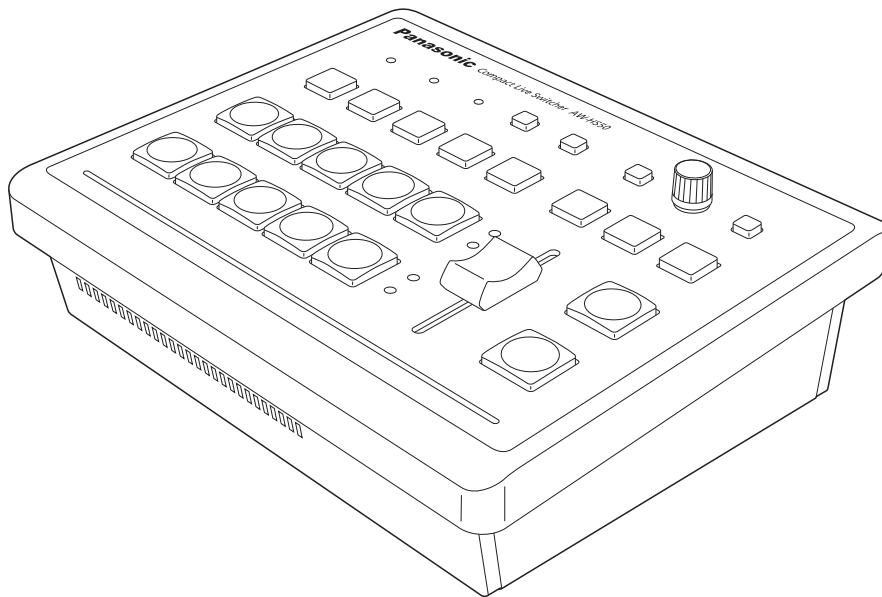


Panasonic®

Operating Instructions



Compact Live Switcher

Model No. **AW-HS50N**



Before operating this product, please read the instructions carefully and save this manual for future use.

Safety precautions

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (service) instructions in the literature accompanying the appliance.

WARNING:

■ THIS APPARATUS MUST BE EARTHED

To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the apparatus must have three cores and be correctly wired to provide connection to the earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the apparatus operates satisfactorily does not imply that the power point is earthed or that the installation is completely safe. For your safety, if you are in any doubt about the effective earthing of the power point, please consult a qualified electrician.

For CANADA

This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

WARNING:

- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.
- THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FCC Note:

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning:


To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.


A warning that an apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.


 indicates safety information.

Safety precautions

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

 indicates safety information.

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Before use

■ Overview

This unit is a 1 ME digital video switcher which supports a multiple number of HD and SD formats.

Despite its compact size, it comes with four SDI inputs, one DVI-D input, two SDI outputs and one DVI-D output.

In addition to its background transition capabilities that use the cut, mix and wipe functions, one keyer channel and one PinP channel are provided to enable video productions in a wide variety of forms.

Furthermore, using the multi-view display settings, the screen of a monitor can be split into a number of sections to accommodate up to ten images, enabling the number of monitors to be reduced and a space-saving system to be configured at low cost.

By means of the IP connection, an operating environment where the unit is tied in with the AW-HE50 HD integrated camera and AW-RP50 remote camera controller is achieved.

■ Concerning the Operating Instructions

- For the purposes of these instructions, AW-HS50N is referred to as “AW-HS50,” AW-RP50N as “AW-RP50,” and AW-HE50HN and AW-HE50SN as “AW-HE50”.
- In these instructions, the phrases “pan-tilt head and camera combination” and “camera integrated with a pan-tilt head” are both referred to collectively as “**remote camera**” except in places where specific equipment is mentioned.

■ Trademarks and registered trademarks

- Microsoft, Windows, Windows Vista and Internet Explorer are the registered trademarks or trademarks of Microsoft Corporation of the United States in the United States, Japan and other countries.
- Adobe and Reader are the registered trademarks or trademarks of Adobe Systems Incorporated in the United States and other countries.
- Other names of companies or products appearing in the text are the registered trademarks or trademarks of the companies concerned.

■ Copyrights

It is forbidden to transfer, copy, reverse assemble, reverse compile or reverse engineer the software included in this unit or to engage in any act of exportation which contravenes the applicable export laws and regulations.

■ Concerning the ratings display

The unit's name, model number and electrical ratings are indicated on its bottom panel.

■ Disclaimer

Panasonic Corporation will accept absolutely no responsibility whatsoever when any of the following is applicable:

- ① Any accidental, special or consequential damages or harm caused either directly or indirectly in connection with the unit
- ② Any problems with or damage to the unit, etc. resulting from misuse, abuse or carelessness on the part of the user
- ③ When the user has disassembled, repaired or remodeled the unit
- ④ Any inconvenience, losses, damages or harm that result from the disability to display images as a result of some reason or cause including problems with or malfunctioning of the unit
- ⑤ Any problem caused by any system in which the unit is used in combination with the equipment of third parties or any inconvenience, damages or harm occurring as a result of such
- ⑥ Any inconvenience, damages or losses resulting from accidents caused by an inadequate installation method or any factors other than a defect in the product itself
- ⑦ Any losses of any registered information whatever may be the cause of those losses
- ⑧ Any damages, claims, etc. due to loss or leakage of image data or setting data saved on this unit or in a personal computer

■ Network-related precautions

This unit is connected to a network and used: As such, it may be susceptible to the following damage, harm or losses.

- ① Leakage or release of information via the unit
- ② Illegal operation of the unit by third parties with malicious intent
- ③ Interference with or shutdown of the unit by third parties with malicious intent

To prevent these kinds of damage, harm or losses, users are urged to take the following measures to ensure network security including, but not limited to, the following:

- The unit must be secured on the network by use of firewalls or other measures.
- When the unit is to be used in a system to which personal computers are connected, notification of virus protection and safe guards against illegal programs are to be implemented and periodically checked.
- Unit should be installed in a manner in which its cables and other accessories cannot be easily damaged.

Characteristics

Compact design

- The unit features a compact design with its half-rack size width (210 mm (8-1/4")) and its 4RU size (177 mm (6-15/16")) depth. The AW-RP50 remote camera controller (option) also has the same size. When it is placed alongside the unit, the two units are neatly housed in the full rack width.

Multiple formats supported

- The signal formats supported by the unit include both HD formats (1080/59.94i, 1080/50i, 1080/24Psf, 1080/23.98Psf, 720/59.94p and 720/50p) and SD formats (480/59.94i and 576/50i).

Five input systems and three output systems featured

- The unit comes with four SDI input connectors (SDI IN 1 to SDI IN 4) and one DVI-D input connector (DVI IN).
- It also comes with two SDI output connectors (SDI OUT 1 and SDI OUT 2) and one DVI-D output connector (DVI OUT).

Frame synchronizer system

- A 10-bit frame synchronizer is incorporated for each of the SDI inputs so that asynchronous video signals can be selected with no accompanying shocks.

2-channel up-converter, 4-channel Dot by Dot function and 4-channel video process function

- An up-converter is incorporated in SDI IN 3 and SDI IN 4.
- A Dot by Dot function is incorporated for all the SDI input connectors (SDI IN 1 to SDI IN 4).
By using this function and the PinP function together, SD materials can be embedded in HD images with no deterioration in the image quality.
- The video process function is incorporated in all the SDI input connectors (SDI IN 1 to SDI IN 4) to make it possible to adjust the colors at the input stage of the switcher.

Multi view display function

- One channel is provided for the multi view display function.
The user can select whether the screen is to be split into 10, 9, 6, 5 or 4 sections.
- On each split screen, the user can assign PGM, PVW, AUX or other materials in addition to input materials IN1 to IN5.

Many different effect functions provided

- The unit enables the user to select wipe or mix as the type of background transition.
- A 1-channel keyer function is provided. The user can select linear keys, luminance keys or chroma keys as the key type.
- One PinP channel and one AUX bus system are available.
The user can choose not only cut transitions but also mix transitions as the effect yielded for switching materials using the PinP bus and AUX bus. (Bus transition function)

2-channel frame memory (8 bits)

- The user can select the still images stored in the frame memory as the bus material.
- Still images can be transferred from the host computer, which is connected to the unit via a LAN, to the frame memories.

Audio level meter display function

- This function enables the level of the embedded audio signals transferred by SDI input to be displayed.

Straightforward and flexible operability

- The control panel layout includes a row of five crosspoint buttons for the A bus and another row of five crosspoint buttons for the B bus. Using these buttons together with the SHIFT button enables a total of ten images to be switched. Cut switches are also made possible by the CUT button.
- Separate buttons enable the PinP, KEY and FTB functions to be turned ON or OFF in a single-step action.
- The slide lever is not only used to initiate background transition operations but it can also be allocated to execute PinP and KEY fade in/out operations.
- Two USER buttons located on control panel. Using these buttons together with the SHIFT button allows a total of four user settings (USER1 to USER4) to be allocated.
PinP settings or WIPE pattern settings can be allocated to the USER buttons

On-screen display (OSD)

- The setting menus can be displayed on an external monitor from the SDI OUT 2 and DVI OUT output connectors.
(These menus cannot be displayed using the SDI OUT 1 output connector.)

Characteristics

Function for linkup with a camera integrated with a pan-tilt head and remote camera controller using IP connection

- The unit can be connected to a Panasonic camera with an integrated pan-tilt head and a remote camera controller using a network.

By linking it with a remote camera controller, it is possible to put together a highly efficient operating environment.

Supported camera integrated with a pan-tilt head:

AW-HE50

Supported remote camera controller:

AW-RP50

Only one switcher (the unit) can be linked with a remote camera controller.

[Display of camera information]

The camera setting information (iris, gain and so on) obtained by the AW-RP50 can be displayed in the AUX output or on the split screens of multi view display.

[Transmission of tally information]

The unit's ON AIR tally information can be sent to the AW-RP50.

[Switching of materials]

The bus materials of the switcher (the unit) can be selected from the AW-RP50.

They can be switched in tandem with the selection of the camera using the AW-RP50.

(Control buses supported: AUX, PVW, PinP, KEY-F)

[Focus assist function]

By operating the buttons on the AW-RP50, it is possible to switch to the multi view display screen from the full screen display of the camera images.

(Control bus supported: AUX)

[Control using PAN/TILT lever and ZOOM button]

The PAN/TILT lever and ZOOM button on the AW-RP50 can be used to change the parameters of the switcher (the unit).

Accessories

Check that the following accessories are present and accounted for.

Operating Instructions (this manual)	1	AC adapter	1
CD-ROM (Operating instructions/Image transmission software)	1	Power cable (2 m [6.6 ft.])	1

Required personal computer environment

Run the software that is provided with the switcher on a host computer which satisfies the following specifications.

CPU	Intel® CoreTM2 DUO 2.4 GHz or faster recommended
Memory	512 MB or more
Network function	10Base-T or 100Base-TX
Image display function	Resolution: 800 × 600 pixels or more Color generation: True Color (24 bits, 32 bits)
Supported operating system	Microsoft® Windows® XP, Microsoft® Windows Vista®, Microsoft® Windows® 7
Hard disk drive	At least 50 MB of free memory

Operating precautions

Handle carefully.

Do not drop the product, or subject it to strong shock or vibration.

Do not carry or move the product by the slide lever lever. This is important to prevent trouble.

Use the product in an ambient 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 will adversely affect the parts inside.

Power off before connecting or disconnecting cables.

Before plugging or unplugging the cables, be sure to switch power off.

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

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.

Caution

- 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

This product's image switching and image effect functions can be used to produce images which flicker rapidly or images which change rapidly.

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

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.

Concerning the consumable parts

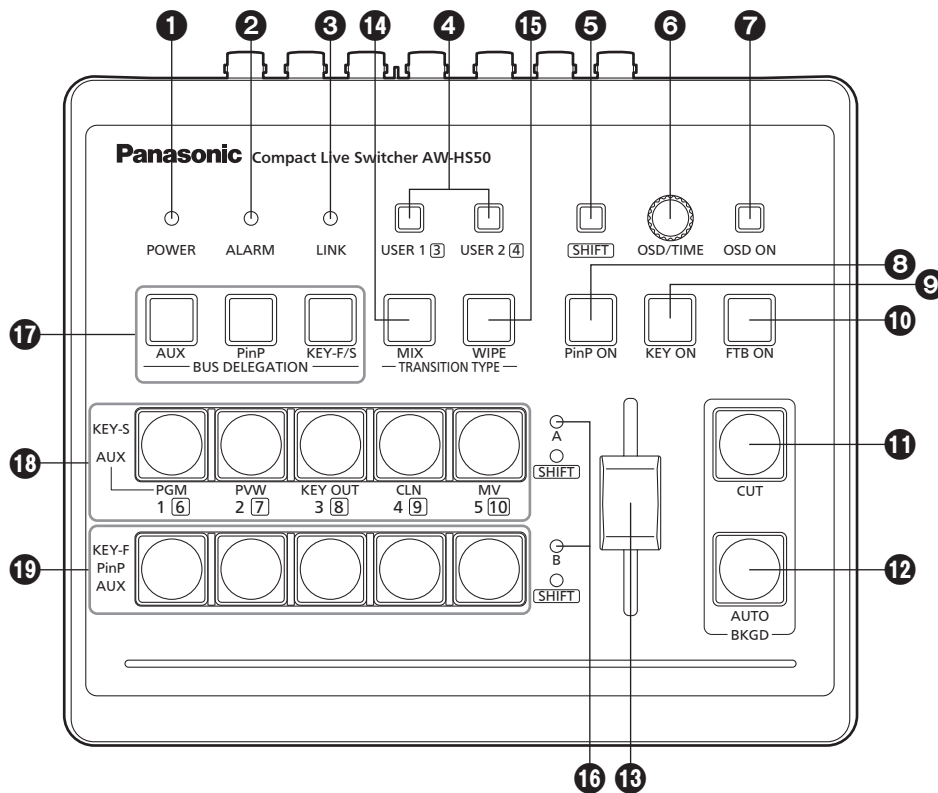
- Cooling fan:
This is a consumable part. As a general rule, replace it every 5 years or so (when the unit has been operated for 15 hours a day).
- AC adapter:
This is a consumable part. As a general rule, replace it every 5 years or so (when the unit has been operated for 15 hours a day).

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 absolutely sure to ask your dealer to do the job.

1. Parts and their functions

1-1. Control panel



1 POWER indicator [POWER]

This indicator lights when the POWER switch (20) on the rear panel is set to ON while power is supplied to the DC IN connector (28).

2 ALARM indicator [ALARM]

This indicator lights when the cooling fan (27) has stopped running or when there is a problem with the power supply (voltage drop).
When this occurs, an alarm message appears on the OSD menu while the OSD menu is displayed on an external monitor (in the OSD ON status).
The alarm information can be output to an external device from the unit's TALLY/GPI connector (26).
For details, refer to "7-2. TALLY/GPI".
When an alarm has occurred, stop using the unit immediately, and be absolutely sure to contact your dealer.
Continuing to use the unit even after an alarm has occurred could damage the unit.

3 LINK indicator [LINK]

This indicator lights when the unit is linked on a network with the AW-RP50 remote camera controller available as an option.
The link setting must be enabled at both the unit and AW-HS50.

4 USER buttons [USER 1, USER 2]

Any four functions selected from among the menu items can be assigned to the USER 1 button and USER 2 button, and then used.
The functions registered in [USER1] and [USER3] are assigned to the USER 1 button whereas the functions registered in [USER2] and [USER4] are assigned to the USER 2 button.
While the SHIFT button (5) is held down, the function registered in [USER3] or [USER4] can be selected.

Button indicator ON:

The functions assigned to the USER buttons are enabled

Button indicator OFF:

The functions assigned to the USER buttons are disabled

When "[2] WIPE Menu", "[3] PinP Menu" or "[5] KEY Adjust Menu" is displayed on the OSD menu or when the chroma key marker is in the ON status, these buttons function as short-cut buttons for specific setting items.
For details, refer to "3-8. Setting the USER buttons".

1. Parts and their functions

5 SHIFT button [SHIFT]

This is pressed to call the [USER3] and [USER4] functions which have been assigned to the USER 1 button and USER 2 button or to call the XPT6 to XPT10 materials which have been assigned to crosspoint buttons [1] to [5].

Button indicator ON:

The SHIFT button is enabled

Button indicator OFF:

The SHIFT button is disabled

(The functions executed using the SHIFT button take effect only while the button is held down.)

6 OSD/TIME dial [OSD/TIME]

The following operations are performed using this dial.

• When the main menu is displayed:

Turn the OSD/TIME dial to select a submenu, and press the dial to enter the selection.

• When a submenu is displayed:

Turn the OSD/TIME dial to select a setting item, and press the dial to enter the selection.

When the dial is turned while a setting is blinking, the setting changes, and when the dial is pressed, the blinking area moves to the right.

When the dial is held down while a setting is blinking, the setting is restored to default value.

(However, the network settings are not returned to their default values.)

- When the dial is turned while it is still held down after the PinP ON, KEY ON, FTB ON or AUTO button has been held down, the respective transition duration can be changed.

7 OSD ON button [OSD ON]

This selects whether the OSD menu is to be displayed or hidden.

Each time the OSD ON button is held down, the OSD menu is switched between displayed and hidden.

Button indicator ON:

The OSD menu is displayed

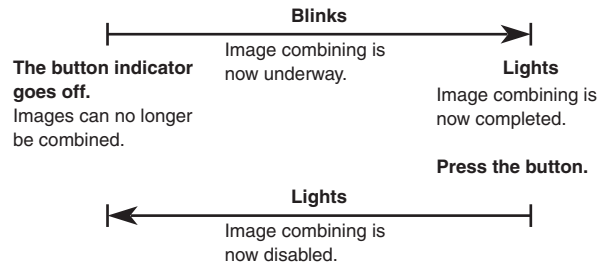
Button indicator OFF:

The OSD menu is hidden

8 PinP ON button [PinP ON]

This is used to combine PinP (picture-in-picture) images for the transition duration which has been set.

Press the button.

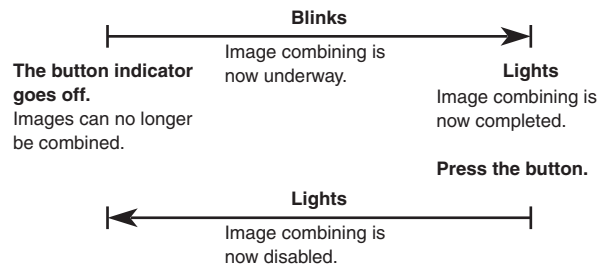


By turning the OSD/TIME dial (6) while keeping the PinP ON button pressed after the button has been held down, the transition duration can be changed.

9 KEY ON button [KEY ON]

This is used to combine key materials for the transition duration which has been set.

Press the button.



By turning the OSD/TIME dial (6) while keeping the KEY ON button pressed after the button has been held down, the transition duration can be changed.

10 FTB button [FTB ON]

This initiates fade-in or fade-out with a black screen or a designated image for the transition duration which has been set.

Button indicator ON:

Now fading out

Button indicator blinking:

Now fading in

Button indicator OFF:

Fade-in or fade-out is now completed

By turning the OSD/TIME dial (6) while keeping the FTP ON button pressed after the button has been held down, the transition duration can be changed.

11 CUT button [CUT]

This instantly initiates a transition for the currently selected operation.

Button indicator ON:

The transition is being executed

Button indicator OFF:

The transition is complete

1. Parts and their functions

12 AUTO button [AUTO]

This automatically initiates the transition for the transition duration which has been set. (Auto transition)

Button indicator ON:

Auto transition is being executed

Button indicator OFF:

Auto transition is complete

If the AUTO button is pressed while auto transition is being executed, the auto transition operation is aborted. When the button is pressed again after the operation was aborted, the remaining transition is executed. When the [AUTO] button is pressed with the slide lever (18) at a midway setting, the transition is executed in the remaining time from the midway status. By turning the OSD/TIME dial (6) while keeping the MIX button pressed after the button has been held down, the transition duration can be changed.

13 Slide lever

This is used when executing transitions manually. When the slide lever is moved to the end, the transition is completed. If it has been moved while an auto transition was being executed, operation will switch to manual as soon as the position of the slide lever has gone beyond the amount of the transition having been executed. It is possible to select a background, key or PinP using a menu for materials involving transitions.

14 MIX button [MIX]

This is used to execute transitions (MIX transitions) while overlapping the images of the A bus and B bus (or images of the PGM bus and PST bus). While a transition is being executed, the total of the A bus and B bus (or PGM bus and PST bus) outputs is held at 100 %. When the MIX button is pressed, its indicator lights to show that this function is now selected. If the WIPE button (15) is now pressed, the function selection is released, and the indicator goes off.

Button indicator ON:

A MIX transition is being selected

15 WIPE button [WIPE]

This is used to execute transitions using the selected wipe pattern. When the WIPE button is pressed, its indicator lights to show that this function is now selected. If the MIX button (14) is now pressed, the function selection is released, and the indicator goes off. By turning the OSD/TIME dial (6) after the WIPE button has been held down and while the button is still pressed, the wipe pattern can be changed.

Button indicator ON:

Wipe selection underway

16 Bus tally indicators [A, B]

The indicator corresponding to the bus whose program (PGM) materials are being output lights.

17 BUS DELEGATION buttons [AUX, PinP, KEY-F/S]

These are used to select the buses which output the materials selected by the crosspoint buttons (18, 19). Any of four lighting statuses are established: the status in which the indicators of all of the three buttons are off, and the statuses in which the indicator of one of the buttons is lighted. (It is not possible for the indicators of two of the buttons to be lighted at the same time.)

- When one of the buttons is pressed while the indicators of all three buttons are off, the indicator of the pressed button lights.
- When the button whose indicator is lighted is pressed, its indicator is turned off. When a button whose indicator is not lighted is pressed, only the indicator of the pressed button lights.

The following operations can be undertaken in each of these statuses.

- 1. When the indicators of all three buttons are off:**
In this status, the materials of the bus that executes background transitions are selected.
- 2. When the indicator of the AUX button is lighted:**
In this status, the AUX bus materials are selected.
- 3. When the indicator of the PinP button is lighted:**
In this status, the PinP bus materials are selected.
- 4. When the indicator of the KEY-F/S button is lighted:**
In this status, the key fill bus and key source bus materials are selected.

1. Parts and their functions

18 A bus crosspoint buttons [1 to 5]

19 B bus crosspoint buttons [1 to 5]

These are used to select the materials to be output to the AUX bus, PinP bus and KEY-F/S bus.

When a button is pressed and the material allocated to that button is selected, the indicator of the button lights.

Depending on the status of the BUS DELEGATION button (17) indicators, the operation performed differs as follows.

1. While the indicators of all three buttons are off:

When one of the crosspoint buttons is pressed, the materials of the buses which execute the background transitions are selected.

[B crosspoint buttons]

These are used to select the PST bus materials. When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

[A crosspoint buttons]


These are used to select the PGM bus materials. When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

Memo

Using the OSD menu, A/B, PGM(A)/PST(B) or PGM(B)/PST(A) can be selected as the bus mode.

The description given above applies when the PGM(A)/PST(B) has been selected.

 For details, refer to “3-1-4. Selecting the bus mode”.

2. When the indicator of the AUX button is lighted:

When one of the crosspoint buttons is pressed, the AUX bus material is selected.

[B crosspoint buttons]

When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

[A crosspoint buttons]

When a button from [1] to [5] is pressed, PGM, PVW, KEY OUT, CLN or MV is selected respectively.

3. While the indicator of the PinP button is lighted:

When a B crosspoint button is pressed, the PinP bus material is selected.

[B crosspoint buttons]

When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

4. While the indicator of the KEY-F/S button is lighted:

When one of the crosspoint buttons is pressed, the key fill bus or key source bus material is selected.

[B crosspoint buttons]

These are used to select the key fill bus materials. When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

[A crosspoint buttons]

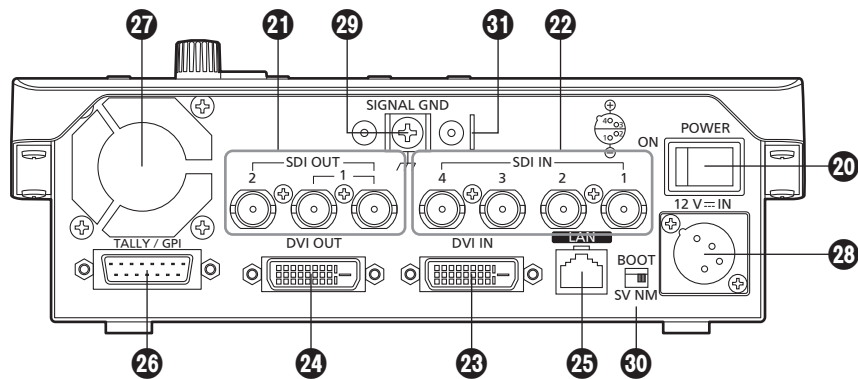
These are used to select the key source bus materials.

When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

1. Parts and their functions

1-2. Rear panel



20 POWER switch [POWER]

When the POWER switch is set to the ON position, the POWER indicator (1) lights, and the unit can be operated.

21 SDI OUT connectors [SDI OUT 1, 2]

These are the HD/SD SDI signal output connectors. The following signals can be assigned to the connector by menu operations:

PGM, PVW, CLN, AUX, MV, KEYOUT

At the SDI OUT 1 connector, the output signals are split into two and output through two connectors.

It is the same signal that is output.

- The OSD menu, multi view display frame, tally information, names of the materials and audio level meters are not displayed for the signals of the SDI OUT 1 connector.
- When the high-resolution multi view mode is enabled, it is not possible to assign MV signals.

22 SDI IN connectors [SDI IN 1 to 4]

These are the HD/SD SDI signal input connectors. The following input modes can be set by menu operations:

SDI IN 1, 2: Normal, DbyD

SDI IN 3, 4: Normal, DbyD, UC, Auto

The video process function can be used for all the SDI IN 1 to 4 input signals.

- The up-converter cannot be used for SDI IN 1 and 2.
- When signals differing from the system format have been input, they are replaced with black signals. (However, when HD has been selected as the system format setting and DbyD or UC has been selected as the input mode setting, SD signals with the same vertical frequency can be input.)

23 DVI IN connector [DVI IN]

This is the DVI-D signal input connector.

Signals with the following resolution can be input to this connector.

Digital RGB (vertical frequency: 60 Hz):

XGA (1024×768), WXGA (1280×768), SXGA (1280×1024), WSXGA+ (1680×1050), UXGA (1600×1200), WUXGA (1920×1200)

Digital RGB:

1920×1080/50P, 1920×1080/59.94P

- Analog signals cannot be input to this connector. A DVI-I cable cannot be used.

1. Parts and their functions

24 DVI OUT connector [DVI OUT]

This is the DVI-D signal output connector. Signals with the following resolution can be output from this connector by menu operations.

Digital RGB (vertical frequency: 60 Hz):
XGA (1024×768), WXGA (1280×768), SXGA (1280×1024), WSXGA+ (1680×1050), UXGA (1600×1200), WUXGA (1920×1200)

Digital RGB:
1920×1080/50P, 1920×1080/59.94P

Furthermore, the following signals can be assigned by menu operations.

PGM, PVW, CLN, AUX, MV, KEYOUT

The connector supports the high-resolution multi view mode so that images can be output at a high resolution when SD has been selected as the system format.

- Analog signals cannot be output from this connector. A DVI-I cable cannot be used.
- When the high-resolution multi view mode has been enabled, MV signals are assigned to the DVI OUT connector, and they cannot be assigned to the SDI OUT 1 connector or SDI OUT 2 connector.

25 LAN connector [LAN] (RJ-45) (10BASE-T/100BASE-TX)

Host computer supporting IP connections to this LAN connector are connected using LAN cables. When a device is connected directly to the unit, use a crossover cable (category 5 or above). When a device is to be connected to the unit through a hub, for instance, use a straight cable (category 5 or above).

26 TALLY/GPI connector [TALLY/GPI] (D-sub 15-pin, female, inch thread)

This connector features five contact input ports for controlling the unit from an external device and seven open collector output ports for outputting the tally information and alarm information from the unit.

27 Cooling fan

28 DC IN connector [12V $\overline{\text{IN}}$] (DC 12V, 2.5A)

The AC adapter provided with the unit is connected to this connector.

29 Ground terminal [SIGNAL GND]

Connect this to the system's ground.

30 SERVICE switch [SV/NM]

This switch is used for maintenance purposes. For normal operations, select the "NM" position.

31 Wire fastening fitting

An anti-theft wire available on the market can be fastened to this fitting to prevent theft.

2. Preparations

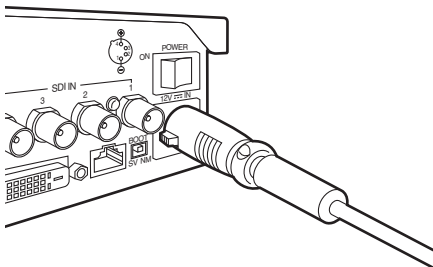
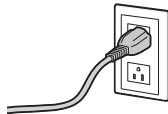
2-1. Installation precautions

● In addition to heeding the points presented in the “Safety precautions”, observe the following precautions as well.

Be absolutely sure to ask your dealer to do the jobs of installing and connecting the unit.

Connecting the power supply

- Use within AC 100 V to 120 V.
- Be absolutely sure to use only the power cord and AC adapter supplied with the panel.
- Be absolutely sure to connect the grounding terminal of the power cord to ground.
- Be absolutely sure to connect the ground terminal (SIGNAL GND) at the rear of the unit to the system ground.
- Insert the DC plug as far as it will go until it locks into position.
- When the unit is not going to be used for a prolonged period of time, turn off its power, and disconnect the power plug from the AC outlet.



Handle carefully!

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

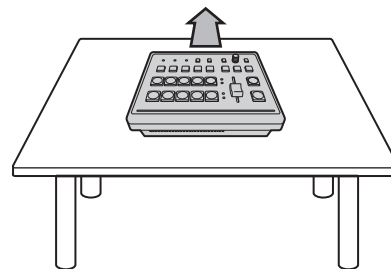
Do not allow any foreign objects to enter inside the unit!

- 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 designed for indoor use only.
- Install the unit on a sufficiently strong, stable and level surface for use.
- Ensure a space of at least 100 mm (3-15/16") around the rear vents to avoid obstructing ventilation. In particular, ensure sufficient space between ventilation and wiring when using mounted in a panel or table.
- Do not install the unit in a cold place where the temperatures will drop below 0 °C (32 °F) or in a hot place where the temperatures will rise above 40 °C (104 °F).
- 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 give rise to trouble.

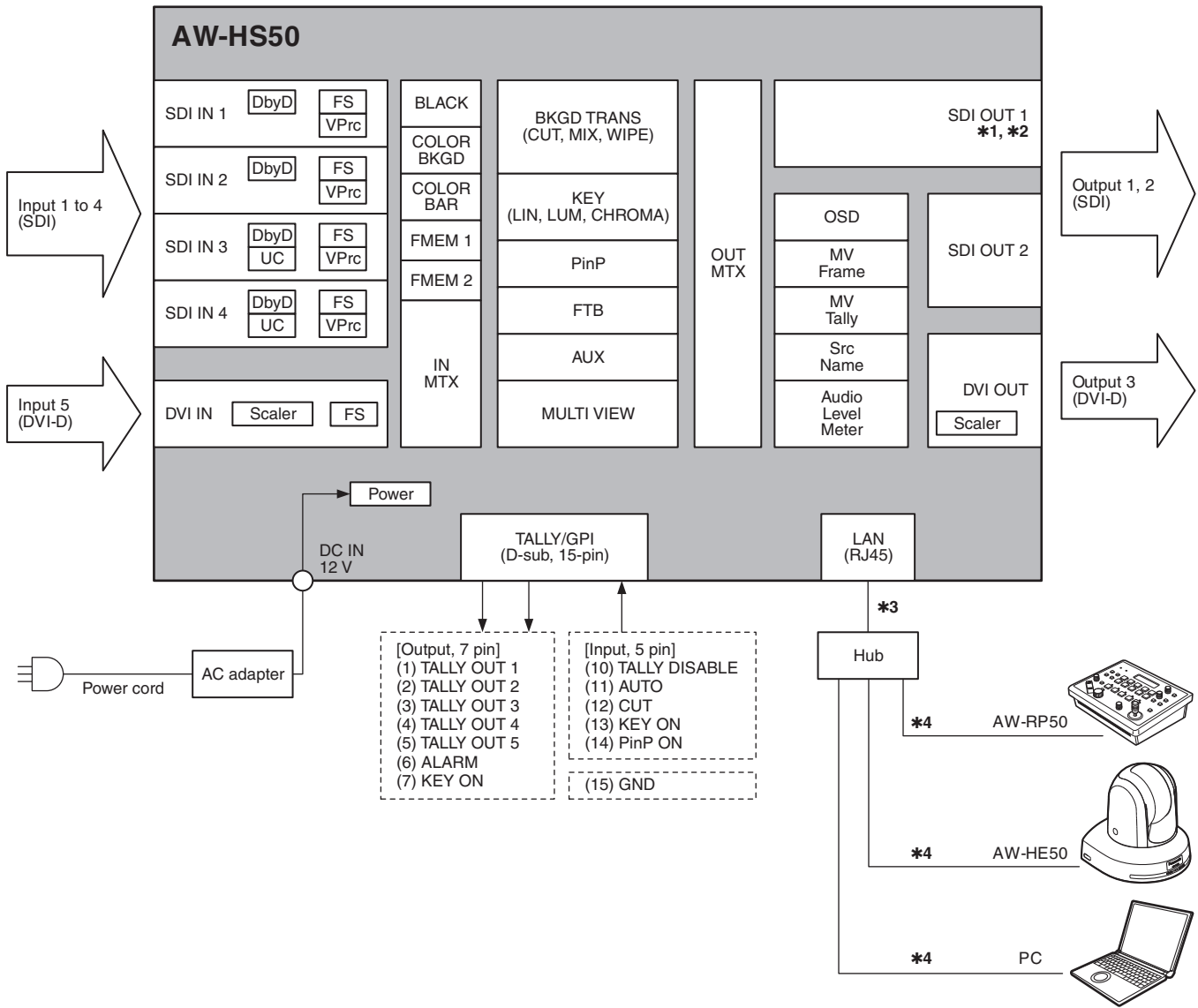
Ventilation holes



2. Preparations

2-2. Connections with other devices

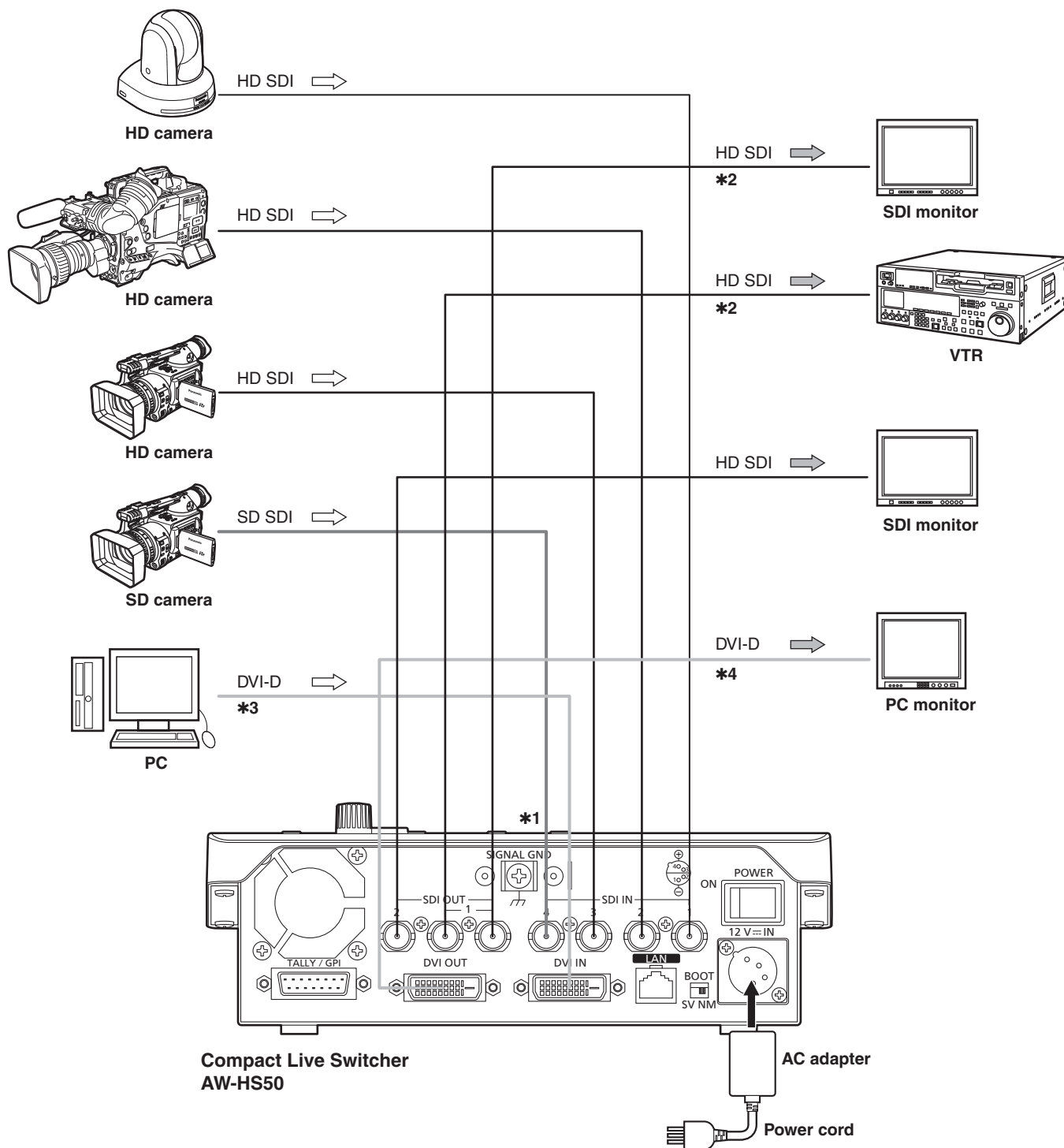
2-2-1. Block diagram



- *1: At the SDI OUT 1 connector, the output signals are split into two and output through two connectors.
- *2: The setting menus (OSD), multi view display frame, tally information, names of the materials and audio level meters are not displayed for the signals of the SDI OUT 1 connectors.
- *3: Use a crossover cable when connecting the unit and another device on a 1:1 basis without going through a hub.
- *4: Communication over the internet is not possible.

2. Preparations

2-2-2. Example of connections



***1:** The up-converter works only with the SDI IN 3 and SDI IN 4 inputs.

(The Dot by Dot mode works with all four SDI IN 1 to 4 inputs.)

***2:** The two signals which are output from the SDI OUT 1 connectors are identical.

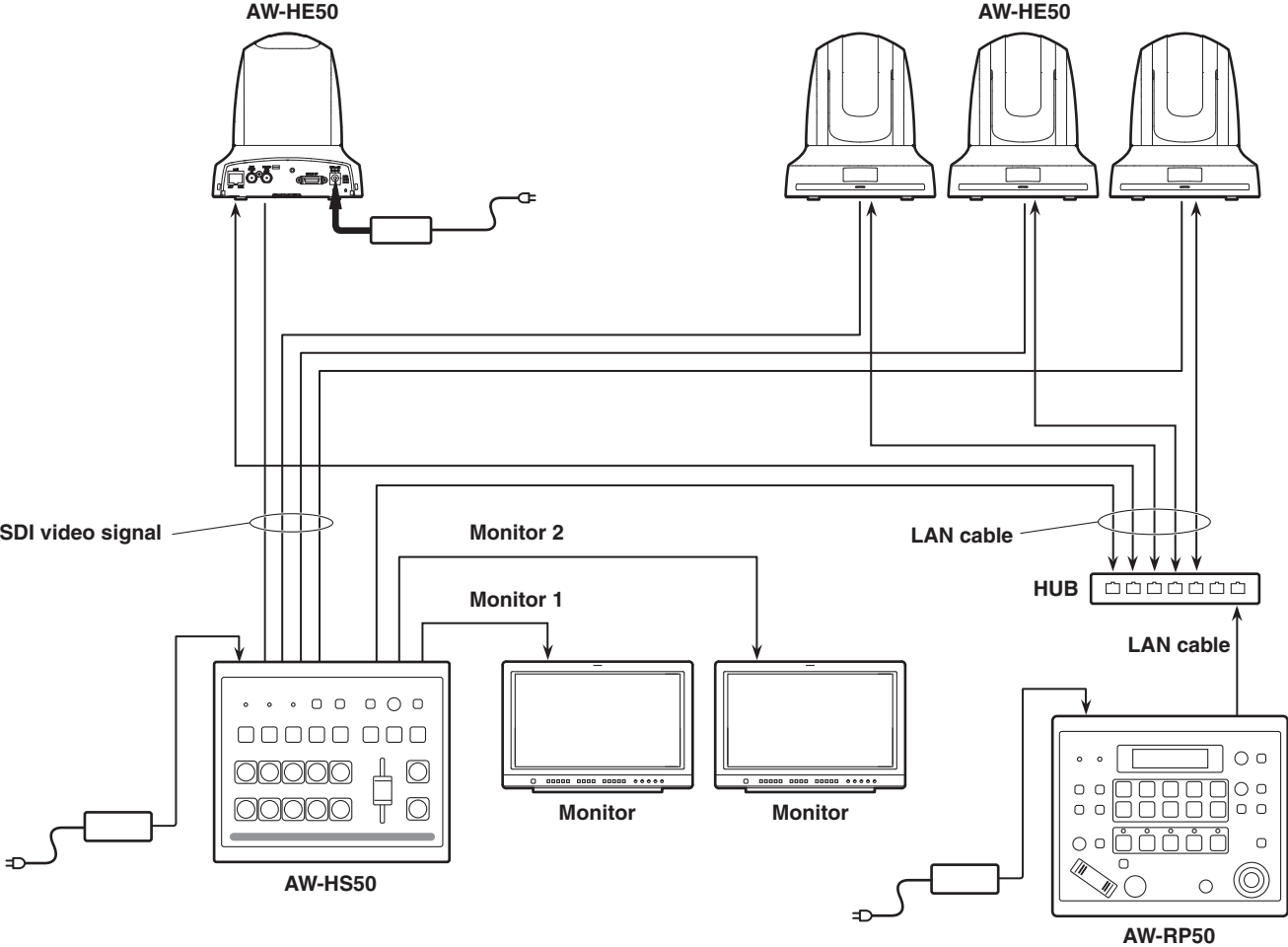
The OSD menus, multi view display frame, tally information, names of the materials and audio level meters are not displayed for the signals of these connectors.

***3:** Analog signal input is not supported.

***4:** Analog signal output is not supported.

2. Preparations

● Example of IP connections (connecting the unit to the AW-HE50 and AW-RP50)



2. Preparations

2-3. Turning the unit's power on and off

■ Turning on the power

1 Set the POWER switch to the ON position.

When power is supplied to the unit, the POWER indicator lights up green.

■ Turning off the power

1 Set the POWER switch to the OFF position.

The unit's power is turned off, and the POWER indicator goes off.

2-4. Checking the video output

Described below are the steps taken to display the unit's OSD menu on an external monitor to check the unit's video output.

2-4-1. Displaying the OSD menus on a PC monitor

1 Connect the PC monitor to the unit's DVI OUT connector.

2 Turn on the power of the PC monitor.

3 Turn on the power of the unit.

4 Hold down the OSD ON button.

The OSD ON button indicator lights, and the OSD menus are displayed on the PC monitor.

If the OSD menus do not appear on the monitor, refer to "How to forcibly display the OSD menus".

Note

If the OSD menu fails to appear on the PC monitor even after the above steps have been taken, it may mean that the PC monitor does not support the unit's DVI output format.

Check the input specifications of the PC monitor.

2. Preparations

2-4-2. Displaying the OSD menus on an SDI monitor

- 1 Connect the SDI monitor to the unit's SDI OUT 2 connector.**
- 2 Turn on the power of the SDI monitor.**
- 3 Turn on the power of the unit.**
- 4 Hold down the OSD ON button.**

The OSD ON button indicator lights, and the OSD menus are displayed on the SDI monitor.
If the OSD menus do not appear on the monitor, refer to "How to forcibly display the OSD menus".

Notes

- The OSD menus cannot be output from the SDI OUT 1 connector.
- If the OSD menu fails to appear on the SDI monitor even after the above steps have been taken, it may mean that the system format which has been set in the unit is not the correct one.
Take the steps in the next section to change the unit's system format.
☞ For details, refer to "Changing the video format".

● Changing the video format

If the OSD menu cannot be displayed even when the SDI monitor has been connected to the unit, the video format must be changed.

Follow the steps below to change the video format.

If the OSD menus can be displayed using a PC monitor, change the video format by following the steps in "6-1-1. Setting the video format".

- 1 Turn off the power of the unit.**
- 2 Turn on the unit's power while at the same time holding down the button that corresponds to the video format supported by the SDI monitor.**

Button to press at the same time	Video format
[OSD ON] + A bus crosspoint [1]	1080/59.94i
[OSD ON] + A bus crosspoint [2]	1080/50i
[OSD ON] + A bus crosspoint [3]	720/59.94p
[OSD ON] + A bus crosspoint [4]	720/50p
[OSD ON] + A bus crosspoint [5]	1080/24psf
[OSD ON] + B bus crosspoint [1]	1080/23.98psf
[OSD ON] + B bus crosspoint [2]	480/59.94i
[OSD ON] + B bus crosspoint [3]	576/50i

- 3 Hold down the OSD ON button.**

The OSD ON button indicator lights, and the OSD menus are displayed on the SDI monitor.

Note

If the OSD menu fails to appear on the SDI monitor even after the above steps have been taken, it may mean that the SDI monitor does not support the unit's SDI output format.
Check the input specifications of the SDI monitor.

2. Preparations

2-5. OSD (on-screen display) menu operations

The unit's settings are selected using the OSD menu which are displayed on the external monitor. Described here is how to operate the OSD menus.

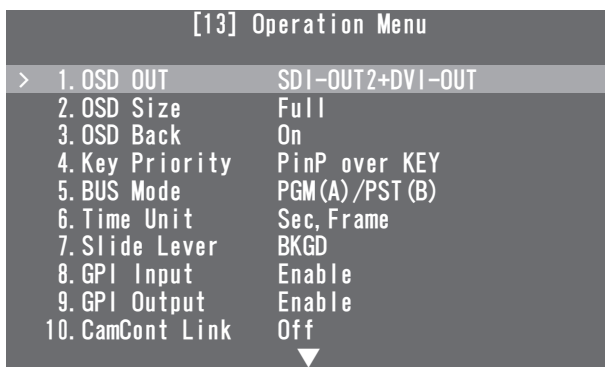
2-5-1. Displaying and clearing the OSD menus

● Basic operations

When the OSD ON button is held down, the OSD ON button indicator lights, and the OSD menus are displayed on the external monitor.

When the OSD ON button is held down while an OSD menu is displayed, the OSD ON button indicator goes off, and the OSD menu display is cleared.

● Changing the connector for outputting the OSD menus



The screenshot shows a menu titled "[13] Operation Menu" with a list of 10 items. The first item, "1. OSD OUT", is highlighted with a right-pointing arrow and shows the current setting "SDI-OUT2+DVI-OUT". A downward-pointing arrow is visible below the list.

[13] Operation Menu	
> 1. OSD OUT	SDI-OUT2+DVI-OUT
2. OSD Size	Full
3. OSD Back	On
4. Key Priority	PinP over KEY
5. BUS Mode	PGM(A)/PST(B)
6. Time Unit	Sec, Frame
7. Slide Lever	BKGD
8. GPI Input	Enable
9. GPI Output	Enable
10. CamCont Link	Off

The OSD menu output connector can be changed using the "1. OSD OUT" item on the [13] Operation Menu.

SDI-OUT2:

The menus are output from the SDI OUT 2 connector.

DVI-OUT:

The menus are output from the DVI OUT connector.

SDI-OUT2+DVI-OUT:

The menus are output from both the SDI OUT 2 connector and DVI OUT connector.

● How to forcibly display the OSD menus

When the OSD ON button is held down while holding down the SHIFT button, the following settings are established automatically.

- The OSD ON button indicator lights, and the OSD menus are displayed on the external monitor.
- The output destination of the OSD menu is set to both the SDI OUT 2 connector and DVI OUT connector.
- The screen size of the OSD menu output from the DVI OUT connector is set to Auto.

(The menus are output in the size that corresponds to the input specifications of the PC monitor which is connected to the unit.)

2. Preparations

2-5-2. Moving between the main menu and submenus

The unit's OSD menus are organized in two hierarchical levels: the main menu and the submenus.

Main menu:

This lists the submenu items.

Submenu:

This displays the setting items and the settings.
The settings can be changed on this screen.

● Moving between the main menu and submenus

Moving from the main menu to a submenu

To select a submenu item:

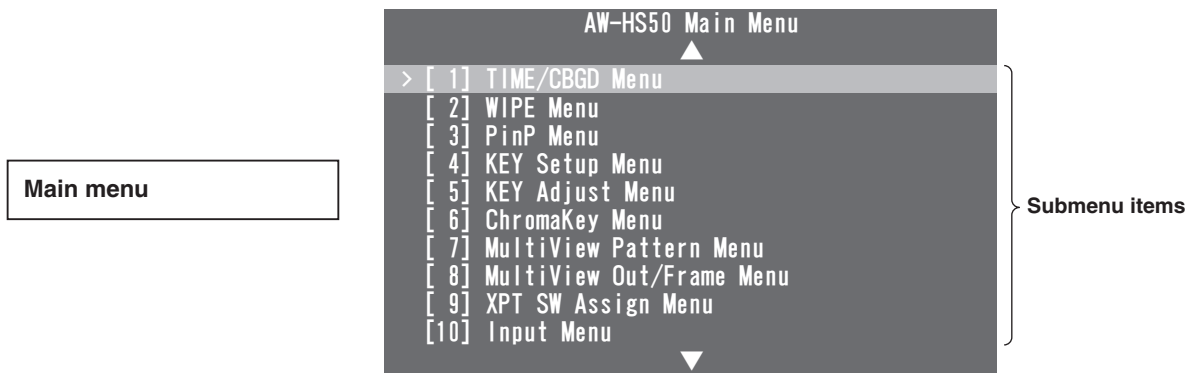
Turn the OSD/TIME dial to select an item.

Entering the setting selected for the submenu item:

Press the OSD/TIME dial to enter the selected item's setting.

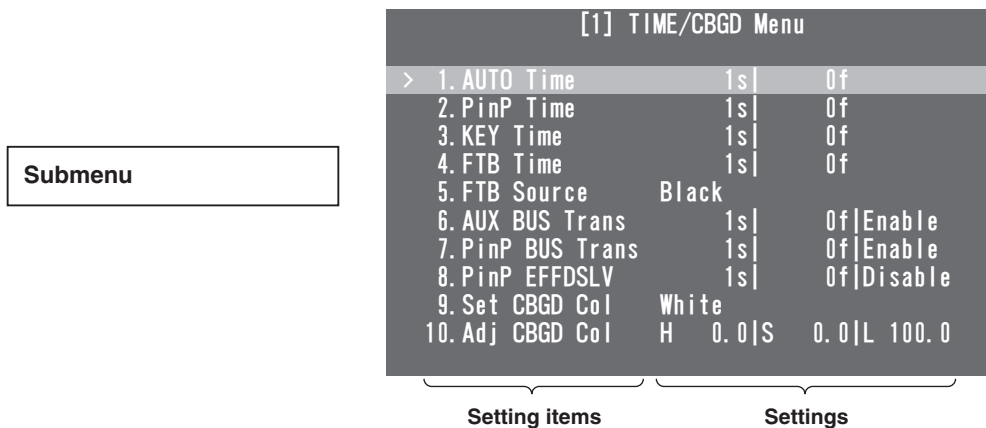
Moving from a submenu to the main menu

The main menu is restored to the screen when the OSD ON button is pressed.



- Turn the OSD/TIME dial, and select the submenu item.
- Press the OSD/TIME dial to enter the selected item's setting.

- Press the OSD ON button.



2. Preparations

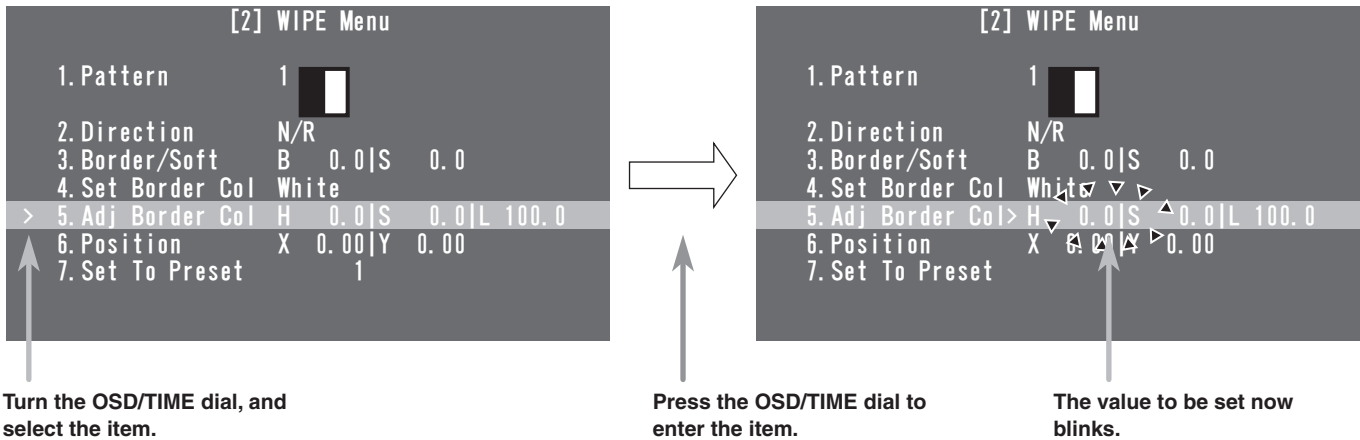
2-5-3. Operations using the submenus

1 Selecting the line with the setting item

When the OSD/TIME dial is turned, the cursor ">" at the far left moves up or down.

Bring the cursor to the line with the setting item whose setting is to be changed, and then press the OSD/TIME dial. The cursor ">" now moves to the center where the setting can be changed.

The value to be set now blinks.



2 Changing the setting

While the setting is blinking, turn the OSD/TIME dial. The setting in the blinking area now changes.

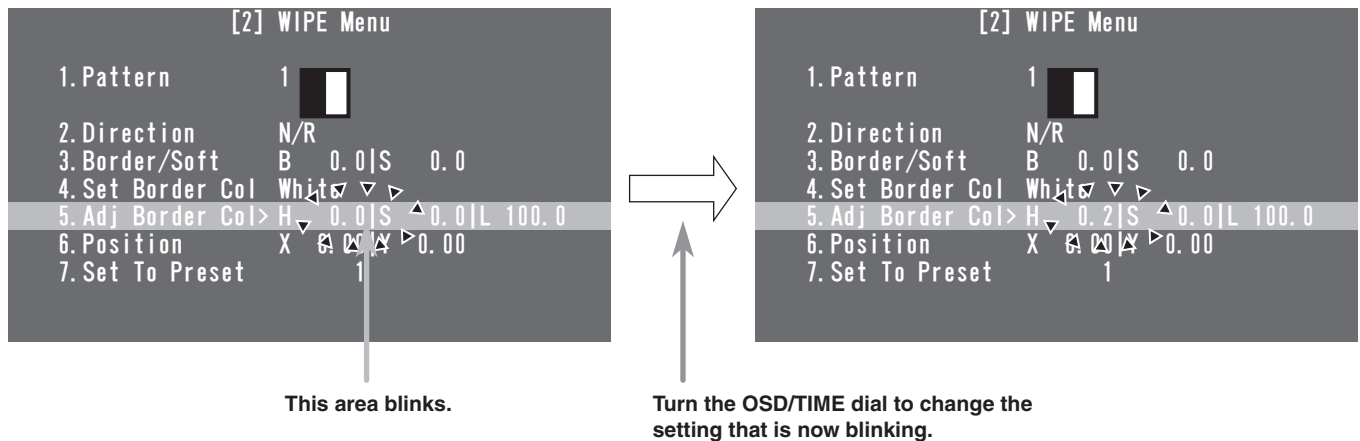
Memo

When values are changed for the regular setting items, these changes are reflected straight away but, with some of the setting items (such as Format), the changes will not be reflected unless the OSD/TIME dial is pressed once the changes have been made.

An asterisk (*) appears in front of the currently selected settings to identify these items.

[Returning the setting to its default value]

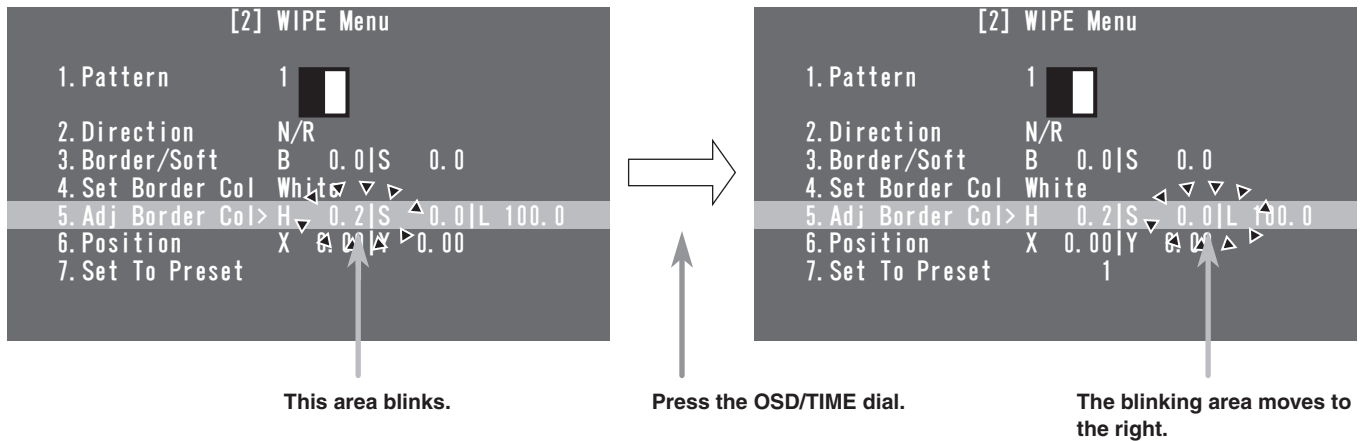
When the OSD/TIME dial is held down now, the value is returned to its default value.



2. Preparations

3 Moving the blinking area

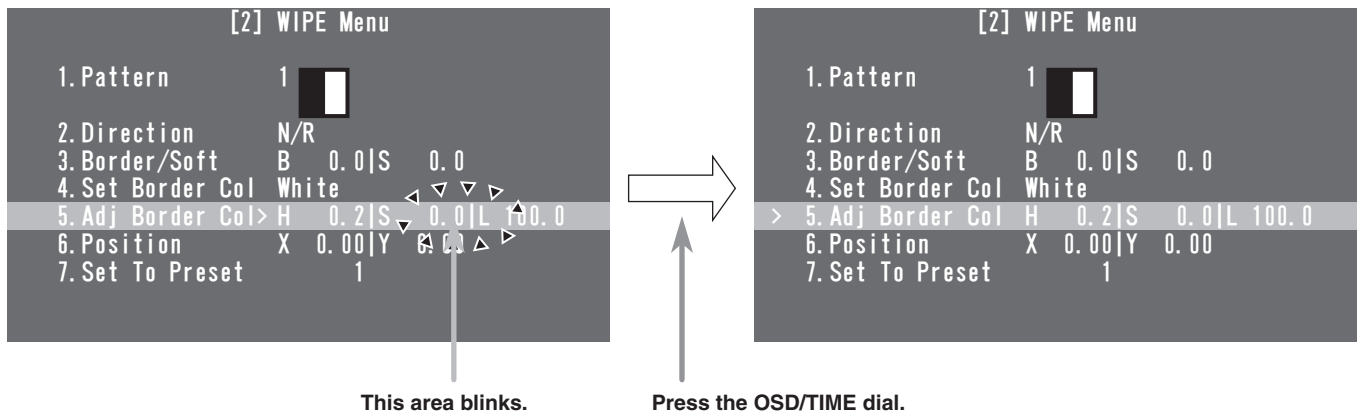
When a setting item has a multiple number of settings, press the OSD/TIME dial to move the blinking area to the right.



4 Completing the changes

When the OSD ON button is pressed while a setting is blinking, the cursor ">" moves to the far left, and the status for selecting the line with a setting item is restored.

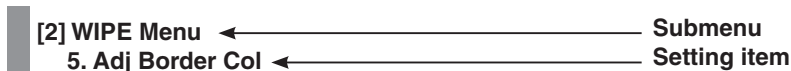
If the item has a multiple number of settings, press the OSD ON button with the blinking area at the far right. The cursor ">" now moves to the far left, and the status for selecting the line with a setting item is restored.



2-5-4. Indications used in these instructions

The operations for the setting items are indicated in these instructions as shown below.

Example: When operating the "5. Adj Border Col" item on the [2] WIPE Menu.

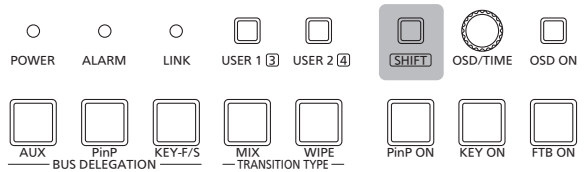


3. Basic operations

3-1. Background transitions

3-1-1. Selecting the bus

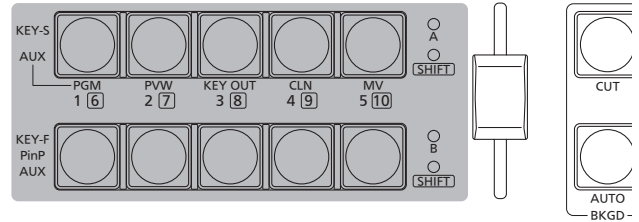
Press one of the A bus or B bus crosspoint buttons to select the material for which the background transition is to be executed.



3-1-2. Select the bus using the SHIFT function

Crosspoint buttons 6 to 10 can be selected while the SHIFT button is held down.

When the crosspoint button 6 to 10 materials have been selected, the SHIFT lamps on the right of the A and B crosspoint buttons light.

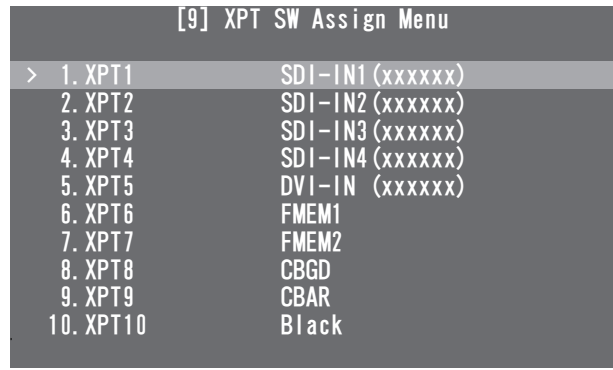


3-1-3. Assigning signals to the crosspoint buttons

External video input signals and internally generated signals can be assigned to crosspoint buttons 1 to 10.

[9] XPT SW Assign Menu

The signal assignment statuses are displayed in the “1. XPT1” to “10. XPT10” items. The “1. XPT1” to “10. XPT10” items can be set, and the following materials can be assigned.



Crosspoint button	Name of material	Material
1 to 10	SDI-IN1 to SDI-IN4	SDI inputs 1 to 4
	DVI-IN	DVI-D input
	FMEM1, FMEM2	Frame memory images
	CBGD	Internally generator signal (color background)
	CBAR	Internally generator signal (color bars)
	Black	Internally generator signal (black signal)
	NoAssign	No signal assigned

- The video signals will not be switched even if a button with the “NoAssign” assigned to it is pressed.

3. Basic operations

3-1-4. Selecting the bus mode

The bus mode can be set by the following menu operations.

[13] Operation Menu
5. Bus Mode

A/B bus:

When the slide lever is at side A, the signals selected by the A bus are output as PGM images.

When the slide lever is at side B, the signals selected by the B bus are output as PGM images.

PGM (A)/PST (B):

Using a flip-flop system, the signals selected by the A bus are always output as PGM images, and the signals selected by the B bus are always output as PST images.

PGM (B)/PST (A):

Using a flip-flop system, the signals selected by the B bus are always output as PGM images, and the signals selected by the A bus are always output as PST images.

3-1-5. Selecting the transition type

Use the MIX button and WIPE button to select the background transition mode.

3-1-6. Manual transitions

Operate the slide lever to execute transitions manually. If the slide lever is moved while an auto transition is executed, operation will switch to manual as soon as the position of the slide lever has gone beyond the amount of the transition which has been executed.

The bus tally indicators on the left of the lever show the program bus output statuses.

When only indicator A is lighted:

A bus output

When both indicators A and B are lighted:

Transition underway

When only indicator B is lighted:

B bus output

<Setting the slide lever function>

[13] Operation Menu
7. Slide Lever

Any of the following materials for which the transition is to be executed can be set by operating the slide lever.

BKGD, Key, PinP, NoAsign

3. Basic operations

3-1-7. Auto transition

When the AUTO button is pressed, the background transition is executed automatically for the transition duration which has been set. When it is pressed while the slide lever is at a midway setting, the transition is executed for the duration remaining from the midway setting.

The transition duration can be set using the following menu operation.

[1] TIME/CBGD Menu
1. AUTO Time

When the AUTO button is held down, the time setting is displayed on the PVW images so the setting can now be changed while checking what is displayed.

The display unit of TIME/CBGD Menu can be changed using the following menu operation.

[13] Operation Menu
6. Time Unit

Either seconds or frames can be selected as the display unit.

Any time from 0 to 999f can be set when using frames as the display unit. The time that can be set when using seconds as the display unit differs depending on the video format.

59.94i:	max 33s09f	50p:	max 19s49f
59.94p:	max 16s39f	24psf:	max 41s15f
50i:	max 39s24f	23.98psf:	max 41s15f

- The auto transition function always targets the background to execute the transition even if “Key”, “PinP” or “NoAssign” has been set for manual transition.

3-1-8. Cut transition

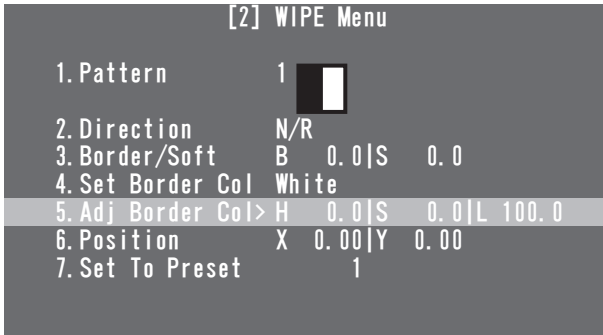
When the CUT button is pressed, the background transition is executed instantly.

- The auto transition function always targets the background to execute the transition even if “Key”, “PinP” or “NoAssign” has been set for manual transition.

3. Basic operations

3-2. Wipe

Wipe patterns or borders can be set for executing the background transition.



3-2-1. Selecting the wipe pattern

[2] WIPE Menu 1. Pattern

The wipe pattern can be selected by turning the OSD/TIME dial.

Wipe patterns and their numbers				

- The wipe pattern can also be changed by turning the OSD/TIME display while pressing the WIPE button without performing a menu operation.

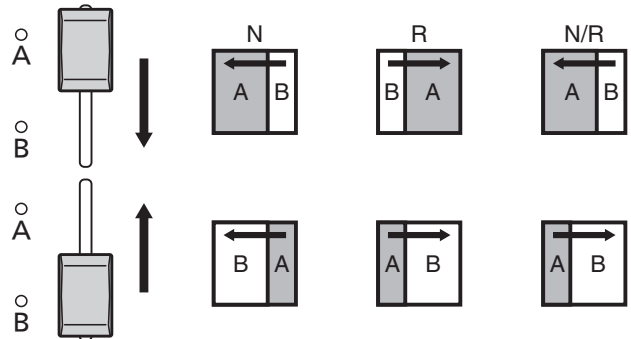
3-2-2. Selecting the wipe direction

[2] WIPE Menu 2. Direction

This item is used to select the wipe direction.

- N(Normal):** Wiping proceeds in the normal direction.
- R(Reverse):** Wiping proceeds in the reverse direction.

N(Normal)/R(Reverse): The normal direction is replaced with the reverse direction (or vice versa) when the transition is completed.



3-2-3. Setting the border width and soft effect

[2] WIPE Menu 3. Border/Soft

[B: Border] This is used to set the border width for wiping. Select "0.0" as the setting if no effects are to be added to the borders.

[S: Soft] This is used to set the amount of the soft effects. This amount indicates the ratio of the soft effect to the border width. When only the soft effect is to be added to wipe, set B (border) to "0.0".

3. Basic operations

3-2-4. Setting the border color

[2] WIPE Menu 4. Set Border Col

This item is used to select any of the following colors for the borders.

White, Yellow, Cyan, Green, Magenta, Red, Blue, Black

3-2-5. Adjusting the border color

[2] WIPE Menu 5. Adj Border Col

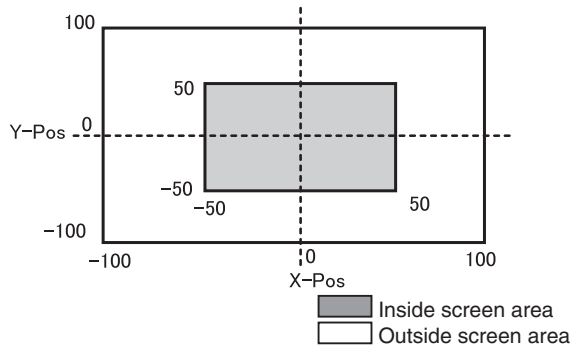
This item is used to adjust the hue (H), saturation (S) and luminance (L) of the color which has been set for the borders.

3-2-6. Setting the wipe start position

[2] WIPE Menu 6. Position

This item is used to set the position where the transition is to start for wipe patterns No.9, 10, 11, 12 and 13 using the X and Y coordinates.

<X-Pos and Y-Pos setting range>



- While the [2] WIPE Menu submenu is displayed, the items to be selected can be switched using the USER buttons.

USER1: WIPEPos X, USER2: WIPEPos Y,
USER3: —, USER4: —

3-2-7. Registering and recalling the preset memories

[2] WIPE Menu 7. Set To Preset

Up to four sets of wipe settings can be registered in the preset memories.

<Registering the settings in the preset memories>

Select 1, 2, 3 or 4, and press the OSD/TIME dial.

The status currently set is now registered in the selected preset number.

<What can be registered in the preset memories>

- Wipe patterns
- Wipe directions
- Border width of wipe
- Soft effect amount
- Border colors
- Position at which the transition starts

<Calling the preset memory settings>

What has been registered in the preset memories can be called using the USER buttons.

- To call what has been registered, select "WIPE PRSET" using the menu operation below.

[12] USER/FMEM Menu 1. USER1

3. Basic operations

3-3. KEY

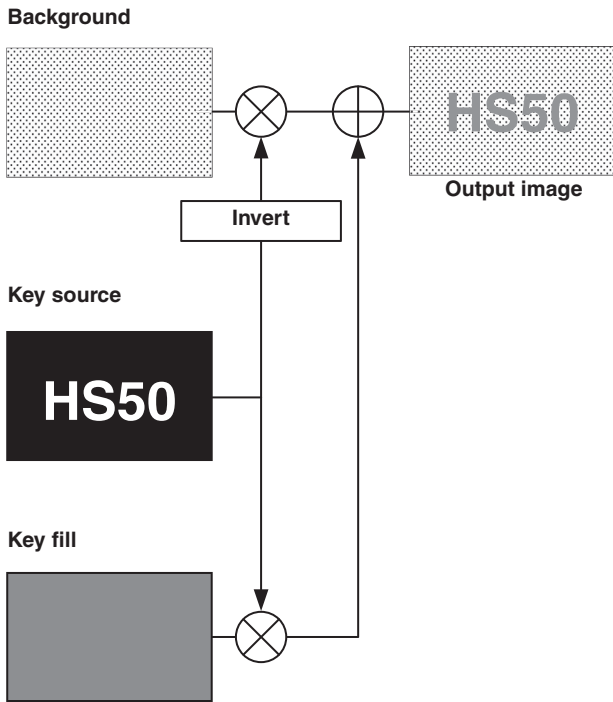
3-3-1. Concerning key combinations

This operation combines another image with the background image.

In addition, how the key is to be defined can be adjusted, and an edge can be added to the image to be combined with the background.

How key combinations work is shown in the figure below.

<How key combination works>



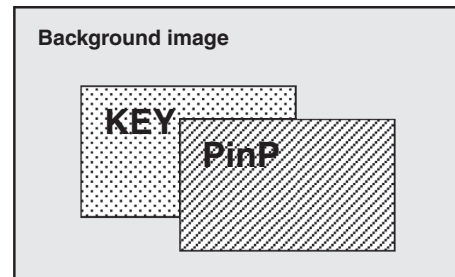
3-3-2. Setting the PinP and KEY priority

Besides keys, PinP (picture in picture) is also available as material to be combined with the background image.

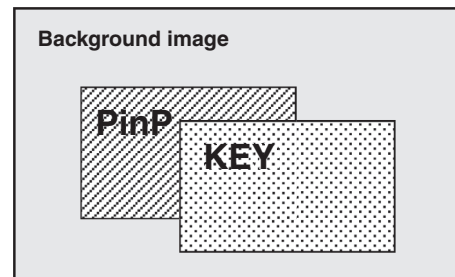
The display priority of the images (that is, which images are shown in front of which images) can be changed using the following menu operation.

[13] Operation Menu
4. Key Priority

PinP over KEY



KEY over PinP

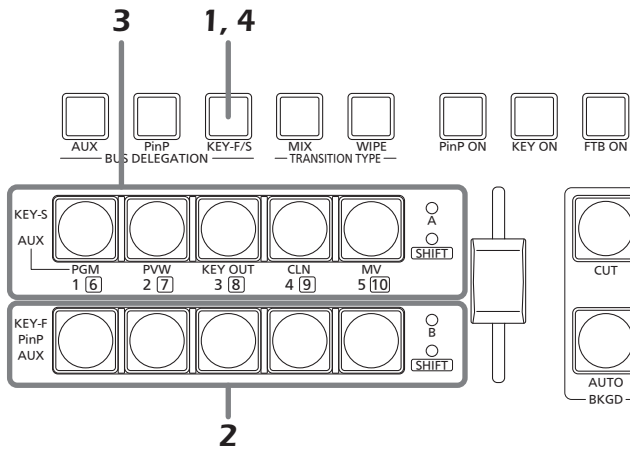


3. Basic operations

3-3-3. Selecting the key materials

Select the key materials using the A bus and B bus crosspoint buttons.

- 1** Press the KEY-F/S button to set the crosspoint buttons to the key bus material selection mode.
- 2** Select the key fill signal using the B bus crosspoint buttons.
- 3** Select the key source signal using the A bus crosspoint buttons.
- 4** Press the KEY-F/S button to release the bus selection mode of the crosspoint buttons.



3-3-4. Key transition

When the KEY ON button is pressed, the key transitions (fades in) for the transition duration which has been set.

<Setting the transition duration>

[1] TIME/CBGD Menu 3. KEY Time

- The transition duration can also be changed by turning the OSD/TIME dial while pressing the KEY ON button. When the KEY ON button is held down, the duration setting is displayed on the OSD menu so the setting can now be changed while checking what is displayed.

The key transition can also be executed by operating the slide lever.

<Selecting the slide lever operation>

[13] Operation Menu 7. Slide Lever

3. Basic operations

3-3-5. Key setup

The key type and other settings can be selected.

[4] KEY Setup Menu	
> 1. Key Type	Luminance (ChrmOff)
2. Fill	Bus
3. PVW	On
4. Set Fill Col	White
5. Adj Fill Col	H 0.0 S 0.0 L 100.0
6. Edge Type	Off
7. Edge Direction	0
8. Edge Width	2
9. Set Edge Col	Black
10. Adj Edge Col	H 0.0 S 0.0 L 0.0

● Key Type

[4] KEY Setup Menu 1. Key Type

This item is used to select the key type.

Luminance (ChrmOff)

(luminance key/chroma off: Self key):

The key signal is created from the luminance component of the key fill signal.

Luminance (ChrmOn)

(luminance key/chroma on: Self key):

The key signal is created from the luminance and chrominance components of the key fill signal.

Linear (linear key: EXT key):

The key signal is created from the luminance component of the key source signal. This setting is used when the key source signal and key fill signal are different.

Chroma (Chroma key: Self key):

The key signal is created using a specific hue of the key fill signal as a reference.

Since the luminance key and chrominance key function as self keys, the key fill signal is used as the key source signal. When the luminance key or chrominance key has been selected as the key type, the key signal remains unchanged even when the key source signal is switched.

When the linear key is used, use a material with a black background and white characters or shapes to be used for the key combination as the key source signal. The key combination may not be achieved neatly with materials having colors other than black and white.

With materials with a white background and black characters, for example, the key level can be reversed and used by selecting ON for the key invert setting.

<Setting the key invert>

[5] KEY Adjust Menu 4. Invert

● Fill

[4] KEY Setup Menu 2. Fill

This item is used to select the fill type.

Bus:

The bus signal is used for the key fill signal.

Matte:

The internal fill matte is used for the key fill signal.

● PVW

[4] KEY Setup Menu 3. PVW

This item enables an image with key effects added to be output for the PVW image to adjust and check the key.

On: An image with key effects added is output for the PVW image.

Off: An image with no key effects added is output for the PVW image.

● Set Fill Col

[4] KEY Setup Menu 4. Set Fill Col

This item is used to select any of the following colors for the fill matte.

White, Yellow, Cyan, Green, Magenta, Red, Blue, Black

● Adj Fill Col

[4] KEY Setup Menu 5. Adj Fill Col

This item is used to adjust the hue (H), saturation (S) and luminance (L) of the color which has been set for the fill matte.

3. Basic operations

● Edge Type

[4] KEY Setup Menu
6. Edge Type

This item is used to add borders, shadows or other edges to the key.

Off:

An edge is not added.

Border:

A border is added around the entire frame.

Drop:

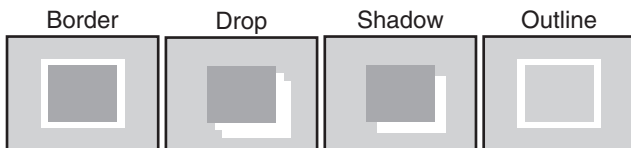
A diagonal border is added.

Shadow:

A shadow is added.

Outline:

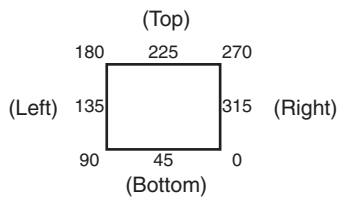
An outline (only a border with no fill) is added.



● Edge Direction

[4] KEY Setup Menu
7. Edge Direction

This item is used to set the direction (in 45-degree increments) in which to add “Drop” or “Shadow”.



● Edge Width

[4] KEY Setup Menu
8. Edge Width

This item is used to set the edge width.

● Set Edge Col

[4] KEY Setup Menu
9. Set Edge Col

This item is used to select any of the following colors for the edges.

White, Yellow, Cyan, Green, Magenta, Red, Blue, Black

● Adj Edge Col

[4] KEY Setup Menu
10. Adj Edge Col

This item is used to adjust the hue (H), saturation (S) and luminance (L) of the color which has been set for the edges.

3. Basic operations

3-3-6. Key adjustments

How the key is to be defined can be adjusted.

[5] KEY Adjust Menu	
> 1. Clip	0.0
2. Gain	100.0
3. Density	100.0
4. Invert	Off
5. Mask	Off
6. Mask Adjust1	L -25.0 R 25.0
7. Mask Adjust2	T 25.0 B -25.0
8. Mask Invert	Off

● Clip

[5] KEY Adjust Menu 1. Clip

This item is used to set the reference level for creating the luminance key and linear key.

The item cannot be used when Chroma (chroma key: self key) has been selected as the key type.

● Gain

[5] KEY Adjust Menu 2. Gain

This item is used to set the amplification level of the luminance key and linear key.

- The item cannot be used when Chroma (chroma key: self key) has been selected as the key type.

● Density

[5] KEY Adjust Menu 3. Density

This item is used to adjust how the luminance key and linear key are to be defined.

● Invert

[5] KEY Adjust Menu 4. Invert

This item is used to set key invert.

- On:** The internally generated key signal is inverted.
- Off:** The key signal is not inverted.

● Mask

[5] KEY Adjust Menu 5. Mask

This item is used to set the masking method.

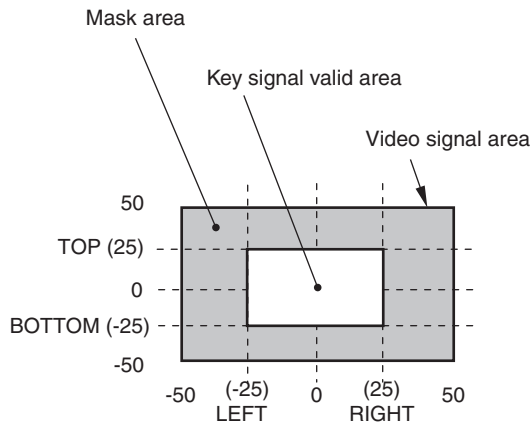
- Off:** The key signal is not masked.
- On:** The area set using the “6. Mask Adjust1” and “7. Mask Adjust2” items is masked.

● Mask Adjust1, Mask Adjust2

[5] KEY Adjust Menu 6. Mask Adjust1 7. Mask Adjust2

This item is used to set the area to be marked.

- 6. Mask Adjust1 item:**
This sets the L (left) and R (right) of the area.
- 7. Mask Adjust2 item:**
This sets the T (top) and B (bottom) of the area.



- When [5] KEY Adjust Menu submenu is displayed, the items to be set can be selected using the USER buttons.

USER1: Mask Left, USER2: Mask Right,
USER3: Mask Top, USER4: Mask Bottom

● Mask Invert

[5] KEY Adjust Menu 8. Mask Invert

This item is used to set mask invert.

- On:** The mask signal is inverted.
- Off:** The mask signal is not inverted.

3. Basic operations

3-3-7. Chroma key adjustments

How the chroma key is to be defined can be adjusted.

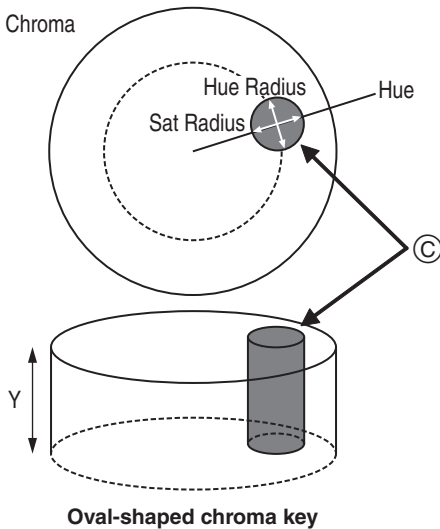
[6] ChromaKey Menu	
> 1. Marker	On
2. Sample	Start
3. Marker Pos	X 0.00 Y 0.0 S 100.0
4. Marker Aspect	0.00
5. Ref Adjust	H 0.0 S 0.0 L 7.0
6. Y-Influence	0.00
7. Radius	H 100.0 S 50.0
8. Soft	0.0
9. Cancel	0.0

Before proceeding with the adjustments, select "Chroma" as the key type using the menu item below.

[4] KEY Setup Menu 1. Key Type

As the chroma key, a key signal is created using a specific hue as a reference. For instance, the key signal is created by detecting the color of the background from the image of a person standing in front of a specific background color, and another background is combined.

This unit uses an area system whose area is designated by a rectangular frame. The result of averaging the colors of the pixels inside that area is used as the chroma key reference color (key reference), and the maximum deviation from the average value is used as the radius of the chroma key oval. Chroma keys faithful to the chroma space sample (area © in the figure) can be generated.



■ Executing the sampling automatically

By specifying the area where the background is to be inserted, the chroma components are sampled.

● Maker

[6] ChromaKey Menu 1. Maker

This item is used to set the sample marker to ON to display the marker on the PVW image.

● Marker Pos

[6] ChromaKey Menu 3. Marker Pos

This item is used to adjust the X coordinate, Y coordinate and size of the sample marker.

● Sample

[6] ChromaKey Menu 2. Sample

Press the OSD/TIME dial to sample the hue components of the area selected by the sample marker.

- When sampling is completed, the image obtained by combining the chroma key with the PVW image is output. (Set the PVW function of the key to ON.)
- Sampling can be initiated without menu operations by using the USER buttons and OSD/TIME dial.

USER1: X coordinate, USER2: Y coordinate
USER3: Size, USER4: Aspect ratio

Press the target USER button to light the button's indicator, and turn the OSD/TIME dial to adjust the sample marker. When the OSD/TIME dial is pressed, sampling is initiated.

3. Basic operations

■ Other chroma key settings

● Marker Aspect

[6] ChromaKey Menu 4. Marker Aspect

This item is used to change the aspect ratio of the sample marker.

● Ref Adjust

[6] ChromaKey Menu 5. Ref Adjust

This item makes it possible to change the color to be used as the chroma key reference from the sampled color.

H (Hue):

Hue to be used as the reference

S (Saturation):

Color saturation to be used as the reference

L (Luminance):

Luminance to be used as the reference

- After auto sampling is finished, the sampled values are displayed.

● Y-Influence

[6] ChromaKey Menu 6. Y-Influence

This item is used to set the extent of the influence to be exerted by the Y (luminance) component.
The higher the value set, the greater the influence, and with a "0" setting, the luminance component has no influence.

● Radius

[6] ChromaKey Menu 7. Radius

This item is used to set the range of the color to be defined.

H (Hue-Radius):

Extent of the range of the hue to be defined

S (Saturation-Radius):

Extent of the range of the color saturation to be defined

- After auto sampling is finished, the sampled values are displayed.

● Soft

[6] ChromaKey Menu 8. Soft

This item is used to adjust the amount of the soft effect on the boundary of the color to be defined.

● Cancel

[6] ChromaKey Menu 9. Cancel

This item is used to adjust the amount of color muting. The color muting is adjusted when the background color is superimposed over the fill image.

📝 Memo 📝

Knack of adjusting the chroma key

The chroma key adjustments are facilitated by following the steps below.

- ① Initiate automatic sampling, and decide on the color to be defined.
 - ② Using the "7. Radius" item, adjust so that the background color is completely defined.
 - ③ Using the "8. Soft" item, finely adjust the key signal boundary.
-

3. Basic operations

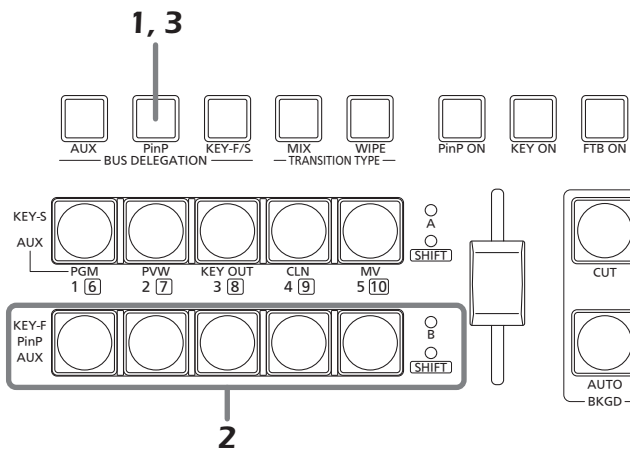
3-4. PinP (picture in picture)

This function involves combining another image with the background image.

3-4-1. Selecting the PinP material

Select the PinP material using the B bus crosspoint buttons.

- 1** Press the PinP button to establish the bus selection mode for the crosspoint buttons.
- 2** Select the PinP signal using the B bus crosspoint buttons.
- 3** Press the PinP button to release the bus selection mode for the crosspoint buttons.



3-4-2. PinP transition

When the PinP button is pressed, the PinP image transitions (fades in) for the transition duration which has been set.

<Setting the transition duration>

[1] TIME/CBGD Menu

2. PinP Time

- The transition duration can also be changed by turning the OSD/TIME dial while pressing the PinP button. When the PinP button is held down, the duration setting is displayed on the OSD menu. The setting can now be changed while checking what is displayed.

The PinP transition can also be initiated by operating the slide lever.

<Selecting the slide lever operation>

[13] Operation Menu

7. Slide Lever

3. Basic operations

3-4-3. PinP settings

Settings can be selected for the PinP images.

[3] PinP Menu	
> 1. Shape	Square
2. Pos:X/Y/Size	X 0.00 Y 0.0 S 100.0
3. PVW	On
4. Border/Soft	B 0.0 S 0.0
5. Set Border Col	White
6. Adj Border Col	H 0.0 S 0.0 L 100.0
7. Trim Adjust1	Off L -40.0 T 40.0
8. Trim Adjust2	R 40.0 B -40.0
9. Set To Preset	1

● Shape

[3] PinP Menu
1. Shape

This item enables any of the following shapes to be selected when combining the PinP image.

Square, Circle, Heart, Flower, Star

● Pos:X/Y/Size

[3] PinP Menu
2. Pos:X/Y/Size

This item is used to adjust the position (X, Y) and size (S) of the PinP image.

- The items to be set can be selected using the USER buttons when the [3] PinP Menu submenu is displayed.

USER1: PinP X, USER2: PinP Y,
USER3: PinP Size, USER4: —

Press the target USER button to light the button's indicator, and turn the OSD/TIME dial to adjust the PinP image.

Note

The size of the image cannot be changed when the Dot by Dot mode has been set for the PinP material.

● PVW

[3] PinP Menu
3. PVW

This item makes it possible to establish the setting for outputting the PinP image to the PVW image.

● Border Width

[3] PinP Menu
4. Border/Soft

[B: Border]

This is used to set the width of the PinP image border.

- Set "0.0" when the border effect is not going to be added.

[S: Soft]

This is used to set the amount of the PinP image's soft effect.

● Set Border Col

[3] PinP Menu
5. Set Border Col

This item is used to select any of the following colors for the borders of the PinP image.

White, Yellow, Cyan, Green, Magenta, Red, Blue, Black

● Adj Border Col

[3] PinP Menu
6. Adj Border Col

This item is used to adjust the hue (H), saturation (S) and luminance (L) of the color which has been set for the borders of the PinP image.

3. Basic operations

● Trim Adjust1, Trim Adjust2

[3] PinP Menu
7. Trim Adjust1
8. Trim Adjust2

The method of trimming the PinP image and the area to be trimmed are set using the "7. Trim Adjust1" and "8. Trim Adjust2" items.

7. Trim Adjust1 item:

Off:

The image is not trimmed.

4:3:

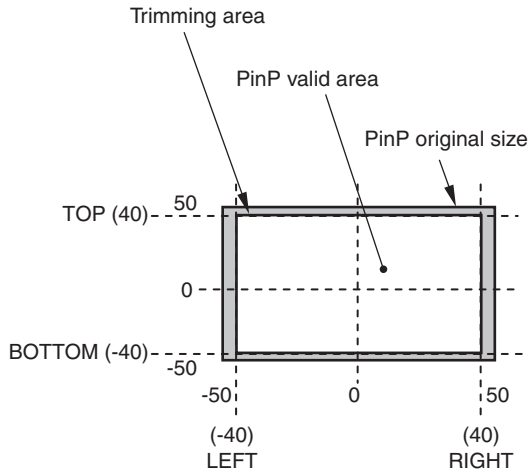
The image is automatically trimmed so that its aspect ratio is 4:3.

Manual:

The image is trimmed in the area which has been set using the "8. Trim Adjust1" and "9. Trim Adjust2" items.

8. Trim Adjust2 item:

This is used to set the T (top) and B (bottom) of the trimming area.



● Set To Preset

[3] PinP Menu
9. Set To Preset

Up to four sets of PinP image settings can be registered in the preset memories.

<Registering the settings in the preset memories>

Select 1, 2, 3 or 4, and press the OSD/TIME dial.

The status currently set is now registered in the selected preset number.

<What can be registered in the preset memories>

- Shape used when combining the images
- Image position (X, Y)
- Image size
- Border width
- Border color
- Soft effect amount
- Trimming setting

<Calling the preset memory settings>

What has been registered in the preset memories can be called using the USER buttons.

- To call what has been registered, select "PinP PRSET" using the menu operation below.

[12] USER/FMEM Menu
1. USER1

3. Basic operations

3-4-4. Transition between PinP materials

By switching between the PinP bus crosspoint buttons, the MIX transition can be executed from one PinP material to another PinP material for the transition duration which has been set.

- When one material set to the Dot by Dot mode and another material have been switched, cut switching where the images change in an instant is performed.

<Setting the transition duration>

[1] TIME/CBGD Menu
7. PinP BUS Trans

While the transition is underway, the indicator of the transition source button lights, and the indicator of the transition destination button blinks.

When the transition is completed, the indicator of the transition source button goes off, and the indicator of the transition destination button lights.

When another signal has been selected while a transition is underway, the processing for the transition will continue from the interim point.

This operation can also be enabled or disabled using this menu item.

3. Basic operations

3-4-5. Effect dissolve

This function enables one effect to be switched to another smoothly when the data in the preset memory where the PinP image settings were registered is called using the USER buttons.

- Before using the function, set the transition duration and either enable or disable for effect dissolve using the menu below.

[1] TIME/CBGD Menu 8. PinP EFFDSL

<Items covered by effect dissolve>

- Image position (X, Y)
- Image size
- Border width
- Border color
- Soft effect amount
- Trimming setting

<Selecting the Dot by Dot mode>

If an SD format image is used as the PinP material when the system is operating in an HD mode, images can be combined in the Dot by Dot mode (actual size images). In this mode, the SD format images are not up-converted so image deterioration can be prevented.

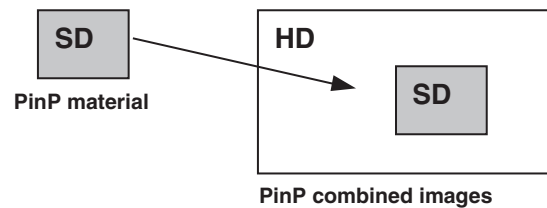
[10] Input Menu 1. Mode

Normal:

The input signals in conformity with the system format are enabled.

DbyD:

The images are combined in the Dot by Dot mode (actual size images).



3. Basic operations

3-5. FTB (fade to black)

Pressing the FTB ON button initiates fade-out from the program image to a black screen or fade-in from a black screen to the program image for the transition duration which has been set.

<Setting the transition duration>

[1] TIME/CBGD Menu
4. FTB Time

<Selecting the image>

[1] TIME/CBGD Menu
5. FTB Source

Any of the following images in place of a black screen can be selected.

FMEM1, FMEM2, CBGD, White

- The transition duration can also be changed by turning the OSD/TIME dial while pressing the FTB ON button. When the FTB ON button is held down, the duration setting is displayed on the OSD menu so the setting can now be changed while checking what is displayed.

3-6. Internal color signals

These signals allow the color of the background used by the bus to be set.

● CBGD Color

[1] TIME/CBGD Menu
9. Set CBGD Col

Any of the following colors can be selected for the background image.

White, Yellow, Cyan, Green, Magenta, Red, Blue, Black

● Color Adjust

[1] TIME/CBGD Menu
10. Adj CBGD Col

This item is used to adjust the hue (H), saturation (S) and luminance (L) of the color which has been set for the background image.

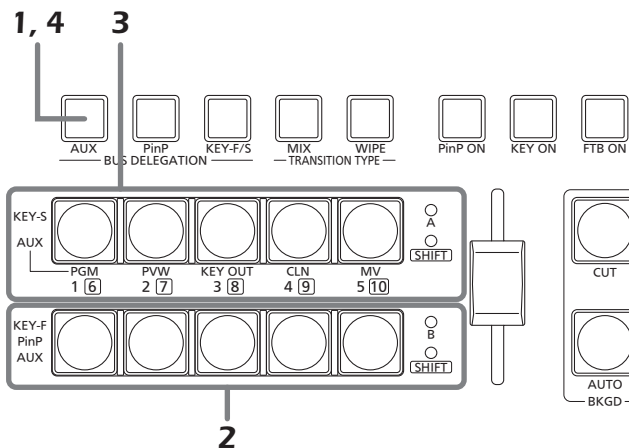
3. Basic operations

3-7. Switching the AUX output

3-7-1. Selecting the AUX bus material

The AUX output material is selected using the A bus and B bus crosspoint buttons.

- 1 Press the AUX button to set the crosspoint buttons to the AUX bus material selection mode.**
- 2 Select the material using the B bus crosspoint buttons.**
 When the buttons from [1] to [5] are pressed, the materials assigned to the corresponding XPT1 to XPT5 are selected.
 When the button from [1] to [5] are pressed while the SHIFT button is held down, the materials assigned to the corresponding XPT6 to XPT10 are selected.
- 3 Select the output signal using the A bus crosspoint buttons.**
 When buttons [1], [2], [3], [4] and [5] are pressed, PGM, PVW, KEY OUT, CLN or MV are selected, respectively.
- 4 Press the AUX button to release the bus selection mode for the crosspoint buttons.**



3-7-2. Transitions between AUX materials

By switching between the AUX bus crosspoint buttons, the MIX transition can be executed from one AUX material to another AUX material for the transition duration which has been set.

<Setting the transition duration>

- [1] TIME/CBGD Menu
- 6. AUX BUS Trans

While the transition is underway, the indicator of the transition source button lights, and the indicator of the transition destination button blinks.

When the transition is completed, the indicator of the transition source button goes off, and the indicator of the transition destination button lights.

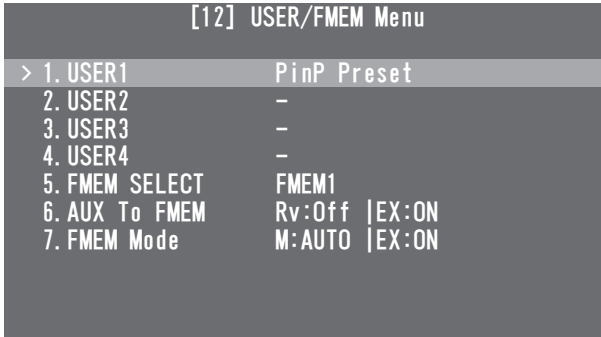
When another signal has been selected while a transition is underway, the processing for the transition will continue from the interim point.

This operation can also be enabled or disabled using this menu item.

3. Basic operations

3-8. Setting the USER buttons

Menu item functions can be assigned to the USER 1[3] button and USER 2[4] button for use later. Up to four functions can be assigned from USER1 to USER4.



The functions registered in [USER1] and [USER3] are assigned to the USER 1 button, and the functions registered in [USER2] and [USER4] are assigned to the USER 2 button.

While the SHIFT button is pressed, the function registered in [USER3] or [USER4] can be selected.

The button indicator is lighted when the functions assigned to the button are enabled, and it is off when the functions are disabled.

Each time a USER button is pressed, its functions are switched between enabled and disabled.

The following functions can be assigned to the USER buttons (USER 1 and USER 2).

No.	Item	Function
1	PinP Preset	This item can be set in the [USER1] only. When it is set, [USER1] to [USER4] can all be used for registering the data in the PinP preset memories and calling it from the memories.
2	WIPE Preset	This item can be set in the [USER1] only. This item can be set in [USER1] only. When it is set, [USER1] to [USER4] can all be used for registering the data in the WIPE preset memories and calling it from the memories.
3	PinPPVW	The PinP image is output to the PVW image.
4	KeyPVW	KEY is output to the PVW image.
5	GPI Input	The GPI input is enabled or disabled.
6	GPI Output	The GPI output is enabled or disabled.
7	CamCont Link	Link control with the AW-RP50 is set to ON or OFF.
8	AUX Transition	The AUX transitions are enabled or disabled.
9	PinP Transition	The PinP transitions are enabled or disabled.
10	EFFDSLTV Time	Effect dissolve is enabled or disabled.
11	StrFMEM1	The images of the AUX bus are imported into the frame memory (FMEM1).
12	StrFMEM2	The images of the AUX bus are imported into the frame memory (FMEM2).
13	No Assign	No item assigned

Even when functions have been assigned to the USER buttons, the assigned function will be disabled and the image setting operations will take priority in the following situations.

<Displaying the chroma key markers>

USER1: X, USER2: Y,
USER3: Size, USER4: Aspect

<Displaying the [3] PinP Menu submenu>

USER1: PinP X, USER2: PinP Y,
USER3: PinP Size, USER4: —

<Displaying the [2] WIPE Menu submenu>

USER1: WIPEPos X, USER2: WIPEPos Y,
USER3: —, USER4: —

<Displaying the [5] KEY Adjust Menu submenu>

USER1: Mask Left, USER2: Mask Right,
USER3: Mask Top, USER4: Mask Bottom

3. Basic operations

3-9. Frame memories

Still images can be stored in the unit's two internal frame memories for use later.

The still images are transferred to the frame memories from the AUX bus or computer.

- For details on the function for transferring images to and from a computer, refer to "8. Connections with a computer".

The images in the frame memories can be used as bus images by assigning FMEM1 and FMEM2 in the crosspoint buttons.

☞ For details, refer to "3-1-3. Assigning signals to the crosspoint buttons".

In addition, the frame memory images can be used instead of the black screen with the FTB (fade to black) function.

The data for the images stored in the frame memories can be retained even when the power is turned off by saving it in the flash memory area which is incorporated inside the unit.

3-9-1. Transferring images from the AUX bus

The frame memory settings can be selected.

[12] USER/FMEM Menu	
1. USER1	PinP Preset
2. USER2	PinP Preset
3. USER3	PinP Preset
4. USER4	PinP Preset
> 5. FMEM SELECT	FMEM1
6. AUX To FMEM	Rv:Off EX:ON
7. FMEM Mode	M:AUTO EX:ON

[12] USER/FMEM Menu 6. AUX to FMEM

Rv (Review):

This setting determines whether the review display is shown.

On: After an image has been imported, the image in the frame memory (FMEM1 or FMEM2) selected for the AUX bus is displayed for about 2 seconds. Even when the review display appears, the next image can be imported.

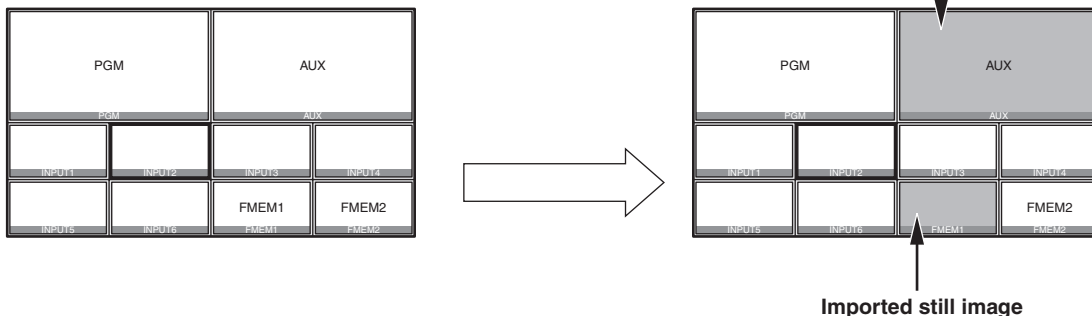
Off: The review display is not shown.

Ex (Exec):

When the OSD/TIME dial is pressed, still images are imported into the frame memory.

[12] USER/FMEM Menu 5. FMEM Select

Select FMEM1 or FMEM2 as the number of the frame memory in which to store the images.



- Even when MV (multi view display) is selected by the AUX bus, the following information is not stored in the frame memory.

Multi view display frame, names of the materials, tally information, audio level meter

3. Basic operations

3-9-2. Saving images in the flash memory

The data of the images stored in the frame memories can be retained even when the unit's power is turned off by saving it in the flash memory area which is incorporated inside the unit.

Whether to automatically save the image data stored in the frame memories or save it manually is set when the data is to be transferred from the AUX bus.

[12] USER/FMEM Menu 7. FMEM Mode

M (Mode):

This is used to set the method of storing the image data in the flash memory area.

<p>Auto: The images are stored automatically. Manual: The images are stored manually.</p>

Ex (Exec):

This is for importing the still images into the flash memory area.

When the OSD/TIME dial is pressed, the image data in the frame memory is stored in the flash memory area.

- This takes effect when "Manual" has been selecting as the M (Mode) setting.

Note

- When data is being written in the flash memory area, a "now writing" message is displayed on the PVW images.
Do not turn off the power while this message is displayed.

4. Input/output signal settings

4-1. Input signal settings

The SDI IN 1 to SDI IN 4 connectors are the SDI signal input connectors, and the DVI IN connector is the DVI-D signal input connector.

The 10-bit frame synchronizer function is enabled for all the SDI input signals.

Using the frame synchronizer function, it is possible to switch smoothly between non-synchronized video signals.

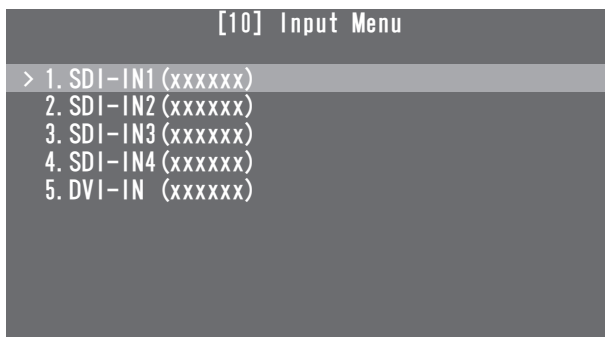
<List of settings by input signal>

Input connector	Setting menu items and sections in this manual				
	MODE	Name Type	Name	Freeze Select	Freeze
	4.1.1	4.1.2	4.1.3	4.1.4	4.1.5
SDI IN 1, SDI IN 2	✓	✓	✓	✓	✓
SDI IN 3, SDI IN 4	✓	✓	✓	✓	✓
DVI IN	—	✓	✓	—	✓

Input connector	Setting menu items and sections in this manual			
	Video Proc	UpConv	DVIIn scaling	DVIIn information display
	4.1.6	4.1.7	4.1.8	4.1.9
SDI IN 1, SDI IN 2	✓	—	—	—
SDI IN 3, SDI IN 4	✓	✓	—	—
DVI IN	—	—	✓	✓

✓: Can be set; —: cannot be set

To set the input signals, display the [10] Input Menu using the OSD menu, and select the input signals.



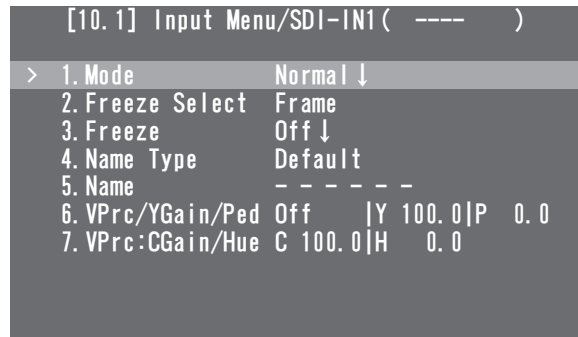
The display is switched to a menu display such as the one shown below by the input signals selected.

The menu title changes to “Input Menu/Input Connectors (Material Names)”.

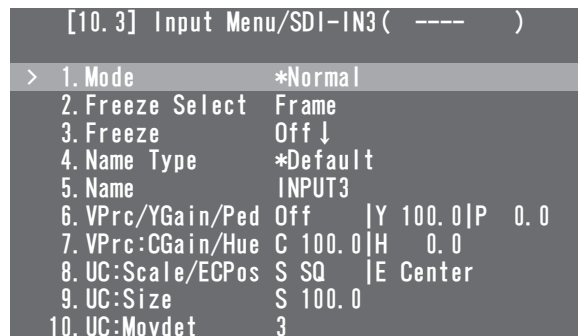
The settings selected using the “4. Name Type” and “5. Name” items described below are displayed in the “(Material Names)” area.

A blank is displayed if a material name has not yet been set.

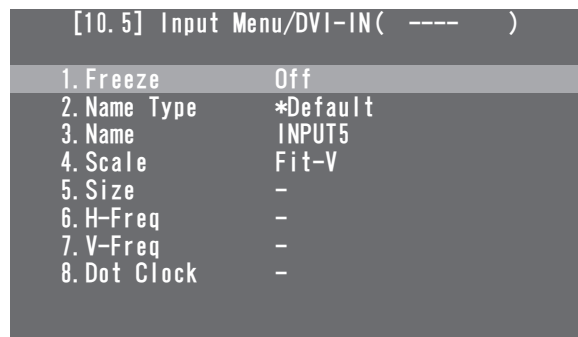
SDI-IN1, SDI-IN2:



SDI-IN3, SDI-IN4:



DVI-IN:



The settings of each menu item will now be described.

4. Input/output signal settings

4-1-1. Setting the input mode

[10.1] Input Menu/SDI-IN1
1. Mode

[10.2] Input Menu/SDI-IN2
1. Mode

[10.3] Input Menu/SDI-IN3
1. Mode

[10.4] Input Menu/SDI-IN4
1. Mode

“Normal” or “DbyD” can be set for the SDI-IN1 and SDI-IN2 connector signals.

An up-converter (UC) function is provided for the SDI-IN3 and SDI-IN4 connectors so “Normal”, “UC”, “DbyD” or “AUTO” can be set for these connectors.

The mode is set for each connector only when HD has been selected as the system format setting.

When SD has been selected for the system format, “Normal” is always set as the mode.

Normal:

The input signals in conformity with the system format take effect.

DbyD:

When SD signals with the same frame rate as the system format have been input, they are input on a dot by dot (equal size) basis with no up-conversion.

In this mode, there is minimal deterioration in the image quality and, as such, the mode is used to combine SD format materials using the PinP function.

- This mode can be set only when 1080i is used as the system format.

UC:

When SD signals with the same frame as the system format have been input, they are up-converted.

Auto:

Input signals in conformity with the system format take effect.

Furthermore, if SD signals with the same frame rate as the system format are input when HD is selected as the system format, they are up-converted.

- In the Auto mode, the images may be disturbed when the input signals are switched.

4-1-2. Setting the material name type

[10.1] Input Menu/SDI-IN1
4. Name Type

[10.2] Input Menu/SDI-IN2
4. Name Type

[10.3] Input Menu/SDI-IN3
4. Name Type

[10.4] Input Menu/SDI-IN4
4. Name Type

[10.5] Input Menu/DVI-IN
2. Name Type

These items are for setting the type used when providing material names for the signals which are input to each connector.

Default:

The default settings (INPUT1 to INPUT5) are used.

Preset:

The material names provided ahead of time are used. The names are set using the “Name” item.

User:

A material name is set using up to 10 characters. The actual material names are set using the “Name” item.

Cam Name:

When an IP connection is established with the AW-RP50, the remote camera names set by the AW-RP50 are set as the material names.

4. Input/output signal settings

4-1-3. Setting the material names

[10.1] Input Menu/SDI-IN1
5. Name

[10.2] Input Menu/SDI-IN2
5. Name

[10.3] Input Menu/SDI-IN3
5. Name

[10.4] Input Menu/SDI-IN4
5. Name

[10.5] Input Menu/DVI-IN
3. Name

These are used to set the material names. Material names can be set when "Preset" or "User" has been selected as the material name type setting.

- The material names are merely displayed (they cannot be set) when "Default" or "Cam Name" has been selected as the material name type setting.

When "Preset" is selected

The materials names are set using the "type + number" format.

Type: C, CG, CGV, CGK, PC, V, VTR, VCR
Numbers: 1 to 9

When "Preset" is selected as the material name type setting, the "Name" item will be displayed as shown below.

3. Name >CG | 1

How to set the material names:

Press the OSD/TIME dial, and move the cursor ">" to the position where the material type is to be selected. Turn the OSD/TIME dial to select the material type, and press the OSD/TIME dial to enter the selection. Next, the cursor ">" will move to the position where the number is to be selected. Turn the OSD/TIME dial to select the number, and press the OSD/TIME dial to enter the selection.

When "User" is selected

Any material names consisting of not more than 10 characters (alphanumerics and symbols which can be expressed in ASCII codes) can be set.

When "User" is selected as the material name type setting, the "Name" item will be displayed as shown below.

3. Name >ABCD | 1

How to set the material names:

Material names are set one character at a time. Press the OSD/TIME dial, and move the cursor ">" to the material name position. Turn the OSD/TIME dial to move the blinking part to the character input position, and press the OSD/TIME dial. Next, the cursor ">" will move to the position where the character is to be selected. Turn the OSD/TIME dial to select the character, and press the OSD/TIME dial to enter the selection.

4-1-4. Setting the freeze method

[10.1] Input Menu/SDI-IN1
2. Freeze Select

[10.2] Input Menu/SDI-IN2
2. Freeze Select

[10.3] Input Menu/SDI-IN3
2. Freeze Select

[10.4] Input Menu/SDI-IN4
2. Freeze Select

These are used to select the increment in which the SDI input signal images are to be frozen (turned into still images).

Frame:

The images are frozen in 1-frame increments.

Field:

The images are frozen in 1-field increments. This is used when freezing moving images. With interlace signals, however, diagonal lines and moving parts appear jagged.

4. Input/output signal settings

4-1-5. Freezing and canceling the freezing of the input images

[10.1] Input Menu/SDI-IN1
3. Freeze

[10.2] Input Menu/SDI-IN2
3. Freeze

[10.3] Input Menu/SDI-IN3
3. Freeze

[10.4] Input Menu/SDI-IN4
3. Freeze

[10.5] Input Menu/DVI-IN
1. Freeze

These are used to freeze the SDI input signal images or cancel the freezing of these images.

On: The images are frozen.

Off: The image freezing is canceled.

- When the multi view display is used to show the input signals of frozen images, the "F" mark appears in front of the material names.

4-1-6. Setting the video process function

The video process function works for all the SDI input signal images.

The color tones can be changed on an image by image basis.

The "VPrc/YGain/Ped" and "VPrc:CGain/Hue" items are used to change them.

VPrc/YGain/Ped	VPrc	This is used to enable or disable the video process function. On: Function enabled Off: Function disabled
	YGain	This is used to set the gain of the Y signal. 0.0 to 200.0
	Ped	This is used to set the pedestal level value. -20.0 to 20.0
VPrc:CGain/Hue	CGain	This is used to set the gain value of the saturation. 0.0 to 200.0
	Hue	This is used to set the amount of change in the hue. 0.0 to 359.9

4-1-7. Setting the up-converter

This unit features an up-converter function.

The up-converter is set on the SDI-IN3 and SDI-IN4 menus.

[10.3] Input Menu/SDI-IN3
8. UC:Scale/ECPos

[10.4] Input Menu/SDI-IN4
8. UC:Scale/ECPos

Scale: "SQ," "EC" or "LB" is set as the scaling method.



Input image

SQ

EC

LB

SQ (squeeze)	The image is enlarged both horizontally and vertically to fill the entire screen.
EC (edge crop)	The aspect ratio of the image is maintained, the image size is increased in accordance with the vertical resolution, and black bands are added at the left and right.
LB (letter box)	The aspect ratio of the image is maintained, the image size is increased in accordance with the horizontal resolution, and the image is cropped at the top and bottom.

ECPos: The image position is finely adjusted.

This can be set only when "EC" (edge crop) has been selected as the Scale setting.

Center	The image is positioned in the center, and black images are added at the left and right.
Right	The image is positioned at the right, and a black image is added at the left.
Left	The image is positioned at the left, and a black image is added at the right.

[10.3] Input Menu/SDI-IN3
9. UC:Size

[10.4] Input Menu/SDI-IN4
9. UC:Size

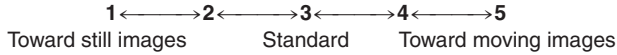
The size of the up-converted input image is adjusted using a percentage from 0 % to 10 %.

4. Input/output signal settings

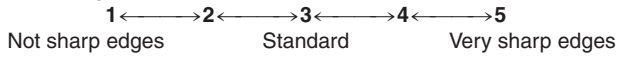
[10.3] Input Menu/SDI-IN3 10. UC:Mvdet/Sharp

[10.4] Input Menu/SDI-IN4 10. UC:Mvdet/Sharp

Mvdet: This is used to set the motion detection sensitivity of the image.



Sharp: This is used to enhance the sharpness of the image edges.



4-1-8. Setting the input image scaling

[10.5] Input Menu/DVI-IN 4. Scale

This is used to set the scaling for the DVI-D input signal images.

Listed below are the resolutions of the images which can be input.

Black images will be displayed if images with other resolutions or other frequencies are input.

Resolutions supported

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


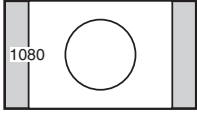



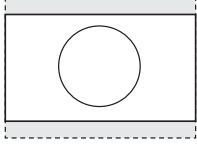
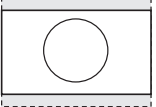
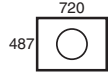
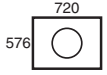
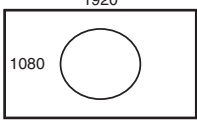
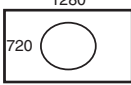

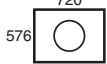
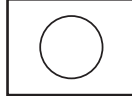
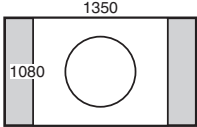
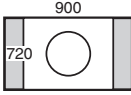
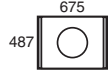
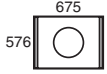
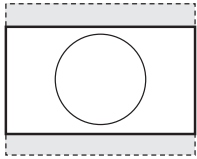
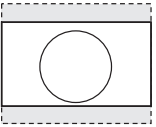


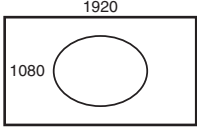
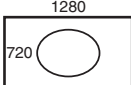
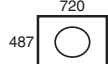
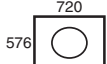
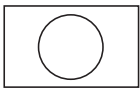
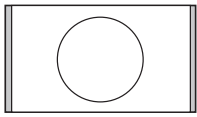
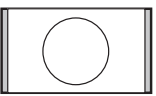
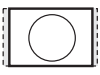
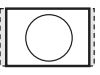
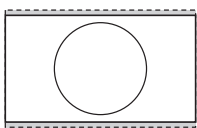
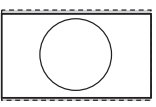
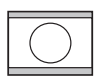
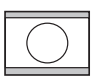
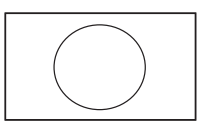
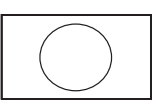
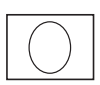
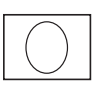
Select the scaling method from among the options listed below.



Fit-V	The aspect ratio of the input image is maintained, and the size of the image is enlarged or reduced in accordance with the vertical resolution.
Fit-H	The aspect ratio of the input image is maintained, and the size of the image is enlarged or reduced in accordance with the horizontal resolution.
FULL	The size of the image is enlarged or reduced in accordance with the system resolution. <ul style="list-style-type: none">• The aspect ratio of the image is not maintained.• The enlargement and reduction ratios differ between the horizontal and vertical directions.

- For details on which sizes are supported for which formats, refer to “Table of DVI input scaling sizes” on the next page.


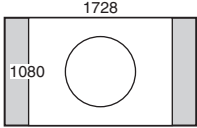
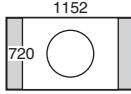
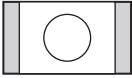
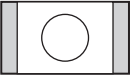
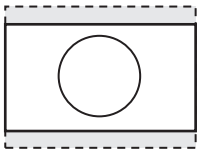
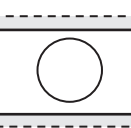

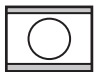
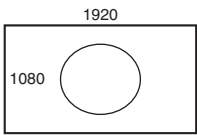
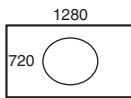

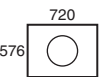
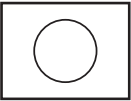
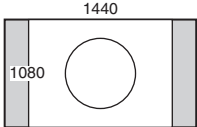
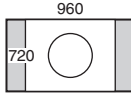

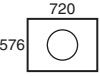
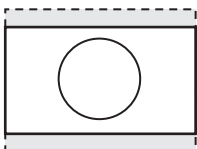
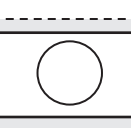

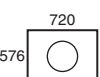
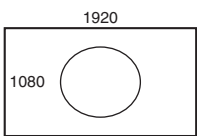
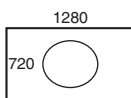

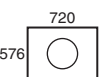
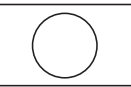
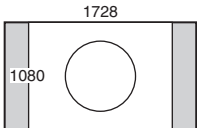
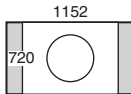


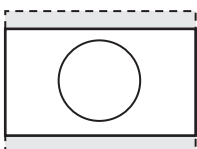
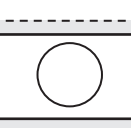


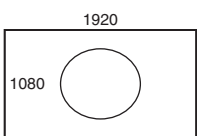
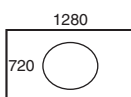

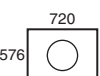
4. Input/output signal settings



● Table of DVI input scaling sizes

DVI format	Mode	HD/1080i	HD/720P	SD/NTSC	SD/PAL
		1920×1080	1280×720	720×487	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				

 : Black images are inserted into these areas.
 : Parts of images protruding in these areas are cropped.

4. Input/output signal settings

DVI format	Mode	HD/1080i	HD/720P	SD/NTSC	SD/PAL
		1920×1080	1280×720	720×487	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				

 : Black images are inserted into these areas.
 : Parts of images protruding in these areas are cropped.

4. Input/output signal settings

4-1-9. Displaying the input image information

[10.5] Input Menu/DVI-IN
5. Size

[10.5] Input Menu/DVI-IN
6. H-Freq

[10.5] Input Menu/DVI-IN
7. V-Freq

[10.5] Input Menu/DVI-IN
8. Dot Clock

These are used to display the information concerning the DVI-D input signal images.
The information cannot be changed.

Size:

This indicates the pixel count of the images.

H-Freq:

This indicates the horizontal frequency of the images.

V-Freq:

This indicates the vertical frequency of the images.

Dot Clock:

This indicates the dot clock frequency of the images.

The formats supported are listed below.

<DVI-D formats supported>

Input video signal			Dot clock frequency (MHz)	Frequency	
				Horizontal (kHz)	Vertical (Hz)
XGA	1024×768	Digital	65.0	48.36	60.00
WXGA	1280×768	Digital	79.5	47.78	59.87
SXGA	1280×1024	Digital	108.0	63.98	60.02
WSXGA+	1680×1050	Digital	148.3	65.29	59.95
WUXGA	1920×1200	Digital	154.0	74.04	59.95
UXGA	1600×1200	Digital	162.0	75.00	60.00
1080/50P	1920×1080	Digital (RGB)	148.5	56.25	50.00
1080/59.94P	1920×1080	Digital (RGB)	148.5/1.001	67.50/1.001	60.00/1.001

- If the format of the input signals is not supported, it may not be possible to import the signals properly, and a black image or disturbed image may appear.

4. Input/output signal settings

4-2. Setting the output signals

Signals can be output from the three connectors: SDI OUT 1, SDI OUT 2 and DVI-D OUT.

The output signals are set on the [11] Output Menu of the OSD menu.

[11] Output Menu		
>	1. SDI-OUT1	PGM
	2. SDI-OUT2	PVW
	3. DVI-OUT	AUX
	4. SDI-OUT:Limit	Off
	5. DVI-OUT:Size	Auto
	6. DVI-OUT:Scale	Fit-V
	7. DVI-OUT:Mvdet	* 3

4-2-1. Assigning the output signals

[11] Output Menu

1. SDI-OUT1

[11] Output Menu

2. SDI-OUT2

[11] Output Menu

3. DVI-OUT

The following assignment options are available.

PGM	This is the main line output of the switcher. Images with wipe, mix, key, PinP or other effects added are output.
PVW	The PVW images which enable the next operation to be checked are output.
CLN	Clean signals (images resulting when the key and PinP effects have been removed from the PGM signal) are output.
AUX	The signal selected using the AUX bus is output.
MV	The multi view display signal is output.
KeyOut	The key signal is output.

4-2-2. Setting the color areas

[11] Output Menu

4. SDI-OUT:Limit

This is used to set the color area for the SDI output signal images.

Off	The color area is not subject to any limitations.
108	The amplitude level of each of the colors (R, G, B) is limited to between 0 % and 108 %.
104	The amplitude level of each of the colors (R, G, B) is limited to between 0 % and 104 %.
100	The amplitude level of each of the colors (R, G, B) is limited to between 0 % and 100 %.

4-2-3. Setting the DVI-D output signals

The following setting is selected for DVI-D output signal images.

[11] Output Menu

5. DVI-OUT:Size

This is used to set the resolution to be output.

The following resolutions are supported.

Supported resolutions

Auto	Using the DVI signals, the information of the device at the output destination is gathered, and the images are output at the optimum resolution. <ul style="list-style-type: none"> The vertical frequency is set to 60 Hz, and the maximum resolution is WUXGA.
XGA	1024×768
WXGA	1280×768
SXGA	1280×1024
WSXGA+	1680×1050
UXGA	1600×1200
WUXGA	1920×1200
1080/59.94p	1920×1080
1080/50p	1920×1080

4. Input/output signal settings

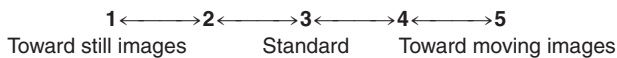
[11] Output Menu 6. DVI-OUT:Scale

This is used to select one of the scaling methods listed below.

Fit-V	The aspect ratio of the output image is maintained, and the size of the image is enlarged or reduced in accordance with the vertical resolution. <ul style="list-style-type: none">• Black images are inserted into areas where there are no images.• Parts of images that protrude are cropped.
Fit-H	The aspect ratio of the output image is maintained, and the size of the image is enlarged or reduced in accordance with the horizontal resolution. <ul style="list-style-type: none">• Black images are inserted into areas where there are no images.• Parts of images that protrude are cropped.
FULL	The size of the output image is enlarged or reduced in accordance with the system resolution. <ul style="list-style-type: none">• The aspect ratio of the image is not maintained.• The enlargement and reduction ratios differ between the horizontal and vertical directions.

[11] Output Menu 6. DVI-OUT:Mvdet

This is used to set the sensitivity with which the motion of moving images is to be detected.



5. Setting the multi view display

The screen of an external monitor can be split into a number of sections, and images such as input images and program image can be positioned in the sections and displayed.

5-1. Screen layout

The multi view display layout is set using the [7] MultiView Pattern Menu of the OSD menu.

[7] MultiView Pattern Menu	
> 1. Split	10-aSplit
2. Pos1 Source	PGM
3. Pos2 Source	PVW
4. Pos3 Source	SDI-IN1
5. Pos4 Source	SDI-IN2
6. Pos5 Source	SDI-IN3
7. Pos6 Source	SDI-IN4
8. Pos7 Source	DVI-IN
9. Pos8 Source	FMEM1
10. Pos9 Source	FMEM2
11. Pos10 Source	AUX

[7] MultiView Pattern Menu 1. Split

The following eight options are available as split screen layouts.

4Split	5-aSplit	5-bSplit	6-aSplit
6-bSplit	9Split	10-aSplit	10-bSplit

[7] MultiView Pattern Menu 2. Pos1 Source



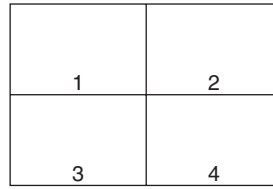
[7] MultiView Pattern Menu 11. Pos10 Source

This is used to set the names of the signals to be displayed in split screens 1 to 10.

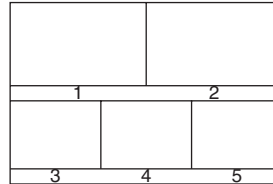
SDI-IN1 to 4 (material names)		DVI-IN (material names)	
CBGD	FMEM1	FMEM2	PGM
PVW		KeyOut	AUX

- Depending on the setting selected for the "1. Split" item, the "6. Pos5 Source" to "11. Pos10 Source" items may not be displayed.

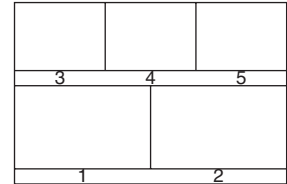
<Split screen layouts>



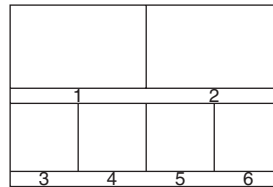
4Split



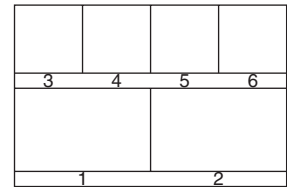
5-aSplit



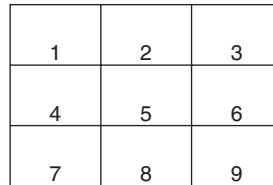
5-bSplit



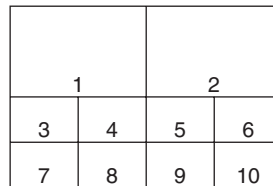
6-aSplit



6-bSplit



9Split



10-aSplit



10-bSplit

5. Setting the multi view display

5-2. Setting the split frames and characters

The frames, character luminance and background to be used for the split screens can be set. The settings are selected on the [8] MultiView Out/Frame Menu of the OSD menu.

[8] MultiView Out/Frame Menu	
> 1. Frame	LUM 75%
2. Character	LUM 75%
3. Label	On
4. Tally	Red+Green
5. Level Meter	Off
6. Input Satus	On

[8] MultiView Out/Frame Menu

1. Frame

This is used to set the split frame brightness and, if the frame is to be displayed, to decide whether the split frames are to be displayed.

LUM (0%, 25%, 50%, 75%, 100%):

The split frame (gray scale) luminance is set.

Off:

The split frame is not displayed.

[8] MultiView Out/Frame Menu

2. Character

This is used to set the character brightness and, if the frame is to be displayed, decide whether the characters are to be displayed.

LUM (0%, 25%, 50%, 75%, 100%):

The character (gray scale) luminance is set.

Off:

The characters are not displayed.

- If the input signals have been frozen, an "F" mark is displayed in front of the material names.

[8] MultiView Out/Frame Menu

3. Label

This is used to decide whether to display the character background (half tones).

On: The character background is displayed.

Off: The character background is not displayed.

5-3. Setting the tally displays

The tally displays to be superimposed onto the split screen frames can be set.

The red tally indicates the material consisting of program outputs.

The green tally indicates the material selected by the preset bus.

If frames are displayed, the red tally or green tally is displayed on the frames.

If the frames are not displayed, the red tally and green tally are displayed on the left of the material names.

[8] MultiView Out/Frame Menu

4. Tally

This is used to set the tally displays.

Red+GRN:

Both the red tally and green tally are displayed.

Red: Only the red tally is displayed.

Off: No tally displays are shown.

- The red tally signals are output from the unit's TALLY/GPI connector.
- The red tally is not displayed during FTB operations while the program images have been completely faded out to a black screen.

During times like this, the green tally is displayed for images consisting of program images.

However, the red tally will be displayed if FMEM1, FMEM2 or CBGD has been selected using the menu item below.

[1] TIME/CBGD Menu

5. FTB Source

5. Setting the multi view display

5-4. Setting the level meters

Level meters for the embedded audio signals transferred by the SDI input can be displayed on the split screens.

Left display:

Channel 1 of group 1

Right display:

Channel 2 of group 1

[8] MultiView Out/Frame Menu

5. Level Meter

On: The level meters are displayed.

Off: The level meters are not displayed.

5-5. Setting the input signal marks

The status of the input signals can be displayed in front of the material names displayed on the split screens.

"F" mark	This appears when the input signals are frozen.
"!" mark	This appears when there are no input signals.
"C" mark	This appears when the signals from a remote camera controlled by the AW-RP50 are input.

[8] MultiView Out/Frame Menu

6. Input Status

On: The input signal status is displayed.

Off: The input signal status is not displayed.

6. System settings

6-1. System menu settings

6-1-1. Setting the video format

The video format of the entire system to which the unit is connected can be set.

[14] SYSTEM Menu				
> 1. Format	1080/59.94i			
2. HiResMV	Off			
3. 16:9SQ	Off			
4. AUX Anci	Off			
5. PGM Anci	Off			
6. PVW Anci	Off			
7. MV Anci	Off			
8. Initial	Off			
9. IP Address	192.	168.	0.	30
10. Subnet Mask	255.	255.	255.	0
11. Gateway	192.	168.	0.	1
12. MAC Address				

Note

The [14] SYSTEM Menu settings cannot be changed if "Locked" has been set using the menu item below.

[13] Operation Menu
14. SYSTEM Menu

[14] SYSTEM Menu
1. Format

Select the supported format from among the options provided below.

Supported formats

1080/59.94i	1080/50i
720/59.94p	720/50p
1080/24psf	1080/23.98psf
480/59.94i	576/50i

<How to specify the video format and then start the system>

With the unit in the power-off status, the video format can be specified and the system started.

Set the POWER switch to ON while holding down one combination of the buttons listed below that corresponds to the video format.

Button to press at the same time	Video format
[OSD ON] + A bus crosspoint [1]	1080/59.94i
[OSD ON] + A bus crosspoint [2]	1080/50i
[OSD ON] + A bus crosspoint [3]	720/59.94p
[OSD ON] + A bus crosspoint [4]	720/50p
[OSD ON] + A bus crosspoint [5]	1080/24psf
[OSD ON] + B bus crosspoint [1]	1080/23.98psf
[OSD ON] + B bus crosspoint [2]	480/59.94i
[OSD ON] + B bus crosspoint [3]	576/50i

- After the POWER switch has been set to ON, keep holding down the buttons until an image is output.

[14] SYSTEM Menu
2. HiResMV

This is used to decide whether to set the high-resolution multi view mode. When SD has been selected as the system's video format setting, images can be output at high resolution as the DVI-D output.

If this is the case, the multi view display is set for the DVI OUT connector output.

The multi view display cannot be set for the SDI OUT connector output.

- On:** The high-resolution multi view mode is enabled.
- Off:** The high-resolution multi view mode is disabled.

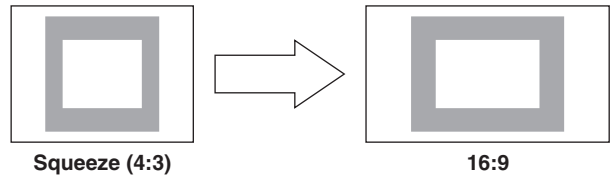
[14] SYSTEM Menu
3. 16:9SQ

This is used to set the 16:9 squeeze mode.

It can be set when SD has been selected as the system's video format setting.

When the 16:9 squeeze mode is selected, SD format images are provided with a border width that factors in cases where the images are to be converted into the 16:9 aspect ratio.

<Border width (graphical representation) when the squeeze mode is supported>



6. System settings

6-1-2. Setting the ancillary data

A function for allowing the V ancillary data and embedded audio data of the SDI input signals to pass through can be set.

When an HD format is used:

The ancillary data starting with line 9 is allowed to pass through.

When an SD format is used:

The ancillary data starting with line 12 is allowed to pass through.

- If SD format signals are input while the HD format has been set as the system format, it will not be possible to allow the ancillary data and embedded audio data to pass through.

[14] SYSTEM Menu

4. AUX Anc

On: The ancillary data and embedded audio data of the SDI input materials selected by the AUX bus are allowed to pass through.

Off: The ancillary data and embedded audio data are not allowed to pass through.

- The data is not allowed to pass through when KEY OUT or CLN material has been selected.

[14] SYSTEM Menu

5. PGM Anc

On: The ancillary data and embedded audio data of the SDI input materials selected by the PGM bus are allowed to pass through.

Off: The ancillary data and embedded audio data are not allowed to pass through.

[14] SYSTEM Menu

6. PVW Anc

On: The ancillary data and embedded audio data of the SDI input materials selected by the PST bus are allowed to pass through.

Off: The ancillary data and embedded audio data are not allowed to pass through.

[14] SYSTEM Menu

7. MV Anc

PGM: The ancillary data and embedded audio data of the SDI input materials selected by the PGM bus are allowed to pass through.

PVW: The ancillary data and embedded audio data of the SDI input materials selected by the PST bus are allowed to pass through.

Off: The ancillary data and embedded audio data are not allowed to pass through.

6. System settings

6-1-3. System initialization

[14] SYSTEM Menu 8. Initial

If “Yes” is selected, the setting data is returned to the initial values.

- However, the network settings will not be initialized.

6-1-4. Network settings

The network settings for upgrading the software versions and other data can be selected.

[14] SYSTEM Menu 9. IP Address

This is used to set the IP address.

Initial value: 192.168.0.30

[14] SYSTEM Menu 10. Subnet Mask

This is used to set the subnet mask.

Initial value: 255.255.255.0

[14] SYSTEM Menu 11. GateWay

This is used to set the gateway.

Initial value: 192.168.0.1

[14] SYSTEM Menu 12. MAC Address

The MAC address is displayed.

- For the network settings to take effect, the system must be rebooted. Turn off the power, and then turn it back on.

6. System settings

6-2. Operation menu settings

6-2-1. OSD (on-screen display) settings

The menu screens can be superimposed onto the images output from the SDI OUT 2 connector and DVI OUT connector, and displayed.

[13] Operation Menu	
> 1. OSD OUT	SDI-OUT2+DVI-OUT
2. OSD Size	Full
3. OSD Back	On
4. Key Priority	PinP over KEY
5. BUS Mode	PGM(A)/PST(B)
6. Time Unit	Sec, Frame
7. Slide Lever	BKGD
8. GPI Input	Enable
9. GPI Output	Enable
10. CamCont Link	Off
11. FAN	-
12. Power	-
13. Temperature	-
14. SYSTEM Menu	UnLocked

[13] Operation Menu 1. OSD OUT

Select the connector to be used for outputting the OSD displays from the options listed below.

SDI-OUT2
DVI-OUT
SDI-OUT2+DVI-OUT

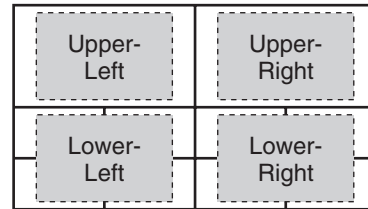
- The SDI OUT2+DVI-OUT option is selected when the OSD ON button is pressed while the SHIFT button is pressed. When this is done, "AUTO" is selected as the following menu setting.

[11] OUTPUT MENU 5. DVI-OUTSIZE

[13] Operation Menu 1. OSD Size

The OSD size and position can be selected from the options listed below.

Full	Full size of screen
Upper-Left Upper-Right Lower-Right Lower-Left	As shown in the figure below, the menu appears in one-fourth of the full size of the screen, and it is positioned in one of the four quadrants.



- If parts of the OSD overlap the multi view display frames, the frame displays will be hidden.

[13] Operation Menu 3. OSD Back

On: A black background is displayed for the OSD.
Off: A black background is not displayed for the OSD.

6. System settings

6-2-2. Other settings

[13] Operation Menu 4. Key Priority

For details, refer to “3-3. KEY”.

[13] Operation Menu 5. BUS Mode

For details, refer to “3-1-4. Selecting the bus mode”.

[13] Operation Menu 6. Time Unit

For details, refer to “3-1-7. Auto transition”.

[13] Operation Menu 7. Slide Lever

For details, refer to “3-1-6. Manual transitions”.

[13] Operation Menu 8. GPI Input

This is used to enable or disable control from the GPI input port.

Enable: Control is enabled.

Disable: Control is disabled.

- For details on what is controlled, refer to “7-2. TALLY/GPI”.

[13] Operation Menu 9. GPI Output

This is used to enable or disable control from the GPI output port.

Enable: Control is enabled.

Disable: Control is disabled.

- For details on what is controlled, refer to “7-2. TALLY/GPI”.

[13] Operation Menu 10. CamCont Link

This is used to set linked control with the AW-RP50 to ON or OFF.

On: Link control is set to ON.

Off: Link control is set to OFF.

- For details on what is controlled, refer to “??? Function for linking up with the remote camera controller ???”.

[13] Operation Menu 11. FAN

This displays “Alarm” when something is wrong with the cooling fan.

[13] Operation Menu 12. Power

This displays “Alarm” when a drop in the supply voltage has been detected.

[13] Operation Menu 13. Temperature

This displays “Alarm” when the temperature inside the unit has risen.

If an alarm has occurred, stop using the unit immediately, and be sure to contact your dealer. Continuing to use the unit in this condition could damage it.

[13] Operation Menu 14. SYSTEM Menu

When “Locked” is selected as this item’s setting, it is not possible to change the [14] SYSTEM Menu settings. Select this setting when it is not desirable for the [14] SYSTEM Menu settings to be changed easily.

6. System settings

6-2-3. Bus status displays

When the A bus or B bus crosspoint buttons are held down, the BUS Assign Status menu appears for the OSD menu.

1. XPT SW	1
2. XPT SW Assign	SDI-IN1 (INPUT1)

3. PGM	SDI-IN1 (INPUT1)
4. PVW	SDI-IN2 (INPUT2)
5. AUX	MV
6. PinP	SDI-IN1 (INPUT1)
7. KEY Fill	CBGD
8. KEY Source	FMEM1

6-2-4. Version displays

The numbers of the versions are displayed on the [15] SYSTEM Status OSD menu.

1. SYSTEM Ver.	XXXXXXXXXX
2. SOFT Ver.	XXXXXXXXXX
3. GLUE FPGA Ver.	XXXXXXXXXX
4. MAIN FPGA Ver.	XXXXXXXXXX
5. FONT Ver.	XXXXXXXXXX

[15] SYSTEM Status 1. SYSTEM Ver

The system version information is displayed here.

[15] SYSTEM Status 2. SOFT Ver

The unit's software version is displayed here.

[15] SYSTEM Status 3. GLUE FPGA Ver

The version of the hardware used to start the unit is displayed here.

[15] SYSTEM Status 4. MAIN FPGA Ver

The version of the hardware that processes the images is displayed here.

[15] SYSTEM Status 5. FONT Ver

The version of the font used for the OSD menu is displayed here.

7. External device control interfaces

7-1. LAN connection

Use LAN cables to connect the AW-HE50, AW-RP50 and host computer.

When connecting the unit directly to another device, use a crossover cable.

For network connections via a device such as a hub, use straight cables.

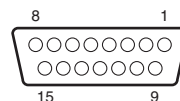
When a hub is not going to be used, ensure that the length of the LAN cable does not exceed 100 meters (328 ft.) (when a CAT5E cable is used).

- For further details on the AW-HE50 and AW-RP50 connections and settings, refer to “2-2-2. Example of connections”.
- For details on the functions available when connection has been made to the host computer, refer to “8. Connections with a computer”.

7-2. TALLY/GPI

The TALLY/GPI connector features five contact input ports for controlling the unit from an external device and seven open collector output ports for outputting the tally and status information from the unit to an external device.

D-sub 15-pin, female, inch thread



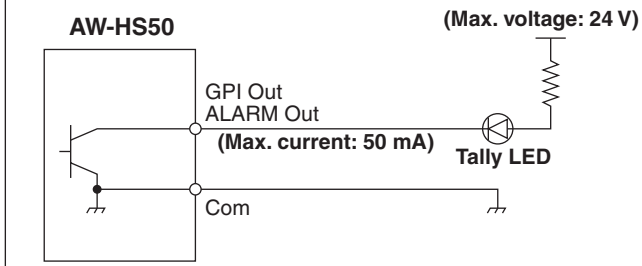
Pin no.	Signal	Input/output	Details of signal	Operation
1	TALLY OUT1	Open collector output	Tally output of input image 1	A low-level signal is output during tally output.
2	TALLY OUT2	Open collector output	Tally output of input image 2	
3	TALLY OUT3	Open collector output	Tally output of input image 3	
4	TALLY OUT4	Open collector output	Tally output of input image 4	
5	TALLY OUT5	Open collector output	Tally output of input image 5	
6	ALARM	Open collector output	Fan alarm or power alarm output	A low-level signal is output when trouble has occurred.
7	KEY ON	Open collector output	Key combination status output	A low level is output during key combinations.
8	(RESERVE)	Contact input	(Reserve)	
9	NC		Not used	
10	Tally Disable	Contact input	Tally signal enable/disable	This signal is enabled by the contact input (and disabled when open).
11	AUTO	Contact input	AUTO button of transition part	The signal is made operational by the contact input (30 ms or more).
12	CUT	Contact input	CUT button of transition part	
13	KeyON	Contact input	KEY ON button of transition part	
14	PinPON	Contact input	PinP button of transition part	
15	GND	Ground	Ground	

Example of an open collector output connection

Ensure that the conditions given below are satisfied.

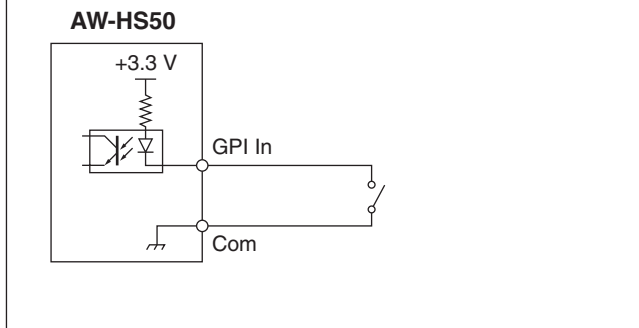
Dielectric strength: Max. DC 24 V

Current: Max. 50 mA



Example of a contact input connection

Provide contact inputs.



8. Connections with a computer

8-1. Image transmission functions

When the unit and computer are connected using a LAN cable, the unit's data can be saved in (downloaded to) the computer and data can be written (uploaded) from the computer to the unit.

The following kinds of data can be downloaded and uploaded.

- Frame memory images (FMEM1, FMEM2)
- Menu settings
- Panel statuses

- Network information (IP address, subnet mask, gateway and MAC address) cannot be uploaded.
- The image formats compatible with the frame memories include bitmap (bmp), JPEG (jpg), TIFF (tif), GIF (gif) and PNG (png).
Images can be converted automatically to the size of the format specified.

In order to use this function, the "Image transmission software" must be installed into the host computer from the CD provided. For details on how to install the application, refer to "8-3. How to install the software".

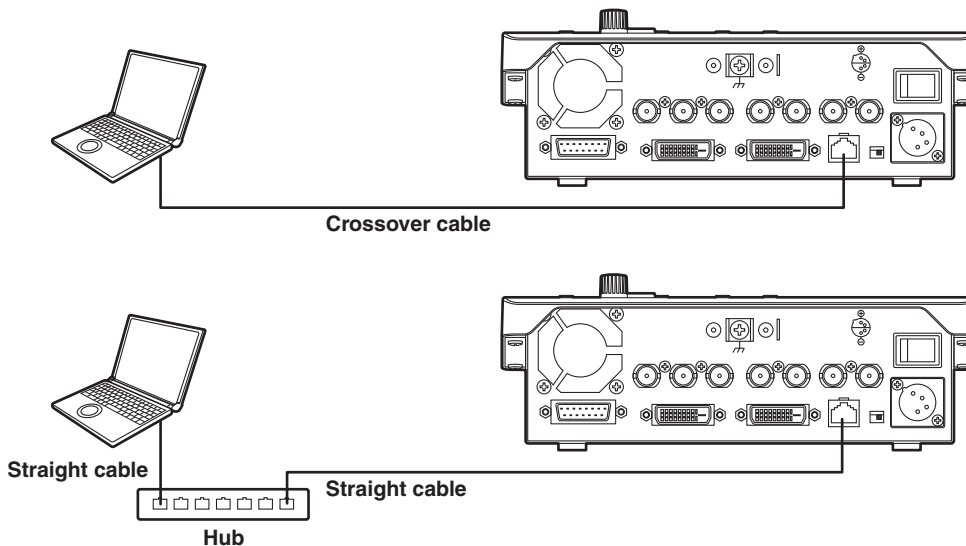
8-2. Connections

A LAN cable is used to connect the host computer to the unit's LAN connector.

When connecting the unit directly to the host computer, use a crossover cable.

When making the connection through a device such as a hub, use a straight cable.

For details on the IP address and other network settings, refer to "6-1-4. Network settings".

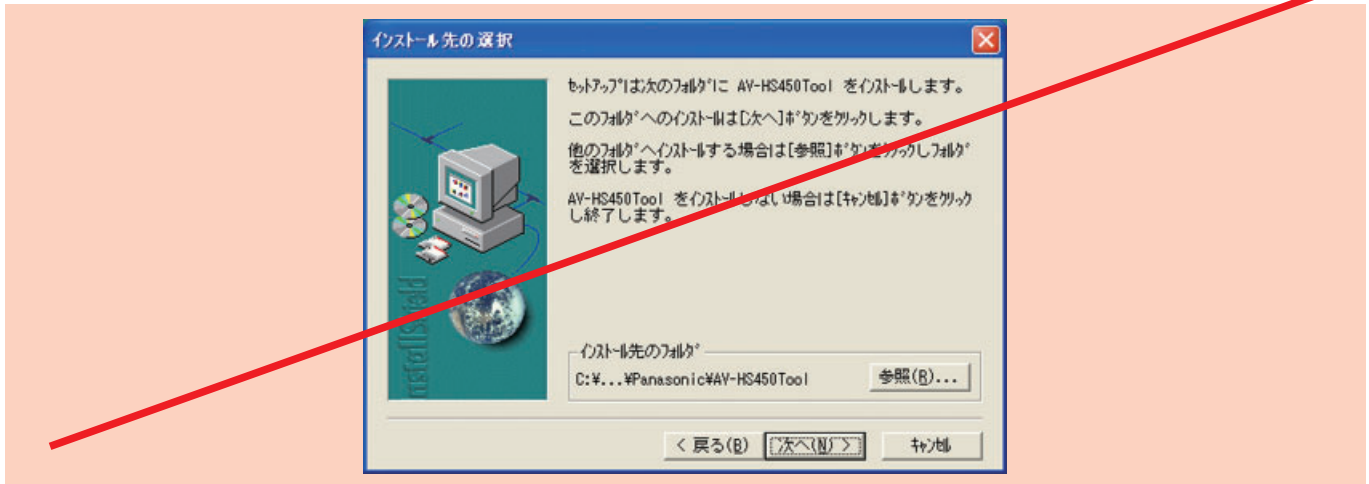


8. Connections with a computer

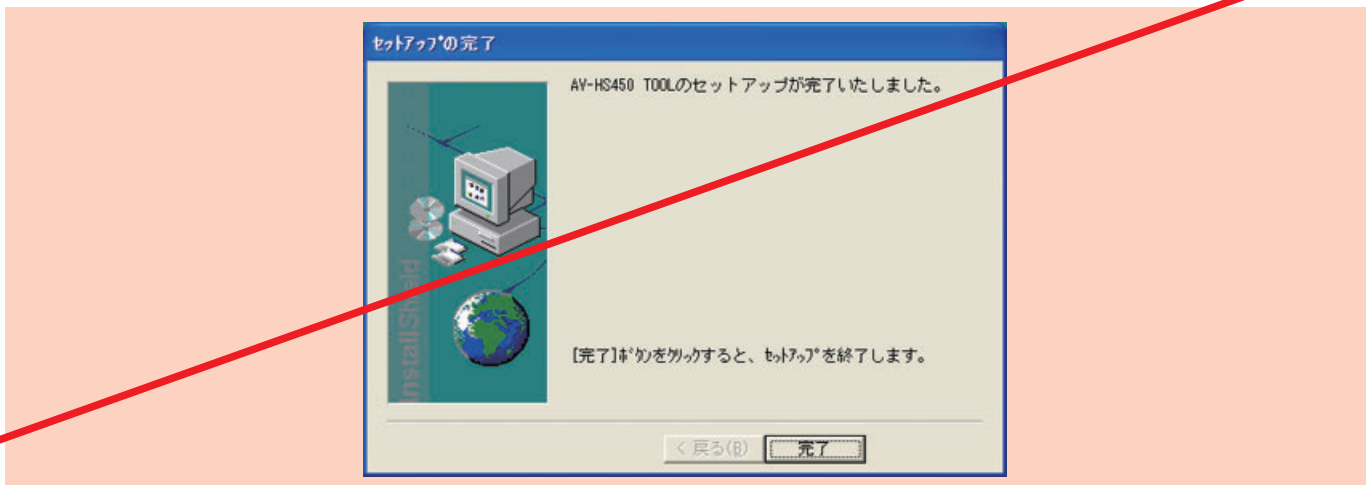
8-3. How to install the software

This section describes how to install the image transmission software (HS50 Tool).
Windows XP is used as the host computer's operating system in the example given here.

1. Insert the CD-ROM supplied with the unit into the CD-ROM drive of the host computer in which the program will be installed. (Here, E: will serve as the name of this drive for example.)
2. Execute the setup program (E:\HS50TOOL\ENG\SETUP.EXE).
3. The installer now starts up so follow its instructions to proceed.



4. The Setup Complete screen appears to indicate that installation is complete. Click [Finish] to close the window.



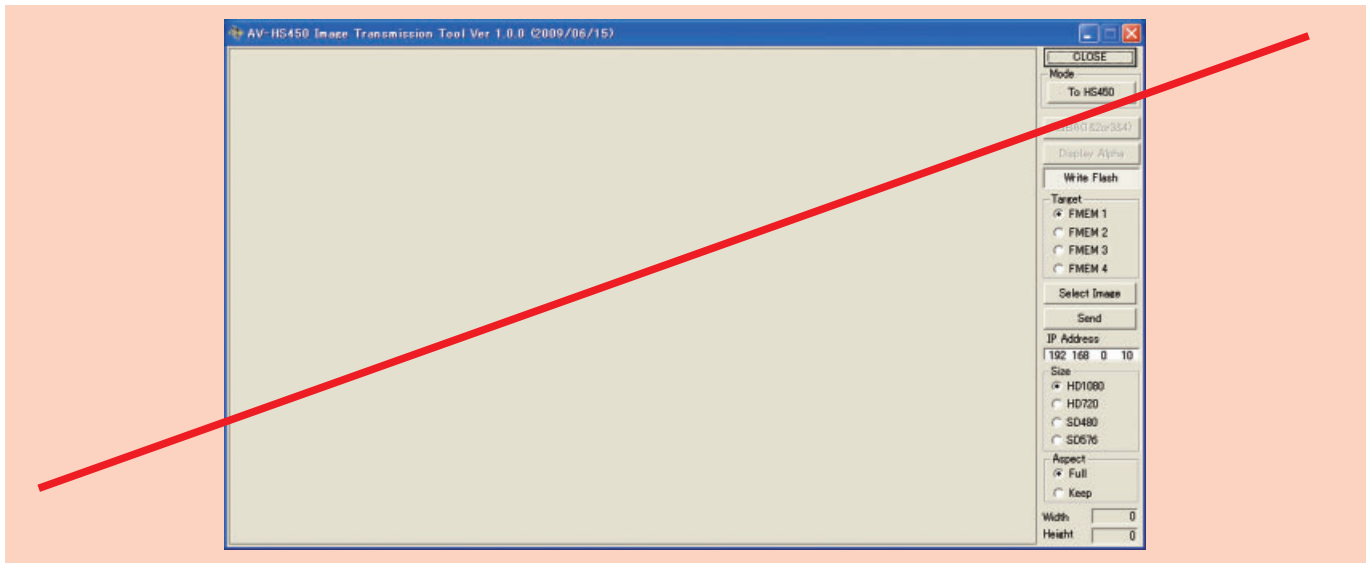
8. Connections with a computer

8-4. Basic operations of software

This section describes how to operate the image transmission software (HS50 Tool).

<Startup>

On the Start menu of Windows, select [Programs] → [Panasonic] → [AV-HS50Tool] → [HS50Tool].
The main screen now appears.



<Exit>

Click the [CLOSE] button.

<Setting the IP address>

Set the unit's IP address in the IP Address setting box.

8. Connections with a computer

8-5. Image transfer

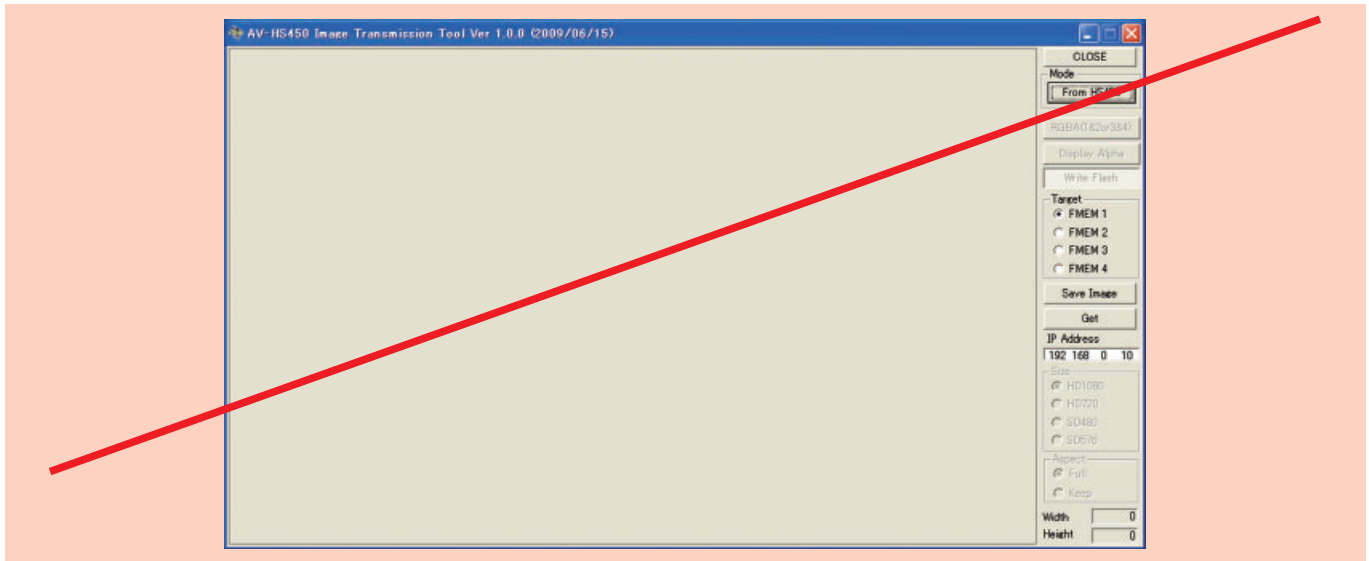
8-5-1. Transferring images from the computer to the unit

1. Select the mode.
Check that [To HS50] appears in the [Mode] field.
If [From HS50] appears instead, click the [From HS50] button so that [To HS50] appears.
2. Select the transmission destination of the images in the [Target] field.
FMEM1: Unit's frame memory 1
FMEM2: Unit's frame memory 2
3. When the [Select Image] button is clicked, the file selection dialog box appears on the screen.
Select the image file to be transmitted, and click [OK].
The image is now displayed in the image display area, and its horizontal and vertical dimensions appear in the [Width] and [Height] fields at the bottom right.
4. In the [Size] field, select the size of the image to be transmitted to the unit.
HD1080 (1920×1080), HD720 (1280×720), SD480 (720×487) or SD576 (720×576) can be selected as the size.
If the image is in a different video format from the ones supported by the unit, the output will not be displayed properly.
5. In the [Aspect] field, select the scaling method.
If the size of the image to be transmitted and the selected image differ, the image will be automatically scaled according to one of the following methods.
Full: The size of the image is increased or reduced so that it fits the size selected in the [Size] field.
If the aspect ratio of the image to be transmitted differs from that of the selected image, the ratio between the horizontal and vertical dimensions will be changed.
Keep: The image is expanded or reduced while its original aspect ratio is kept unchanged.
Any empty spaces in the image will appear black.
6. The [RGBA(1&2)] button can be selected when images containing the alpha channel are to be transmitted.
Click the [RGBA(1&2)] button and select FMEM1 in the [Target] field to transmit the RGB images to frame memory 1 (FMEM1) and the alpha channel images to frame memory 2 (FMEM2).
When the [Display Alpha] button is clicked, the alpha channel images appear as a preview display.
7. When the [Send] button is clicked, images are transmitted to the unit and images are saved in frame memory and flash memory.
 - When not saving images in the flash memory, click the [Write Flash] button to deselect the [Write Flash] button.

8. Connections with a computer

8-5-2. Transferring the unit's images to the computer

1. Select the mode.
Check that [From HS50] appears in the [Mode] field.
If [To HS50] appears instead, click the [To HS50] button so that [From HS50] appears.

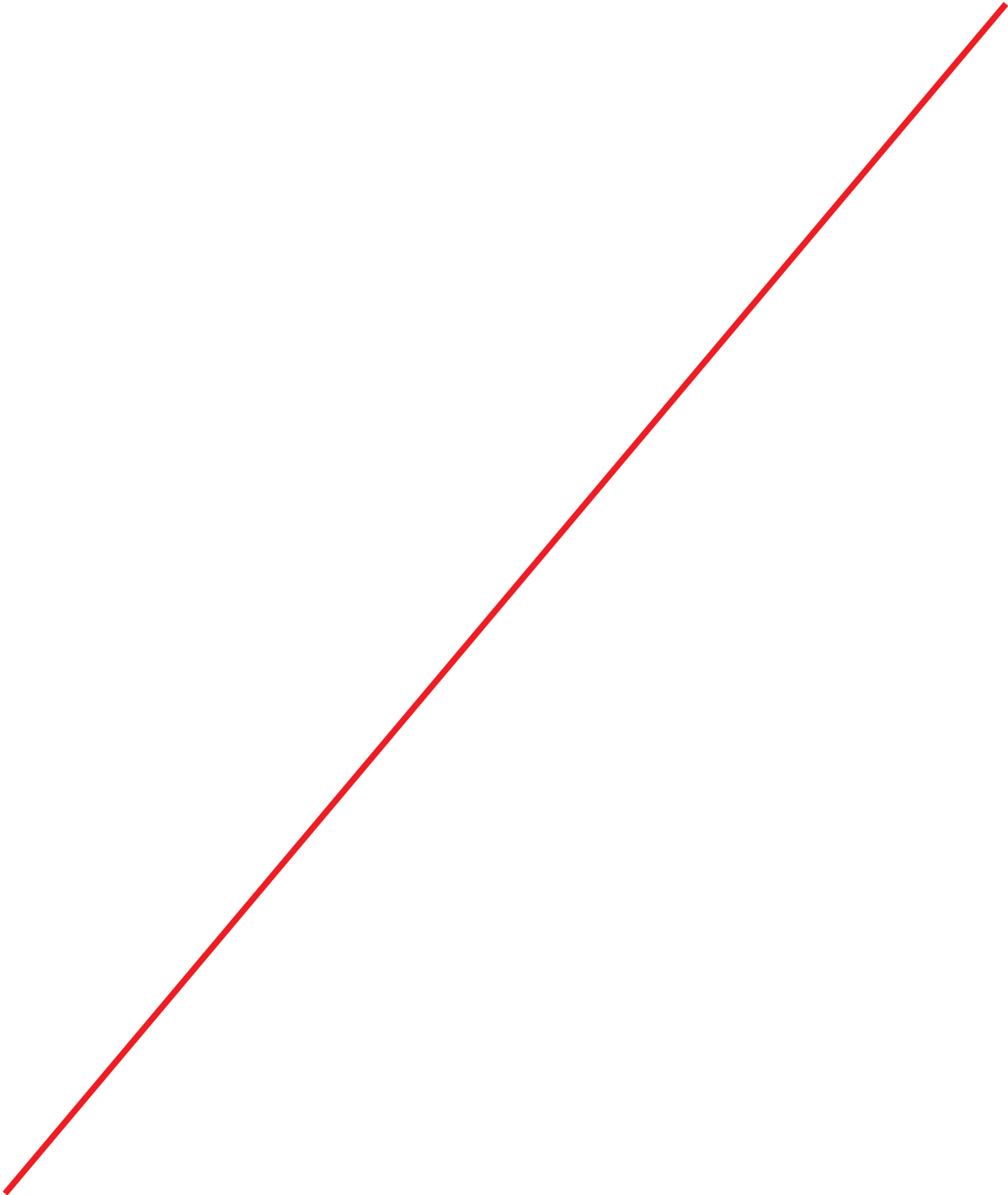


2. Select the images to be imported to the host computer in the [Target] field.
FMEM1: Images in unit's frame memory 1
FMEM2: Images in unit's frame memory 2
3. When the [Get] button is clicked, the image is imported from the unit.
The image is now displayed in the image display area, and its horizontal and vertical dimensions appear in the Width and Height fields at the bottom right.
4. When the [Save Image] button is clicked, the file save dialog box appears on the screen.
Select the image file to be transmitted, and click [Save].

8. Connections with a computer

<Transferring the setup data to the unit>

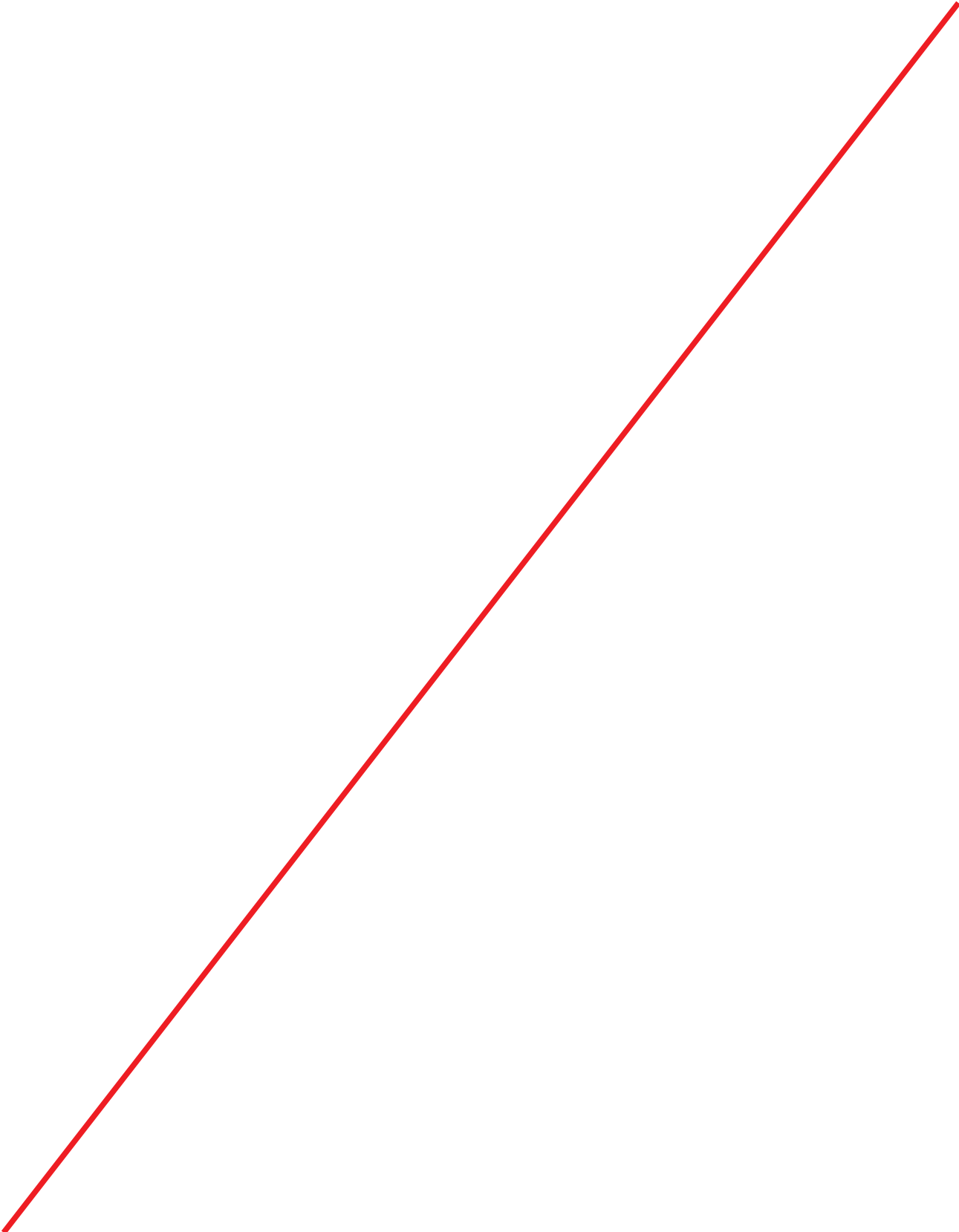
未



8. Connections with a computer

<Transferring the setup data from the unit>

未



9. Setting menu tables

No.	Sub menu	Setting item	Setting						
1	TIME/CBGD Menu	1 AUTO Time	Setting range	0 to 33s (59.94Hz)		0 to 999f			
			Initial value	1s		0f			
		2 PinP Time	Setting range	0 to 33s (59.94Hz)		0 to 999f			
			Initial value	1s		0f			
		3 KEY Time	Setting range	0 to 33s (59.94Hz)		0 to 999f			
			Initial value	1s		0f			
		4 FTB Time	Setting range	0 to 33s (59.94Hz)		0 to 999f			
			Initial value	1s		0f			
		5 FTB Source	Setting range	FMEM1, FMEM2, CBGD, White, Black					
			Initial value	Black					
6 AUX BUS Trans	Setting range	0 to 33s (59.94Hz)	0 to 999f	Enable, Disable					
	Initial value	1s	0f	Enable					
7 PinP BUS Trans	Setting range	0 to 33s (59.94Hz)	0 to 999f	Enable, Disable					
	Initial value	1s	0f	Enable					
8 PinP EFFDSLV	Setting range	0 to 33s (59.94Hz)	0 to 999f	Enable, Disable					
	Initial value	1s	0f	Enable					
9 Set CBGD Col	Setting range	White, Yellow, Cyan, Green, Magenta, Red, Blue, Black							
	Initial value	White							
10 Adj CBGD Col	Setting range	H	0.0 to 359.9	S	0.0 to 100.0	L	0.0 to 108.0		
	Initial value	H	0.0	S	0.0	L	100.0		
2	WIPE Menu	1 Pattern	Setting range	1 to 13					
			Initial value	1					
		2 Direction	Setting range	N, R, N/R					
			Initial value	N/R					
		3 Border Width	Setting range	0.0 to 100.0					
			Initial value	0.0					
		4 Set Border Col	Setting range	White, Yellow, Cyan, Green, Magenta, Red, Blue, Black					
			Initial value	White					
5 Adj Border Col	Setting range	H	0.0 to 359.9	S	0.0 to 100.0	L	0.0 to 108.0		
	Initial value	H	0.0	S	0.0	L	100.0		
6 Soft Width	Setting range	0.0 to 100.0							
	Initial value	0.0							
7 Position	Setting range	X	-100.00 to 100.00	Y	-100.00 to 100.00				
	Initial value	X	0.00	Y	0.00				
8 Set To Preset	Setting range	1 to 4							
	Initial value	1							
3	PinP Menu	1 Shape	Setting range	Square, Circle, Heart, Flower, Star					
			Initial value	Square					
		2 Pos:X/Y/Size	Setting range	X	-100.00 to 100.00	Y	-100.00 to 100.00	S	0.00 to 100.00
			Initial value	X	0.00	Y	0.00	S	25.00
		3 PVW	Setting range	On, Off					
			Initial value	Off					
		4 Border Width	Setting range	0.0 to 100.0					
			Initial value	0.0					
		5 Set Border Col	Setting range	White, Yellow, Cyan, Green, Magenta, Red, Blue, Black					
			Initial value	White					
6 Adj Border Col	Setting range	H	0.0 to 359.9	S	0.0 to 100.0	L	0.0 to 108.0		
	Initial value	H	0.0	S	0.0	L	100.0		
7 Soft Width	Setting range	0.0 to 100.0							
	Initial value	0.0							
8 Trim Adjust1	Setting range	Manual, Off, 4:3		L	-50.00 to 50.00	T	-50.00 to 50.00		
	Initial value	Off		L	-40.00	T	40.00		
9 Trim Adjust2	Setting range	R	-50.00 to 50.00	B	-50.00 to 50.00				
	Initial value	R	40.00	B	-40.00				
10 Set To Preset	Setting range	1 to 4							
	Initial value	1							

9. Setting menu tables

No.	Sub menu	Setting item	Setting	
4	KEY Setup Menu	1 Key Type	Setting range	Luminance, Linear, Chroma
			Initial value	Luminance
		2 Fill	Setting range	Bus, Matte
			Initial value	Bus
		3 PVW	Setting range	On, Off
			Initial value	Off
		4 Set Fill Col	Setting range	White, Yellow, Cyan, Green, Magenta, Red, Blue, Black
			Initial value	White
		5 Adj Fill Col	Setting range	H 0.0 to 359.9 S 0.0 to 100.0 L 0.0 to 108.0
			Initial value	H 0.0 S 0.0 L 100.0
6 Edge Type	Setting range	Off, Border, Drop, Shadow, Outline		
	Initial value	Off		
7 Edge Direction	Setting range	0, 45, 90, 135, 180, 225, 270, 315		
	Initial value	0		
8 Edge Width	Setting range	0 to 4		
	Initial value	2		
9 Set Edge Col	Setting range	White, Yellow, Cyan, Green, Magenta, Red, Blue, Black		
	Initial value	Black		
10 Adj Edge Col	Setting range	H 0.0 to 359.9 S 0.0 to 100.0 L 0.0 to 108.0		
	Initial value	H 0.0 S 0.0 L 0.0		
5	KEY Adjust Menu	1 Clip	Setting range	0.0 to 108.0
			Initial value	0.0
		2 Gain	Setting range	0.0 to 200.0
			Initial value	100.0
		3 Density	Setting range	0.0 to 100.0
			Initial value	100.0
		4 Invert	Setting range	On, Off
			Initial value	Off
5 Mask	Setting range	On, Off		
	Initial value	Off		
6 Mask Adjust1	Setting range	L -50.00 to 50.00 R -50.00 to 50.00		
	Initial value	L -25.00 R 25.00		
7 Mask Adjust2	Setting range	T -50.00 to 50.00 B -50.00 to 50.00		
	Initial value	T 25.00 B -25.00		
8 Mask Invert	Setting range	On, Off		
	Initial value	Off		
6	ChromaKey Menu	1 Marker	Setting range	On, Off
			Initial value	Off
		2 Sample	Setting range	Start
			Initial value	Start
		3 Marker Pos	Setting range	X -50.00 to 50.00 Y -50.00 to 50.00 S 0.00 to 25.00
			Initial value	X 0.00 Y 0.00 S 10.00
		4 Marker Aspect	Setting range	-50.00 to 50.00
			Initial value	0.00
		5 Ref Adjust	Setting range	H 0.0 to 359.9 S 0.0 to 100.0 L 0.0 to 108.0
Initial value	H 354.0 S 100.0 L 7.0			
6 Y-Influence	Setting range	0.0 to 100.0		
	Initial value	0.00		
7 Radius	Setting range	H 0.0 to 100.0 S 0.0 to 100.0		
	Initial value	H 100.0 S 50.0		
8 Soft	Setting range	0.0 to 100.0		
	Initial value	0.0		
9 Cancel	Setting range	0.0 to 100.0		
	Initial value	0.0		

9. Setting menu tables

No.	Sub menu	Setting item	Setting	
7	MultiView Pattern Menu	1 Split	Setting range	4Split, 5-aSplit, 5-bSplit, 9Split, 10-aSplit, 10-bSplit
			Initial value	10-aSplit
		2 Pos1 Source	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
			Initial value	PGM
		3 Pos2 Source	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
			Initial value	PVW
		4 Pos3 Source	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
			Initial value	Input1(Input Name)
		5 Pos4 Source	Setting range	SDI-IN1 to 4 (Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
			Initial value	Input2(Input Name)
		6 Pos5 Source	Setting range	SDI-IN1 to 4 (Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
Initial value	Input3(Input Name)			
7 Pos6 Source	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
	Initial value	Input4(Input Name)		
8 Pos7 Source	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
	Initial value	DVI-D(Input Name)		
9 Pos8 Source	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
	Initial value	FMEM1		
10 Pos9 Source	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
	Initial value	FMEM2		
11 Pos10 Source	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
	Initial value	AUX		
8	MultiView Out/Frame Menu	1 Frame	Setting range	LUM0%, LUM25%, LUM50%, LUM75%, LUM100%, Off
			Initial value	LUM75%
		2 Character	Setting range	LUM0%, LUM25%, LUM50%, LUM75%, LUM100%, Off
			Initial value	LUM75%
		3 Label	Setting range	On, Off
			Initial value	On
4 Tally	Setting range	Red, Red+Green, Off		
	Initial value	Red+Green		
5 Level Meter	Setting range	On, Off		
	Initial value	Off		
6 Input Status	Setting range	On, Off		
	Initial value	On		
9	XPT SW Assign Menu	1 XPT1	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
			Initial value	SDI-IN1(Input Name)
		2 XPT2	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
			Initial value	SDI-IN2(Input Name)
		3 XPT3	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
			Initial value	SDI-IN3(Input Name)
		4 XPT4	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign
			Initial value	SDI-IN4(Input Name)

9. Setting menu tables

No.	Sub menu	Setting item	Setting			
9	XPT SW Assign Menu	5 XPT5	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
			Initial value	DVI-D(Input Name)		
		6 XPT6	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
			Initial value	FMEM1		
		7 XPT7	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
			Initial value	FMEM2		
		8 XPT8	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
			Initial value	CBGD		
		9 XPT9	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
			Initial value	CBAR		
		10 XPT10	Setting range	SDI-IN1 to 4(Input Name), DVI-IN(Input Name), FMEM1, FMEM2, CBGD, CBAR, Black, NoAssign		
			Initial value	Black		
10	Input Menu	1 SDI-IN1(Input Name)	Setting range			
			Initial value			
		2 SDI-IN2(Input Name)	Setting range			
			Initial value			
		3 SDI-IN3(Input Name)	Setting range			
			Initial value			
4 SDI-IN4(Input Name)	Setting range					
	Initial value					
10.1	Input Menu/SDI-IN1(xxxxxx)	1 Mode	Setting range	Normal, DbyD, AUTO		
			Initial value	Normal		
		2 Freeze Select	Setting range	Frame, Field		
			Initial value	Frame		
		3 Freeze	Setting range	On, Off		
			Initial value	Off		
		4 Name Type	Setting range	Default, Preset, User, CAM Name		
			Initial value	Default		
		5 Name	Setting range	Max. 10 characters can be set		
			Initial value			
		6 VPrc:YGain/Ped	Setting range	V On, Off	Y 0.0 to 200.0	P -20.0 to 20.0
			Initial value	V Off	Y 100.0	P 0.0
7 VPrc:CGain/Hue	Setting range		C 0.0 to 200.0	H 0.0 to 359.9		
	Initial value		C 100.0	H 0.0		
10.2	Input Menu/SDI-IN2(xxxxxx)	1 Mode	Setting range	Normal, DbyD, AUTO		
			Initial value	Normal		
		2 Freeze Select	Setting range	Frame, Field		
			Initial value	Frame		
		3 Freeze	Setting range	On, Off		
			Initial value	Off		
		4 Name Type	Setting range	Default, Preset, User, CAM Name		
			Initial value	Default		
		5 Name	Setting range	Max. 10 characters can be set		
			Initial value			
		6 VPrc:YGain/Ped	Setting range	V On, Off	Y 0.0 to 200.0	P -20.0 to 20.0
			Initial value	V Off	Y 100.0	P 0.0
7 VPrc:CGain/Hue	Setting range		C 0.0 to 200.0	H 0.0 to 359.9		
	Initial value		C 100.0	H 0.0		

9. Setting menu tables

No.	Sub menu	Setting item	Setting	
10.3	Input Menu/SDI-IN3(xxxxxx)	1 Mode	Setting range	Normal, DbyD, UC, AUTO
			Initial value	Normal
		2 Freeze Select	Setting range	Frame, Field
			Initial value	Frame
		3 Freeze	Setting range	On, Off
			Initial value	Off
		4 Name Type	Setting range	Default, Preset, User, CAM Name
			Initial value	Default
		5 Name	Setting range	Max. 10 characters can be set
			Initial value	
6 VPrc/YGain/Ped	Setting range	V On, Off	Y 0.0 to 200.0	P -20.0 to 20.0
	Initial value	Off	100.0	0.0
7 VPrc:CGain/Hue	Setting range	C 0.0 to 200.0	H 0.0 to 359.9	
	Initial value	100.0	0.0	
8 UC:Scale/ECPos	Setting range	S SQ, EC, LB	E Center, Right, Left	
	Initial value	SQ	Center	
9 UC:Size	Setting range	S 100 to 110		
	Initial value	S 100		
10 UC:Mvdet/Sharp	Setting range	M 1 to 5	S 1 to 5	
	Initial value	M 3	S 3	
10.4	Input Menu/SDI-IN4(xxxxxx)	1 Mode	Setting range	Normal, DbyD, UC, AUTO
			Initial value	Normal
		2 Freeze Select	Setting range	Frame, Field
			Initial value	Frame
		3 Freeze	Setting range	On, Off
			Initial value	Off
		4 Name Type	Setting range	Default, Preset, User, CAM Name
			Initial value	Default
		5 Name	Setting range	Max. 10 characters can be set
			Initial value	
6 VPrc/YGain/Ped	Setting range	V On, Off	Y 0.0 to 200.0	P -20.0 to 20.0
	Initial value	Off	100.0	0.0
7 VPrc:CGain/Hue	Setting range	C 0.0 to 200.0	H 0.0 to 359.9	
	Initial value	100.0	0.0	
8 UC:Scale/ECPos	Setting range	S SQ,EC,LB	E Center, Right, Left	
	Initial value	SQ	Center	
9 UC:Size	Setting range	S 100 to 110		
	Initial value	S 100		
10 UC:Mvdet/Sharp	Setting range	M 1 to 5	S 1 to 5	
	Initial value	M 3	S 3	
10.5	Input Menu/DVI-IN(xxxxxx)	1 Freeze	Setting range	On, Off
			Initial value	Off
		2 Name Type	Setting range	Default, Preset, User, CAM Name
			Initial value	Default
		3 Name	Setting range	
			Initial value	
		4 Scale	Setting range	Fit-V, Fit-H, Full
			Initial value	Fit-V
5 Size	Setting range	xxxx*xxxx		
	Initial value			
6 H-Freq	Setting range	XXHz		
	Initial value			
7 V-Freq	Setting range	XXHz		
	Initial value			
8 Dot Clock	Setting range	XXX.XXMHz		
	Initial value			

9. Setting menu tables

No.	Sub menu	Setting item	Setting		
11	Output Menu	1 SDI-OUT1	Setting range	PGM, PVW, CLN, AUX, MV, KeyOut	
			Initial value	PGM	
		2 SDI-OUT2	Setting range	PGM, PVW, CLN, AUX, MV, KeyOut	
			Initial value	PVW	
		3 DVI-OUT	Setting range	PGM, PVW, CLN, AUX, MV, KeyOut	
			Initial value	AUX	
		4 SDI-OUT:Limit	Setting range	Off, 108, 104, 100	
			Initial value	Off	
		5 DVI-OUT:Size	Setting range	Auto, XGA, WXGA, SXGA, WSXGA+, UXGA, WUXGA, 1080/59.94p, 1080/50p	
			Initial value	Auto	
		6 DVI-OUT:Scale	Setting range	Fit-V, Fit-H, Full	
			Initial value	Fit-V	
		7 DVI-OUT:Mvdet	Setting range	1 to 5	
			Initial value	3	
12	USER/FMEM Menu	1 USER1	Setting range	PinP Preset, WIPE Preset, PinPPVW, KeyPVW, GPI Input, GPI Output, CamCont Link, AUX Transition, PinP Transition, EFFDSLTV Time, StrFMEM1, StrFMEM2, No Assign	
			Initial value	PinP Preset	
		2 USER2	Setting range	PinPPVW, KeyPVW, GPI Input, GPI Output, CamCont Link, AUX Transition, PinP Transition, EFFDSLTV Time, StrFMEM1, StrFMEM2, No Assign	
			Initial value	—	
		3 USER3	Setting range	PinPPVW, KeyPVW, GPI Input, GPI Output, CamCont Link, AUX Transition, PinP Transition, EFFDSLTV Time, StrFMEM1, StrFMEM2, No Assign	
			Initial value	—	
		4 USER4	Setting range	PinPPVW, KeyPVW, GPI Input, GPI Output, CamCont Link, AUX Transition, PinP Transition, EFFDSLTV Time, StrFMEM1, StrFMEM2, No Assign	
			Initial value	—	
		5 FMEM Select	Setting range	FMEM1, FMEM2	
			Initial value	FMEM1	
		6 AUX to FMEM	Setting range	Rv On, Off	EX On
			Initial value	Off	On
		7 FMEM Mode	Setting range	M AUTO, Manual	EX On
			Initial value	AUTO	On
13	Operation Menu	1 OSD OUT	Setting range	SDI-OUT2, DVI-OUT, SDI-OUT2+DVI-D	
			Initial value	SDI-OUT2+DVI-D	
		2 OSD Size	Setting range	Full, Upper-Left, Upper-Right, Lower-Right, Lower-Left	
			Initial value	Full	
		3 OSD Back	Setting range	On, Off	
			Initial value	On	
		4 Key Priority	Setting range	PinP over KEY, KEY over PinP	
			Initial value	PinP over KEY	
		5 BUS Mode	Setting range	A/B, PGM(A)/PST(B), PGM(B)/PST(A)	
			Initial value	PGM(A)/PST(B)	
		6 Time Unit	Setting range	Sec, Frame	
			Initial value	Sec	
		7 Slide Lever	Setting range	BKGD, Key, PinP, NoAssign	
			Initial value	BKGD	
8 GPI Input	Setting range	Enable, Disable			
	Initial value	Enable			
9 GPI Output	Setting range	Enable, Disable			
	Initial value	Enable			
10 CamCont Link	Setting range	On, Off			
	Initial value	Off			

9. Setting menu tables

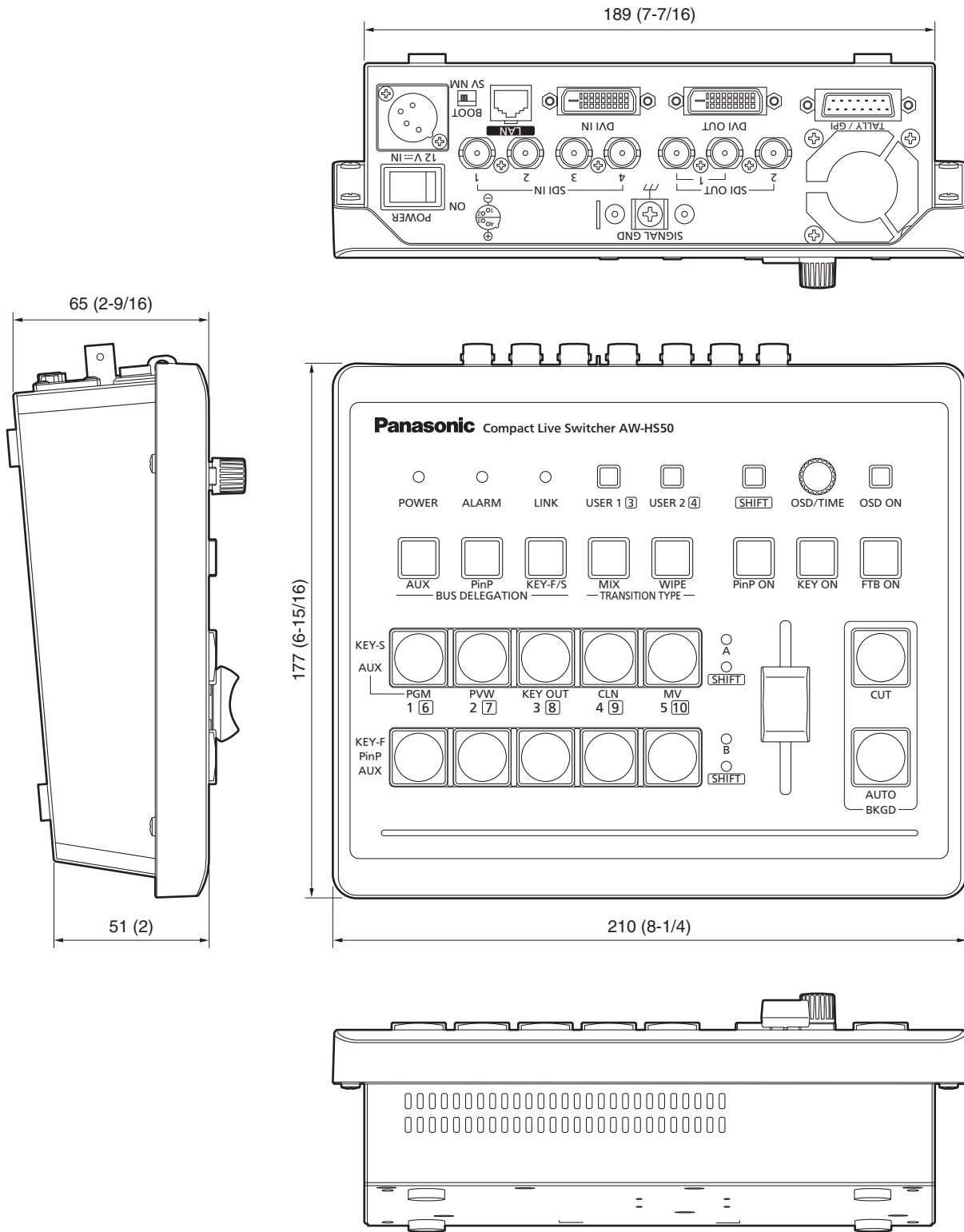
No.	Sub menu	Setting item	Setting	
13	Operation Menu	11 FAN	Setting range	Alarm, NoAlarm
			Initial value	—
		12 Power	Setting range	Alarm, NoAlarm
			Initial value	—
		13 Temperature	Setting range	Alarm, NoAlarm
			Initial value	—
		14 SYSTEM Menu	Setting range	UnLocked, Locked
			Initial value	UnLocked
14	SYSTEM Menu	1 Format	Setting range	1080/59.94i, 1080/50i, 1080/24psf, 1080/23.98psf, 720/59.94p, 720/50p, 480/59.94i, 576/50i
			Initial value	1080/59.94i
		2 HiResMV	Setting range	On, Off
			Initial value	Off
		3 16:9SQ	Setting range	On, Off
			Initial value	Off
		4 AUX Anci	Setting range	On, Off
			Initial value	Off
		5 PGM Anci	Setting range	On, Off
			Initial value	Off
		6 PVW Anci	Setting range	On, Off
			Initial value	Off
		7 MV Anci	Setting range	PGM, PVW, Off
			Initial value	Off
8 Initial	Setting range	On, Off		
	Initial value	Off		
9 IP Address	Setting range	—		
	Initial value	192.168.0.30		
10 Subnet Mask	Setting range	—		
	Initial value	255.255.255.0		
11 GateWay	Setting range	—		
	Initial value	192.168.0.1		
12 MAC Address	Setting range			
	Initial value			
15	SYSTEM Status	1 SYSTEM Ver.	Setting range	Vxx.xx.xx
			Initial value	
		2 SOFT Ver.	Setting range	Vxx.xx.xx
			Initial value	
		3 GLUE FPGA Ver.	Setting range	Vxx.xx.xx
			Initial value	
		4 MAIN FPGA Ver.	Setting range	Vxx.xx.xx
			Initial value	
		5 FONT Ver.	Setting range	Vxx.xx.xx
			Initial value	

9. Setting menu tables

No.	Sub menu	Setting item		Setting
	BUS Assign Status	1	XPT SW	Setting range
				Initial value
		2	XPT SW Assign	Setting range
				Initial value
		3	PGM	Setting range
				Initial value
		4	PVW	Setting range
				Initial value
		5	AUX	Setting range
				Initial value
		6	PinP	Setting range
				Initial value
		7	Key-F	Setting range
				Initial value
		8	Key-S	Setting range
				Initial value

10. Appearance

Unit: mm (inch)



11. Specifications

Inputs	5 video lines SDI 4 signal lines: SDI IN 1 to SDI IN 4 DVI-D 1 signal line: DVI IN	
Outputs	3 video lines, 4 outputs SDI 2 signal lines: SDI OUT 1, SDI OUT 2 (Only the SDI OUT 1 signals are split into two) DVI-D 1 signal line: DVI OUT	
Signal formats	SD	480/59.94i, 576/50i
	HD	1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 1080/24PsF, 1080/23.98PsF
Signal processing	Y:Cb:Cr 4:2:2, 10 bit (8 bits for frame memory) RGB 4:4:4 8 bit	
ME number	1ME	
SDI inputs	HD: Serial digital component (SMPTE 292M) SD: Serial digital component (SMPTE 259M)	
	4 signal lines: SDI IN 1 to SDI IN 4	
	HD: SMPTE 292M (BTA S-004B) standard complied with <ul style="list-style-type: none"> • 0.8 V [p-p] $\pm 10\%$ (75 Ω) • Input return loss More than 15 dB (5 MHz to 1.5 GHz) • Automatic equalizer 100 m (328 ft.) (when 5C-FB cable is used) 	
	SD: SMPTE 259M standard complied with <ul style="list-style-type: none"> • 0.8 V [p-p] $\pm 10\%$ (75 Ω) • Input return loss More than 15 dB (5 MHz to 270 MHz) • Automatic equalizer 200 m (656 ft.) (when 5C-2V cable is used) 	
DVI-D input	Digital RGB (Vertical frequency: 60 Hz): XGA (1024×768), WXGA (1280×768), SXGA (1280×1024), WSXGA+ (1680×1050), UXGA (1600×1200), WUXGA (1920×1200) Digital RGB: 1080/50P, 1080/59.94P <ul style="list-style-type: none"> • Analog input signals are not supported. 	
SDI outputs	HD: Serial digital component (SMPTE 292M) SD: Serial digital component (SMPTE 259M)	
	2 signal lines: SDI OUT 1, SDI OUT 2 (Only the SDI OUT 1 signals are split into two)	
	HD: SMPTE 292M (BTA S-004B) standard complied with <ul style="list-style-type: none"> • Output return loss More than 15 dB (5 MHz to 1.5 GHz) • Output level 0.8 V [p-p] $\pm 10\%$ (75 Ω) • Rise time Less than 270 ps • Fall time Less than 270 ps • Difference between rise time and fall time Less than 100 ps • Alignment jitter Less than 0.2 UI (130 ps) • Timing jitter Less than 1.0 UI • Eye aperture ratio More than 90 % • DC offset 0 ± 0.5 V 	
	SD: SMPTE 259M standard complied with <ul style="list-style-type: none"> • Output return loss More than 15 dB (5 MHz to 270 MHz) • Output level 0.8 V [p-p] $\pm 10\%$ (75 Ω) • Rise time Less than 1.5 ns • Fall time Less than 1.5 ns • Difference between rise time and fall time Less than 0.5 ns • Jitter Less than 0.2 UI 	

11. Specifications

DVI-D output	<p>Digital RGB (Vertical frequency: 60 Hz): XGA (1024×768), WXGA (1280×768), SXGA (1280×1024), WSXGA+ (1680×1050), UXGA (1600×1200), WUXGA (1920×1200) Digital RGB: 1080/50P, 1080/59.94P</p> <ul style="list-style-type: none"> High-resolution multi view mode supported: Signals are also output with a high resolution even when SD has been selected as the system mode. <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>When the high-resolution multi view mode is enabled, MV is assigned to the DVI OUT connector, and MV cannot be assigned to the SDI OUT 1 connectors or SDI OUT 2 connector</p> </div> <ul style="list-style-type: none"> Analog output signals are not supported. 	
Video delay time	<p>1 frame (F)</p> <ul style="list-style-type: none"> Video signals that have passed through the PinP, multi view display, DVI-D input or DVI-D output will be delayed in each case by up to one frame. 	
Control I/O	<p>LAN (RJ45) 10Base-T/100Base-TX (For IP control)</p>	<p>Connecting cable: LAN cable (category 5 or above), max. 100 m (328 ft.)</p> <ul style="list-style-type: none"> When connecting to a hub, use a straight cable. Use a crossover cable when connecting the unit and another device on a 1:1 basis without going through a hub.
	<p>TALLY/GPI (D-sub 15-pin, female, inch thread)</p>	<p>INPUT : 5 inputs, photocoupler sensing OUTPUT : 7 outputs, open collector output (negative logic)</p>
Other	<p>SERVICE switch [SV/NM] (for maintenance purposes) Normally, this switch is used as the “NM” position.</p>	

11. Specifications

Ambient operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10 % to 90 % (no condensation)
Power supply	DC 12 V, 2.5 A ● Power consumption when using the AC adapter: AC 30 W Supplied AC adapter Rated input: AC 100 V to 240 V, 1.6 A, 47 to 63 Hz Rated output: DC 12 V, 4.75 A, 57 W Supplied power cord Maximum rating: AC 125 V ● Use within AC 100 V to 120 V.
Dimensions (W × H × D)	210 × 65 × 177 mm (8-1/4" × 2-9/16" × 6-15/16") [excluding protrusions]
Weight	1.4 kg (3.08 lbs.)

- The AC adapter and power cord provided must be used without fail.

Appendix (glossary)

Defined below are the terms used in this manual.

Word	Explanation
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 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.
AVDL [Automatic Video Delayline]	A function to automatically adjust the input image signal phase to the horizontal synchronization reference signal phase.
BB [Black burst]	The black burst signal. A full-screen black level composite signal which is used as the reference signal for gen-lock.
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	The threshold level of the luminance when key signals are created from a key source.
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 (1×) images. 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 material 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 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 Memory	A memory which can hold the video signals equivalent to one frame.
Frame Synchronizer	A function which matches the synchronization of non-synchronized video input signals.
Freeze	A function which continues the display of the same image, creating the impression that the image has been “frozen”.
FTB [Fade to Black]	This is the effect where the background image is faded out to the black screen.
Genlock	A function for synchronizing the video signals using an external sync signal as the reference.

Appendix (glossary)

Word	Explanation
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 combination 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	A function which inverts the key signals.
Key Mask	This is the function that specifies the area for key combination using the box pattern, etc. When only part of the area of the key signals is used, key combination is executed with the unnecessary area masked.
Key Source	The video signals for creating the key signals.
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".
Multi View Display	This function combines multiple materials and displays them on one screen. PGM, PVW and the input material can be previewed at the same time on a single screen.
OSD [On Screen Display]	This function enables settings to be performed on the menu screens which are displayed in the monitor output.
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 system.
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.
Sat [Saturation]	This refers to the intensity of the color chrominance level of video signals.
SDI [Serial Digital Interface]	The standard by which video signals in various SD and HD formats are transmitted along a single coaxial cable.
Self Key	A 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.

Appendix (glossary)

Word	Explanation
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 material in the SD format into the HD format which yields a high resolution.
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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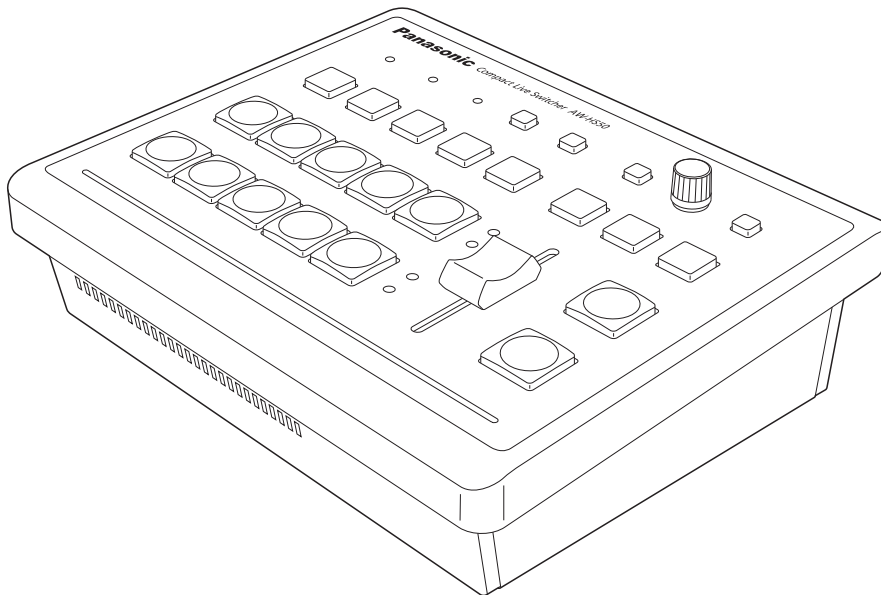
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Panasonic®

Operating Instructions <Basics>

Compact Live Switcher

Model No. **AW-HS50N**



Before operating this product, please read the instructions carefully and save this manual for future use.

For instructions on how to operate this Compact Live Switcher and how to establish its settings, refer to the "Operations and Settings" manual (PDF file) which can be found on the CD-ROM supplied with the camera.

Safety precautions



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (service) instructions in the literature accompanying the appliance.

WARNING:

■ THIS APPARATUS MUST BE EARTHED

To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the apparatus must have three cores and be correctly wired to provide connection to the earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the apparatus operates satisfactorily does not imply that the power point is earthed or that the installation is completely safe. For your safety, if you are in any doubt about the effective earthing of the power point, please consult a qualified electrician.

— For CANADA —

This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

WARNING:

- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.
- THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FCC Note:

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning:

To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.


The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

A warning that an apparatus with CLASS 1 construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Safety precautions

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

 indicates safety information.

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How the model's Operating Instructions manuals are configured

- The manual of this Compact Live Switcher (hereafter, "the unit") is divided into two manuals: one is the <Basics> (this manual), and the other is the <Operations and Settings> (CD-ROM). Before installing the unit, be sure to read the <Basics> to ensure that the unit is installed correctly.
- This manual explains how to install the unit, how to check the video outputs and how to perform the OSD menu operations.
For details on how to operate the unit and select its settings, refer to the "Operating Instructions <Operations and Settings>" (PDF file) on the CD-ROM supplied with the unit.
To read PDF files, you will need Adobe® Reader® which is available from Adobe Systems.

Before use

■ Overview

This unit is a 1 ME digital video switcher which supports a multiple number of HD and SD formats. Despite its compact size, it comes with four SDI inputs, one DVI-D input, two SDI outputs and one DVI-D output.

In addition to its background transition capabilities that use the cut, mix and wipe functions, one keyer channel and one PinP channel are provided to enable video productions in a wide variety of forms.

Furthermore, using the multi view display settings, the screen of a monitor can be split into a number of sections to accommodate up to ten images, enabling the number of monitors to be reduced and a space-saving system to be configured at low cost.

By means of the IP connection, an operating environment where the unit is tied in with the AW-HE50 HD integrated camera and AW-RP50 remote camera controller is achieved.

■ Concerning the Operating Instructions

- For the purposes of these instructions, AW-HS50N is referred to as “AW-HS50”. Similarly, AW-HE50HN and AW-HE50SN are referred as “AW-HE50,” and AW-RP50N is referred to as “AW-RP50”.
- In these instructions, the phrases “pan-tilt head and camera combination” and “camera integrated with a pan-tilt head” are both referred to collectively as “**remote camera**” except in places where specific equipment is mentioned.

■ Trademarks and registered trademarks

- Microsoft, Windows, Windows Vista, Windows 7 and Internet Explorer are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
- Intel and Intel Core are trademarks or registered trademarks of Intel Corporation in the United States and other countries.
- Adobe and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- Other names of companies and products contained in these Operating Instructions may be trademarks or registered trademarks of their respective owners.

■ About copyright and licence

Distributing, copying, disassembling, reverse compiling, reverse engineering, and also exporting in violation of export laws of the software provided with this unit are expressly prohibited.

■ Concerning the ratings display

The unit’s name, model number and electrical ratings are indicated on its bottom panel.

Before use

■ Disclaimer of warranty

IN NO EVENT SHALL Panasonic System Networks Co., Ltd. BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

- ① ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
- ② PERSONAL INJURY OR ANY DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
- ③ UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;
- ④ INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
- ⑤ ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
- ⑥ ANY INCONVENIENCE, DAMAGES OR LOSSES RESULTING FROM ACCIDENTS CAUSED BY AN INADEQUATE INSTALLATION METHOD OR ANY FACTORS OTHER THAN A DEFECT IN THE PRODUCT ITSELF;
- ⑦ LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE;
- ⑧ ANY DAMAGES, CLAIMS, ETC. DUE TO LOSS OR LEAKAGE OF IMAGE DATA OR SETTING DATA SAVED ON THIS UNIT OR IN A PERSONAL COMPUTER.

■ Network security

As you will use this unit connected to a network, your attention is called to the following security risks.

- ① Leakage or theft of information through this unit
- ② Use of this unit for illegal operations by persons with malicious intent
- ③ 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 PCs, 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.).
- Refrain from connections that use public lines.

Characteristics

Compact design

- The unit features a compact design with its half-rack size width (210 mm [8-1/4"]) and its 4RU size (177 mm [6-15/16"]) depth.
The AW-RP50 remote camera controller (option) also has the same size. When it is placed alongside the unit, the two units are housed in the full rack width.

Multiple formats supported

- The signal formats supported by the unit include both HD formats (1080/59.94i, 1080/50i, 1080/24PsF, 1080/23.98PsF, 720/59.94p and 720/50p) and SD formats (480/59.94i and 576/50i).

Five input systems and three output systems featured

- The unit comes with four SDI input connectors (SDI IN 1 to SDI IN 4) and one DVI-D input connector (DVI IN).
- It also comes with two SDI output connectors (SDI OUT 1 and SDI OUT 2) and one DVI-D output connector (DVI OUT).

Frame synchronizer system

- A frame synchronizer is incorporated for each of the inputs so that asynchronous video signals can be selected with no accompanying shocks.

2-channel up-converter, 4-channel Dot by Dot function and 4-channel video process function

- An up-converter is incorporated in SDI IN 3 and SDI IN 4.
- A Dot by Dot function is incorporated for all the SDI input connectors (SDI IN 1 to SDI IN 4).
By using this function and the PinP function together, SD materials can be embedded in HD images with no deterioration in the image quality.
- The video process function is incorporated in all the SDI input connectors (SDI IN 1 to SDI IN 4) to make it possible to adjust the colors at the input stage of the switcher.

Multi view display function

- One channel is provided for the multi view display function.
The user can select whether the screen is to be split into 10, 9, 6, 5 or 4 sections.
- On each split screen, the user can assign PGM, PVW, AUX or other materials in addition to input materials.

Many different effect functions provided

- The unit enables the user to select wipe or mix as the type of background transition.
- A 1-channel keyer function is provided. The user can select linear keys, luminance keys or chroma keys as the key type.
- One PinP channel and one AUX bus system are available.
The user can choose not only cut transitions but also mix transitions as the effect yielded for switching materials using the PinP bus and AUX bus. (Bus transition function)

2-channel frame memory (8 bits)

- The user can select the still images stored in the frame memory as the bus material.
- Still images can be transferred from the host computer, which is connected to the unit via a LAN, to the frame memories.

Audio level meter display function

- This function enables the level of the embedded audio signals transferred by SDI input to be displayed.

Characteristics

Straightforward and flexible operability

- The control panel layout includes a row of five crosspoint buttons for the A bus and another row of five crosspoint buttons for the B bus. Using these buttons together with the SHIFT button enables a total of ten images to be switched. Cut switches are also made possible by the CUT button.
- Separate buttons enable the PinP, KEY and FTB functions to be turned ON or OFF in a single-step action.
- The slide lever is not only used to initiate background transition operations but it can also be allocated to execute PinP and KEY fade in/out operations.
- Two USER buttons located on control panel. Using these buttons together with the SHIFT button allows a total of four user settings (USER1 to USER4) to be allocated. PinP settings or WIPE pattern settings can be allocated to the USER buttons.

On-screen display (OSD)

- The setting menus can be displayed on an external monitor from the SDI OUT 2 and DVI OUT output connectors.
(These menus cannot be displayed using the SDI OUT 1 output connector.)

Function for linkup with a remote camera controller using IP connection

- The unit can be connected to a Panasonic remote camera controller using a network.
By linking it with a remote camera controller, it is possible to put together a highly efficient operating environment.

Supported remote camera controller:

AW-RP50

Only one switcher (the unit) can be linked with a remote camera controller.

[Display of camera information]

The camera setting information (iris, gain and so on) obtained by the AW-RP50 can be displayed in the AUX output or on the split screens of multi view display.

[Transmission of tally information]

The unit's ON AIR tally information can be sent to the AW-RP50.

[Switching of materials]

The bus materials of the switcher (the unit) can be selected from the AW-RP50.

They can be switched in tandem with the selection of the camera using the AW-RP50.
(Control buses supported: AUX, PVW, PinP, KEY-F)

[Focus assist function]

By operating the buttons on the AW-RP50, it is possible to switch to the multi view display screen from the full screen display of the camera images.

(Control bus supported: AUX)

[Parameter operation using PAN/TILT lever and ZOOM button]

The PAN/TILT lever and ZOOM button on the AW-RP50 can be used to change the parameters of the switcher (the unit).

Accessories

Check that the following accessories are present and accounted for.

Operating Instructions <Basics> (this manual)	1	AC adapter	1
CD-ROM	1	Power cable (2 m [6.6 ft.])	1

- Operating Instructions <Basics>
- Operating Instructions <Operations and Settings>
- Data Transmission Software

Required personal computer environment

Run the software that is provided with the switcher on a host computer which satisfies the following specifications.

CPU	Intel® Core™2 DUO 2.4 GHz or faster recommended
Memory	Windows® XP: 512 MB or more Microsoft® Windows Vista®, Microsoft® Windows® 7: 1 GB or more
Network function	10BASE-T or 100BASE-TX
Image display function	Resolution: 1024 × 768 pixels or more Color generation: True Color (24 bits or more)
Supported operating system	Microsoft® Windows® XP, Microsoft® Windows Vista®, Microsoft® Windows® 7
Hard disk drive	At least 50 MB of free memory
Other	CD-ROM drive (for using the Operating Instructions and various software) Adobe® Reader® (for browsing the Operating Instructions on the CD-ROM)

Operating precautions

- In addition to heeding the points presented in the “Safety precautions”, observe the following precautions as well.

Handle carefully.

Do not drop the product, or subject it to strong shock or vibration.

Do not carry or move the product by the slide lever.

This is important to prevent trouble.

Use the product in an ambient 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 will adversely affect the parts inside.

Power off before connecting or disconnecting cables.

Before plugging or unplugging the cables, be sure to switch power off.

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

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.

Caution

- 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

This product's image switching and image effect functions can be used to produce images which flicker rapidly or images which change rapidly.

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

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.

Concerning the consumable parts

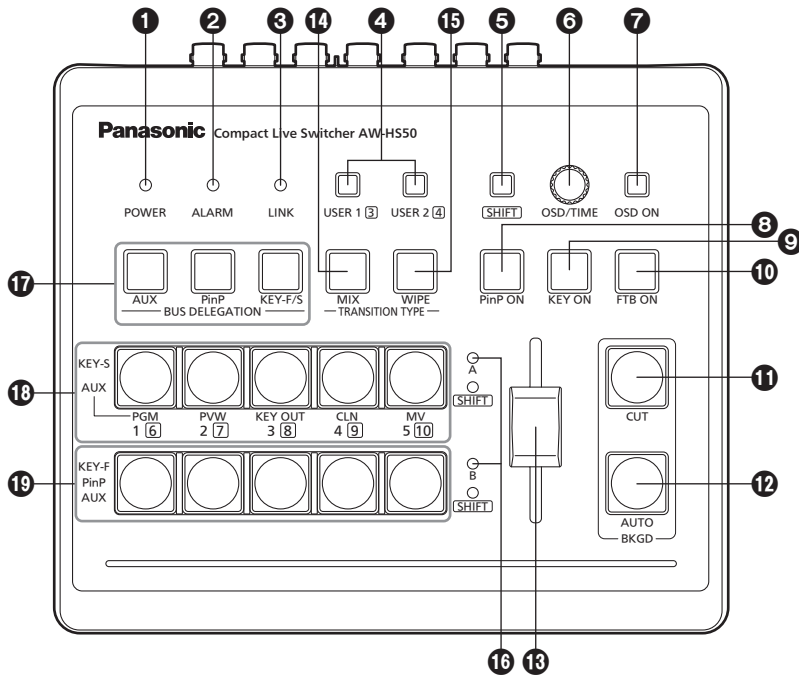
- Cooling fan:
This is a consumable part.
As a general rule, replace it every 5 years or so (when the unit has been operated for 15 hours a day).
- AC adapter:
This is a consumable part.
As a general rule, replace it every 5 years or so (when the unit has been operated for 15 hours a day).

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 absolutely sure to ask your dealer to do the job.

1. Parts and their functions

1-1. Control panel



1 POWER indicator [POWER]

This indicator lights when the POWER switch (20) on the rear panel is set to ON while power is supplied to the DC IN connector (23).

2 ALARM indicator [ALARM]

This indicator lights when the cooling fan (27) has stopped running, when there is a problem with the power supply (voltage drop) or when the temperature inside the unit has reached an abnormally high level.

When this occurs, an alarm message appears on the OSD menu while the OSD menu is displayed on an external monitor (in the OSD ON status).

The alarm information can be output to an external device from the unit's TALLY/GPI connector (26).

☞ Refer to "5-2. TALLY/GPI" (<Operations and Settings> Operating Instructions).

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

Continuing to use the unit even after an alarm has occurred could damage the unit.

3 LINK indicator [LINK]

This indicator lights when the unit is linked on a network with the AW-RP50 remote camera controller available as an option.

The link setting must be enabled at both the unit and AW-HS50.

1. Parts and their functions

④ USER buttons [USER 1, USER 2]

Any four functions selected from among the menu items can be assigned to the USER 1 button and USER 2 button, and then used.

The functions registered in [USER1] and [USER3] are assigned to the USER 1 button whereas the functions registered in [USER2] and [USER4] are assigned to the USER 2 button.

While the SHIFT button (⑤) is held down, the function registered in [USER3] or [USER4] can be selected.

Button indicator ON:

The functions assigned to the USER buttons are enabled.

Button indicator OFF:

The functions assigned to the USER buttons are disabled.

When “[2] WIPE Menu”, “[3] PinP Menu” or “[5] KEY Adjust Menu” is displayed on the OSD menu or when the chroma key marker is in the ON status, these buttons function as short-cut buttons for specific setting items.

☞ Refer to “1-8. Setting the USER buttons” (<Operations and Settings> Operating Instructions).

⑤ SHIFT button [SHIFT]

This is pressed to call the [USER3] and [USER4] functions which have been assigned to the USER 1 button and USER 2 button or to call the XPT6 to XPT10 materials which have been assigned to crosspoint buttons [1] to [5].

Button indicator ON:

The SHIFT button is enabled.

Button indicator OFF:

The SHIFT button is disabled.
(The functions executed using the SHIFT button take effect only while the button is held down.)

⑥ OSD/TIME dial [OSD/TIME]

The following operations are performed using this dial.

• When the main menu is displayed:

Turn the OSD/TIME dial to select a submenu, and press the dial to enter the selection.

• When a submenu is displayed:

Turn the OSD/TIME dial to select a setting item, and press the dial to enter the selection.

When the dial is turned while a setting is blinking, the setting changes, and when the dial is pressed, the blinking part moves to the right. When the dial is held down while a setting is blinking, the setting is restored to default value. (However, the network settings are not returned to their default values.)

• When the dial is turned while it is still held down after the PinP ON, KEY ON, FTB ON or AUTO button has been held down, the respective transition duration can be changed.

⑦ OSD ON button [OSD ON]

This selects whether the OSD menu is to be displayed or hidden.

Each time the OSD ON button is held down, the OSD menu is switched between displayed and hidden.

Button indicator ON:

The OSD menu is displayed.

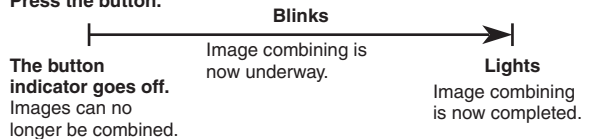
Button indicator OFF:

The OSD menu is hidden.

⑧ PinP ON button [PinP ON]

This is used to combine PinP (picture-in-picture) images for the transition duration which has been set.

Press the button.

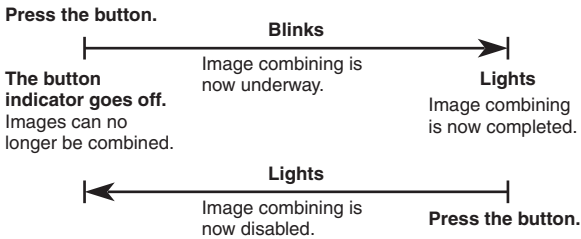


By turning the OSD/TIME dial (⑥) while keeping the PinP ON button pressed after the button has been held down, the transition duration can be changed.

1. Parts and their functions

9 KEY ON button [KEY ON]

This is used to combine key materials for the transition duration which has been set.

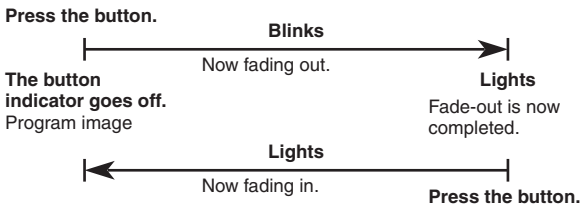


By turning the OSD/TIME dial (6) while keeping the KEY ON button pressed after the button has been held down, the transition duration can be changed.

10 FTB ON button [FTB ON]

Press this button to fade out the program image to a black screen for the transition duration which has been set.

When the button is pressed again, the program image is faded in from the black screen.



An image other than the black screen can be set as the screen to which the program image is to be faded out.

☞ Refer to “1-5. FTB (fade to black)” (<Operations and Settings> Operating Instructions).

By turning the OSD/TIME dial (6) while keeping the FTB ON button pressed after the button has been held down, the transition duration can be changed.

11 CUT button [BKGD CUT]

This instantly initiates a transition for the currently selected operation.

Button indicator ON:

The transition is being executed.

Button indicator OFF:

The transition is complete.

12 AUTO button [BKGD AUTO]

This automatically initiates the transition for the transition duration which has been set. (Auto transition)

Button indicator ON:

Auto transition is being executed.

Button indicator OFF:

Auto transition is complete.

If the AUTO button is pressed while auto transition is being executed, the auto transition operation is aborted.

When the button is pressed again after the operation was aborted, the remaining transition is executed.

When the AUTO button is pressed with the slide lever (13) at a midway setting, the transition is executed in the remaining time from the midway status.

By turning the OSD/TIME dial (6) while keeping the AUTO button pressed after the button has been held down, the transition duration can be changed.

13 Slide lever

This is used when executing transitions manually. When the slide lever is moved to the end, the transition is completed.

If it has been moved while an auto transition was being executed, operation will switch to manual as soon as the position of the slide lever has gone beyond the amount of the transition having been executed.

It is possible to select a background, key or PinP using a menu for materials involving transitions.

1. Parts and their functions

14 MIX button [MIX]

This is used to execute transitions (MIX transitions) while overlapping the images of the A bus and B bus (or images of the PGM bus and PST bus). While a transition is being executed, the total of the A bus and B bus (or PGM bus and PST bus) outputs is held at 100 %.

When the MIX button is pressed, its indicator lights to show that this function is now selected.

If the WIPE button (15) is now pressed, the function selection is released, and the indicator goes off.

Button indicator ON:

A MIX transition is being selected.

15 WIPE button [WIPE]

This is used to execute transitions using the selected wipe pattern.

When the WIPE button is pressed, its indicator lights to show that this function is now selected.

If the MIX button (14) is now pressed, the function selection is released, and the indicator goes off.

By turning the OSD/TIME dial (6) after the WIPE button has been held down and while the button is still pressed, the wipe pattern can be changed.

Button indicator ON:

Wipe selection underway

16 Bus tally indicators [A, B]

The indicator corresponding to the bus whose program (PGM) materials are being output lights.

17 BUS DELEGATION buttons

[AUX, PinP, KEY-F/S]

These are used to select the buses which output the materials selected by the crosspoint buttons (18, 19).

Any of four lighting statuses are established: the status in which the indicators of all of the three buttons are off, and the statuses in which the indicator of one of the buttons is blinked. (It is not possible for the indicators of two of the buttons to be blinked at the same time.)

- When one of the buttons is pressed while the indicators of all three buttons are off, the indicator of the pressed button blinks.
- When the button whose indicator is blinked is pressed, its indicator is turned off. When a button whose indicator is not blinked is pressed, only the indicator of the pressed button blinks.

The following operations can be undertaken in each of these statuses.

1. When the indicators of all three buttons are off:

In this status, the materials of the bus that executes background transitions are selected.

2. When the indicator of the AUX button is blinked:

In this status, the AUX bus materials are selected.

3. When the indicator of the PinP button is blinked:

In this status, the PinP bus materials are selected.

4. When the indicator of the KEY-F/S button is blinked:

In this status, the key fill bus and key source bus materials are selected.

1. Parts and their functions

18 A bus crosspoint buttons [1 to 5]

19 B bus crosspoint buttons [1 to 5]

These are used to select the materials to be output to the PGM bus, PST bus, AUX bus, PinP bus and KEY-F/S bus.

When a button is pressed and the material allocated to that button is selected, the indicator of the button lights.

Depending on the status of the BUS DELEGATION button (17) indicators, the operation performed differs as follows.

1. While the indicators of all three buttons are off:

When one of the crosspoint buttons is pressed, the materials of the buses which execute the background transitions are selected.

[B bus crosspoint buttons]

These are used to select the PST bus materials.

When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

[A bus crosspoint buttons]

These are used to select the PGM bus materials.

When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

2. When the indicator of the AUX button is blinked:

When one of the crosspoint buttons is pressed, the AUX bus material is selected.

[B bus crosspoint buttons]

When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

[A bus crosspoint buttons]

When a button from [1] to [5] is pressed, PGM, PVW, KEY OUT, CLN or MV is selected respectively.

3. While the indicator of the PinP button is blinked:

When a B crosspoint button is pressed, the PinP bus material is selected.

[B bus crosspoint buttons]

When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

4. While the indicator of the KEY-F/S button is blinked:

When one of the crosspoint buttons is pressed, the key fill bus or key source bus material is selected.

[B bus crosspoint buttons]

These are used to select the key fill bus materials. When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

[A bus crosspoint buttons]


These are used to select the key source bus materials.

When a button from [1] to [5] is pressed, the material assigned to the corresponding XPT1 to XPT5 is selected.

When a button from [1] to [5] is pressed while the SHIFT button is held down, the material assigned to the corresponding XPT6 to XPT10 is selected.

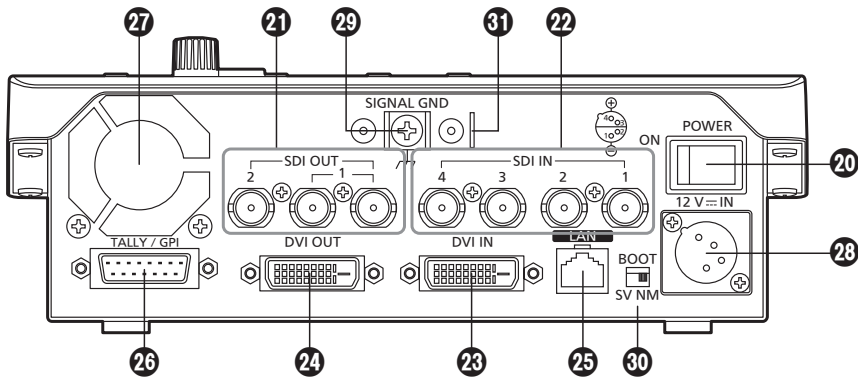
Memo

Using the OSD menu, A/B, PGM(A)/PST(B) or PGM(B)/PST(A) can be selected as the bus mode. The description given above applies when the PGM(A)/PST(B) has been selected.

 Refer to "1-1-4. Selecting the bus mode" (<Operations and Settings> Operating Instructions).

1. Parts and their functions

1-2. Rear panel



20 POWER switch [POWER]

When the POWER switch is set to the ON position, the POWER indicator (●) lights, and the unit can be operated.

21 SDI OUT connectors [SDI OUT 1, 2]

These are the HD/SD SDI signal output connectors. The following signals can be assigned to the connector by menu operations:

PGM, PVW, CLN, AUX, MV, KEYOUT

- At the SDI OUT 1 connector, the output signals are split into two and output through two connectors.
It is the same signal that is output.
- The OSD menu, multi view display frame, tally information, names of the materials and audio level meters are not displayed for the signals of the SDI OUT 1 connector.
- When the high-resolution multi view mode is enabled, it is not possible to assign MV signals.

22 SDI IN connectors [SDI IN 1 to 4]

These are the HD/SD SDI signal input connectors. The following input modes can be set by menu operations:

SDI IN 1, 2: Normal, DbyD

SDI IN 3, 4: Normal, DbyD, UC, Auto

The video process function can be used for all the SDI IN 1 to 4 input signals.

- The up-converter cannot be used for SDI IN 1 and 2.
- When signals differing from the system format have been input, they are replaced with black signals.
(However, when HD has been selected as the system format setting and DbyD or UC has been selected as the input mode setting, SD signals with the same vertical frequency can be input.)

23 DVI IN connector [DVI IN]

This is the DVI-D signal input connector.

Signals with the following resolution can be input to this connector.

Digital RGB (vertical frequency: 60 Hz):

XGA (1024 × 768), WXGA (1280 × 768),
SXGA (1280 × 1024), WSXGA+ (1680 × 1050),
UXGA (1600 × 1200), WUXGA (1920 × 1200)

Digital RGB:

1920 × 1080/50p, 1920 × 1080/59.94p

- Analog signals cannot be input to this connector.
A DVI-I cable cannot be used.

1. Parts and their functions

24 DVI OUT connector [DVI OUT]

This is the DVI-D signal output connector. Signals with the following resolution can be output from this connector by menu operations.

Digital RGB (vertical frequency: 60 Hz):
XGA (1024 × 768), WXGA (1280 × 768),
SXGA (1280 × 1024), WSXGA+ (1680 × 1050),
UXGA (1600 × 1200), WUXGA (1920 × 1200)

Digital RGB:
1920 × 1080/50p, 1920 × 1080/59.94p

Furthermore, the following signals can be assigned by menu operations.

PGM, PVW, CLN, AUX, MV, KEYOUT

The connector supports the high-resolution multi view mode so that images can be output at a high resolution when SD has been selected as the system format.

- Analog signals cannot be output from this connector.
A DVI-I cable cannot be used.
- When the high-resolution multi view mode has been enabled, MV signals are assigned to the DVI OUT connector, and they cannot be assigned to the SDI OUT 1 connector or SDI OUT 2 connector.

25 LAN connector [LAN] (RJ-45) (10BASE-T/100BASE-TX)

The remote camera, remote camera controller and host computer supporting IP connections to this LAN connector are connected using LAN cables. When a device is connected directly to the unit, use a crossover cable (category 5 or above). When a device is to be connected to the unit through a hub (switching hub), for instance, use a straight cable (category 5 or above).

26 TALLY/GPI connector [TALLY/GPI] (D-sub 15-pin, female, inch thread)

This connector features five contact input ports for controlling the unit from an external device and seven open collector output ports for outputting the tally information and alarm information from the unit.

27 Cooling fan

28 DC IN connector [12V $\overline{\text{IN}}$] (DC 12 V, 2.0 A)

The AC adapter provided with the unit is connected to this connector.

29 Ground terminal [SIGNAL GND]

Connect this to the system's ground.

30 SERVICE switch [SV/NM]

This switch is used for maintenance purposes. For normal operations, select the "NM" position.

31 Wire fastening fitting

An anti-theft wire available on the market can be fastened to this fitting to prevent theft.

2. Preparations

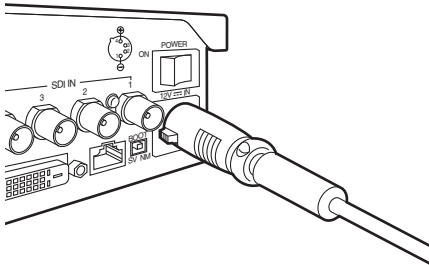
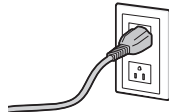
2-1. Installation precautions

● In addition to heeding the points presented in the “Safety precautions”, observe the following precautions as well.

Be absolutely sure to ask your dealer to do the jobs of installing and connecting the unit.

Connecting the power supply

- Use within AC 100 V to 120 V.
- Be absolutely sure to use only the power cable and AC adapter supplied with the unit.
- The power cable supplied with the unit has a 3-pin plug with a grounding terminal. Connect it to a 3-pole outlet which has been connected to ground.
- Be absolutely sure to connect the ground terminal (SIGNAL GND) at the rear of the unit to the system ground.
- Insert the DC plug as far as it will go until it locks into position.
- When the unit is not going to be used for a prolonged period of time, turn off its power, and disconnect the power plug from the AC outlet.



Handle carefully!

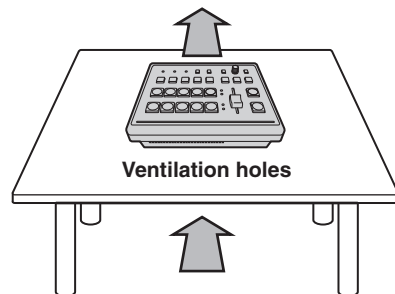
- Dropping the unit or subjecting it to strong impact or vibration may cause trouble and/or malfunctioning.

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

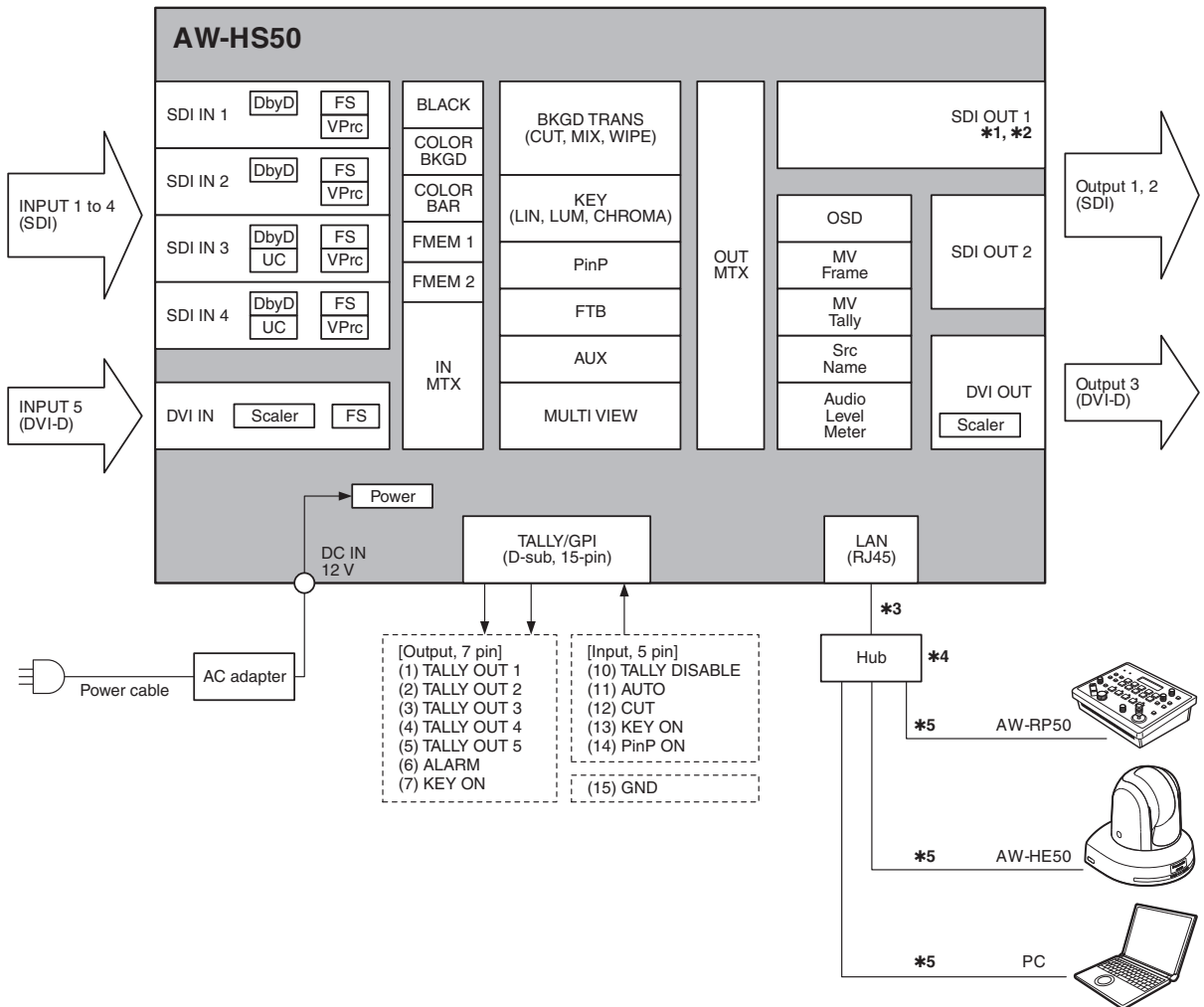
- This unit is designed for indoor use only.
- Install the unit on a sufficiently strong, stable and level surface for use.
- Ensure a space of at least 100 mm (3-15/16") around the front and rear vents to avoid obstructing ventilation. In particular, ensure sufficient space between ventilation and wiring when using mounted in a panel or table.
- Do not install the unit in a manner in which its cables and other accessories can be easily damaged.
- Do not install the unit in a cold place where the temperatures will drop below 0 °C (32 °F) or in a hot place where the temperatures will rise above +40 °C (104 °F).
- 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 give rise to trouble.



2. Preparations

2-2. Connections with other devices

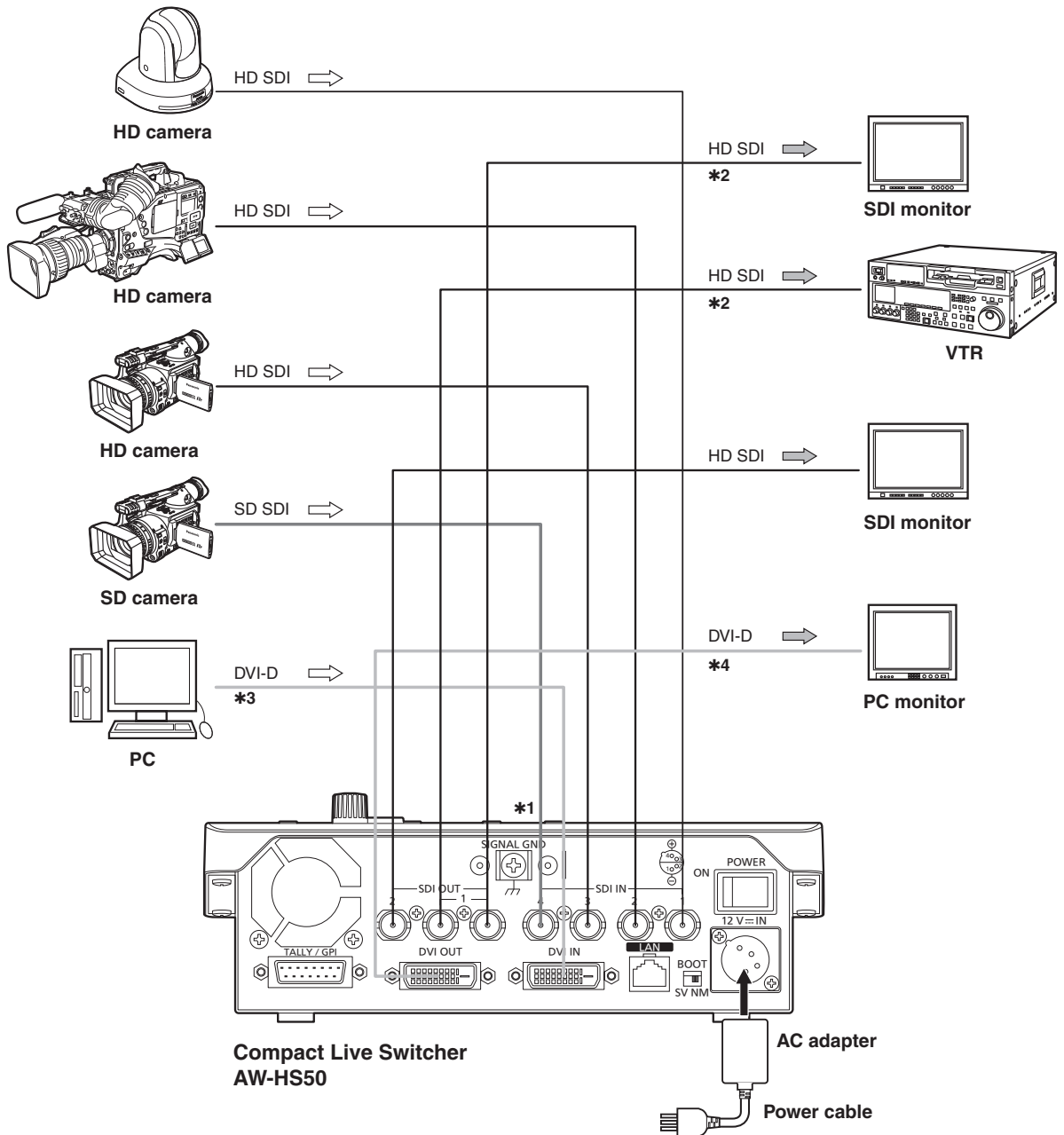
2-2-1. Block diagram



- *1:** At the SDI OUT 1 connector, the output signals are split into two and output through two connectors.
- *2:** The setting menus (OSD), multi view display frame, tally information, names of the materials and audio level meters are not displayed for the signals of the SDI OUT 1 connectors.
- *3:** Use a crossover cable when connecting the unit and another device on a 1:1 basis without going through a hub (switching hub).
- *4:** Use a switching hub.
- *5:** Communication over the internet is not possible.

2. Preparations

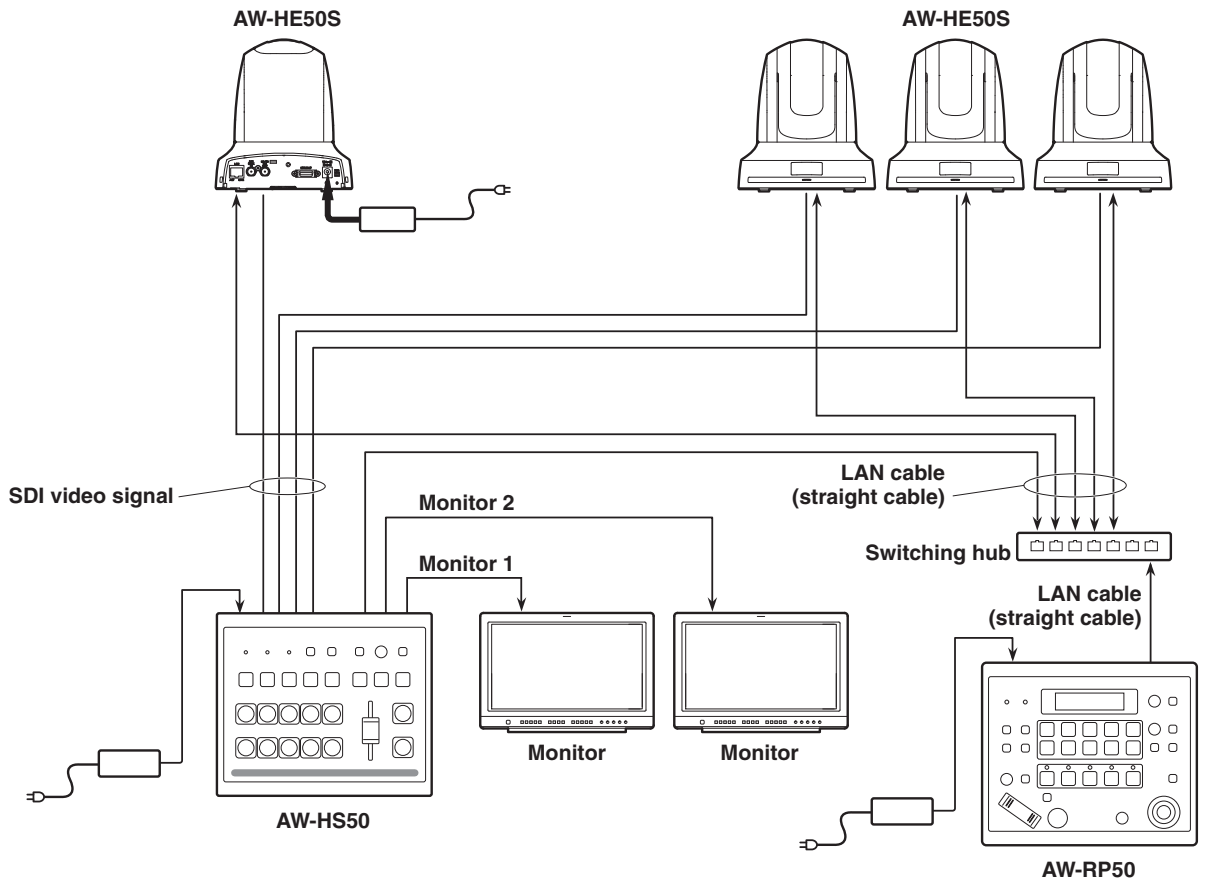
2-2-2. Example of connections



- *1:** The up-converter works only with the SDI IN 3 and SDI IN 4 inputs.
(The Dot by Dot mode works with all four SDI IN 1 to 4 inputs.)
- *2:** The two signals which are output from the SDI OUT 1 connectors are identical.
The OSD menus, multi view display frame, tally information, names of the materials and audio level meters are not displayed for the signals of these connectors.
- *3:** Analog signal input is not supported.
- *4:** Analog signal output is not supported.

2. Preparations

- Example of IP connections
(connecting the unit to the AW-HE50 and AW-RP50)



2. Preparations

2-3. Turning the unit's power on and off

■ Turning on the power

1 Set the POWER switch to the ON position.

When power is supplied to the unit, the POWER indicator lights up green.

■ Turning off the power

1 Set the POWER switch to the OFF position.

The unit's power is turned off, and the POWER indicator goes off.

2-4. Checking the video output

Described below are the steps taken to display the unit's OSD menu on an external monitor to check the unit's video output.

2-4-1. Displaying the OSD menus on a PC monitor

1 Connect the PC monitor to the unit's DVI OUT connector.

2 Turn on the power of the PC monitor.

3 Turn on the power of the unit.

4 Hold down the OSD ON button.

The OSD ON button indicator lights, and the OSD menus are displayed on the PC monitor.

If the OSD menus do not appear on the monitor, refer to "2-5-2. How to forcibly display the OSD menus".

Note

If the OSD menu fails to appear on the PC monitor even after the above steps have been taken, it may mean that the PC monitor does not support the unit's DVI output format.

Check the input specifications of the PC monitor.

2. Preparations

2-4-2. Displaying the OSD menus on an SDI monitor

- 1 Connect the SDI monitor to the unit's SDI OUT 2 connector.**
- 2 Turn on the power of the SDI monitor.**
- 3 Turn on the power of the unit.**
- 4 Hold down the OSD ON button.**

The OSD ON button indicator lights, and the OSD menus are displayed on the SDI monitor.

If the OSD menus do not appear on the monitor, refer to "2-5-2. How to forcibly display the OSD menus".

Notes

- The OSD menus cannot be output from the SDI OUT 1 connector.
- If the OSD menu fails to appear on the SDI monitor even after the above steps have been taken, it may mean that the video format which has been set in the unit is not the correct one. Take the steps in the next section to change the unit's video format.
☞ Refer to "Changing the video format".

● Changing the video format

If the OSD menus cannot be displayed even when the SDI monitor has been connected to the unit, the video format must be changed.

Follow the steps below to change the video format. If the OSD menus can be displayed using a PC monitor, change the video format by following the steps in "4-1-1. Setting the video format" (<Operations and Settings> Operating Instructions).

- 1 Turn off the power of the unit.**
- 2 Turn on the unit's power while at the same time holding down the button that corresponds to the video format supported by the SDI monitor.**

Button to press at the same time	Video format
[OSD ON] + A bus crosspoint [1]	1080/59.94i
[OSD ON] + A bus crosspoint [2]	1080/50i
[OSD ON] + A bus crosspoint [3]	720/59.94p
[OSD ON] + A bus crosspoint [4]	720/50p
[OSD ON] + A bus crosspoint [5]	1080/24PsF
[OSD ON] + B bus crosspoint [1]	1080/23.98PsF
[OSD ON] + B bus crosspoint [2]	480/59.94i
[OSD ON] + B bus crosspoint [3]	576/50i

- 3 Hold down the OSD ON button.**

The OSD ON button indicator lights, and the OSD menus are displayed on the SDI monitor.

Note

If the OSD menu fails to appear on the SDI monitor even after the above steps have been taken, it may mean that the SDI monitor does not support the unit's SDI output format.

Check the input specifications of the SDI monitor.

2. Preparations

2-5. OSD (on-screen display) menu operations

The unit's settings are selected using the OSD menus which are displayed on the external monitor. Described here is how to operate the OSD menus.

2-5-1. Displaying and clearing the OSD menus

● Basic operations

When the OSD ON button is held down, the OSD ON button indicator lights, and the OSD menus are displayed on the external monitor.

When the OSD ON button is held down while an OSD menu is displayed, the OSD ON button indicator goes off, and the OSD menu display is cleared.

Note

If parts of the OSD menus overlap the multi view display frame, the split screen frames and characters will not be displayed.

● Changing the connector for outputting the OSD menus

[13] Operation Menu	
> 1. OSD OUT	SDI-OUT2+DVI-OUT
2. OSD Size	FULL
3. OSD Back	On
4. Key Priority	PinP over KEY
5. Bus Mode	PGM (A) /PST (B)
6. Time Unit	Sec
7. Slide Lever	BKGD
8. GPI Input	Enable
9. GPI Output	Enable
10. CamCont Link	Off
11. SYSTEM Menu	Unlocked

The OSD menu output connector can be changed using the "1. OSD OUT" item on the [13] Operation Menu.

SDI-OUT2:

The menus are output from the SDI OUT 2 connector.

DVI-OUT:

The menus are output from the DVI OUT connector.

SDI-OUT2+DVI-OUT:

The menus are output from both the SDI OUT 2 connector and DVI OUT connector.

Note

The OSD menus cannot be output from the SDI OUT 1 connector.

2-5-2. How to forcibly display the OSD menus

When the OSD ON button is held down while holding down the SHIFT button, the following settings are established automatically.

- The OSD ON button indicator lights, and the OSD menus are displayed on the external monitor.
- The output destination of the OSD menus is set to both the SDI OUT 2 connector and DVI OUT connector.
- The screen size of the OSD menus output from the DVI OUT connector is set to Auto.
(The menus are output in the size that corresponds to the input specifications of the PC monitor which is connected to the unit.)

2. Preparations

2-5-3. Menu configuration and moving between menus

● Menu configuration of the unit

The unit's OSD menus are organized in two hierarchical levels: the main menu and the submenu.

Main menu:

This lists the submenu items.

Submenu:

This displays the setting items and the settings.
The settings can be changed on this screen.

● Moving between the main menu and submenus

Moving from the main menu to a submenu

To select a submenu item:

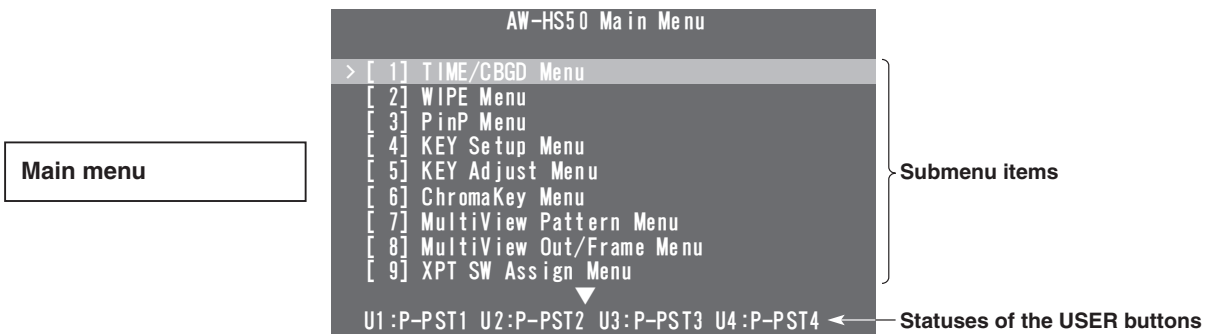
Turn the OSD/TIME dial to select an item.

Entering the setting selected for the submenu item:

Press the OSD/TIME dial to enter the selected item's setting.

Moving from a submenu to the main menu

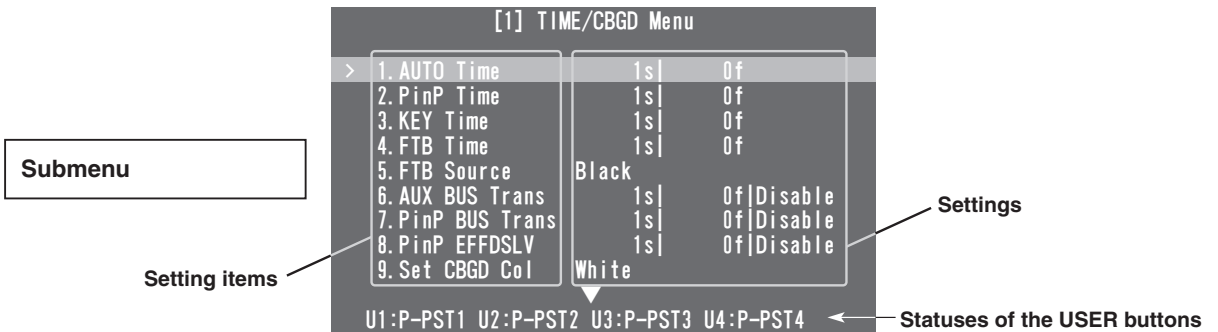
The main menu is restored to the screen when the OSD ON button is pressed.



- Turn the OSD/TIME dial, and select the submenu item.
- Press the OSD/TIME dial to enter the selected item's setting.



- Press the OSD ON button.



● USER button status display

The functions assigned to USER buttons 1 to 4 are displayed on the last line of each menu screen.

☞ Refer to "1-8. Setting the USER buttons" (<Operations and Settings> Operating Instructions).

- In this manual, the menu screens are always shown without the area where the USER button statuses are displayed except under special circumstances.

● Displaying menus consisting of more than one page

When a menu contains many setting items, they are displayed on more than one page.

When "▲" or "▼" is displayed, turn the OSD/TIME dial on the line before the arrow to scroll the screen and display the items which are hidden.

- In this manual, only one menu screen is shown even when that screen consists of more than one page.

2. Preparations

2-5-4. Operations using the submenus

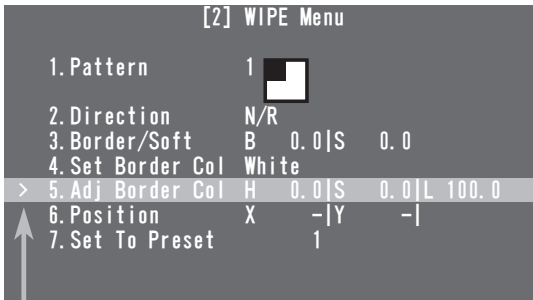
1 Select the line with the setting item.

When the OSD/TIME dial is turned, the cursor ">" at the far left moves up or down.

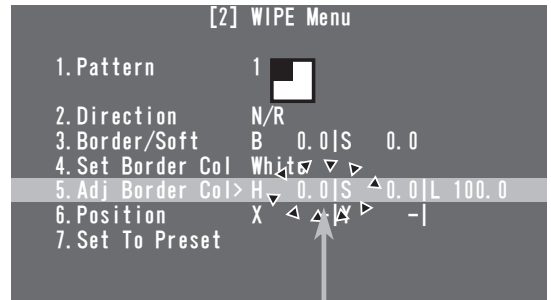
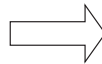
Bring the cursor to the line with the setting item whose setting is to be changed, and then press the OSD/TIME dial.

The cursor ">" now moves to the center where the setting can be changed.

The value to be set now blinks.



Turn the OSD/TIME dial, and select the item.



Press the OSD/TIME dial to enter the item.

The value to be set now blinks.

2 Change the setting.

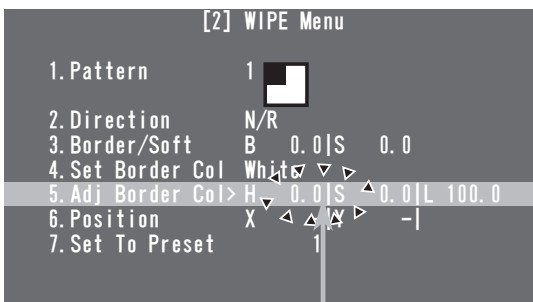
While the setting is blinking, turn the OSD/TIME dial. The setting in the blinking part now changes.

- If a value has up to two decimal places, the speed at which the setting is changed can be increased by turning the OSD/TIME dial while the SHIFT button is held down.

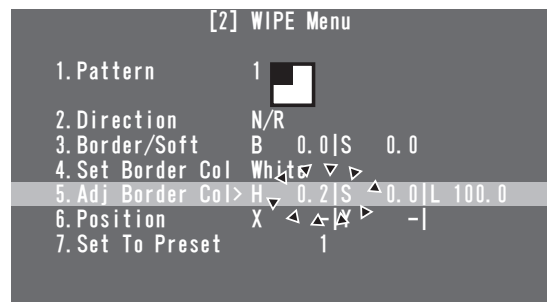
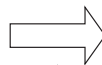
Memo

When values are changed for the regular setting items, these changes are reflected straight away but, with some of the setting items (such as Format), the changes will not be reflected unless the OSD/TIME dial is pressed once the changes have been made.

An asterisk (*) appears in front of the currently selected settings to identify these items.



This part blinks.



Turn the OSD/TIME dial to change the setting that is now blinking.

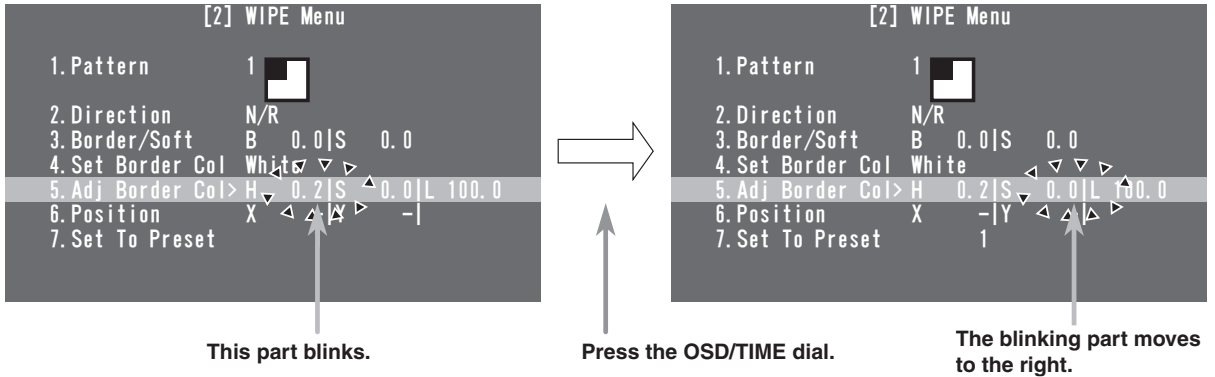
[Returning the setting to its default value]

When the OSD/TIME dial is held down now, the value is returned to its default value.

2. Preparations

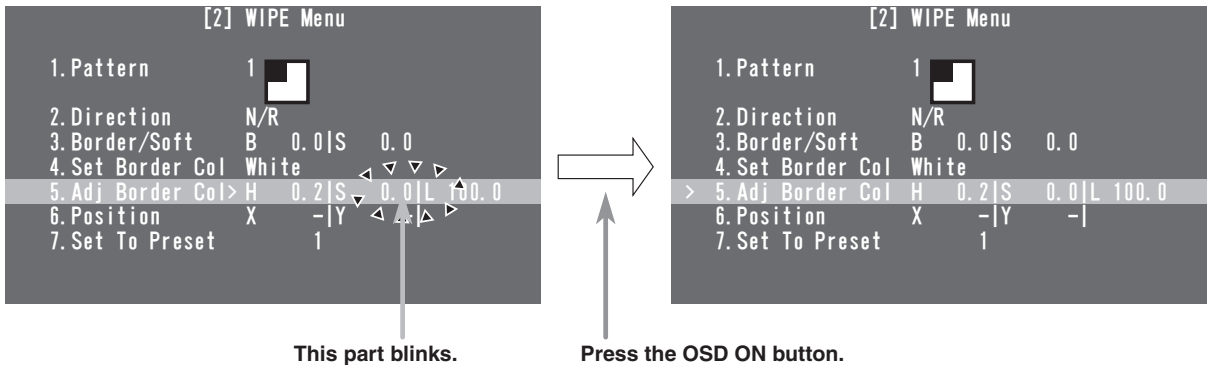
3 Move the blinking part.

When a setting item has a multiple number of settings, press the OSD/TIME dial to move the blinking part to the right.



4 Complete the changes.

When the OSD ON button is pressed while a setting is blinking, the cursor ">" moves to the far left, and the status for selecting the line with a setting item is restored.

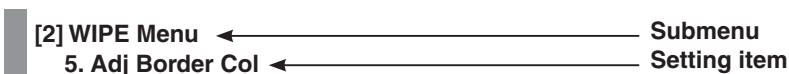


Furthermore, the ">" cursor will move to the far left, and the status for selecting the line to be set will be restored also when the OSD/TIME dial has been pressed while the blinking part is at the far right.

2-5-5. Indications used in this Operating Instructions

The operations for the setting items are indicated in this Operating Instructions as shown below.

Example: When operating the "5. Adj Border Col" item on the [2] WIPE Menu.



2. Preparations

2-5-6. Direct operations using the USER buttons and OSD/TIME dial

The functions that have been assigned to the USER buttons are displayed in the USER button status display area, and the setting items which can be operated directly using the USER buttons and OSD/TIME dial are displayed in the states listed below.

When this happens, the functions assigned to the USER buttons are disabled.

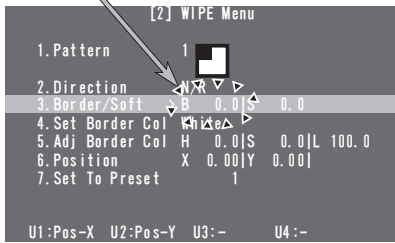
- When the chroma key marker is displayed
- When the submenu [2] WIPE Menu is displayed
- When the submenu [3] PinP Menu is displayed
- When the submenu [5] KEY Adjust Menu is displayed

When a particular USER button is pressed at this time, the status in which to change the settings shown in the status area is established, and the value concerned can be changed by turning the OSD/TIME dial. The values that have been changed are reflected instantly.

- U1: USER 1 button
- U2: USER 2 button
- U3: USER 3 button (SHIFT button + USER 1 button)
- U4: USER 4 button (SHIFT button + USER 2 button)

Example: When [2] WIPE Menu is displayed

The value of "B" for the 3. Border/Soft item has been set. The "B" value is blinking.

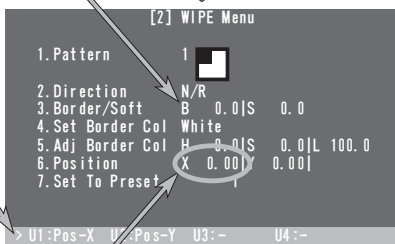


Press the USER 1 button.

The indicator of the USER 1 button lights.

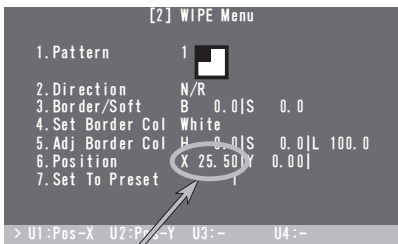
The value stops blinking.

The cursor moves to the last line that displays the USER button status.



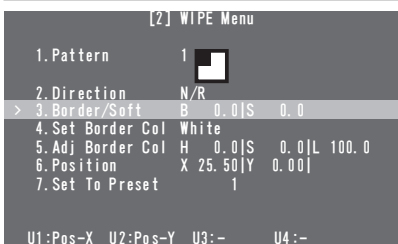
The state in which the value (Pos-X) of "X" for the 6. Position item can be changed is now established.

Turn the OSD/TIME dial to change the value.



The "X" value is changed, and it is reflected instantly.

Press the USER 1 button.



The USER 1 button indicator goes off, the direct operation is canceled, and operation returns to the 3. Border/Soft item setting.

2. Preparations

2-5-7. Menu delegation function

When the buttons listed below are double-clicked, the specified menu is selected.
(The menu delegation function)

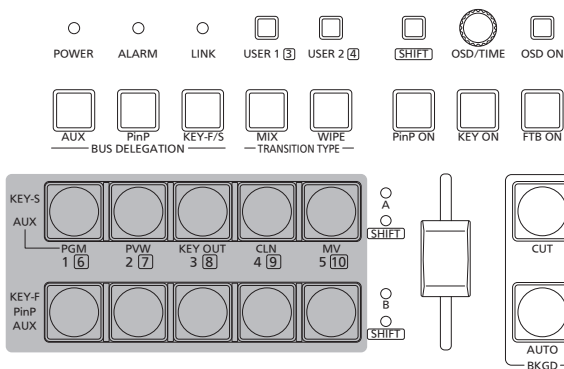
The operation corresponding to the button pressed is also executed.

<List of menu delegation functions>

Button	Menu selected
AUTO	[1] TIME/CBGD Menu
FTB ON	
KEY ON	
PinP ON	
WIPE	[2] WIPE Menu
PinP	[3] PinP Menu
KEY-F/S	<ul style="list-style-type: none"> When any key type except "Chroma" has been selected: [4] KEY Setup Menu When "Chroma" has been selected as the key type: [6] ChromaKey Menu
USER 1	[12] USER/FMEM Menu
USER 2	
USER 3 (SHIFT + USER 1)	
USER 4 (SHIFT + USER 2)	

2-5-8. Bus status displays

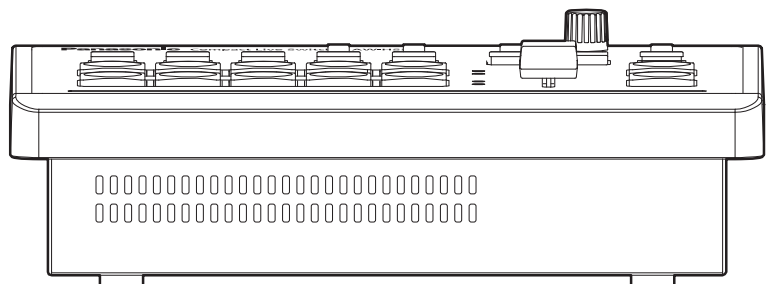
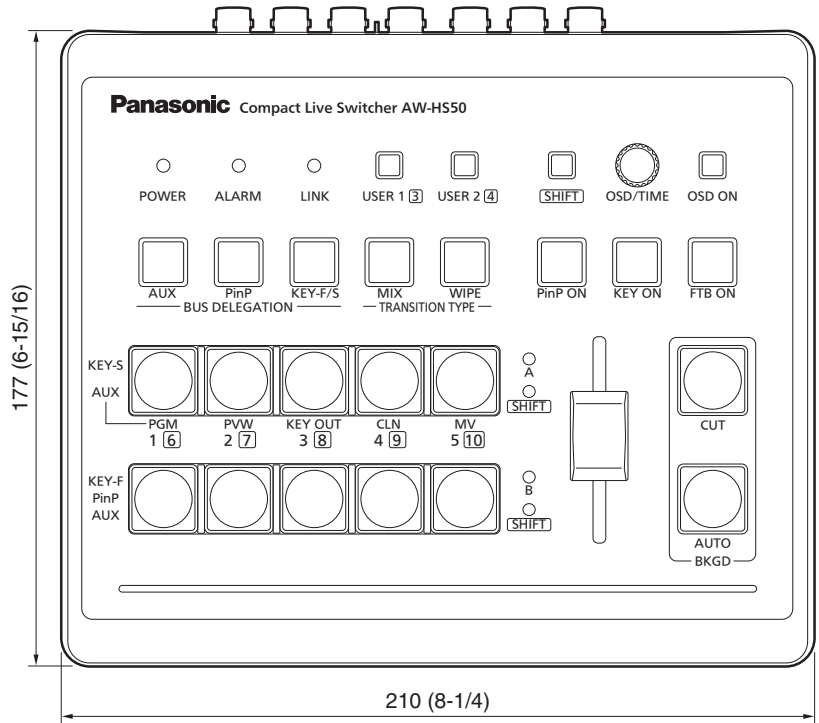
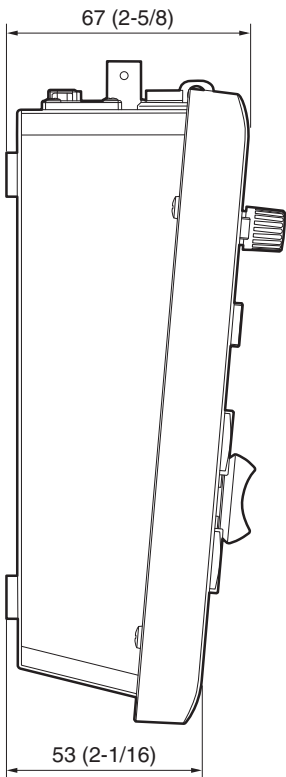
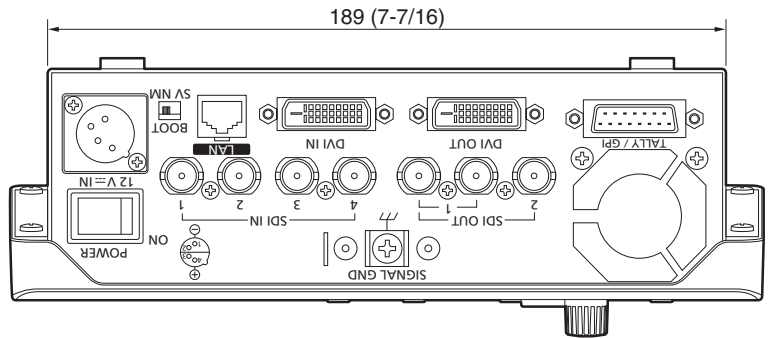
When the A bus or B bus crosspoint buttons are held down, the BUS Assign Status menu appears for the OSD menu.



BUS Assign Status	
XPT SW	1
XPT SW Assign	SDI-IN1 (INPUT1)
PGM	SDI-IN1 (INPUT1)
PWV	SDI-IN2 (INPUT2)
AUX	MV
PinP	SDI-IN1 (INPUT1)
KEY Fill	CBGD
KEY Source	FMEM1

3. Appearance

Unit: mm (inch)



4. Specifications

Inputs	5 video lines SDI 4 signal lines: SDI IN 1 to SDI IN 4 DVI-D 1 signal line: DVI IN	
Outputs	3 video lines, 4 outputs SDI 2 signal lines: SDI OUT 1, SDI OUT 2 (Only the SDI OUT 1 signals are split into two) DVI-D 1 signal line: DVI OUT	
Signal formats	SD	480/59.94i, 576/50i
	HD	1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 1080/24PsF, 1080/23.98PsF
Signal processing	Y:Cb:Cr 4:2:2, 10 bit (8 bits for frame memory) RGB 4:4:4, 8 bit	
ME number	1ME	
SDI inputs	HD: Serial digital component (SMPTE 292M) SD: Serial digital component (SMPTE 259M)	
	4 signal lines: SDI IN 1 to SDI IN 4	
	HD: SMPTE 292M (BTA S-004B) standard complied with <ul style="list-style-type: none"> • 0.8 V [p-p] $\pm 10\%$ (75 Ω) • Input return loss More than 15 dB (5 MHz to 1.5 GHz) • Automatic equalizer 100 m (328 ft.) (when 5C-FB cable is used) 	
	SD: SMPTE 259M standard complied with <ul style="list-style-type: none"> • 0.8 V [p-p] $\pm 10\%$ (75 Ω) • Input return loss More than 15 dB (5 MHz to 270 MHz) • Automatic equalizer 200 m (656 ft.) (when 5C-2V cable is used) 	
DVI-D input	Digital RGB (Vertical frequency: 60 Hz): XGA (1024 \times 768), WXGA (1280 \times 768), SXGA (1280 \times 1024), WSXGA+ (1680 \times 1050), UXGA (1600 \times 1200), WUXGA (1920 \times 1200) Digital RGB: 1080/50p, 1080/59.94p <ul style="list-style-type: none"> • Analog input signals are not supported. 	

4. Specifications

SDI outputs	<p>HD: Serial digital component (SMPTE 292M) SD: Serial digital component (SMPTE 259M)</p> <p>2 signal lines: SDI OUT 1, SDI OUT 2 (Only the SDI OUT 1 signals are split into two)</p> <p>HD: SMPTE 292M (BTA S-004B) standard complied with</p> <ul style="list-style-type: none"> • Output return loss More than 15 dB (5 MHz to 1.5 GHz) • Output level 0.8 V [p-p] ±10 % (75 Ω) • Rise time Less than 270 ps • Fall time Less than 270 ps • Difference between rise time and fall time Less than 100 ps • Alignment jitter Less than 0.2 UI (130 ps) • Timing jitter Less than 1.0 UI • Eye aperture ratio More than 90 % • DC offset 0 ±0.5 V <p>SD: SMPTE 259M standard complied with</p> <ul style="list-style-type: none"> • Output return loss More than 15 dB (5 MHz to 270 MHz) • Output level 0.8 V [p-p] ±10 % (75 Ω) • Rise time Less than 1.5 ns • Fall time Less than 1.5 ns • Difference between rise time and fall time Less than 0.5 ns • Jitter Less than 0.2 UI
DVI-D output	<p>Digital RGB (Vertical frequency: 60 Hz): XGA (1024 × 768), WXGA (1280 × 768), SXGA (1280 × 1024), WSXGA+ (1680 × 1050), UXGA (1600 × 1200), WUXGA (1920 × 1200) Digital RGB: 1080/50p, 1080/59.94p</p> <ul style="list-style-type: none"> • High-resolution multi view mode supported: Signals are also output with a high resolution even when SD has been selected as the system mode. <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>When the high-resolution multi view mode is enabled, MV is assigned to the DVI OUT connector, and MV cannot be assigned to the SDI OUT 1 connectors or SDI OUT 2 connector.</p> </div> <ul style="list-style-type: none"> • Analog output signals are not supported.
Video delay time	<p>1 frame (F)</p> <ul style="list-style-type: none"> • Video signals that have passed through the PinP, multi view display, DVI-D input or DVI-D output will be delayed in each case by up to one frame.

4. Specifications

Control I/O	LAN (RJ-45) 10BASE-T/100BASE-TX (For IP control)	Connecting cable: LAN cable (category 5 or above), max. 100 m [328 ft.], STP (Shielded Twisted Pair) cable recommended <ul style="list-style-type: none"> When connecting to a hub (switching hub), use a straight cable. Use a crossover cable when connecting the unit and another device on a 1:1 basis without going through a hub.
	TALLY/GPI (D-sub 15-pin, female, inch thread)	INPUT : 5 inputs, photocoupler sensing OUTPUT : 7 outputs, open collector output (negative logic)
Other	SERVICE switch [SV/NM] (for maintenance purposes) Normally, this switch is used as the "NM" position.	

Ambient operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10 % to 90 % (no condensation)
Power requirements	DC 12 V ±10 % (AC adapter provided)
Current consumption	2.0 A (DC 12 V)
Dimensions (W × H × D)	210 × 67 × 177 mm (8-1/4" × 2-5/8" × 6-15/16") [excluding protrusions]
Mass	1.4 kg (3.08 lbs.)

■ Supplied AC adapter

Rated input: AC 100 V to 240 V, 1.3 A, 47 Hz to 63 Hz

Rated output: DC 12 V, 3.5 A, 42 W

**The provided power cable is for 125 V AC or less.
Use it within AC 100 V to 120 V.**

- The AC adapter and power cable provided must be used without fail.

Mass and dimensions shown are approximate.
Specifications are subject to change without notice.

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