

Line-up

FOR-A's HVS-4000 Series are a 2 M/E, 2.5 M/E, or 3 M/E multi format video switcher. It has a wide range of features, including HD/SD mixed input, 3 Gbps support, 2.5D and 3D DVE, multiviewer, up/down converter, external device control, macro function and video file support. It also comes with a number of interfaces and functions for connecting to external devices, making it extremely useful as the core device in your video production system.

2 M/E, 2.5 M/E, and 3 M/E models

The HVS-4000 Series offer you a choice of three models, a 2 M/E, 2.5 M/E, or 3 M/E model. The main unit and options are the same, so you can upgrade to 3 M/E even after purchasing a 2 M/E model. The main unit has a redundant power source, DVE board and a number of options for adding functions, all in a main unit. Helping to reduce system peripherals and save you space.

*The number of rows of the control panel buttons and optional devices that can be added are varied, depending on the specification requirements.

Model Details

Main Unit	HVS-4000HS		HVS-4000HSA	
Lines of Control Panel	2 Lines	3 Lines	2 Lines	3 Lines
Num. of M/E	2 M/E	Supported	Supported	Supported
	2.5 M/E	Not Supported	HVS-4SUBME	Not Supported
	3 M/E	Not Supported	Not Supported	Not Supported
Control Panels	16-button	HVS-21630U	Not Supported	HVS-21630U
	24-button	HVS-22430U or HVS-22440U	HVS-32440U	HVS-22430U or HVS-22440U
	32-button	Not Supported	HVS-33240U	Not Supported
Support Formats	HD/SD	HD/SD	HD/SD (3G: option)	HD/SD (3G: option)
2.5D DVE	6 channels (option)	6 channels (option)	6 channels (option)	6 channels (option)
3D DVE (Max. of channels)	4 channels (option)	4 channels (option)	8 channels (option)	8 channels (option)
Multiviewer	1	1	2	2
Combiner	Not Supported	Not Supported	HVS-4COMB	HVS-4COMB

2 Lines Model (2 M/E)

A control panel with the traditional easy operation of the HANABI Series, great for simple, direct operations

- HVS-21630U: 2 Lines model, 16-button type
- HVS-22430U: 2 Lines model, 24-button type
- HVS-22440U: 2 Lines Model, 24-button type



HVS-4000HS / HVS-4000HSA Main Unit



HVS-21630U

Five types of Control Panel

The control panels available for the HVS-4000HS include three types of 2 lines models (2 M/E) and two types of 3 lines models (2.5 M/E or 3 M/E).

3 Lines Model (2.5 M/E or 3 M/E)

A control panel that puts the emphasis on direct access to preset content, including a macro bus and event recall button for each M/E

- HVS-32440U: 3 Lines model, 24-button type
- HVS-33240U: 3 Lines model, 32-button type



HVS-22430U



HVS-22440U



HVS-32440U



HVS-33240U

Main Features

Supports HD/SD Mixed Input

With its simple panel operation, the HVS-4000 lets you switch between HD and SD signals and the various HD formats. With the optional up/down converter card installed, the system can support mixed input from HD and SD devices. With the switcher alone, it is possible to perform mixed processing without concern for the differences between HD and SD signals.

Supported formats:

HD-SDI: 1080/59.94i, 1080/50i, 1080/30PsF, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF, 720/59.94p, 720/50p
SD-SDI: 525/60, 625/50

Supports 3 Gbps Signal (option)

In addition to HD and SD signals, support for the next-generation signal standard 3 Gbps is an available option (HVS-4000HSA only).

*HVS-4EX option is not supported 3 Gbps.

Supported formats:

3G-SDI: 1080/59.94p, 1080/50p

Maximum 48 Inputs and 24 Outputs

HD/SD-SDI 16 inputs, 16 outputs come standard. And can be expanded up to 48 inputs (in units of 16) and 28 outputs (adding 12). A side panel and safety marker can be added to the AUX output.

The HVS-4000 also comes with two utility bus channels per M/E. These channels can be used for keyer external mask, wipe border, a background needed for M/E bus P-in-P, side panel, and local still.

Up/Down Converter

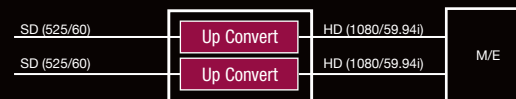
The HVS-4000 allows the option of adding an up/down converter*. With a frame synchronizer, asynchronous video can be input as is (up to four channels with this option).

*No frame rate converter function provided.

Convert Details

Input formats		Converted formats	
SD-SDI	525/60	HD-SDI	1080/59.94i
	625/50	HD-SDI	1080/50i
HD-SDI	1080/59.94i	SD-SDI	525/60
	1080/50i	SD-SDI	625/50
	1080/30PsF	HD-SDI	—
	1080/29.97PsF	HD-SDI	—
	1080/25PsF	HD-SDI	—
	1080/24PsF	HD-SDI	—
	1080/23.98PsF	HD-SDI	—
	720/59.94p	SD-SDI	525/60
		HD-SDI	1080/59.94i
	720/50p	SD-SDI	625/50
	HD-SDI	1080/50i	

Assignable to Input



Assignable to BUS



Up to 18 Keyers

The HVS-4000 comes standard with 4 keyers for each M/E. Eight keyers are standard on the 2 M/E model, 11 keyers are standard on the 2.5 M/E model and 12 keyers are standard on the 3 M/E model (P/P line has 3 keyers). Two keyers can optionally be added to each M/E. This lets you expand to up to 12 keyers on the 2 M/E model, 15 keyers on the 2.5 M/E model and 18 keyers on the 3 M/E model.



*GUI is option

AUX Bus Dedicated DSK

As an additional option, you can add two dedicated DSK to an AUX bus. Allowing you to do superimposing on each AUX output.

Combiner Function (to be supported in the future)

HVS-4000 can be added with the independent combiner function besides the M/E function. For example, the combiner function can be used by installing to the HVS-4000 in the stage prior to the M/E process and adding DVE to the input signals in order to provide multiple P-in-P video via a single channel (pre-combiner function). It can also be used by installing to the HVS-4000 in the stage subsequent to the M/E process and utilizing it for CG composition (L-shaped left side and bottom of the screen).

Maximum 12-channel Still Stores

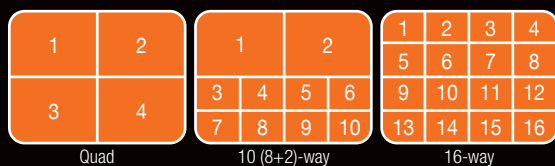
Six still stores (Global Still) that can be selected for all buses come standard. The switcher can be expanded up to eight still stores. Furthermore, four more dedicated still stores (Local Still) can be added in each M/E, bringing the number of still stores to a total of 12. A logo animation function, is also provided. A motion logo which loops a succession of still images.



*GUI is option

Multi-viewer

A 4/10/16-way multi-viewer comes standard. Two multi-viewer modes are available: one multi-viewer channel for the 10- or 16-way mode and two multi-viewer channels for quad mode. A multi-viewer function with one channel for 10-way mode or a function with two channels for quad mode can be added as an option.



DVE

2.5D DVEs and 3D DVEs can be added simultaneously. Up to six channels can be added to the 2.5D DVE, whereas up to eight channels (in 2-channel units) can be added to the 3D DVE. A total of up to 14 channels of DVEs can be added. All DVEs can process V+K on one channel. The number of channels does not decrease even when the flying key effect is used. 3D DVEs use the same architecture as in the HVS-5000 series. This allows DVE effects with high image quality and high functionality.



LINE DVE

HVS-4000 has adopted a conventional built-in DVE system (LINE DVE) for four channels and external DVE system for the remaining four channels. This makes it possible to select advanced 3D DVE video as a single body of material from multiple buses. The use of DVE widens the scope of creative video broadcasting, for example, using 2.5D DVE for Picture in Picture (P-in-P), 3D DVE for P-in-P and transitions, and 3D DVE for video material production added with digital video effects.

Color Corrector

A full-featured, optional two-channel color corrector can be added for inputs. This allows color correction for any two input channels. The color corrector option can also be added for each bus. Because the color corrector option for four channels per single output card can be added for the AUX bus, this feature is useful for suppressing illegal signal outputs and color adjustment for on-set monitors.

Color correction mode



Macro Function

The HVS-4000 comes with macro function to record and play back complex operating procedures with just one button. This lets you easily register a series of operations and then perform complicated operations with one push of a button. For example, you could send a play command to a VTR, then switch to the VTR channel after waiting a set amount of time before footage playback begins.

Sequence Function

Allows you to register changes in parameters as a sequence. By using the optional GUI software, a timeline can be displayed, making it easy to make corrections or changes. Up to 20 sequences can be registered.

Event Memory

The HVS-4000 comes with event memory capable of registering all types of parameter settings. Up to 200 events can be registered.

Clip drive unit

An optional motion picture playback unit can be connected. With one unit, it is possible to record and play back up to one hour of HD full motion video (30 minutes in the case of V+K), which can be used for all types of animation, including CG wipes and opening CG. When an optional clip drive is connected, the clip function using the still store video path can be added.

To achieve CG wipes with ordinary video switchers, it is typical to make the connection settings to an external device by using a switcher's timeline function to put together the key frames. But with FOR-A's HVS-4000 HANABI Series, all you need to do is make the setting as a wipe function to achieve a CG wipe that connects to auto-transition. This unit, which we offer as an external add-on option, supports video signal input and file transfer (MXF files) from a PC by Ethernet.



External Device Control

Enables integrated control of various external devices such as routing switcher, VTR, DDR, clip server and multi-viewer. Video names on the switcher control panel can be changed in accordance with crosspoint switches on the router. The switcher tally information can be also sent to other devices such as a multiviewer through the router with video names.



*GUI is option

Specifications

	HD mode	SD mode
Video Formats	1080/59.94i, 1080/50i, 1080/30PsF, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF, 720/59.94p, 720/50p	525/60, 625/50
Video Format (option)	1080/59.94p, 1080/50p	—
Processing	4:2:2:4, 10-bit, digital component	
Quantization	Y: 10-bit, C: 10-bit, KEY: 10-bit	
Video Inputs	Standard: 16, max.: 48	
	HD-SDI: 1.5 Gbps, 75Ω BNC	SD-SDI: 270 Mbps, 75Ω BNC
Video Inputs (option)	3G-SDI: 3 Gbps 75Ω BNC	
Genlock Input	BB: NTSC 0.429 Vp-p/PAL 0.45 Vp-p or Tri-level sync: 0.6 Vp-p, 75Ω BNC x 1, loop-through (Terminate with 75Ω terminator, if unused.)	BB: NTSC 0.429 Vp-p/PAL 0.45 Vp-p, 75Ω BNC x 1, loop-through (Terminate with 75Ω terminator, if unused.)
Video Outputs	Standard: 16, max.: 28	
	HD-SDI: 1.5 Gbps, 75Ω BNC	SD-SDI: 270 Mbps, 75Ω BNC
Video Outputs (option)	3G-SDI: 3 Gbps 75Ω BNC	
I/O Delay	1 H (minimum delay) 1 frame + 1 H (Using DVE)	
Storage	Internal Storage (main unit) USB memory device (with HVS-21630U, HVS-22430U)	
Interfaces	RS-422: 9-pin D-sub (female) x 6 EDITOR: 9-pin D-sub (female) x 1 GPI IN: 15-pin D-sub (female) x 1 (10 inputs) GPI/TALLY OUT: 25-pin D-sub (female) x 1 (20 outputs) ARCNET: 75Ω BNC x 1, loop-through (Terminate with 75Ω terminator, if unused.) Ethernet: 1000BASE-T ALARM: 9-pin D-sub (female) x 1 USB: USB 1.1, Series A connector x 1 (with HVS-21630U, HVS-22430U)	
Temperature / Humidity	0°C to 40°C, 5°C to 40°C (with HVS-4CLIP) / 30% to 90% (no condensation)	
Power / Consumption	HVS-4000HS / HVS-4000HSA: 100 V AC to 240 V AC ±10% 50/60 Hz / Max. 830 VA (At 100 V AC), Max. 880 VA (At 200V AC) HVS-21630U: 100 V AC to 240 V AC ±10% 50/60 Hz / Max. 70 VA (At 100 V AC), Max. 75 VA (At 200V AC) HVS-22430U: 100 V AC to 240 V AC ±10% 50/60 Hz / Max. 80 VA (At 100 V AC), Max. 77 VA (At 200V AC) HVS-22440U: 100 V AC to 240 V AC ±10% 50/60 Hz / Max. 50 VA (At 100 V AC), Max. 59 VA (At 200V AC) HVS-32440U: 100 V AC to 240 V AC ±10% 50/60 Hz / Max. 45 VA (At 100 V AC), Max. 57.2 VA (At 200V AC) HVS-33240U: 100 V AC to 240 V AC ±10% 50/60 Hz / Max. 45 VA (At 100 V AC), Max. 55 VA (At 200V AC)	
Dimensions / Weight	HVS-4000HS / HVS-4000HSA: 429.4 (W) x 177 (H) x 510 (D) mm / 30 kg (full options) HVS-21630U: 777 (W) x 106 (H) x 473 (D) mm / 14 kg HVS-22430U: 922 (W) x 106 (H) x 473 (D) mm / 17 kg HVS-22440U: 1018 (W) x 94.7 (H) x 365 (D) mm / 16 kg HVS-32440U: 1018 (W) x 128.3 (H) x 486 (D) mm / 23 kg HVS-33240U: 1186 (W) x 128.3 (H) x 486 (D) mm / 25 kg	
Accessories	HVS-4000HS / HVS-4000HSA: AC cord, Rack mount brackets Control Panels: Operation manual, AC cord, 5C-2V Cable (10m) *Rack mount brackets are optional.	
Consumables	Power unit: Replace every 5 years Cooling fan: Replace every 4 years HDD (HVS-4CLIP): Replace every year	

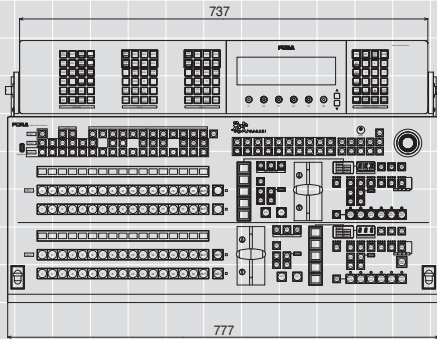
Options

Name	Summary	Max. of install
<I/O Expansion Card>		
HVS-4HSDI	Input expansion card (16 inputs)	2
HVS-4HSDO	Output expansion card (8 outputs)	1
HVS-4HSDOA*	SDI (8 outputs), down converter (2 outputs), multi-viewer (2 outputs)	1
<Additional Function Card>		
HVS-43GEXP	3 Gbps support	Soft Op.
HVS-4DVEIF	3D DVE base unit (incl. 2 channels of 3D DVE)	1
HVS-4DVE3D	3D DVE expansion card (2 channels) (Requires the HVS-400HSA if 2 or more cards installed.)	3
HVS-4EX	2.5D DVE expansion card (6 channels)	1
HVS-4STLKEY	2 Global Still, 2 Keyer for each M/E and 4 Local Still expansion	Soft OP.
HVS-4AUXDSK	AUX DSK expansion (2 channels)	Soft OP.
HVS-4UD	Up/Down converter card (4 channels)	1
HVS-4SUBME	2 M/E to 2.5 M/E card	1
HVS-4MEEXP	2.5 M/E to 3 M/E (Requires the HVS-4SUBME card and HVS-4000HSA)	Soft OP.
HVS-4COMB*	Combiner function (Requires the HVS-4000HSA)	Soft OP.
HVS-4ED	Editor Interface	1
HVS-4CC	Color correction: 2 channels (full functional) , and Proc Amp and Hue for M/E, Util, Key Fill and AUX buses (4 channels per OUTPUT CARD)	Soft OP.
HVS-4ECD	External clip drive	1
HVS-4GUI	GUI software (Touch panel display control support) (Requires a control PC)	1
HVS-4VR	Virtual link	Soft OP.
<Redundant Power Supply, Support Hardware>		
HVS-4PSM	MU redundant power supply (for HVS-4000HS)	1
HVS-42PSO	OU redundant power supply (for 2-M/E OU)	1
HVS-43PSO	OU redundant power supply (for 3-M/E OU)	1
HVS-AUX8/16/32	AUX remote control panel	16
HVS-AUXRK/AUX8BK	AUX panel extension kit	Same as above
HVS-TALR20/32	Tally relay unit (20/32 terminals)	Total of 5 units
HVS-TALOC20/32	Tally open collector unit (20/32 terminals)	

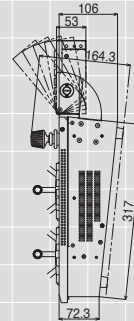
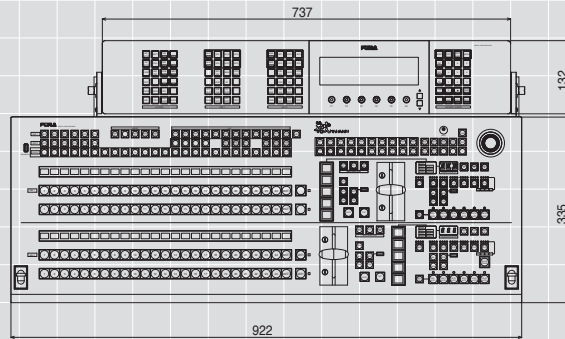
*to be supported in the future

Dimensions

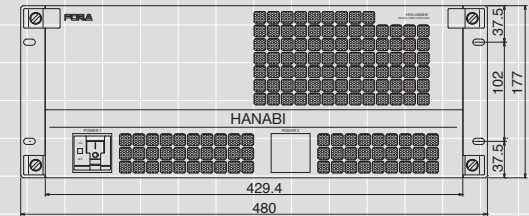
HVS-2163OU



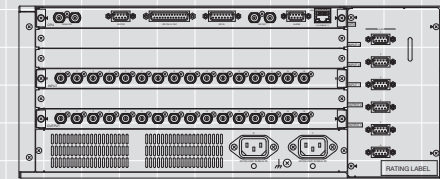
HVS-2243OU



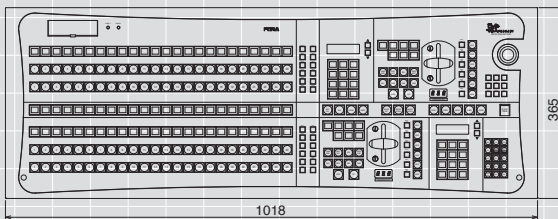
Main Unit External Dimensions



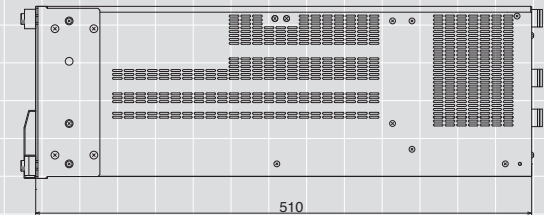
Rear Panel



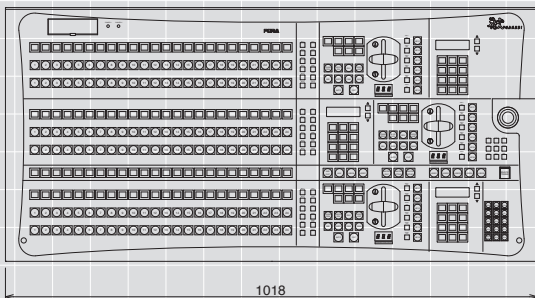
HVS-2244OU



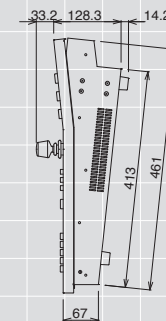
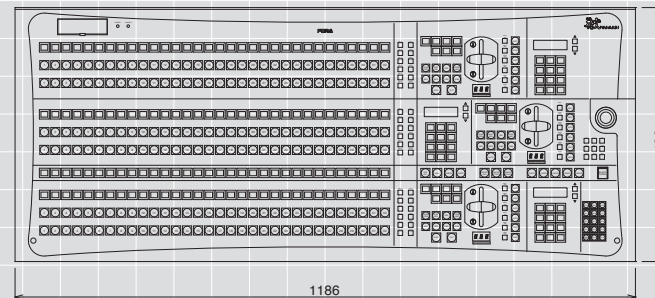
Side Panel



HVS-3244OU



HVS-3324OU



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