for playback status display and channel selection.



1 Channel name
Displays channels from [Clip1] to [Clip4].

2 Thumbnail image
- The first frame image becomes the thumbnail image right after the image is recorded through the operation of the <MEM> button on the top menu → [CLIP] → [Rec] tab → [Rec1] column.
- The first frame image becomes the thumbnail image when the image file is loaded from the <MEM> button on the top menu → [CLIP] → [Register] tab.
- The frame which is currently playing is updated as the thumbnail image when [Get Thumbnail] is selected from the <MEM> button on the top menu → [CLIP] → [Play Clip1] to [Play Clip4] tab → [Edit] column.

3 Current frame

4 Recording time
Displays the recording time. If the clip has been trimmed, then the time from the IN point to the OUT point is displayed.

5 Source with audio data mark
Indicates this is a source with audio data.
This mark is displayed only for source with audio data.

6 Source with key mark
Indicates a source with key. This mark is displayed only for sources with key.

7 OUT point

8 Current playback position

9 IN point

Register icons

■ Icon of a still image file

Select the <MEM> button on the top menu → [STILL] → [Register] tab, and then the following file icon is displayed on the file selection screen.

1 Still image file name

2 Register memory number

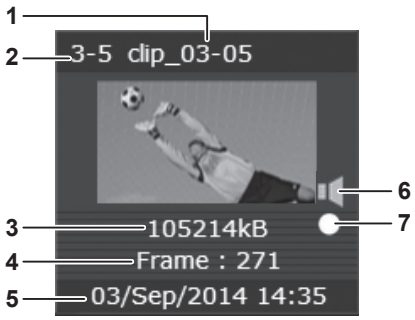
3 Time stamp when saved

4 Source with key mark
Indicates a source with key. This mark is displayed only for sources with key.

5 Image file size

■ Icon of a moving image file

Select the <MEM> button on the top menu → [CLIP] → [Register] tab, and then the following file icon is displayed on the file selection screen.



1 Moving image file name

2 Register memory number

3 Image file size

4 Number of frames in the moving image file

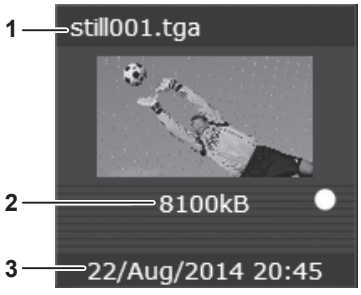
5 Time stamp when saved

6 Source with audio data mark
Indicates this is a source with audio data.
This mark is displayed only for source with audio data.

7 Source with key mark
Indicates a source with key. This mark is displayed only for sources with key.

■ File icon for SD card

Select the <MEM> button on the top menu → [CLIP]/[STILL] → [Register] tab, and then the following file icon is displayed on the file selection screen.



1 File name and extension

2 Image file size

3 Time stamp when saved in SD memory card

Operating in the multi-selection panel area

Record or play back the moving image memories (Clip) and still image memories (Still), and save or recall register memories.
For details, refer to “Video memory menu” (page 43).

Project management

The settings of the unit can be saved or loaded in/from three types of storage.

- Memory card (optional) inserted in the memory card slot of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 connected to the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2
- Storage Module AV-HS60D1 (optional) which can be mounted inside the Main Frame AV-HS60U1/AV-HS60U2
- Internal storage of the local computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2

NOTE

- To use a memory card in the unit, make sure to initialize the memory card using the unit. When the unit initializes the memory card, it formats the memory card (in compliance with the SD standard) and creates a dedicated directory. (All files saved on the memory card will be erased.) For details, refer to “Initializing a memory card” (page 115).

Saving data on a memory card or storage module

Save a project file in a memory card or the Storage Module AV-HS60D1 (optional).

1 Select the <PRJ> button → [PROJECT] → [SD/SSD] tab.

2 Select an item in [Save] in the [SD]/[SSD] column.

- The [Save] screen is displayed.

3 Change the screen display as necessary.

[Sort]	Sorts the file icon view in ascending or descending order by file number, file name, or date.
[View]	Fixed to icon display.
[Cancel]	Closes the [Save] screen.

4 Select the item to be stored.

[Setup]	• Current setting data • Key source preset, background wipe preset
[SMEM]	• Register memory of shot memory (Max. 81) • Key preset memory
[EMEM]	Register memory of event memory (Max. 81)
[Macro]	Register memory of macro memory (Max. 81)
[Still]	Four channels of current frame memory
[Clip]	Four channels of current frame memory
[Still Reg]	81 still images saved in the register memory area

5 Select [OK].

- The project file is saved in a memory card and the Storage Module AV-HS60D1 (optional).
- A file name is assigned automatically. To change the file name, use the [Misc] screen after the registration.
- Up to 100 project files can be saved in the Storage Module AV-HS60D1 (optional). The number of files that can be saved becomes less depending on the item to be stored in memory. If a file cannot be saved, perform registration after deleting the file in the [MISC] screen.

Loading data from a memory card or the storage module

Load a project file saved in a memory card or the Storage Module AV-HS60D1 (optional).

1 Select the <PRJ> button → [PROJECT] → [SD/SSD] tab.

2 Select an item in [Load] in the [SD]/[SSD] column.

- The [Load] screen is displayed.

3 Change the screen display as necessary.

[Sort]	Sorts the file icon view in ascending or descending order by file number, file name, or date.
[View]	Fixed to icon display.
[Cancel]	Closes the [Load] screen.

4 Select the item to load.

- Items not saved in the project file are displayed as [OFF].

[Setup]*	• Current setting data • Key source preset, background wipe preset
[SMEM]	• Register memory of shot memory (Max. 81) • Key preset memory
[EMEM]	Register memory of event memory (Max. 81)
[Macro]	Register memory of macro memory (Max. 81)
[Still]	Four channels of current frame memory
[Clip]	Four channels of current frame memory

[Still Reg]	81 still images saved in the register memory area

* To load a project file saved in the video format different from the current video format, always select [Setup].

5 Select [OK].

- The project file is loaded.

NOTE

- The project file cannot be loaded when [Clip] is selected as an item to load while playing back a moving image (Clip).

Editing data in a memory card or the storage module

Delete data saved in a memory card or the Storage Module AV-HS60D1 (optional), or change file names.

1 Select the <PRJ> button → [PROJECT] → [SD/SSD] tab.

2 Select an item in [Misc] in the [SD]/[SSD] column.

- The [Misc] screen is displayed.

[Rename]	Select [Rename] after selecting a file icon to change the file name using the on-screen keyboard.
[Delete]	Select [Delete] after selecting a file icon to delete the project file.
[Protect]	Select [Protect] after selecting a file icon to switch on/off of the corresponding project file. Deleting or changing the file name cannot be performed for the protected project file.
[Sort]	Sorts the file icon view in ascending or descending order by file number, file name, or date.
[View]	Fixed to icon display.
[Close]	Closes the [Misc] screen.

Saving and loading data in/from the local computer

Project files can be saved and loaded in/from the internal storage of the local computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.

Saving data in the local computer

1 Select the <PRJ> button → [PROJECT] → [Local] tab.

2 Select [without VMEM], [with Still], [with Still/Clip], or [Save All] in the [Save] column.

- The project file (extension: prj) is saved in an internal storage of the computer.

■ Data included in project files

- "✓" indicates savable, and "—" indicates unsavable.

	[without VMEM]	[with Still]	[with Still/Clip]	[Save All]
Current setting data, key source preset, background wipe preset	✓	✓	✓	✓
Key preset memory, shot memory, event memory, macro memory	✓	✓	✓	✓
Current video memory (Still × 4 channels)	—	✓	✓	✓
Current video memory (Clip × 4 channels)	—	—	✓	✓
81 still images saved in the register memory area	—	—	—	✓

Loading data from the local computer

1 Select the <PRJ> button → [PROJECT] → [Local] tab.

2 Select [Load] in the [Load] column.

- The file operation screen of the computer opens, and the project file can be loaded from the internal storage of the computer.
- The communication between the Main Frame AV-HS60U1/AV-HS60U2 and the local computer may be disconnected when the file operation screen is left opened, and an error may be displayed in the browser. Perform the screen update in the browser if this occurs.

NOTE

- The project file cannot be loaded from the local computer while playing back a moving image (Clip).

Storage

The settings of the unit can be saved or loaded in/from three types of storage.

- Memory card (optional) inserted in the memory card slot of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 connected to the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2
- Storage Module AV-HS60D1 (optional) which can be mounted inside the Main Frame AV-HS60U1/AV-HS60U2
- Internal storage of the local computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2

■ Table of savable and loadable files

- The meanings of the symbols indicating save and load targets are as follows.
  - 1: Memory card (optional)
  - 2: Storage Module AV-HS60D1 (optional)
  - 3: Local computer
  - R: Loadable
  - W: Savable
  - —: No save, no load

File	Save and load targets			Operation menu
	1	2	3	
Project file*	R/W	R/W	R/W	The <PRJ> button on the top menu → [PROJECT] → [SD/SSD]/[Local] tab
Video memory (Still file)	R/W	R/W	R/W	The <MEM> button on the top menu → [STILL] → [Register] tab
Video memory (Clip file)	R/W	R/W	R/W	The <MEM> button on the top menu → [CLIP] → [Register] tab
Bitmap data of source name	—	—	R	The <CONF> button on the top menu → [SOURCE NAME] → [Load Picture] tab
Plug-in software	R	—	R	The <PLUG IN> button on the top menu → [PLUGIN Maint] → [Load] tab
Update file	R	—	—	The <SYS> button on the top menu → [MAINTENANCE] → [Status] tab
Log file*	W	—	W	The <SYS> button on the top menu → [MAINTENANCE] → [Alarm] tab

* Extension of the file saved in a memory card is different from that saved in a local computer.

Memory card

Data can be saved and loaded in/from a memory card inserted in the memory card slot of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

- It may take up to 10 minutes to load moving images of a long recording time from a memory card or save them to a memory card.
- While loading images from a memory card or saving them to a memory card, operations other than switching crosspoints may be affected.
- The memory card cannot be used with the sub control panel.

■ Data folder configuration

Data is saved in the following folders on the memory card.

When data is to be loaded, first save the data in the respective folders, and then load the files.

- The number of files that can be saved in each folder is limited to a maximum 100 files.

File	Extension	Storage folder
Project file*	001, 002, ...	HS\COMM\PROJECT
Video memory (Still file)	bmp, png, jpg (jpeg), tga, tiff (tif), gif	HS\COMM\IMAGE
Thumbnail image of the video memory (Still file)	tbm, tpn, tjp, ttg, ttif, tgi	HS\COMM\IMAGE_THUMBNAIL
Video memory (Clip file)	clp	HS\COMM\CLIP
Thumbnail image of the video memory (Clip file)	png	HS\COMM\CLIP_THUMBNAIL
Plug-in software	plg	HS\COMM\PLUGIN
Update file	60d	HS\HS6000\UPDATE
Log file	log	HS\HS6000\LOG

* For project files, folders with File Name are created under the HS\COMM\PROJECT folder, and the project files are saved in the created folders. If the size of the project file to be saved is large, the file is divided and sequential numbers (001, 002, ...) are added to each file.

■ Handling precautions for memory card

- Do not turn off the power of the unit or eject the memory card while the memory card access LED is lighting. The memory card or data in the memory card may be damaged.
- The data saved on memory cards may be lost as a result of misplacing the cards or performing erroneous operations. It is recommended that valuable data be saved on a computer or other device.

Initializing a memory card

To use a memory card in the unit, make sure to initialize the memory card using the unit. When the unit initializes the memory card, it formats the memory card (in compliance with the SD standard) and creates a dedicated directory. (All files saved on the memory card will be erased.)

1 Select the <PRJ> button → [PROJECT] → [SD/SSD] tab.

2 Select an item in [Format] in the [SD] column.

- Operate following the confirmation screen.

Saving data on the memory card

Insert the memory card which has been initialized by the unit, into the memory card slot.

Ex) To save a log file

1 Select the <SYS> button → [MAINTENANCE] → [Alarm] tab.

2 Select an item in [Log File] in the [Log] column.

- The [Save] screen is displayed.

[Sort]	Sorts the file icon view in ascending or descending order by file number, file name, or date.
[View]	Fixed to icon display.
[File Type]	Fixed to file type. The name of the folder where a log file is saved becomes the file name of the log file. File names are assigned automatically as follows. hs001.log to hs100.log
[Cancel]	Closes the [Save] screen.

3 Select [OK].

- The file is saved.

NOTE

- For details on the data save destination, refer to “Data folder configuration” (page 115).
- For details on saving project files, refer to “Project management” (page 113).
- For details on saving image files in the video memory (Still, Clip), refer to “Video memory” (page 103).
- For details on saving activation files, refer to “Expansion of the chroma key function” (page 158).

Loading data from the memory card

Insert the memory card on which the data is saved in a specified folder into the memory card slot.

Data stored in other folders will not be recognized by the unit.

Ex) When loading the update file

1 Select the <SYS> button → [MAINTENANCE] → [Status] tab.

2 Select an item in [Update File] in the [Update] column.

- The [Load] screen is displayed.

[Sort]	Sorts the file icon view in ascending or descending order by file number, file name, or date.
[View]	Fixed to icon display.
[File Type]	Fixed to file type.
[Cancel]	Closes the [Load] screen.

3 Select a file icon, and select [OK].

- The file is loaded.

NOTE

- For details on the data save destination, refer to “Data folder configuration” (page 115).
- A file name can contain a maximum 32 characters.
- The characters that can be used in a file name are single-byte alphanumeric characters and single-byte symbols. The characters that can be used are as follows.
  A to Z, a to z, 0 to 9, ! # $ % & ' ( ) - . @ ^ _ ` { }
- If the name of the file to be loaded consists of more than eight characters, the unit displays a shortened version of the file name.
- For details on loading project files, refer to “Project management” (page 113).
- For details on loading image files from the video memory (Still, Clip), refer to “Video memory” (page 103).
- For details on loading plug-in software, refer to “Plug-in software” (page 172).

Deleting files on the memory card

To delete unnecessary project files and video memory (Still, Clip) files, select [Delete] on the [Misc] screen. To delete unnecessary files of other functions, delete using the computer. (page 106)

Storage Module

Project files and image files in the video memory can be saved and loaded in/from the optional Storage Module AV-HS60D1 which is mounted inside the Main Frame AV-HS60U1/AV-HS60U2.

NOTE

- For details on saving and loading project files, refer to “Project management” (page 113).
- For details on saving and loading image files of the video memory (Still, Clip), refer to “Video memory” (page 103).

■ Displaying the mounting status of the storage module

Use the system menu to display the mounting status on the unit of the Storage Module AV-HS60D1 (optional).

For details, refer to “Installation condition of the Storage Module” (page 158).

■ Initializing the storage module

Initialize data saved in the Storage Module AV-HS60D1 (optional).

For details, refer to “Initializing the Storage Module AV-HS60D1” (page 159).

Saving and loading data in/from the local computer

Only the menu of the local computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 is displayed.

NOTE

- For details on saving and loading project files, refer to “Project management” (page 113).
- For details on saving and loading image files of the video memory (Still, Clip), refer to “Video memory” (page 103).

Chapter 6 Input/Output Signal Settings

This chapter describes the input/output signal settings.

Setting input signals

[SDI IN 1] to [SDI IN 32] are used for SDI signal input.

[DVI IN 1] and [DVI IN 2] are used for DVI-D signal input.

- To configure the input signal settings, select the <IN OUT> button on the top menu → [SDI IN]/[DVI IN].

NOTE

- There is a limitation on the function when the switcher mode is set to the 3G mode or the 4K mode. For details on the 3G mode or the 4K mode, refer to “Difference of function for each mode” (page 164).

■ List of settings by input signal

- “✓” indicates enabled, and “—” indicates disabled.

	[FS]	[Mode]	[Frame delay]	[Freeze Mode], [Freeze]	Source name setting*1	Color corrector*2	[Up Converter]
[SDI IN 1] - [SDI IN 24]	✓	✓	—	✓	✓	—	—
[SDI IN 25], [SDI IN 26], [SDI IN 29], [SDI IN 30]	✓	✓	—	✓	✓	✓	—
[SDI IN 27], [SDI IN 28], [SDI IN 31], [SDI IN 32]	✓	✓	✓	✓	✓	✓	✓
[DVI IN 1], [DVI IN 2]	Always enabled	—	—	✓	✓	—	—

*1 For details, refer to “Setting the source name” (page 132).

*2 For details, refer to “Color corrector” (page 86).

Setting the frame synchronizer

The frame synchronizer can be set enabled/disabled for each input.

- The frame synchronizer for DVI input is always enabled, and setting cannot be changed.

1 Select the <IN OUT> button → [SDI IN] → [Frame Buffer] tab.

2 Select an item in [FS] in the [SDI IN 1] to [SDI IN 32] columns.

[Strict]	Enables the frame synchronizer function. When the signal different from the system format is input, the screen becomes black.
[Acceptable]	Enables the frame synchronizer function. Even when the signal different from the system format is input, the screen does not become black. The images output at this time may be disturbed. VANC and HANC data will be deleted.
[Off]	Disables the frame synchronizer function.

- When the output signal phase is set to [0H], [FS] cannot be set to [Off].
  For details, refer to “Setting the output phase” (page 141).

NOTE

- Line synchronizer function is active while the frame synchronizer function is set to [Off].
- The line synchronizer function automatically adjusts the input video signal phase to the horizontal sync signal phase.
  For details, refer to “Setting the output phase” (page 141).
- The screen becomes black in the following combinations even if [Acceptable] is selected in [FS] in the [SDI IN 1] to [SDI IN 32] columns.
  - When the system format frequency is 59.94i, 50i, 29.97Psf, or 25Psf, and the input signal frequency is 59.94p or 50p
  - When the system format frequency is 59.94p or 50p, and the input signal frequency is 59.94i, 50i, 29.97Psf, or 25Psf

Setting the input mode

The mode can be set for each input only when HD is selected as the system format.

The input mode is always set to [Normal] when SD is selected as the system format.

1 Select the <IN OUT> button → [SDI IN] → [Frame Buffer] tab.

2 Select an item in [Mode] in the [SDI IN 1] to [SDI IN 32] columns.

- Set the input mode.

[Normal]	Input signals in conformity with the system format take effect.
[Dot by Dot]	When SD signals with the same frame rate as the system format have been input, they are input on a dot by dot (actual size) basis without up-conversion. (This can be set only when the system format is 1080i) In this mode, there is minimal deterioration in the image quality and, as such, the mode is used to combine sources in the SD format using the PinP function.
[U/C]	When HD is selected as the system format and SD signals with the same frame rate as the system format have been input, the signals are up-converted. When HD signals are input, the screen becomes black. • This item is displayed when the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column is selected.
[Auto]	Input signals in conformity with the system format are enabled. When HD is selected as the system format, whether the input signal is HD or SD is determined. The HD signal is handled as [Normal], and the SD signal is handled as [U/C]. In [Auto] mode, the images may be disturbed when the input signals are switched. • This item is displayed when the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column is selected.

NOTE

- When the frame synchronizer function is [Off], if [Dot by Dot], [U/C], and [Auto] are set, the frame synchronizer function is automatically set to [Strict].
- When [Freeze] is set to [On] in the [SDI IN 1] to [SDI IN 32] columns, the input mode cannot be changed.

Setting the delay amount

The input signals can be delayed.

- This function is enabled when [FS] in the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column is set to an item other than [Off].

1 Select the <IN OUT> button → [SDI IN] → [Frame Buffer] tab.

2 Set [Frame delay] in the [SDI IN 1] to [SDI IN 32] columns.

- Set the input signal delay amount in a range between [0F] and [8F].

Freezing input signals

The input signals can be frozen and used. While signals are frozen, the tally signals of the corresponding input will not be output.

Setting the freeze mode

1 Select the <IN OUT> button → [SDI IN] → [Frame Buffer] tab.

2 Select an item in [Freeze Mode] in the [SDI IN 1] to [SDI IN 32] columns.

- An item can also be selected while an image is frozen.

[Frame]	Freezes the images frame by frame.
[Field]	Freezes the images field by field. This is used to freeze moving images. With interlace signals, however, diagonal lines appear jagged.

Setting freeze

1 Select the <IN OUT> button → [SDI IN] → [Frame Buffer] tab.

2 Select an item in [Freeze] in the [SDI IN 1] to [SDI IN 32] columns.

[On]	Freezes the input signals.
[Off]	Does not freeze the input signals.

- The [F] mark appears in front of the source name when the signals set for output of MultiView displays are frozen.
- When the unit is used with the frame synchronizer function [Off], the output images may be disturbed when freezing is executed, but the frozen images will not be adversely affected.
- If the freeze setting is set to [On] while the frame synchronizer function is set to [Off], the frame synchronizer function is automatically set to [Strict].

Setting the source name

The source names displayed on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 and the MultiView display can be set from the <CONF> button on the top menu → [SOURCE NAME] → [Panel Name]/[MV Name] tab.

For details, refer to “Setting the source name” (page 132).

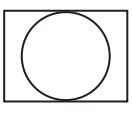
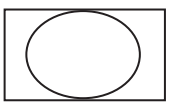
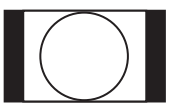
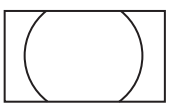
Setting the up-converter

In the [SDI IN 27], [SDI IN 28], [SDI IN 31], [SDI IN 32] columns, configure the built-in up-converter setting.

1 Select the <IN OUT> button → [SDI IN] → [Up Converter] tab.

2 Select an item in [Scale] in the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column.

- Select the scaling system.

Item	Description	Input image (SD)	System image (HD)
[Squeeze]	Enlarges the image both horizontally and vertically to fill the entire screen.		
[Edge Crop]	Maintains the aspect ratio of the image, and enlarges the image in accordance with the vertical resolution. Black images are added at the left and right.		
[Letter Box]	Maintains the aspect ratio of the image, and enlarges the image in accordance with the horizontal resolution. The image is cropped at the top and bottom.		

3 Select an item in [Motion Detect] in the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column.

- Set the image movement detection sensitivity.

[3] is the standard setting. Set this closer to [1] to configure it toward still images, and to [5] to configure it toward moving images.

4 Select an item in [Sharp] in the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column.

- Set the extent of the edge sharpness for the images.

[3] is the standard setting. Set this closer to [1] for less sharp edges, and to [5] for sharper edges.

5 Set [Size] in the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column.

- Adjust the input image size (100% to 110%).

Fine-tuning image positions

Fine-tune image positions when [Edge Crop] is selected for the scaling method.

1 Select the <IN OUT> button → [SDI IN] → [Up Converter] tab.

2 Select an item in [Edge Crop Pos.] in the [SDI IN 27]/[SDI IN 28]/[SDI IN 31]/[SDI IN 32] column.

[Center]	Positions the image at the center, and adds a black image at the left and right.
[Right]	Positions the image at the right, and adds a black image at the left.
[Left]	Positions the image at the left, and adds a black image at the right.

Setting DVI input signals

Configure the DVI input signal setting. Signals with the available resolution are as follows.

- XGA (1024×768)/60 Hz, WXGA (1280×768)/60 Hz, SXGA (1280×1024)/60 Hz, WSXGA+ (1680×1050)/60 Hz, UXGA (1600×1200)/60 Hz, WUXGA (1920×1200)/60 Hz, 1080/59.94p (1920×1080)/59.94 Hz, 1080/50p (1920×1080)/50 Hz, 1080/59.94i (1920×1080)/59.94 Hz, 1080/50i (1920×1080)/50 Hz, 720/59.94p (1280×720)/59.94 Hz, 720/50p (1280×720)/50 Hz

NOTE

- If signals with any other resolutions or frequencies are input, the signals cannot be imported correctly. The output images in this case may be black or disturbed.
- The <DVI-D IN1>/<DVI-D IN2> terminals do not support HDCP (High-bandwidth Digital Content Protection).

Setting the scaling method

1 Select the <IN OUT> button → [DVI IN] → [Frame Buffer] tab.

2 Select an item in [Scale] in the [DVI IN 1]/[DVI IN 2] column.

- Select the scaling method.

[Full]	Enlarges or reduced the input image in accordance with the system resolution. (The aspect ratio is not maintained. The increased or reduced ratio in vertical and horizontal directions will differ.)
[Fit-V]	Maintains the aspect ratio of the input image, and enlarges or reduces the image in accordance with the vertical resolution.
[Fit-H]	Maintains the aspect ratio of the input image, and enlarges or reduces in accordance with the horizontal resolution.

Setting the freeze method

1 Select the <IN OUT> button → [DVI IN] → [Frame Buffer] tab.

2 Select an item in [Freeze Mode] in the [DVI IN 1]/[DVI IN 2] column.

- An item can also be selected while an image is frozen.

[Frame]	Freezes the images frame by frame.
[Field]	Freezes the images field by field.

Setting freeze

1 Select the <IN OUT> button → [DVI IN] → [Frame Buffer] tab.

2 Select an item in [Freeze] in the [DVI IN 1]/[DVI IN 2] column.

[On]	Freezes the input signals.
[Off]	Freezes the input signals.

Converting the level of the DVI input signal

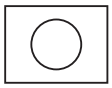
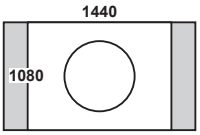
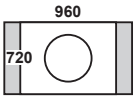
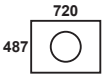
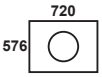
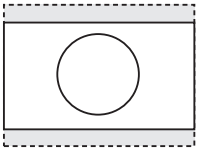
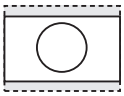
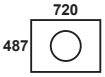
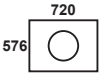
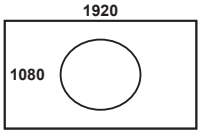
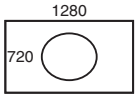
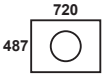
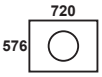
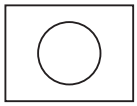
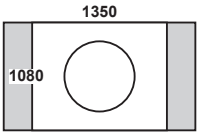
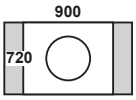
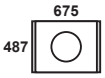
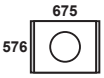
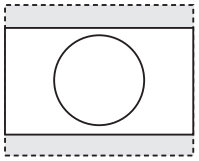
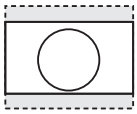
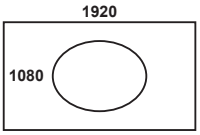
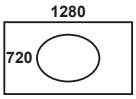
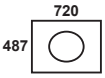
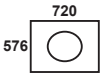
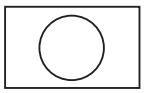
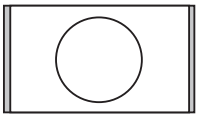
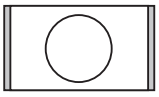
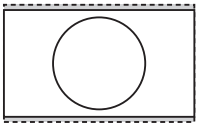
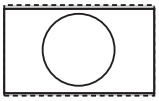
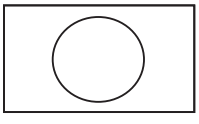
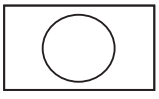
Settings are performed according to the specifications of the device connected to the unit.

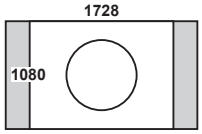
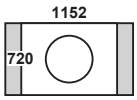
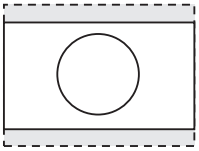
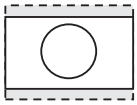
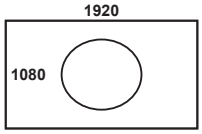
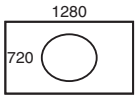
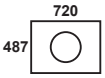
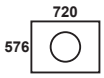
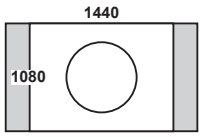
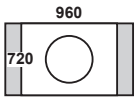
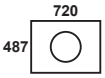
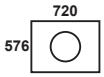
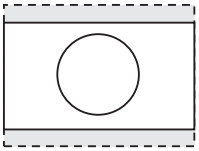
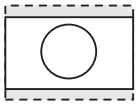
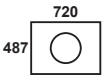
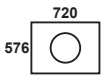
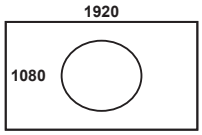
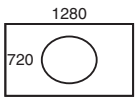
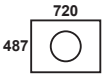
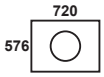
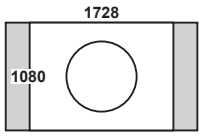
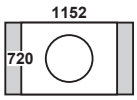
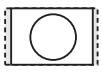
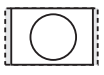
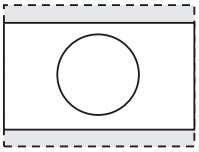
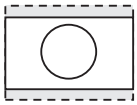
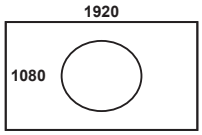
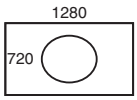
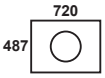
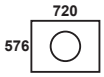
1 Select the <IN OUT> button → [DVI IN] → [Frame Buffer] tab.

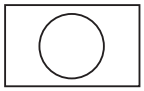
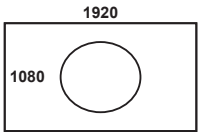
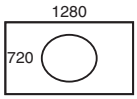
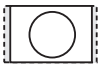
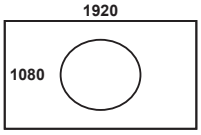
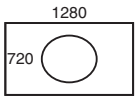
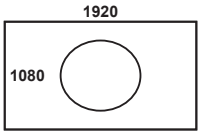
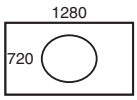
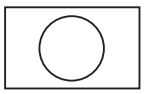
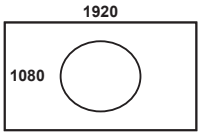
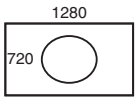
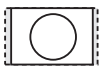
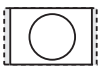
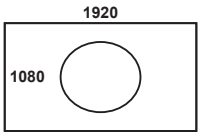
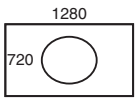
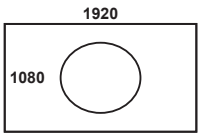
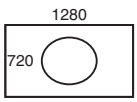
2 Select an item in [Limited] in the [DVI IN 1]/[DVI IN 2] column.

[OFF]	Does not convert the DVI input signal level. Set this when the connected device outputs the DVI signal in the 0 to 255 (8 bit) range.
[ON]	Converts the DVI input signal level. Set this when the connected device outputs the DVI signal in the 16 to 235 (8 bit) range.

■ **List of DVI input scaling sizes**

DVI format	[Mode]	HD/1080i 1920×1080	HD/720p 1280×720	SD/NTSC 720×487	SD/PAL 720×576
XGA (1024×768) 	[Fit-V]				
	[Fit-H]				
	[Full]				
SXGA (1280×1024) 	[Fit-V]				
	[Fit-H]				
	[Full]				
WXGA (1280×768) 	[Fit-V]				
	[Fit-H]				
	[Full]				

DVI format	[Mode]	HD/1080i 1920×1080	HD/720p 1280×720	SD/NTSC 720×487	SD/PAL 720×576
WSXGA+ (1680×1050)	[Fit-V]				
	[Fit-H]				
	[Full]				
UXGA (1600×1200)	[Fit-V]				
	[Fit-H]				
	[Full]				
WUXGA (1920×1200)	[Fit-V]				
	[Fit-H]				
	[Full]				

DVI format	[Mode]	HD/1080i 1920×1080	HD/720p 1280×720	SD/NTSC 720×487	SD/PAL 720×576
1080/59.94p 1080/50p 1080/59.94i 1080/50i (1920×1080) 	[Fit-V]				
	[Fit-H]				
	[Full]				
720/59.94p 720/50p (1280×720) 	[Fit-V]				
	[Fit-H]				
	[Full]				

: Black images are inserted here.

: The parts of the images protruding in these areas are cropped.

Displaying video input signal information

Displaying the SDI input signal information

Display the information concerning the SDI input signal images.

- The information cannot be changed.

1 Select the <IN OUT> button → [SDI IN] → [Status] tab.

2 Check the [SDI IN 1] to [SDI IN 32] columns.

[Format]	Displays the input format. When there is no input signal, [No signal] is displayed. For formats that are not supported, [Undefined] is displayed. If horizontal pixels are the same, false detection may occur.
[Audio]	Displays the presence or absence of audio packets in the audio channels 1 to 8. [*]: audio packet is present; [•]: audio packet is absent. Ex) When only channels 1 to 4 have audio packets, the following is displayed. [**** ••••]

Displaying the DVI input signal information

Display the information concerning the DVI-D input signal images.

- The information cannot be changed.

1 Select the <IN OUT> button → [DVI IN] → [Status] tab.

2 Check columns from [DVI IN 1]/[DVI IN 2].

[Size]	Indicates the pixel count of the image.
[Dot Clock]	Indicates the dot clock frequency of the image.
[H-Frequency]	Indicates the horizontal frequency of the image.
[V-Frequency]	Indicates the vertical frequency of the image.

Setting output signals

[SDI OUT 1] to [SDI OUT 16] are used for SDI signal output.
The functions differ depending on the output signals.

NOTE

- There is a limitation on the function when the switcher mode is set to the 3G mode or the 4K mode. For details on the 3G mode or the 4K mode, refer to “Difference of function for each mode” (page 164).

■ **List of settings by output signal**

- “✓” indicates enabled, and “—” indicates disabled.

	[Assign]	Color corrector*	[Down Converter]
[SDI OUT 1] - [SDI OUT 12]	✓	—	—
[SDI OUT 13], [SDI OUT 15]	✓	✓	—
[SDI OUT 14], [SDI OUT 16]	✓	✓	✓

* For details, refer to “Color corrector” (page 86).

Assigning output signals

Assign output signals to [SDI OUT 1] through [SDI OUT 16].

1 Select the <IN OUT> button → [SDI OUT] → [Assign] tab.

2 Set the output signals to assign.

- Output signals that can be assigned are as follows.

ME1PGM, ME2PGM, DSKPGM1, DSKPGM2	Outputs an image with the wipe, mix, key, downstream key or other effect to the switcher's main line output.
DSKPVW1, DSKPVW2	Outputs the DSK preview signal with the ME1PVW or ME2PVW output signal in background.
AUX1 - AUX16	Outputs the signal selected by the 16 lines of AUX buses ([AUX1] to [AUX16]).
ME1CLN, ME2CLN, DSK1CLN, DSK2CLN, DSK3CLN, DSK4CLN	Outputs clean signals before key effects were added. ME1CLN and ME2CLN signals can be switched to the Key Out signals which are used for key combination.
MV1 - MV4	Outputs the MultiView display signal. Multiple input and output signals are reduced and output to a single screen. (page 127)
ME1KEYPVW, ME2KEYPVW, SEL KEYPVW	Outputs the preview signal exclusively for the key.
ME1PVW, ME2PVW	Outputs the preview signals for BKGD, KEY1 to KEY4 which were selected in the next transition.

- For details on ME/DSK output signal settings, refer to “Setting the ME output and DSK output” (page 148).

Setting the down-converter

For [SDI OUT 14], [SDI OUT 16], the down-converter is available.
When the system format is 1080/59.94i, 720/59.94p, the image is output in 480/59.94i format.
When the system format is 1080/50i, 720/50p, the image is output in 576/50i format.
This function cannot be selected when the system format is SD (480/59.94i, 576/50i).

1 Select the <IN OUT> button → [SDI OUT] → [Down Converter] tab.

2 Select an item in [Enable] in the [SDI OUT 14]/[SDI OUT 16] column.

[Off]	Disables the down-converter.
[On]	Enables the down-converter.

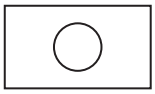
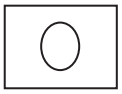
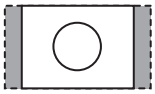
3 Select an item in [Limit] in the [SDI OUT 14]/[SDI OUT 16] column.

- Set the color range.

[Off]	Does not restrict the color range.
[108%]	Restricts the amplitude level of the colors (R, G, and B) to 0% to 108%.
[104%]	Restricts the amplitude level of the colors (R, G, and B) to 0% to 104%.
[100%]	Restricts the amplitude level of the colors (R, G, and B) to 0% to 100%.

4 Select an item in [Scale] in the [SDI OUT 14]/[SDI OUT 16] column.

- Select the scaling system.

Item	Description	System image (HD)	Output image (SD)
[Squeeze]	Reduces the image both horizontally and vertically so that the aspect ratio is set to 4:3.		
[Edge Crop]	Maintains the aspect ratio of the image, and reduces the image in accordance with the vertical resolution. The image is cropped at the left and right.		
[Letter]	Maintains the aspect ratio of the image, and reduces in accordance with the horizontal resolution. Black images are added at the top and bottom.		

5 Select an item in [Delay] in the [SDI OUT 14]/[SDI OUT 16] column.

- Set the delay time of the output.

[90H] ([75H])	When the system format is 1080/59.94i, the image is delayed from the system image (HD) by 90H, and output. When the system format is 720/59.94p, the image is delayed from the system image (HD) by 90H+1F, and output. When the system format is 1080/50i, the image is delayed from the system image (HD) by 75H, and output. When the system format is 720/50p, the image is delayed from the system image (HD) by 75H+1F, and output. When the system format is 1080/50i or 720/50p, 75H is displayed in the menu.
[1F]	The image is output in-phase with a delay of 1 frame from the system image (HD). For details on the phase and delay amount, refer to “Setting the output phase” (page 141).

6 Select an item from [1] to [5] in [Sharp] in the [SDI OUT 14]/[SDI OUT 16] column.

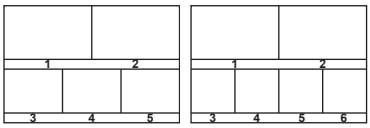
- Set the extent of the edge sharpness for the images. Set this closer to [5] for sharper edges.

Setting MultiView displays

The unit has 4 lines of MultiView display that can be split up to 16 screens.

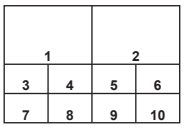
Setting the screen layout

Select the layout of the split-screen from the following ten in [Split] of the [Pattern] column.

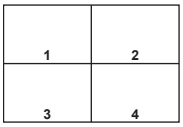


[5-aSplit]

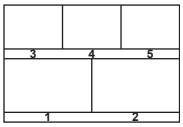
[6-aSplit]



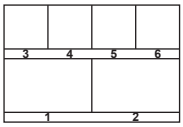
[10-aSplit]



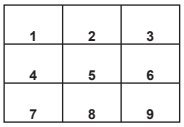
[4Split]



[5-bSplit]

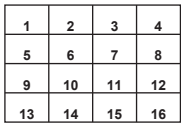


[6-bSplit]

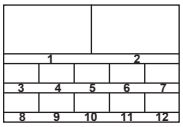


[9Split]

[10-bSplit]



[16Split]



[12Split]

1 Select the <MV> button → [MV1-4] → [MV1] to [MV4] tabs.

2 Select an item in [Split] in the [Pattern] column.

- Select the split-screen layout.
- [12Split] cannot be selected when the video format is set to [720/59.94p], [720/50p], [480/59.94i], or [576/50i].

3 Select an item in [Size] in the [Pattern] column.

- Set the size mode of the split screens.

[Fit]	The size of the split frame is the same as the split-screen size.
[SQ]	The split-screen size is smaller than the split-frame size, and the source names, level meter, etc. are displayed outside the split screen.

4 Select an item in [Assign] in the [Pattern] column.

- The assign setting screen for the sub-screen is displayed.
- Signals that can be assigned: SDI IN1 to SDI IN32, DVI IN1 to DVI IN2, Still 1V to Still 4V, Still 1K to Still 4K, Clip 1V to Clip 4V, Clip 1K to Clip 4K, CBAR, Black, CBGD1, CBGD2, ME1PGM, ME1PVW, ME1CLN, ME1KEYPVW, ME2PGM, ME2PVW, ME2CLN, ME2KEYPVW, DSKPGM1, DSKPGM2, DSKPVW1, DSKPVW2, DSK1CLN to DSK4CLN, SEL KEYPVW, MV1 to MV4, AUX1 to AUX16, Clock, LTC

NOTE

- When an input signal (SDI IN1 to SDI IN32, DVI IN1 to DVI IN2, Still 1V to Still 4V, Still 1K to Still 4K, Clip 1V to Clip 4V, Clip 1K to Clip 4K, CBAR, Black, CBGD1, CBGD2) is selected, the source name set from the <CONF> button → [SOURCE NAME] → [Panel Name]/[MV Name] tab is displayed. If the input signal is selected in the AUX bus (AUX1 to AUX16), the first 4 letters of the source name are displayed in [ ].
  - When SDI IN1 (source name: CAM1) is selected in AUX1: AUX1[CAM1]
  - When SDI IN2 (source name: CAMERA2) is selected in AUX2: AUX2[CAME]
- When MV1 to MV4 are displayed on the sub-screen of the MultiView display, the images are looped as if two mirrors were facing each other.

Setting the split frame and characters

Set the frame, character luminance, and background of the split screens to be displayed on the MultiView display.

1 Select the <MV> button → [MV1-4] → [MV1] to [MV4] tabs.

2 Select an item in [Frame] in the [MV Frame] column.

- Set the luminance and display of the split frames.
  Select from [Off], [LUM 0%], [LUM 25%], [LUM 50%], [LUM 75%], and [LUM 100%].

3 Select an item in [Character] in the [MV Frame] column.

- Set the luminance and display of the characters.
  Select from [Off], [LUM 0%], [LUM 25%], [LUM 50%], [LUM 75%], and [LUM 100%]. When [Off] is selected, the character background is not displayed.

4 Select an item in [Label] in the [MV Frame] column.

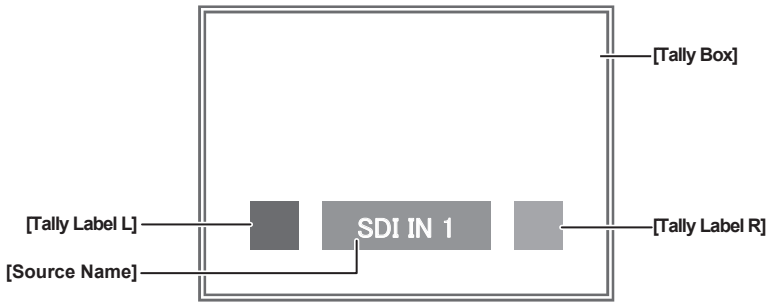
[On]	Displays the character background (half-tone).
[Off]	Does not display the character background (half-tone).

5 Select an item in [Clock] in the [MV Frame] column.

[Off]	The clock is not displayed in the text display or outside the frame of the sub-screen.
[Label]	The text displayed in the smallest number sub-screen is changed to clock display instead of the source name.
[Outside Frame]	The clock is displayed outside the frame of the sub-screen. • This is displayed when [5-aSplit], [5-bSplit], [6-aSplit], [6-bSplit], or [12Split] is selected.

Setting the tally display

Configure the tally display setting to be superimposed onto the split frame of the MultiView display.



1 Select the <MV> button → [MV1-4] → [MV1] to [MV4] tabs.

2 Select an item in [Tally Group1] to [Tally Group4] in the [Tally Box]/[Tally Label L]/[Tally Label R] column.

[On]	Shows the tally displays.
[Off]	Does not show the tally displays.

NOTE

- If conditions overlap, the following priority order is used:
  [Tally Group1] > [Tally Group2] > [Tally Group3] > [Tally Group4]
- To set the tally color, select the <SYS> button on the top menu → [PERIPHERAL] → [Tally] tab → [Tally Group2-1] to [Tally Group4-1] columns → [Color].
- For details on the tally group settings, refer to “Setting a tally” (page 153).

Other display settings

Setting the level meter

Level meters for the embedded audio signals transferred by the SDI input can be displayed on the split screens.

- Display on the left: Channel 1 of group 1
- Display on the right: Channel 2 of group 1

1 Select the <MV> button → [MV1-4] → [MV1] to [MV4] tabs.

2 Select an item in [Level Meter] in the [Display] column.

[Off]	Does not display the level meter.
[On]	Displays the level meter.

Setting the input signal mark

The status of the input signals can be displayed in front of the source names displayed on the split screens.

- [F] mark: Indicates that the input signals are frozen.
- [!] mark: Indicates that there are no input signals or signals with different formats are input. If horizontal pixels are the same, false detection may occur.

1 Select the <MV> button → [MV1-4] → [MV1] to [MV4] tabs.

2 Select an item in [Input Status] in the [Display] column.

[On]	Displays the input signal status.
[Off]	Does not display the input signal status.

- When the [F] mark is displayed, the [!] mark is not displayed.

Setting the marker

Safety markers can be displayed for PGM and PVW sources of the MultiView display.

1 Select the <MV> button → [MV1-4] → [MV1] to [MV4] tabs.

2 Select an item in [Marker] in the [Display] column.

- Configure the marker display setting.

[Off]	Does not display the markers.
[4:3]	Displays the markers using the 4:3 aspect ratio.
[16:9]	Displays the markers using the 16:9 aspect ratio.

3 Set [Marker Size] in the [Display] column.

- Set the marker size.

Chapter 7 CONFIG Menu

This chapter describes how to operate the CONFIG menu displayed when the <CONF> button is pressed.

Disabling button operations

For each button or block, the operation can be disabled.

1 Select the <CONF> button → [BUTTON INHIBIT] → [MainPanel]/[SubPanel1]/[SubPanel2] tab.

[MainPanel] tab	Assigns the main control panel.
[SubPanel1] tab	Assigns the sub control panel 1 (second Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).
[SubPanel2] tab	Assigns the sub control panel 2 (third Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).

2 Select the buttons/blocks to be disabled from the button/block list in the left column.

- Select [Button Group] to filter the button/block list in the left column.

3 Set the range of disabled operations.

- Use [Group Select] and [Bus Select] to set the range of disabled operations.
  For details, refer to “Target button/block for [Button Group]/[Group Select]/[Bus Select] operations” (page 130).

4 Select an item in [Inhibit].

[Off]	Enables the operation.
[On]	Disables the operation.

5 Select [Set].

NOTE

- The 24 buttons for each page are displayed in the left column. The settings for first 16 are applied when the Control Panel AV-HS60C4 is connected.

■ Target button/block for [Button Group]/[Group Select]/[Bus Select] operations

- The macro bus is not included in the target.

Item	Description
[Button Group]	Filters the button/block list in the left column. [All]: All [XPT-Page1]: First page of the crosspoint buttons [XPT-Page1]: Second page of the crosspoint buttons [XPT-Page1]: Third page of the crosspoint buttons [XPT-Page1]: Fourth page of the crosspoint buttons [Other]: <IMAG> button, <2nd PAGE>/<3rd PAGE> buttons, <AUX 1/2> to <AUX 15/16> buttons [Block]: ME1 block, ME2 block, DSK operation area, positioner area
[Group Select]	Sets the group range for disabled operations. **■ When the first to fourth pages of the crosspoint buttons are selected in the left column:** [All+AUX]: All buses including the AUX bus [All]: All buses excluding the AUX bus [ME1]: The ME1 bus [ME2]: The ME2 bus **■ When the <IMAG> button, <2nd PAGE>/<3rd PAGE> buttons are selected in the left column:** [All+AUX], [All]: All [ME1]: Buttons in the ME1 block [ME2]: Buttons in the ME2 block
[Bus Select]	Sets details of [Group Select] when the first to fourth pages of the crosspoint buttons are selected in the left column. [All]: All in the [Group Select] setting range [A/B]: The A bus and the B bus in the [Group Select] setting range [Key]: KEY1 to KEY4 (including DSK) in the [Group Select] setting range

Assigning signals to buttons

External video input signals and internally generated signals can be assigned to the crosspoint buttons (the PGM/A, PST/B, and KEY bus crosspoint buttons) in the crosspoint area. All buses in a single Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 have a common assignment.

If the assignment of the signals selected by the crosspoint buttons is changed, the positions of the lit crosspoint buttons will be changed according to the changed assignment. In this case, the output video is not changed.

1 Select the <CONF> button → [XPT ASSIGN] → [MainPanel]/[SubPanel1]/[SubPanel2] tab.

[MainPanel] tab	Assigns the main control panel.
[SubPanel1] tab	Assigns the sub control panel 1 (second Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).
[SubPanel2] tab	Assigns the sub control panel 2 (third Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).

2 Select the buttons to assign the video sources from the button list in the left column.

- Select [Button Group] to filter the button list in the left column.

3 Select a signal to be assigned from the signal list in the right column.

- Select [Filter] to filter the signal list in the right column.

4 Select [Assign].

- The signal selected in step **3** is assigned to the button selected in **2**.

5 Select [Insert].

- The signal selected in step **3** is assigned to the button selected in **2**. The buttons after the button selected in step **2** will be the signal that was originally assigned to the previous button.
- The setting of the button assigned to [ME1PGM], [ME2PGM] does not change.

6 Select [Delete].

- The signal assigned to the button selected in step **2** and the buttons after that will each shift one to forward. The last button will be Blank.
- The setting of the button assigned to [ME1PGM], [ME2PGM] does not change.

NOTE

- The 24 buttons for each page are displayed in the left column. The settings for first 16 are applied when the Control Panel AV-HS60C4 is connected.

■ **Signals that can be selected for the crosspoint buttons:**

- "✓" indicates selectable, and "—" indicates non-selectable.

Signal name	Description	ME*1	AUX*2
SDI IN1 - SDI IN32	SDI input signals 1 to 32	✓	✓
DVI IN1, DVI IN2	DVI-D input signal	✓	✓
ME1CLN, ME2CLN	Clean signal	✓*3	✓
ME1KEYPVW, ME2KEYPVW	Key preview video signal	—	✓
ME1PGM, ME2PGM	Program video signal	✓*3	✓
ME1PVW, ME2 PVW	Preview video signal	—	✓
DSKPGM1, DSKPGM2	Program video signal	—	✓
DSKPVW1, DSKPVW2	DSK preview video signal	—	✓
DSK1CLN - DSK4CLN	Clean signal	—	✓
SEL KEYPVW	Selected key preview video signal	—	✓
Clip 1V - Clip 4V	Video memory (moving image) 1 to 4 videos	✓	✓
Clip 1K - Clip 4K	Video memory (moving image) 1 to 4 keys	✓	✓
Still 1V - Still 4V	Video memory (still image) 1 to 4 videos	✓	✓
Still 1K - Still 4K	Video memory (still image) 1 to 4 keys	✓	✓
CBGD1, CBGD2	Color background 1, 2	✓	✓
CBAR	Color bar	✓	✓
Black	Black image	✓	✓
MV1 - MV4	MultiView display output signal	—	✓
2nd PAGE, 3rd PAGE	Page switching function	✓*4	✓*4
Blank	Not assigned	—	—

*1 Crosspoint buttons other than the <AUX 1/2> to <AUX 15/16>, <DISP>, and <VMEM F/S> buttons.

*2 <AUX 1/2> to <AUX 15/16>, <DISP>, and <VMEM F/S> buttons.

*3 ME1PGM and ME2PGM have a limitation on selection.
Ex) For ME1, ME1PGM cannot be selected. When ME1PGM is selected for ME2, ME2PGM cannot be selected for ME1.

*4 Used with the SHIFT function.

Setting the source name

Setting the source name display panel

Set the display of the source name display panels on the crosspoint area and KEY/DSK operation area.

1 Select the <CONF> button → [SOURCE NAME] → [Panel Name] tab.

2 Select an item in [Type] in the column that displays the source name to be set.

[Default]	Displays the same name as the column name.
[User]	Displays a desired name.
[Picture]	Displays bitmap data.

Displaying a desired source name

1 Select the <CONF> button → [SOURCE NAME] → [Panel Name] tab.

2 Select [Name] in the column that displays the source name to be set.

- Enter a desired name with the on-screen keyboard.

Loading bitmap data

Set the bitmap data to be displayed when [Picture] of the [Type] item is selected from the <CONF> button on the top menu → [SOURCE NAME] → each column of the [Panel Name] tab. There are two methods: generating the bitmap data from the input signal and loading the bitmap data from a local computer.

Generating the bitmap data from the input signal

1 Select the <CONF> button → [SOURCE NAME] → [Panel Name] tab.

2 Select [Get Src Picture] in the column that displays the source name to be set.

- Bitmap data is generated from the input signal and displayed in the source name display panel.

Loading bitmap data from a local computer

Load the bitmap data from a local computer connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2.

1 Select the <CONF> button → [SOURCE NAME] → [Load Picture] tab.

2 Select [Load from Local] in the column that displays the source name to be set.

- Load operation can be performed by opening the file operation screen on the computer.
- By selecting the file on a computer, the bitmap data is loaded to the unit and displayed in the source name display panel.

■ **Bitmap data specification**

PNG format file with a 42×58 pixel size is loaded. Color image data is converted to gray scale when being loaded.

NOTE

- Bitmap data cannot be loaded from a memory card inserted in the memory card slot of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

Setting the lighting status when the crosspoint area is off

1 Select the <CONF> button → [SOURCE NAME] → [Panel Name] tab.

2 Select an item in [Color Group] in the column that displays the source name to be set.

- Select an item from [ColorGroup1] to [ColorGroup8].
  For details, refer to “Setting the colors when the buttons are turned off” (page 152).

Setting the MultiView display

Set the MultiView display.

1 Select the <CONF> button → [SOURCE NAME] → [MV Name] tab.

2 Select an item in [Type] in the column that displays the source name to be set.

[Default]	Displays the same name as the column name.
[User]	Displays a desired name.
[Same as Panel]	Links to the setting from the <CONF> button on the top menu → [SOURCE NAME] → [Panel Name] tab. • When [Picture] is selected in the [Panel Name] tab, this setting links to the [Default] setting.

Displaying a desired source name

1 Select the <CONF> button → [SOURCE NAME] → [MV Name] tab.

2 Select [Name] in the column that displays the source name to be set.

- Enter a desired name with the on-screen keyboard.

Setting the source link

Setting the key coupling

Linking the key fill signal and key source signal

If you select key fill signal or key source signal using the key bus crosspoint buttons of the control panel, the signals are linked and the other signal is automatically selected.

The unit's linking operation has two modes.

- [Fill to Source]: When the key fill signal (master) is selected, the key source signal (slave) changes automatically.
- [Source to Fill]: When the key source signal (master) is selected, the key fill signal (slave) changes automatically.

1 Select the <CONF> button → [SOURCE LINK] → [Key Assign] tab.

2 Select an item in [Master/Slave].

[Fill to Source]	Links the key fill signal (master) to the key source signal (slave).
[Source to Fill]	Links the key source signal (master) to the key fill signal (slave).

3 Select the item to be set as the master from the left column.

- Select [Master Filter] to filter the master list in the left column.

4 Select the item to be set as the slave from the right column.

- Select [Slave Filter] to filter the slave list in the right column.

5 Select [Assign].

- Make the coupling setting for the source selected as the master and the source selected as the slave.
- If [Self] is set to [On] and [Assign] is selected, the same source selected for the master is coupled, regardless of the selection status of the slave.

NOTE

- When the [Master/Slave] settings are changed, the coupling setting is initialized.

Linking the AUX bus

Two AUX buses can be linked by the setting in "Setting the key coupling" (page 134),

- The coupling combinations are the odd AUX signals and the subsequent even AUX signals, such as AUX1 and AUX2 or AUX3 and AUX4.

Linking the odd AUX signals and even AUX signals

1 Perform the steps 1 to 5 in "Linking the key fill signal and key source signal" (page 134).

- Details of the items for the step **2** are as follows.

[Fill to Source]	Links the odd AUX signal (master) to the even AUX signal (slave).
[Source to Fill]	Links the even AUX signal (master) to the odd AUX signal (slave).

2 Select the [AUX Bus Link] tab.

- Enable or disable the coupling setting.

3 Select an item in [AUX1/2 Link] to [AUX15/16 Link] in the [Link 1]/[Link 2] column.

[Off]	Disables the coupling setting.
[On]	Enables the coupling setting.

NOTE

- When the [Master/Slave] settings are changed, the coupling setting is initialized.

Setting the operation mode

Setting the operation mode for the crosspoint buttons

Selecting a bus using the SHIFT function

The SHIFT function is used to assign four sources to one crosspoint button (the KEY, PGM/A, or PST/B crosspoint button) and change pages using the <2nd PAGE>/<3rd PAGE> buttons on the right of the source name display panel.
There are two operation methods for the SHIFT function:

All SHIFT	Use the <2nd PAGE>/<3rd PAGE> buttons to change all source pages for the crosspoint buttons included in the corresponding ME at once.
Single SHIFT	Operate by assigning the <2nd PAGE>/<3rd PAGE> button to the crosspoint buttons with the menu. Use the assigned button to change the source page of the crosspoint buttons included in the corresponding ME on a bus basis. In this case, the <2nd PAGE>/<3rd PAGE> buttons on the right of the source name display panel can be used to switch the source name displays.

The <2nd PAGE>/<3rd PAGE> buttons can be used in two modes.

1 Select the <CONF> button → [OPERATE] → [Transition] tab.

2 Set an item in [2nd Page Button] and [3rd Page Button] in the [Page Mode] column.

[Normal]	Enabled only while the button is pressed.
[Page Lock]	Enabled and disabled every time the button is pressed.

Assign the SHIFT function to the crosspoint buttons

1 Select the <CONF> button → [XPT ASSIGN] → [MainPanel]/[SubPanel1]/[SubPanel2] tab.

[MainPanel] tab	Assigns the main control panel.
[SubPanel1] tab	Assigns the sub control panel 1 (second Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).
[SubPanel2] tab	Assigns the sub control panel 2 (third Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).

2 Select the buttons to assign the SHIFT function from the button list in the left column.

- For details on the button assignment of the crosspoint area, refer to “Assigning signals to buttons” (page 131).

3 Select [2nd Page] or [3rd Page] from the signal list in the right column.

4 Select [Assign].

- The SHIFT function is assigned to the button selected in the step **2**.
- Once the assignment is set on one page, the corresponding button on other pages works in a same way.

NOTE

- The 24 buttons for each page are displayed in the left column. The settings for first 16 are applied when the Control Panel AV-HS60C4 is connected.

Selecting the bus mode

Select the A/B bus system or the flip-flop system (PGM/PST system).

1 Select the <CONF> button → [OPERATE] → [Transition] tab.

2 Set an item in [Bus Mode Type] in the [Bus Mode] column.

[Common]	Sets the same bus mode in ME1 and ME2. Setting of the [Bus Mode] column → [Bus Mode] is applied to both ME1 and ME2.
[Each]	Different bus modes can be set for ME1 and ME2. Settings of the [Each Bus Mode1] column → [Bus Mode ME1] and [Bus Mode ME2] are applied to ME1 and ME2 respectively.

3 Select an item in [Bus Mode] in the [Bus Mode] column, and [Bus Mode ME1]/[Bus Mode ME2] in the [Each Bus Mode1] column.

[A/B]	When the fader lever is at side A, the signals selected on the A bus are used as the source of the PGM bus. When the fader lever is at side B, the signals selected on the B bus are used as the source of the PGM bus.
[PGM-A/PST-B]	Using a flip-flop system, the signals selected on the A bus are always used as the source of the PGM bus, and the signals selected on the B bus are always used as the source of the PST bus.
[PGM-B/PST-A]	Using a flip-flop system, the signals selected on the B bus are always used as the source of the PGM bus, and the signals selected on the A bus are always used as the source of the PST bus.

Setting the transition operation mode

Setting the time display unit

The time display unit used in this unit can be set as a second/frame basis or a frame basis.

1 Select the <CONF> button → [OPERATE] → [Transition] tab.

2 Select an item in [Time Unit] in the [Time Unit] column.

[Sec/Frame]	Sets the time display unit as a second/frame basis.
[Frame]	Sets the time display unit as a frame basis.

- When [Sec/Frame] is selected, the time that can be set differs depending on the system format.
  - 59.94i: Max. 33s09f
  - 59.94p: Max. 16s39f
  - 50i: Max. 39s24f
  - 50p: Max. 19s49f
  - 24PsF: Max. 41s15f
  - 23.98PsF: Max. 41s15f
- The time that can be set in [Frame] is between 0 and 999 frames.

FTB (Fade to Black)

For DSKPGM1 and DSKPGM2 outputs, fade out from the program image to the black background screen, and fade in from the black ground screen to the program image. While the settings and transition are performed by the menu, use the macro memory to assign to certain buttons to execute transition.

1 Select the <CONF> button → [OPERATE] → [Transition] tab.

2 Select an item in [Source] in the [FTB] column.

- Select the image for fading out.

[Still1] - [Still4]	Uses still image video memory (Still1 to Still4).
[Clip1] - [Clip4]	Uses moving image video memory (Clip1 to Clip4).
[CBGD1], [CBGD2]	Uses the color background.
[White]	Uses the white background.
[Black]	Uses the black background.

3 Set [Time] in the [FTB] column.

- Set the transition time.

4 Set [FTB On] in the [FTB] column.

- When [FTB On] is selected, the screen fades out to the image selected in the step **2** at a specified transition time.
  If [FTB On] is selected when the image selected in the step **2** is on the screen, the screen fades in to the program image.
  If [FTB On] is selected during transition, the transition direction is reversed.

NOTE

- If an item other than [White] or [Black] is selected in [Source] in the [FTB] column, the corresponding crosspoint buttons will light in red while [FTB On] is set.

AUX1 to AUX4 bus transitions

In the AUX1 to AUX4 buses, MIX transition is available.

1 Select the <CONF> button → [OPERATE] → [Transition] tab.

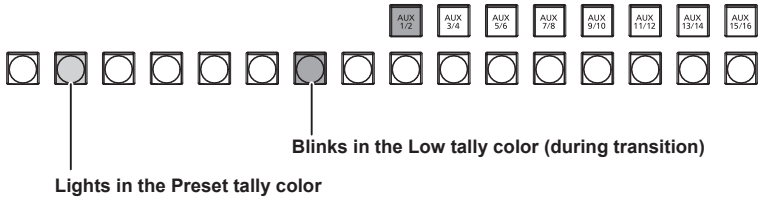
2 Select an item in [AUX1] to [AUX4] in the [AUX Trans] column.

[Off]	Disables the MIX translation.
[On]	Enables the MIX translation.

3 Set [AUX1] through [AUX4] in the [Trans Time] column.

- Set the transition time.

■ **AUX bus transition operation**



If [AUX1] to [AUX4] are set to [On] in the [AUX Trans] column, select the source signal that is changed by the corresponding KEY bus crosspoint buttons.

At this time, the MIX transition is performed at the transition time specified in [AUX1] to [AUX4] in the [Trans Time] column.

During transition, KEY crosspoint buttons denoting the transition source lights in the Preset tally color, and the KEY bus crosspoint buttons denoting the transition target source lights in the Low tally color.

When the transition is completed, the transition source button goes off, and the transition target button lights in the Low color.

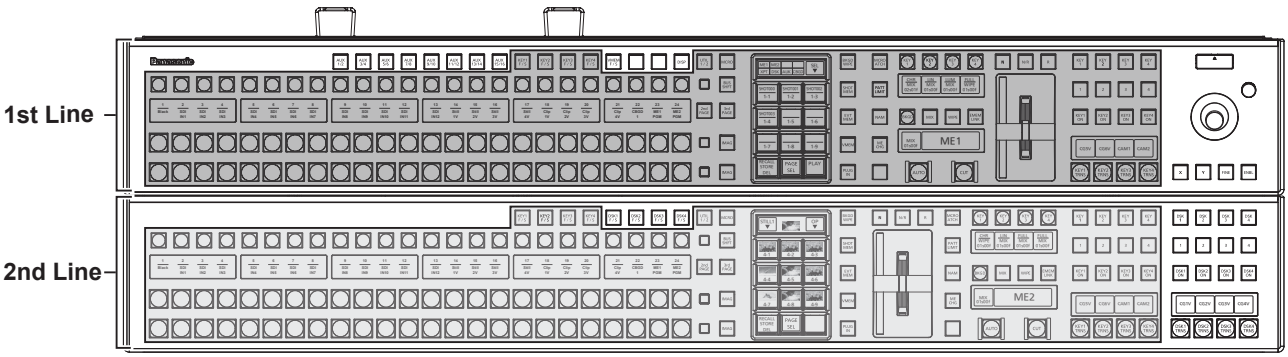
When another signal is selected during transition, the transition processing continues from that midway point.

Switching the ME area in the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

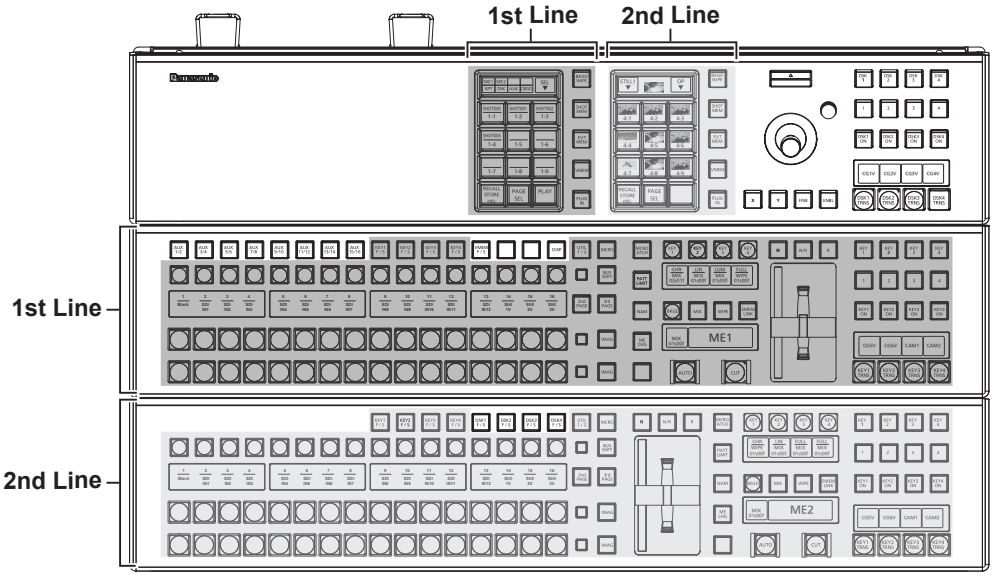
Switch the ME1 and ME2 in the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

- The following figure shows the area that can be switched.

■ **AV-HS60C1/AV-HS60C2**



■ **AV-HS60C4**



NOTE

- <AUX1/2> to <AUX15/16> buttons, <VMEM F/S> button, <DISP> button, <DSK1 F/S> to <DSK4 F/S> buttons, DSK operation area, positioner area, and Menu Panel AV-HS60C3 are not subject for switching.
- If you perform switching using the KEY bus selector buttons on the upper ME line (1st Line) while <AUX 1/2> to <AUX 15/16> buttons are selected, the selection status of the KEY bus crosspoint buttons on the lower ME line (2nd Line) takes over the KEY bus crosspoint buttons on the upper ME line (1st Line) before switching, and the KEY bus selector button lamps all turn off. Press the KEY bus selector buttons on the lower ME line (2nd Line) to turn on the lamps and change the operation targets of the KEY bus crosspoint buttons to the appropriate bus.

Switching the ME area in the Menu Panel AV-HS60C3

1 **Select the <CONF> button → [OPERATE] → [MECHG] tab.**

2 **Select an item in [1st Line] and [2nd Line] in the [MainPanel]/[SubPanel1]/[SubPanel2] column.**

[ME1]	The corresponding ME area is used as ME1.
[ME2]	The corresponding ME area is used as ME2.

- If the item set for [ME1] is switched to [ME2], the item selected for [ME2] is switched to [ME1].

Switching the ME area in multi-selection panel area

You can switch ME areas through the multi-selection panel area.

For basic operations of the multi-selection panel area, refer to “Basic operations for the multi-selection panel area” (page 40).

1 Press the <ME CHG> button.

- The display of the multi-selection panel area changes as follows:

S1	Blank	—
S2	Current ME line	Displays the ME line to which the corresponding multi-selection panel area belongs.
S3	Blank	—
1	ME1	The current ME line is displayed in red.
2	ME2	The current ME line is displayed in red.
3 to 12	Blank	—

2 In the multi-selection panel area, hold down the button (1 or 2) that displays the target ME line.

- If you press the button that displays an ME line that is different from the current ME line, the ME line will be switched.

Key source preset settings

The key source preset is a function that stores (presents) key settings in memory for each keyer and each source.

If a key source is selected using the KEY bus crosspoint buttons of the control panel, a preset is automatically recalled. Also, if the key settings are changed, each preset is automatically overwritten.

The following settings are stored in memory for each preset:

- KEY1 to KEY4 of ME1 and ME2
  - All settings of the <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Key Setting] tab
  - Settings of the <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Chroma] tab → [Adjust] column
  - Settings that disable the chroma key
- DSK1 to DSK4
  - All settings of the <DSK MISC> button on the top menu → [DSK1] to [DSK4] → [Setting] tab

Key source preset operation settings

1 Select the <CONF> button → [OPERATE] → [Key] tab.

2 Select an item in [Source Preset] in the [Key Source Preset] column.

[Enable]	Enables the key source preset function. Stores the settings in memory by each keyer and each source.
[Disable]	Disables the key source preset function. The preset is not recalled even if the source is switched.

3 Select an item in [Keyer Link] in the [Key Source Preset] column.

- Select the keyer link setting for the source preset.

[Enable]	Links key source presets between keyers. If the selected source is the same, the same settings are applied, even if the keyers are different. However, a link is not established between KEY1 and KEY4, and between DSK1 and DSK4 of ME.
[Disable]	Stores key source presets individually by each keyer and each source. If the same source is selected using a different keyer, different settings are applied for each.

NOTE

- When [Disable] is selected in the [Source Preset] item, operation is performed with keyer link settings in [Disable], regardless of the [Keyer Link] item selection status.

Locking the menu operation

The menu setting that can be operated from the <CONF> button can be locked by each menu in the second hierarchy.

1 Select the <CONF> button → [MENU LOCK] → [Menu Lock] tab.

2 Select an item in [BUTTON INHIBIT], [XPT ASSIGN], [SOURCE NAME], [SOURCE LINK], and [OPERATE] in the [Menu Lock] column.

[Off]	Enables changing of the settings of the corresponding menu.
[On]	Locks the settings of the corresponding menu. The setting details can be checked.

Chapter 8 System Menu

This chapter describes how to operate the system menu displayed when the <SYS> button is pressed.

System settings

For details of operation in the 3G mode or the 4K mode, refer to “Difference of function for each mode” (page 164).

Setting the video format function

One system format (input/output signal) can be selected.

NOTE

- Do not change the format during any of the following operations:
  - When loading from a memory card or saving to a memory card
  - When loading from the Storage Module AV-HS60D1 or saving to the Storage Module AV-HS60D1
  - When recording videos or still images

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Select an item in [Video Format] in the [Video Format] column.

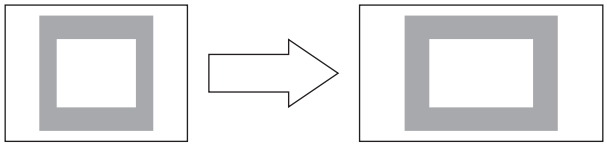
- Select a system format. Selectable items are as follows:
  - Standard mode:
    [1080/59.94i], [1080/50i], [1080/24PsF], [1080/23.98PsF], [720/59.94p], [720/50p], [480/59.94i], [576/50i], [1080/29.97PsF], [1080/25PsF]
  - 3G mode
    [1080/59.94p], [1080/50p]
  - 4K mode
    [2160/59.94p], [2160/50p]

3 Select an item in [16:9 Squeeze] in the [Video Format] column.

- This setting is enabled when SD is selected as the system format.
- When [16:9 Squeeze] is set to [On], a border width (wipe or PinP), which considers cases where SD format videos are converted to the 16:9 aspect ratio before use, is established.

[Off]	Squeeze mode is not supported.
[On]	Squeeze mode is supported.

■ **Border width (graphical representation) when squeeze mode is supported**



Squeeze (4:3) **16:9**

Setting the output phase

The phase of the output video signals can be adjusted.

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Select an item in [System] in the [Output Phase] column.

[1H]	Outputs video signal with 1H delay against the system sync signal. When the frame synchronizer function is on, the video signal is output with delay of 1 frame + 1H.
[0H]	Output video signals are output in phase for the system sync signal. The frame synchronizer function is ON for all input signals.

3 Select an item in [H-Phase[H]] in the [Output Phase] column.

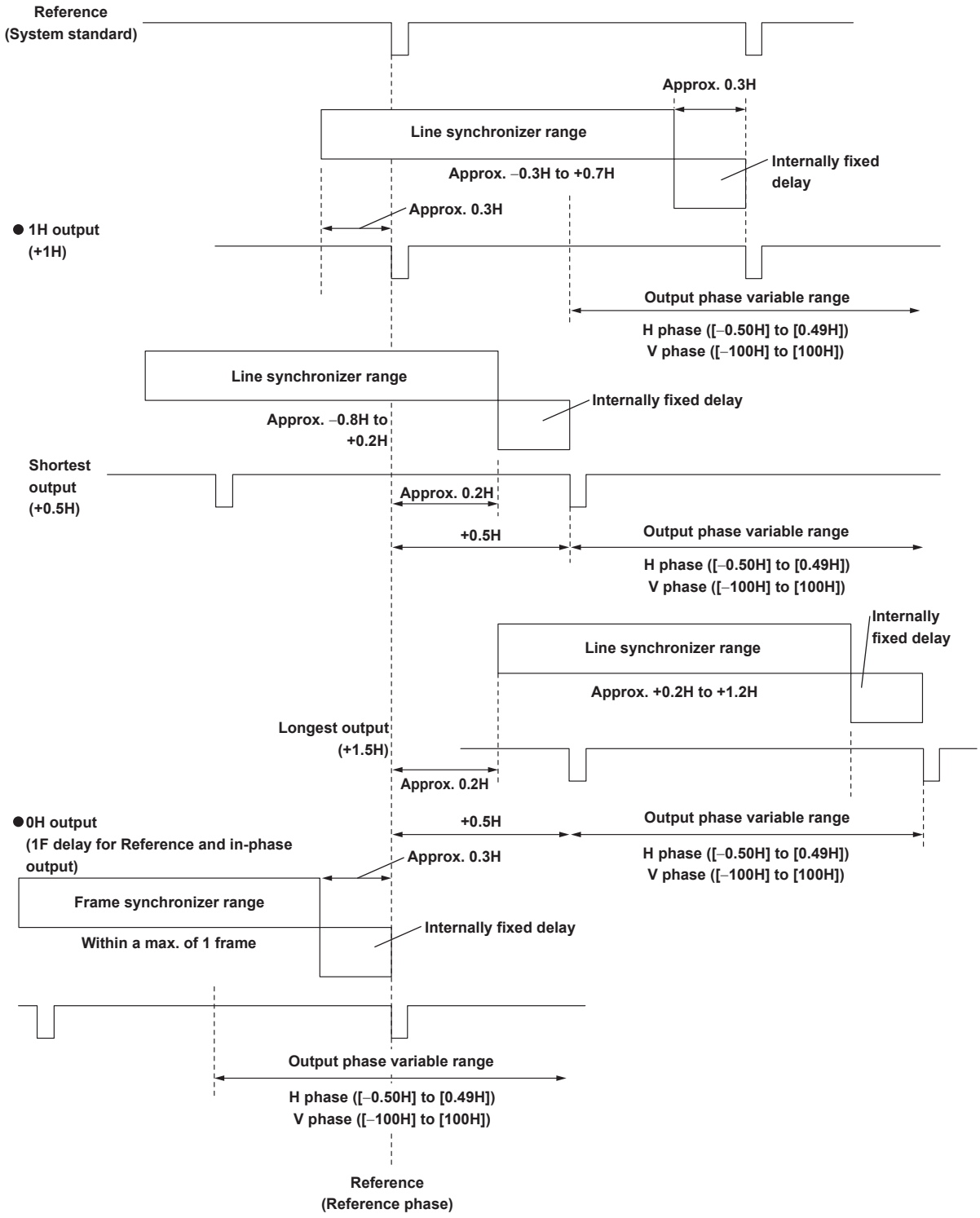
- Adjust the H phase. It can be adjusted to a value from [−0.50H] to [0.49H].

4 Select an item in [V-Phase [Line]] in the [Output Phase] column.

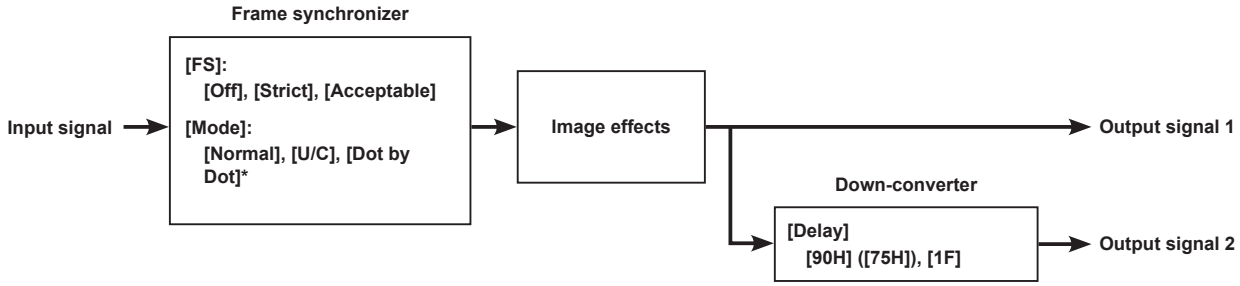
- Adjust the V phase. It can be adjusted to a value from [−100H] to [100H].

■ **Phase adjustment setup**

- The line synchronizer range is the draw-in range in which automatic phase adjustment is possible. The following illustration shows that the signal is 1080/59.94i.



Phases and delay amount of input/output signals when HD format is used



* Not selectable when the system format is 720p.

- For details on the frame synchronizer, refer to “Setting the frame synchronizer” (page 119).
- For details on the down-converter, refer to “Setting the down-converter” (page 125).

■ **When the sync signal (Reference) is set to [BB], [Tri-level sync], or [Internal]**

[Output Phase]	[System]	[1H]			[0H] Example 1)
Input signal	[Mode]	[Normal]	[Normal]	[U/C]/[Dot by Dot]	[Normal]/[U/C]/[Dot by Dot]
	[FS]	Off	[Strict] or [Acceptable]	[Strict] (forced) or [Acceptable]	[Strict] (forced) or [Acceptable]
Non-synchronized input		Not possible	Possible		
Output signal 1	Phase	Reference + 1H			In-phase with Reference
	Delay amount	1H	Max. of 1F + 1H		Max. of 1F
Output signal 2 Down-converter [90H] ([75H])	Phase	Output Signal 1 + 90H			
	Delay amount	1H + 90H	Max. of 1F + 1H + 90H		Max. of 1F + 90H
Output signal 2 Down-converter [1F]	Phase	In-phase with Output signal 1			
	Delay amount	1H + 1F	Max. of 2F + 1H		Max. of 2F

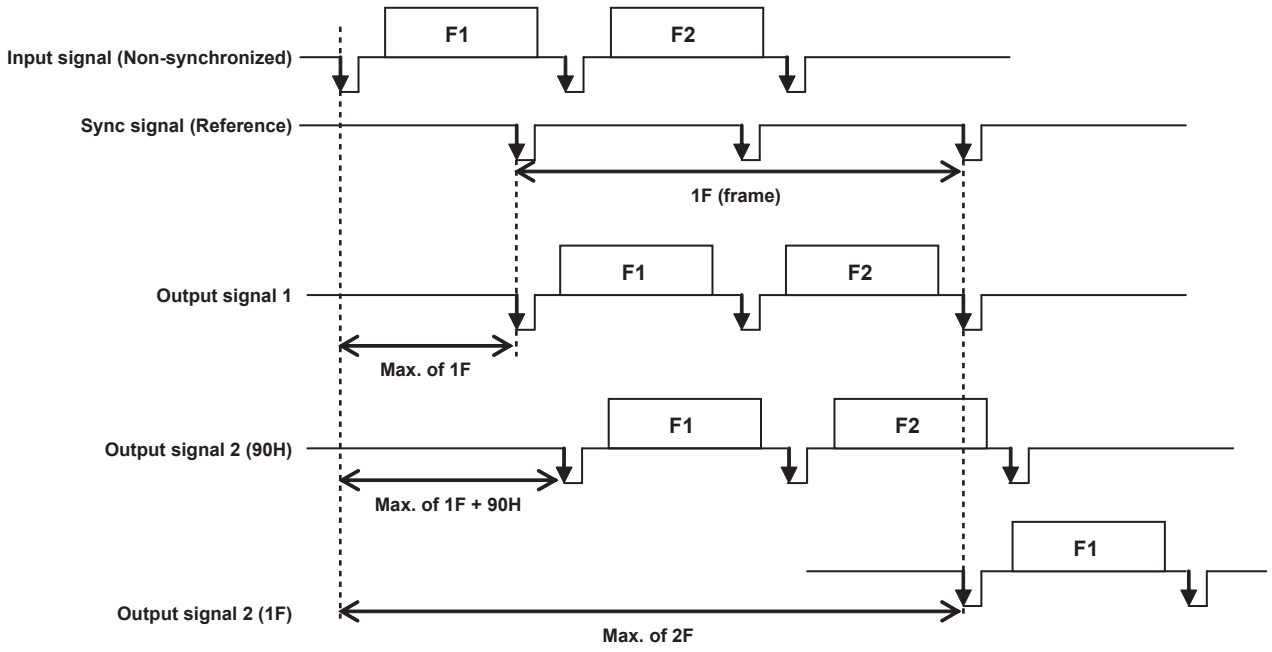
■ **When the sync signal (Reference) is set to [BB Advanced]**

[Output Phase]	[System]	[1H]			[0H] Example 2)
Input signal	[Mode]	[Normal]	[Normal]	[U/C]/[Dot by Dot]	[Normal]/[U/C]/[Dot by Dot]
	[FS]	Off	On	On (forced)	On (forced)
Non-synchronized input		Not possible	Possible		
Output signal 1	Phase	Reference − 90H + 1H			Reference − 90H
	Delay amount	1H	Max. of 1F − 90H + 1H		Max. of 1F − 90H
Output signal 2 Down-converter [90H] ([75H])	Phase	Output signal +90H			Output Signal 1 + 90H (in-phase with Reference)
	Delay amount	1H + 90H	Max. of 1F + 1H		Max. of 1F
Output signal 2 Down-converter [1F]	Phase	In-phase with Output Signal 1			
	Delay amount	1F + 1H	Max. of 2F − 90H + 1H		Max. of 2F − 90H

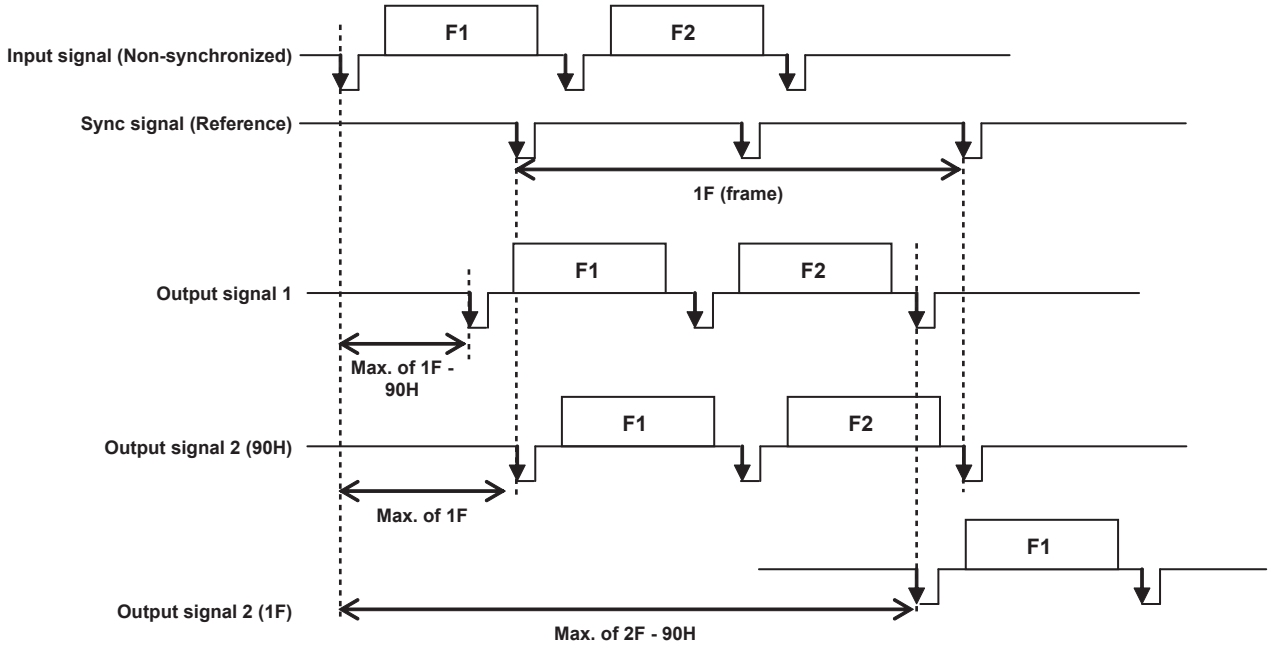
- For 1080/50i and 720/50p, 90H in the output signal field becomes 75H.
- 1H is the conversion in the HD format. It is equivalent to 2 lines in the 1080/59.94p or 1080/50p format.
- 1F is the conversion in the HD format. It is equivalent to 2 frames in the 1080/59.94p or 1080/50p format.
- When DVE or PinP is used as the video effect, the output signal is delayed by +1F.
- Since a DVI input signal always has the frame synchronizer function running, the phase and amount of delay is the same during [Dot by Dot] mode / [U/C] selection.
- When video is output to the MultiView display, the output video is delayed by +1F.

■ **Phase relationship between input and output signals (for 1080/59.94i)**

Example 1)



Example 2)



Setting the sync signal

The sync signal to be used by the system can be selected.
In external synchronization, it is synchronized with an external sync signal. (Genlock)
The Reference input signal is output using the loop-through method.

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Select an item in [Sync] in the [Reference] column.

- Select the sync signal.

[BB]	Black burst signal (vertical phase of 0H)
[BB Advanced]	Black burst signal When 59.94i or 59.94p is selected: Vertical phase of 90H When 50i or 50p is selected: Vertical phase of 75H
[Tri-level sync]	Tri-level sync signal (vertical phase of 0H)
[Internal]	Synchronizes with an internal reference signal (INT). Outputs the REFOUT signal (black burst signal) from the two <REF> terminals.

- When the system format is 1080/24PsF, [Internal] cannot be selected in [Sync] in the [Reference] column.
- This unit supports synchronization signals for field frequencies that are the same as those of the system format.
  However, when the system format is 1080/23.98PsF, black burst signals with 10 Field ID (SMPTE318M compliant) are also supported.
- When the system format is 1080/24PsF, [Tri-level sync] can only be selected.

3 Select an item in [BB Setup] in the [Reference] column.

- Select [7.5IRE] or [0IRE] for the setup level of the black burst signal in the internal synchronization mode.

This setting takes effect when the video system is 59.94i or 59.94p. It is fixed to [0IRE] when the video system is 50i or 50p.

4 Check the display in [Gen Lock] in the [Reference] column.

- Check the Genlock status.

[Unlocked]	Not synchronized with the external sync signal or internal reference signal.
[Locked]	Synchronized with the external sync signal or internal reference signal.

Other video signal settings

Setting the amount of delay in video effects

A delay amount can be set for the background or key video.

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Select an item in [BKGD]/[Key] in the [Latency] column.

[Minimum]	The video is not delayed. • However, the image will be delayed by one frame (1F) when [SQ], [SL], or [3D] is selected in wipe pattern.

[1F Fix], [2F Fix]	The video is delayed for one frame (1F_Fix) or two frames (2F_Fix). • The delay difference during transition (when [SQ], [SL], or [3D] is selected in the wipe pattern) and after transition will disappear. • Only [1F Fix] can be selected in the Standard mode, and [2F Fix] can be selected in the 3G mode and the 4K mode.

■ **Setting the delay amount**

Item	After transition	MIX/WIPE	SQ/SL/3D
[Minimum]	No delay	No delay	1 F delay, 2 F delay*
[1F Fix]	1 F delay	1 F delay	1 F delay
[2F Fix]	2 F delay	2 F delay	2 F delay

* It will be one frame (1 F) delay when operating in the Standard mode, and two frames (2 F) delay when operating in the 3G mode and the 4K mode.

Setting the SDI signal ancillary

Set the function to superimpose the ancillary data (V ancillary data and embedded audio data).

- For SD format: Ancillary data starting in line 12 will be superimposed.
- For HD format: Ancillary data starting in line 9 will be superimposed.
- For 3G format (Level B): Ancillary data starting from line nine of LinkA and LinkB is superimposed.
  The ancillary data included in the 3G-Level A signal is deleted.
- The ancillary data is superimposed only to the following signal when operating in the 4K mode.
  - The LinkA signal with smallest number within the four lines of the output signals constructing one 4K signal.

When 1080/59.94i, 720/59.94p, 1080/50i, or 720/50p is selected as the system format of the unit, it is not possible to allow the ancillary data and embedded audio data to pass through even if SD format signals (480/59.94i or 576/50i) have been input in the [Dot by Dot] mode or [U/C] mode.
For details on [Dot by Dot] mode and [U/C] mode, refer to “Setting the input mode” (page 119).

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Select an item in [AUX] in the [Ancillary1] column.

Configure the setting to superimpose the ancillary data to AUX1 to AUX16 output.

[Off]	Does not superimpose the ancillary data.
[On]	Superimposes the ancillary data of the source selected in the AUX bus (AUX1 to AUX16).

3 Select an item in [ME PGM] in the [Ancillary] column.

Configure the setting to superimpose the ancillary data to ME1PGM output and ME2PGM output.

[Off]	Does not superimpose the ancillary data.
[On]	• When [BKGD] is selected as the type of the ancillary data for corresponding ME Superimposes the ancillary data of the source selected in the PGM bus of the corresponding ME. • When [KEY1] to [KEY4] is selected as the type of the ancillary data for corresponding ME Superimposes the ancillary data of the source selected in the KEY1 to KEY4 key fill bus of the corresponding ME.
[AUTO]	• When [BKGD] is selected as the type of the ancillary data for corresponding ME Superimposes the ancillary data of the source selected in the PGM bus of the corresponding ME. • When [KEY1] to [KEY4] is selected as the type of the ancillary data for corresponding ME - During the period that the KEY1 to KEY4 in the corresponding ME are turned on Superimposes the ancillary data of the source selected in the corresponding key fill bus. - During the period that the KEY1 to KEY4 in the corresponding ME are not turned on Does not superimpose the ancillary data.

- For selecting the type of ancillary data for the corresponding ME, refer to Steps **7** and **8**.

4 Select an item in [ME PVW] in the [Ancillary] column.

Configure the setting to superimpose the ancillary data to ME1PVW output and ME2PVW output.

[Off]	Does not superimpose the ancillary data.
[On]	• When [BKGD] is selected as the type of the ancillary data for corresponding ME Superimposes the ancillary data of the source selected in the PST bus of the corresponding ME. • When [KEY1] to [KEY4] is selected as the type of the ancillary data for corresponding ME Superimposes the ancillary data of the source selected in the KEY1 to KEY4 key fill bus of the corresponding ME.
[AUTO]	• When [BKGD] is selected as the type of the ancillary data for corresponding ME Superimposes the ancillary data of the source selected in the PST bus of the corresponding ME. • When [KEY1] to [KEY4] is selected as the type of the ancillary data for corresponding ME - During the period that the KEY1 to KEY4 in the corresponding ME are turned on Superimposes the ancillary data of the source selected in the corresponding key fill bus. - During the period that the KEY1 to KEY4 in the corresponding ME are not turned on Does not superimpose the ancillary data.

- For selecting the type of ancillary data for the corresponding ME, refer to Steps **7** and **8**.

5 Select an item in [DSK] in the [Ancillary] column.

- Sets to superimpose the ancillary data to the DSKPGM output (DSKPGM1/DSKPGM2).

[Off]	Does not superimpose the ancillary data.

[On]	• When [BKGD] is selected as the type of the ancillary data for corresponding DSKPGM output Superimposes the ancillary data of the PGM output from ME that will become the base. • When [DSK1] to [DSK4] is selected as the type of the ancillary data for corresponding DSKPGM output Superimposes the ancillary data of the source selected in the key file bus for DSK1 to DSK4.
[AUTO]	• When [BKGD] is selected as the type of the ancillary data for corresponding DSKPGM output Superimposes the ancillary data of the PGM output from ME that will become the base. • When [DSK1] to [DSK4] is selected as the type of the ancillary data for corresponding DSKPGM output - During the period that the DSK1 to DSK4 are turned on Superimposes the ancillary data of the source selected in the key file bus for DSK1 to DSK4. - During the period that the DSK1 to DSK4 are not turned on Does not superimpose the ancillary data.

• For selecting the type of ancillary data for the corresponding DSKPGM output, refer to Step **6**.

6 Select an item in [DSKPGM1]/[DSKPGM2] in the [DSK ANC TYPE] column.

• Selects the type of the ancillary data to superimpose to the DSKPGM output (DSKPGM1/DSKPGM2).

• Selects the type for DSKPGM1 output in [DSKPGM1], and the type for DSKPGM2 output in [DSKPGM2].

[BKGD]	The ancillary data for PGM output of ME to be the base.
[DSK1]	The ancillary data for the source selected in the key file bus of DSK1.
[DSK2]	The ancillary data for the source selected in the key file bus of DSK2.
[DSK3]	The ancillary data for the source selected in the key file bus of DSK3.
[DSK4]	The ancillary data for the source selected in the key file bus of DSK4.

7 Select an item in [ME ANC Mode] in the [ME ANC Mode] column.

• Selects if all ME to apply the same setting or to apply individual setting for each ME as the type of the ancillary data for ME.

[Common]	• The same setting is applied to all ME. Setting in the [ME ANC Mode] column → [Common] is applied.
[Each]	• The individual setting is applied for each ME. Setting in the [ME ANC Each Type] column → [ME1], [ME2] item is applied respectively.

8 Select an item in [Common] in the [ME ANC Mode] column, and [ME1] and [ME2] in the [ME ANC Each Type] column.

Selects the type of the ancillary data to be superimposed to the ME1PGM output, ME2PGM output, ME1PVW output, and ME2PVW output.

[BKGD]	Ancillary data of the source selected in the PGM bus or the PST bus of each ME
[KEY1]	Ancillary data of the source selected in the KEY1 fill bus of each ME
[KEY2]	Ancillary data of the source selected in the KEY2 fill bus of each ME
[KEY3]	Ancillary data of the source selected in the KEY3 fill bus of each ME
[KEY4]	Ancillary data of the source selected in the KEY4 fill bus of each ME

Setting the ancillary for the MultiView display

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Select an item in [MV1] to [MV4] in the [MV Ancillary] column.

• Configure the setting to superimpose the ancillary data to each MultiView display output.

[ME1-PGM]/[ME2-PGM]	Superimposes the ancillary data of the source selected in the PGM bus of ME1/PGM bus of ME2.
[ME1-PVW]/[ME2-PVW]	Superimposes the ancillary data of the source selected in the PST bus of ME1/PST bus of ME2.
[DSK-PGM1]/[DSK-PGM2]	Superimposes the ancillary data superimposed to DSKPGM1/DSKPGM2.
[Off]	Does not superimpose the ancillary data.

Setting the crosspoint switching

The timing at which the crosspoints are to be switched can be set.

• This switching involves the operation of the crosspoint buttons and the <CUT> button.

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Select an item in [Timing] in the [XPT Switch] column.

• Select the timing of switching.

[Any]	The crosspoints are switched in the nearest field. This is for live applications.
[Field1]	The crosspoints are switched in field 1. This is for editing applications.
[Field2]	The crosspoints are switched in field 2. This is for editing applications.

Network settings

For details on network settings, refer to “Network settings” (page 47).

Setting the image and the WFM/VECT to display on the Menu Panel AV-HS60C3

Set the image and the WFM/VECT to display on the Menu Panel AV-HS60C3.

Setting the image to encode

1 Select the <SYS> button → [SYSTEM] → [Display] tab.

2 Select an item in [Target] in the [Video Codec] column.

- Select the image to encode in the Main Frame AV-HS60U1/AV-HS60U2.

[DISP]	Encodes the image selected in the DISP bus, and displays the image, WFM and VECT on the Menu Panel AV-HS60C3 connected to the main control panel.
[External]	Displays the image on the external device connected to the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2. When this setting is applied, the image selected in the DISP bus, WFM, and VECT is not displayed in the Menu Panel AV-HS60C3.

Setting the WFM (waveform monitor)

1 Select the <SYS> button → [SYSTEM] → [Display] tab.

2 Select an item in [Style] in the [WFM] column.

- Select the display method of the signal waveform.

[Parade]	The signal waveforms are displayed side-by-side.
[Overlay]	The signal waveforms are displayed on top of each other.

3 Select an item in [Mode] in the [WFM] column.

- Select the signal with the waveform displayed.

[YPbPr]	Y, P_B, and P_R signals are displayed.
[RGB]	R, G, and B signals are displayed.
[Y]	Only the Y signal is displayed.

Setting the VECTOR (vectorscope)

The reference marker of the color bar can be selected.

1 Select the <SYS> button → [SYSTEM] → [Display] tab.

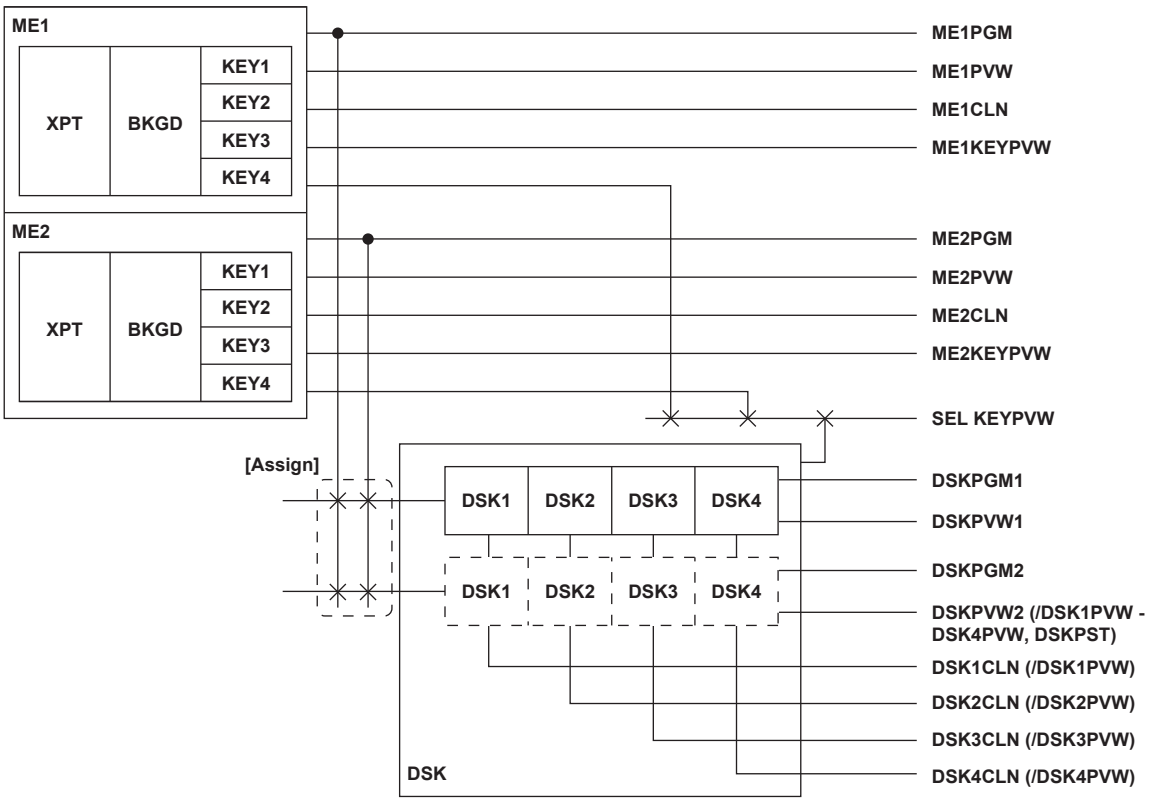
2 Select an item in [Bar Target] in the [Vector] column.

[75%]	The reference marker of the 75% color bar is displayed.
[100%]	The reference marker of the 100% color bar is displayed.

Setting the Main Frame AV-HS60U1/AV-HS60U2

Setting the ME output and DSK output

Video signals can be output in the ME1/ME2/DSK block as shown in the following figure. Each output can be assigned to the SDI OUT signal from the <IN OUT> button → [SDI OUT] → [Assign] tab.



Setting the ME1CLN/ME2CLN output

Clean signals (before key effects were added) can be output. Key Out signals using key combinations can also be output.

1 Select the <SYS> button → [MAIN FRAME] → [ME1,2] tab.

2 Select an item in [Key Select] in the [ME1 CLN]/[ME2 CLN] column.

- Select the keyer from [Key1] to [Key4].

3 Select an item in [CLN/KOUT] in the [ME1 CLN]/[ME2 CLN] column.

[Clean]	Outputs clean signals before key effects of the keyer set in [Key Select] in the [ME1 CLN]/[ME2 CLN] column were added.
[Keyout]	Outputs key signals for the keyer set in [Key Select] in the [ME1 CLN]/[ME2 CLN] column.
[Combined KOUT]	Outputs the combined key signal of KEY1 to KEY4.

NOTE

- DSK clean signals are output individually from DSK1 to DSK4.
- DSK Key Out signals cannot be output.

Setting the ME1KEYPVW/ME2KEYPVW output

Preview output exclusive for key. Set whether to output signals with added keyer key effects to the PGM background.

It can be switched with the chroma key adjustment preview screen for the corresponding keyer when [Key1] to [Key4] is selected on the top menu <ME1>/<ME2> button → [KEY1] to [KEY4] → [Chroma] → [Sample] → [Chroma PVW].

1 Select the <SYS> button → [MAIN FRAME] → [ME1,2] tab.

2 Select an item in [Key1 Enable] to [Key4 Enable] in the [ME1 KEYPVW]/[ME2 KEYPVW] column.

[On]	Signals with added key effects of the corresponding keyer is output.
[Off]	No signal is output.

3 Select an item in [Chroma PVW] in the [ME1 KEYPVW]/[ME2 KEYPVW] column.

[Enable]	Displays the preview screen for chroma key adjustment in each preview output.

[Disable]	Does not display the preview screen for chroma key adjustment in each preview output.

Setting the ME1PVW/ME2 PVW output

A preview signal of the BKGD and KEY1 to KEY4 which were selected in the next transaction can be output.

Select [Key1] to [Key4] from the <ME1>/<ME2> button on the top menu → [KEY1] to [KEY4] → [Chroma] → [Sample] → [Chroma PVW] to switch to the preview screen for chroma key adjustment of the corresponding keyer.

1 Select the <SYS> button → [MAIN FRAME] → [ME1,2] tab.

2 Select an item in [Key1 Enable] to [Key4 Enable] in the [ME1 PVW]/[ME2 PVW] column.

[Off]	Does not output signals.
[On]	Outputs the preview signal of the corresponding keyer.

3 Select an item in [Chroma PVW] in the [ME1 PVW]/[ME2 PVW] column.

[Enable]	Displays the preview screen for chroma key adjustment in each preview output.
[Disable]	Does not display the preview screen for chroma key adjustment in each preview output.

Setting the DSKPGM1/DSKPGM2 output

Selects the video to be the base of DSKPGM1 and DSKPGM2.

1 Open the <SYS> button → [MAIN FRAME] → [DSK] tab.

2 Select an item in the [DSK Assign] column → [Assign Mode].

[Common]	• Makes the base video for DSKPGM1 and DSKPGM2 the same. Setting of the [DSK Assign] column → [DSKPGM1] is applied to both DSKPGM1 and DSKPGM2.
[Each]	• Different base videos can be set for DSKPGM1 and DSKPGM2. Settings of the [DSK Assign] column → [DSKPGM1] and [DSKPGM2] are applied to DSKPGM1 and DSKPGM2 respectively.

3 Select an item in the [DSK Assign] column → [DSKPGM1]/[DSKPGM2].

[ME1PGM], [ME2PGM]	ME1PGM and ME2PGM will be the base video, respectively.
[ME1CLN], [ME2CLN]	ME1CLN and ME2CLN will be the base video, respectively.

• For details of ME1CLN and ME2CLN output settings, refer to “Setting the ME1CLN/ME2CLN output” (page 148).

Setting DSKPVW1/DSKPVW2/DSK1CLN to DSK4CLN output

The unit can output 6 signals for preview output and clean output in addition to the DSKPGM1 or DSKPGM2 for program output as the DSK output.

• DSKPVW1: Signal for preview of DSKPGM1

• DSKPVW2: Signal for preview of DSKPGM2

• DSK1CLN to DSK4CLN: Clean signal before adding each DSK (DSK1 to DSK4)

Following signals can be assigned to the DSKPVW2 in addition to the signal for preview of DSKPGM2.

• DSK1PVW to DSK4PVW: Signal for individual preview of each DSK (DSK1 to DSK4)

• DSKPST: The PVW output of the last ME line that the DSK is assigned

In addition to the clean signal, individual preview (DSK1PVW to DSK4PVW) for each can be assigned to DSK1CLN to DSK4CLN.

1 Select the <SYS> button → [MAIN FRAME] → [DSK] tab.

2 Select an item in [Combine] in the [DSK PVW] column.

• Select the combine mode for DSKPVW1, DSKPVW2, DSK1PVW to DSK4PVW.

[On]	Adds DSK regardless of on/off of the DSK1 to DSK4. • DSK1PVW - DSK4PVW Adds the corresponding DSK (DSK1 to DSK4) and all the DSK from the lower layers. • DSKPVW1, DSKPVW2 Adds the DSK in the uppermost layer and all DSK in the lower layer out of the DSK assigned to DSKPGM1 and DSKPGM2.
[Off]	Adds DSK in accordance to the on/off of the DSK1 to DSK4. • DSK1PVW - DSK4PVW The corresponding DSK itself (DSK1 to DSK4) is always added. The DSK for the lower layer is not added if it is off. • DSKPVW1, DSKPVW2 The DSK in the uppermost layer out of the DSK assigned to DSKPGM1 and DSKPGM2 is always added. The DSK for the lower layer is not added if it is off. • The [DSK Base] setting in the [DSK PVW Base] column is fixed to [PGM].

3 Select an item in [DSK1 Enable] to [DSK4 Enable] in the [DSK PVW] column.

• Select if each DSK is to be added to the preview output of DSK (DSKPVW1, DSKPVW2, DSK1PVW to DSK4PVW).

[On]	Adds to the DSK preview output.
[Off]	Does not add to the DSK preview output.

4 Select an item in [DSK Base] in the [DSK PVW Base] column.

- Select the background of the preview output of DSK (DSKPVW1, DSKPVW2, DSK1PVW to DSK4PVW).

[PGM]	Uses the PGM output of ME in the last line. However, for the DSKPVW output against the DSKPGM that is not assigned to [DSK1] to [DSK4] of the [Config] column will be the PVW output of ME in the last line.
[PST]	Uses the PVW output of ME in the last line. This cannot be selected when the [Combine] item in the [DSK PVW] column is set to [Off].

5 Select an item in [DSK1CLN] to [DSK4CLN] in the [DSKPVW ASSIGN] column.

- Select the signal to be assigned to DSK1CLN to DSK4CLN.

[DSK1CLN] - [DSK4CLN]	Assigns the clean signal for corresponding DSK.
[DSK1PVW] - [DSK4PVW]	Assigns the individual preview signal for corresponding DSK.

6 Select an item in [DSKPVW2] in the [DSKPVW ASSIGN] column.

- Select the signal to be assigned to DSKPVW2.

[DSKPVW2]	Assigns the signal for preview of DSKPGM2.
[DSK1PVW] - [DSK4PVW]	Assigns the individual preview signal for corresponding DSK.
[DSKPST]	Assigns the PVW output for ME of the last line.

Setting the SEL KEYPVW output

The preview for the corresponding key is output to the SEL KEYPVW output when the <KEY1> to <KEY4>, and <DSK1> to <DSK4> buttons in the KEY operation area of ME are pressed.

The chroma key adjustment preview screen is displayed when the key type of the corresponding key is [Chroma].

1 Select the <SYS> button → [MAIN FRAME] → [Sel KeyPVW] tab.

2 Select an item in the [Panel Ctrl] column in the [Mode] column.

[On]	The preview of the corresponding key is output by pressing the <KEY1> to <KEY4> or the <DSK1> to <DSK4> buttons in the KEY operation section of each ME.
[Off]	The SEL KEYPVW output will not change when the <KEY1> to <KEY4> or the <DSK1> to <DSK4> buttons in the KEY operation section of each ME is pressed.

3 Select an item in [Key1 Enable] to [Key4 Enable] in the [ME1]/[ME2]/[DSK] column.

[On]	Outputs the image where the key is combined when the button of the corresponding key is pressed.
[Off]	Outputs the image where the key is not combined when the button of the corresponding key is pressed.

Setting the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

Settings for the main control panel and sub control panel

Panel brightness and saver time can be set for each of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

Setting the touch buzzer

The buzzer sound during touch screen operation can be enabled/disabled.

- The buzzer only activates when operating the Menu Panel AV-HS60C3.

1 Select the <SYS> button → [CTRL PANEL] → [Main Panel]/[SubPanel1]/[SubPanel2] tab.

2 Select an item in [Touch Sound] in the [Sound] column.

[Touch Sound]	Sets the enable ([On])/disable ([Off]) of the buzzer sound during the touch screen operation in the menu panel.
[Register Sound]	Sets the enable ([On])/disable ([Off]) of the buzzer sound during the [Store] operation of the memory.
[Error Sound]	Sets the enable ([On])/disable ([Off]) of the buzzer sound when the error message is displayed.

Setting menu delegation

For details on the menu delegation function, refer to “Menu delegation function” (page 45).

Setting the saver time

The panel backlight can be automatically turned off when panel operation becomes idle for a certain period.

- This setting is applied to Menu Panel AV-HS60C3, multi-selection panel, and source name display panel.

1 Select the <SYS> button → [CTRL PANEL] → [Main Panel]/[SubPanel1]/[SubPanel2] tab.

2 Select an item in [Saver Time] in the [Saver Time] column.

[On]	Backlight is turned on all the time.
[Off]	The backlight turns off as soon as [Off] is set. It turns on again when the panel is operated. The setting after it turns on becomes [On].
[60], [120], [180]	When no control panel operation is performed within a set time interval (60, 120, or 180 minutes), the built-in display backlight is turned off automatically. It turns on again when the panel is operated.

NOTE

- The backlight does not turn on even if a mouse is used.

Setting the panel brightness

1 Select the <SYS> button → [CTRL PANEL] → [Main Panel]/[SubPanel1]/[SubPanel2] tab.

2 Set [MenuPanel] in the [Brightness] column.

- Adjust the brightness of the Menu Panel AV-HS60C3.

3 Set [Select Panel] in the [Brightness] column.

- Adjust the brightness of the multi-selection menu panel.

4 Set [Source Name] in the [Brightness] column.

- Adjust the brightness of the source name display panel.

Setting the button color

The lighting color for each of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 buttons can be set.

Setting the colors when the buttons are turned on

- You can select [Red], [Green], [Yellow], [Orange], and [ColorGroup1] to [ColorGroup8].

1 Select the <SYS> button → [CTRL PANEL] → [Button Color] tab.

2 Select an item in [High Tally] in the [Select Button] column.

- Set the color of the button included in the on-air output.
- Applicable buttons are the KEY bus crosspoint buttons, PGM/A bus crosspoint buttons, PST/B bus crosspoint buttons, corresponding buttons from <KEY1 TRNS> to <KEY4 TRNS>, <DSK1 TRNS> to <DSK4 TRNS> buttons, and the KEY bus selector buttons (except the <DISP> button and the <MCRO> button).

3 Select an item in [Low Tally] in the [Select Button] column.

- Set the color of the button not included in the on-air output (except Preset).
- Besides the KEY bus crosspoint buttons, the PGM/A bus crosspoint buttons, and the PST/B bus crosspoint buttons, other buttons excluding Preset are also included.

4 Select an item in [Preset] in the [Select Button] column.

- Set the color for the Preset button.
- Preset buttons other than the KEY bus crosspoint buttons, the PGM/A bus crosspoint buttons, and the PST/B buttons, are also included.

5 Select an item in [Lighting Logic] in the [Select Button] column.

- Select the condition to light the crosspoint buttons in the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

[Button]	Only one crosspoint button lights up for each bus in each panel.
[Source]	All the crosspoint buttons light up for the same source.

Setting the colors when the buttons are turned off

Set the buttons so that they will light dimly when they are turned off. The color of buttons that are turned off can be set at each block of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

- Select a color from [ColorGroup1] to [ColorGroup8].

1 Select the <SYS> button → [CTRL PANEL] → [Button Color] tab.

2 Select an item in [XPT]/[Select Panel]/[BKGD]/[Key]/[DSK]/[Common] in the [No Sel ME1]/[No Sel ME2]/[No Sel Other] column.

- The applicable blocks of each item are as follows:
  - [XPT]: Crosspoint area
  - [Select Panel]: Multi-selection panel area
  - [BKGD]: Transition area
  - [Key]: Key operation area
  - [DSK]: DSK operation area
  - [Common]: Other buttons

[Input]*1	Sets [ColorGroup1] through [ColorGroup8] for each source from the <CONF> button → [SOURCE NAME] → [Panel Name] tab. • Sources (such as ME1PGM) that cannot be changed from the <CONF> button → [SOURCE NAME] → [Panel Name] tab, are fixed to a white lighting.
[ColorGroup1] to [ColorGroup8]	Sets any of 8 types of color.
[AssignableME]*2	Sets the button color to the ME color that was selected from the <SYS> button → [MAIN FRAME] → [DSK] tab → [Config] column → [Assign].

*1 Setting item only for [XPT] in the [No Sel ME1]/[No Sel ME2] column.

*2 Setting item only for [DSK] in the [No Sel Other] column.

Setting the brightness of buttons when they are turned off

1 Select the <SYS> button → [CTRL PANEL] → [Main Panel]/[SubPanel1]/[SubPanel2] tab.

2 Set [Button Dimmer] in the [Brightness] column.

- Set the brightness of buttons that are OFF.

Setting the preset color of buttons when they are turned on

1 Select the <SYS> button → [CTRL PANEL] → [Color Group] tab.

2 Adjust the color.

- While looking at the lighting status of the buttons, set [R], [G], and [B] in the [Color Group1] to [Color Group8] columns.

Setting the external connection

Setting a serial port

The <COM4 (M/S)> port can be switched between master and slave connection.

1 Select the <SYS> button → [PERIPHERAL] → [General] tab.

2 Select an item in [Master/Slave] in the [MF COM4] column.

[Master]	A master connection is used.
[Slave]	A slave connection is used.

Setting a tally

Setting the tally mode

1 Select the <SYS> button → [PERIPHERAL] → [Tally] tab.

2 Select an item in [MV Tally] in the [Tally Mode] column.

[Internal]	The tally of each sub-screen of the MultiView display is updated according to the tally generated by the unit.
[External]	The tally of each sub-screen of the MultiView display is not updated by tally generated by the unit and is updated according to the information from external devices connected to the unit. The tally control from external devices is supported by the plug-in software.

3 Select an item in [Key Judge] in the [Tally Mode] column.

[ON]	On/off of the tally is determined by corresponding source is included in the valid screen.
[OFF]	On/off of the tally is determined from the transition amount or on/off of the key.

Setting a tally group

1 Select the <SYS> button → [PERIPHERAL] → [Tally] tab.

2 Select an item in [Target A], [+Target B], [+Target C], and [+Target D] of the [Tally Group1-1 (On-Air)] column, and select an item in [+Target E], [+Target F], [+Target G], and [+Target H] of the [Tally Group1-2 (On-Air)] column.

- Set the reference output for [Tally Group1-1 (On-Air)]/[Tally Group1-2 (On-Air)] (on-air tally).
  Off, ME1PGM, ME1CLN, ME2PGM, ME2CLN, DSKPGM1, DSKPGM2, DSK1CLN to DSK4CLN, AUX1 to AUX16
- Since [Tally Group1-1 (On-Air)]/[Tally Group1-2 (On-Air)] is used exclusively for on-air tally, a preview output cannot be specified.
- Tally information of sources that configure any of the outputs set in [Target A], [+Target B], [+Target C], and [+Target D] of the [Tally Group1-1 (On-Air)] column and [+Target E], [+Target F], [+Target G], and [+Target H] of the [Tally Group1-2 (On-Air)] column is generated.

3 Select an item in [Target A], [+Target B], [+Target C], [+Target D] of columns [Tally Group2-1] to [Tally Group4-1], and [+Target E], [+Target F], [+Target G], and [+Target H] of columns [Tally Group2-2] to [Tally Group4-2].

- Set the reference output for [Tally Group2-1]/[Tally Group2-2] to [Tally Group4-1]/[Tally Group4-2].
  Off, ME1PGM, ME1CLN, ME2PGM, ME2CLN, DSKPGM1, DSKPGM2, DSK1CLN to DSK4CLN, AUX1 to AUX16, ME1PVW, ME2PVW, DSKPVW1, DSKPVW2

4 Select an item in [Color] in the [Tally Group1-1 (On-Air)] to [Tally Group4-1] columns.

- Select [Red], [Green], [Yellow], or [Orange] for the color of the MultiView display.
- Since [Tally Group1] is exclusively for on-air tally, the color is fixed to [Red].

Tally display of the MultiView display

The target of tally display of the MultiView display is [Tally Box], [Tally Label L], and [Tally Label R].
For each of those areas, [Tally Group1] to [Tally Group4] are set and displayed.

- For details on the tally display of the MultiView display, refer to “Setting the tally display” (page 128).

High tally display and bus tally display of the button

The High tally and bus tally are displayed for the next button from [Tally Group1-1 (On-Air)] (on-air tally).

- Applicable buttons are the KEY bus crosspoint buttons, PGM/A bus crosspoint buttons, PST/B bus crosspoint buttons, corresponding buttons from <KEY1 TRNS> to <KEY4 TRNS>, and buttons from <DSK1 TRNS> to <DSK4 TRNS>.

GPI input/output tally settings

- For each tally group, a maximum of 48 source tally outputs can be assigned to the GPI output terminal.
- The functions can be assigned in each tally group and can be enabled/disabled externally through the GPI input terminal.
- For details on GPI input/output tally settings, refer to “Setting the GPI input/output” (page 154).

Setting the GPI input/output

Set the GPI input/output port of the Main Frame AV-HS60U1/AV-HS60U2, Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

Setting the GPI input port

Functions can be assigned and externally controlled through the GPI input ports.

- The GPI input ports are the pins 1 to 18 of the <GPI IN> terminal on the Main Frame AV-HS60U1/AV-HS60U2, and the pins 1 to 8 of the <GPI I/O> terminal on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4. (page 169)

1 Select the <SYS> button → [PERIPHERAL] → [GPI IN] tab.

2 Select [ID] and select an item.

- Select [Mainframe], [MainPanel], [SubPanel1], or [SubPanel2] as the setting target.

3 Select the port where you want to assign a function from the port list in the left column.

- Select [Select] to filter the port list in the left column. You can select [All], [GPI In1-6], [GPI In7-12], or [GPI In13-18].

4 Select the function to assign from the function list in the right column.

- The input signal type can be selected from the right column function list by selecting [Type]. Type is limited by the function.
  - [LowEdge]: Falling edge
  - [HighEdge]: Rising edge
  - [LowLevel]: Low level
  - [HighLevel]: High level
- Select [Group Select] to switch the group of the function list in the right column.
  For details, refer to “GPI input function list” (page 154).

5 Select [Assign].

- The function is assigned to the button selected in the step **2**.
- Select [Test Fire] to test the signal input operation of the set GPI port.

■ GPI input function list

[Group Select]	Signal name	Description	[Type]
[ME1], [ME2]	KEY1 ON to KEY4 ON	Executes the transition for KEY1 to KEY4.	[LowEdge] or [HighEdge]
	KEY1 CUT to KEY4 CUT	Executes the cut transition for KEY1 to KEY4.	
	AUTO	Executes the auto transition.	
	CUT	Executes the cut transition.	
[DSK]	KEY1 ON to KEY4 ON	Executes the cut transition for DSK1 to DSK4.	[LowEdge] or [HighEdge]
	KEY1 CUT to KEY4 CUT	Executes the cut transition for DSK1 to DSK4.	
[USK]	USK1 ON - USK4 ON	On/off of USK1 ON to USK4 ON.	[Low Edge] or [High Edge]
[OTHER]	No Assign	No function assigned	—
	REC Still1 to REC Still4	Still recording	[LowEdge] or [HighEdge]
	REC Clip1 to REC Clip4	Clip recording start	
	PLAY Clip1 to PLAY Clip4	Clip playback start	
	STOP Clip1 to STOP Clip4	Clip recording stop or playback stop	
	FTB	FTB transition start	
	Tally G1 DSBL	[Tally Group1] tally signal is not output	[LowLevel] or [HighLevel]
	Tally G2 DSBL	[Tally Group2] tally signal is not output	
	Tally G3 DSBL	[Tally Group3] tally signal is not output	
	Tally G4 DSBL	[Tally Group4] tally signal is not output	
[Macro]	Macro1-1 - Macro9-9	Playback of the applicable macro register memory (one out of 1-1 to 9-9).	[Low Edge] or [High Edge]
	Play Cancel	Canceling of the macro playback.	
	Play Resume	Resuming of the paused macro playback.	

NOTE

- When a plug-in software application is introduced, there are cases where functions inherent to that application are added as functions to be assigned.

Setting the GPI output port

GPI output functions and tally outputs can be assigned and externally output through the GPI output port.

- The GPI output ports are the pins 1 to 48 of the <GPI OUT1>/<GPI OUT2> terminal on the Main Frame AV-HS60U1/AV-HS60U2, and the pins 1 to 10 of the <GPI I/O> terminal on the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4. (page 169)

1 Select the <SYS> button → [PERIPHERAL] → [GPI OUT] tab.

2 **Select [ID] and select an item.**

- Select [Mainframe], [MainPanel], [SubPanel1], or [SubPanel2] as the setting target.

3 **Select the port where you want to assign a function from the port list in the left column.**

- Select [Select] to filter the port list in the left column. Select a color from [All], [GPI Out1-6], [GPI Out7-12], [GPI Out13-18], [GPI Out19-24], [GPI Out25-30], [GPI Out31-36], [GPI Out37-42], and [GPI Out43-48].

4 **Select the function to assign from the function list in the right column.**

- Select [Type] to select the type of output signal from the function list in the right line.
  - [LowEdge]: Falling edge
  - [HighEdge]: Rising edge
  - [LowLevel]: Low level
  - [HighLevel]: High level
- Select [Group Select] to switch the group of the function list in the right column.
  For details, refer to “GPI output function list” (page 155).
- For tally output assignment, select [Tally Select] to set the tally group.
- For details, refer to “Tally output function list” (page 155).

5 **Select [Assign].**

- The function is assigned to the button selected in the step **2**.
- Select [Test Fire] to test the signal output operation of the set GPI port. The pulse of Low level is output for approximately 0.05 seconds.

■ GPI output function list

Describes about when [ME1], [ME2], [DSK], [USK], or [OTHER] is selected in [Group Select].

[Group Select]	Signal name	Description	[Type]
[ME1], [ME2]	KEY1 ON to KEY4 ON	Key on	[LowLevel] or [HighLevel]
	KEY1 CUT to KEY4 CUT	Cut transition of a key was executed	[LowEdge] or [HighEdge]
	CUT	Cut transition was executed	
	KEY1 Trans to KEY4 Trans	Key transition in progress	[LowLevel] or [HighLevel]
	AUTO	Auto transition in progress	
[DSK]	KEY1 ON to KEY4 ON	DSK on	[LowLevel] or [HighLevel]
	KEY1 CUT to KEY4 CUT	Cut transition of the DSK was executed	[LowEdge] or [HighEdge]
	KEY1 Trans to KEY4 Trans	DSK transition in progress	[LowLevel] or [HighLevel]
[USK]	USK1 ON - USK4 ON	On/off of USK1 ON to USK4 ON.	[LowLevel] or [HighLevel]
[OTHER]	No Assign	No function assigned	—
	Event MEM	Event set by event memory executed	[LowEdge] or [HighEdge]
	FTB ON	FTB on	[LowLevel] or [HighLevel]
	FTB Trans	FTB transition in progress	

NOTE

- When a plug-in software application is introduced, some functions inherent to that application may be added as functions to be assigned.

■ Tally output function list

- This table describes cases when [Tally Group1], [Tally Group2], [Tally Group3], or [Tally Group4] is selected in [Group Select].

[Tally Select]	Signal name	Description	[Type]
[Input1-20]	SDI IN1 to SDI IN20	SDI input signals 1 to 20	[LowLevel] or [HighLevel]
[Input21-40]	SDI IN21 to SDI IN32	SDI input signals 21 to 32	
	DVI IN1 to DVI IN2	DVI-D input signal	
[Internal]	Still 1V to Still 4V	Video memory (photo) 1 to 4 videos	
	Still 1K to Still 4K	Video memory (photo) 1 to 4 keys	
	Clip 1V to Clip 4V	Video memory (video) 1 to 4 videos	
	Clip 1K to Clip 4K	Video memory (video) 1 to 4 keys	
	CBGD1, CBGD2	Color background 1, 2	
[MEOut]	ME1PGM, ME2PGM	Program video signal	
	ME1PVW, ME2 PVW	Preview video signal	
	ME1CLN, ME2CLN	Clean signal	
	DSKPGM1, DSKPGM2	Program video signal	
	DSKPVW1, DSKPVW2	DSK preview video signal	
	DSK1CLN to DSK4CLN	Clean signal	
[AUX]	AUX1 to AUX16	AUX video signal	

Maintenance settings

Software and hardware version

Version information

Information on the software and hardware versions of this unit can be displayed.

1 Select the <SYS> button → [MAINTENANCE] → [Status] tab.

2 Check the [System Version] display in the [System Version] column.

- Check the version of the overall system.

3 Check the display of the following columns.

[Main frame Soft1], [Main frame Soft2], [Main frame FPGA]	Check the versions of software and hardware of the Main Frame AV-HS60U1/AV-HS60U2.
[Main Panel Soft], [Main Panel FPGA], [Main Panel CPLD]	Check the versions of software and hardware of the main control panel.
[Sub Panel1 Soft], [Sub Panel1 FPGA], [Sub Panel1 CPLD]	Check the versions of software and hardware of the sub control panel 1 (second Control Panel AV-HS60C1/AV-HS60C2/ AV-HS60C4).
[Sub Panel2 Soft], [Sub Panel2 FPGA], [Sub Panel2 CPLD]	Check the versions of software and hardware of the sub control panel 2 (third Control Panel AV-HS60C1/AV-HS60C2/ AV-HS60C4).

Updates

Version of the software for the unit can be updated using a memory card.
For the latest software information and methods to upgrade the software version, refer to the following website.
http://pro-av.panasonic.net/ (English only)

Alarm

In this unit, the next alarm message will appear as a popup.
For error displays, the indicator part of [ALARM] in Menu Panel AV-HS60C3 is lit in red.

Alarm message

An alarm message is displayed in Menu Panel AV-HS60C3 when an alarm has occurred.

Alarm message	Type of trouble	Solution
[ALARM! Fan Stop]	Shutdown of the cooling fan	The alarm message disappears if [OK] is selected. Contact your dealer immediately.
[ALARM! Power Failure]	Power supply problem	
[ALARM! Temperature]	Rise in the temperature inside the unit	

Alarm status displays

The next hardware alarm can be checked from the <SYS> button → [MAINTENANCE] → [Alarm] tab page. This page can be displayed even if [ALARM] of the Menu Panel AV-HS60C3 is selected.

1 Select the <SYS> button → [MAINTENANCE] → [Alarm] tab.

2 Check the display of each item in the [Main frame]/[Main Panel]/[Sub Panel1]/[Sub Panel2] column.

[Power A]	Displays the status of problems in the cooling fan or power inside the power supply 1.
[Power B]	Displays the status of problems in the cooling fan or power inside the power supply 2.
[Fan]	Displays the problem status of the cooling fan. It is displayed in the [Main frame] column.
[Temperature]	Displays the problem status of the internal temperature.

■ **Display details**

[No Alarm]	Shows that there are no problems.
[Alarm]	Shows that there is a problem.
[–]	Not a target for determination. • When a power supply unit is not mounted • When [Off] is selected in each item of [Alarm Enable]

Enabling/disabling the alarm display

1 Select the <SYS> button → [MAINTENANCE] → [Alarm] tab.

2 Select an item in the [Alarm Enable] column below each [Main frame]/[Main Panel]/[Sub Panel1]/[Sub Panel2] column.

[On]	Alarm detection is enabled.
[Off]	Alarm detection is disabled.

Log file recording

Each type of information in this unit such as alarms, are recorded in the built-in log file.
Log files can be saved in a memory card and a local computer connected to the LAN terminal of the Main Frame AV-HS60U1/AV-HS60U2.

■ **To save a log file to a memory card**

1 Select the <SYS> button → [MAINTENANCE] → [Alarm] tab.

2 Select an item in [Log File] in the [Log] column.

3 Select [OK].

- Save the log file to a memory card.

■ **To save a log file to a local computer**

1 Connect the Main Frame AV-HS60U1/AV-HS60U2 and a computer.

For details, refer to “Connecting a computer” (page 17).

2 Enter the address (http://192.168.0.5/log/log.txt) in the Web browser of a computer.

- A log file is saved in an internal storage of the computer.
- Enter the IP address for the <LAN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 in the place of “192.168.0.5”. If the address has been changed from the default setting (192.168.0.5), enter the changed value. For details on IP address setting, refer to “Configuring the network for the Main Frame AV-HS60U1/AV-HS60U2” (page 48).

Initialization

Initializing the setting data

The setting data can be reset to factory settings.

1 Select the <SYS> button → [MAINTENANCE] → [Boot] tab.

2 Select an item in the [Initial] column.

- Select the mode to be initialized.

[Initial]	Initializes the unit. • Plug-in software is not deleted. • Network setting values are not initialized.
[with Plugin]	Initializes the unit. All plug-in software applications are deleted. • Network setting values are not initialized.
[with Plugin/NW]	Initializes the unit including network setting values. All plug-in software applications registered in the unit are deleted.

3 Select [OK] in the confirmation screen.

- Initialize the settings data.

NOTE

- Data of the video memory is erased when the setting data is initialized. Data stored in the Storage Module AV-HS60D1 (optional) is not initialized.
- The setting of date and time is not initialized. (page 159)
- Initialization cannot be performed during video (Clip) recording/playback or during event memory playback.
- When you have deleted plug-in software, turn off the power, and restart the unit.

Initializing the fader lever

The transition range of the fader lever can be initialized.

- Initialization should be performed when the fader lever becomes out of adjustment by moving the installation location, etc., and transitions are not completed even if the fader lever has been pushed as far as it will go.

1 Select the <SYS> button → [MAINTENANCE] → [Boot] tab.

2 Select [Fader Initial] in the [Fader Initial] column.

3 Select [OK] in the confirmation screen.

4 Move the fader lever back and forth once.

Installation condition of the Storage Module

Installation condition of the Storage Module

Confirm the installation condition of the Storage Module AV-HS60D1.

1 Select the <SYS> button → [MAINTENANCE] → [Option] tab.

2 Check the [SSD] display in the [SSD] column.

- Display details are as follows.

[Enable]	The Storage Module is installed.
[Disable]	The Storage Module is not installed.

Expansion of the chroma key function

- The Chromakey Software AV-SFU60G (paid) is required to expand the chroma key function.
- One Chromakey Software AV-SFU60G can acquire one activation code, and chroma key for 1ch/ME (2ch/2ME) can be expanded against a single Main Frame AV-HS60U1/AV-HS60U2.
- Maximum of 3 Chromakey Software AV-SFU60G can be implemented to a single Main Frame AV-HS60U1/AV-HS60U2. Purchase required number depending on the system.
- Store the key code supplied with the Chromakey Software AV-SFU60G together with the serial number of the activated Main Frame AV-HS60U1/AV-HS60U2 in a safe place.

Activation procedure

1 Insert the memory card into the memory card slot.

- Insert the memory card initialized with the unit.
- For details of the initialization of the memory card, refer to “Initializing a memory card” (page 115).

2 Select the <SYS> button → [MAINTENANCE] → [Option] tab.

3 Select [Serial Data File] in the [Activate] column.

- Following folder is created in the memory card.
  PRIVATE\MEIGROUP\PAVCN\SBG\P2SD\ACTV\
  The machine information file “SERIAL.LST” for the unit is saved in this folder.

4 Acquire the activation code.

- Remove the memory card from the memory card slot and insert it into a PC connected to the Internet.
- Using the browser on the PC, connect to the following activation code issuing site. Acquire the activation code following the procedure displayed. To acquire the activation code, the key code supplied with the Chromakey Software AV-SFU60G is required.
  http://panasonic.biz/sav/actkey_e (English only)
- The activation code “ACTIVE.LST” is saved in the folder on the memory card created in step **3**. The file name may be automatically changed depending on the browser when the “ACTIVE.LST” file is already saved. Save after confirming that the “ACTIVE.LST” file does not exist.

5 Insert the memory card into the memory card slot.

- Insert the memory card with the activation code saved into the memory card slot of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

6 Select the <SYS> button → [MAINTENANCE] → [Option] tab.

7 Select an item in the [Activate] column.

- Select the channel of the key to expand the chroma key function.

[Activate Data File Key2]	Expands the chroma key function in KEY2.
[Activate Data File Key3]	Expands the chroma key function in KEY3.
[Activate Data File Key4]	Expands the chroma key function in KEY4.

- The activation code that is already used can be applied to other key channel.

8 Confirm the status in the [License Status] column → [Primatte Key2] to [Primatte Key4]

- The corresponding item will change to [Ready] when correctly activated.
- The item corresponding to the channel of the key that was originally activated will change to [Enable-] when the activation code that was already used is applied to the other key channel.

[Enable]	Activation is enabled, and the chroma key function is operating.
[Enable-]	Activation is disabled. The chroma key function is operating currently. The chroma key function will not operate when the power is turned on next time.
[Ready]	Activation is enabled. The chroma key function is not yet operating. The chroma key function will operate when the power is turned on next time.
[Disable]	Activation is disabled. The chroma key function is also not operating.

9 Turn off the power of the Main Frame AV-HS60U1/AV-HS60U2, and then turn it on again.

10 Confirm the status in the [License Status] column → [Primatte Key2] to [Primatte Key4]

- Confirm that the item corresponding to the channel for the key where activation has been enabled is set to [Enable].

Maintenance

Confirmation of cumulative operating time

Confirm rough indication of the cumulative operating time of the Main Frame AV-HS60U1/AV-HS60U2, and the cumulative operating time of the power supply and cooling fan installed in the Main Frame AV-HS60U1/AV-HS60U2 and the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

1 Select the <SYS> button → [MAINTENANCE] → [Mainte] tab

2 Confirm each item in the [System Running] column.

[System]	Displays the count-up time when the Main Frame AV-HS60U1/AV-HS60U2 is in operation.

3 Confirm each item in the [Main Frame Running] column.

[Power A]	Displays the count-up time when the power supply 1 of the Main Frame AV-HS60U1/AV-HS60U2 is in operation.
[Power B]	Displays the count-up time when the power supply 2 of the Main Frame AV-HS60U1/AV-HS60U2 is in operation.
[Fan]	Displays the count-up time when the Main Frame AV-HS60U1/AV-HS60U2 is in operation.

4 Confirm each item in the [Main Panel Running] column.

[Power A]	Displays the count-up time when the main control panel is connected to the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2, and the power supply 1 of the corresponding Control Panel AV-HS60C1/AV-HS60C2/ AV-HS60C4 is in operation.
[Power B]	Displays the count-up time when the main control panel is connected to the <PANEL> terminal of the Main Frame AV-HS60U1/AV-HS60U2, and the power supply 2 of the corresponding Control Panel AV-HS60C1/AV-HS60C2/ AV-HS60C4 is in operation.

5 Confirm each item in the [Sub1 Connecting]/[Sub2 Connecting] column.

[Power A]	Displays the count-up time when the sub control panels 1/2 (the second and the third Control Panel AV-HS60C1/ AV-HS60C2/AV-HS60C4) are connected to the LAN terminal of the Main Frame AV-HS60U1/AV-HS60U2 and each power supply 1 is in operation.
[Power B]	Displays the count-up time when the sub control panels 1/2 (the second and the third Control Panel AV-HS60C1/ AV-HS60C2/AV-HS60C4) are connected to the LAN terminal of the Main Frame AV-HS60U1/AV-HS60U2 and each power supply 2 is in operation.

NOTE

- When the unit with system version earlier than 3.00-00-0.00 is updated to 3.00-00-0.00 or later, each item in the [System Running] column, [Main Frame Running] column, and [Main Panel Running] column will display the same value.
- Each item in the [Main Panel Running]/[Sub1 Connecting]/[Sub2 Connecting] columns will display the value counted up in the Main Frame AV-HS60U1/AV-HS60U2. Therefore, the displayed value will not change even if the main control panel or the sub control panel connected to the Main Frame AV-HS60U1/AV-HS60U2 is replaced.

Initializing the Storage Module AV-HS60D1

1 Select the <SYS> button → [MAINTENANCE] → [Mainte] tab.

2 Select [SSD Format] in the [Format] column.

- All data stored in the Storage Module AV-HS60D1 (optional) is initialized.

Setting the date and time

The date and time to be used as the time stamp of the memory card can be set. Make sure to set them when using a memory card. They can be displayed on the split screens of the MultiView display.

Setting the date

1 Select the <SYS> button → [MAINTENANCE] → [Misc] tab.

- The date currently set will be loaded when the [Misc] tab page is opened.

2 Select an item in [Year], [Month], and [Date] in the [Date] column.

- Set the year, month, and day.
- The date currently set will be reloaded if [Get] in the [Date] column is selected.

3 Select [Set] in the [Date] column.

- Modified items will be set.

Setting the time

1 Select the <SYS> button → [MAINTENANCE] → [Misc] tab.

- The time currently set will be loaded when the [Misc] tab page is opened.

2 Set the [Hour], [Minute], and [Second] in the [Time] column.

- Change the hour, minute, and second.
- The time currently set will be reloaded if [Get] in the [Time] column is selected.

3 Select [Set] in the [Time] column.

- Modified items will be set.

Reflecting LTC in the time

The LTC currently being entered will be loaded when the settings page is opened.

1 Select the <SYS> button → [MAINTENANCE] → [Misc] tab.

2 Check the [Hour], [Minute], and [Second] display in the [LTC] column.

- Display the hour, minute, and second.
- The LTC currently entered will be reloaded if [Get] in the [LTC] column is selected.

3 Select [Sync Time] in the [LTC] column.

- Entered details will be reflected in [Time]. Select [Get] in the [Time] column to check the time.

Locking the menu operation

The menu setting that can be operated from the <SYS> button can be locked by each menu in the second hierarchy.

1 Select the <SYS> button → [MENU LOCK] → [Menu Lock] tab.

2 Select an item in [SYSTEM], [MAIN FRAME], [CTRL PANEL], [PERIPHERAL], and [MAINTENANCE] in the [Menu Lock] column.

[Off]	Enables changing of the settings of the corresponding menu.
[On]	Locks the settings of the corresponding menu. The setting details can be checked.

Chapter 9 3G mode/4K mode

This chapter describes the difference with the Standard mode.

Switcher mode

Selecting the switcher mode

There are three operation modes (switches modes) of Standard mode, 3G mode, and 4K mode for this unit.
The video formats that can be selected are different for each mode.

1 Select the <SYS> button → [SYSTEM] → [Video] tab.

2 Select an item in the [Video Format] column → [Switcher Mode].

[Standard]	A mode that will operate in following video format. • HD format: [1080/59.94i], [1080/50i], [1080/29.97PsF], [1080/25PsF], [1080/24PsF], [1080/23.98PsF], [720/59.94p], [720/50p] • SD format: [480/59.94i], [576/50i]
[3G]	A mode that will operate in following video format. [1080/59.94p], [1080/50p]
[4K]	A mode that will operate in following video format. [2160/59.94p], [2160/50p]

NOTE

- The Main Frame AV-HS60U1/AV-HS60U2 and the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 will reboot when the switcher mode is switched. Communication between the Main Frame AV-HS60U1/AV-HS60U2 and the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 is interrupted at this time, so the communication error message is displayed in the menu panel for several tens of seconds. Also, current setting and data in the shot memory, event memory, macro memory, and video memory are initialized. However, the network setting and the data saved in the storage module are not initialized.
- It is recommended to save the current setting to the project file before switching the switcher mode.
- The project file from different switcher mode cannot be loaded.

Difference of function for each mode

There are differences in function that can operate for each mode.

Comparison of function for each mode

Item	Standard	3G	4K*1
Input function			
• Number of SDI inputs	32	16	4K signal: ×8*2
• Number of DVI inputs	2	0	0
• Number of up-converter channel	4	0	0
• Dot by Dot	Possible	Not possible	Not possible
• Number of delay function channel	4	2	0
• Number of color corrector channel	8	4	0
• Number of upstream keyer channel	4	2	0
Output function			
• Number of SDI output	16	8	4K signal: ×3*2 2K signal: ×2*3
• Number of down-converter channel	2	0	0
• Number of color corrector channel	4	2	0
ME1 function			
• Number of utility bus	2	1	1
ME2 function			
• BKGD transition pattern (SQ, SL, 3D)	Possible	Not possible	Not possible
• IMAGE	Possible	Not possible	Not possible
• Number of keyer	4	0	0
• Number of utility bus	2	0	0
Number of DSK keyer	4	2	2
Number of still image (Still) memory channel	4	2	2*4
Moving image (Clip) memory function			
• Number of channel	4	2	2
• Recording time per channel (standard image quality)	Approximately 60 seconds	Approximately 30 seconds	Approximately 30 seconds*4
• Recording time per channel (high image quality)	Approximately 30 seconds	Approximately 15 seconds	Approximately 15 seconds*4
Number of MultiViewer	4	2	2
Number of AUX	16	8	8

*1 There are the following function limitations other than described in the table for 4K mode.
- The frame synchronizer is always on.
- Edge cannot be added to DSK.
- The signals that can be selected as the source for FTB are only Black and White.
- Image quality may change due to internal processing. For details, refer to “Considerations for 4K mode” (page 166).

*2 The one line of the 4K signal is constructed with four lines of the 3G-SDI signals.

*3 The 2K signal means 1080/59.94p, 50p, 59.94i, and 50i signals.

*4 The video signal recorded in the video memory will be in 2K resolution (1920×1080). The size of the image file that can be read from the memory card will be the same.

Input/output function in the 3G mode

■ **Relationship between the notation of the input terminals at the rear of the Main Frame AV-HS60U1/AV-HS60U2 and each input function (for 3G mode)**

Notation of the terminal at rear	Notation in menu	Color corrector	Frame delay
1	[SDI IN1]	—	—
3	[SDI IN2]	—	—
5	[SDI IN3]	—	—
7	[SDI IN4]	—	—
9	[SDI IN5]	—	—
11	[SDI IN6]	—	—
13	[SDI IN7]	—	—
15	[SDI IN8]	—	—
17	[SDI IN9]	—	—
19	[SDI IN10]	—	—
21	[SDI IN11]	—	—
23	[SDI IN12]	—	—
25	[SDI IN13]	✓	—
27	[SDI IN14]	✓	✓
29	[SDI IN15]	✓	—

Notation of the terminal at rear	Notation in menu	Color corrector	Frame delay
31	[SDI IN16]	✓	✓

- Even numbered input terminals (2, 4, 6 ... 30, 32) cannot be used.
- Both signals from 3G-SDI Level A and Level B can be used on all the odd numbered input terminals. Set the setting of the frame synchronizer to anything other than [Off] when the signal for 3G-SDI Level A Mapping is input.
- Color corrector can be used in [SDI IN13] to [SDI IN16].
- Frame delay can be used in [SDI IN14] and [SDI IN16]. The delay amount can be set in 2 frame intervals.
- [1080p Auto] can be selected in the [FS] item of the <IN OUT> button → [SDI IN] → [Frame Buffer] tab → [SDI IN1] to [SDI IN16] column. Each line of the 1080i signal is copied and automatically converted to a video signal in the 1080p format when a 1080i format video signal is input to the terminal which is set to [1080p Auto]. The converted signal can be used with the unit.
  - The 1080/59.94i signal is automatically converted when the video format is 1080/59.94p.
  - The 1080/50i signal is automatically converted when the video format is 1080/50p.

■ Relationship between the notation of the output terminals at the rear of the Main Frame AV-HS60U1/AV-HS60U2 and each output function (for 3G mode)

Notation of the terminal at rear	Notation in menu	Color corrector	Video format
1	[SDI OUT1]	—	1080p
2	—	—	—
3	[SDI OUT2]	—	1080p
4	—	—	—
5	[SDI OUT3]	—	1080p
6	—	—	—
7	[SDI OUT4]	—	1080p
8	—	—	—
9	[SDI OUT5]	—	1080p
10	—	—	—
11	[SDI OUT6]	—	1080p
12	—	—	—
13	[SDI OUT7]	✓	1080p
14			1080i
15	[SDI OUT8]	✓	1080p
16			1080i

- The video signal in 1080p format is not output from the even numbered output terminals (2, 4, 6 ... 14, 16). No signal is output from the terminals 2 to 12.
- A signal with half of the line decimated from the signal in 1080p format, and converted to 1080i format is output from the terminals 14 and 16.
- The signal in the 1080p format is output in 3G-SDI Level B.

Input/output function in the 4K mode

■ Relationship between the notation of the input terminals at the rear of the Main Frame AV-HS60U1/AV-HS60U2 and each input function (for 4K mode)

Notation of the terminal at rear	Notation in menu	Representative notation
1	[SDI IN1]	[SDI IN1]
2	[SDI IN2]	
3	[SDI IN3]	
4	[SDI IN4]	
5	[SDI IN5]	[SDI IN5]
6	[SDI IN6]	
7	[SDI IN7]	
8	[SDI IN8]	
9	[SDI IN9]	[SDI IN9]
10	[SDI IN10]	
11	[SDI IN11]	
12	[SDI IN12]	
13	[SDI IN13]	[SDI IN13]
14	[SDI IN14]	
15	[SDI IN15]	
16	[SDI IN16]	
17	[SDI IN17]	[SDI IN17]
18	[SDI IN18]	
19	[SDI IN19]	
20	[SDI IN20]	

Notation of the terminal at rear	Notation in menu	Representative notation
21	[SDI IN21]	[SDI IN21]
22	[SDI IN22]	
23	[SDI IN23]	
24	[SDI IN24]	
25	[SDI IN25]	[SDI IN25]
26	[SDI IN26]	
27	[SDI IN27]	
28	[SDI IN28]	
29	[SDI IN29]	[SDI IN29]
30	[SDI IN30]	
31	[SDI IN31]	
32	[SDI IN32]	

- Status of all the input signals ([SDI IN1] to [SDI IN32]) are displayed in the <IN OUT> button → [SDI IN] → [Status] tab.
- It is displayed with the representative notation gathering the signals for four lines input from outside to one for other menus (such as assigning setting of the XPT button).
- Signal from both 3G-SDI Level A and 3G-SDI Level B can be used in all input terminal. This cannot be used when there are signals in different formats or asynchronous signals mixed in the signals of four lines constructing the 4K signal.
- [Off] cannot be selected for the [FS] item in the <IN OUT> button → [SDI IN] → [Frame Buffer] tab → [SDI IN1] to [SDI IN29] column in the 4K mode.
- [1080p Auto] can be selected for the [FS] item in the <IN OUT> button → [SDI IN] → [Frame Buffer] tab → [SDI IN1] to [SDI IN29] column.
  Even when the video signal of the frame frequency (29.97p, 29.97Psf, 59.94i, 25p, 25Psf, 50i, 23.98p, 23.98Psf, 24p, 24Psf) that is different from the system format is input in the terminal set to [1080p Auto], the screen does not become black.
- The 4K signal format can be selected for the [4K Format] item in the <IN OUT> button → [SDI IN] → [Frame Buffer] tab → [SDI IN1] to [SDI IN29] column.
  - AUTO: The format is determined by referencing the Payload ID contained in the input SDI signal. It is processed in 2SI format if all the signals for four lines are 2SI format, and in SQD format if they are not.
  - SQD: It is processed in SQD format.
  - 2SI: It is processed in 2SI format. All the signal for the four lines are converted to black signal if no signal is included in the signals for the four lines.
  - UC: The signal with smallest number within the signals of four lines is processed by enlarging to the size of 4K resolution.
- The [Link] item in the <IN OUT> button → [SDI IN] → [Frame Buffer] tab → [SDI IN1] to [SDI IN32] column will display the status of Payload ID contained in the input SDI signal.
  It will display as “2SI-#” (# is number) if it is 2SI format, and “—” if it is something else.
  However, it will display as “ASYNC” if the signals with different synchronization is connected.

■ Relationship between the notation of the output terminals at the rear of the Main Frame AV-HS60U1/AV-HS60U2 and menu notation (for 4K mode)

Notation of the terminal at rear	Representative notation	Video format
1	[SDI OUT1]	4K signal
2		
3		
4		
5	[SDI OUT5]	4K signal
6		
7		
8		
9	[SDI OUT9]	4K signal
10		
11		
12		
13	[SDI OUT 13]	1080p
14		1080i
15	[SDI OUT 15]	1080p
16		1080i

- The 4K signal is displayed with the representative notation consolidating the signals of the four lines in the menu.
- The format of 4K signal that is output is only SQD format (each terminal is 3G-SDI Level B).
- The same signal is output in different formats (1080p and 1080i) from the rear terminals 13 and 14, and 15 and 16. Each is displayed as [SDI OUT 13] and [SDI OUT 15] respectively in the menu.
- The signal in the 1080p format is output in 3G-SDI Level B.
- A signal with half of the line decimated from the signal in 1080p format and converted to the 1080i format is output from the terminals 14 and 16.

Considerations for 4K mode

■ Light compression process for the input signal

This unit performs unique light compression process for all the input 4K signal to reduce the load of video processing of the frame synchronizer (FS) section.

Therefore, there may be slight difference with the input signal if there is section with large deviation in the horizontal direction in the corresponding input signal even if the 4K signal is selected with ME2 and output as 4K signal without processing.

■ 4K resolution processing and 2K resolution processing

The “ME2 processing unit” and the “combination processing unit for the ME2 output and DSK” of the unit is processing the image in 4K resolution (3840×2160).

Image is processed in other image processing unit (key processing unit of ME1 and DSK, video memory, AUX, MultiView. etc.) in 2K resolution (1920×1080) to reduce the image processing load.

Therefore, there will be change in the resolution feeling when the signal that has passed through the image processing unit of 2K resolution is selected even when the input 4K signal is selected and output as 4K without any change.

As an example, the resolution is reduced compared with the input signal when input 4K signal is selected in ME1 or the AUX bus, and output as the 4K signal.

The image is recorded in 2K resolution in the video memory (Still, Clip). The image size that can be read from the memory card will also be 2K resolution (1920×1080).

■ Image processing delay

To perform the above processes (4K resolution process and 2K resolution process), both the 4K signal and the 2K signal are output for each input signal from the FS unit.

There is processing delay of one frame (1 F) in the FS unit. Therefore, the minimum delay when the unit is operating in the 4K mode will be 1 F.

The signal is output with delay of 1 F when the input signal is selected with ME2 and output directly as 4K signal or when the input signal is selected with ME1 and output directly as 2K signal.

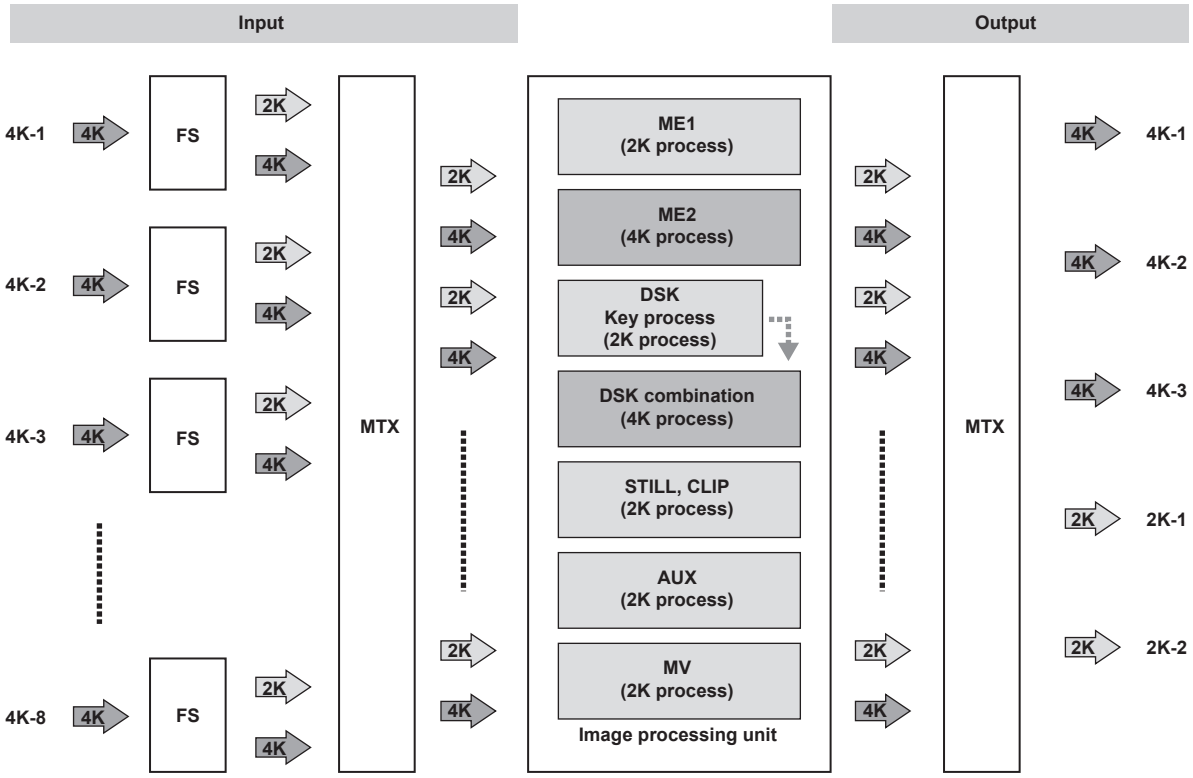
Delay of another 1 F will be added when the signal that has passed through the image processing unit in the 2K resolution is output as the 4K signal because it will pass through the processing to enlarge to the 4K resolution.

Similarly, delay of 1 F is also added to the ME1 output signal selected as a re-entry source with ME2. To eliminate the delay difference when switching between the re-entry source and the input source, the delay for 4K signal from the FS unit can be changed to 2 F.

- <SYS> button → [SYSTEM] → [Video] tab → [Latency] column → [4K FS] item
  - [Minimum]: Outputs with minimum delay (1F).
  - [+1F]: Outputs only the 4K signal with 2 F delay.

  However, another 2 F delay is added to the signal passing through the DVE or MV of ME1.

■ Block diagram of outline when operating in 4K mode with AV-HS6000



Chapter 10 External Interfaces

This chapter describes the terminals and signals of the unit.

GPI input/output settings and alarm output

The unit has 18 GPI input ports in the <GPI IN> terminal of the Main Frame AV-HS60U1/AV-HS60U2 and 8 in the <GPI I/O> terminal of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

It also has 48 GPI output ports in the <GPI OUT1>/<GPI OUT2> terminal of the Main Frame AV-HS60U1/AV-HS60U2 and 10 in the <GPI I/O> terminal of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

Assign functions to the ports through the <SYS> button on the top menu → [PERIPHERAL] → [GPI IN]/[GPI OUT] tab.

For details, refer to “System Menu” (page 140).

Also, alarm signals can be output externally from specific pins of the <GPI IN> terminal (Main Frame AV-HS60U1/AV-HS60U2) and <GPI I/O> terminal (Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4).

■ Connection examples

GPI OUT, alarm connection examples (Fig. 1): Make sure that the following conditions are satisfied.

Dielectric strength: Max. DC 24 V

Current: Max. 50 mA

GPI IN connection example (Fig. 2): Provide contact inputs.

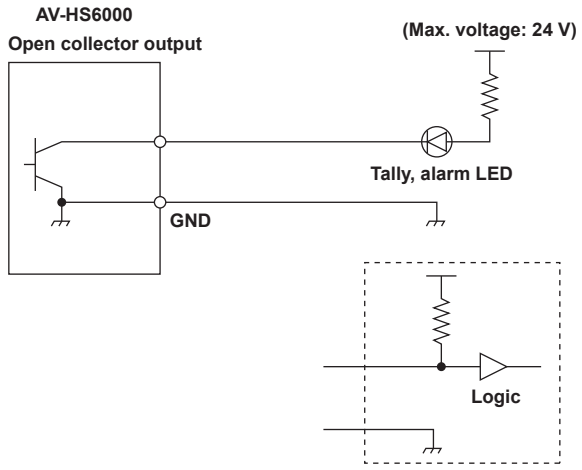


Fig. 1

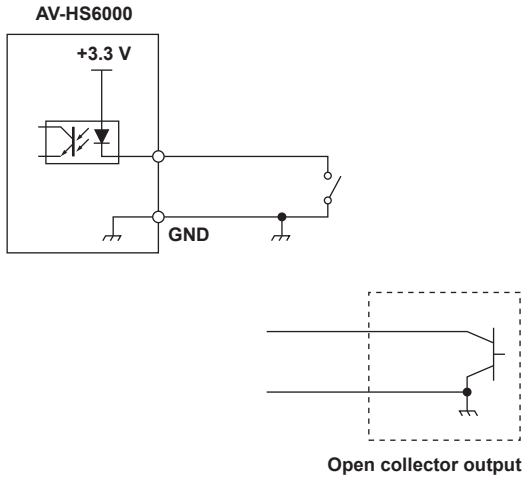
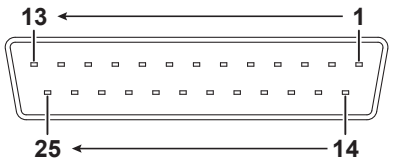


Fig. 2

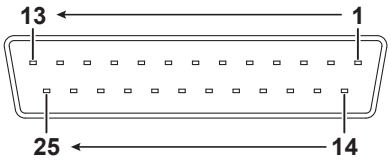
GPI input/output ports of the Main Frame AV-HS60U1/AV-HS60U2

Pin assignments and signal names of the <GPI OUT1>/<GPI OUT2> terminal



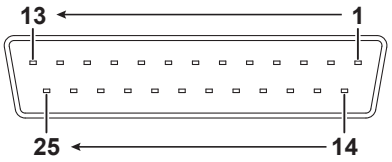
Outside view	Pin No.	Signal Name (<GPI OUT1> terminal)	Signal Name (<GPI OUT2> terminal)
	1	GPI OUT-1	GPI OUT-25
	2	GPI OUT-2	GPI OUT-26
	3	GPI OUT-3	GPI OUT-27
	4	GPI OUT-4	GPI OUT-28
	5	GPI OUT-5	GPI OUT-29
	6	GPI OUT-6	GPI OUT-30
	7	GPI OUT-7	GPI OUT-31
	8	GPI OUT-8	GPI OUT-32
	9	GPI OUT-9	GPI OUT-33
	10	GPI OUT-10	GPI OUT-34
	11	GPI OUT-11	GPI OUT-35
	12	GPI OUT-12	GPI OUT-36
	13	GPI OUT-13	GPI OUT-37
	14	GPI OUT-14	GPI OUT-38
	15	GPI OUT-15	GPI OUT-39
	16	GPI OUT-16	GPI OUT-40
	17	GPI OUT-17	GPI OUT-41
	18	GPI OUT-18	GPI OUT-42
	19	GPI OUT-19	GPI OUT-43
	20	GPI OUT-20	GPI OUT-44
	21	GPI OUT-21	GPI OUT-45
	22	GPI OUT-22	GPI OUT-46
	23	GPI OUT-23	GPI OUT-47
	24	GPI OUT-24	GPI OUT-48
	25	COM (GND)	

Pin assignments and signal names of the <GPI IN> terminal

Outside view	Pin No.	Signal name	Pin No.	Signal name
	1	GPI IN-1	14	GPI IN-13
	2	GPI IN-2	15	GPI IN-14
	3	GPI IN-3	16	GPI IN-15
	4	GPI IN-4	17	GPI IN-16
	5	GPI IN-5	18	GPI IN-17
	6	GPI IN-6	19	GPI IN-18
	7	GPI IN-7	20	COM (GND)
	8	GPI IN-8	21	ALARM OUT
	9	COM (GND)	22	NC
	10	GPI IN-9	23	NC
	11	GPI IN-10	24	NC
	12	GPI IN-11	25	COM (GND)
	13	GPI IN-12		

GPI input/output ports of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

Pin assignments and signal names of the <GPI I/O> terminal

Outside view	Pin No.	Signal name	Pin No.	Signal name
	1	GPI IN-1	14	GPI OUT-5
	2	GPI IN-2	15	GPI OUT-6
	3	GPI IN-3	16	GPI OUT-7
	4	GPI IN-4	17	GPI OUT-8
	5	GPI IN-5	18	GPI OUT-9
	6	GPI IN-6	19	GPI OUT-10
	7	GPI IN-7	20	COM (GND)
	8	GPI IN-8	21	ALARM OUT
	9	COM (GND)	22	NC
	10	GPI OUT-1	23	NC
	11	GPI OUT-2	24	NC
	12	GPI OUT-3	25	COM (GND)
	13	GPI OUT-4		

Serial ports

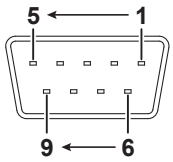
Serial ports of the Main Frame AV-HS60U1/AV-HS60U2

There are 4 serial ports (RS-422) in Main Frame AV-HS60U1/AV-HS60U2.

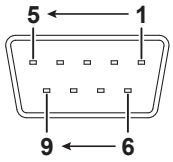
The <COM1 (M)>, <COM2 (M)>, and <COM3 (M)> terminals are exclusively for master connection. The <COM4 (M/S)> terminal can switch between the master connection and the slave connection through the <SYS> button on the top menu → [PERIPHERAL] → [General] tab → [MF COM4] column → [Master/Slave]. (page 153)

- It supports plug-in software.

Pin assignments and signal names of the <COM1 (M)>/<COM2 (M)>/<COM3 (M)> terminal

Outside view	Pin No.	Signal name	Pin No.	Signal name
	1	FG	6	SG
	2	RX–	7	RX+
	3	TX+	8	TX–
	4	SG	9	FG
	5	NC		

Pin assignments and signal names of the <COM4 (M/S)> terminal

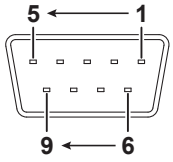
Outside view	Pin No.	Signal name	Pin No.	Signal name
	1	FG	6	SG
	2	RX–/TX–	7	RX+/TX+
	3	TX+/RX+	8	TX–/RX–
	4	SG	9	FG
	5	NC		

Serial ports of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4

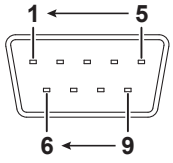
There are 2 serial ports (RS-422 and RS-232) in Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4.

- It supports plug-in software.
- Cannot be used on the sub control panel.

Pin assignments and signal names of the <COM1 (M)> terminal

Outside view	Pin No.	Signal name	Pin No.	Signal name
	1	FG	6	SG
	2	RX–	7	RX+
	3	TX+	8	TX–
	4	SG	9	FG
	5	NC		

Pin assignments and signal names of the <COM2 (RS-232)> terminal

Outside view	Pin No.	Signal name	Pin No.	Signal name
	1	NC	6	DSR
	2	RXD	7	RTS
	3	TXD	8	CTX
	4	DTR	9	NC
	5	GND		

Plug-in software

The unit allows plug-in software to be registered and functions to be added.

Plug-in software can be registered, deleted, or started through the <PLUG IN> button on the top menu → [PLUGIN Maint] → [Configuration]/[Load] tab.

- For detailed information regarding the plug-in software, consult your dealer.

1 Select the <PLUG IN> button → [PLUGIN Maint] → [Configuration]/[Load] tab.

2 Select an item in [Enable on boot] in the column which displays the name of the plug-in to be set.

- Set whether to start the plug-in software when the unit is started up.
- The [Enable on boot] setting takes effect the next time the unit is started up.

[On]	The plug-in software is started up when the unit is started up.
[Off]	The plug-in software is not started up when the unit is started up.

3 Select an item in the column which displays the name of the plug-in to be set.

[Version]	Displays the plug-in software version.
[Delete]	Deletes the plug-in software from the internal memory. • The corresponding plug-in software is deleted the next time the unit is started up.
[SD Load]	Loads the program from the memory card. • By registering the plug-in software, individual menu operation defined using the plug-in software becomes available. • When you have loaded plug-in software, turn off the power, and restart the unit.
[Local Load]	Loads the plug-in software saved in the computer. • By registering the plug-in software, individual menu operation defined using the plug-in software becomes available. • This function is available only in computers connected to the <LAN> terminal. • When you have loaded plug-in software, turn off the power, and restart the unit.

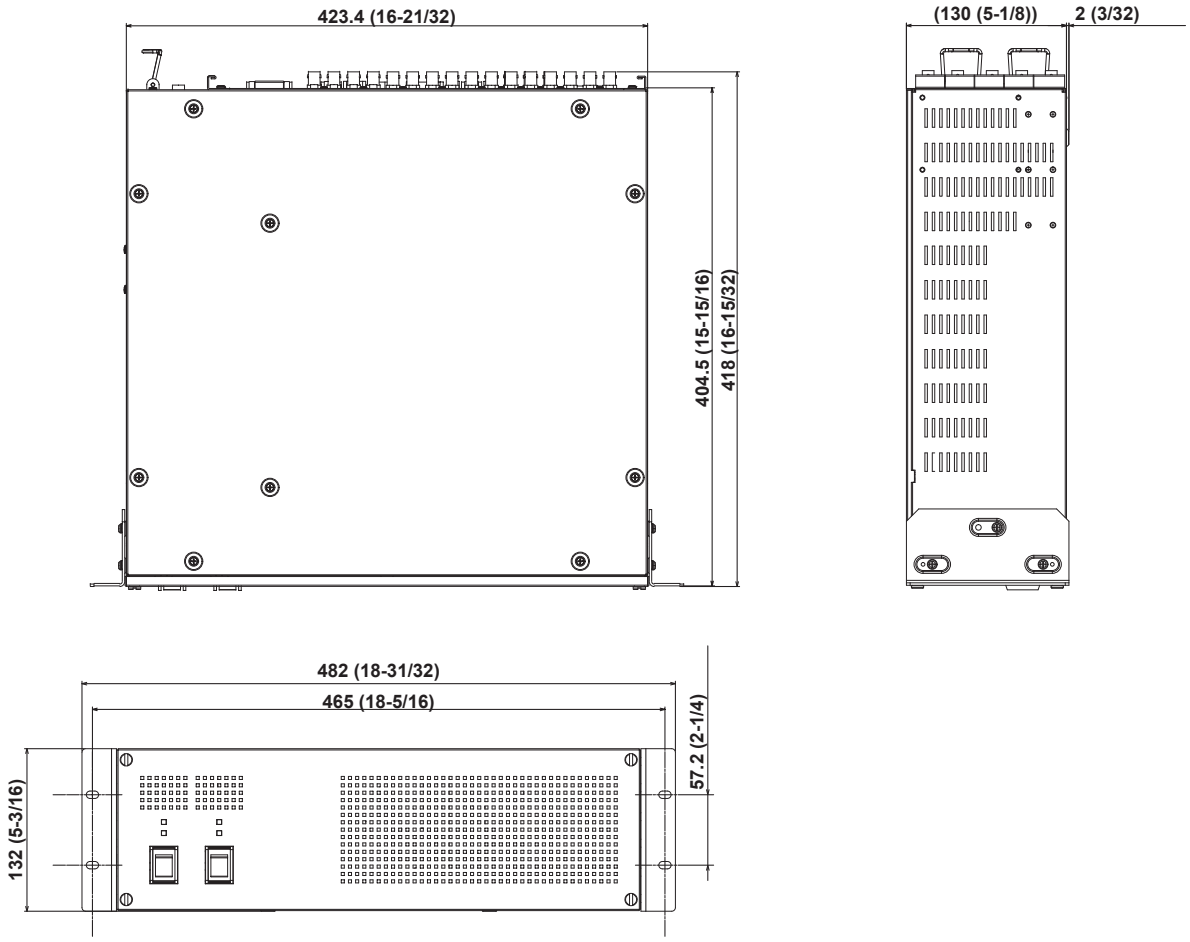
Chapter 11 Specifications

This chapter describes the dimensions and specifications of this product.

Dimensions

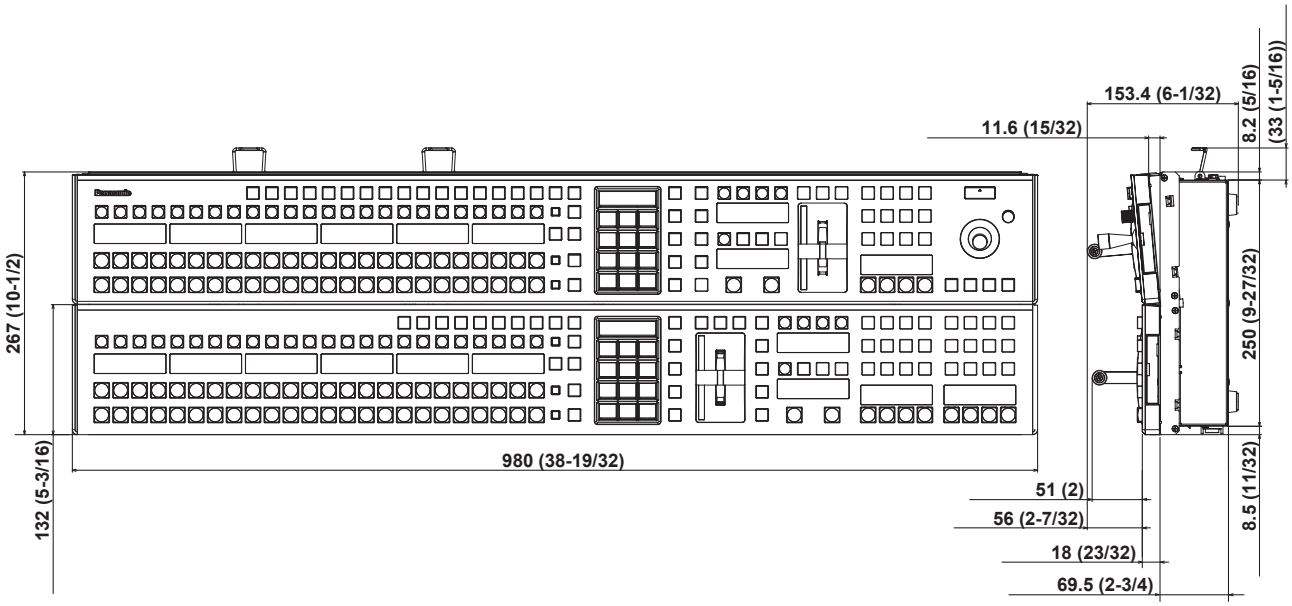
Dimensions of the Main Frame AV-HS60U1/AV-HS60U2

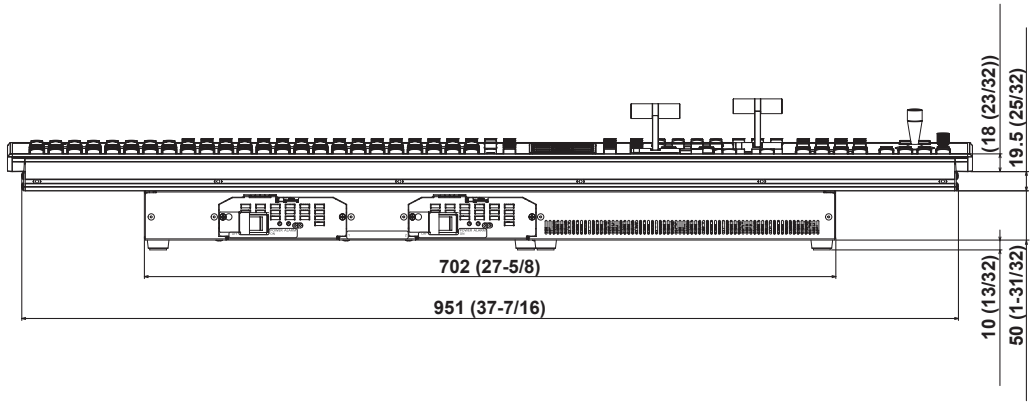
Unit: mm (inch)



Dimensions of the Control Panel AV-HS60C1/AV-HS60C2

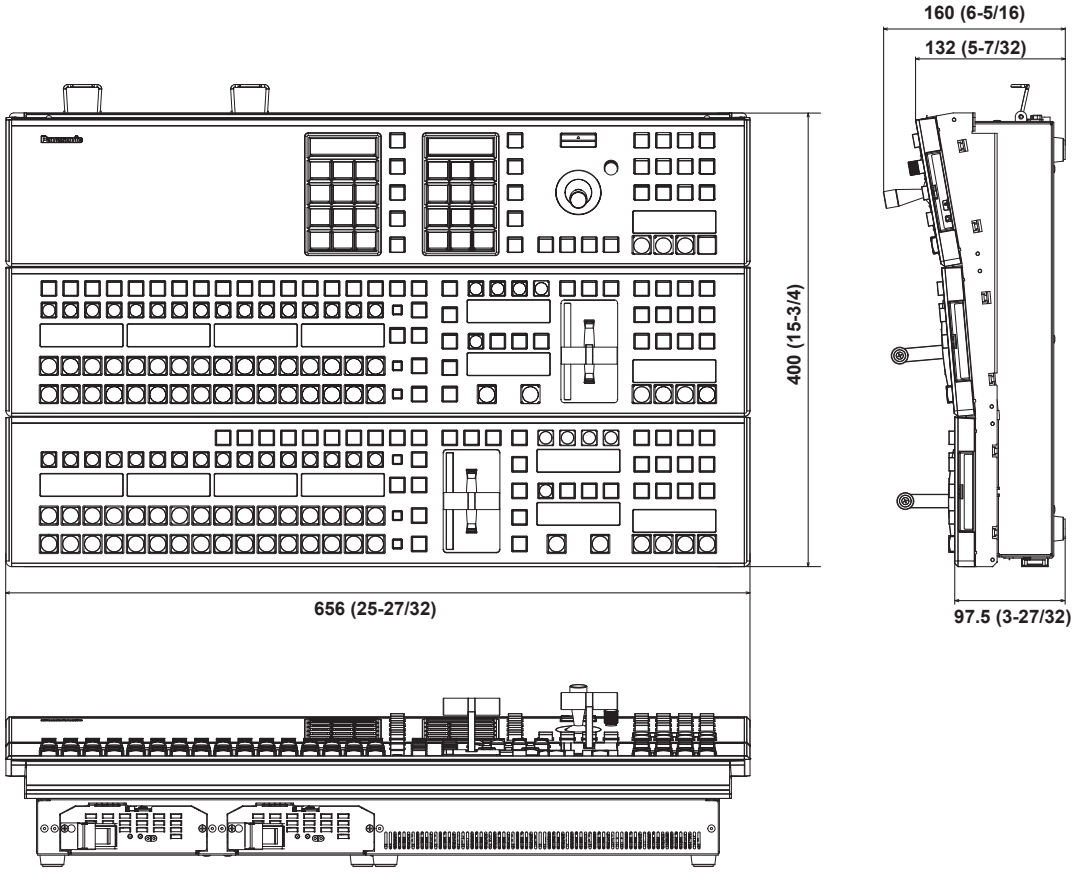
Unit: mm (inch)





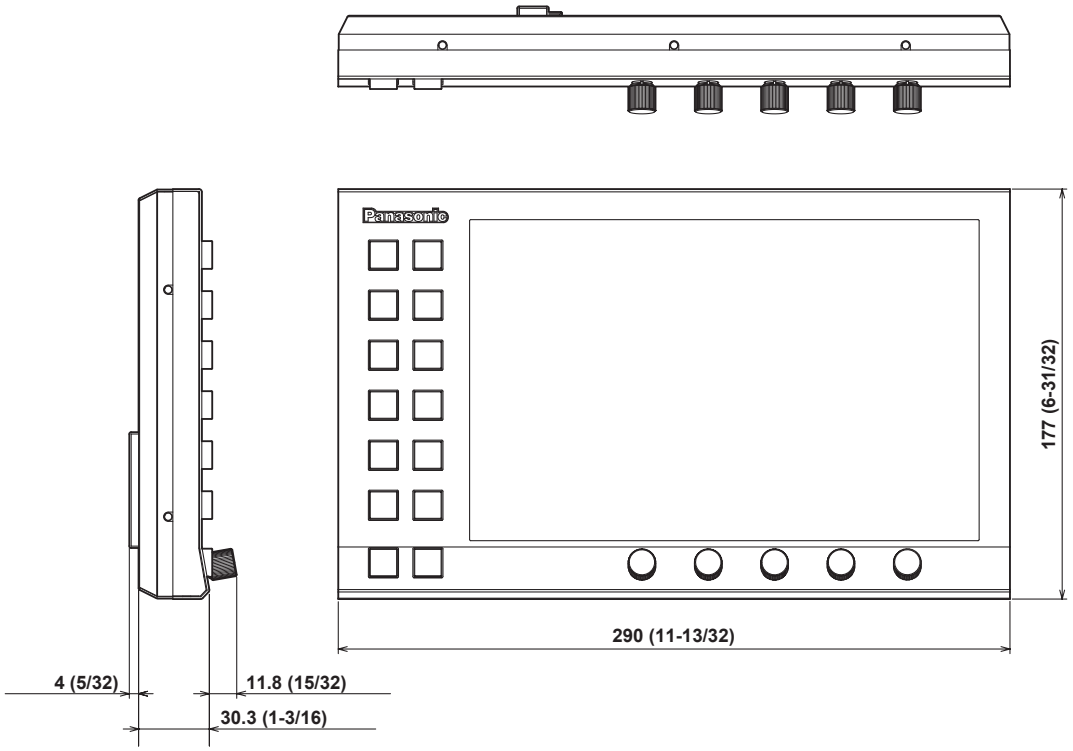
Dimensions of the Control Panel AV-HS60C4

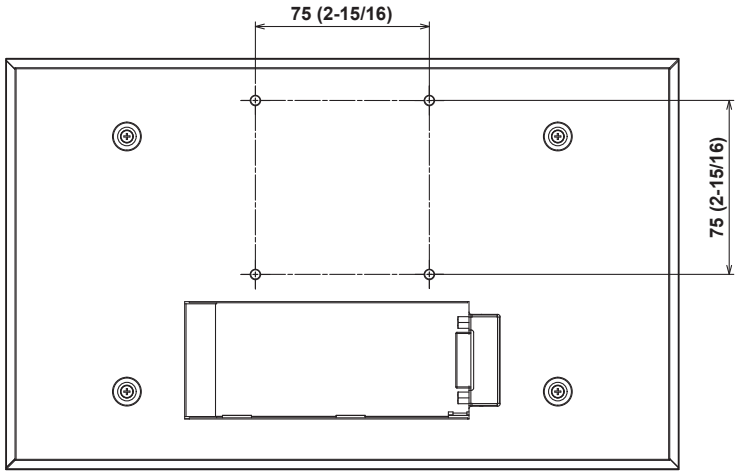
Unit: mm (inch)



Dimensions of the Menu Panel AV-HS60C3

Unit: mm (inch)





Specifications

Main Frame AV-HS60U1/AV-HS60U2

Power supply
AC ⁓ 100 V to 240 V, 50 Hz/60 Hz
Power consumption
110 W

AV-HS60U2 supports redundant power supply.
▭ indicates safety information.

Video terminal

<SDI IN 1> to <SDI IN 32> terminals	**During Standard mode** 32 lines • Connectors: BNC×32 • <SDI IN 27>, <SDI IN 28>, <SDI IN 31>, and <SDI IN 32> terminals are equipped with up-converters. • <SDI IN 25> to <SDI IN 32> terminals are equipped with color correctors.	
	HD-SDI	HD serial digital, SMPTE292M (BTA S-004) standard compliant • 0.8 V [p-p] ±10% (75 Ω) • Automatic equalizer 100 m (328 ft) (when 1.5 Gbps/5C-FB cable is used)
	SD-SDI	SD serial digital, SMPTE259M standard compliant • 0.8 V [p-p] ±10% (75 Ω) • Automatic equalizer 200 m (656 ft) (when 5C-2V cable is used)
	During 3G mode 16 lines • Connector: BNC×16(only the odd numbered terminals can be used) • The even numbered terminals <SDI IN 2>, <SDI IN 4> ... <SDI IN 32> cannot be used. • <SDI IN 25>, <SDI IN 27>, <SDI IN 29>, and <SDI IN 31> terminals are equipped with color correctors. **During 4K mode** 4K signal × eight lines • Connector: BNC × 32 (constructs one line of 4K signal with four terminals) • Can use the 4K signal in SQD format and 2SI format	
	3G-SDI	3G serial digital, SMPTE424M standard compliant • 0.8 V[p-p] ±10% (75 Ω) • Automatic equalizer 100 m (328 ft) (when 3 Gbps/5C-FB cable is used) • 3G-SDI Level A, 3G-SDI Level B
<DVI-D IN1>/<DVI-D IN2> terminals	2 lines Digital RGB: XGA (1024×768), WXGA (1280×768), SXGA (1280×1024), WSXGA+ (1680×1050), UXGA (1600×1200), WUXGA (1920×1200) Vertical frequency: 60 Hz Video format inputs: 1080/50p, 1080/59.94p, 1080/50i, 1080/59.94i, 720/50p, 720/59.94p • Connectors: DVI-D×2 • The terminals do not support HDCP. • The DVI-I connector cable cannot be used. • For the DVI-D connector cable, use a cable with a length of up to 5 m (16.4 ft). • <DVI-D IN1>/<DVI-D IN2> terminal cannot be used during the 3G mode and the 4K mode.	

<SDI OUT 1> to <SDI OUT 16> terminals	**During Standard mode** 16 lines (two distribute outputs per line) • Connectors: BNC×32 • ME1PGM, ME1PVW, ME1CLN, ME1KEYPVW, ME2PGM, ME2PVW, ME2CLN, ME2KEYPVW, DSKPGM1, DSKPGM2, DSKPVW1, DSKPVW2, DSK1CLN, DSK2CLN, DSK3CLN, DSK4CLN, SEL KEYPVW, MV1 to MV4, and AUX1 to AUX16 can be assigned.	
	HD-SDI	HD serial digital, SMPTE292M (BTA S-004) standard compliant • Output level: 0.8 V [p-p] ±10% • Rise time: Less than 270 ps (HD) • Fall time: Less than 270 ps (HD) • Difference between rise time and fall time: 100 ps or less (HD) • Alignment jitter: 0.2 UI (130 ps) or less (HD) • Timing jitter: 1.0 UI or less (HD) • Eye aperture ratio: 90% or more • DC offset: 0±0.5 V
	SD-SDI	SD serial digital, SMPTE259M standard compliant • Output level: 0.8 V [p-p] ±10% • Rise time: 1.5 ns or less • Fall time: 1.5 ns or less • Difference between rise time and fall time: 0.5 ns or less • Jitter: 0.2 UI or less
	During 3G mode 3G-SDI output: Eight lines (two distribute outputs per line) HD-SDI output: Two lines (two distribute outputs per line) • Connector 3G-SDI: BNC×16(odd numbered terminals only) HD-SDI: BNC×4 (<SDI OUT 14> and <SDI OUT 16> terminals only) • 3G-SDI signal is not output from the even numbered terminals. - No signal is output from the <SDI OUT 2>, <SDI OUT 4> ... <SDI OUT 12> terminals. - The HD-SDI signal converted to the 1080i format is output from the <SDI OUT 14> and <SDI OUT 16> terminals. This signal is converted to the 1080i format by decimating the 1080p signal output from the <SDI OUT 13> and <SDI OUT 15> terminals. • <SDI OUT 13> and <SDI OUT 15> terminals are equipped with color correctors. The same color corrector setting is also applied to <SDI OUT 14> and <SDI OUT 16> terminals. • ME1PGM, ME1PVW, ME1CLN, ME1KEYPVW, ME2PGM, ME2PVW, ME2CLN, DSKPGM1, DSKPGM2, DSKPVW1, DSKPVW2, DSK1CLN, DSK2CLN, SEL KEYPVW, MV1 to MV2, and AUX1 to AUX8 can be assigned. **During 4K mode** 4K signal output: Three lines (two distribute outputs per line) 2K signal output: Two lines (two distribute outputs per line) • Connector 3G-SDI (for 4K signal): BNC × 24 (terminal number 1 to 12) 3G-SDI (for 2K signal): BNC × 4 (terminal number 13 and 15) HD-SDI (for 2K signal): BNC × 4 (terminal number 14 and 16) • The 4K signal is output in SQD format. • The HD-SDI signal converted to the 1080i format is output from the <SDI OUT 14> and <SDI OUT 16> terminals. This signal is converted to the 1080i format by decimating the 1080p signal output from the <SDI OUT 13> and <SDI OUT 15> terminals. • ME1PGM, ME1PVW, ME1CLN, ME1KEYPVW, ME2PGM, ME2PVW, ME2CLN, DSKPGM1, DSKPGM2, DSKPVW1, DSKPVW2, DSK1CLN, DSK2CLN, SEL KEYPVW, MV1 to MV2, and AUX1 to AUX8 can be assigned.	
	3G-SDI	3G serial digital, SMPTE424M standard compliant • Output level: 0.8 V [p-p] ±10% • Rise time: 135 ps or less • Fall time: 135 ps or less • Difference between rise time and fall time: 50 ps or less • Alignment jitter: 0.3 UI or less • Timing jitter: 2.0 UI or less • DC offset: 0±0.5 V • 3G-SDI Level B
Signal formats	SD	480/59.94i, 576/50i
	HD	1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF
	3G	1080/59.94p, 1080/50p
	4K	2160/59.94p, 2160/50p
Signal processing	$Y:P_B:P_R$	4:2:2 10 bits
	R:G:B	4:4:4 8 bits
ME number	2ME	

Synchronous terminal

<REF> terminal	In Genlock mode: Black burst or Tri-level Sync input signals (with loop-through) • If the loop-through output is not used, provide a 75 Ω termination. In internal sync mode: Black burst output signal ×2 • Connector: BNC • Same field frequencies as those of the system formats supported • In the 1080/24PsF and 1080/23.98PsF formats, only Genlock mode supported • In the 1080/23.98PsF format, black burst signals with 10 Field ID (SMPTE318M standard compliant) or Tri-level Sync signals supported	
<LTC IN> terminal	This is the LTC (linear time code) input terminal • Connector: BNC • Impedance: 1 kΩ • Level: 1 to 2 V [p-p]	
Video delay time	**During Standard mode**	
	1 line (H)	When the frame synchronizer is set to [Off], and the up-converter is set to [Off]
	1 frame (F)	When the frame synchronizer is set to on, or the up-converter is set to [On]
	• When the signals have passed through PinP, DVE, MultiView, down-converter, or DVI-IN, a maximum delay of 1 frame is applied in each case.	
	During 3G mode	
	2 lines (H)	When the frame synchronizer is set to [Off]
	2 frames (F)	When the frame synchronizer is set to [On]
	• Maximum of 2 frame delay is added to each when passed through PinP, DVE, or MultiView.	
	During 4K mode	
	1 frame (F)	The frame synchronizer is always on.
	• Maximum of 2 frame delay is added to each when passed through PinP, DVE, or MultiView. • For details on other added delays, refer to “3G mode/4K mode” (page 162).	

Control terminal

<LAN> terminal	Compatible with 100Base-TX and AUTO-MDIX (For IP control) • Connection cable: LAN cable (CAT5E), max. 100 m (328 ft), STP (Shielded Twisted Pair) cable recommended • Connector: RJ-45
<PANEL> terminal	Compatible with 100Base-TX and AUTO-MDIX (For Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 connection) • Connection cable (supplied with AV-HS60C1/AV-HS60C2/AV-HS60C4): LAN cable (CAT5E), straight cable, STP (Shielded Twisted Pair), 10 m (32.8 ft) • Connector: RJ-45
<COM1 (M)>/<COM2 (M)>/<COM3 (M)> terminals	RS-422 control terminal For master connection for controlling external devices • Connector: D-sub 9-pin (female) ×3, inch screw
<COM4 (M/S)> terminal	RS-422 control terminal For master/slave connection for controlling external devices • Connector: D-sub 9-pin (female), inch screw • Switchable between master connection and slave connection by the menu
<GPI IN> terminal	GPI IN: 18 inputs, general-purpose, photocoupler sensing ALARM OUT: 1 output, open collector output (negative logic) • Connector: D-sub 25-pin (female), inch screw
<GPI OUT1>/<GPI OUT2> terminals	GPI OUT: 48 outputs, selected from general purpose, tally Open collector output • Connector: D-sub 25-pin (female) ×2, inch screw

NOTE

- Use with the same segment is recommended for the devices which are connected to the unit. If the unit is connected to the devices whose segments are different, events dependent upon the settings inherent to the network equipment, for instance, may occur. Thoroughly check the connections with the devices to which the unit will be connected prior to the start of operation.

Other

Ambient operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10% to 90% (no condensation)
Dimensions (W×H×D)	482 mm×132 mm×418 mm (18-31/32 inches×5-3/16 inches×16-15/32 inches) (excluding protrusions) 3RU
Mass	AV-HS60U1: Approx. 12.6 kg (27.8 lbs.) (excluding accessories) AV-HS60U2: Approx. 13.5 kg (29.7 lbs.) (excluding accessories)

■ For AV-HS60U1E/AV-HS60U2E

Inrush current, measured according to European standard EN55103-1, on initial switch-on: 3 A, after a supply interruption of 5 s: 35 A (Each mains input)

Control Panel AV-HS60C1/AV-HS60C2

Power supply
AC ⁓ 100 V to 240 V, 50 Hz/60 Hz
Power consumption
40 W

AV-HS60C2 supports redundant power supply.
▭ indicates safety information.

Control terminal

<MAIN FRAME> terminal	Compatible with 100Base-TX and AUTO-MDIX (For Main Frame AV-HS60U1/AV-HS60U2 connection) • Connection cable (supplied with AV-HS60C1/AV-HS60C2): LAN cable (CAT5E), straight cable, STP (Shielded Twisted Pair), 10 m (32.8 ft) • Connector: RJ-45 * When connected to the <LAN> terminal, no video will be displayed on the Menu Panel AV-HS60C3.
<MENU PANEL> terminal	Used only for the Menu Panel AV-HS60C3 • Connector: DVI-D • Because an independent signal format is used, cannot be displayed on a DVI-D monitor. • Cannot be used concurrently with a DVI-D monitor (computer) connected to the <DVI-D> terminal. Select with the display selector switch.
<DVI-D> terminal	Used for displaying menus to the DVI monitor (computer) • Connector: DVI-D • Monitor resolution: 1366×768 compatible monitor • Cannot be used concurrently with the <MENU PANEL> terminal. Select with the display selector switch.
<USB> terminal	For DVI monitor (computer) menu operation • Connector: USB (Type A, female) • Cannot be used for the Menu Panel AV-HS60C3.
Display selector switch	Switch for selecting <MENU PANEL> terminal or <DVI-D> terminal
<COM1 (M)> terminal	RS-422 control terminal For master connection for controlling external devices • Connector: D-sub 9-pin (female), inch screw
<COM2 (RS-232)> terminal	RS-232 control terminal For external device control connections • Connector: D-sub 9-pin (male), inch screw
<GPI I/O> terminal	GPI IN: 8 inputs, general-purpose, photocoupler sensing ALARM OUT: 1 output, open collector output (negative logic) GPI OUT: 10 outputs, selected from general purpose, tally Open collector output • Connector: D-sub 25-pin (female), inch screw • Logic is switchable by menu.
ME number	2ME

Other

Ambient operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10% to 90% (no condensation)
Dimensions (W×H×D)	980 mm×153.4 mm×267 mm (38-19/32 inches×6-1/32 inches×10-1/2 inches) (excluding protrusions)
Mass	AV-HS60C1: Approx. 13.0 kg (28.6 lbs.) (excluding accessories) AV-HS60C2: Approx. 13.9 kg (30.6 lbs.) (excluding accessories)

■ **For AV-HS60C1E/AV-HS60C2E**

Inrush current, measured according to European standard EN55103-1, on initial switch-on: 3 A, after a supply interruption of 5 s: 25 A (Each mains input)

Control Panel AV-HS60C4

Power supply
AC ⁓ 100 V to 240 V, 50 Hz/60 Hz
Power consumption
40 W

Supports redundant power supply.
▭ indicates safety information.

Control terminal

<MAIN FRAME> terminal	Compatible with 100Base-TX and AUTO-MDIX (For Main Frame AV-HS60U1/AV-HS60U2 connection) • Connection cable (supplied with AV-HS60C4): LAN cable (CAT5E), straight cable, STP (Shielded Twisted Pair), 10 m (32.8 ft) • Connector: RJ-45 * When connected to the <LAN> terminal, no video will be displayed on the Menu Panel AV-HS60C3.
<MENU PANEL> terminal	Used only for the Menu Panel AV-HS60C3 • Connector: DVI-D • Cannot be displayed on a DVI-D monitor because an independent signal format is used. • Cannot be used concurrently with a DVI-D monitor (computer) connected to the <DVI-D> terminal. Select with the display selector switch.
<DVI-D> terminal	Used for displaying menus to the DVI monitor (computer) • Connector: DVI-D • Monitor resolution: 1366×768 compatible monitor • Cannot be used concurrently with the <MENU PANEL> terminal. Select with the display selector switch.
<USB> terminal	For DVI monitor (computer) menu operation • Connector: USB (Type A, female) • Cannot be used for the Menu Panel AV-HS60C3.
Display selector switch	Switch for selecting <MENU PANEL> terminal or <DVI-D> terminal
<COM1 (M)> terminal	RS-422 control terminal For master connection for controlling external devices • Connector: D-sub 9-pin (female), inch screw
<COM2 (RS-232)> terminal	RS-232 control terminal For external device control connections • Connector: D-sub 9-pin (male), inch screw
<GPI I/O> terminal	GPI IN: 8 inputs, general-purpose, photocoupler sensing ALARM OUT: 1 output, open collector output (negative logic) GPI OUT: 10 outputs, selected from general purpose, tally Open collector output • Connector: D-sub 25-pin (female), inch screw • Logic is switchable by menu.
ME number	2ME

Other

Ambient operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10% to 90% (no condensation)
Dimensions (W×H×D)	656 mm×160 mm×400 mm (25-27/32 inches×6-5/16 inches×15-3/4inches) (excluding protrusions)
Mass	Approx. 15.0 kg (33.1 lbs.) (excluding accessories)

■ **For AV-HS60C4**

Inrush current, measured according to European standard EN55103-1, on initial switch-on: 3 A, after a supply interruption of 5 s: 25 A (Each mains input)

Menu Panel AV-HS60C3

Power supply
DC ⎓ 12 V/0.54 A
* Supplied from AV-HS60C1/AV-HS60C2/AV-HS60C4 using supplied cable
Power consumption
6.48 W

indicates safety information.

<CONTROL PANEL> terminal	Used only for the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 • Connector: DVI-D • Because an independent signal format is used, DVI-D source cannot be displayed. • Cannot be used concurrently with a DVI-D monitor connected to the <DVI-D> terminal of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4. Set the display selector switch of the Control Panel AV-HS60C1/AV-HS60C2/AV-HS60C4 to the <MENU PANEL> terminal side.
Ambient operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10% to 90% (no condensation)
Dimensions (W×H×D)	290 mm×177 mm×46.1 mm (11-13/32 inches×6-31/32 inches×1-13/16 inches) (excluding protrusions) 4RU
Mass	AV-HS60C3: Approx. 1.7 kg (3.7 lbs.) (excluding accessories)

Storage Module

NAND Flash Drive

Memory	128 GB
Shape	mSATA JEDEC MO-300
Dimensions (W×H×D)	29.85 mm×4.0 mm×50.8 mm (1-3/16 inches×5/32 inches×2 inches)
Mass	Approx. 7.0 g (0.3 ozs.)

- Due to device characteristics, the NAND Flash Drive is subject to data damage and overwriting restriction. It is recommended to save the valuable data on a computer or other device.

Chapter 12 Appendix

This chapter describes the setting menu table and terms.

Setting menu table

This section describes the menu configuration. To perform menu operations, select the top menu → function menu → menu tab → column → item. For details on basic menu operations, refer to “Basic menu operations” (page 35).

The menu structure of the Standard mode is described below unless specially mentioned. The corresponding function menu, tab, column, item, or setting item are not displayed for the function that does not operate in the 3G mode or the 4K mode. For the difference between the Standard mode and the 3G mode or the 4K mode, refer to “3G mode/4K mode” (page 162).

<ME1>/<ME2> button (top menu)

[KEY1]/[KEY2] (function menu)

[Key Setting] tab

Column	Item	Setting item	Default
[Key]	[Type]	[Lum], [Linear], [Chroma], [Full]	[Linear]
	[Lum Key]	[Chroma Off], [Chroma On]	[Chroma Off]
	[Clean Key]	[Off], [On]	[Off]
	[Source Type]	[Self Key], [External Key]	[External Key]
	[Fill]	[Bus], [Matte]	[Bus]
[Key Adjust]	[Clip]	[0.0] - [108.0]	[0.0]
	[Gain]	[0.0] - [200.0]	[100.0]
	[Density]	[0.0] - [100.0]	[100.0]
	[Invert]	[Off], [On]	[Off]
[Fill Matte]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Edge]	[Type]	[Off], [Border], [Drop], [Shadow], [Outline]	[Off]
	[Width]	[0] - [4]	[2]
	[Direction]	[0], [45], [90], [135], [180], [225], [270], [315]	[0]
	[Density]	[25%], [50%], [75%], [100%]	[100%]
	[Fill]	[Matte], [UTIL1], [UTIL2]	[Matte]
[Edge Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[0.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Mask]	[Mask]	[Off], [4:3], [Manual]	[Off]
	[Type]	[BackGround], [ForeGround]	[ForeGround]
	[Invert]	[Off], [On]	[Off]
[Mask Adjust1]	[Left]	[–50.00] - [50.00]	[–25.00]
	[Top]	[–50.00] - [50.00]	[25.00]
[Mask Adjust2]	[Right]	[–50.00] - [50.00]	[25.00]
	[Bottom]	[–50.00] - [50.00]	[–25.00]
[BOX Matte]	[Hue]	[0.0] - [359.9]	[0]
	[Sat]	[0.0] - [100.0]	[0]
	[Lum]	[0.0] - [108.0]	[0]
	[BOX Matte]	[Off], [On]	[Off]
	[Color Palette]	(Color palette screen)	—
[BOX Adjust]	[X]	[–50.00] - [50.00]	[0]
	[Y]	[–50.00] - [50.00]	[0]
	[H Size]	[0.00] - [100.00]	[50]
	[V Size]	[0.00] - [100.00]	[25]
	[Density]	[0.0] - [100.0]	[25]

[PinP Adjust] tab

Column	Item	Setting item	Default
[Mode]	[PinP]	[Off], [On]	[Off]
	[Full Key]	[Off], [On]	[On]
	[WipeMask]	[Off], [Circle], [Heart], [Flower], [Star]	[Off]
	[Sync]	[Off], [Key1]/[Key2], [Key3], [Key4]	[Off]
	[Sync Mode]	[Same], [Symmetry-X], [Symmetry-Y], [Symmetry-C]	[Same]
[Border]	[Border]	[Off], [On]	[Off]
	[Width]	[0.1] - [100.0]	[5.0]
	[Soft]	[0.0] - [100.0]	[0.0]
	[Mode]	[Fix], [Variable]	[Fix]
[Border Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Position]	[X]	[–100.00] - [100.00]	[0.00]
	[Y]	[–100.00] - [100.00]	[0.00]
	[Size]	[0.00] - [400.00]	[25.00]
[Rotation]	[X]	[–2880.0] - [2880.0]	[0.0]
	[Y]	[–2880.0] - [2880.0]	[0.0]
	[Z]	[–2880.0] - [2880.0]	[0.0]
	[X-Aspect]	[50.00] - [100.00]	[100.00]
	[Y-Aspect]	[50.00] - [100.00]	[100.00]
[Trim]	[Trim]	[Off], [4:3], [Manual]	[Off]
	[Manual]	[Free], [Pair]	[Free]
	—	—	—
	[WipeAspect]	[–50.00] - [50.00]	[0.00]
[Trim Adjust1]	[Left]	[–50.00] - [50.00]	[–40.00]
	[Top]	[–50.00] - [50.00]	[40.00]
[Trim Adjust2]	[Right]	[–50.00] - [50.00]	[40.00]
	[Bottom]	[–50.00] - [50.00]	[–40.00]

[Transition] tab

Column	Item	Setting item	Default
[In Type]	[Transition]	[Off], [On]	[On]
	[MIX]	Off, on	On
	[WIPE]	Off, on	Off
	[Time]	[0] - [999]	—
[Out Type]	[Transition]	[Off], [On]	[On]
	[MIX]	Off, on	On
	[WIPE]	Off, on	Off
	[Time]	[0] - [999]	—
	[In=Out]	[Off], [On]	[Off]

[Key Pattern] tab

Column	Item	Setting item	Default
[Key Pattern]	[In]	(Wipe pattern screen)	[1]
	[Out]	(Wipe pattern screen)	[1]
	[Sync]	[Separate], [Link]	[Separate]
	—	—	—
	[PinP Wipe Mode]	[Off], [SQ], [SL]	[SQ]
[In Position]	[X-Pos]	[–100.00] - [100.00]	[0.00]
	[Y-Pos]	[–100.00] - [100.00]	[0.00]
[Out Position]	[X-Pos]	[–100.00] - [100.00]	[0.00]
	[Y-Pos]	[–100.00] - [100.00]	[0.00]
	—	—	—
	[In=Out]	[Off], [On]	[Off]

[Modify] tab

Column	Item	Setting item	Default
[In Spin]	[X-Spin]	[–4.0] - [4.0]	[0.0]
	[Y-Spin]	[–4.0] - [4.0]	[0.0]
	[Z-Spin]	[–4.0] - [4.0]	[0.0]
[Out Spin]	[X-Spin]	[–4.0] - [4.0]	[0.0]
	[Y-Spin]	[–4.0] - [4.0]	[0.0]
	[Z-Spin]	[–4.0] - [4.0]	[0.0]
	—	—	—
	[In=Out]	[Off], [On]	[Off]
[Multi]	[H]	[1], [2], [4], [8]	[1]
	[V]	[1], [2], [4], [8]	[1]
	—	—	—
	—	—	—
	[H/V Sync]	[Off], [On]	[On]
[H Modulation]	[Amplitude]	[0.00] - [100.00]	[0]
	[Frequency]	[0.00] - [100.00]	[0]
	[Speed]	[–50.00] - [50.00]	[0]
	—	—	—
	[Pattern]	[Sine], [Delta]	[Sine]
[V Modulation]	[Amplitude]	[0.00] - [100.00]	[0]
	[Frequency]	[0.00] - [100.00]	[0]
	[Speed]	[–50.00] - [50.00]	[0]
	—	—	—
	[Pattern]	[Sine], [Delta]	[Sine]

[Chroma] tab

Column	Item	Setting item	Default
[Auto Compute]	[Auto Compute]	—	—
	[Reset]	—	—
[Adjust]	[Narrow]	[Off], [0.5], [1.0], [1.5]	[Off]
	[Phase]	[–4.0] - [4.0]	[0.0]
[Sample]	[Chroma PVW]	[Off], [Key1], [Key2], [Key3], [Key4]	[Off]
	[View]	[Composite], [Matte], [Proc.FG], [FG]	[Composite]
	[Mode]	[Select BG Color], [Clean BG Noise], [Clean FG Noise], [Spill Sponge], [Matte Sponge], [Make FG Trans], [Restore Detail], [Fine Tuning], [Point BG Color]	[Select BG Color]
	[Undo]	—	—
[Sample Area]	[X-Pos]	[–50.00] - [50.00]	[0.00]
	[Y-Pos]	[–50.00] - [50.00]	[0.00]
	[Size]	[0.1] - [100.0]	[10.0]
	[Sampling]	—	—
[Fine Tuning]	[Spill]	[–1000] - [1000]	[0]
	[Trans]	[–1000] - [1000]	[0]
	[Detail]	[–1000] - [1000]	[0]

[KEY3]/[KEY4] (function menu)

[Key Setting] tab

Column	Item	Setting item	Default
[Key]	[Type]	[Lum], [Linear], [Chroma], [Full]	[Linear]
	[Lum Key]	[Chroma Off], [Chroma On]	[Chroma Off]
	[Clean Key]	[Off], [On]	[Off]
	[Source Type]	[Self Key], [External Key]	[External Key]
	[Fill]	[Bus], [Matte]	[Bus]
[Key Adjust]	[Clip]	[0.0] - [108.0]	[0.0]
	[Gain]	[0.0] - [200.0]	[100.0]
	[Density]	[0.0] - [100.0]	[100.0]
	[Invert]	[Off], [On]	[Off]
[Fill Matte]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Edge]	[Type]	[Off], [Border], [Drop], [Shadow], [Outline]	[Off]
	[Width]	[0] - [4]	[2]
	[Direction]	[0], [45], [90], [135], [180], [225], [270], [315]	[0]
	[Density]	[25%], [50%], [75%], [100%]	[100%]
	[Fill]	[Matte], [UTIL1], [UTIL2]	[Matte]
[Edge Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[0.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Mask]	[Mask]	[Off], [4:3], [Manual]	[Off]
	[Type]	[BackGround], [ForeGround]	[ForeGround]
	[Invert]	[Off], [On]	[Off]
[Mask Adjust1]	[Left]	[–50.00] - [50.00]	[–25.00]
	[Top]	[–50.00] - [50.00]	[25.00]
[Mask Adjust2]	[Right]	[–50.00] - [50.00]	[25.00]
	[Bottom]	[–50.00] - [50.00]	[–25.00]

Column	Item	Setting item	Default
[BOX Matte]	[Hue]	[0.00] - [359.9]	[0]
	[Sat]	[0.00] - [100.00]	[0]
	[Lum]	[0.00] - [108.0]	[0]
	[BOX Matte]	[Off], [On]	[Off]
	[Color Palette]	(Color palette screen)	—
[BOX Adjust]	[X]	[–50.00] - [50.00]	[0]
	[Y]	[–50.00] - [50.00]	[0]
	[H Size]	[0.00] - [100.00]	[50]
	[V Size]	[0.00] - [100.00]	[25]
	[Density]	[0.00] - [100.00]	[25]

[PinP Adjust] tab

Column	Item	Setting item	Default
[Mode]	[PinP]	[Off], [On]	[Off]
	[Full Key]	[Off], [On]	[On]
	[WipeMask]	[Off], [Circle], [Heart], [Flower], [Star]	[Off]
	[Sync]	[Off], [Key1], [Key2], [Key3]/[Key4]	[Off]
	[Sync Mode]	[Same], [Symmetry-X], [Symmetry-Y], [Symmetry-C]	[Same]
[Border]	[Border]	[Off], [On]	[Off]
	[Width]	[0.1] - [100.0]	[5.0]
	[Soft]	[0.0] - [100.0]	[0.0]
	[Mode]	[Fix], [Variable]	[Fix]
[Border Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Position]	[X]	[–100.00] - [100.00]	[0.00]
	[Y]	[–100.00] - [100.00]	[0.00]
	[Size]	[0.00] - [100.00]	[25.00]
[Trim]	[Trim]	[Off], [4:3], [Manual]	[Off]
	[Manual]	[Free], [Pair]	[Free]
	—	—	—
	—	—	—
[Trim Adjust1]	[Left]	[–50.00] - [50.00]	[–40.00]
	[Top]	[–50.00] - [50.00]	[40.00]
[Trim Adjust2]	[Right]	[–50.00] - [50.00]	[40.00]
	[Bottom]	[–50.00] - [50.00]	[–40.00]

[Transition] tab

Column	Item	Setting item	Default
[In Type]	[Transition]	[Off], [On]	[On]
	[MIX]	Off, on	On
	[WIPE]	Off, on	Off
	[Time]	[0] - [999]	—
[Out Type]	[Transition]	[Off], [On]	[On]
	[MIX]	Off, on	On
	[WIPE]	Off, on	Off
	[Time]	[0] - [999]	—
	[In=Out]	[Off], [On]	[Off]

[Key Pattern] tab

Column	Item	Setting item	Default
[Key Pattern]	[In]	(Wipe pattern screen)	[1]
	[Out]	(Wipe pattern screen)	[1]
	[Sync]	[Separate], [Link]	[Separate]
	—	—	—
	[PinP Wipe Mode]	[Off], [SQ], [SL]	[SQ]
[In Position]	[X-Pos]	[–100.00] - [100.00]	[0.00]
	[Y-Pos]	[–100.00] - [100.00]	[0.00]
[Out Position]	[X-Pos]	[–100.00] - [100.00]	[0.00]
	[Y-Pos]	[–100.00] - [100.00]	[0.00]
	—	—	—
	[In=Out]	[Off], [On]	[Off]

[Modify] tab

Column	Item	Setting item	Default
[Multi]	[H]	[1], [2], [4], [8]	[1]
	[V]	[1], [2], [4], [8]	[1]
	—	—	—
	—	—	—
	[H/V Sync]	[Off], [On]	[On]
[H Modulation]	[Amplitude]	[0.00] - [100.00]	[0]
	[Frequency]	[0.00] - [100.00]	[0]
	[Speed]	[–50.00] - [50.00]	[0]
	—	—	—
	[Pattern]	[Sine], [Delta]	[Sine]
[V Modulation]	[Amplitude]	[0.00] - [100.00]	[0]
	[Frequency]	[0.00] - [100.00]	[0]
	[Speed]	[–50.00] - [50.00]	[0]
	—	—	—
	[Pattern]	[Sine], [Delta]	[Sine]

[Chroma] tab

Column	Item	Setting item	Default
[Auto Compute]	[Auto Compute]	—	—
	[Reset]	—	—
[Adjust]	[Narrow]	[Off], [0.5], [1.0], [1.5]	[Off]
	[Phase]	[–4.0] - [4.0]	[0.0]
[Sample]	[Chroma PVW]	[Off], [Key1], [Key2], [Key3], [Key4]	[Off]
	[View]	[Composite], [Matte], [Proc.FG], [FG]	[Composite]
	[Mode]	[Select BG Color], [Clean BG Noise], [Clean FG Noise], [Spill Sponge], [Matte Sponge], [Make FG Trans], [Restore Detail], [Fine Tuning], [Point BG Color]	[Select BG Color]
	[Undo]	—	—
[Sample Area]	[X-Pos]	[–50.00] - [50.00]	[0.00]
	[Y-Pos]	[–50.00] - [50.00]	[0.00]
	[Size]	[0.1] - [100.0]	[10.0]
	[Sampling]	—	—
[Fine Tuning]	[Spill]	[–1000] - [1000]	[0]
	[Trans]	[–1000] - [1000]	[0]
	[Detail]	[–1000] - [1000]	[0]

[BKGD] (function menu)

[Transition] tab

Column	Item	Setting item	Default
[Transition]	[Time]	[0] - [999]	—
	[Start Point]	[0.0] - [100.0]	[0.0]
	[End Point]	[0.0] - [100.0]	[0.0]
[Trans Type]	[NAM/CMIX]	[NAM], [CMIX]	[NAM]
[CMIX Color]	[Hue]	[0.00] - [359.9]	[0]
	[Sat]	[0.00] - [100.00]	[0]
	[Lum]	[0.00] - [108.0]	[100]
	—	—	—
	[Color Palette]	(Color palette screen)	—

[BKGD Pattern] tab

Column	Item	Setting item	Default
[BKGD Pattern]	[Pattern]	(Wipe pattern screen)	[5]

[Edge Border] tab

Column	Item	Setting item	Default
[Border]	[Border]	[Off], [On]	[Off]
	[Width]	[0.1] - [100.0]	[5.0]
	[Soft]	[0.0] - [100.0]	[0.0]
	[Fill]	[Matte], [UTIL1], [UTIL2]	[Matte]
[Border Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Base Video]	[Base Video]	[Off], [UTIL1], [UTIL2]	[Off]

[Position] tab

Column	Item	Setting item	Default
[Direction]	[Normal]	Off, on	On
	[Normal/ Reverse]	[Off], [On]	[On]
	[Reverse]	Off, on	Off
[Pattern Limit]	[Pattern Limit]	[Off], [On]	[Off]
	[Size]	[1.00] - [99.00]	[50.00]
	[Return Time]	[0] - [999]	—
[Position]	[X-Pos]	[–100.00] - [100.00]	[0.00]
	[Y-Pos]	[–100.00] - [100.00]	[0.00]
	[Size]	[0.00] - [100.00]	[0.00]
[Trim]	[Trim]	[Off], [16:9], [4:3], [4:3 Smooth], [Manual]	[Off]
	[Manual]	[Free], [Pair]	[Free]
	[4:3 Auto]	[Off], [On]	[Off]
	[WipeAspect]	[–50.00] - [50.00]	[0.00]
	[Smooth]	[Off], [On]	[Off]
[Trim Adjust1]	[Left]	[–50.00] - [50.00]	[–40.00]
	[Top]	[–50.00] - [50.00]	[40.00]
[Trim Adjust2]	[Right]	[–50.00] - [50.00]	[40.00]
	[Bottom]	[–50.00] - [50.00]	[–40.00]

[Modify] tab

Column	Item	Setting item	Default
[Pageturn]	[Light]	[Off], [On]	[Off]
	[Size]	[0.0] - [100.0]	[100.0]
	[Radius]	[0.000] - [1.000]	[0.500]
	[Angle]	[–45] - [45]	[0]

Column	Item	Setting item	Default
[Spin]	[X-Spin]	[–4.0] - [4.0]	[0.0]
	[Y-Spin]	[–4.0] - [4.0]	[0.0]
	[Z-Spin]	[–4.0] - [4.0]	[0.0]
	[Spin Mode]	[Off], [Trans Spin], [Auto Spin], [Manual Spin]	[Off]
[MID Position]	[X]	[–100.00] - [100.00]	[0]
	[Y]	[–100.00] - [100.00]	[0]
	[Size]	[0.00] - [100.00]	[50]
[Multi]	[H]	[1], [2], [4], [8]	[1]
	[V]	[1], [2], [4], [8]	[1]
	—	—	—
	—	—	—
	[H/V Sync]	[Off], [On]	[On]
[H Modulation]	[Amplitude]	[0.00] - [100.00]	[0]
	[Frequency]	[0.00] - [100.00]	[0]
	[Speed]	[–50.00] - [50.00]	[0]
	—	—	—
	[Pattern]	[Sine], [Delta]	[Sine]
[V Modulation]	[Amplitude]	[0.00] - [100.00]	[0]
	[Frequency]	[0.00] - [100.00]	[0]
	[Speed]	[–50.00] - [50.00]	[0]
	—	—	—
	[Pattern]	[Sine], [Delta]	[Sine]

[Free PATT] tab

Column	Item	Setting item	Default
[Setting]	[CH1 Reset]	—	—
	[CH2 Reset]	—	—
	[CH1 to CH2]	—	—
	[CH2 to CH1]	—	—
	[Prio INV]	—	—
[Position]	[X]	[–200.00] - [200.00]	[0]
	[Y]	[–200.00] - [200.00]	[0]
	[Size]	[0.00] - [400.00]	[100]
[2nd Position]	[X]	[–200.00] - [200.00]	[0]
	[Y]	[–200.00] - [200.00]	[0]
	[Size]	[0.00] - [400.00]	[100]
[Rotation]	[X]	[–10.000] - [10.000]	[0]
	[Y]	[–10.000] - [10.000]	[0]
	[Z]	[–10.000] - [10.000]	[0]
[2nd Rotation]	[X]	[–10.000] - [10.000]	[0]
	[Y]	[–10.000] - [10.000]	[0]
	[Z]	[–10.000] - [10.000]	[0]
[Trim]	[Left]	[–50.00] - [50.00]	[–50]
	[Top]	[–50.00] - [50.00]	[50]
	[Right]	[–50.00] - [50.00]	[50]
	[Bottom]	[–50.00] - [50.00]	[–50]
	[Pair]	[Off], [On]	[Off]
[2nd Trim]	[Left]	[–50.00] - [50.00]	[–50]
	[Top]	[–50.00] - [50.00]	[50]
	[Right]	[–50.00] - [50.00]	[50]
	[Bottom]	[–50.00] - [50.00]	[–50]
	[Pair]	[Off], [On]	[Off]

[IMAGE] (function menu)

[Key1]/[Key2] tab

Column	Item	Setting item	Default
[Effect1]	[Image]	[Off], [On]	[Off]
	—	—	—
	[Paint]	[Off], [On]	[Off]
	[Paint Y]	[0] - [7]	[0]
	[Paint C]	[0] - [7]	[0]
[Effect2]	—	—	—
	—	—	—
	[Mono]	[Off], [On]	[Off]
	[Mono Hue]	[0.0] - [359.9]	[0.0]
	[Mono Sat]	[0.0] - [100.0]	[0.0]
[Mosaic/ Defocus]	[Off]	Off, on	On
	[Mosaic]	Off, on	Off
	[Defocus]	Off, on	Off
	[Level]	[0.0] - [100.0]	[20.0]

[BKGD] tab

Column	Item	Setting item	Default
[A Effect1]	[Image]	[Off], [On]	[Off]
	—	—	—
	[Paint]	[Off], [On]	[Off]
	[Paint Y]	[0] - [7]	[0]
	[Paint C]	[0] - [7]	[0]
[A Effect2]	—	—	—
	—	—	—
	[Mono]	[Off], [On]	[Off]
	[Mono Hue]	[0.0] - [359.9]	[0.0]
	[Mono Sat]	[0.0] - [100.0]	[0.0]
[A Mosaic/ Defocus]	[Off]	Off, on	On
	[Mosaic]	Off, on	Off
	[Defocus]	Off, on	Off
	[Level]	[0.0] - [100.0]	[20.0]
[B Effect1]	[Image]	[Off], [On]	[Off]
	—	—	—
	[Paint]	[Off], [On]	[Off]
	[Paint Y]	[0] - [7]	[0]
	[Paint C]	[0] - [7]	[0]
[B Effect2]	—	—	—
	—	—	—
	[Mono]	[Off], [On]	[Off]
	[Mono Hue]	[0.0] - [359.9]	[0.0]
	[Mono Sat]	[0.0] - [100.0]	[0.0]
[B Mosaic/ Defocus]	[Off]	Off, on	On
	[Mosaic]	Off, on	Off
	[Defocus]	Off, on	Off
	[Level]	[0.0] - [100.0]	[20.0]

[MISC] (function menu)

[Misc] tab

Column	Item	Setting item	Default
[Key Priority]	[Key1]	[1st], [2nd], [3rd], [4th]	[4th]
	[Key2]	[1st], [2nd], [3rd], [4th]	[3rd]
	[Key3]	[1st], [2nd], [3rd], [4th]	[2nd]
	[Key4]	[1st], [2nd], [3rd], [4th]	[1st]
[Key On Link]	[Key1] - [Key4]	[Off], [On]	[Off]
[Key On]	[Key1]	[Off], [On]	[Off]
	[Key2]	[Off], [On]	[Off]
	[Key3]	[Off], [On]	[Off]
	[Key4]	[Off], [On]	[Off]
[PinP Copy]	[Key1 From]	[NoAssign], [ME1-KEY1], [ME1-KEY2], [ME1-KEY3], [ME1-KEY4], [ME2-KEY1], [ME2-KEY2], [ME2-KEY3], [ME2-KEY4]	[NoAssign]
	[Key2 From]	[NoAssign], [ME1-KEY1], [ME1-KEY2], [ME1-KEY3], [ME1-KEY4], [ME2-KEY1], [ME2-KEY2], [ME2-KEY3], [ME2-KEY4]	[NoAssign]
	[Key3 From]	[NoAssign], [ME1-KEY1], [ME1-KEY2], [ME1-KEY3], [ME1-KEY4], [ME2-KEY1], [ME2-KEY2], [ME2-KEY3], [ME2-KEY4]	[NoAssign]
	[Key4 From]	[NoAssign], [ME1-KEY1], [ME1-KEY2], [ME1-KEY3], [ME1-KEY4], [ME2-KEY1], [ME2-KEY2], [ME2-KEY3], [ME2-KEY4]	[NoAssign]
	[Execute]	—	—

<DSK MISC> button (top menu)

[DSK1] to [DSK4] (function menu)

[Setting] tab

Column	Item	Setting item	Default
[DSK]	[Type]	[Lum], [Linear]	[Linear]
	[Lum Key]	[Chroma Off], [Chroma On]	[Chroma Off]
	[Clean Key]	[Off], [On]	[Off]
	[Source Type]	[Self Key], [External Key]	[External Key]
	[Fill]	[Bus], [Matte]	[Bus]
[DSK Adjust]	[Clip]	[0.0] - [108.0]	[0.0]
	[Gain]	[0.0] - [200.0]	[100.0]
	[Density]	[0.0] - [100.0]	[100.0]
	[Invert]	[Off], [On]	[Off]
[Fill Matte]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Edge]	[Type]	[Off], [Border], [Drop], [Shadow], [Outline]	[Off]
	[Width]	[0] - [4]	[2]
	[Direction]	[0], [45], [90], [135], [180], [225], [270], [315]	[0]
	[Density]	[25%], [50%], [75%], [100%]	[100%]
	[Fill]	[Matte], [CBGD 1], [CBGD 2], [Still1], [Still2], [Still3], [Still4], [Clip1], [Clip2], [Clip3], [Clip4]	[Matte]
[Edge Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[0.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Mask]	[Mask]	[Off], [4:3], [Manual]	[Off]
	[Type]	[BackGround], [ForeGround]	[ForeGround]
	[Invert]	[Off], [On]	[Off]
[Mask Adjust1]	[Left]	[–50.00] - [50.00]	[–25.00]
	[Top]	[–50.00] - [50.00]	[25.00]
[Mask Adjust2]	[Right]	[–50.00] - [50.00]	[25.00]
	[Bottom]	[–50.00] - [50.00]	[–25.00]

[Transition] tab

Column	Item	Setting item	Default
[In Type]	[Transition]	[Off], [On]	[On]
	[MIX]	On	On
	—	—	—
	[Time]	[0] - [999]	—
[Out Type]	[Transition]	[Off], [On]	[On]
	[MIX]	On	On
	—	—	—
	[Time]	[0] - [999]	—
	[In=Out]	[Off], [On]	[Off]

[CBGD] (function menu)

[CBGD1] tab

Column	Item	Setting item	Default
[Main Color]	[Hue]	[0.0] - [359.9]	[120.0]
	[Sat]	[0.0] - [100.0]	[100.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Sub Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Wash]	[Wash]	[Off], [On]	[Off]
	[Color Type]	[Dual], [Rainbow]	[Dual]
	[Rainbow Sat]	[0.0] - [100.0]	[100.0]
	[Rainbow Lum]	[0.0] - [108.0]	[100.0]
[Wave]	[Pattern]	[Sine], [Saw]	[Sine]
	[Cycle]	[0.0] - [100.0]	[0.0]
	[Phase]	[–180.0] - [180.0]	[0.0]
	[Angle]	[0.0] - [360.0]	[90.0]
[Move]	[Type]	[Off], [Roll], [Rotation]	[Off]
	[Speed]	[–50.0] - [50.0]	[1.0]

[CBGD2] tab

Column	Item	Setting item	Default
[Main Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[100.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Sub Color]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[0.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—
[Wash]	[Wash]	[Off], [On]	[Off]
	[Color Type]	[Dual], [Rainbow]	[Dual]
	[Rainbow Sat]	[0.0] - [100.0]	[100.0]
	[Rainbow Lum]	[0.0] - [108.0]	[100.0]
[Wave]	[Pattern]	[Sine], [Saw]	[Sine]
	[Cycle]	[0.0] - [100.0]	[0.0]
	[Phase]	[–180.0] - [180.0]	[0.0]
	[Angle]	[0.0] - [360.0]	[90.0]
[Move]	[Type]	[Off], [Roll], [Rotation]	[Off]
	[Speed]	[–50.0] - [50.0]	[1.0]

[MISC] (function menu)

[Misc] tab

Column	Item	Setting item	Default
[DSK Priority]	[DSK1]	[1st], [2nd], [3rd], [4th]	[4th]
	[DSK2]	[1st], [2nd], [3rd], [4th]	[3rd]
	[DSK3]	[1st], [2nd], [3rd], [4th]	[2nd]
	[DSK4]	[1st], [2nd], [3rd], [4th]	[1st]

Column	Item	Setting item	Default
[DSK On Link]	[DSK1]	[Off], [On]	[Off]
	[DSK2]	[Off], [On]	[Off]
	[DSK3]	[Off], [On]	[Off]
	[DSK4]	[Off], [On]	[Off]
[DSK On]	[DSK1]	[Off], [On]	[Off]
	[DSK2]	[Off], [On]	[Off]
	[DSK3]	[Off], [On]	[Off]
	[DSK4]	[Off], [On]	[Off]

[USK] (function menu)

[USK1] to [USK4] tabs

Column	Item	Setting item	Default
[USK]	[Type]	[Lum], [Linear], [Full]	[Linear]
	[Lum Key]	[Chroma Off], [Chroma On]	[Chroma Off]
	[Clean Key]	[Off], [On]	[Off]
	[Source Type]	[Self Key], [External Key]	[External Key]
	[Fill]	[Bus], [Matte]	[Bus]
[Fill Matte]	[Hue]	[0.0] - [359.9]	[0.0]
	[Sat]	[0.0] - [100.0]	[0.0]
	[Lum]	[0.0] - [108.0]	[100.0]
	—	—	—
	[Color Palette]	(Color palette screen)	—

Column	Item	Setting item	Default
[USK Adjust]	[Clip]	[0.0] - [108.0]	[0]
	[Gain]	[0.0] - [200.0]	[100.0]
	[Density]	[0.0] - [100.0]	[100.0]
	[Invert]	[Off], [On]	[Off]
[Mask]	[Mask]	[Off], [4:3], [Manual]	[Off]
	[Type]	[Background], [Foreground]	[Foreground]
	[Invert]	[Off], [On]	[Off]
[Mask Adjust1]	[Left]	[–50.00] - [50.00]	[–25.00]
	[Top]	[–50.00] - [50.00]	[25.00]
[Mask Adjust2]	[Bottom]	[–50.00] - [50.00]	[–25.00]
	[Right]	[–50.00] - [50.00]	[25.00]

<MEM> button (top menu)

[STILL] (function menu)

[Still] tab

Column	Item	Setting item	Default
[Current Still]	[Still1]	Off, on	—
	[Still2]	Off, on	—
	[Still3]	Off, on	—
	[Still4]	Off, on	—
[Rec1]	[Rec]	—	—
	—	—	—
	—	—	—
	—	—	—
	[Key Enable]	[Off], [On]	[On]
[Rec2]	[Input Disp]	[Off], [On]	[Off]
[Play Mode]	[Still1]	[Frame], [Field]	[Frame]
	[Still2]	[Frame], [Field]	[Frame]
	[Still3]	[Frame], [Field]	[Frame]
	[Still4]	[Frame], [Field]	[Frame]

[Register] tab

Column	Item	Setting item	Default
[Current Still]	[Still1]	Off, on	—
	[Still2]	Off, on	—
	[Still3]	Off, on	—
	[Still4]	Off, on	—
[Register]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—
	[Misc]	([Misc] screen)	—
[SD]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—
	[Misc]	([Misc] screen)	—
	—	—	—
	[Create Thumbnail]	—	—
[Local]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—

[CLIP] (function menu)

[Play Clip1] to [Play Clip4] tabs

Column	Item	Setting item	Default
[Current Clip]	[Clip1]	—	—
	[Clip2]	—	—
	[Clip3]	—	—
	[Clip4]	—	—

Column	Item	Setting item	Default
[Play1]	[Play]	—	—
	[Pause]	—	—
	[Stop]	—	—
	[<<Lead]	—	—
	[>>Last]	—	—

Column	Item	Setting item	Default
[Play2]	[Link Target]	[Off], [AUTO], [KEY1] - [KEY4], [Rec], [Fader]	[Off]
	[Link ME]	[ME1], [ME2]	[ME1]
	—	—	—
	[<Step]	—	—
	[>Step]	—	—
[Play3]	[Mode]	[Lead], [Last], [Loop]	[Last]
	[Reverse]	[Off], [On]	[Off]
	[Variable]	[×1], [×2], [×4], [×8], [×1/2], [×1/4], [×1/8]	[×1]
	—	—	—
	[Freeze Mode]	[Frame], [Field]	[Frame]
[Edit]	[Trim In]	—	—
	[Trim Out]	—	—
	[Trim In CLR]	—	—
	[Trim Out CLR]	—	—
	[Get Thumbnail]	—	—
[Audio]	[Play Enable]	[Off], [On]	[On]

[Rec] tab

Column	Item	Setting item	Default
[Current Clip]	[Clip1]	Off, on	—
	[Clip2]	Off, on	—
	[Clip3]	Off, on	—
	[Clip4]	Off, on	—
[Rec1]	[Rec]	—	—
	—	—	—
	[Stop]	—	—
	—	—	—
	[Key Enable]	[Off], [On]	[On]
[Rec2]	[Input Disp]	[Off], [On]	[Off]
	—	—	—
	[Loop]	[Off], [On]	[Off]
	[Quality]	[High], [Standard]	[Standard]
	[Limit Time]	[0] - [1200]	—
[Audio]	[Rec Enable]	[Off], [On]	[Off]

[Register] tab

Column	Item	Setting item	Default
[Current Clip]	[Clip1]	Off, on	—
	[Clip2]	Off, on	—
	[Clip3]	Off, on	—
	[Clip4]	Off, on	—
[Register]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—
	[Misc]	([Misc] screen)	—
[SD]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—
	[Misc]	([Misc] screen)	—
	—	—	—
	[Create Thumbnail]	—	—
[Local]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—

[SHOT MEMORY] (function menu)

[Register] tab

Column	Item	Setting item	Default
[Register]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—
	[Misc]	([Misc] screen)	—
[Mode]	[Effect Dissolve]	[Off], [On]	[On]
	[Dissolve Time]	[0] - [999]	—
	[Hue Path]	[Short], [Long], [CW], [CCW], [Step]	[CW]

[Detail Select] tab

Column	Item	Setting item	Default
[Detail ME]	[BKGD]	[Off], [On]	[On]
	[Key1]	[Off], [On]	[On]
	[Key2]	[Off], [On]	[On]
	[Key3]	[Off], [On]	[On]
	[Key4]	[Off], [On]	[On]
[Detail XPT]	[A/B XPT]	[Off], [On]	[On]
	[Key XPT]	[Off], [On]	[On]
[Detail AUX]	[AUX Sel1]	[Off], [All], [AUX1] - [AUX16]	[Off]
	[AUX Sel2]	[Off], [AUX1] - [AUX16]	[Off]
	[AUX Sel3]	[Off], [AUX1] - [AUX16]	[Off]
	[AUX Sel4]	[Off], [AUX1] - [AUX16]	[Off]
	[AUX Sel5]	[Off], [AUX1] - [AUX16]	[Off]

[EVENT MEMORY] (function menu)

[Edit] tab

Column	Item	Setting item	Default
[Control1]	[Edit]	[Off], [On]	[Off]
	[<<Lead]	—	—
	[<Step]	—	—
	[>Step]	—	—
	[>>Last]	—	—
[Control2]	[Play]	—	—
	[Pause]	—	—
	[Fader Link]	[Off], [ME1], [ME2]	[Off]
	[Fader Mode]	[Event Paddle], [Total Event]	[Total Event]
	[Reverse]	[Off], [On]	[Off]
[Edit1]	[New]	—	—
	[Insert]	—	—
	[Delete]	—	—
	[Modify]	—	—
	[Undo]	—	—

Column	Item	Setting item	Default
[Edit2]	[Copy]	—	—
	[Paste]	—	—
	[Event Duration]	[1] - [215999]	—
	[Total Duration]	[1] - [215999]	—
	[Execute]	—	—
[Mark]	[Pause]	[Off], [On]	[Off]
	[Clip]	[Off], [Clip1] - [Clip4]	[Off]
	[GPI-Out]	[Off], [EMEM-01] - [EMEM-20]	[Off]
	—	—	—
	[Play Mode]	[Once], [Loop]	[Once]
[Path]	[Trans Path]	[Linear], [Spline], [Step]	[Linear]
	[Hue Path]	[Short], [Long], [CW], [CCW], [Step]	[CW]
	[A/B XPT]	[Off], [On]	[On]
	[Key XPT]	[Off], [On]	[On]
[Select1]	[ME1]	[Off], [On]	[On]
	[ME2]	[Off], [On]	[On]
[Select2]	[DSK]	[Off], [On]	[On]
	[AUX]	[Off], [On]	[On]
	[CBGD]	[Off], [On]	[On]
	[CLIP]	[Off], [On]	[On]
	[XPT]	[Off], [On]	[On]

[Register] tab

Column	Item	Setting item	Default
[Register]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—
	[Misc]	([Misc] screen)	—

Column	Item	Setting item	Default
[Select Panel]	[Direct/Next]	[Direct], [Next]	[Next]
	—	—	—
	—	—	—
	—	—	—
	[Play Mode]	[Once], [Loop]	[Once]

[Detail Select] tab

Column	Item	Setting item	Default
[Detail ME]	[BKGD]	[Off], [On]	[On]
	[Key1]	[Off], [On]	[On]
	[Key2]	[Off], [On]	[On]
	[Key3]	[Off], [On]	[On]
	[Key4]	[Off], [On]	[On]
[Detail XPT]	[A/B XPT]	[Off], [On]	[On]
	[Key XPT]	[Off], [On]	[On]
[Detail Clip]	[Clip1]	[Off], [On]	[On]
	[Clip2]	[Off], [On]	[On]
	[Clip3]	[Off], [On]	[On]
	[Clip4]	[Off], [On]	[On]
[Detail AUX]	[AUX Sel1]	[Off], [All], [AUX1] - [AUX16]	[Off]
	[AUX Sel2]	[Off], [AUX1] - [AUX16]	[Off]
	[AUX Sel3]	[Off], [AUX1] - [AUX16]	[Off]
	[AUX Sel4]	[Off], [AUX1] - [AUX16]	[Off]
	[AUX Sel5]	[Off], [AUX1] - [AUX16]	[Off]

[MACRO] (function menu)

[Macro] tab

Column	Item	Setting item	Default
[Status]	[Rec]	—	—
	[Play]	—	—
	[Pause]	—	—
	[Play Cancel]	—	—
	[Play Resume]	—	—
[Work Status]	[Current Event]	—	—
	[Total Event]	—	—
	—	—	—
	[Used]	—	—
	[Remain]	—	—
[Rec]	[Rec]	—	—
	[Stop]	—	—
	—	—	—
	[Back Delete]	—	—
[Edit]	[New]	—	—
	—	—	—
	[Insert Delay]	—	—
	[Delay Time]	[0] - [600]	—
	[Insert Pause]	—	—

Column	Item	Setting item	Default
[Play]	[Play]	—	—

[Register] tab

Column	Item	Setting item	Default
[Register]	[Recall]	([Recall] screen)	—
	[Store]	([Store] screen)	—
	[Misc]	([Misc] screen)	—

[Macro Attach] tab

The assignment setting screen is displayed.

[Attach Enable] tab

Column	Item	Setting item	Default
[Main Panel], [SubPanel1], [SubPanel2]	[ME1]	[Off], [On]	[Off]
	[ME2]	[Off], [On]	[Off]

[XPT Assign] tab

The assignment setting screen is displayed.

[KEY PRESET] (function menu)

Column	Item	Setting item	Default
[Recall Sel]	[XPT]	[Off], [On]	[On]
	[Key Effect]	[Off], [On]	[On]
	[Key Trans]	[Off], [On]	[On]
[Config]	[Long Push]	[Store], [Delete]	[Store]

<SYS> button (top menu)

[SYSTEM] (function menu)

[Video] tab

Column	Item	Setting item	Default
[Switcher Mode]	[Switcher Mode]*1	[1080/59.94i], [1080/50i], [1080/24PsF], [1080/23.98PsF] [720/59.94p], [720/50p], [480/59.94i], [576/50i], [1080/29.97PsF], [1080/25PsF]	[1080/59.94i]*2
	[Switcher Mode]	[Standard], [3G], [4K]	—
	[16:9 Squeeze]	[Off], [On]	[Off]
[Output Phase]	[System]	[0H], [1H]	[1H]
	—	—	—
	—	—	—
	[H-Phase[H]]	[–0.50H] - [0.49H]	[0.00]
	[V-Phase [Line]]	[–100H] - [100H]	[0]
[Reference]	[Sync]	[BB], [BB Advanced], [Tri-level sync], [Internal]	[BB]
	[BB Setup]	[0IRE], [7.5IRE]	[7.5IRE]*3
	[Gen Lock]	—	[Unlocked]
[Latency]	[BKGD]	[1F Fix], [Minimum]	[Minimum]
	[Key]	[1F Fix], [Minimum]	[Minimum]
	[DSK]	—	[Minimum]
[Ancillary]	[AUX]	[Off], [On]	[Off]
	[ME PGM]	[Off], [On], [AUTO]	[Off]
	[ME PVW]	[Off], [On], [AUTO]	[Off]
	[DSK]	[Off], [On], [AUTO]	[Off]
[DSK ANC TYPE]	[DSKPGM1]	[BKGD], [DSK1], [DSK2], [DSK3], [DSK4]	[BKGD]
	[DSKPGM2]	[BKGD], [DSK1], [DSK2], [DSK3], [DSK4]	[BKGD]
[ME ANC Mode]	[ME ANC Mode]	[Common], [Each]	[Common]
	[Common]	[BKGD], [KEY1], [KEY2], [KEY3], [KEY4]	[BKGD]
[ME ANC Each Type]	[ME1]	[BKGD], [KEY1], [KEY2], [KEY3], [KEY4]	[BKGD]
	[ME2]	[BKGD], [KEY1], [KEY2], [KEY3], [KEY4]	[BKGD]
[MV Ancillary]	[MV1]	[Off], [ME1-PGM], [ME2-PGM], [ME1-PVW], [ME2-PVW], [DSK-PGM1], [DSK-PGM2]	[Off]
	[MV2]	[Off], [ME1-PGM], [ME2-PGM], [ME1-PVW], [ME2-PVW], [DSK-PGM1], [DSK-PGM2]	[Off]
	[MV3]	[Off], [ME1-PGM], [ME2-PGM], [ME1-PVW], [ME2-PVW], [DSK-PGM1], [DSK-PGM2]	[Off]
	[MV4]	[Off], [ME1-PGM], [ME2-PGM], [ME1-PVW], [ME2-PVW], [DSK-PGM1], [DSK-PGM2]	[Off]
[XPT Switch]	[Timing]	[Any], [Field1], [Field2]	[Any]

*1 The following setting items are displayed when operating in the 3G mode.
[1080/59.94p], [1080/50p]
The following setting items are displayed when operating in the 4K mode.
[2160/59.94p], [2160/50p]

*2 AV-HS60U1P/AV-HS60U2P: [1080/59.94i], AV-HS60U1E/AV-HS60U2E: [1080/50i]

*3 AV-HS60U1P/AV-HS60U2P: [7.5IRE], AV-HS60U1E/AV-HS60U2E: [0IRE]

[Network] tab

Column	Item	Setting item	Default
[Network1]	[IP Address]	[0] - [255]	[192.168.0.5]
	[Subnet Mask]	[0] - [255]	[255.255.255.0]
[Network2]	[Default Gateway]	[0] - [255]	—
	[MAC Address]	—	—

[Display] tab

Column	Item	Setting item	Default
[WFM]	[Style]	[Parade], [Overlay]	[Parade]
	[Mode]	[YPbPr], [RGB], [Y]	[YPbPr]
[Vector]	[Bar Target]	[75%], [100%]	[100%]
[Video Codec]	[Target]	[DISP], [External]	[DISP]

[MAIN FRAME] (function menu)

[ME1,2] tab

Column	Item	Setting item	Default
[ME1 CLN]/ [ME2 CLN]	[Key Select]	[Key1], [Key2], [Key3], [Key4]	[Key1]
	[CLN/KOUT]	[Clean], [Keyout], [Combined KOUT]	[Clean]
[ME1 KEYPVW]/[ME2 KEYPVW]	[Key1 Enable]	[Off], [On]	[On]
	[Key2 Enable]	[Off], [On]	[On]
	[Key3 Enable]	[Off], [On]	[On]
	[Key4 Enable]	[Off], [On]	[On]
	[Chroma PVW]	[Enable], [Disable]	[Disable]
[ME1 PVW]/ [ME2 PVW]	[Key1 Enable]	[Off], [On]	[On]
	[Key2 Enable]	[Off], [On]	[On]
	[Key3 Enable]	[Off], [On]	[On]
	[Key4 Enable]	[Off], [On]	[On]
	[Chroma PVW]	[Enable], [Disable]	[Enable]

[DSK] tab

Column	Item	Setting item	Default
[DSK Assign]	[DSKPGM1]	[ME1-PGM], [ME2-PGM], [ME1-CLN], [ME2-CLN]	[ME2-PGM]
	[DSKPGM2]	[ME1-PGM], [ME2-PGM], [ME1-CLN], [ME2-CLN]	[ME2-PGM]
	[Assign Mode]	[Common], [Each]	[Common]
[Config]	—	—	—
	[DSK1]	[DSKPGM1], [DSKPGM2]	[DSKPGM1]
	[DSK2]	[DSKPGM1], [DSKPGM2]	[DSKPGM1]
	[DSK3]	[DSKPGM1], [DSKPGM2]	[DSKPGM1]
	[DSK4]	[DSKPGM1], [DSKPGM2]	[DSKPGM1]
[DSK PVW]	[Combine]	[Off], [On]	[On]
	[DSK1 Enable]	[Off], [On]	[On]
	[DSK2 Enable]	[Off], [On]	[On]
	[DSK3 Enable]	[Off], [On]	[On]
	[DSK4 Enable]	[Off], [On]	[On]

Column	Item	Setting item	Default
[DSK PVW Base]	[DSK Base]	[PGM], [PST]	[PST]
[DSKPVW ASSIGN]	[DSK1CLN]	[DSK1CLN], [DSK1PVW]	[DSK1CLN]
	[DSK2CLN]	[DSK2CLN], [DSK2PVW]	[DSK2CLN]
	[DSK3CLN]	[DSK3CLN], [DSK3PVW]	[DSK3CLN]
	[DSK4CLN]	[DSK4CLN], [DSK4PVW]	[DSK4CLN]
	[DSKPVW2]	[DSKPVW2], [DSK1PVW], [DSK2PVW], [DSK3PVW], [DSK4PVW]	[DSKPVW2]

[Sel KeyPVW] tab

Column	Item	Setting item	Default
[Mode]	[Panel Ctrl]	[Off], [On]	[On]
[ME1]/[ME2]/[DSK]	[Key1 Enable]	[Off], [On]	[On]
	[Key2 Enable]	[Off], [On]	[On]
	[Key3 Enable]	[Off], [On]	[On]
	[Key4 Enable]	[Off], [On]	[On]

[CTRL PANEL] (function menu)

[Main Panel] tab

Column	Item	Setting item	Default
[Sound]	[Touch Sound]	[Off], [On]	[Off]
	[Register Sound]	[Off], [On]	[On]
	[Error Sound]	[Off], [On]	[On]
[Delegation]	[MenuPanel]	[Off], [On]	[On]
	[Select Panel]	[Off], [On]	[On]
[Saver Time]	[Saver Time]	[Off], [On], [60], [120], [180]	[On]
[Brightness]	[MenuPanel]	[0.6] - [1.3]	[1.0]
	[Select Panel]	[0.7] - [1.3]	[1.0]
	[Source Name]	[0.6] - [1.4]	[1.0]
	[Button Dimmer]	[0.0] - [1.0]	[0.2]

[SubPanel1] tab

Column	Item	Setting item	Default
[Sound]	[Touch Sound]	[Off], [On]	[Off]
	[Register Sound]	[Off], [On]	[On]
	[Error Sound]	[Off], [On]	[On]
[Delegation]	[MenuPanel]	[Off], [On]	[On]
	[Select Panel]	[Off], [On]	[On]
[Saver Time]	[Saver Time]	[Off], [On], [60], [120], [180]	[On]
[Brightness]	[MenuPanel]	[0.6] - [1.3]	[1.0]
	[Select Panel]	[0.7] - [1.3]	[1.0]
	[Source Name]	[0.6] - [1.4]	[1.0]
	[Button Dimmer]	[0.0] - [1.0]	[0.2]
[Network]	[IP Address]	[0] - [255]	—

[SubPanel2] tab

Column	Item	Setting item	Default
[Sound]	[Touch Sound]	[Off], [On]	[Off]
	[Register Sound]	[Off], [On]	[On]
	[Error Sound]	[Off], [On]	[On]
[Delegation]	[MenuPanel]	[Off], [On]	[On]
	[Select Panel]	[Off], [On]	[On]
[Saver Time]	[Saver Time]	[Off], [On], [60], [120], [180]	[On]
[Brightness]	[MenuPanel]	[0.6] - [1.3]	[1.0]
	[Select Panel]	[0.7] - [1.3]	[1.0]
	[Source Name]	[0.6] - [1.4]	[1.0]
	[Button Dimmer]	[0.0] - [1.0]	[0.2]
[Network]	[IP Address]	[0] - [255]	—

[Button Color] tab

Column	Item	Setting item	Default
[Select Button]	[High Tally]	[Red], [Green], [Yellow], [Orange], [ColorGroup1] - [ColorGroup8]	[Red]
	[Low Tally]	[Red], [Green], [Yellow], [Orange], [ColorGroup1] - [ColorGroup8]	[Yellow]
	[Preset]	[Red], [Green], [Yellow], [Orange], [ColorGroup1] - [ColorGroup8]	[Green]
	[Lighting Logic]	[Button], [Source]	[Button]
[No Sel ME1]/[No Sel ME2]	[XPT]	[Input], [ColorGroup1] - [ColorGroup8]	[Input]
	[Select Panel]	[ColorGroup1] - [ColorGroup8]	[ColorGroup1]
	[BKGD]	[ColorGroup1] - [ColorGroup8]	[ColorGroup1]
	[Key]	[ColorGroup1] - [ColorGroup8]	[ColorGroup1]
[No Sel Other]	[XPT]	[Input], [ColorGroup1] - [ColorGroup8]	[Input]
	—	—	—
	[Macro Attach]	[ColorGroup1] - [ColorGroup8]	[ColorGroup1]
	[DSK]	[ColorGroup1] - [ColorGroup8], [AssignableME]	[AssignableME]
	[Common]	[ColorGroup1] - [ColorGroup8]	[ColorGroup1]

[Color Group] tab

Column	Item	Setting item	Default
[Color Group1] - [Color Group8]	[R]	[0.0] - [1.5]	—
	[G]	[0.0] - [1.5]	—
	[B]	[0.0] - [1.5]	—

[PERIPHERAL] (function menu)

[General] tab

Column	Item	Setting item	Default
[MF COM4]	[Master/Slave]	[Master], [Slave]	[Master]

[Tally] tab

Column	Item	Setting item	Default
[Tally Mode]	[MV Tally]	[Internal], [External]	[Internal]
	[Key Judge]	[Off], [On]	[On]

Column	Item	Setting item	Default
[Tally Group1-1 (On-Air)]	[Target A]	[Off], [ME1PGM], [ME1CLN], [ME2PGM], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[DSKPGM1]
	[+Target B]/ [+Target C]/ [+Target D]	[Off], [ME1PGM], [ME1CLN], [ME2PGM], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[Off]
	[Color]	[Red]	[Red]
[Tally Group1-2 (On-Air)]	[+Target E]/ [+Target F]/ [+Target G]/ [+Target H]	[Off], [ME1PGM], [ME1CLN], [ME2PGM], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[Off]
[Tally Group2-1]	[Target A]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[DSKPVW1]
	[+Target B]/ [+Target C]/ [+Target D]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[Off]
	[Color]	[Red], [Green], [Yellow], [Orange]	[Green]
[Tally Group2-2]	[+Target E]/ [+Target F]/ [+Target G]/ [+Target H]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[Off]
[Tally Group3-1]	[Target A]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[ME1PGM]
	[+Target B]/ [+Target C]/ [+Target D]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[Off]
	[Color]	[Red], [Green], [Yellow], [Orange]	[Yellow]
[Tally Group3-2]	[+Target E]/ [+Target F]/ [+Target G]/ [+Target H]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[Off]
[Tally Group4-1]	[Target A]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[AUX1]
	[+Target B]/ [+Target C]/ [+Target D]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[Off]
	[Color]	[Red], [Green], [Yellow], [Orange]	[Orange]
[Tally Group4-2]	[+Target E]/ [+Target F]/ [+Target G]/ [+Target H]	[Off], [ME1PGM], [ME1PVW], [ME1CLN], [ME2PGM], [ME2PVW], [ME2CLN], [DSKPGM1], [DSKPGM2], [DSKPVW1], [DSKPVW2], [DSK1CLN] - [DSK4CLN], [AUX1] - [AUX16]	[Off]

[GPI IN] tab

The assignment setting screen is displayed.

[GPI OUT] tab

The assignment setting screen is displayed.

[MAINTENANCE] (function menu)

[Status] tab

Column	Item	Setting item	Default
[System Version]	[System Version]	—	—
[Main frame Soft1]	[Backend]	—	—
	[SystemMng]	—	—
	[Application]	—	—
	[WebApp]	—	—
	[Library]	—	—
[Main frame Soft2]	[System]	—	—

Column	Item	Setting item	Default
[Main frame FPGA]	[boot]	—	—
	[glue]	—	—
	[me1]	—	—
	[me2]	—	—
	[sdi]	—	—
[Main Panel Soft]	[Frontend]	—	—
	[PanelBrowser]	—	—
	[MultiPanelBrowser]	—	—
	[System]	—	—
[Main Panel FPGA]	[PanelSub]	—	—
	[boot]	—	—
[Main Panel CPLD]	[XPTBase]	—	—
	[XPTExt]	—	—
	[Trans]	—	—
	[Menu]	—	—
[Sub Panel1 Soft]	[Frontend]	—	—
	[PanelBrowser]	—	—
	[MultiPanelBrowser]	—	—
	[System]	—	—
[Sub Panel1 FPGA]	[PanelSub]	—	—
	[boot]	—	—
[Sub Panel1 CPLD]	[XPTBase]	—	—
	[XPTExt]	—	—
	[Trans]	—	—
	[Menu]	—	—
[Sub Panel2 Soft]	[Frontend]	—	—
	[PanelBrowser]	—	—
	[MultiPanelBrowser]	—	—
	[System]	—	—
[Sub Panel2 FPGA]	[PanelSub]	—	—
	[boot]	—	—
[Sub Panel2 CPLD]	[XPTBase]	—	—
	[XPTExt]	—	—
	[Trans]	—	—
	[Menu]	—	—
[Update]	[Update File]	([Load] screen)	—

[Alarm] tab

Column	Item	Setting item	Default
[Main frame]	[Power A]	—	—
	[Power B]	—	—
	[Fan]	—	—
	[Temperature]	—	—
[Alarm Enable]	[Power A]	[Off], [On]	[On]
	[Power B]	[Off], [On]	[On]
	[Fan]	[Off], [On]	[On]
	[Temperature]	[Off], [On]	[On]
[Sub Panel1]	[Power A]	—	—
	[Power B]	—	—
	—	—	—
	[Temperature]	—	—
[Alarm Enable]	[Power A]	[Off], [On]	[On]
	[Power B]	[Off], [On]	[On]
	—	—	—
	[Temperature]	[Off], [On]	[On]
[Sub Panel2]	[Power A]	—	—
	[Power B]	—	—
	—	—	—
	[Temperature]	—	—
[Alarm Enable]	[Power A]	[Off], [On]	[On]
	[Power B]	[Off], [On]	[On]
	—	—	—
	[Temperature]	[Off], [On]	[On]
[Log]	[Log File]	([Save] screen)	—

[Boot] tab

Column	Item	Setting item	Default
[Initial]	[Initial]	—	—
	[with Plugin]	—	—
	[with Plugin/ NW]	—	—
[Fader Initial]	[Fader Initial]	—	—

[Option] tab

Column	Item	Setting item	Default
[SSD]	[SSD]	—	—
[License Status]	—	—	—
	[Primatte Key2]	—	—
	[Primatte Key3]	—	—
	[Primatte Key4]	—	—
[Activate]	[Serial Data File]	—	—
	[Activate Data File Key2]	—	—
	[Activate Data File Key3]	—	—
	[Activate Data File Key4]	—	—

[Mainte] tab

Column	Item	Setting item	Default
[System Running]	[System]	—	—
[Main Frame Running]	[Power A]	—	—
	[Power B]	—	—
	[Fan]	—	—
[Main Panel Running]	[Power A]	—	—
	[Power B]	—	—
[Sub1 Connecting]	[Power A]	—	—
	[Power B]	—	—
[Sub2 Connecting]	[Power A]	—	—
	[Power B]	—	—
[Format]	[SSD Format]	—	—

[Misc] tab

Column	Item	Setting item	Default
[Date]	[Year]	[2000] - [2037]	—
	[Month]	[1] - [12]	—
	[Date]	[1] - [31]	—
	[Get]	—	—
	[Set]	—	—
[Time]	[Hour]	[0] - [23]	—
	[Minute]	[0] - [59]	—
	[Second]	[0] - [59]	—
	[Get]	—	—
	[Set]	—	—
[LTC]	[Hour]	—	—
	[Minute]	—	—
	[Second]	—	—
	[Get]	—	—
	[Sync Time]	—	—

[MENU LOCK] (function menu)

[Menu Lock] tab

Column	Item	Setting item	Default
[Menu Lock]	[SYSTEM]	[Off], [On]	[Off]
	[MAIN FRAME]	[Off], [On]	[Off]
	[CTRL PANEL]	[Off], [On]	[Off]
	[PERIPHERAL]	[Off], [On]	[Off]
	[MAINTENANCE]	[Off], [On]	[Off]

<IN OUT> button (top menu)

[SDI IN] (function menu)

[Frame Buffer] tab

Column	Item	Setting item	Default
[SDI IN 1] - [SDI IN 26], [SDI IN 29], [SDI IN 30]	[Mode]	[Normal], [Dot by Dot]	[Normal]
	[FS]	[Off], [Strict], [Acceptable]	[Strict]
	[Freeze mode]	[Frame], [Field]	[Frame]
	[Freeze]	[Off], [On]	[Off]
	[Frame delay]	—	—
[SDI IN 27], [SDI IN 28], [SDI IN 31], [SDI IN 32]	[Mode]	[Normal], [Dot by Dot], [U/C], [Auto]	[Auto] ([Normal])
	[FS]	[Off], [Strict], [Acceptable]	[Strict]
	[Freeze mode]	[Frame], [Field]	[Frame]
	[Freeze]	[Off], [On]	[Off]
	[Frame delay]	[0F] - [8F]	[0F]

[Status] tab

Column	Item	Setting item	Default
[SDI IN 1] - [SDI IN 32]	[Format]	—	—
	[Audio]	—	—

[Up Converter] tab

Column	Item	Setting item	Default
[SDI IN 27], [SDI IN 28], [SDI IN 31], [SDI IN 32]	[Scale]	[Squeeze], [Edge Crop], [Letter Box]	[Squeeze]
	[Motion Detect]	[1] - [5]	[3]
	[Sharp]	[1] - [5]	[3]
	[Size]	[100] - [110]	[100]
	[Edge Crop Pos.]	[Center], [Right], [Left]	[Center]

[DVI IN] (function menu)

[Frame Buffer] tab

Column	Item	Setting item	Default
[DVI IN 1], [DVI IN 2]	[Scale]	[Full], [Fit-V], [Fit-H]	[Full]
	[Freeze mode]	[Frame], [Field]	[Frame]
	[Freeze]	[Off], [On]	[Off]
	[Limited]	[Off], [On]	[Off]

[Status] tab

Column	Item	Setting item	Default
[DVI IN 1], [DVI IN 2]	[Size]	—	—
	[Dot Clock]	—	—
	[H-Frequency]	—	—
	[V-Frequency]	—	—

[SDI OUT] (function menu)

[Assign] tab

The assignment setting screen is displayed.

[Down Converter] tab

Column	Item	Setting item	Default
[SDI OUT 14], [SDI OUT 16]	[Limit]	[Off], [108%], [104%], [100%]	[Off]
	[Enable]	[Off], [On]	[Off]
	[Scale]	[Squeeze], [Edge Crop], [Letter Box]	[Squeeze]
	[Delay]	[90H] ([75H]), [1F]	[90H] ([75H])
	[Sharp]	[1] - [5]	[3]

[C/C IN 25-30], [C/C IN 31-32] (function menu)

[SDI IN 25] to [SDI IN 32] tabs

Column	Item	Setting item	Default
[Operation]	[Enable]	[Off], [On]	[Off]
	[Limit]	[Off], [108], [104], [100]	[Off]
[Process]	[Y-Gain]	[0.0] - [200.0]	[100.0]
	[Pedestal]	[–20.0] - [20.0]	[0.0]
	[C-Gain]	[0.0] - [200.0]	[100.0]
	[Hue]	[0.0] - [359.9]	[0.0]
	[Colorimetry]	[Off], [On]	[Off]

Column	Item	Setting item	Default
[Tone1 Black]	[Red]	[–10.0] - [108.0]	[0.0]
	[Green]	[–10.0] - [108.0]	[0.0]
	[Blue]	[–10.0] - [108.0]	[0.0]
	[RGB Link]	[Off], [On]	[Off]
[Tone2 Gray L]	[Red]	[–10.0] - [108.0]	[33.3]
	[Green]	[–10.0] - [108.0]	[33.3]
	[Blue]	[–10.0] - [108.0]	[33.3]

Column	Item	Setting item	Default
[Tone3 Gray H]	[Red]	[–10.0] - [108.0]	[66.6]
	[Green]	[–10.0] - [108.0]	[66.6]
	[Blue]	[–10.0] - [108.0]	[66.6]
[Tone4 White]	[Red]	[–10.0] - [108.0]	[100]
	[Green]	[–10.0] - [108.0]	[100]
	[Blue]	[–10.0] - [108.0]	[100]
[Matrix R/G]	[R-G]	[–0.60] - [0.60]	[0.00]
	[R-B]	[–0.60] - [0.60]	[0.00]
	[G-R]	[–0.60] - [0.60]	[0.00]
	[G-B]	[–0.60] - [0.60]	[0.00]
[Matrix B]	[B-R]	[–0.60] - [0.60]	[0.00]
	[B-G]	[–0.60] - [0.60]	[0.00]
[Setting]	[Init Target]	[Process], [Tone], [RGB Matrix], [All]	[All]
	[Initialize]	—	—
	[Copy Target]	[SDI IN 25] - [SDI IN 32], [SDI OUT 13] - [SDI OUT 16]	[SDI IN 25]
	[Copy From]	—	—

[C/C OUT] (function menu)

[SDI OUT 13] to [SDI OUT 16] tabs

Column	Item	Setting item	Default
[Operation]	[Enable]	[Off], [On]	[Off]
	[Limit]	[Off], [108], [104], [100]	[Off]
[Process]	[Y-Gain]	[0.0] - [200.0]	[100.0]
	[Pedestal]	[–20.0] - [20.0]	[0.0]
	[C-Gain]	[0.0] - [200.0]	[100.0]
	[Hue]	[0.0] - [359.9]	[0.0]
[Tone1 Black]	[Red]	[–10.0] - [108.0]	[0.0]
	[Green]	[–10.0] - [108.0]	[0.0]
	[Blue]	[–10.0] - [108.0]	[0.0]
	[RGB Link]	[Off], [On]	[Off]
[Tone2 Gray L]	[Red]	[–10.0] - [108.0]	[33.3]
	[Green]	[–10.0] - [108.0]	[33.3]
	[Blue]	[–10.0] - [108.0]	[33.3]
[Tone3 Gray H]	[Red]	[–10.0] - [108.0]	[66.6]
	[Green]	[–10.0] - [108.0]	[66.6]
	[Blue]	[–10.0] - [108.0]	[66.6]
[Tone4 White]	[Red]	[–10.0] - [108.0]	[100]
	[Green]	[–10.0] - [108.0]	[100]
	[Blue]	[–10.0] - [108.0]	[100]
[Matrix R/G]	[R-G]	[–0.60] - [0.60]	[0.00]
	[R-B]	[–0.60] - [0.60]	[0.00]
	[G-R]	[–0.60] - [0.60]	[0.00]
	[G-B]	[–0.60] - [0.60]	[0.00]
[Matrix B]	[B-R]	[–0.60] - [0.60]	[0.00]
	[B-G]	[–0.60] - [0.60]	[0.00]
[Setting]	[Init Target]	[Process], [Tone], [RGB Matrix], [All]	[All]
	[Initialize]	—	—
	[Copy Target]	[SDI IN 25] - [SDI IN 32], [SDI OUT 13] - [SDI OUT 16]	[SDI IN 25]
	[Copy From]	—	—

<MV> button (top menu)

[MV1-4] (function menu)

[MV1]/[MV2]/[MV3]/[MV4] tab

Column	Item	Setting item	Default
[Pattern]	[Split]	[4Split], [5-aSplit], [5-bSplit], [6-aSplit], [6-bSplit], [9Split], [10-aSplit], [10-bSplit], [16Split], [12Split]	[10-aSplit]
	[Size]	[Fit], [SQ]	[SQ]
	—	—	—
	—	—	—
	[Assign]	(Assignment setting screen)	—
[MV Frame]	[Frame]	[LUM 0%], [LUM 25%], [LUM 50%], [LUM 75%], [LUM 100%], [Off]	[LUM 75%]
	[Character]	[LUM 0%], [LUM 25%], [LUM 50%], [LUM 75%], [LUM 100%], [Off]	[LUM 75%]
	[Label]	[Off], [On]	[On]
	[Clock]	[Off], [Label], [Outside Frame]	[Off]
[Tally Box], [Tally Label L], [Tally Label R]	[Tally Group1] - [Tally Group4]	[Off], [On]	[Off]
[Display]	[Level Meter]	[Off], [On]	[Off]
	[Input Status]	[Off], [On]	[On]
	[Marker]	[Off], [4:3], [16:9]	[Off]
	[Marker Size]	[80%] - [100%]	[95%]

<PLUG IN> button (top menu)

[PLUGIN Maint] (function menu)

[Configuration] tab

Column	Item	Setting item	Default
[1] - [30]	[Plugin Name]	—	—
	[Enable on boot]	[Off], [On]	[On]
	[Version]	—	—
	[Delete]	—	—

[Load] tab

Column	Item	Setting item	Default
[Total]	[Storage Use(B)]	—	—
	[Storage Remain(B)]	—	—
	[Program Use(KB)]	—	—
	[Prgram Remain(KB)]	—	—
[1] - [30]	[Plugin Name]	—	—
	[Storage Use(B)]	—	—
	[Program Use(KB)]	—	—
	[SD Load]	([SD Load] screen)	—
	[Local Load]	([Local Load] screen)	—

<PRJ> button (top menu)

[PROJECT] (function menu)

[SD/SSD] tab

Column	Item	Setting item	Default
[SD]	[Load]	([Load] screen)	—
	[Save]	([Save] screen)	—
	[Misc]	([Misc] screen)	—
	[Format]	—	—
	—	—	—
[SSD]	[Load]	([Load] screen)	—
	[Save]	([Save] screen)	—
	[Misc]	([Misc] screen)	—
	—	—	—

[Local] tab

Column	Item	Setting item	Default
[Load]	[Load]	([Load] screen)	—
[Save]	[without VMEM]	—	—
	[with Still]	—	—
	[with Still/Clip]	—	—
	[Save All]	—	—

<CONF> button (top menu)

[BUTTON INHIBIT] (function menu)

[MainPanel] tab, [SubPanel1] tab, [SubPanel2] tab

The assignment setting screen is displayed.

[XPT ASSIGN] (function menu)

[MainPanel] tab, [SubPanel1] tab, [SubPanel2] tab

The assignment setting screen is displayed.

[SOURCE NAME] (function menu)

[Panel Name] tab

Column	Item	Setting item	Default
[SDI IN 1] - [SDI IN 32]	[Type]	[Default], [User], [Picture]	[Default]
	[Name]	—	—
	—	—	—
	[Get Src Picture]	—	—
	[Color Group]	[ColorGroup1] - [ColorGroup8]	[ColorGroup1]

Column	Item	Setting item	Default
[DVI IN 1], [DVI IN 2], [Still 1V] - [Still 4V], [Still 1K] - [Still 4K], [Clip 1V] - [Clip 4V], [Clip 1K] - [Clip 4K], [CBGD 1], [CBGD 2], [CBAR], [Black]	[Type]	[Default], [User], [Picture]	[Default]
	[Name]	—	—
	—	—	—
	[Get Src Picture]	—	—
	[Color Group]	[ColorGroup1] - [ColorGroup8]	[ColorGroup1]

[Load Picture] tab

Column	Item	Setting item	Default
[SDI IN 1] - [SDI IN 32], [DVI IN 1], [DVI IN 2], [Still 1V] - [Still 4V], [Still 1K] - [Still 4K], [Clip 1V] - [Clip 4V], [Clip 1K] - [Clip 4K], [CBGD 1], [CBGD 2], [CBAR], [Black]	[Type]	[Default], [User], [Picture]	[Default]
	[Name]	—	—
	—	—	—
	—	—	—
	[Load from Local]	([Load from Local] screen)	—

[MV Name] tab

Column	Item	Setting item	Default
[SDI IN 1] - [SDI IN 32], [DVI IN 1], [DVI IN 2], [Still 1V] - [Still 4V], [Still 1K] - [Still 4K], [Clip 1V] - [Clip 4V], [Clip 1K] - [Clip 4K], [CBGD 1], [CBGD 2], [CBAR], [Black]	[Type]	[Default], [User], [Same as Panel]	[Same as Panel]
	[Name]	—	—

[SOURCE LINK] (function menu)

[Key Assign] tab

The assignment setting screen is displayed.

[AUX Bus Link] tab

Column	Item	Setting item	Default
[Link 1]	[AUX1/2 Link] - [AUX9/10 Link]	[Off], [On]	[Off]
[Link 2]	[AUX11/12 Link] - [AUX15/16 Link]	[Off], [On]	[Off]

[OPERATE] (function menu)

[Transition] tab

Column	Item	Setting item	Default
[Page Mode]	[2nd Page Button], [3rd Page Button]	[Normal], [Page Lock]	[Normal]
[Bus Mode]	[Bus Mode]	[A/B], [PGM-A/PST-B], [PGM-B/PST-A]	[PGM-A/PST-B]
[Time Unit]	[Time Unit]	[Sec/Frame], [Frame]	[Sec/Frame]
[FTB]	[FTB On]	[Off], [On]	[Off]
	Source	[Still1] - [Still4], [Clip1] - [Clip4], [CBGD 1], [CBGD 2], [White], [Black]	[Black]
	[Time]	[0] - [999]	—
[AUX Trans]	[AUX1] - [AUX4]	[Off], [On]	[Off]
[Trans Time]	[AUX1] - [AUX4]	[0] - [999]	—

[MECHG] tab

Column	Item	Setting item	Default
[MainPanel], [SubPanel1], [SubPanel2]	[1st Line]	[ME1], [ME2]	[ME1]
	[2nd Line]	[ME1], [ME2]	[ME2]

[Key] tab

Column	Item	Setting item	Default
[Key Source Preset]	[Source Preset]	[Enable], [Disable]	[Enable]
	[Keyer Link]	[Enable], [Disable]	[Disable]

[MENU LOCK] (function menu)

[Menu Lock] tab

Column	Item	Setting item	Default
[Menu Lock]	[BUTTON INHIBIT]	[Off], [On]	[Off]
	[XPT ASSIGN]	[Off], [On]	[Off]
	[SOURCE NAME]	[Off], [On]	[Off]
	[SOURCE LINK]	[Off], [On]	[Off]
	[OPERATE]	[Off], [On]	[Off]

Glossary

Defined below are the terms used in this manual.

Word	Explanation
AB Bus **AB Bus system**	A bus control mode. By executing a transition, the A bus and B bus signals are output to the program images alternately.
Ancillary Data	The auxiliary data other than the video signals, which is transmitted inside the data stream of the video serial interface. The data superimposed on the vertical blanking period is referred to as the V ancillary data (VANC).
Aspect **Aspect ratio**	The ratio between the horizontal and vertical dimensions of an image or screen. It is 16:9 for the HD format and 4:3 for the SD format.
AUX (Auxiliary Bus)	A spare bus which can be switched by signals other than the main line output signals.
BB (BlackBurst)	The black burst signal. A composite signal of full-screen black level which is used as the reference signal for Genlock.
Border	The area or margin that is added to the edge of a wipe or key. Its width and color can be adjusted. The defocusing of the area around a border is referred to as the soft effect.
Chroma Key	This refers to the function for creating the key signals based on the color information of the video signals and combining the keys.
Clip	Moving image memory of the video memory (VMEM)
Key Clip	The threshold level of the luminance when key signals are created from a key source.
CBGD (Color Background)	The signals which are output from the internal color generator and used as the background image.
Cut	This refers to the effect where the display is instantly switched to the next image.
Density	A parameter which is used to adjust the density of the key signals.
Dot by Dot	This treats images as actual size. With PinP, it allows SD images to be combined with HD images with no accompanying deterioration in the images themselves.
Down Converter	This is the function that converts a source in the HD format into the SD format.
DSK (Downstream Key)	This refers to the key combination process which is performed at the end of the mix effect. The key is always combined with the foremost image.
DVE (Digital Video Effect)	This refers to the transition patterns accompanying size reductions or slide effects.
DVI (Digital Visual Interface)	A digital video interface standard. DVI-I can handle both digital signals and analog signals.
Embedded Audio	This refers to the audio data packets which are transferred inside the data stream of the video serial interface.
Flip Flop **Flip Flop system (PGM/PST system)**	A bus control mode. The signals selected by the program bus are always output as the program images. By executing a transition, the program bus and preset bus signals are switched over.
Flying Key	This function uses DVE effects to move, expand, or reduce key signals.
Frame Synchronizer	The function which matches the synchronization of non-synchronized video input signals.
Freeze	The function which freezes the video signal.
FTB (Fade to Black)	This is the effect where the background image is faded out to the black screen.
Genlock	The function for synchronizing the video signals using an external sync signal as the reference.
GPI (General Purpose Interface)	Interface signals which control auto transition from an external source.
Hue	The color tone of the video signals.
IRE	A unit used for video signal levels. The setup level (black level) of the signals is expressed as 0 IRE, 7.5 IRE, etc.
Key Edge	The border or shadow added to the edges of keys.
Key Fill	The signal that uses key composition processing to fill in the areas left blank by the key signals.
Key Gain	A parameter which is used to adjust the amplitude of the key signals.
Key Invert	The function which inverts the key signals.
Key Mask	The function that specifies the area for key composition using the box pattern, etc. When only part of the area of the key signals is used, key composition is executed with the unnecessary area masked.
Key Source	The video signals for creating the key signals.
Line Synchronizer	The function to automatically adjust the input video signal phase to the horizontal synchronization reference signal phase.
Linear Key	The function which combines keys using monochrome key signals with gradations in its outlines as a reference.
Lum (Luminance)	The brightness portion of the video signals.
Luminance Key	The function which creates key signals based on the luminance (brightness) information of the video signals to combine keys.
ME (Mix Effect)	A video effect device which combines a number of video signals to create mix, wipe, key and other video signals.
Mix	The picture-changing effect produced by overlapping one image with the next. It is also referred to as “dissolve”.
MultiView Display	This function combines multiple sources and displays them on one screen. PGM, PVW, and the input source can be previewed at the same time on a single screen.
PinP (Picture in Picture)	This function combines a sub-screen image with the background image.
PVW (Preview)	The function for checking ahead of time the image which will be output after the next transition. The image is output from the PVW line.
PGM (Program Bus)	The bus which always carries the program output signals.
PST (Preset Bus)	The bus which carries the program output signals after the next background transition.
RS-422	A serial interface standard. It is the interface used to control the switcher from an editor or other external device.

Word	Explanation
Sat (Saturation)	This refers to the saturation (intensity of the color chrominance level) of video signals.
SDI (Serial Digital Interface)	The standard by which video signals in the SD and HD formats are transmitted along a single coaxial cable.
Self Key	The function that creates key signals from key fill signals for combining keys.
Setup Data	The memory in which the control panel statuses can be saved and recalled. The button selection statuses as well as the border, color and other setting information can be saved in this memory.
Still	Still image memory of the video memory (VMEM).
Tally	The signal which outputs the program output statuses of the input signals to an external device. The LED that indicates the program output status on the control panel is also referred to as tally.
Transition	A function that switches from one image to another. Wipe, mix and other effects are available for the images during switching.
Tri-level Sync	The sync signal used for HD formats.
Trimming	This is the function that eliminates the unnecessary parts at the top, bottom, left and/or right of the images which are combined using the PinP function.
Up Converter	This is the function that converts a source in the SD format into the HD format which yields a high resolution.
Video Memory	This is the memory in which the images (still images and moving images) with key signals can be stored.
Wipe	A video effect in which one image is gradually replaced by another as the boundary between the two is moved using a preselected pattern.

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