

AV-HS410 [AV-HS410N/E]

General	
Power Supply	AC 100 V to 240 V, 50/60 Hz
Power Consumption	88 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)	440 mm x 158 mm x 361 mm [17-5/16 inches x 6-7/32 inches x 14-7/32 inches] [excluding protrusions]
Mass	Approx. 6.2 kg (13.669 lb) [excluding accessory parts when no options have been installed] Approx. 6.6 kg (14.550 lb) [excluding accessory parts when all the possible options have been installed]

Video Terminal	
Video Inputs (13 signal lines, maximum)	Standard SDI: 8 signal lines BNC x 8 (SDI INPUT 1 to SDI INPUT 8) • The up-converter function can be used for the SDI INPUT 5 to SDI INPUT 8 connectors.
	Standard DVI-D: 1 signal line DVI-D x 1 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: 5 signal lines BNC x 6 (SDI OUTPUT 1 to SDI OUTPUT 5 x 1 line each, 2 distributed outputs for SDI OUTPUT 1 only) Standard DVI-D: 1 signal line DVI-D x 1 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, MV (MULTI_VIEW), CLN, KEYOUT and MEM PVW can be assigned to SDI OUTPUT 1 to SDI OUTPUT 5, DVI-D OUT, OUT A1, OUT A2, OUT B1 and OUT B2. • CLN can be pre-selected from KEY or DSK using a menu.
Signal Formats	SD 480/59.94i, 576/50i 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
	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
Signal Processing	Y:Cb:Cr 4: 2: 2, 10 bit (8 bits for video memory) RGB 4:4:4, 8 bit
ME Number	1ME
SDI Inputs	HD-SDI: HD Serial digital (SMPTE 292M) SD-SDI: SD Serial digital (SMPTE 259M) 8 signal lines, standard: IN1 to IN8 12 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) • Automatic equalizer More than 100 m (328 ft) (when 1.5 Gbps/5C-FB cable is used) SD: SMPTE 259M standard complied with • 0.8 V [p-p] ±10 % (75 Ω) • Automatic equalizer 200 m (656 ft) (when 5C-2V cable is used)
SDI Outputs	HD-SDI: HD Serial digital (SMPTE 292M) SD-SDI: SD Serial digital (SMPTE 259M) 5 signal lines, standard: OUT1 x 2; OUT2 to OUT5 x 1 each 9 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 level 0.8 V [p-p] ±10 % (75 Ω) • Rise time HD: Less than 270 ps • Fall time HD: Less than 270 ps • Difference between rise time and fall time HD: Less than 100 ps • Alignment jitter HD: Less than 0.2 UI (130 ps) • Timing jitter HD: Less than 1.0 UI • Eye aperture ratio More than 90 % • DC offset 0 ±0.5 V

SDI Outputs	HD: SMPTE 292M (BTA S-004B) standard complied with • Output level 0.8 V [p-p] ±10 % (75 Ω) • Rise time HD: Less than 270 ps • Fall time HD: Less than 270 ps • Difference between rise time and fall time HD: Less than 100 ps • Alignment jitter HD: Less than 0.2 UI (130 ps) • Timing jitter HD: Less than 1.0 UI • Eye aperture ratio More than 90 % • DC offset 0 ±0.5 V
	SD: SMPTE 259M standard complied with • 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 board)	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 board)	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 board)	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 board)	Analog/digital RGB: XGA (1024 x 768), WXGA (1280 x 768), SXGA (1280 x 1024) Vertical frequency: 60 Hz • This connector does not support the HDCP technologies. 4 signal lines, maximum: IN A1, IN A2, IN B1, IN B2 (When two AV-HS04M3 boards are used)
DVI-I Output (Option board)	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 • This connector does not support the HDCP technologies. 2 signal lines, maximum: OUT A2, OUT B2 (When two AV-HS04M5 boards are used)
DVI-D Input (Option board)	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 • Analog input signals are not supported. • This connector does not support the HDCP technologies. 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).
	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 Video format inputs: Digital RGB: 1080/50p, 1080/59.94p Vertical frequency: Same as system formats Video format outputs: Digital RGB: 1080/50p, 1080/59.94p, 1080/50i, 1080/59.94i, 720/50p, 720/59.94p • The input and output of analog signals are not supported. • Output support the high-resolution multi view mode: Signals are output with a high resolution even when SD is set as the system mode. (When high-resolution multi view mode has been enabled, MV is selected as the DVI-D OUT output, and it is not possible to select MV with SDI OUT.) • This connector does not support the HDCP technologies. Standard input/output: 1 line each (DVI-D IN, DVI-D OUT) • 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 1080/24PsF format, only gen-lock mode supported. • With the 1080/23.98PsF format, black burst with 10F-ID (SMPTE318M standard met) or TRI signals supported.
	1 line (H) When the frame synchronizer setting is "Off" and the up-converter setting is "Off". 1 frame (F) When the frame synchronizer setting is "On" or the up-converter setting is "On". • When the signals have passed through PinP, DVE, multi view, down-converter, DVI-IN or DVI-OUT, a maximum delay of 1 frame is applied in each case.
Control Terminal	
LAN	RJ-45 x 1 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 • When connecting to a hub (switching hub), use a straight cable. Use a crossover cable when connecting the unit and computer on a 1:1 basis without going through a hub. • Use with the same segment is recommended for the equipment which is connected to the unit. If the unit is connected to equipment whose segments are different, events dependent upon the settings inherent to the network equipment, for instance, may occur so thoroughly check the connections with the equipment to which the unit will be connected prior to the start of operation.

EDITOR	D-sub, 9-pin, female Used to control an editor RS-422 control connector Communication format Baud rate: 38400 bps Character length: 8 bit Parity: Odd Stop bit: 1 bit Flow control: None
	D-sub, 9-pin, female Used to control an external device RS-422 control connector Communication format (selected using a menu) • Mode: 1 (default setting) Baud rate: 9600 bps Character length: 8 bit Parity: None Stop bit: 1 bit Flow control: None • Mode: 2 Baud rate: 38400 bps Character length: 8 bit Parity: Odd Stop bit: 1 bit Flow control: None • Mode: 3 Baud rate: 38400 bps Character length: 8 bit Parity: None Stop bit: 1 bit Flow control: None
COM	D-sub, 15-pin, female (x 2) 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)
	Other BOOT switch [SV/NM (service/normal)] (for maintenance purposes) Normally, this switch is used as the "NM" position.
Accessories CD-ROM (Operating Instructions <Basics>, Operating Instructions <Operations and Settings>, User Guide "AV-HS410 Image Transmission Software", DVI input level adjustment file (BW.bmp), Image Transmission Software (ImageTrans.exe)), Power cable (2 m [6.6 ft])	

AV-HS410 Block Diagram

