Panasonic
CONNECT

AV-UHS500
Live Switcher

4K/12G-SDI Compatible Compact Live Switcher

4K PROFESSIONAL HDR

12G SDI

HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE

Worldwide Olympic Partner

Worldwide Paralympic Partner

Achieving 4K Video Production with a Compact, Versatile Switcher

This feature-rich, multi-format switcher for 4K and HD productions extends Panasonic's legacy of producing high-quality, reliable switchers.
With its compact, integrated body, this live switcher is equipped with many functions found in high end models and delivers 4K video production with the same operability as HD.
In addition to fixed installations such as university lecture halls and corporate conference rooms, the AV-UHS500 is well suited for remote production. Designed for easy portability and simple set up it should become a favorite tool for staging and other event production.

- **Versatile 12G-SDI/3G-SDI/HDMI interface support**
- **UHD/HD multi-format support**
- **Expanded functions with two optional unit slots**
- **Standard number of inputs/outputs:**
  8 inputs / 7 outputs,
  Maximum number of inputs/outputs (with optional units):
  Maximum 16 inputs / Maximum 15 outputs
- **Five keyers for excellent image effects**
- **Up/down conversion function, HDR/SDR conversion function and ITU-R BT.2020/BT.709 conversion function; Scaler function; Color correction function support**
- **Four AUX buses**
  AUX 1 and 2 have MIX transition functions, DSK 1 and 2 can also be assigned
- **Camera control for Panasonic Integrated PTZ Cameras**
- **Animation Wipe**
  Combine video memory data with a transition to create animation wipes
- **Supports TSL5.0**
  The TSL5.0 protocol can be used to send Tally information, bus transitions, and source name information to external devices connected via a network
- **ROI (Region of Interest) function**
  The ROI function creates four crop (cut out) signals (ROI sources) that can be used as input sources from a single input source
- **Audio source selection function**
  The AV-UHS500 includes a mode that enables the audio of a selected video input source to be multiplexed with another video signal and output in addition to the audio follow video

NEW

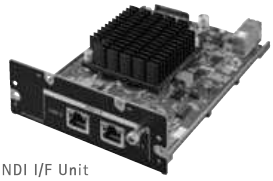
- **NDI® input and output support (with optional unit)**
  NDI® resource input and output are supported when an AV-UHS5M6G unit is attached

NEW

- **Software panel**
  Remote operation is available from and external PC or Mac

NEW

IP transmission through high bandwidth NDI® and NDI®|HX

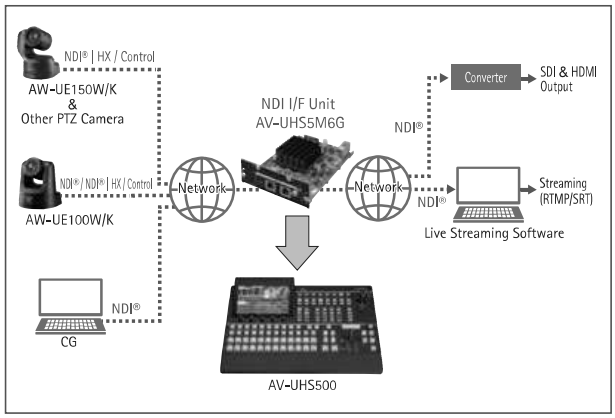


NDI I/F Unit
AV-UHS5M6G

This optional unit provides NDI®*1 support for the AV-UHS500 and is installed into one of the optional unit slots on the main unit. This enables use of IP transmission resources through high bandwidth NDI®*1 and NDI®|HX*1 (Version 1 and Version 2) in addition to conventional SDI and HDMI signals, without the need for external converters. High bandwidth NDI®*1 signal output can also be forwarded to other devices that support NDI®*1 and checked from remote locations. Up to two units can be attached to each AV-UHS500, providing expansion to a maximum of eight NDI®*1 input lines and four NDI®*1 output lines (when in 2K mode).

Remote live production

When used in combination with Panasonic cameras that support high bandwidth NDI®*1 or NDI®|HX*1, operations from video transmission to camera control and tally output can be performed with a single LAN cable. Both video transmission and camera control operation can be performed remotely, making remote live video production a reality.



NDI® transmission with up to four inputs and two outputs per unit

Number of NDI inputs/outputs (per NDI I/F Unit)

System Mode	Input		Output
	HB NDI®	NDI® | HX	HB NDI®
2K	4	-	2
	3	1	
	2	2	
4K	1	-	1

* Use an NDI® signal format that matches the system format.
When the system mode is set to 1080i, 1080p NDI® signals can also be used.

NDI® resource search and selection made easy

NDI® resources on the network can be searched for and selected from a list with ease. No complex network configuration is required.

*1: NDI® is a new protocol developed by NewTek, Inc. that supports IP video production workflow. NDI® is a registered trademark of NewTek, Inc. in the United States and other countries. In this instance, NDI® is used to indicate low latency with high bandwidth NDI®, NDI® | HX is used to indicate high efficiency low bandwidth NDI® | HX.

NEW

Simple direct switching from remote locations with touch and mouse control

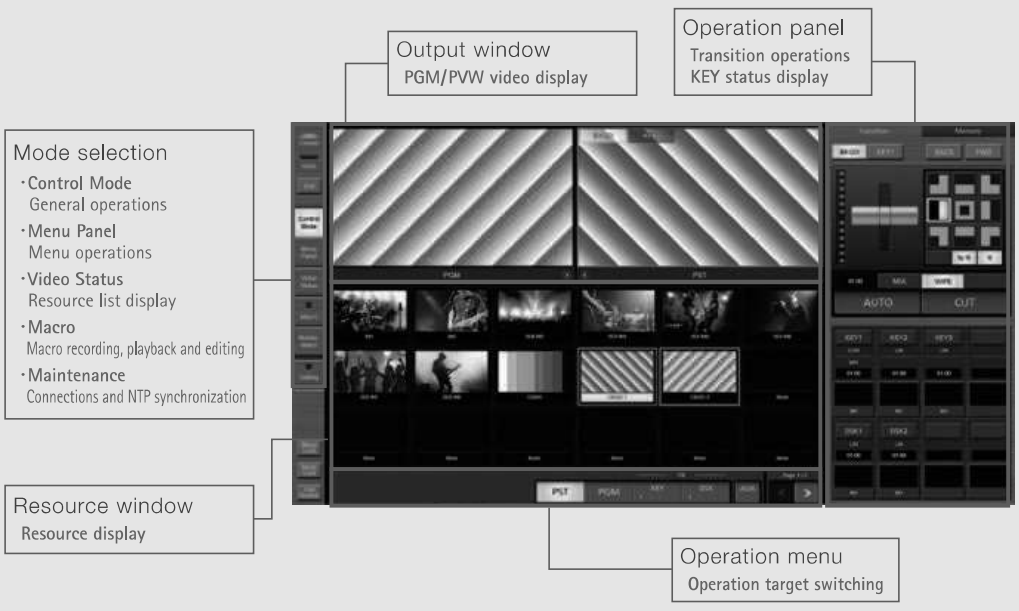
Software Control Panel

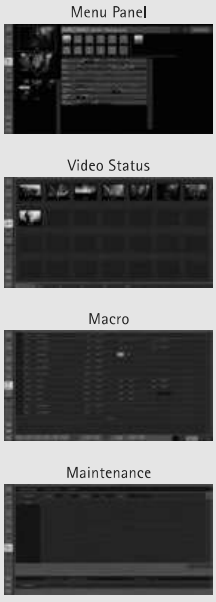
AV-SF500 (Free download, Windows and Mac versions available)

The AV-UHS500 control panel has been developed as a PC application. Video and images can be displayed on the application with built-in MJPEG codec on the AV-UHS500. Resource videos can be viewed while working, providing easy, intuitive control, and can also be used as a sub panel.

Example system construction

* For information on downloading the Software Control Panel, see the Live Switcher AV-UHS500 product page on the Panasonic website (https://pro-av.panasonic.net/en/).





Exceptional Support for Mixed 4K and HD Operation

12G-SDI/3G-SDI/HDMI/NDI® Support

12G-SDI that can transmit 4K video with as single coaxial cable is supported as standard, and it provides easy setup and operation with high quality 4K video production. In addition, HDMI support allows direct input of data from a PC for live production such as during seminars and lectures without the need for a separate HDMI converter. The addition of an NDI I/F Unit AV-UHS5M6G (optional) also enables handling of NDI®*1, which is part of Video over IP. Various video signals can be handled directly, enabling immediate creation of a range of video effects.

*1: NDI® is a new protocol developed by NewTek, Inc. that supports IP video production workflow. NDI® is a registered trademark of NewTek, Inc. in the United States and other countries. In this instance, NDI® is used to indicate low latency with high bandwidth NDI®, NDI® | HX is used to indicate high efficiency low bandwidth NDI® | HX.

UHD/HD Multi-Format Support

Multiple 4K/3G/HD formats are supported, including 2160/59.94p and 1080/59.94p.

UHD/HD function comparison

	AV-UHS500	
	4K (UHD) mode	2K (HD) mode
DVE	Option (AV-UHS5M5G)	Standard
Clip	1ch	2ch
Still	1ch	2ch

Frame Synchronizer for All Inputs

All input channels feature a built-in frame synchronizer. The Genlock function also supports synchronizing systems based on external sync signals (Black burst or Tri-level).

Eight Standard SDI Inputs, Two Standard HDMI Inputs*1 Five Standard SDI Outputs, Two Standard HDMI Outputs

The number of inputs and outputs during HD operation can be maintained in 4K. The number can also be increased if required through the use of two optional unit slots.

Number of inputs	12G/3G-SDI	8 inputs, standard / 16 inputs, maximum*2
	HDMI	2 inputs, standard*1 / 8 inputs, maximum*2
Number of outputs	12G/3G-SDI	5 outputs, standard / 13 outputs, maximum*2
	HDMI	2 outputs, standard*3 / 8 outputs, maximum*2

*1: SDI input is reduced by the number of HDMI input channels used. HDMI input is not compatible with CPRM (input not possible).
*2: When the optional unit is installed. For details, see page 10.
*3: The HDMI output format is the same as the system format only for video.

Various Built-in Conversion Functions, Including Up/Down Conversion*1

Various conversion functions are provided as standard. No external conversion box is required.

- **Up/down conversion function**
- **HDR/SDR conversion function**
- **ITU-R BT.2020/BT.709 conversion function**
- **Scaler function**
- **Color correction function**

*1: The NDI I/F Unit AV-UHS5M6G is not supported.

Video Input/Output Support

Input

Function		Standard input										Optional input										
		SDI input								HDMI input		when SDI Input Unit AV-UHS5M1G is used				when HDMI Input Unit AV-UHS5M3G is used			when NDI I/F Unit AV-UHS5M6G is used			
		1*1	2*1	3	4	5	6	7	8	1*1	2*1	1	2	3	4	1	2	3	1	2	3	4
4K	Up-converter	✓*2	✓*2	✓*2	✓*2	✓	✓	✓	✓	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-
HD	Down-converter	✓*2	✓*2	✓*2	✓*2	✓	✓	✓	✓	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-
Frame synchronizer		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Scaler		-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	✓	✓	✓	-	-	-	-
BT.709 ↔ BT.2020 conversion		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
HDR ↔ SDR conversion		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
Color correction		-	-	-	-	✓	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	-	-	-	-

*1: SDI inputs 1 and 2 and HDMI inputs 1 and 2 cannot be used simultaneously because of their exclusive functions. Select from the menu.
*2: Standard SDI inputs 1–4 only support simple conversion.

Output

Function		Standard output							Optional output										
		SDI Output					HDMI Output		when SDI Output Unit AV-UHS5M2G is used				when HDMI Output Unit AV-UHS5M4G is used			when NDI I/F Unit AV-UHS5M6G is used			
		1	2	3	4	5	1	2	1	2	3	4	1	2	3	1	2	3	4
4K	Simple down-converter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-
Scaler		-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	-	-	-	-
BT.709 ↔ BT.2020 conversion		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
HDR ↔ SDR conversion		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-

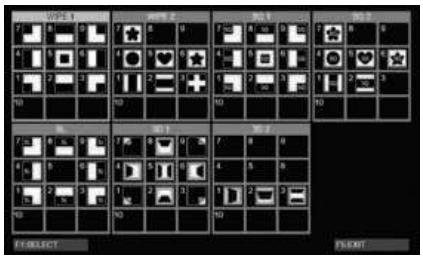
Various Image Effects Achieved with Enhanced Keyer and Memory Functions

Versatile Transitions and Effects

In addition to standard wipe, mix, and cut transitions, a variety of DVE transitions patterns using two channels, such as reduce, slide, squeeze and 3D wipe are available in HD mode. DVE transitions can also be used in 4K by adding a 4K DVE Unit AV-UHS5M5G.

Circle wipe

Page turn



Wipe, squeeze, slide, 3D wipe menu (in HD mode)

Five Keyers

A luminance key, linear key, chroma key, full key and PinP are provided for three channels, plus two channels of downstream key (DSK). Chroma keying employs the Primatte® algorithm, which is widely used as a plug-in for nonlinear editors. The same excellent Primatte® quality that is used worldwide for movies, TV programs, music videos and commercials is achieved by the live switcher's real time processing.

4K mode (standard)

	Luminance key Linear key	Full key	Mask	Edge	Chroma key	PinP	DVE
Key1	✓	✓	✓	✓	✓	✓	–
Key2	✓	✓	✓	✓	–	–	–
Key3	✓	✓	✓	–	–	–	–
DSK1	✓	✓	✓	–	✓	✓	–
DSK2	✓	✓	✓	–	–	–	–

HD mode/4K mode (when 4K DVE Unit AV-UHS5M5G is used)

	Luminance key Linear key	Full key	Mask	Edge	Chroma key	PinP	DVE
Key1	✓	✓	✓	✓	✓	–	✓
Key2	✓	✓	✓	✓	–	✓	–
Key3	✓	✓	✓	–	–	–	–
DSK1	✓	✓	✓	–	✓	✓	–
DSK2	✓	✓	✓	–	–	–	–

Four AUX Buses, DSK 1 and 2 Can Also Be Assigned

Two PinP buses and four AUX buses are provided. Borders and software effects can be applied to the PinP buses. In addition to cut transitions, the bus transition function (PinP and AUX buses transition effect) also enables mix transitions (AUX bus 1 and 2 only). Flexible support is achieved by combining AUX buses and M/E sections. DSK 1 and 2 can also be assigned to AUX 1 and 2.

Three independent outputs can be controlled

Video Memory

Two inputs in HD and one input in 4K for still (STILL) or video (CLIP) images can be selected as bus footage. Moving images can be recorded and played back with key signals (with the 1080/59.94i format, approximately 120 seconds /3600 frames). Up to 50 still or video images (up to 50 images or 20 GB for CLIP) can be saved to the internal storage (non-volatile SSD memory). Still images are registered to Play List and can be replayed in order.

Various Memory Functions for Smooth Live Production

■ Shot memory

Up to 100 background transition patterns, PinP sizes, border widths and other video effects can be registered and recalled. Effect dissolve can be set to ensure smooth switching from the current image to the image or operation registered in the shot memory.

■ Event memory

Up to 64 image effects in sequence can be registered and played back on a timeline using the event memory function. This allows highly expressive consecutive effects to be easily and smoothly executed. Up to 100 event memories can be registered.

■ Macro memory

This function allows recording and playback of a series of operations on the Control Panel. It can also record and playback setting information, such as input/output and keyers, allowing video effects involving complicated operations to be executed easily. Macro memory playback is executed by assigning to the crosspoint buttons.

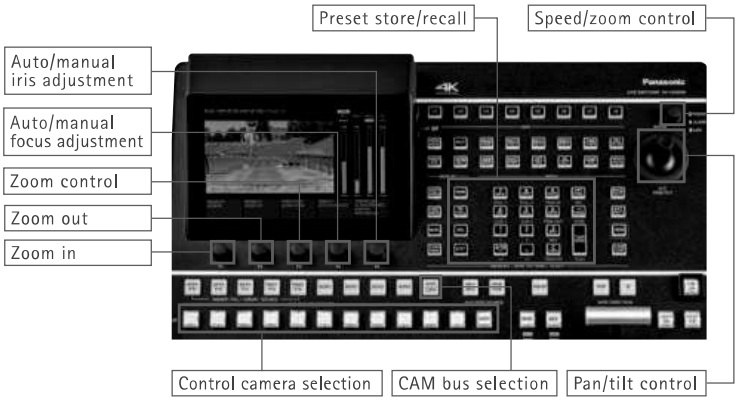
PTZ Camera Control Function

•See page 10 for supported 4K/HD Integrated Cameras.

The PTZ camera control function enables 4K/HD Integrated Cameras to be controlled from the AV-UHS500.

PTZ camera control

- **Number of cameras controlled:**
  8 cameras, standard / 16 cameras, maximum (with input from optional unit)
- **Camera control:**
  Pan, tilt, zoom, focus, iris, preset store, recall, scope, preset speed, AWB mode, AWB execution, paint, OSD menu
- **Linking with Camera Controllers:**
  Bus transitions can be performed automatically on the AV-UHS500 by selecting a camera using the AW-RP150GJ or AW-RP60GJ Camera Controller. This is convenient when you need to switch between source monitors while using an external camera controller.



4K/HD Integrated Camera control menu screen

4K/HD Integrated Camera control confirmation screen

4K/HD Integrated Camera preset selection screen

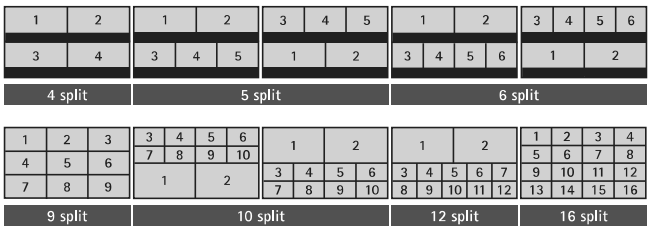
Two MultiViewer Functions

Two independent MultiViewer output functions are provided as standard, enabling the display of up to 16 split screens (a total of 10 patterns) on a single screen.

- **MultiViewer layout can be selected from a total of 10 patterns, including four split, five split (two patterns), six split (two patterns), nine split, 10 split (two patterns), 12 split*, and 16 split.**
- **Source names, tallies, audio level meters, clock and safety markers can be displayed.**
- **The audio level meters can be displayed not only for IN (the source side), but also on the PGM and PVW screen.**
- **Select between fit mode, in which the video image is the same size as the split frame, and squeeze mode, which places the source name and level meter outside the image.**

* Does not operate at 720p.

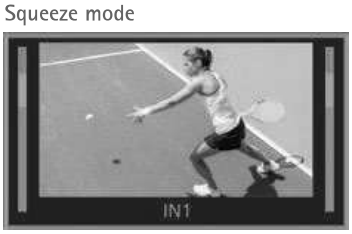
Split screen configuration examples



12 split screen configuration

Fit mode

Squeeze mode



* The screen is simulated.

ROI (Region of Interest) function

* ROI function may not work with some video format input. Refer Input Signal Support list for the details.

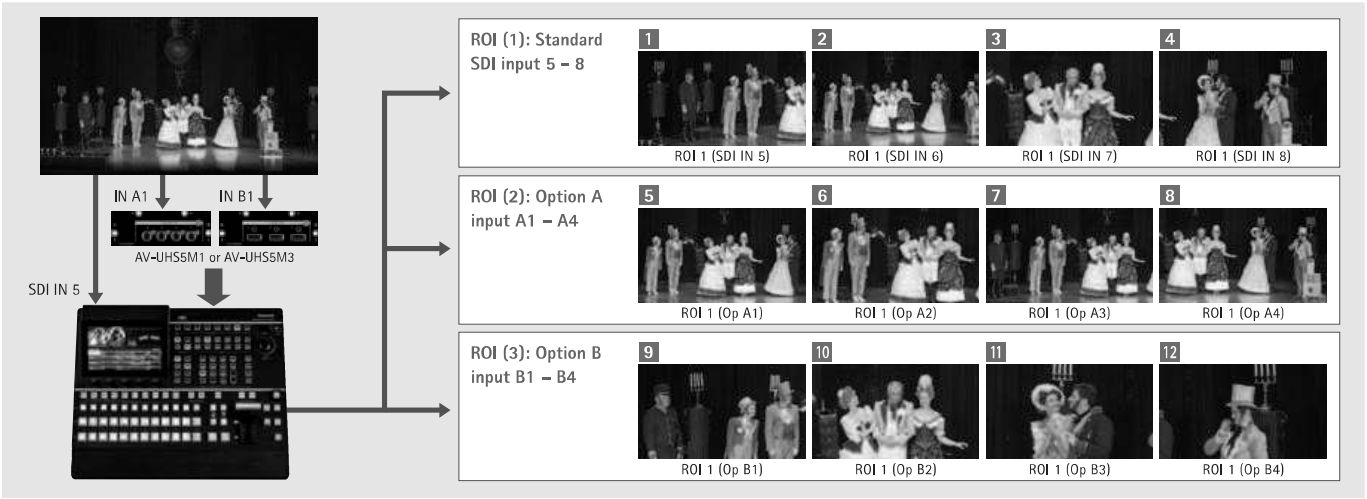
The AV-UHS500 includes a ROI function that creates a maximum of four crop (cut out) signals (ROI sources) that can be used as input sources from a single input source. The ROI function can be used from standard SDI input terminals 5 to 8 and an SDI/HDMI input unit attached to the optional slot.

<Main features>

- **A maximum of 12* ROI sources (up to four ROI sources per video input) can be used.**
- **As with pan/tilt/zoom operations, the position and size can be adjusted and recorded for each material (a maximum of 10 can be recorded per ROI).**
- **As with pan/tilt/zoom operations, smooth movement is possible between the recorded positions.**
- **Available zoom ratios are 10% (x10) to 100% (x1).**

* When an SDI or HDMI input unit is attached to optional slot A or B

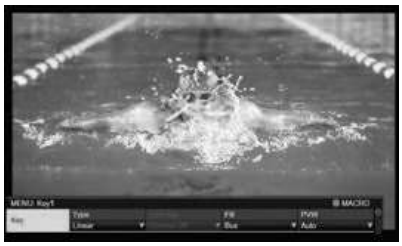
* The above frames illustrate the cropping screen and are not actually displayed on the screen.



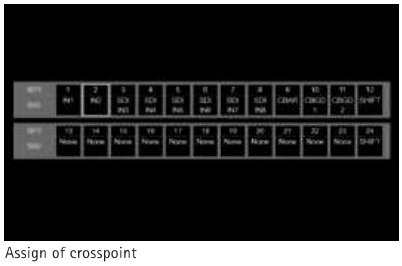
GUI menu screen examples

Menu display in matrix type

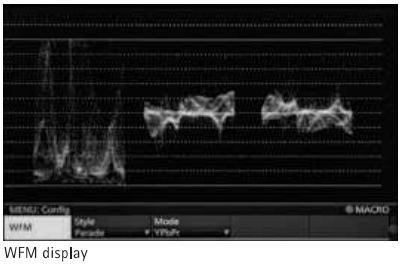
Video display on inset screen



One line of menu display on an image monitor



Assign of crosspoint



WFM display

VECTOR display

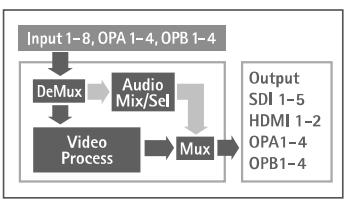
Audio source selection function

The audio source selection function enables the audio of a selected video input source to be multiplexed with another video signal and output in addition to the audio follow video. A separate audio source can be selected for AUX1 to 4, PGM, PVW, CLN, and MV.

<Selectable audio sources>

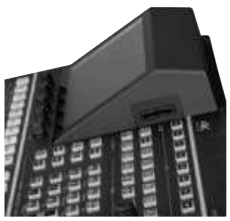
IN1, IN2, SDI IN3-8,
IN-A1-A4, IN-B1-B4

* Audio is only multiplexed when Ancillary is set to ON.

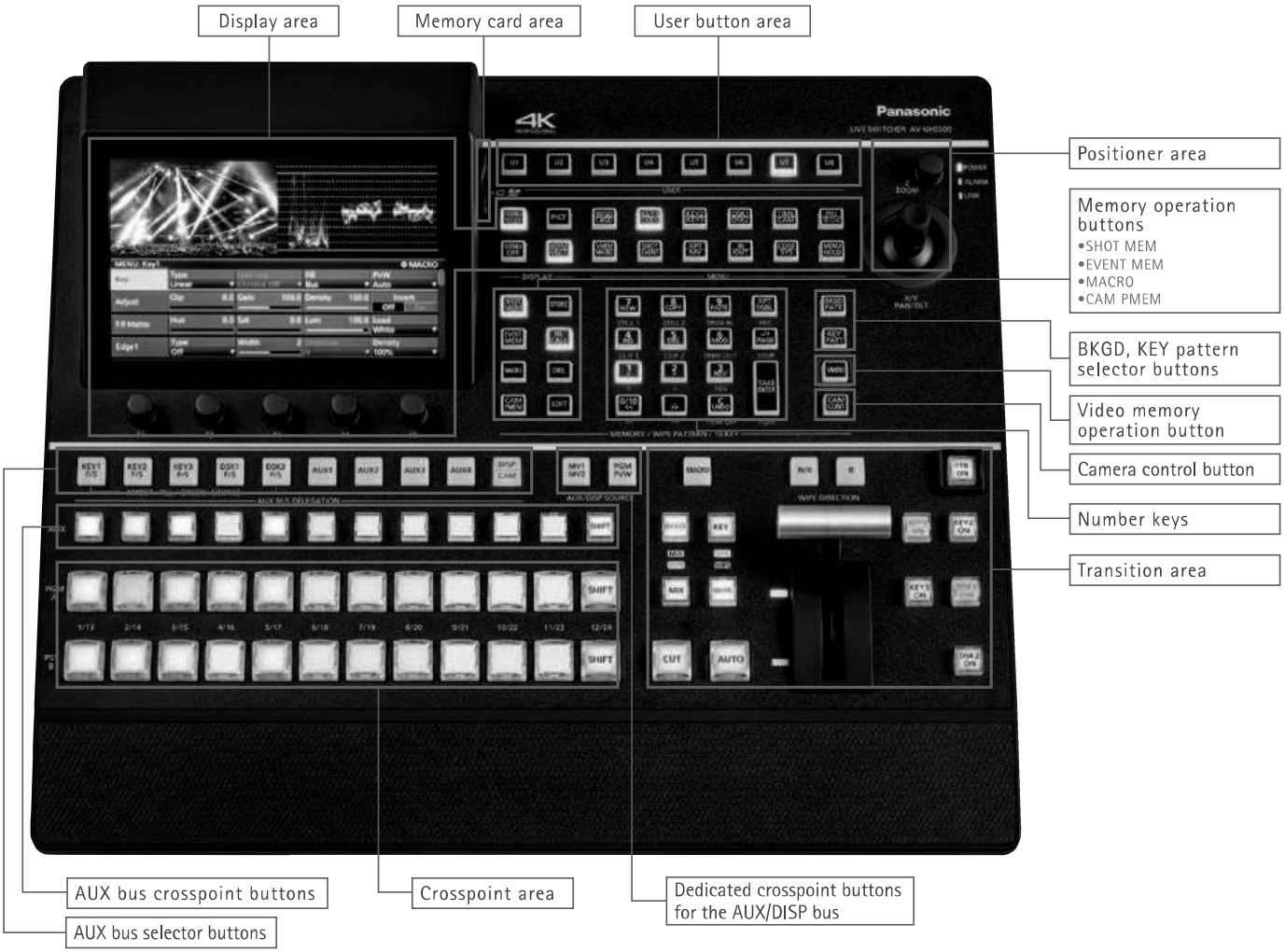


SDHC/SDXC Memory Card Slot

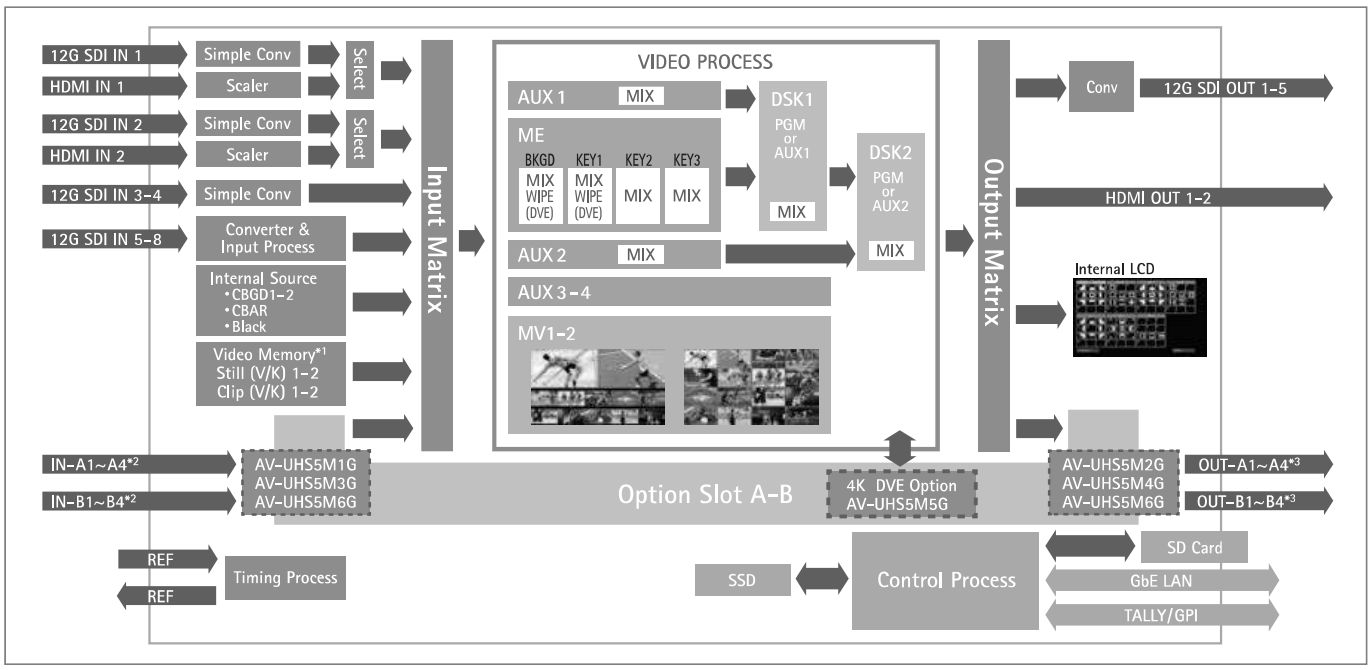
Video memory, shot memory data, event memory data, and setup data can be saved using an SDHC/SDXC memory card.



178 mm (7 inches) LCD Monitor with Excellent Visibility and Easy-to-Use Control Panel



Block Diagram



*1: 1 only for still/clip in 4K mode. *2: A1–A3 and B1–B3 when the AV-UHS5M3G is attached. A1 and B1 when the AV-UHS5M6G is attached and 4K mode is selected. *3: A1–A3 and B1–B3 when the AV-UHS5M4G is attached. A1–A2 and B1–B2 when the AV-UHS5M6G is attached, A1 and B1 when 4K mode is also selected.

Input Signal Support

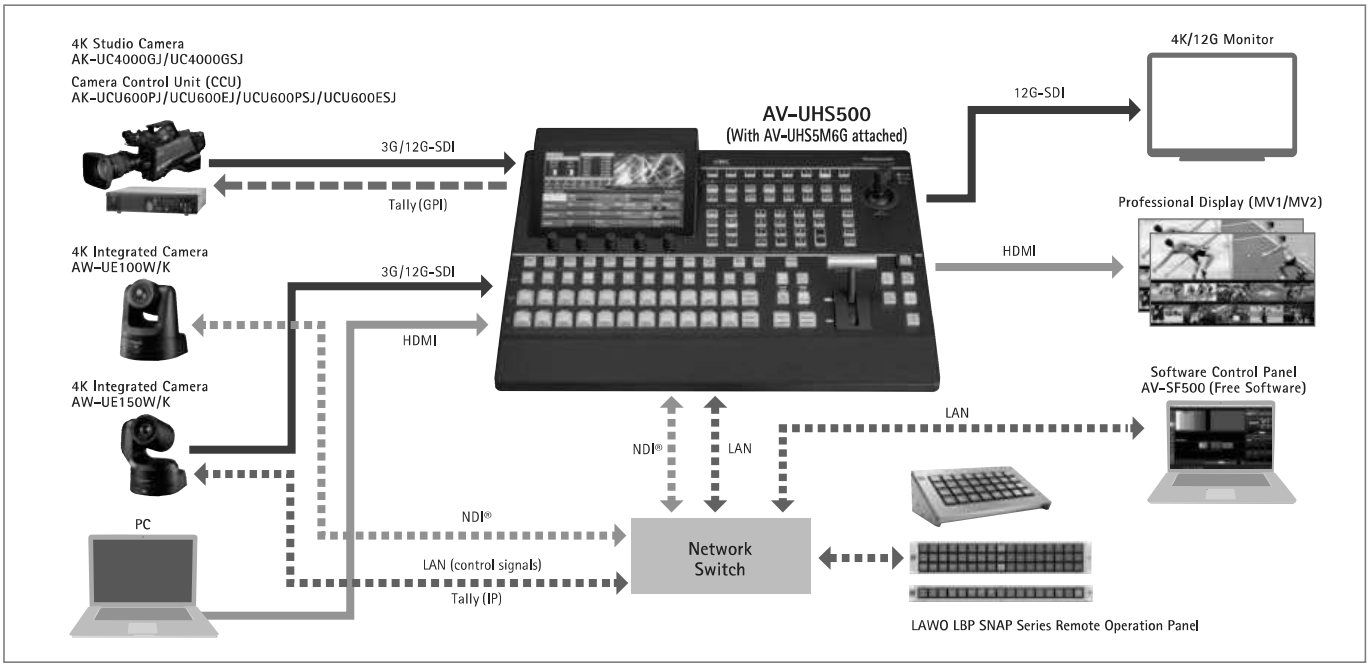
●: Without format conversion ○: With format conversion △: Only when in ROI mode

Input Signal			System Format																
			4K						2K										
	Resolution	V frequency	2160/59.94p	2160/50p	2160/29.97p	2160/25p	2160/24p	2160/23.98p	1080/59.94p	1080/50p	1080/29.97p 1080/29.97PsF	1080/25p 1080/25PsF	1080/24p 1080/24PsF	1080/23.98p 1080/23.98PsF	1080/59.94i	1080/50i	720/59.94p	720/50p
SDI	2160p	59.94Hz	●	–	–	–	–	–	○	–	–	–	–	–	○	–	○	–
		50.00Hz	–	●	–	–	–	–	–	○	–	–	–	–	–	○	–	○
		29.97Hz	–	–	●	–	–	–	–	–	○	–	–	–	–	–	–	–
		25.00Hz	–	–	–	●	–	–	–	–	–	○	–	–	–	–	–	–
		24.00Hz	–	–	–	–	●	–	–	–	–	–	○	–	–	–	–	–
		23.98Hz	–	–	–	–	–	●	–	–	–	–	–	○	–	–	–	–
	1080p	59.94Hz*2	○	–	–	–	–	–	●	–	–	–	–	–	○	–	○	–
		50.00Hz*2	–	○	–	–	–	–	–	●	–	–	–	–	–	○	–	○
		29.97Hz	–	–	○	–	–	–	–	–	●	–	–	–	–	–	–	–
		25.00Hz	–	–	–	○	–	–	–	–	–	●	–	–	–	–	–	–
		24.00Hz	–	–	–	–	○	–	–	–	–	–	●	–	–	–	–	–
		23.98Hz	–	–	–	–	–	○	–	–	–	–	–	●	–	–	–	–
	1080PsF	29.97Hz	○*1	–	○	–	–	–	○*1	–	●	–	–	–	○*1	–	○*1	–
		25.00Hz	–	○*1	–	○	–	–	–	○*1	–	●	–	–	–	○*1	–	○*1
		24.00Hz	–	–	–	–	○	–	–	–	–	–	●	–	–	–	–	–
		23.98Hz	–	–	–	–	–	○	–	–	–	–	–	●	–	–	–	–
	1080i	59.94Hz	○*1	–	△	–	–	–	○*1	–	○	–	–	–	●*1	–	○*1	–
		50.00Hz	–	○*1	–	△	–	–	–	○*1	–	○	–	–	–	●*1	–	○*1
	720p	59.94Hz	○	–	–	–	–	–	○	–	–	–	–	–	○	–	●	–
		50.00Hz	–	○	–	–	–	–	–	○	–	–	–	–	–	○	–	●
HDMI	2160p	59.94Hz	●	–	–	–	–	–	○	–	–	–	–	–	○	–	○	–
		50.00Hz	–	●	–	–	–	–	–	○	–	–	–	–	–	○	–	○
		29.97Hz	–	–	●	–	–	–	–	–	○	–	–	–	–	–	–	–
		25.00Hz	–	–	–	●	–	–	–	–	–	○	–	–	–	–	–	–
		24.00Hz	–	–	–	–	●	–	–	–	–	–	○	–	–	–	–	–
		23.98Hz	–	–	–	–	–	●	–	–	–	–	–	○	–	–	–	–
	1080p	59.94Hz	○	–	–	–	–	–	●	–	–	–	–	–	○	–	○	–
		50.00Hz	–	○	–	–	–	–	–	●	–	–	–	–	–	○	–	○
		29.97Hz	–	–	○	–	–	–	–	–	●	–	–	–	–	–	–	–
		25.00Hz	–	–	–	○	–	–	–	–	–	●	–	–	–	–	–	–
		24.00Hz	–	–	–	–	○	–	–	–	–	–	●	–	–	–	–	–
		23.98Hz	–	–	–	–	–	○	–	–	–	–	–	●	–	–	–	–
	1080i	59.94Hz	○*1	–	–	–	–	–	○*1	–	○*1	–	–	–	●*1	–	○*1	–
		50.00Hz	–	○*1	–	–	–	–	–	○*1	–	○*1	–	–	–	●*1	–	○*1
	720p	59.94Hz	○	–	–	–	–	–	○	–	–	–	–	–	○	–	●	–
		50.00Hz	–	○	–	–	–	–	–	○	–	–	–	–	–	○	–	●
	3840 x 2160 (4K)	60.00Hz	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	2560 x 1440 (WQHD)	60.00Hz	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	1920 x 1200 (WUXGA)	60.00Hz	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	1600 x 1200 (UXGA)	60.00Hz	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	1680 x 1050 (WSXGA+)	60.00Hz	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	1280 x 1024 (SXGA)	60.00Hz	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	1280 x 768 (WXGA)	60.00Hz	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	1024 x 768 (XGA)	60.00Hz	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

*1: ROI mode is not supported. *2: 3G-SDI Level-B input signals are not supported when in ROI mode.

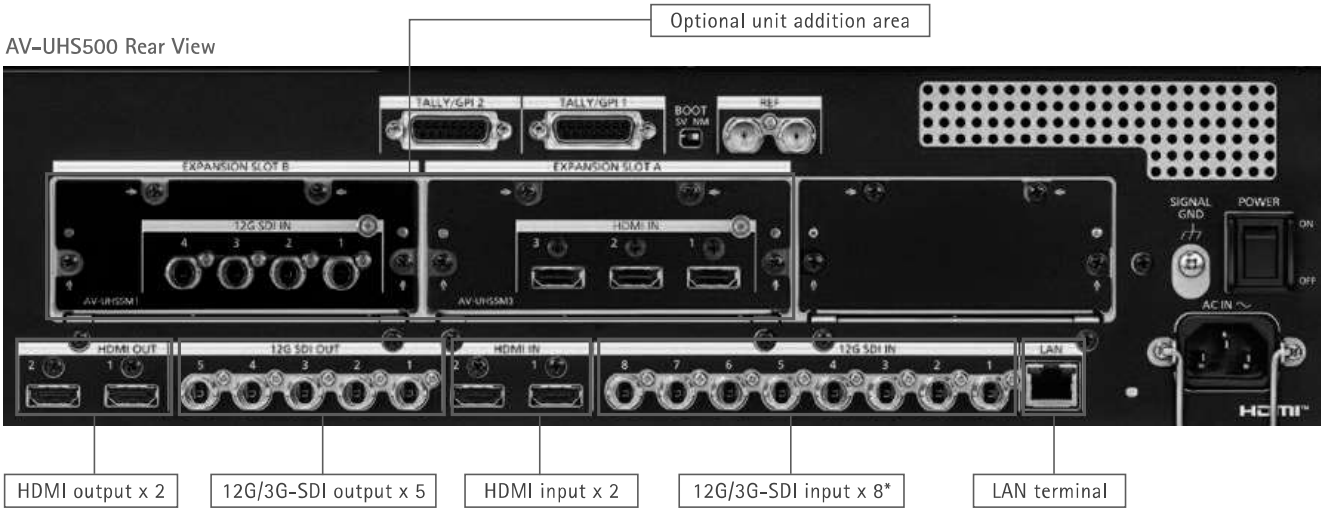
* The NDI I/F Unit AV-UHS5M6G does not provide convertor functions. Use an NDI® signal format that matches the system format. When the system mode is set to 1080i, 1080p NDI® signals can also be used.

System Configuration



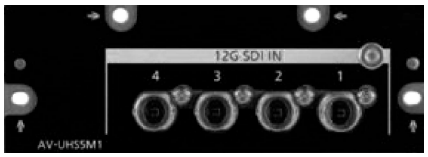
Expandable with a Variety of Functions as Required Using Six Optional Units

AV-UHS500 Rear View



* SDI input is reduced by the number of HDMI input channels used.

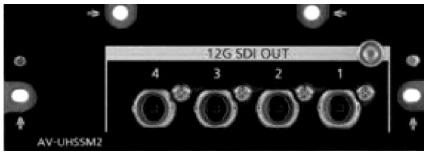
Optional Units



SDI Input Unit

AV-UHS5M1G

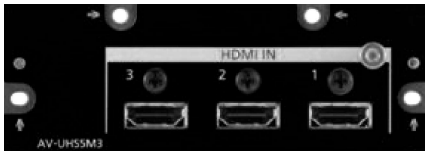
12G/3G-SDI x 4 inputs
Frame synchronizer, up-conversion, color correction, SDR/HDR conversion and ITU-R BT.709/BT.2020 conversion compatible



SDI Output Unit

AV-UHS5M2G

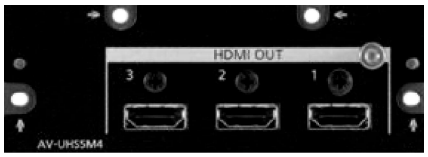
12G/3G-SDI x 4 outputs
Down-conversion, HDR/SDR conversion and ITU-R BT.2020/BT.709 conversion compatible



HDMI Input Unit

AV-UHS5M3G

HDMI 2.0 x 3 inputs
Scaler for each channel



HDMI Output Unit

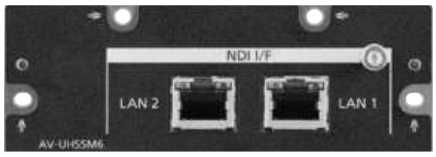
AV-UHS5M4G

HDMI 2.0 x 3 outputs
Scaler for each channel

4K DVE Unit

AV-UHS5M5G

DVE function in 4K mode
(background transition x 1, key transition x 1)



NDI I/F Unit

AV-UHS5M6G NEW

LAN terminal (1 Gb) x 2
NDI® support with up to 4 inputs and 2 outputs

Related Equipment

Panasonic Integrated PTZ Cameras
that allow camera control from AV-UHS500

As of April, 2022

Supported cameras

High-end model	Entry model
AW-UE150W/K	AW-UE20W/K
AW-UE100W/K	AW-HE20W/K
AW-HE145W/K	
Standard model	**Outdoor Model**
AW-UE80W/K	AW-HR140
AW-UE50W/K	
AW-UE40W/K	

For details, see the Panasonic website (https://pro-av.panasonic.net/en/).

Operation-verified 3rd party devices

Lawo LBP SNAP Series
Remote Operation Panel

As of April, 2022

Contact

LAWO AG
TEL : +49 7222 1002 0
WEB : www.lawo.com
E-Mail : sales@lawo.com

Specifications

As of April, 2022

Live Switcher AV-UHS500

General

Power Supply	AC 100 V to 240 V, 50 Hz/60 Hz
Current Consumption	1.5 A
Ambient Operating Temperature	0°C to 40°C (32°F to 104°F)
Ambient Operating Humidity	10% to 90% (no condensation)
Storage Temperature	0°C to 40°C (32°F to 104°F)
Storage Humidity	10% to 90% (no condensation)
Weight	Approx. 7 kg (Approx.15.4 lb)
Dimensions (W x H x D)	440 mm x 170 mm x 360 mm (17-5/16 inches x 6-11/16 inches x 14-3/16 inches) (excluding protrusions)

Video Terminal

SDI IN 1 to SDI IN 8 Terminals	8 lines (plus another maximum of 8 lines when using the OPTION unit) • Connectors: BNC x 8 • Color space conversion function • Frame synchronizer function • Connectors <SDI IN 1> to <SDI IN 4> equipped with simple format converters. • Connectors <SDI IN 5> to <SDI IN 8> equipped with up-converters. • Connectors <SDI IN 5> to <SDI IN 8> equipped with color correctors. * SDI IN 1/2 excludes HDMI IN 1/2.	
	12G-SDI	12G-SDI, SMPTE ST 2082-10 standard complied with
	3G-SDI	3G-SDI, SMPTE292 standard complied with (Compatible with Level-A/Level-B)
	HD-SDI	HD-SDI, SMPTE292M standard complied with
HDMI IN 1 to HDMI IN 2 Terminals	2 lines (plus another maximum of 6 lines when using the OPTION unit) Video format inputs: 720p/59.94 Hz, 720p/50 Hz, 1080i/59.94 Hz, 1080i/50 Hz, 1080p/59.94 Hz, 1080p/50 Hz, 1080p/29.97 Hz, 1080p/25 Hz, 1080p/24 Hz, 1080p/23.98 Hz, 2160p/59.94 Hz, 2160p/50 Hz, 2160p/29.97 Hz, 2160p/25 Hz, 2160p/24 Hz, 2160p/23.98 Hz PC format inputs: 4K (3840 x 2160, 60 Hz), WQHD (2560 x 1440, 60 Hz), WUXGA (1920 x 1200, 60 Hz), UXGA (1600 x 1200, 60 Hz), WSXGA+ (1680 x 1050, 60 Hz), SXGA (1280 x 1024, 60 Hz), WXGA (1280 x 768, 60 Hz), XGA (1024 x 768, 60 Hz) Mode: Full/Fit-H/Fit-V • Scaler, Frame synchronizer and Color space conversion function • Connectors: HDMI x 2 • This connector does not support the CPRM technologies. * HDMI IN 1/2 excludes SDI IN 1/2.	
SDI OUT 1 to SDI OUT 5 Terminals	5 lines (plus another maximum of 8 lines when using the OPTION unit) • Connectors: BNC x 5 • Down-converter to 1080p, Color space conversion function • PGM, PVW, CLN, ME PGM, MV1 to MV2, AUX1 to AUX4, Key Out can be assigned.	
	12G-SDI	12G-SDI, SMPTE ST 2082-10 standard complied with
	3G-SDI	3G-SDI, SMPTE292 standard complied with (Compatible with Level-A)
	HD-SDI	HD-SDI, SMPTE292M standard complied with
HDMI OUT 1 to HDMI OUT 2 Terminals	2 lines (plus another maximum of 6 lines when using the OPTION unit) • Connectors: HDMI x 2 • Down-converter to 1080p • Color space conversion function • PGM, PVW, CLN, ME PGM, MV1 to MV2, AUX1 to AUX4, Key Out can be assigned.	
Signal Formats	2160/59.94p, 50p, 29.97p, 25p, 24p, 23.98p, 1080/59.94p, 50p, 29.97p, 29.97PsF, 25p, 25PsF, 24p, 24PsF, 23.98p, 23.98PsF, 59.94i, 50i 720/59.94p, 50p	
Signal Processing	R: G: B 4: 4: 4 8 bit / 4: 2: 2 10 bit (Only for HDMI)	
	Y: C_B: C_R 4: 2: 2 10 bit	
ME Number	1ME	

Synchronous Terminal

REF Terminal Reference Input/ BB Outputs	In Genlock mode: Black burst or Tri-level Sync input signals (with loop-through) • Loop-through output is performed in external sync mode. • If loop-through output is not going to be used, provide a 75 Ω termination. • Connectors : BNC x 2 • Same field frequencies as those of the system formats supported. • With the 24.00p format, Black Burst input signal is not supported. • With the 1080/23.98PsF format, black burst with 10 Field ID (SMPTE318M standard met) or Trilevel Sync signals supported. • BB signals are output from two connectors in the internal sync mode.	
Video Delay Time	1 line (H)	When the frame synchronizer setting is [Off] and neither the up-converter nor the down-converter is operating
	1 frame (F)	When the frame synchronizer setting is [On] and the up-converter and downconverter are operating
	• When the signals have passed through PinP, DVE, multi view, down-converter or HDMI IN, a maximum delay of 1 frame is applied in each case.	

Control Terminal

LAN Terminal	Compatible with 1000BASE-TX and AUTO-MDIX (For IP control) • Connecting cable: LAN cable (CAT5E), max. 100 m (328 ft), STP (Shielded Twisted Pair) cable recommended • Connectors : RJ-45
TALLY GPI Terminal	INPUT: 8 inputs general-purpose, photocoupler sensing OUTPUT: 19 outputs; selected from R/G tally, general-purpose ALARM: 1 output, open collector output (negative logic)

OPTION Unit

	AV-UHS5M1G	AV-UHS5M2G	AV-UHS5M3G	AV-UHS5M4G	AV-UHS5M5G	AV-UHS5M6G
Power Supply	DC 12 V Supplied by AV-UHS500					
Power Consumption	15 W 1.2 A		16 W 1.3 A		14 W 1.1 A	
Ambient Operating Temperature	0°C to 40°C (32°F to 104°F)					
Ambient Operating Humidity	10% to 90% (no condensation)					
Storage Temperature	0°C to 40°C (32°F to 104°F)					
Storage Humidity	10% to 90% (no condensation)					
Weight	Approx. 371 g (Approx. 0.82 lbs.)		Approx. 353 g (Approx. 0.78 lbs.)		Approx. 345 g (Approx. 0.76 lbs.)	Approx. 353 g (Approx. 0.78 lbs.)
Dimensions (W x H x D)	112 mm x 42 mm x 167 mm (4-13/32 inches x 1-21/32 inches x 6-9/16 inches) (excluding protrusions)		112 mm x 42 mm x 166 mm (4-13/32 inches x 1-21/32 inches x 6-17/32 inches) (excluding protrusions)			

SDI Input Unit AV-UHS5M1G

SDI IN 1 to SDI IN 4 Terminals	4 lines • Connectors: BNC x 4 • Frame synchronizer function • Up-converter fitted. • Color space conversion function • Color corrector fitted.	
	12G-SDI	12G Serial digital, SMPTE ST 2082-10 standard complied with • 0.8 V [p-p] ± 10% (75 Ω) • Automatic equalizer 80 m (when the cable is used)
	3G-SDI	3G Serial digital, SMPTE292 standard complied with (Level-A/Level-B) • 0.8 V [p-p] ± 10% (75 Ω) • Automatic equalizer 100 m (when the cable is used)
	HD-SDI	HD Serial digital, SMPTE292M standard complied with • 0.8 V [p-p] ± 10% (75 Ω) • Automatic equalizer 100 m (when the cable is used)

SDI Output Unit AV-UHS5M2G

SDI OUT 1 to SDI OUT 4 Terminals	4 lines • Connectors: BNC x 4 • Down-converter • Color space conversion function • PGM, PVW, CLN, ME PGM, MV1 to MV2, AUX1 to AUX4, Key Out can be assigned.	
	12G-SDI	12G Serial digital, SMPTE ST 2082-10 standard complied with 0.8 V [p-p] ± 10% (75 Ω)
	3G-SDI	3G Serial digital, SMPTE292 standard complied with (Level-A) 0.8 V [p-p] ± 10% (75 Ω)
	HD-SDI	HD Serial digital, SMPTE292M standard complied with 0.8 V [p-p] ± 10% (75 Ω)

HDMI Input Unit AV-UHS5M3G

HDMI IN 1 to HDMI IN 3 Terminals	3 lines Video format inputs: 720p/59.94 Hz, 720p/50 Hz, 1080i/59.94 Hz, 1080i/50 Hz, 1080p/59.94 Hz, 1080p/50 Hz, 1080p/29.97 Hz, 1080p/25 Hz, 1080p/24 Hz, 1080p/23.98 Hz, 2160p/59.94 Hz, 2160p/50 Hz, 2160p/29.97 Hz, 2160p/25 Hz, 2160p/24 Hz, 2160p/23.98 Hz PC format inputs: 4K (3840 x 2160, 60 Hz), WQHD (2560 x 1440, 60 Hz), WUXGA (1920 x 1200, 60 Hz), UXGA (1600 x 1200, 60 Hz), WSXGA+ (1680 x 1050, 60 Hz), SXGA (1280 x 1024, 60 Hz), WXGA (1280 x 768, 60 Hz), XGA (1024 x 768, 60 Hz) Mode: Full/Fit-H/Fit-V • Connectors: HDMI x 3 • Frame synchronizer function • Color corrector fitted. • Scaler and Color space conversion function • This connector does not support the CPRM technologies.

HDMI Output Unit AV-UHS5M4G

HDMI OUT 1 to HDMI OUT 3 Terminals	3 lines Mode: Fit-V, Fit-H, Full, Full-90%, Full-80% Size: Auto, WQHD (2560 x 1440, 60 Hz), WUXGA (1920 x 1200, 60 Hz), UXGA (1600 x 1200, 60 Hz), WSXGA+ (1680 x 1050, 60 Hz), SXGA (1280 x 1024, 60 Hz), WXGA (1280 x 768, 60 Hz), XGA (1024 x 768, 60 Hz), Native Color: Auto, RGB, YUV444, YUV422 • Connectors: HDMI x 3 • PGM, PVW, CLN, ME PGM, MV1 to MV2, AUX1 to AUX4, Key Out can be assigned. • Scaler and Color space conversion function

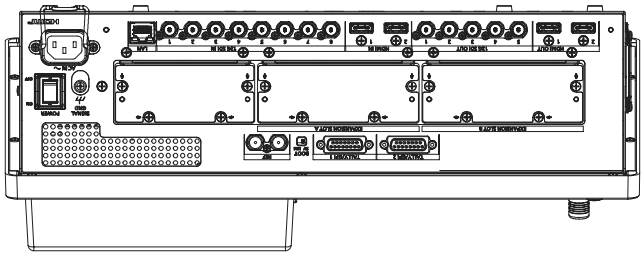
NDI I/F Unit AV-UHS5M6G

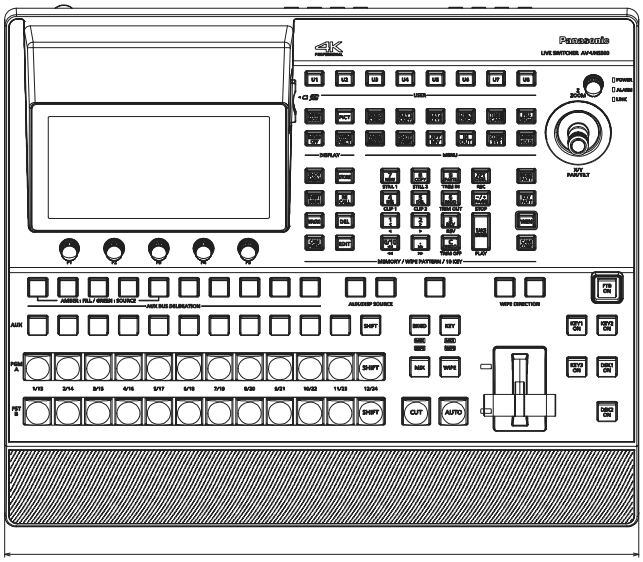
LAN 1 and LAN 2 Terminals	Supported formats	High Bandwidth NDI®/Low Bandwidth NDI®/NDI®|HX*1
	Input	Maximum 4 lines Possible input formats • When system format is 4K High Bandwidth NDI®: 2160/59.94p, 2160/50p, 2160/29.97p, 2160/25p, 2160/24p, 2160/23.98p • When system format is 2K*1*2*3*4 High Bandwidth NDI®: 1080/59.94p, 1080/50p, 1080/29.97p, 1080/25p, 1080/24p, 1080/23.98p, 720/59.94p, 720/50p NDI®|HX: 1920/1080p, 1280/720p*5
	Output	Maximum 2 lines Possible output formats • When system format is 4K High Bandwidth NDI®: 2160/59.94p, 2160/50p, 2160/29.97p, 2160/25p, 2160/24p, 2160/23.98p • When system format is 2K*1*4 High Bandwidth NDI®: 1080/59.94p, 1080/50p, 1080/29.97p, 1080/25p, 1080/24p, 1080/23.98p, 720/59.94p, 720/50p • PGM, PVW, CLN, ME PGM, AUX1 to 4, MV1 and 2, and Key Out can be allocated to the output.

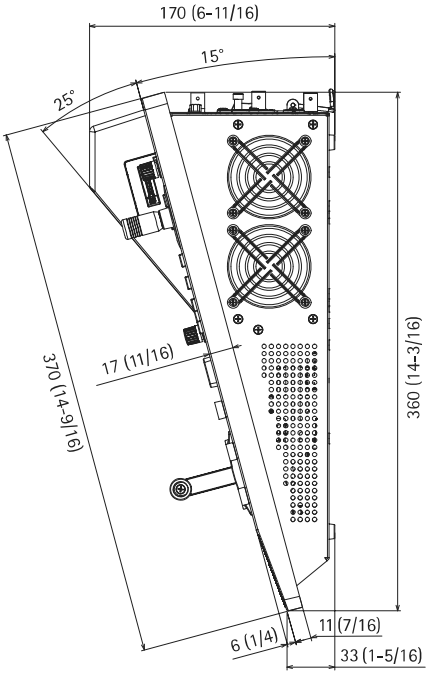
*1: Support for NDI®HX is input only. Only High Bandwidth NDI® is supported for output. *2: When the system format is 2K, mixed input of High Bandwidth NDI® and NDI®|HX is possible. *3: P/I conversion is possible for input when the system format is 2K. *4: Not available when the system format is Psf. *5: The frame rate for NDI®|HX depends on the system format.

Dimensions Unit: mm (inches)

As of April, 2022







* The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.
* SDHC and SDXC Logos are trademarks of SD-3C,LLC.
* Primatte® is the registered trademark of Photron Limited.
* Photron Limited is the holder of the intellectual rights to Primatte®.
* Photron Limited is the holder of the patent for Primatte®.

*Specifications are subject to change without notice.

Panasonic®

Panasonic Connect Co., Ltd.
2-15 Matsuba-cho, Kadoma, Osaka 571-8503 Japan

ISO 14001 JACO EC98J2010 UKAS MANAGEMENT SYSTEMS 0051

Factories of Panasonic Connect Co., Ltd. have received ISO14001:2015-the Environmental Management System certification. (Except for 3rd party's peripherals.)

For more information, please visit Panasonic web site
https://pro-av.panasonic.net/en/qr/

Broadcast and Professional AV Website | **Contact Information** | **Facebook** | **Mobile App**

SP-UHS500PE3WEB

202204U