Panasonic CONNECT

HD Switcher

AV-HS450

Switcher Expandable to 20 inputs or 10 outputs

Key Features

- Built-in 4 up-converters and 8 color correctors
- Built-in dual-monitor multi display function with up to 20 windows
- A wide range of 2D and 3D effects enhance creative expression

3D PROFESSIONAL

Panasonic CONNECT

AV-HS450

https://eu.connect.panasonic.com/de/en/products/broadcast-proav/av-hs450

Mainframe (AV-HS450U1N/E)	
General	
Power Supply	AC 100 V to 120 V, 50/60 Hz • Redundant power supply standard supported
Power Consumption	120 W
Ambient Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	10 % to 90 % (no condensation)
Dimensions (W x H x D)	2RU size 482 x 88 x 471 mm (19″ x 3-7/16″ x 18-9/16″) [excluding protrusions]
Weight	9.8 kg (21.605 lbs.) [excluding accessory parts when no options have been installed] 10.3 kg (22.707 lbs.) [excluding accessory parts when all the possible options have been installed]
Video Terminal	
Video Inputs (20 Signal Lines, Maximum)	Standard SDI: 16 signal lines BNC x 16 (IN1 to IN16) Optional: Up to 4 additional signal lines (IN A1, IN A2, IN B1, IN B2) (Up to two option boards can be installed in the two input/output slots.)
Video Outputs (10 Signal Lines, Maximum)	Standard SDI: 4 signal lines BNC x 5 (OUT1 to OUT4 x 1 line each, 2 distributed outputs for OUT1 only) Standard DVI-D: 2 signal lines DVI-D x 2 (OUT5, OUT6) Optional: Up to 4 additional lines (OUT A1, OUT A2, OUT B1, OUT B2) (Up to two option boards can be installed in the two input/output slots.) • PGM, PVW, AUX1 to AUX4, MV1 (MULTI_PVW1), MV2 (MULTI_PVW2), CLN and KEYOUT can be allocated to each output. • CLN can be pre-selected from KEY, DSK1 or DSK2 using a menu.
Signal Formats	SD: 480/59.94i, 576/50i HD: 1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 1080/24PsF*, 1080/23.98PsF* *The following option boards are not supported: AV-HS04M1, AV-HS04M2, AV-HS04M3, AV-HS04M4, AV-HS04M5, AV-HS04M6,AV-HS04M7, AV-HS04M7D
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) 16 signal lines, standard: IN1 to IN16 20 signal lines, maximum: IN A1, IN A2, IN B1, IN B2 (When two AV-HS04M1 boards are used; with active through) HD [SMPTE 292M (BTA S-004B) standard complied with] • 0.8 V [p-p] ±10 % (75 Ω) • Input return loss More than 15 dB (5 MHz to 750 MHz) More than 10 dB (750 MHz to 1.5 GHz) • Automatic equalizer 100 m (328 ft.) (when 5C-FB cable is used) SD [SMPTE 259M standard complied with] • 0.8 V [p-p] ±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)
SDI Outputs	HD: Serial digital component (SMPTE 292M) SD: Serial digital component (SMPTE 259M) 4 signal lines, standard: OUT1 x 2; OUT2, OUT3, OUT4 x 1 each 8 signal lines, maximum: OUT A1, OUT A2, OUT B1, OUT B2 (When two AV-HS04M7 boards are used) HD [SMPTE 292M (BTA S-004B) standard complied with] • Output return loss: More than 15 dB (5 MHz to 750 MHz), More than 10 dB (750 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 ime 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] • 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
Composite Input (Option)	Analog composite signal (NTSC/PAL) (1.0 V [p-p], 75 Ω) 4 signal lines, maximum: IN A1, IN A2, IN B1, IN B2 (When two AV-HS04M6 boards are used; with loop-through)
Analog Input (Option)	SD/HD analog component Y/Pb/Pr (1.0 V [p-p], 75 Ω) 4 signal lines, maximum: IN A1, IN A2, IN B1, IN B2 (When two AV-HS04M2 boards are used)
Analog Output (Option)	SD/HD analog component Y/Pb/Pr (1.0 V [p-p], 75 Ω) 4 signal lines, maximum: OUT A1, OUT A2, OUT B1, OUT B2 (When two AV-HS04M4 boards are used) • 2 signal lines (OUT A1, OUT B1) when two AV-HS04M5 boards are used
DVI-I Input (Option)	Analog/digital RGB: XGA (1024 x 768), WXGA (1280 x 768), SXGA (1280 x 1024) Vertical frequency: 60 Hz 4 signal lines, maximum: IN A1, IN A2, IN B1, IN B2(When two AV-HS04M3 boards are used)

DVI-I Output (Option)	Analog/digital RGB: XGA (1024 x 768), WXGA (1280 x 768), SXGA (1280 x 1024), WSXGA+* (1680 x 1050), UXGA* (1600 x 1200), WUXGA* (1920 x 1200) *Selectable only when digital signals are output Vertical frequency: 60 Hz 2 signal lines, maximum: OUT A2, OUT B2(When two AV-HS04M5 boards are used)
DVI-D Input (Option)	Digital RGB: 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 Digital RGB: 1080/50P, 1080/59.94P • This board is incompatible with the HDCP (High-bandwidth Digital Content Protection). • Analog input signals are not supported. 4 signal lines, maximum: IN A1, IN A2, IN B1, IN B2 (When two AV-HS04M8 boards are used) • The DVI-I connector cable cannot be used. • For the DVI-D connector cable, use a cable with a length of up to 5 m (16.4 ft.).
DVI-D Output	Digital RGB: 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 Digital RGB: 1080/50P, 1080/59.94P (The vertical frequency is the same as that of the system format. When the system format is 1080/23.98PsF or 24PsF, the images cannot be output.) • Analog output signals are not supported. • High-resolution multi view mode supported: Signals are also output with a high resolution even when SD has been selected as the system mode. With this mode setting, MV1 is output to OUT5 and MV2 to OUT6; MV1 and MV2 cannot be output to any other outputs. 2 lines, standard: OUT5, OUT6 • The DVI-I connector cable cannot be used. • For the DVI-D connector cable, use a cable with a length of up to 5 m (16.4 ft.).
Synchronous Terminal	
Reference Input/Output	In gen-lock mode: Black burst or Tri-level Sync input signals (with loop-through) In internal sync mode: Black burst output signals x 2 • Same field frequencies as those of the system formats supported • With the 1080/23.98PsF and 24PsF formats, only GENLOCK mode supported • With the 1080/23.98PsF format, black burst with 10F-ID (SMPTE318M standard met) or TRI signals supported
Video Delay Time	FS OFF, U/C OFF 1 line (H) FS ON or U/C ON 1 frame (F) • When the signals have passed through DVE, multi view, down-converter, DVI-IN or DVI-OUT, a maximum delay of 1 frame is applied in each case.
Control Terminal	
Panle	RJ45 x 1 100 Mbps • When the control panel is connected
LAN	RJ45 x 1 100/10 Mbps • Used for maintenance purposes
Editor	D-sub, 9-pin, female RS-422 control connector • GVG standard protocol subset supported
COM	D-sub, 9-pin, female RS-422 control connector • For Panasonic pan-tilt head system control, etc.
Tally/GPI	D-sub, 50-pin, female INPUT: 8 inputs, general-purpose, photocoupler sensing OUTPUT: 31 outputs; selected from R/G tally, general-purpose ALARM: 1 output, open collector output (negative logic)
Control Panel (AV-HS450C1N/E)	
General (AV-HS450C1N/E)	

Power Supply (AV-HS450C1N/E)	DC 12 V, 0.8 A • Redundant operation enabled by connecting two AC adapters • Power consumption when using the AC adapter: AC 14 W
Ambient Operating Temperature (AV-HS450C1N/E)	0 °C to 40 °C (32 °F to 104 °F)
Humidity (AV-HS450C1N/E)	10 % to 90 % (no condensation)
(AV-HS450C1N/E) Dimensions (W x H x D)	560 x 88 x 299 mm (22-1/16″ x 3-7/16″ x 11-3/4″) [excluding protrusions]
Weight (AV-HS450C1N/E)	3.9 kg (8.598 lbs.) [excluding accessory parts]
Control Terminal (AV-HS450C1N/E)	
Mainframe	RJ45 x 1 100 Mbps • For connecting the mainframe
Tally/GPI (AV-HS450C1N/E)	D-sub, 25-pin, female INPUT: 8 inputs OUTPUT: 8 outputs ALARM: 1 output
Other	
SD Memory Cards	Memory size supported: Max. 32 GB (SDHC memory cards supported) Still image files: Load, save Setup data: Backup
Accessories	Operating instructions, CD-ROM (Operating instructions/Image transmission software), AC adapters (for control panel), Power cords (for mainframe and AC adapter), CAT5E cable (STP, straight cable, 10 m (32.8 ft.) long)