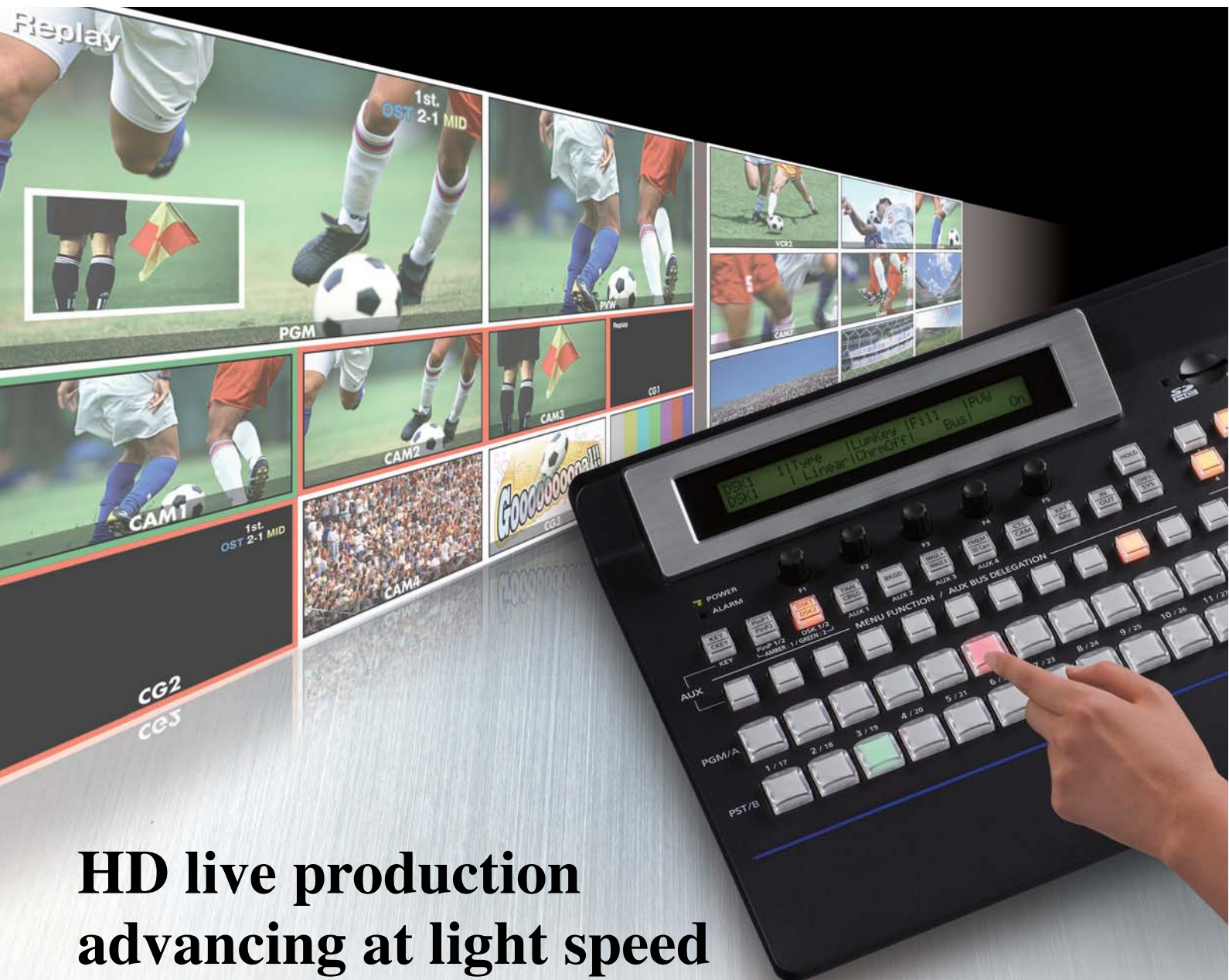


**AV-HS450**  
**AV-HS400A**  
**AV-HS300**



## HD live production advancing at light speed

### ● Multi-format Live Switchers



**AV-HS450**



**AV-HS400A**



**AV-HS300**

# Advanced broadcast quality HD technology in a A global line-up suitable for myriad applications.



**P2HD**  
Memory Card  
Camera-Recorder



HD Integrated Camera  
AW-HE100



Multi-purpose Camera  
AK-HC1800  
AK-HC1500



HD Convertible Camera  
AW-HE870

## AV-HS400A

**HD** 1080/59.94i, 50i,  
720/59.94p, 50p

**SD** 480/59.94i, 576/50i

**An all-in-one, 1ME switcher supplied with a MultiViewer, dual 3D-DVE, AUX Bus, and much more.**

The HS400A is equipped with four HD/SD-SDI inputs and three outputs, and expandable to eight-in and seven-out.

Standard equipment includes PinP (Picture in Picture), Chroma Keyer and DSK (Downstream Keyer), Frame Sync, PTZ camera control, SD Card, and Ethernet Graphics Transfer.



Ten Split MultiViewer Display



**Multi-format  
HD/SD compatibility  
for worldwide use**

Compatibility with various HD/SD formats will help you meet changing production needs as video production shifts towards HD on a global scale. You can also use optional cards to combine a variety of HD and SD signals in a flexible system, as you make a smooth transition from SD to HD.





compact form.



## AV-HS450

**HD** 1080/59.94i, 50i, 23.98PsF\*, 24PsF\*  
720/59.94p, 50p

**SD** 480/59.94i, 576/50i

\* AV-HS04M1 through M7 cards do not support 24 or 23.98PsF.

**HD switcher with 16 SDI inputs, 4 SDI outputs, 2 DVI outputs, and Dual-screen MultiViewer as standard equipment.**

Expandable to 20 inputs or 10 outputs, this powerful 2-piece switcher includes a wide range of standard functions, including dual PinP, dual DSK, dual channel 3D DVE, four AUX busses, shot and PinP memories, a powerful chroma keyer, PTZ camera control with preset memories, dual redundant power supplies and much more.



Sixteen Split

Can simultaneously display up to 20 windows on two screens.



Quad Split

## AV-HS300

**HD** 1080/59.94i, 50i,  
720/59.94p, 50p

**SD** 480/59.94i, 576/50i

**Professional HD production has never been easier. A compact switcher offering great portability.**

The HS300 is a portable, one-piece, switchable HD/SD switcher with 5 SDI inputs 1 DVI input, and basic keying functions. Powered with an optional 12 VDC power supply (e.g. AW-PS505A) the HS300 is ideal for field production.

- The switcher is not water-proof, and should only be used in a dry environment.



Offers 9 wipe patterns in 3 directions.

**Built-in  
Frame Synchronizers  
suitable for field operation**

Each input features a built-in high-performance 10-bit Frame Synchronizer. You can also smoothly switch asynchronous video signals without experiencing shock or freeze. It is also compatible with the reference (black burst) signal input, so you can synchronize with external systems.



# Versatile inputs/outputs and dual-screen Multi



• Control panel

Multi-format Live Switcher

## AV-HS450



• Mainframe

### Built-in 4 up-converters and 8 color correctors. Also comes with redundant power supply.

The compact 2RU mainframe size switcher is standardly equipped with 16 HD/SD-SDI input channels. All inputs feature a built-in Frame Synchronizer. It is also mounted with 4 up-converters and 8 color correctors. Its standard output configuration includes 4 HD/SD-SDI output channels and 2 DVI-D output channels. In addition, it features 4 Aux busses\*1, and the Aux 1 comes with a MIX transition function. In combination with mix effects, the switcher enables a flexible production workflow, and the redundant power supply ensures smooth field operation.

\*1 You can also add an SDI embedded audio input.

An extensive range of inputs and outputs will help you build a versatile system.

Excellent performance in various situations from broadcasting, entertainment, to education.



News Magazine Show



Sports Arena



Education



Halls / Theaters

### Built-in dual-monitor multi display function with up to 20 windows.

Standardly equipped with a dual-monitor multi display function. A maximum of 20 channels including program (PGM), preview (PVW), and input video signal can be simultaneously displayed on 2 screens. The exclusive feature lets you work comfortably with only two monitors, even at large-scale events.



You can split your screens into 4, 9, 10, and 16 sections.

A maximum of 20 channels may be simultaneously displayed on 2 screens.



Four Split Pictures (images)



Sixteen Split Pictures (images)



Ten Split Pictures (images)



Nine Split Pictures (images)



# Viewer for powerful, cost effective production.

## Standard configuration includes dedicated hardware for 2 DSK and 2 PinP channels.

The built-in upstream keyer includes luminance and chroma key functions. The HS450 chroma keyer employs the powerful Primatte® algorithm, previously only available for use with high-end non-linear editing systems. Widely used in motion picture and TV production, incorporation of Primatte's algorithm into the HS450 now provides easy to adjust, high-precision compositing technology for live production. In addition, the switcher comes equipped with dedicated hardware for 2 DSK and 2 independent channels of picture-in-picture.

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

## ■ Embedded with high-grade chroma key technology

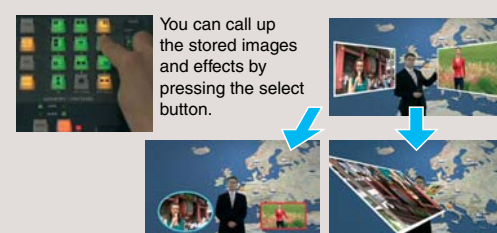
By matching transparent materials such as silk and glass to the background color, the superb spill removal function produces natural, realistic results. Reproduces details of elaborate content such as hair with great precision.



## Enhanced shot memory and PinP memory for streamlined operation.

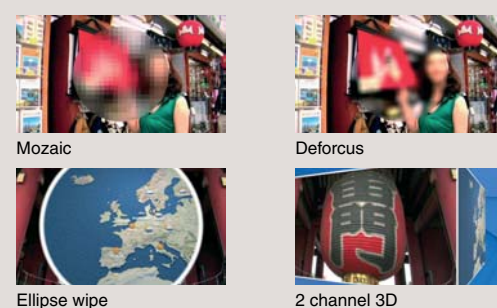
You can store up to 10 memorized image states for background transition pattern, PinP size, position and border width. The switcher is also equipped with an effect dissolve function\*2. These enhanced memory functions enable a smoother and more intuitive production workflow.

\*2 You can smoothly switch from the current image to the image or operation store in the SHOT memory.



## A wide range of 2D and 3D effects enhance creative expression.

In addition to standard wipe, mix, and cut transitions, powerful 2D and 3D DVE effects such as squeeze, slide, rotation, and page turn are now available. Dual channel DVE effects are also available for dramatic key effects and other creative transitions. Useful new effects include variable mosaic and selectable defocus.



## Superior PTZ camera system control with preset recall and save functions.

The HS450 offers advanced control of Panasonic pan-tilt camera systems\*3, including the AW-HE100 HD integrated PTZ camera. You can control one camera via direct serial connection, or up to 5 in conjunction with system controllers\*4. Up to 10 preset positions may be stored or recalled for each camera.

\*3 Compatible models: AW-PH400/AW-PH405/AW-PH360.

\*4 Compatible models: AW-RP655/AW-RP555.

Control camera and pan-tilt systems right from the switcher to easily capture perfectly framed video.



# A compact, high-performance, global standard



## Multi-format Live Switcher **AV-HS400A**

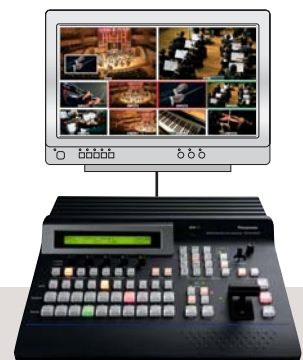
### A compact switcher equipped with every function needed for great video production.

The control panel, switching circuitry, connection panel, and MultiViewer are integrated into a single compact unit, providing great portability and ease of use. The HS400A comes equipped with all the features required for high-level video production, and a simple, streamlined control panel layout makes creative switching a breeze.



### The Built-in MultiViewer Can Reduce System Cost, Save Space, and Streamline Production Workflow.

Reduce the number of monitors and build an environmentally conscious system by dividing the screen to display numerous sources on a single monitor. You can edit the label of source windows, turn the labels on or off, adjust label brightness, and turn off the label background bar. You can also adjust the frame line brightness, or turn the frame lines off for use as a multi-image program display.



#### ■ Selectable Split-screen Quantity and Location

- The window layout can be selected: 4, 8, or 10.
- Split-screen labels may customized or selected from menus.
- Red/Green Program/Preview tally indicators may be displayed\*1.
- When splitting screens into 10/8 sections, the upper 2 windows may be selected from PGM/PVW/AUX BUS/KEYOUT images.



Ten Split Pictures (images)



Eight Split Pictures (images)



Four Split Pictures (images)

\*1 The tally output connector is not compatible to green tally output.

# model compatible with multi-view display.

**Basic HD/SD configuration includes 4 SDI inputs and 3 assignable SDI output channels\*2.**

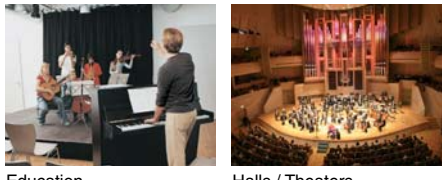
**Using optional I/O boards, the HS400A can be expanded to a maximum of 8 input and 7 output channels.**

The HS400A may be easily expanded to suit a wide range of applications through the use of optional input and output boards. Tally connections for up to 8 cameras are included as standard equipment, as is an RS-422 control port compatible with the basic GVG protocol.

- Optional input and output boards include:  
Inputs : AV-HS04M1: Dual HD/SD-SDI with Up-conversion  
          AV-HS04M2: Dual HD/SD Analog Component with Up-conversion  
          AV-HS04M3: Dual Scalable DVI  
          AV-HS04M6: Dual SD Analog Composite with Up-conversion  
Outputs: AV-HS04M4: Dual HD Analog Component  
          AV-HS04M5: Scalable DVI and HD Analog Component  
          AV-HS04M7: Dual HD/SD-SDI with Down-conversion

\*2 Two interfaces assignable as PGM,PVW, AUX, multi-screen, and keyout.

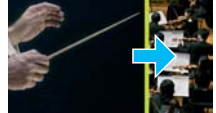
The wide range of input and output configurations are ideal for many applications.



**Comes with a great diversity of effects to expand your creative expression.**

In addition to standard wipe patterns, you can employ slide, size-reduction, and a variety of 3D effects. 3D transitions can also be applied independently to the upstream key function, for dramatic graphic and titling effects to luminance and chroma keys. PinP and DSK functions are also included as standard equipment.

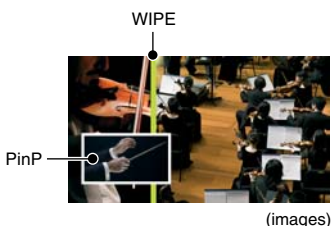
WIPE (images: pattern4)



3D (images: pattern1)



■ Example of a compound effect

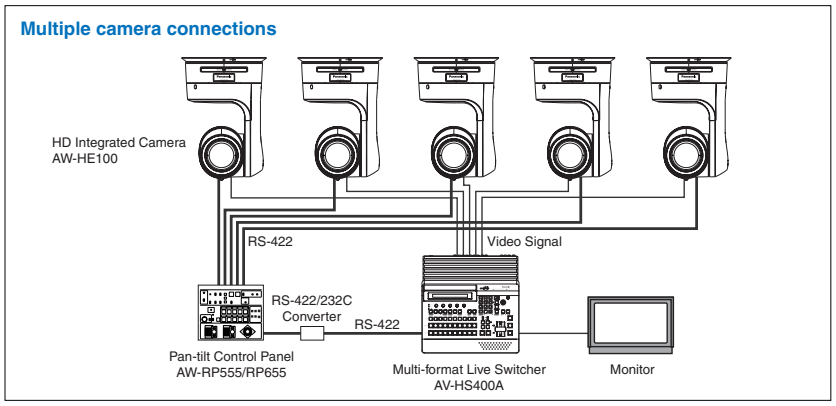
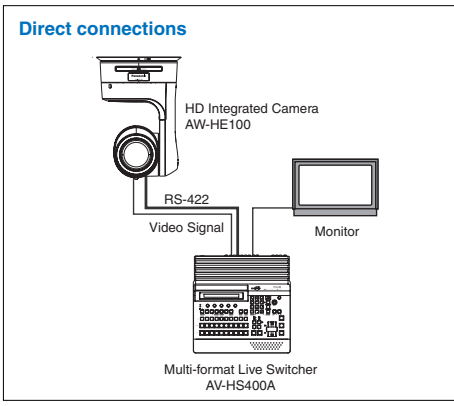


**Remotely control the AW-HE100 and other Panasonic pan-tilt systems\*3.**

Directly connecting the AW-HE100 3CCD integrated pan/tilt/zoom camera or a Panasonic camera/pan-tilt system\*3 allows control over pan, tilt, zoom, and focus using the HS400A's positioner.

Moreover, by also connecting a Panasonic control panel\*4 you can switch between and operate up to 5 cameras and pan-tilt heads\*3.

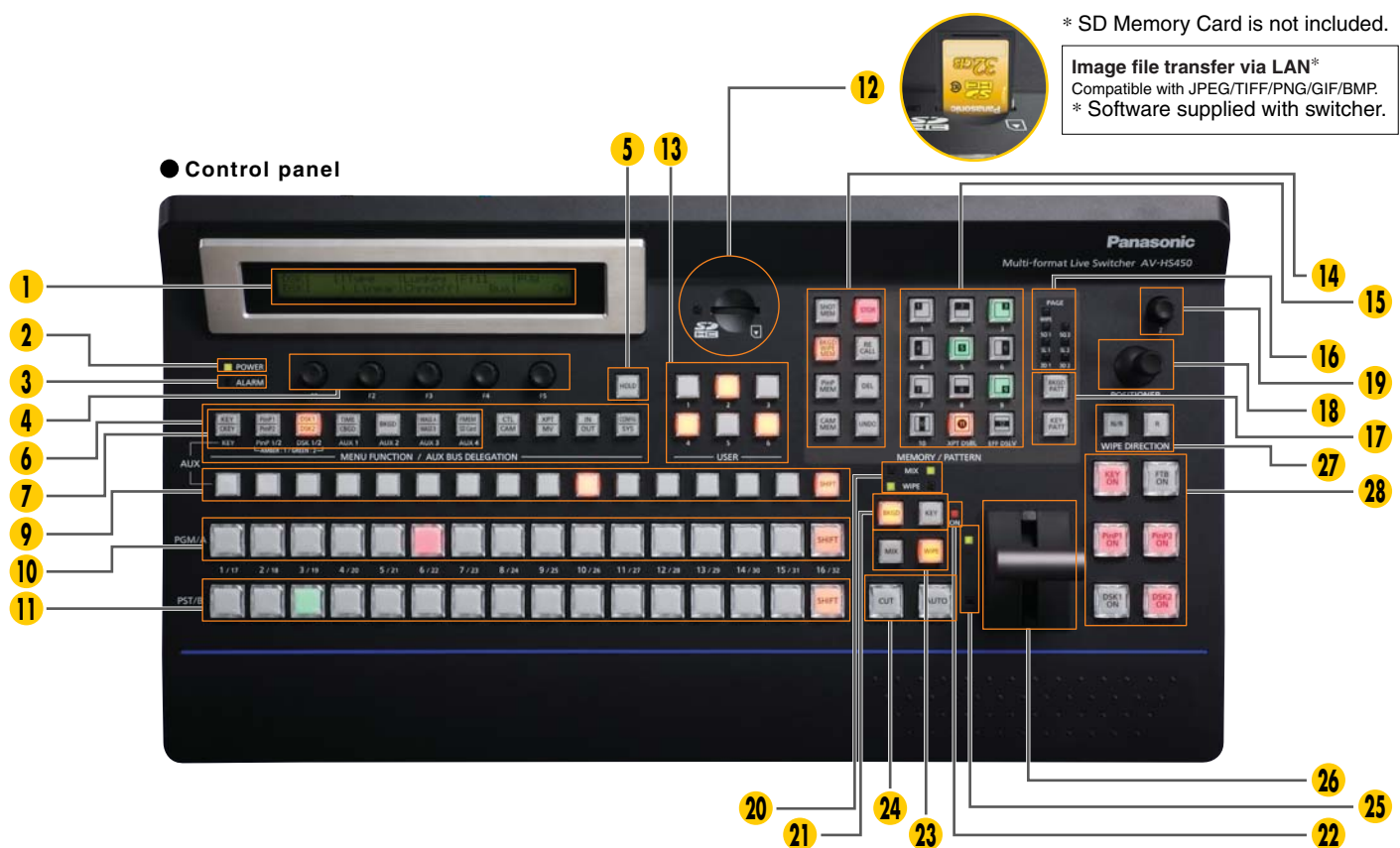
\*3 Compatible models: AW-PH400/AW-PH405/AW-PH360. \*4 Compatible models: AW-RP655/AW-RP555.



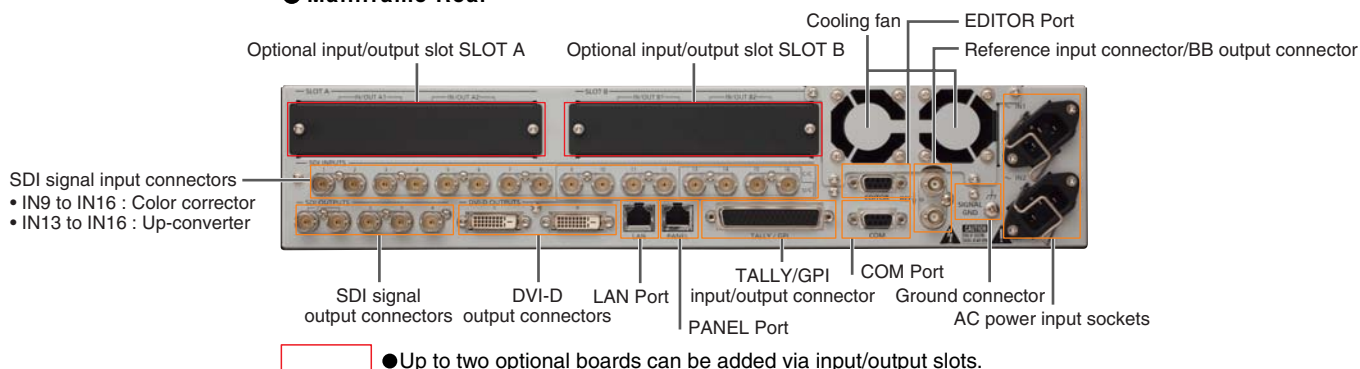
● You can upgrade the existing AV-HS400. Please contact Panasonic for more information.



# AV-HS450 Controls and functions



## ● Mainframe Rear



### 1 LCD

Displays settings menus.

### 2 Power indicator

### 3 Alarm indicator

### 4 Rotary encoders [F1] to [F5]

Sets parameters displayed in the menu.

### 5 [HOLD] button (only applies to AV-HS450)

Prohibits switching to Menu and AUX bus select buttons.

### 6 Menu function buttons

For direct selection of many menu functions.

### 7 AUX bus selector buttons

Switches AUX Bus Crosspoint button application between KEY, DSK and PinP buses.

### 8 AUX bus dedicated crosspoint buttons (only applies to AV-HS400A)

Selects CLN, PVW and PGM material that is selectable with the AUX bus only.

### 9 AUX bus crosspoint buttons

Select the source of the bus switched with the KEY/AUX Bus Cross-point row.

### 10 PGM/A bus crosspoint buttons

Select the PGM/A-Bus video signal.

### 11 PST/B bus crosspoint buttons

Select the PST/B-Bus video signal.

### 12 SD memory card slot

Still images (JPEG, BMP) recorded on an SD Memory Card can be used as background or key images. SD Memory Cards can also be used to store frame memory images and settings data.

- The AV-HS450 is compatible with SD/SDHC Memory Cards.

- The AV-HS400A is compatible with SD Memory Cards.

- SDHC/SD logos are registered trademarks.

### 13 User buttons

You can assign various menu functions to these button for one-touch access.

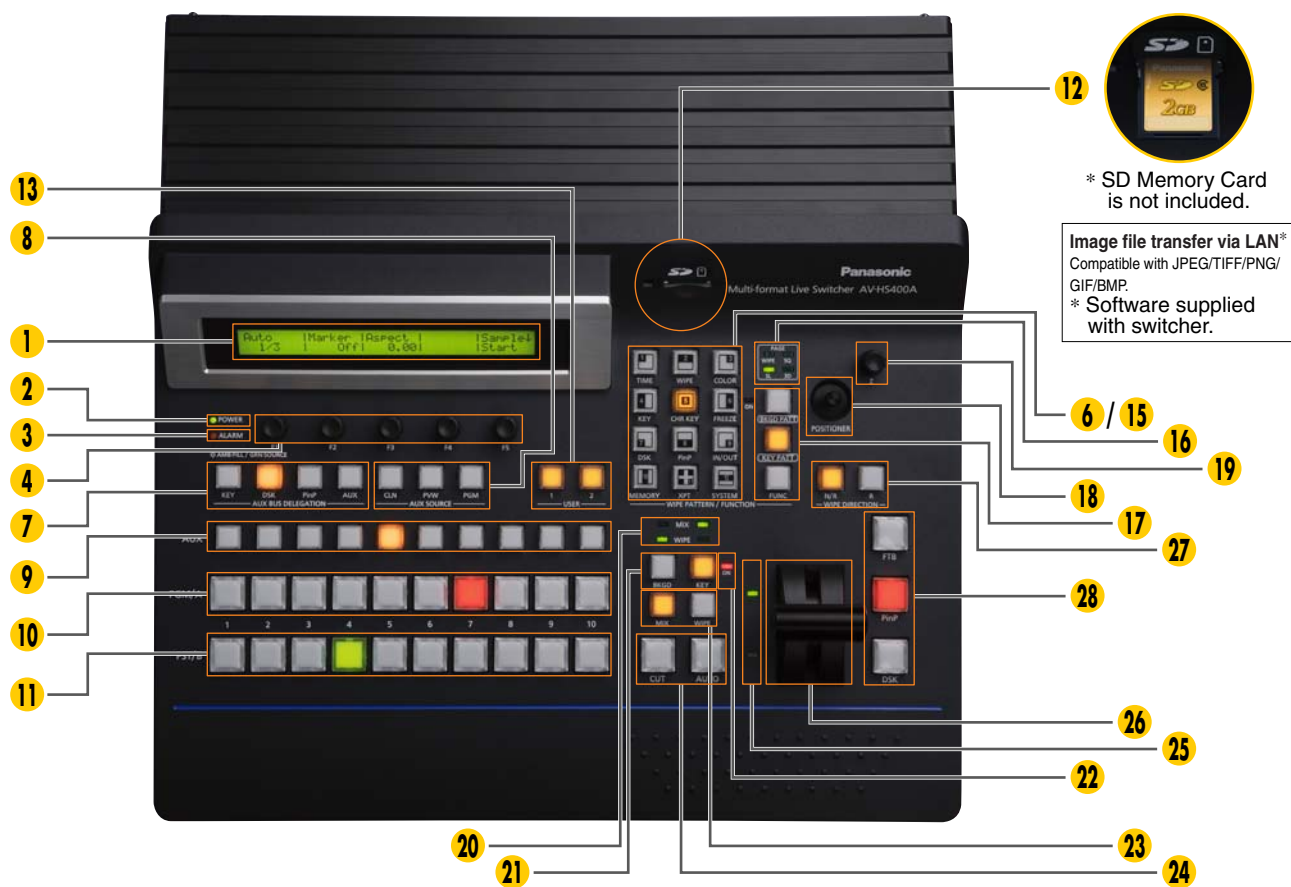
### 14 Memory operation buttons (only applies to AV-HS450)

### 15 Wipe pattern selector buttons

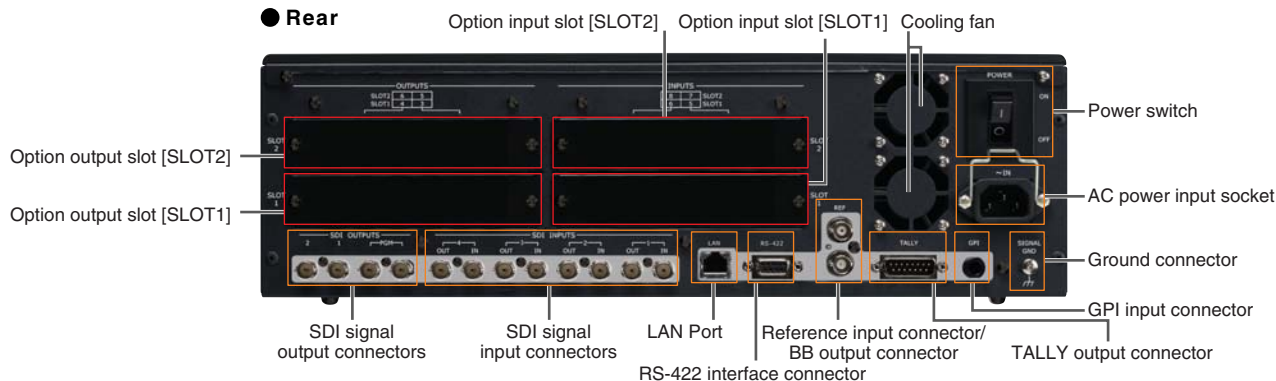
- With the AV-HS450, data can be stored in the memories of buttons 1 to 10 or recalled from these memories while one of the memory operation buttons.



# AV-HS400A Controls and functions



## ● Rear



● You can add up to two optional input cards and two optional output cards via the dedicated slots.

### 16 Pattern page indicator LEDs

Indicates the status of the pattern page selection such as "WIPE (wipe) / SQ1 (squeeze 1) / SL1 (slide 1) / 3D1 (3 dimension 1) / SQ2 (squeeze 2) / SL2 (slide 2) / 3D2 (3 dimension 2)" for AV-HS450 and "WIPE (wipe) / SQ (squeeze) / SL (slide) / 3D (3 dimension)" for AV-HS400A.

### 17 BKGD,KEY pattern selector buttons

Selects from background wipe, KEY wipe or FUNCTION (only applies for AV-HS400A) for WIPE PATTERN/FUNCTION Selection buttons.

### 18 Positioner [X/Y]

In conjunction with the positioner (X, Y), used to set PinP and wipe location, chroma key range and other parameters.

### 20 MIX, WIPE selection status tally LEDs

Indicates background and KEY transition type selection status.

### 21 Next transition selection buttons

Select transition image from background and key.

### 22 KEY ON tally LED

### 23 Transition type selection buttons

Selects the transition type option, selected with, Next Transition selection buttons for background and KEY.

- MIX - Switches A-/B-bus images while overlapping.
- WIPE - Performs transition using the pattern selected with the Wipe Pattern Selection button.

### 24 Transition execution buttons

- AUTO - Executes automatic transition of a selected duration.
- CUT - Executes instant transition.

### 25 Bus tally LEDs

Indicates A-, B-Bus output status.

### 26 Fader lever

### 27 Wipe direction selection buttons

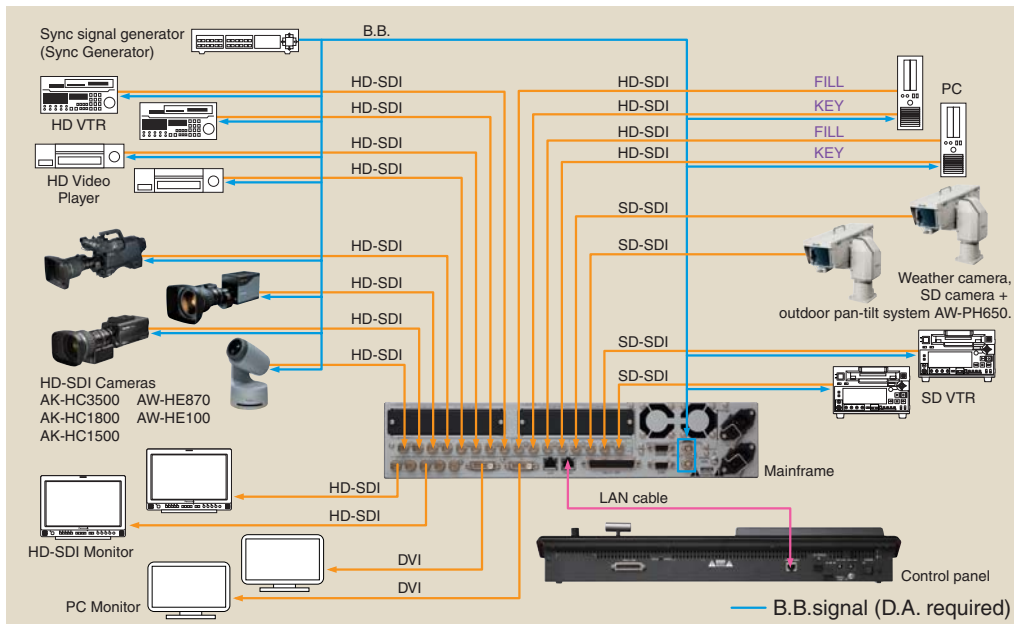
### 28 Transition execution buttons

Switches FTB (Fade-to-Black), PinP and DSK ON/OFF. With the AV-HS400A, you can disable or change the FTB to KEY ON/OFF.

# AV-HS450

- Ideal for use at broadcast stations, production companies, as well as in mid-sized studios and production vans.

**This example employs HD/SD-SDI cards for all cameras and uses an external sync generator for Genlock reference.**



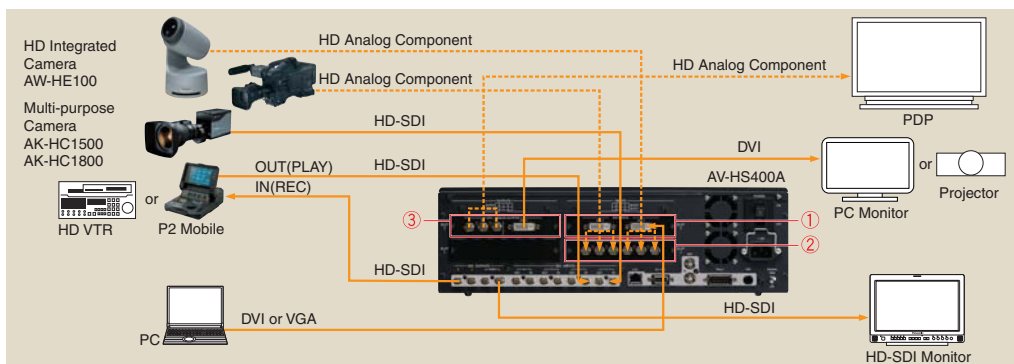
# AV-HS400A

- **Ideal for use with smaller systems at cable stations, schools, and for mobile flypacks.**

**This example employs HD Analog and other option cards, and does not require Genlock.**

= Option Boards

- ① DVI INPUTS (AV-HS04M3)
- ② ANALOG INPUTS (AV-HS04M2)
- ③ DVI/ANALOG OUTPUTS (AV-HS04M5)

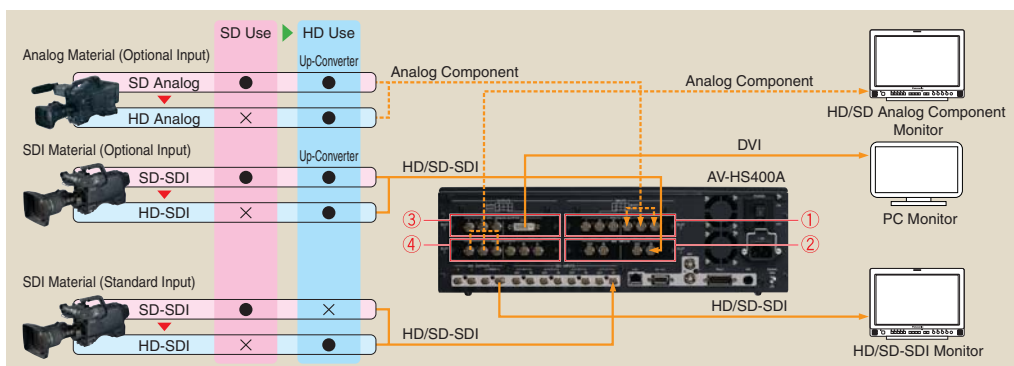


- Provides the flexibility required for facilities moving from SD to HD production.

- 1. A combined HD/SD-SDI and HD/SD analog component environment without Genlock.**

= Option Boards

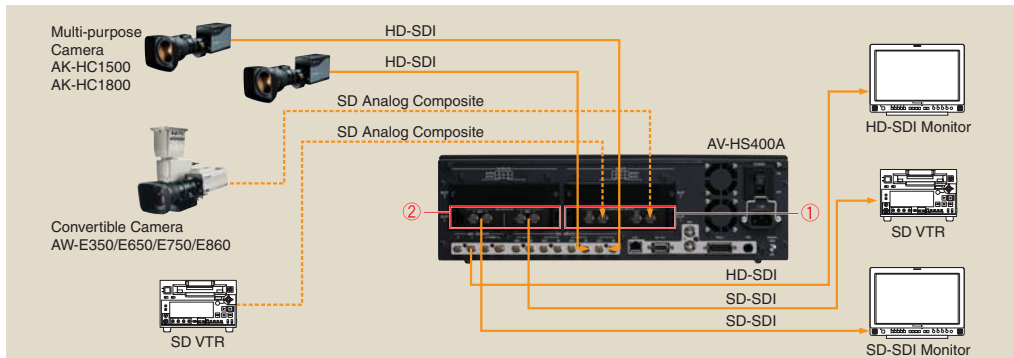
- ① ANALOG INPUTS(AV-HS04M2)
- ② SDI INPUTS(AV-HS04M1)
- ③ DVI/ANALOG OUTPUTS(AV-HS04M5)
- ④ ANALOG OUTPUTS(AV-HS04M4)



- 2. A combined HD/SD-SDI and analog composite environment without Genlock.**

  = Option Boards



- ① ANALOG COMPOSITE INPUTS (AV-HS04M6)
- ② SDI OUTPUTS (AV-HS04M7)





# AV-HS450 / AV-HS400A Option Boards

## Input/output formats compatible with the AV-HS450/HS400A

																						
			AV-HS450										AV-HS400A									
			Standard	Standard	Standard	M1	M2	M3	M4	M5	M6	M7	M8	Standard	Standard	M1	M2	M3	M4	M5	M6	M7
			SDI x16	SDI x4	DVI-D x2	SDI x2	COMP x2	DVI-I x2	COMP x2	DVI-I/COMP	COMPSIT x2	SDI x2	DVI-D x2	SDI x4	SD x3	SDI x2	COMP x2	DVI-I x2	COMP x2	DVI-I/COMP	COMPSIT x2	SDI x2
			IN	OUT	OUT	IN	IN	IN	OUT	OUT	IN	OUT	IN	OUT	IN	IN	IN	OUT	OUT	IN	OUT	
Analog composite	NTSC										✓									✓		
	PAL										✓									✓		
Analog component	480/59.94i					✓			✓	✓						✓		✓	✓			
	576/50i					✓			✓	✓						✓		✓	✓			
	1080/59.94i					✓			✓	✓						✓		✓	✓			
	1080/50i					✓			✓	✓						✓		✓	✓			
	720/59.94p					✓			✓	✓						✓		✓	✓			
	720/50p					✓			✓	✓					✓		✓	✓				
SDI	480/59.94i	✓	✓		✓						✓		✓	✓	✓						✓	
	576/50i	✓	✓		✓						✓		✓	✓	✓						✓	
	1080/59.94i	✓	✓		✓						✓		✓	✓	✓						✓	
	1080/50i	✓	✓		✓						✓		✓	✓	✓						✓	
	720/59.94p	✓	✓		✓						✓		✓	✓	✓						✓	
	720/50p	✓	✓		✓						✓		✓	✓	✓						✓	
	1080/24PsF	✓	✓																			
	1080/23.98PsF	✓	✓																			
DVI analog	XGA (1024 x 768) 60Hz						✓		✓								✓		✓			
	WXGA (1280 x 768) 60Hz						✓		✓								✓		✓			
	SXGA (1280 x 1024) 60Hz						✓		✓								✓		✓			
DVI digital (PC)	XGA (1024 x 768) 60Hz			✓			✓		✓			✓					✓		✓			
	WXGA (1280 x 768) 60Hz			✓			✓		✓			✓					✓		✓			
	SXGA (1280 x 1024) 60Hz			✓			✓		✓			✓				✓		✓				
	UXGA (1600 x 1200) 60Hz			✓					✓			✓						✓		✓		
	WSXGA+ (1680 x 1050) 60Hz			✓					✓			✓						✓		✓		
	WUXGA (1920 x 1200) 60Hz			✓					✓			✓						✓				
DVI digital (VIDEO)	1080/59.94p			✓							✓											
	1080/50p			✓							✓											

✓ Compatible

● As of September 2009.

## Option Boards You can expand inputs/outputs to match your requirements.

- You can add up to 2 boards to the input/output option board slots of the AV-HS450, and up to 2 input and 2 output boards to the option board slots of the AV-HS400A. These option boards cannot be added to the AV-HS300.

### INPUTS



SDI Input Board  
**AV-HS04M1**  
INPUTS : HD/SD-SDI x2 (BNC)(Built-in Up-converter)



Analog Component Input Board  
**AV-HS04M2**  
INPUTS : HD/SD Analog Component x2(Y/Pb/Pr)  
(Built-in Up-converter)



DVI Input Board  
**AV-HS04M3**  
INPUTS : DVI-I x2 (Built-in Scaler)



Analog Composite Input Board  
**AV-HS04M6** \*1  
INPUTS : Analog Composite x2 (Built-in Up-converter)



Full HD DVI input board (for AV-HS450 only)  
**AV-HS04M8** \*2  
INPUTS : DVI-D x2 (compatible with WUXGA)

### OUTPUTS



Analog Output Board  
**AV-HS04M4**  
OUTPUTS : HD/SD Analog Component x2 (Y/Pb/Pr)



DVI/Analog Output Board  
**AV-HS04M5**  
OUTPUTS : DVI-I x1, Analog Component x1 (Y/Pb/Pr)



SDI Output Board  
**AV-HS04M7** \*1  
OUTPUTS : HD/SD-SDI x2 (Each one has 2 outputs)(BNC)  
(Built-in Down-converter)

\*1 AV-HS04M6/HS04M7 are for the AV-HS450/HS400A. To use with the AV-HS400, system software must be upgraded. Please contact Panasonic for more information. \*2 The AV-HS04M8 is only compatible with the AV-HS450.(As of September 2009.)

# Makes HD production easier and more accessible than ever!

## High-tech, compact body offers high cost performance.



### Multi-format Live Switcher **AV-HS300**

#### Easily portable, light, compact body. Optimal live operation with a 12 VDC external power supply.

This highly portable switcher is ideal for a wide range of applications. All inputs include a 10-bit Frame Synchronizer for smooth transitions with either synchronous or asynchronous sources. Using the appropriate optional 12 VDC power supply, the HS300 may be used for indoor or outdoor live production.

- The switcher is not waterproof. Avoid exposure to rain or excess moisture.



Compact, all-in-one design offers flexibility and convenience.

#### A compact body with 6 input channels/ 3 output channels. Equipped with serial, tally, and network interfaces.

Standard setup includes 6 input channels (5 SDI inputs, 1 DVI-I input) and 3 SDI output channels (PGM, PVW, AUX). The switcher is compatible with the optional HD analog component with 5 input channels. Also embedded with six channel tally outputs and an RS-422 interface, the switcher offers a wide range of live switching systems. There is also a built-in network interface, so you can easily import background images from a PC. The switcher is great for classrooms, and small-scale productions.

#### Optimal for live events, classrooms, and small scale productions.



Education



Halls /  
Theaters



Studio Use



Field production

#### Offers numerous effect and key functions. You can now easily add switch effects and titles.

There are 9 wipe patterns and a variety of border and soft effects. The key synthesizer is compatible with self and linear keying, as well as key invert. You can add borders to titles and specify border colors for more versatile titling.



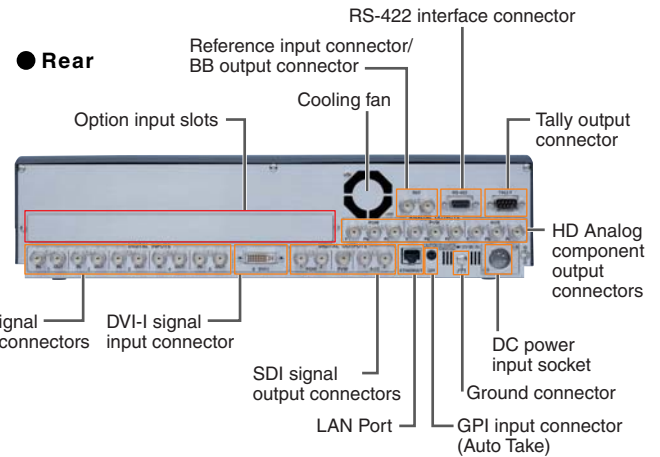
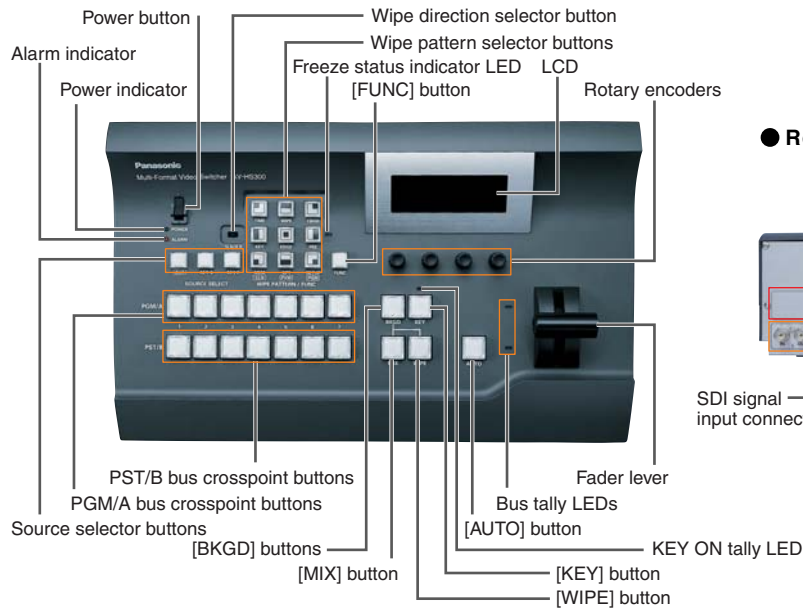
Simple operation lets you quickly take advantage of a selection of wipe patterns and directions, an ideal feature for live situations where speed is required. You can also cut and mix.

#### Wipe Convenience with 9 Patterns in 3 Directions





## AV-HS300 Controls and their Functions



## AV-HS300 Option Board / AC adaptor

HD ANALOG INPUTS  
**AV-HSB300**  
INPUTS: HD Analog Component x 5 (Y/Pb/Pr)



Optional Adaptor is required for A.C. Operation  
AC adaptor

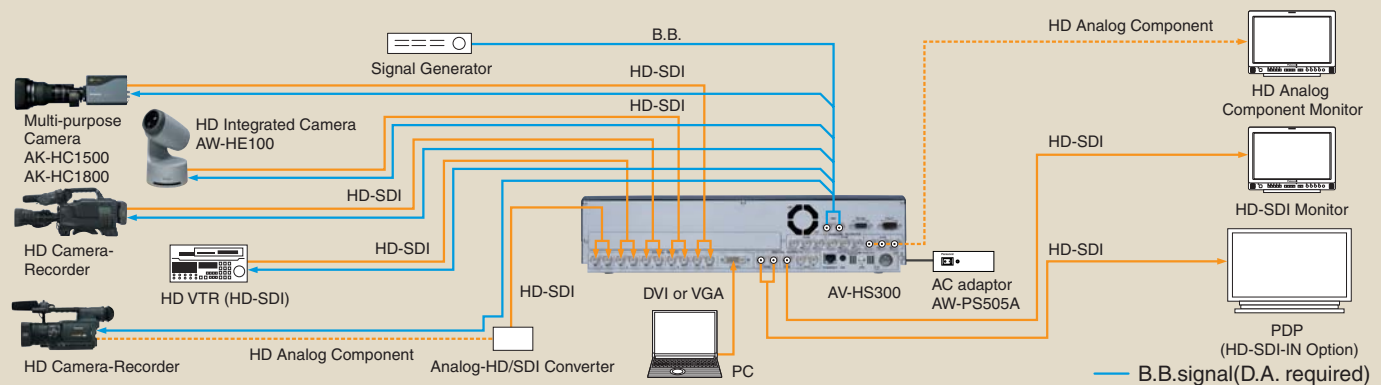
### AW-PS505A

Power supply: AC120 V/AC220 V to 240 V\*  
Power consumption: Approx. 76 W  
Dimensions (width x height x depth): 132 mm x 51 mm x 275 mm  
Weight: Approx. 1.6 kg  
Accessories: DC cable with 4-pin Canon connector (for AW-RP400, etc.): Approx. 2 m,  
DC cable with ø 5.5 plug (for AW-RC400, etc.): Approx. 3 m, DC cable with  
ø 6.5 plug (for convertible cameras): Approx. 3 m \* The value vary depending on the region.

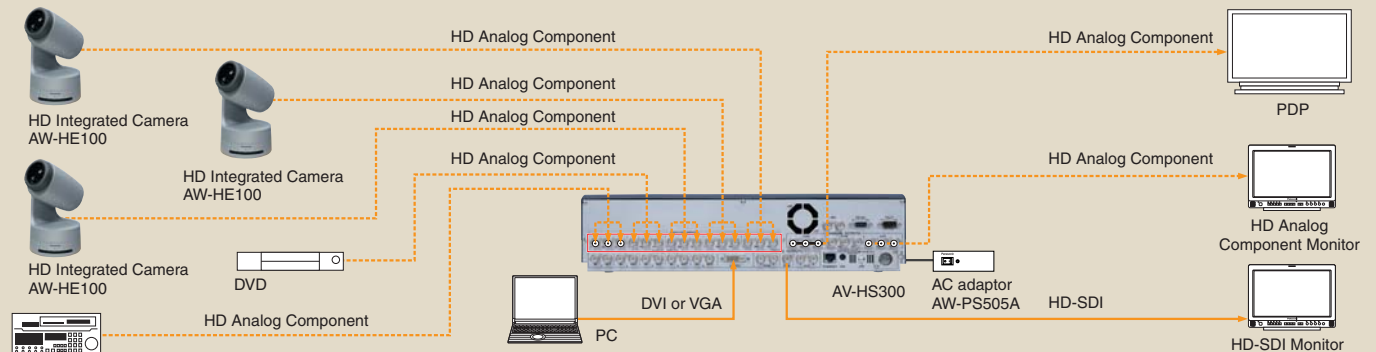


## AV-HS300 System Examples

**Solid support for full-scale program production at CATV and other broadcast stations.** - HD-SDI camera environment (with Gen-Lock)



**Easy operation also assured for school education and other systems.** - HD camera environment (no Gen-Lock): Using the HD Analog component option

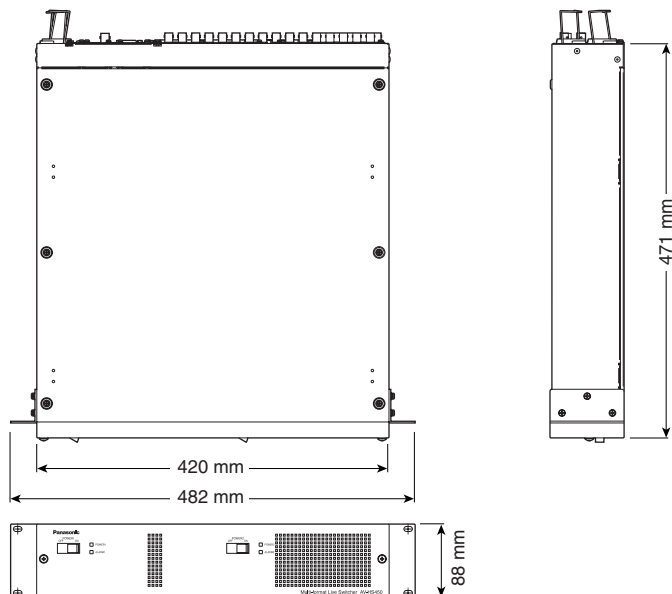


Option Board HD ANALOG INPUTS BOARD: AV-HSB300 \*The HD Analog component input is optional.

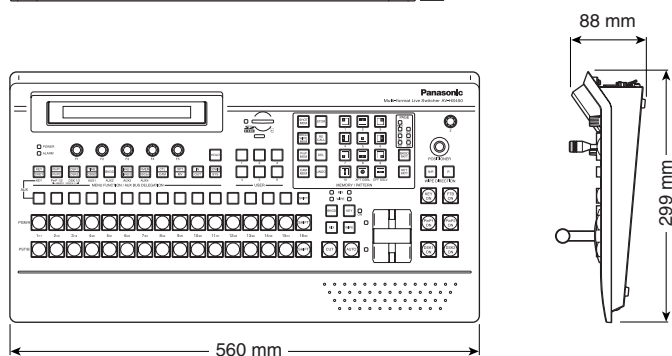
# Dimensions

## AV-HS450

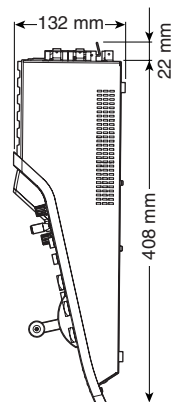
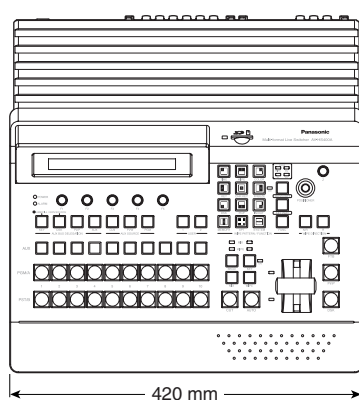
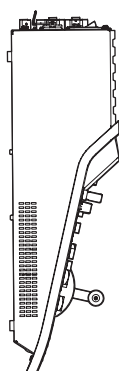
· Mainframe



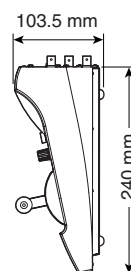
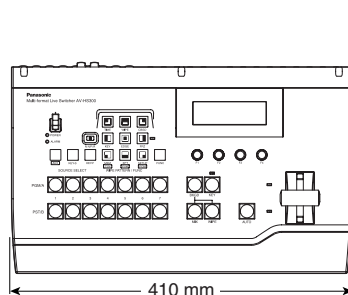
· Control panel



## AV-HS400A



## AV-HS300





# Specifications

## • Mainframe

		AV-HS450 (Part number: AV-HS450U1)	AV-HS400A	AV-HS300
Video format		HD (1080/59.94i, 1080/50i, 1080/23.98PsF*1, 1080/24PsF*1, 720/59.94p, 720/50p) SD (480/59.94i, 576/50i)	HD (1080/59.94i, 1080/50i, 720/59.94p, 720/50p) SD (480/59.94i, 576/50i)	HD (1080/59.94i, 1080/50i, 720/59.94p, 720/50p) SD (480/59.94i, 576/50i),
Video processing		Y:Cb:Cr, 4:2:2 10 bit (8 bit for FMEM) RGB, 4:4:4 8 bit	Y:Cb:Cr, 4:2:2 10 bit RGB, 4:4:4 8 bit	Y:Cb:Cr, 4:2:2 10 bit RGB, 4:4:4 8 bit
M/E		1 M/E	1 M/E	1 M/E
Video Input		A maximum of 20 inputs Standard: 16 SDI inputs (IN 1 to 16) Optional: Maximum of 4 inputs (IN A1, A2, B1, B2) (Up to 2 optional boards may be inserted into the 2 input/output optional slots)	A maximum of 8 inputs Standard: 4 SDI inputs (IN 1 to 4) Optional: Maximum of 4 inputs (IN 5 to 8) (Up to 2 optional boards may be inserted into the 2 input optional slots)	Maximum 6 inputs Standard: 5 SDI inputs (IN 1 to 5) 1 DVI-I input (IN 6) Optional: 5 HD analog component inputs (IN 1 to 5)
Reference input		Black burst or tri sync signal input (with loop through) x 1*2 ①,②	Black burst or tri sync signal input (with loop through) x 1*2 ①	Black burst or tri sync signal input (with loop through) x 1*2 ①
Video output		A maximum of 10 outputs Standard: 4 SDI outputs (OUT 1 to 4 each, 2 output distribution for OUT 1) Option: Maximum of 4 outputs (OUT A1, A2, B1, B2) (Up to 2 optional boards may be inserted into the 2 input/output optional slots) Standard: 2 DVI-D outputs (OUT 5, OUT 6)*3 XGA (1024 x 768), WXGA (1280 x 768), SXGA (1280 x 1024), WSXGA+ (1680 x 1050), UXGA (1600 x 1200), WUXGA (1920 x 1200) Vertical frequency: 60 Hz 1080/50p, 1080/59.94p	Maximum 7 outputs Standard: 3 SDI outputs (OUT 1 to 2 each, PGM x 2) Optional: Maximum 4 outputs (OUT 3 to 6 each) (Up to 2 optional boards may be added to the 2 optional output slots)	3 outputs 3 SDI outputs (PGM, PVW, AUX) 3 HD analog component outputs (PGM, PVW, AUX)
Reference output		Gen-lock mode: Loop through x 1 Internal sync: black burst signal x 2	Gen-lock mode: Loop through x 1 Internal sync: black burst signal x 2	Gen-lock mode: Loop through x 1 Internal sync: black burst signal x 2
BKGD	Wipe/DVE pattern	Wipe x 12, Squeeze x 11, Slide x 8, 3D x 12, 2ch squeeze x 4, 2ch slide x 4, 2ch 3D x 4	Wipe x 12, Squeeze x 11, Slide x 8, 3D DVE x 12	Wipe x 9
	Transition type	Cut, Mix, Wipe (including DVE)	Cut, Mix, Wipe (including DVE)	Cut, Mix, Wipe
	Image	Image effect: PGM/A, PST/B BUS Effect: Mosaic, Defocus, Mono color, Paint	-	-
KEYER	Number of keys	1	1	1
	Key type	Linear key, Luminance key, Chroma key, Full key	Linear key, Luminance key, Chroma key, Full key	Self key, Linear key
	Transition type	Cut, Mix, Wipe (including DVE)	Cut, Mix, Wipe (including DVE)	Mix
	Wipe/DVE pattern	Wipe x 12, Squeeze x 11, Slide x 9, 3D x 12	Wipe x 12, Squeeze x 11, Slide x 9, 3D x 12	-
DSK	Number of keys	2	1	-
	Key type	Linear key, Luminance key	Linear key, Luminance key	-
	Transition type	Mix	Mix	-
PinP	Number of PinP	2	1	-
	Transition type	Mix	Mix	-
AUX BUS		AUX Bus 1-4 *4 *5	AUX Bus 1 *5	AUX Bus 1
Input function	Frame Synchronizer	IN 1 to 16 *6	IN 1 to 4 *7	IN 1 to 6 (IN 6 is always-on) *8
	Freeze	IN 1 to 16 *6	IN 1 to 4 *7	IN 1 to 6 *8
	Up-converter	IN 13 to 16 *6	With optional input board *7	-
	Color collector	IN 9 to 16	-	-
Output function	Multi Viewer	2 systems Labels, Tally indication, Split-screen (the screen may be split into 4, 9, 10 and 16 sections) *9	1 system Labels, Tally indication, Split-screen (the screen may be split into 4, 8 and 10 sections)	-
	Other function	OSD (PVW and several MULTI outputs), phase adjustment, chroma key sample marker, down converter (SDI output board only)	OSD (PVW and several MULTI outputs), phase adjustment, chroma key sample marker, down converter (SDI output board only)	Phase adjustment
Frame memory		4 channels	2 channels	1 channel
Memory function		Shot memory, BKGD/Wipe memory, PinP memory, Camera memory *10	Preset memory	Preset memory
Interface	PANEL	RJ45, 100 Mbps x 1 (to connect to the control panel)	-	-
	EDITOR	D-sub 9 pin x 1, RS-422 (GVG protocol compatible)	D-sub 9 pin x 1, RS-422 (GVG protocol compatible), pan-tilt system control	D-sub 9 pin x 1, RS-422
	COM	D-sub 9 pin x 1, pan-tilt system control	-	-
	TALLY/GPI	D-sub 50 pin x 1 (8 IN and 31 OUT may be set)	D-sub 15 pin x 1, open collector output ø 3.5 Stereo mini jack x 1 (2 Ports)	D-sub 9 pin x 1: 6 ch, open collector output ø 3.5 Stereo plug x 1 (auto take)
	LAN	RJ45, 100 Mbps / 10 Mbps x 1	RJ45, 10 Mbps x 1	RJ45 x 1, 100 Mbps / 10 Mbps x 1
Removable media	SD memory card	-	Capacity: Maximum 2 GB (SD Memory Card compatible) Still image file: Loading/saving, setup data: backup	-
Power supply/Power consumption		AC 220 V to 240 V, 50 Hz/60 Hz 120 W	AC 220 V to 240 V, 50 Hz/60 Hz 98 W	DC 12 V / 45 W
Operating temperature		0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C
Operating humidity		10 % to 90 % (no condensation)	10 % to 90 % (no condensation)	10 % to 90 % (no condensation)
Dimensions (W x H x D)		(2RU) 482 mm x 88 mm x 471 mm (excluding protrusions)	420 mm x 132 mm x 408 mm (excluding protrusions)	410 mm x 103.5 mm x 240 mm (Exclusive of protrusion)
Weight		Approx. 9.8 kg (without options/excluding accessories)	Approx. 6.4 kg (without options/excluding accessories)	Approx. 2.9 kg (without options/excluding accessories)
		Approx. 10.3 kg (with full options/excluding accessories)	Approx. 7.2 kg (with full options/excluding accessories)	Approx. 3.2 kg (with full options/excluding accessories)

## • Control panel

		AV-HS450 (Part number: AV-HS450C1)
Interface	Mainframe	RJ45, 100 Mbps x 1 (to connect to the mainframe)
	TALLY/GPI	D-sub 25 pin x 1 (8 IN and 8 OUT may be set)
Removable media	SD memory card	Capacity: Maximum 32 GB (SDHC Memory Card compatible) Still image file: Loading/saving, setup data: backup
Operating temperature		0 °C to +40 °C
Operating humidity		10 % to 90 % (no condensation)
Power supply/Power consumption		DC 12 V 0.8 A (accessory AC adapter)
		Power consumption with AC adapter: AC 14 W
		Accessory AC adapter: DC 12 V, 2.5 A, 30 W (rated output) Accessory power cord: AC 250 V (maximum rating)
Dimensions (W x H x D)		560 mm x 88 mm x 299 mm (excluding protrusions)
Weight		Approx. 3.9 kg (excluding accessories)

\*1 1080/23.98PsF and 24PsF are not compatible with optional boards AV-HS04 M1, M2, M3, M4, M5, M6 and M7.

\*2 ① Compatible with the same field frequencies of the system format.

② 1080/23.98PsF format is compatible with black burst (SMPTE318M-compliant) with 10F-ID, or tri-level sync signal.

\*3 Analog output not supported.

\*4 AUX BUS1 is compatible with MIX transition.

\*5 May be routed through the SDI embedded audio input.

\*6 Specifications for IN A1, A2, B1, and B2 depend on the specs of the mounted optional equipment.

\*7 Specifications for IN 5 to IN 8 depend on the specs of the mounted optional equipment.

\*8 Option [HD analog component]: IN 1 to 5 may also be used.

\*9 Maximum 20 channels may be simultaneously displayed on 2 screens.

\*10 May store and recall up to 10 presets (per camera) with current Panasonic pan-tilt systems.

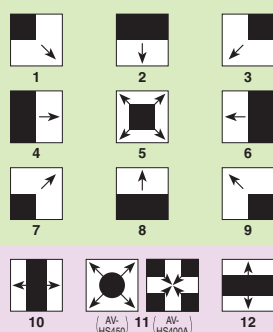
# Wipe patterns

AV-HS450

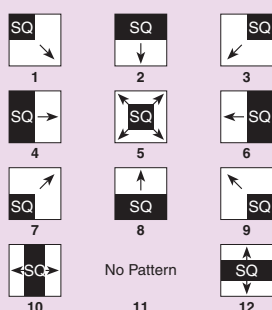
AV-HS400A

AV-HS300

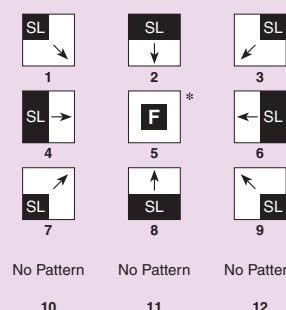
## WIPE



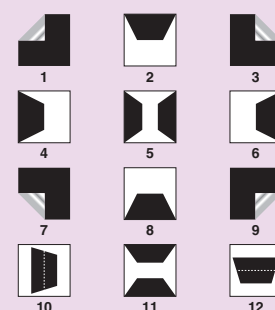
## SQ (Squeeze)



## SL (Slide)

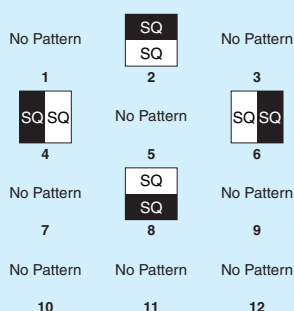


## 3D (3 Dimension)

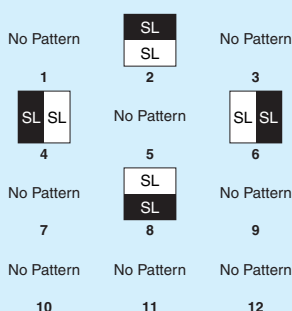


\* Key transition only.

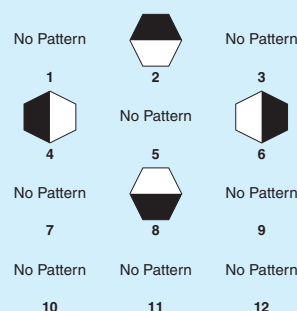
## SQ2 (Squeeze2)



## SL2 (Slide2)



## 3D2 (3 Dimension2)



● Specifications and functions are subject to change without notice.

● The image on the screen is a composite image. ● Composite images, photographs, and illustrations are included for reference use only.

**Panasonic**

<http://panasonic.net/pss/broad/>

### [Countries and Regions]

Argentina +54 1 308 1610  
Australia +61 2 9986 7400  
Austria +49 (0)611 235 401  
Bahrain +973 252292  
Belgium +32 (0)2 481 04 57  
Bulgaria +359 2 946 0786  
Brazil +55 11 3889 4035  
Canada +1 905 624 5010  
China +86 10 6515 8828  
(Hong Kong) +852 2313 0888  
Czech Republic +420 236 032 552/511  
Denmark +45 43 20 08 57  
Egypt +20 2 3938151  
Finland, Latvia, Lithuania, Estonia +358 (9)521 52 53  
France +33 (0)1 49 46 43 59  
Germany +49 (0)611 235 401  
Greece +30 210 96 92 300  
Hungary +36 (1)382 60 60  
Indonesia +62 21 385 9449  
Iran +98 212 2271463  
Italy +39 02 67 88 449  
Jordan +962 585 9801  
Kazakhstan +7 3272 980 891  
Korea +82 2 2106 6666

Kuwait +965 481 2123  
Lebanon +961 1 216827  
Malaysia +60 3 5549 5422  
Mexico +52 5 488 1000  
Montenegro, Serbia +41 (0)26 466 25 20  
Netherlands +31 73 64 02 577  
New Zealand +64 9 272 0100  
Norway +47 67 91 78 00  
Pakistan +92 5370320 21  
Panama +507 229 2955  
Peru +51 145 29470  
Philippines +63 2 633 6162  
Poland +48 (22)338 1100  
Portugal +351 21 425 77 04  
Puerto Rico +1 787 750 4300  
Romania +40 21 211 4855  
Russia & CIS +7 495 980 42 06  
Saudi Arabia +966 1 465 0709  
Singapore +65 6270 0110  
Slovak Republic +421 (0)2 52 92 14 23  
Slovenia, Croatia, Bosnia, Macedonia +44 (0)20 76 63 36 57  
South Africa +27 11 313 1400  
Spain +34 (93) 425 93 00

Sweden +46 (8) 680 26 41  
Switzerland +41 (0)41 259 96 32  
Taiwan +886 2 2227 6100  
Thailand +66 2 731 8888  
Turkey +90 216 578 3700  
U.A.E. +971 4 282201  
Ukraine +380 44 4903437  
+380 44 4903438  
[ext. 112]  
U.K. +44 (0) 1344 70 69 20  
U.S.A. +1 201 348 5300  
+1 800 528 8601  
Vietnam +84 38370280