

Most Powerful 1.5M/E Switcher

A new product has been released in FOR-A's Digital Video Switcher HANABI series. The HVS-1500HS is an advanced digital video switcher, born of diversified needs in the video production field. It brings together all the expertise accumulated in the HANABI series to provide high standards of operability and stability. With a wide range of advanced functions such as an up-converter, down-converter, color corrector and DVE, the HVS-1500HS delivers a video production environment that is optimized for the individual application, while at same time providing excellent value for money.

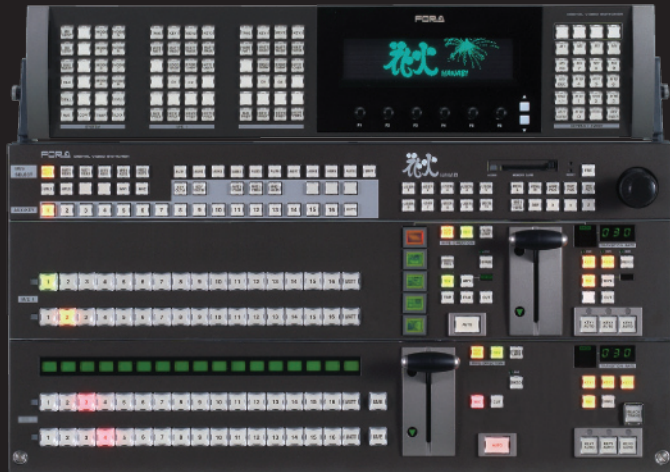
3 Control Panels

The HVS-1500HS includes compact, 24-button or 16-button or rack mountable 12-button control panel.

The control panel keeps the same familiar HANABI series operating system that has been widely used by our customers with a new design for easier usage and more functionality.



HVS-12ROU: Rack mountable 12-button control panel

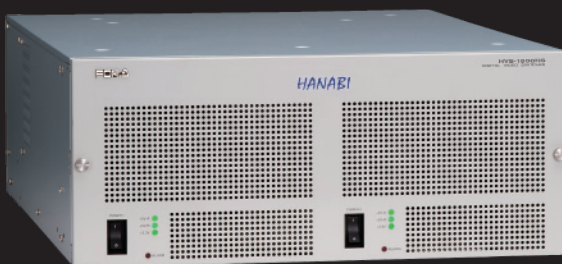


HVS-160UB: 16-button control panel



HVS-240UB: 24-button control panel

4RU Main Unit



The main unit incorporates a redundant power supply, DVE cards, additional function options, and a wide range of other functions in 4RU size. The additional function options also allow installation of a number of video peripherals for use of fewer system devices and reduced space.

HVS-1500HS Main Features

HD/SD switchable

HVS-1500HS is switchable between HD or SD formats by simply re-initializing the Operation Unit's mode setup. HVS-1500HS functions in various HD formats such as 1080/60i and 720/60p. Additional support includes 4:3 display generation in HD mode; or the choice of letter-box or squeeze display in SD mode. Thus, providing the preparation needed for up/down conversions.

Support format;

HD formats: 1080/60i, 59.94i, 50i, 24p, 24PsF, 23.98p, 23.98PsF, 720/60p, 50p, 59.94p

SD formats: 525/60, 625/50

Up to 6 Still Stores

In addition to the standard 4 still stores, a memory card can be used to enable importing of image data from a PC and exporting images stored in the switcher. Logo animation and motion blur using divided areas of the image are also supported. HVS-38SS or HVS-38SSAM6/12 options can be added for two more still stores.

Additional Still Image Storage

In addition to memory cards, HVS-38SS or HVS-38SSAM6/12 options can also be installed in the main unit. This enables storing of up to 200 still images files (in HD format) without using any external media.

*This option does not support recording or playback of the following formats:

1080/24p, 1080/24PsF, 1080/23.98p and 1080/23.98PsF

Animation Function

An optional frame memory HVS-38SSAM6/12 can be installed as an expansion function to enable storage and playback of movie files as uncompressed HD video.

- HVS-38SSAM6: HD: 3 sec., 2 ea. or SD: 19 sec., 2 ea.

- HVS-38SSAM12: HD: 6 sec., 2 ea. or SD: 38 sec., 2 ea.

6 Keyers

The HVS-1500HS offers a total of 6 keyers, with 3 keyers for each M/E and P/P Bus (2 keyers + 1 DSK) as standard. This enables keying of up to 9 layers when the M/E re-entry is used. Chroma key functions are also available for KEY1 and KEY2 of each M/E and P/P. Up to 4 keyers can be used.

Up to 16 AUX Bus Outputs

HVS-1500HS features 10 standard auxiliary output buses. HVS-38AUMV option can be added for 6 more auxiliary buses. Expansion of your system is easy. You can ever connect an optional auxiliary controller for remote operation.

Line DVEs

DVEs can be applied to the PGM, PST, KEY1, KEY2, and KEY3 buses for enabling transitions for the image using wipe or mix. This makes it easy to set picture-in-picture and other effects.

Forced Background

The Forced Background function allows mixing or wiping effects inside the digital effects image for more versatile renditions of effects despite being a 1.5M/E switcher.

Editor Support

Support is provided for a wide range of editing protocols. Installation of the optional editor interface HVS-38ED enables connection of editors from various makers to this system. (Supported protocols: BVS-3000 and GVG-100)

Sequence Function

A sequence memory of up to 20 patterns can be set in combination with the registered event memory. Sequences can be linked to faders for even easier operation.

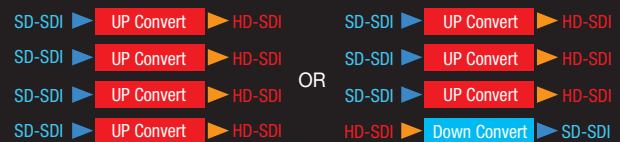
4-split Screen Display

With the HVS-38AUMV option, HVS-1500HS can accommodate two 4 input systems that can show split-screen displays on a single screen. The inputs can be assigned to any section of the split screen display. This enables use of fewer monitors for checking the display input without any external devices.



Up Converter/Down Converter

Up to 4 channels can be installed for up converter input HVS-38UC or down converter output HVS-38DC*. This enables up-converted signals to be assigned to the M/E, AUX, and KEYS buses in the same way as external input and internal still stores. *Only one down converter output available.



User Setting Buttons

Shortcut buttons are provided that enable registration of user-selected functions and menu options for speedy switcher operation.

Event Memory

The HVS-1500HS includes an event memory that can store the data for up to 200 events and setting conditions.

Motion Blur

The Motion Blur function can provide blur trail effects for moving images. The effect level can be adjusted with the fader control.

Gradation Matte

A gradation function based on up to 5 colors is provided. Colors can be assigned to backgrounds, wipe borders, and keyer mattes.

Safety Area Marker and Color Bars

A safety area marker is provided for use during down conversion and can be displayed as a box or bracket shape. Color bar generation also comes standard.

ANC Data Through/Swap Function

In the AUX output, the ANC data can pass through or be swapped.

Network Support

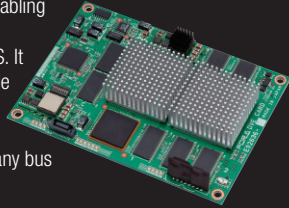
The standard ARCNET interface is provided to enable connection of multiple OUs for a single main unit and control of multiple main units from a single OU (up to five units). Installation of the Ethernet allows images to be transferred from a PC over a network connection.

Edit Preview

AUX 10 can be operated as an edit preview bus using control from the editor. (This requires the optional HVS-38ED editor interface.)

High-performance, Compact DVEs

Internal DVE cards can be installed for enabling effects. Up to 2 cards can be installed. HVS-38DVE2D designed for HVS-1500HS. It enables use of 1-channel DVE in HD mode or 2-channel DVEs in SD mode. It enables use of 2-channel DVEs in SD mode. The channels can be assigned to any bus (BKGD, KEY1, KEY2, and KEY3).



Real 3-dimensional DVEs

In addition to regular DVEs, users can also install a card for the most eye-catching feature of the HANABI series, real 3D DVEs.



3D Page Roll



3D Sphere



3D Quad Turn



3D Pizza Box

Real 3D DVE

Real-time rendering for mapping images to 3D shapes such as Page Turn and Sphere and providing complete 3D processing for DVEs.

Uncompromised high image quality

Filtering is optimized for the image size for improved enlargement and reduction quality, and an edge key generation function is used to reduce jagginess for higher image quality.

New defocus circuit design

Defocus effects can be applied as sub effects and used simultaneously with DVEs.

Trail effects

In addition to regular decay trails and star trails, border trails are also available that provide trail effects in border colors.

Internal still image memory

Includes an internal still image memory within DVEs to enable mapping of still images to the side image of a pizza box or the back side of a page turn.

Options

Input Card / DVE / Color Corrector Options

HVS-38HSDI: HD/SD 12 Input Expansion Card

This option adds 12 HD/SD-SDI inputs for enabling expansion to a maximum of 28 inputs.

HVS-38DVE2D: HD/SD-compatible 2D DVE Card

This option enables DVEs for 2 channels in SD and 1 channel in HD. Up to 2 cards can be installed.

HVS-38DVE3D: HD/SD-compatible Real 3D DVE Card

This option enables real 3D DVE effects. (Not compatible with the HVS-38DVE2D.)

HVS-38CC: Addition of Color Corrector

This option adds a color correction function to the primary inputs and keyers. (It can be set for each bus, keyer, and input.)

Expansion Options / Editor Interface

HVS-38IOEX: HVS-38AUMV/UC/DC Interface Card

Necessary interface card for installing HVS-38AUMV, HVS-38UC and HVS-38DC options. Only one card can be installed.

HVS-38AUMV: Expansion of AUX/MV Card

This option adds 6 AUX outputs, the 4-split screen display function, and 2 asynchronous inputs.

HVS-38SS: Expansion of Still Store Card

This option adds 2 built-in still stores and expands the still image storage capacity.

HVS-38SSAM6/12: Expansion of Still Store and Animation Card

This option adds 2 internal still stores, expands the still image storage capacity, and adds a movie playback function.

HVS-38UDIF: HVS-38UC/DC Interface Card

Additional interface card for the HVS-38IOEX. Required to install the HVS-38UC and HVS-38DC. Only one card can be installed. (Required HVS-38IOEX option)

HVS-38UC: Up-converter Card

This option adds up-converter input. Up to 4 cards can be installed. Up to four cards including the HVS-38DC. (Required HVS-38UDIF option)

HVS-38DC: Down-converter Card

This option adds down-converter output. A maximum of 1 card can be installed. (Required HVS-38UDIF option)

HVS-38ED: Editor Interface

This software option provides support for the BVS-3000 and GVG-100 editing protocols.

Configuration of expansion options

Functions	Required option	HVS-38IOEX	HVS-38AUMV	HVS-38UDIF	HVS-38UC	HVS-38DC	HVS-38SS	38SSAM	38ED
Adds 6 AUXs, 2 quad viewers, 2 utility inputs		✓	✓						
Adds Up-converters (max. 4 inputs)		✓		✓	✓	✓			
Adds Down-converter (max. 1 outputs)		✓		✓					
Adds 2 still stores, expands the still image storage							✓		
Adds 2 still stores, expands the still image storage, movie playback function								✓	
Editor Interface									✓

Color Correction Features Added

Optional color correction functions can be applied to the primary inputs and keyers. Proc Amp controls, gamma corrections and various clip functions are all available. The parameters for any of these functions can be registered in the event memory to enable different changes to be made in the course of sequences.

<Main color correction functions>

- Three color correction modes (balance, differential and sepia)
- Gamma adjustment functions in HIGH, MID and LOW tones
- Proc Amp controls (video level, chroma level and setup level)
- Various clip functions (RGB/Yp/Pa)

Color Correction Mode



Balance mode:
For color correction in RGB signals.

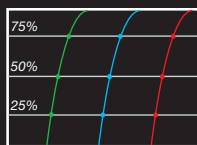


Differential mode:
For color correction without upsetting the white balance.



Sepia mode:
For converting the colors into a monotone.

Gamma Correction



For gamma correction separately for the RGB signals in the HIGH (near 75%), MID (near 50%) or LOW (near 25%) tone.

Hardware options

HVS-38PSM: Redundant Power Supply for Main Unit

This unit features a redundant power supply design for the main unit and provides hot swap and shutdown functions.

HVS-12PS0: Redundant Power Supply for OU

This unit features a redundant power supply design for the operation unit (12ROU).

HVS-38PS0: Redundant Power Supply for OU

This unit features a redundant power supply design for the operation unit (160UB, 240UB).

HVS-TALR20/32: Tally Relay Unit

This is a relay contact type of tally unit. Output signals can be assigned to any channel. It includes 20 or 32 independent output circuits. Up to 5 units can be linked using a cascade connection.

HVS-TALOC20/32: Tally Open Collector Unit

This is an open collector type of tally unit. Output signals can be assigned to any channel. It includes 20 or 32 independent output circuits. Up to 5 units can be linked using a cascade connection.

HVS-AUX16: 16-button AUX Switchbox with Shift

This unit enables support for 32 inputs using the shift button. Up to 16 units can be connected, and inputs can be assigned to any panel.

HVS-AUX32: 32-button AUX Switchbox

This unit enables direct control of 32 inputs. Up to 16 units can be connected, and inputs can be assigned to any panel.

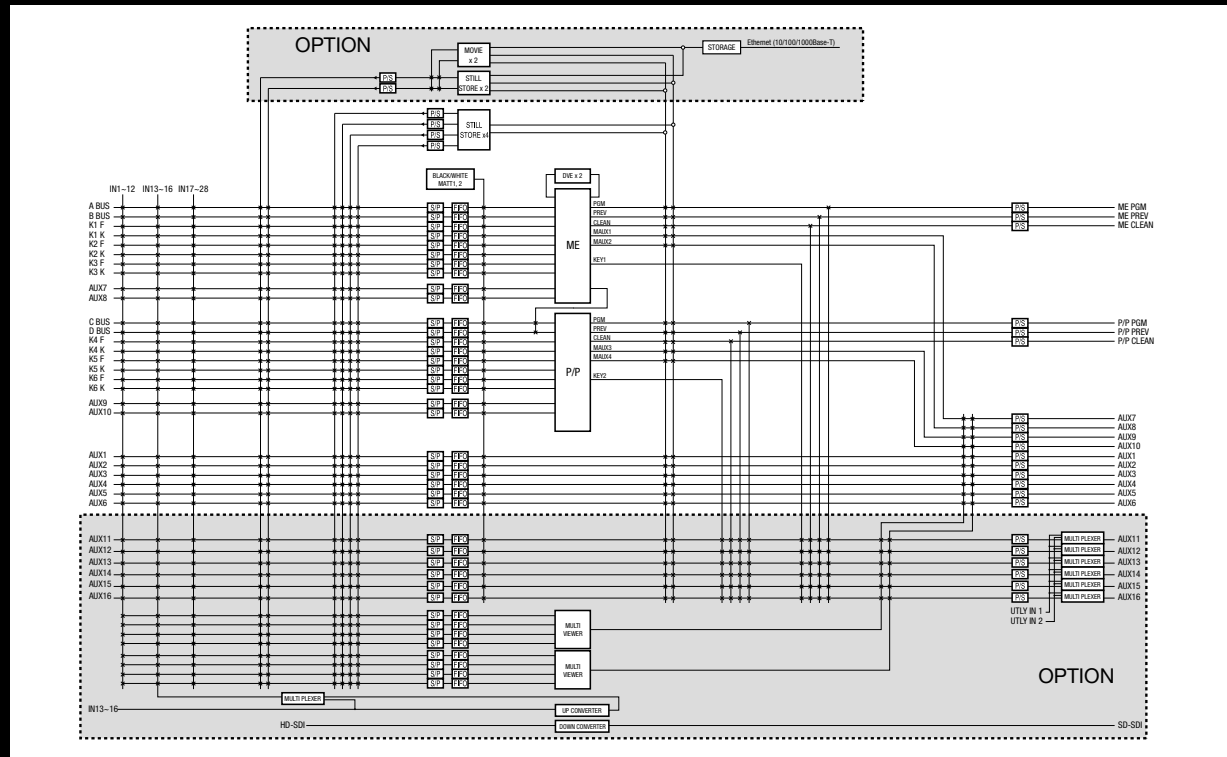
HVS-AUXRK: AUX Panel Extension Kit

This kit enables separation and extension of the HVS-AUX16 or HVS-AUX32 panel. Extension is possible up to 5 meters.

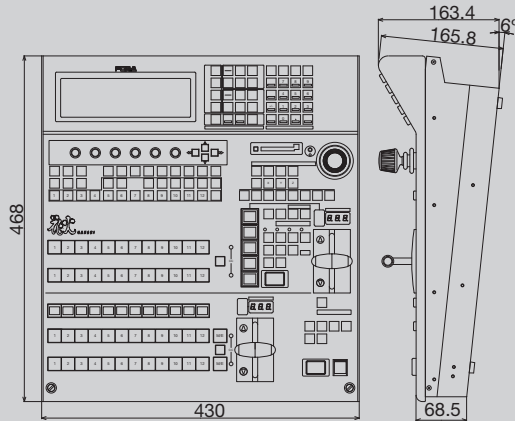
Specifications

	HD mode	SD mode
Standard	1080/60i, 59.94i, 50i, 24p, 24PsF, 23.98p, 23.98PsF, 720/60p, 50p, 59.94p (Selectable at menu)	525/60 (NTSC), 625/50 (PAL) (selectable at menu)
Signal processing	4:2:2:4 digital component, 10-bit	
Video Input	16 standard inputs, optionally expandable to 31 inputs (28 inputs + 2 utility inputs + 1 down convert input)	
	HD SDI: 1.485Gbps or 1.485/1.001Gbps, 75Ω, BNC	SD-SDI: 270Mbps, 75Ω, BNC
Reference Input	Tri-level Sync: ±0.3Vp-p or BB: 0.429Vp-p (NTSC) /0.45Vp-p (PAL) 75Ω or loopthrough, 1ea., BNC	BB: 0.429Vp-p (NTSC) /0.45Vp-p (PAL), 75Ω or loopthrough, 1ea., BNC
Video Output	16 standard outputs, optionally expandable to 23 outputs (22 outputs + 1 down convert output)	
	HD SDI: 1.485Gbps or 1.485/1.001Gbps, 75Ω, BNC	SD-SDI: 270Mbps, 75Ω, BNC
Reference Output	Tri-level Sync: ±0.3Vp-p or BB: 0.429Vp-p (NTSC) /0.45Vp-p (PAL) 75Ω, 2ea., BNC	BB: 0.429Vp-p (NTSC) /0.45Vp-p (PAL), 75Ω, 2ea., BNC
I/O Delay	1H (when DVE option not applied to output), 1 frame +1H (KEY1, KEY2), 1 more additional frame when DVE applied to output	
Memory Device	Memory card (compact flash card)	
Interfaces	RS-422: 6ea., 9-pin D-sub (female) (for Tally unit, Editor, etc) GPI IN: 1ea., 15-pin D-sub (female) GPI/TALLY OUT: 1ea., 25-pin D-sub (female) ALARM: 1ea., 9-pin D-sub (female) ARCNET: 75Ω or loopthrough, 1ea., BNC (for HANABI series option) Ethernet: 10/100Base-T, 1ea., RJ-45 (for HVS-DPUA) (with the HVS-38SS option expands to 2 ports)	
Temperature / Humidity	0°C - 40°C / 30% - 90% (no condensation)	
Power	100VAC - 240VAC 50/60Hz	
Consumption	Main Unit: 400VA (at 100VAC) (full option: 770VAC), 400VA (at 240VAC) (full option 764VAC) HVS-12ROU: 54VA (at 100VAC), 72VA (at 240VAC) HVS-160UB: 100VA (at 100VAC), 137VA (at 240VAC) HVS-240UB: 100VA (at 100VAC), 110VA (at 240VAC)	
Dimensions / Weight	Main Unit: 430 (W) x 177 (H) x 505 (D) mm, EIA 4RU / 25kg (full option) HVS-12ROU: 430 (W) x 165.8 (H) x 468 (D) mm / 10kg HVS-160UB: 640 (W) x 95 (H) x 460 (D) mm / 16kg HVS-240UB: 787 (W) x 95 (H) x 460 (D) mm / 20kg	
Accessories	Main Unit: AC Cable / Rack mount brackets HVS-12ROU / 160UB / 240UB: User's Manual / AC Cable / Connection Cable / Memory Card (rack mount brackets are optional)	
Options	HVS-38HSDI: HD/SD 12 Input Expansion Card / HVS-38DVE2D: HD/SD-compatible 2D DVE Card HVS-38DVE3D: HD/SD-compatible Real 3D DVE Card / HVS-38CC: Addition of Color Correction for HVS-3800HS and HVS-1500HS	
Expansion Options	HVS-38IOEX: HVS-38AUMV/UC/DC Interface Card / HVS-38AUMV: Expansion of AUX/MV Card / HVS-38SS: Expansion of Still Store Card HVS-38SSAM: Expansion of Still Store and Animation Card / HVS-38UDIF: HVS-38UC/DC Interface Card / HVS-38UC: Up-converter Card for HVS-3800HS and HVS-1500HS / HVS-38DC: Down-converter Card for HVS-3800HS and HVS-1500HS	
Editor Interface Option	HVS-38ED: Editor Interface	
Hardware Options	HVS-38PSM: Redundant Power Supply for Main Unit / HVS-38PSO: Redundant Power Supply for Operation Unit HVS-TALR20/HVS-TALR32: Tally Relay Unit / HVS-TALOC20/HVS-TALOC32: Tally Open Collector Unit HVS-AUX16: 16-button AUX Switchbox with Shift / HVS-AUX32: 32-button AUX Switchbox / HVS-AUXRK: AUX Panel Extension Kit HVS-DPUA: Touch Panel Display Unit / UMD-300: Under Monitor Display	

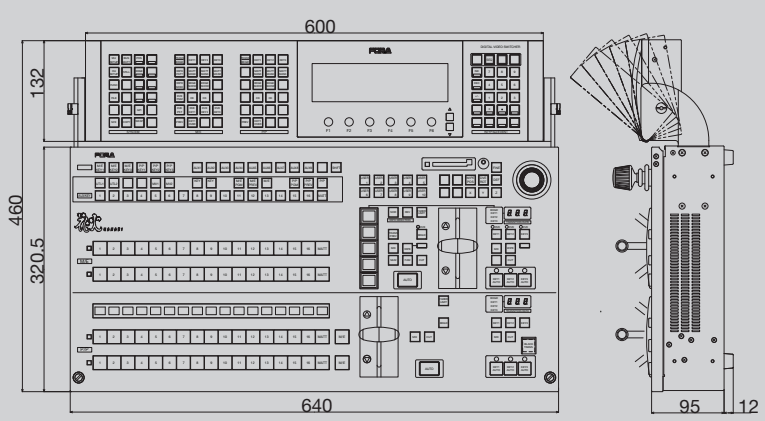
Block Diagram



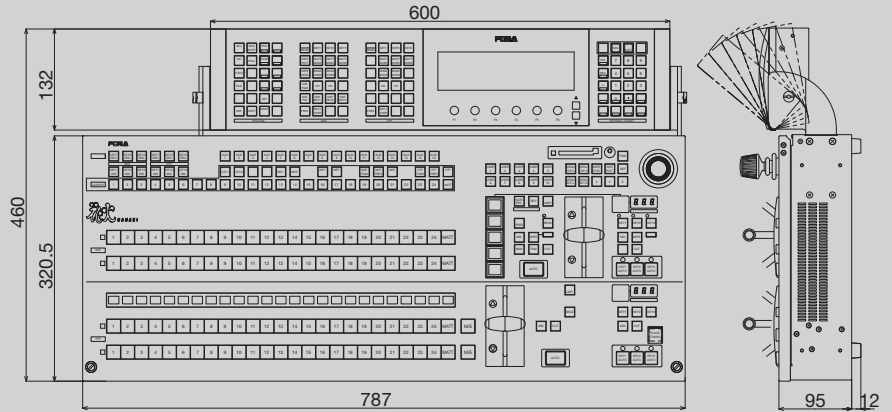
HVS-12ROU: External Dimensions



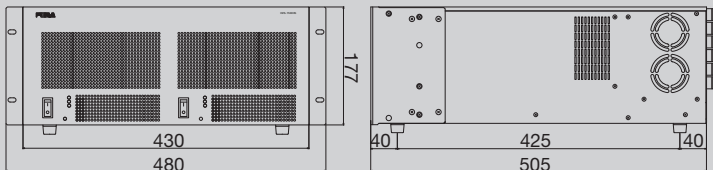
HVS-160UB: External Dimensions



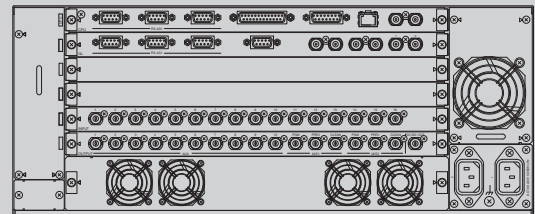
HVS-240UB: External Dimensions



HVS-1500HS: Main Unit External Dimensions



HVS-1500HS: Main Unit Rear Panel



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