FOR-A®

3G/HD/SD PORTABLE VIDEO SWITCHER

HVS-100/110

HANABI

花火
HANABI

Enhanced Multi-functionality and Unbelievable Cost Performance

The HVS-100 and the HVS-110, portable video switchers, boast exceptional cost performance. Both mixers inherit and improve upon the diverse functions and features of the popular HVS-300HS, including mixed HD/SD input, frame synchronizing, re-sizing engine, 2.5D wipe effects, DVE, Chroma keyer and DSK. The HVS-100 and HVS-110 also have a built-in Web server that lets you change settings from a PC or a tablet. A clip memory feature has been added to the still store to support playback of video or animations and enhances productions through the use of CG wipes, while the multi-viewer meets a diverse range of monitoring needs. The equipment can be used in all types of locations, including live events, sports, news studios, OB vans, editorial offices and presentation venues, making it the ideal tool for shaping the imaginative ideas of video creators.

Product Line-up

Two models are avairable: one with separate main unit and control panel, and one with compact, integrated design, both of which can be adapted to a wide variety of applications and operation configurations.

HVS-100 (bottom) and HVS-100OU (top)

HVS-100

Separate Main Unit/Control Panel Type

The control panel has been laid out specifically with professionals in mind with a design that leverages the knowledge of expert operators. It includes dedicated bus buttons, AUX buttons, a fader controller and direct user buttons for various functions. The main unit offers exceptional expandability to facilitate the addition of a redundant power source unit and various input/output cards.

HVS-110

Integrated Main Unit/Control Panel Type

Featuring operability almost on par with the HVS-100, the HVS-110 also boasts a compact design enabling simple portability. The inclusion of ample video input and output functionality, making it ideal for use in small broadcasting vans and broadcasting helicopters. Despite being portable, a redundant power source is also possible using an optional AC adaptor.

HVS-100/110 Main Features

Standard 8, Maximum 14 Inputs;
Standard 4 + 1, Maximum 9 outputs (HVS-100)

8 HD/SD-SDI inputs, 4 HD/SD-SDI outputs and 1 HDMI output come as standard. Mixed HD/SD input is supported in the standard configuration. The 5 outputs can all be freely assigned. Three slots enable various inputs and outputs to be added, such as analog component, analog composite, HDMI, and VGA in addition to more HD/SD-SDI.

12 Inputs; 8 + 1 Outputs (HVS-110)

12 HD/SD-SDI inputs, 8 HD/SD-SDI outputs and 1 HDMI output come as standard. Mixed HD/SD input is supported in the standard configuration. The 9 outputs can all be freely assigned.

Input/Output Card Configuration

The following outlines combinations of input/output cards that can be used in the HVS-100 slots. Refer to “Options” for details of cards.

Expansion Slots			Inputs				Outputs			
SlotA	SlotB	SlotC	HD/SD -SDI	Analog	HDMI		HD/SD -SDI	Analog	HDMI	
					HDMI	HDMI or VGA			HDMI	HDMI and VGA
–	–	–	8	0	0	0	4	0	1	0
HVS-100AI	–	–	8	2	0	0	4	0	1	0
HVS-100AI	HVS-100AI	–	8	4	0	0	4	0	1	0
HVS-100AI	HVS-100AI	HVS-100AO	8	4	0	0	4	2	1	0
HVS-100AI	HVS-100AI	HVS-100DO	8	4	0	0	6	0	1	0
HVS-100AI	HVS-100AI	HVS-100PCO	8	4	0	0	4	0	2	1
HVS-100AI	HVS-100DI-A	–	10	2	0	0	4	0	1	0
HVS-100AI	HVS-100DI-A	HVS-100AO	10	2	0	0	4	2	1	0
HVS-100AI	HVS-100DI-A	HVS-100DO	10	2	0	0	6	0	1	0
HVS-100AI	HVS-100DI-A	HVS-100PCO	10	2	0	0	4	0	2	1
HVS-100AI	HVS-100PCI	–	8	2	1	1	4	0	1	0
HVS-100AI	HVS-100PCI	HVS-100AO	8	2	1	1	4	2	1	0
HVS-100AI	HVS-100PCI	HVS-100DO	8	2	1	1	6	0	1	0
HVS-100AI	HVS-100PCI	HVS-100PCO	8	2	1	1	4	0	2	1
HVS-100AI	HVS-100AO	–	8	2	0	0	4	2	1	0
HVS-100AI	HVS-100AO	HVS-100AO	8	2	0	0	4	4	1	0
HVS-100AI	HVS-100AO	HVS-100DO	8	2	0	0	6	2	1	0
HVS-100AI	HVS-100AO	HVS-100PCO	8	2	0	0	4	2	2	1
HVS-100AI	HVS-100DO	–	8	2	0	0	6	0	1	0
HVS-100AI	HVS-100DO	HVS-100DO	8	2	0	0	8	0	1	0
HVS-100AI	HVS-100PCO	–	8	2	0	0	4	0	2	1
HVS-100AI	HVS-100PCO	HVS-100DO	8	2	0	0	6	0	2	1
HVS-100AI	HVS-100PCO	HVS-100PCO	8	2	0	0	4	0	3	2
HVS-100DI-A	–	–	12	0	0	0	4	0	1	0
HVS-100DI-A	HVS-100AI	–	12	2	0	0	4	0	1	0
HVS-100DI-A	HVS-100AI	HVS-100AO	12	2	0	0	4	2	1	0
HVS-100DI-A	HVS-100AI	HVS-100DO	12	2	0	0	6	0	1	0
HVS-100DI-A	HVS-100AI	HVS-100PCO	12	2	0	0	4	0	2	1
HVS-100DI-A	HVS-100DI-A	–	14	0	0	0	4	0	1	0
HVS-100DI-A	HVS-100DI-A	HVS-100AO	14	0	0	0	4	2	1	0
HVS-100DI-A	HVS-100DI-A	HVS-100DO	14	0	0	0	6	0	1	0
HVS-100DI-A	HVS-100DI-A	HVS-100PCO	14	0	0	0	4	0	2	1
HVS-100DI-A	HVS-100PCI	–	12	0	1	1	4	0	1	0
HVS-100DI-A	HVS-100PCI	HVS-100AO	12	0	1	1	4	2	1	0
HVS-100DI-A	HVS-100PCI	HVS-100DO	12	0	1	1	6	0	1	0
HVS-100DI-A	HVS-100PCI	HVS-100PCO	12	0	1	1	4	0	2	1
HVS-100DI-A	HVS-100AO	–	12	0	0	0	4	2	1	0
HVS-100DI-A	HVS-100AO	HVS-100AO	12	0	0	0	4	4	1	0
HVS-100DI-A	HVS-100AO	HVS-100DO	12	0	0	0	6	2	1	0
HVS-100DI-A	HVS-100AO	HVS-100PCO	12	0	0	0	4	2	2	1

Expansion Slots			Inputs				Outputs			
SlotA	SlotB	SlotC	HD/SD -SDI	Analog	HDMI		HD/SD -SDI	Analog	HDMI	
					HDMI	HDMI or VGA			HDMI	HDMI and VGA
HVS-100DI-A	HVS-100DO	–	12	0	0	0	6	0	1	0
HVS-100DI-A	HVS-100DO	HVS-100DO	12	0	0	0	8	0	1	0
HVS-100DI-A	HVS100PCO	–	12	0	0	0	4	0	2	1
HVS-100DI-A	HVS100PCO	HVS-100DO	12	0	0	0	6	0	2	1
HVS-100DI-A	HVS100PCO	HVS-100PCO	12	0	0	0	4	0	3	2
HVS-100PCI	–	–	8	0	1	1	4	0	1	0
HVS-100PCI	HVS-100AI	–	8	2	1	1	4	0	1	0
HVS-100PCI	HVS-100AI	HVS-100AO	8	2	1	1	4	2	1	0
HVS-100PCI	HVS-100AI	HVS-100DO	8	2	1	1	6	0	1	0
HVS-100PCI	HVS-100DI-A	–	10	0	1	1	4	0	1	0
HVS-100PCI	HVS-100DI-A	HVS-100AO	10	0	1	1	4	2	1	0
HVS-100PCI	HVS-100DI-A	HVS-100DO	10	0	1	1	6	0	1	0
HVS-100PCI	HVS-100DI-A	HVS-100PCO	10	0	1	1	4	0	2	1
HVS-100PCI	HVS-100PCI	–	8	0	2	2	4	0	1	0
HVS-100PCI	HVS-100PCI	HVS-100AO	8	0	2	2	4	2	1	0
HVS-100PCI	HVS-100PCI	HVS-100DO	8	0	2	2	6	0	1	0
HVS-100PCI	HVS-100PCI	HVS-100PCO	8	0	2	2	4	0	2	1
HVS-100PCI	HVS-100AO	–	8	0	1	1	4	2	1	0
HVS-100PCI	HVS-100AO	HVS-100AO	8	0	1	1	4	4	1	0
HVS-100PCI	HVS-100AO	HVS-100DO	8	0	1	1	6	2	1	0
HVS-100PCI	HVS-100AO	HVS-100PCO	8	0	1	1	4	2	2	1
HVS-100PCI	HVS-100DO	–	8	0	1	1	6	0	1	0
HVS-100PCI	HVS-100DO	HVS-100DO	8	0	1	1	8	0	1	0
HVS-100PCI	HVS-100PCO	–	8	0	1	1	4	0	2	1
HVS-100PCI	HVS-100PCO	HVS-100DO	8	0	1	1	6	0	2	1
HVS-100PCI	HVS-100PCO	HVS-100PCO	8	0	1	1	4	0	3	2
–	HVS-100DI-A	–	10	0	0	0	4	0	1	0
–	HVS-100DI-A	HVS-100AO	10	0	0	0	4	2	1	0
–	HVS-100DI-A	HVS-100DO	10	0	0	0	6	0	1	0
–	HVS-100DI-A	HVS-100PCO	10	0	0	0	4	0	2	1
–	HVS-100AO	–	8	0	0	0	4	2	1	0
–	HVS-100AO	HVS-100AO	8	0	0	0	4	4	1	0
–	HVS-100AO	HVS-100DO	8	0	0	0	6	2	1	0
–	HVS-100AO	HVS-100PCO	8	0	0	0	4	2	2	1
–	HVS-100DO	–	8	0	0	0	6	0	1	0
–	HVS-100DO	HVS-100DO	8	0	0	0	8	0	1	0
–	HVS-100PCO	–	8	0	0	0	4	0	2	1
–	HVS-100PCO	HVS-100DO	8	0	0	0	6	0	2	1
–	HVS-100PCO	HVS-100PCO	8	0	0	0	4	0	3	2

* HVS-100AI and HVS-100PCI input cards can only be used in slots A and B.
* HVS-100DO, HVS-100AO, and HVS-100PCO output cards can only be used in slots B and C.
* HVS-100DI-A input card can be used in slot A and B (used in slot B, only 2 HD/SD-SDI channels are expanded).

* HDMI inputs
  2 HDMI inputs, or 1 HDMI input and 1 VGA input are possible with HVS-100PCI input card.
* HDMI outputs
  1 HDMI output is supported as standard. Able to add 2 HDMI outputs and 1 VGA output with HVS-100PCO output card (HDMI-2 output and VGA output are mirrored).

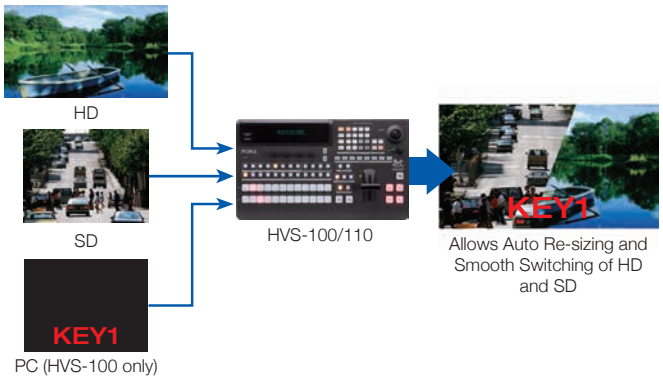
HVS-100/110 Main Features

Frame Synchronizer

Every input in the HVS-100 and 8 inputs in the HVS-110 are fitted with frame synchronizers that enable switching of synchronous and asynchronous video signals. Installation of optional expansion cards supports asynchronous picture input from PCs, etc. Each input is also equipped with a process amplifier capable of adjusting the video level and chroma level, etc. of the input signal.

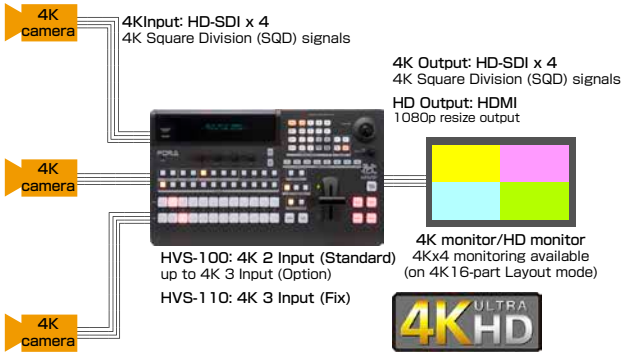
Re-sizing Engine

Up-resizing engines are provided on 4 of the standard inputs. This achieves a fully mixed SD/HD environment with the switcher alone. The optional input cards also have re-sizing engine on each input. This is readily suitable for re-sizing not only SD signals but also PC video (*Up-resizing engines are not supported at 1080p).



Progressive-format, 4K Square Division (SQD) signal support

HVS-100/110 units already support Progressive Segmented Frame formats such as 1080/29.97PsF, 25PsF, 23.98PsF, 24PsF. Support for additional progressive formats, 1080/29.97p, 25p, 23.98p, 24p, has been added. HVS-100/110 is now able to use 4K camera Square Division (SQD) signals on 29.97p, 25p, 23.98p and 24p.



Level-B signal input support at 1080/59.94p, 50p

HVS-100/110 have a new Level-B/A converter function on input signals that allows Level B of 3G-SDI signals to be input onto 1080/59.94p, 50p signals. Level-A and Level-B signals are combined to system equipment on the input-side of the switcher, which converts Level-B signals to Level-A, and outputs all signals as Level-A. (Output-side fixed as Level-A.)

Audio playback support

Play back clips with audio. Sound effects can be mixed on switched videos using CG-Wipe effects. To utilize this function, download the audio data to the HVS-100/110 in advance.

2 Keyers and 2 DSKs

Further proof of the power of these new small mixers is that they come as standard with 2 keyers, 2 DSKs and 4 powerful 2.5D DVE engines.

Advance Chroma Key

An advanced, high quality Chroma keyer can be assigned to any one of the two M/E Keyers or two Downstream Keyers.

4 DVE 2.5D (rotation and perspective)

The 4* powerful DVE engines, can be assigned to any keyer or used for transitions etc, and with their standard 2.5D ability, allows flexible creativity for the operator to enhance productions (*Only 2 DVE engines are available at 1080p).

Abundant Transitions and DVEs

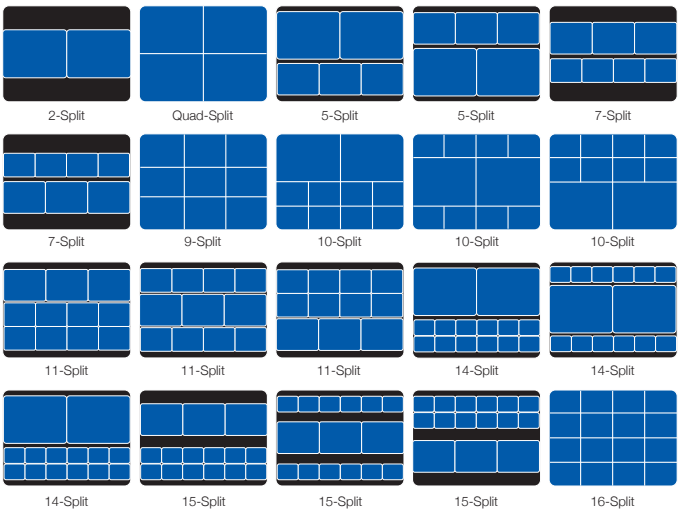
Cut, mix and wipe can be chosen for the transition. Diverse DVE wipes include 100 2.5D wipe patterns. Along with wipes, effects like mosaic and defocus are also provided.

2 Still/Clip Stores

Powerful, high capacity clip stores are now a standard feature. Each store can hold up to 227 frames of HD video. Images can be recorded and played back from incoming video or PGM o/p, or animations transferred over FTP (.bmp, .jpeg, .tga sequences). Clip store images can be used as CG wipe transitions, to further enhance possibilities and add production value. In addition, should both stores be used for clips, then still images can be used as well, by the standard feature of using some of the inputs as still stores.

20 kinds of multi-viewer split patterns able to be selected as standard.

Display channels can be freely assigned, allowing assignment of not only input source but also PGM output. Each channel offers title display and tally display functions.



Additional Non-Border display function support and 4K mode layout on Multi Viewer

Selection of Non-Border Muti-Viewer function is now supported. In 4K mode, Square Division (SQD) signal able to assign each quarter window, and display the 1080p Re-sized output. In 16-part layout mode, maximum four 4K video images are able to be monitored simultaneously via display.

Macro Function

A macro function enables you to store and register a series of operations and then perform complicated operations with one push of a button.

Event Memory and User Button

The main unit is equipped with an event memory function allowing up to 100 events to be stored. Event memories can be simply recalled by the user buttons. Mixer set-ups and useful operational tools such as key set up, DVE position/size etc can all be stored in event memories. Operators can freely set the transition time and effect for loading events. By setting up in advance, event memories can bring extra power and creativity, simply by pressing buttons during the live event. User buttons can also be used for many other features, such as instant navigation to a selectable menu page, or grab a still, or send a GPI, or preview a key etc as well as many other functions to make life easier in a live production.

Freely Assignable DSK

The 2 Downstream keyers can be assigned to either the M/E PGM, M/E PST or an AUX output. As we also include the ability to mix on an Aux crosspoint selection, the Aux outputs can effectively and creatively be used to do away with the need for multiple M/Es, when creating different outputs for different screens or feeds at a live venue.

External Interfaces

External interfaces include GPI port supporting up to 24 inputs/outputs and two RS-422 ports as standard. The RS-422 ports support for connecting an HVS-30RU remote unit, tally expansion boxes, device specific VDCP, VTR, MFR routers, or TSL. An Ethernet port is used during PC control. An editor interface option allow to connect to an editor/automation system or other external control system.

GUI Control Function via Web Browser

An in-built Web server enables the settings of the HVS-100 and HVS-110 to be changed from a PC via a network. Mobile and tablet terminals can also be used through a wireless access point.

HVS-100/110

GUI for PC and Tablet

VDCP Over IP protocol available

Support for VDCP Over IP protocol allows video server control via a LAN connection.

Redundant Power Supply

An optional redundant power supply unit enables doubling-up of power source (redundant AC adaptor for the HVS-110). An enlarged fan and improved exhaust process guarantee quiet operation.

External keyer control over DSK-400

HVS-100/110 are now able to control the DSK-400 (supports 4K (UHD)). A compact system can be built to operate a DSK-400 using only an HVS-100/110 controller.

4K (Ultra-HD) Switcher Capability

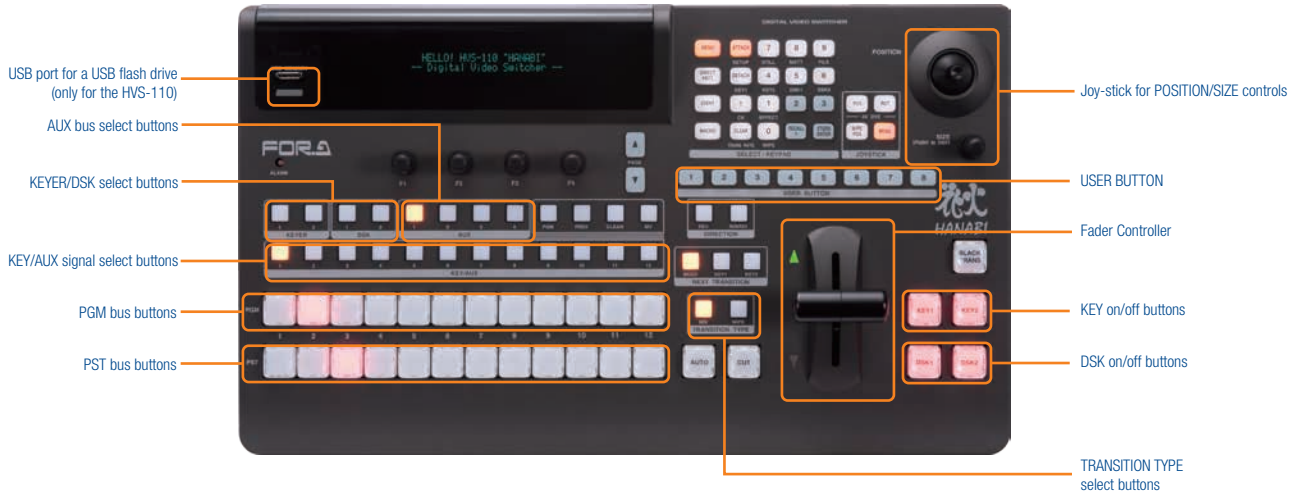
The HVS-100 and HVS-110 can be used as 4K switchers with HVS-100EXP3G.

HVS-100 supports 2 inputs/1 output (expandable to 3 inputs/2 outputs with optional Input/Output cards). HVS-110 supports 3 inputs/2 outputs. In conjunction with MFR series, 4K input channels can be expanded. Cut and mix are provided as transitions.

Other

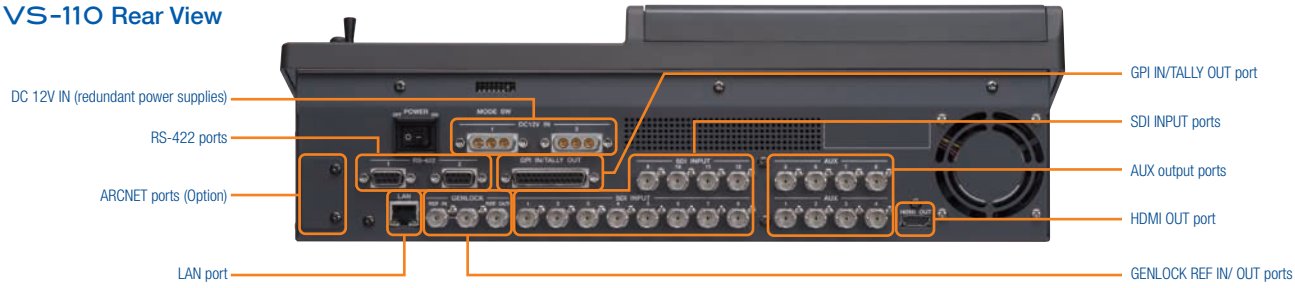
- Safety area marker display
- Color bar generator
- Mat generator, etc.

HVS-1000U/HVS-110 Front View

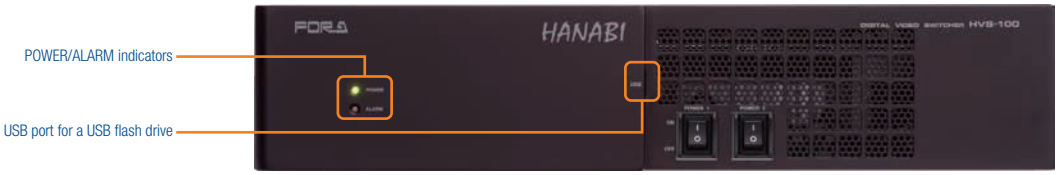


HVS-1000U Rear View

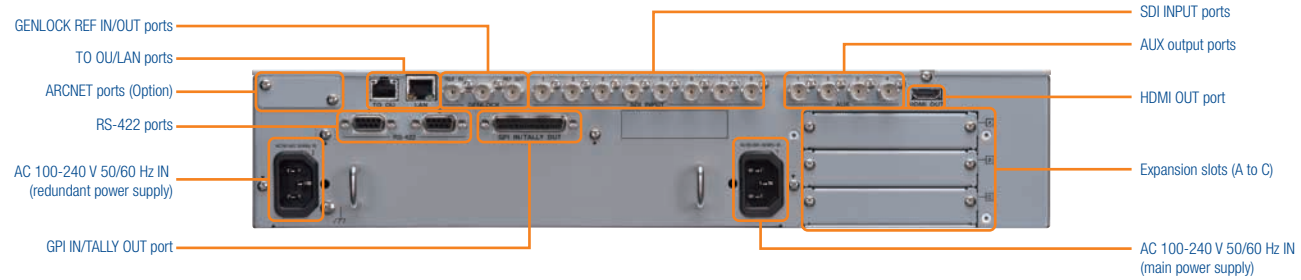
HVS-110 Rear View



HVS-100 Front View



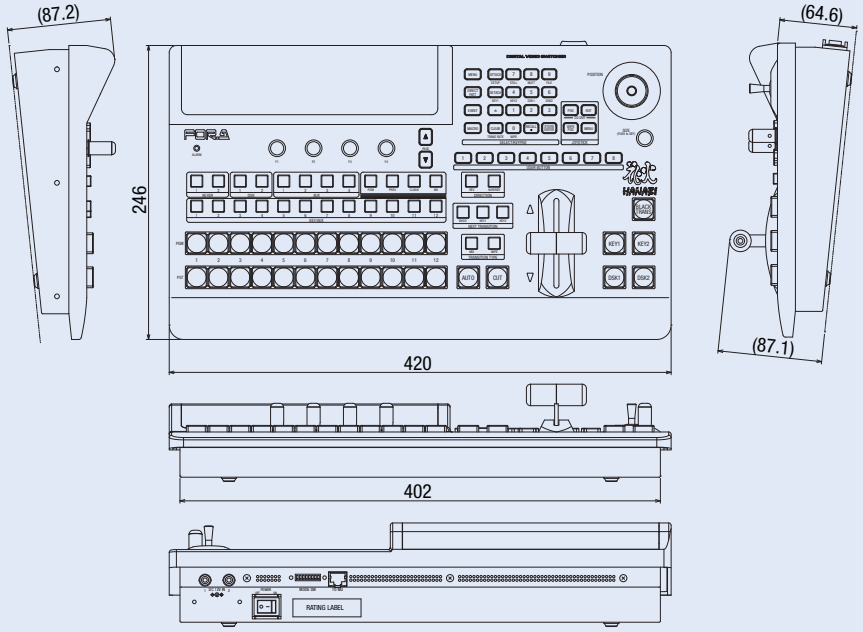
HVS-100 Rear View



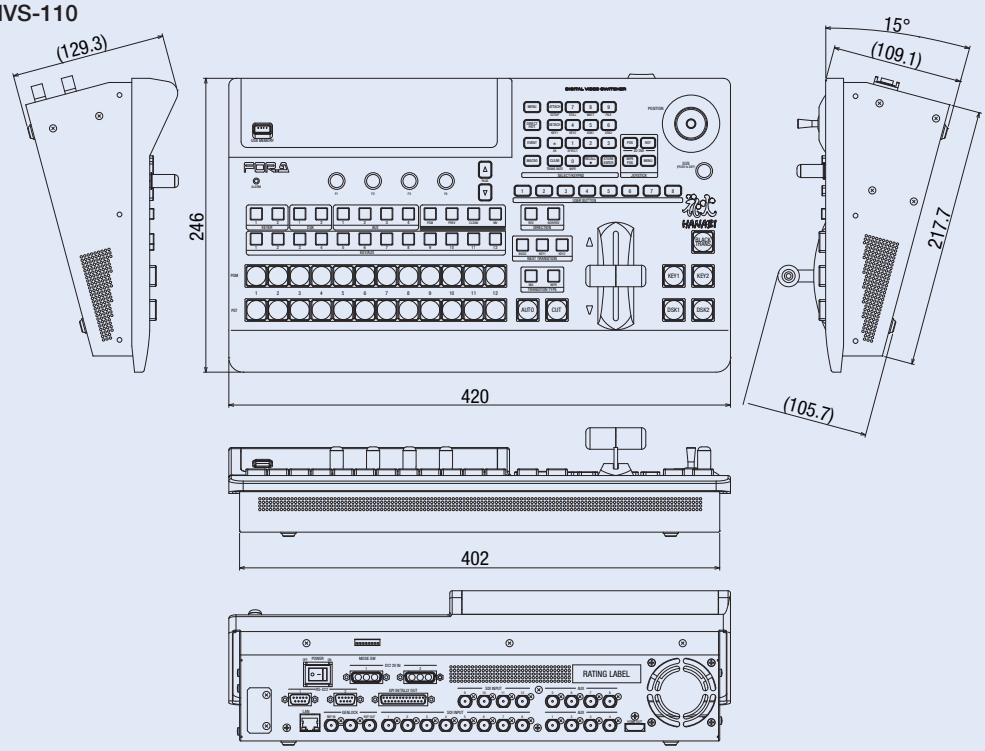
Dimensions

Unit: mm

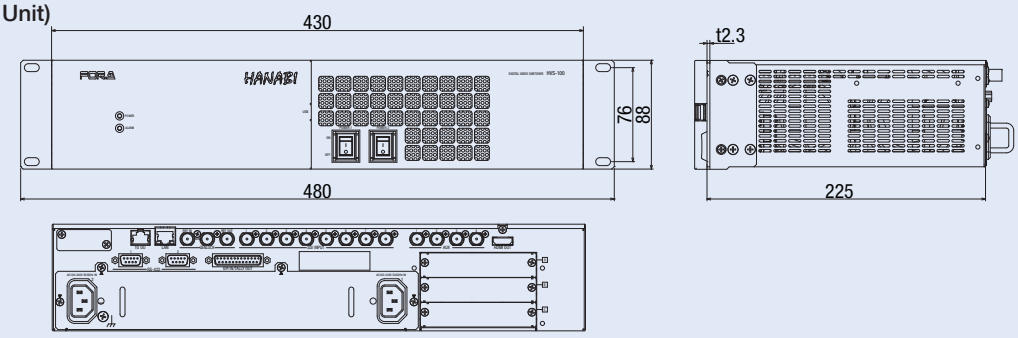
HVS-100OU Control Panel



HVS-110



HVS-100 (Main Unit)



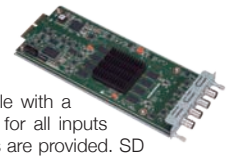
Options

Options for the HVS-100

With the HVS-100, you can add just the input and output formats you need, in just the amount needed. There are three expansion slots so that other inputs and outputs can be installed, such as analog component, analog composite, HDMI and RGB in addition to HD/SD-SDI.

HVS-100DI-A

HD/SD-SDI Input Card



4 channels of HD/SD-SDI input are possible with a single card. A frame synchronizer function for all inputs and re-size (expansion) function for 2 inputs are provided. SD images can be processed internally as HD images.

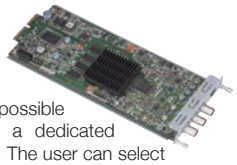
HVS-100DO

HD/SD-SDI Output Card

2 channels of HD/SD-SDI output are possible with a single card. As down-converters are provided for all outputs, HD and SD images can simultaneously be output.

HVS-100AI

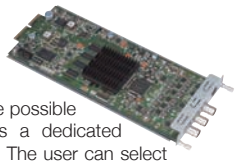
Analog Video Input Card



2 channels of analog video signal input are possible with a single card. Input terminal 2 is a dedicated connector (conversion connector supplied). The user can select between analog composite and analog component (HD or SD) input for each input terminal.

HVS-100AO

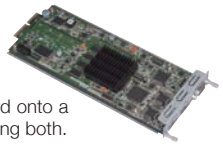
Analog Video Output Card



2 channels of analog video signal output are possible with a single card. Output terminal 2 is a dedicated connector (conversion connector supplied). The user can select between analog composite and analog component (HD or SD) output for each output terminal.

HVS-100PCI

PC (HDMI/VGA) Input Card



HDMI and VGA terminals have been mounted onto a single card. 2 input channels are possible using both.

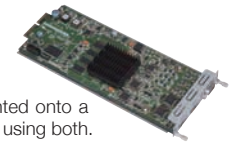
Resolutions supported by the input cards	
• HD mode*	
1080/59.94p	1024 x 768/60Hz (XGA), 1280 x 1024/60Hz (SXGA), 1280 x 768/60Hz (WXGA), 1600 x 1200/60Hz (UXGA), 1920 x 1200/60Hz (WUXGA), 1920 x 1080/59.94p (HDTV)
1080/50p	1024 x 768/60Hz (XGA)**, 1280 x 1024/60Hz (SXGA)**, 1280 x 768/60Hz (WXGA)**, 1600 x 1200/60Hz (UXGA)**, 1920 x 1200 /60Hz (WUXGA)**, 1920 x 1080/50p (HDTV)
1080/29.97p	1920 x 1080/29.97p (HDTV)
1080/25p	1920 x 1080/25p (HDTV)
1080/24p	1920 x 1080/24p (HDTV)
1080/23.98p	1920 x 1080/23.98p (HDTV)
1080/59.94i	1024 x 768/60Hz (XGA), 1280 x 1024/60Hz (SXGA), 1280 x 768/60Hz (WXGA), 1600 x 1200/60Hz (UXGA), 1920 x 1200/60Hz (WUXGA), 1920 x 1080/59.94i (HDTV)
1080/50i	1024 x 768/60Hz (XGA)**, 1280 x 1024/60Hz (SXGA)**, 1280 x 768/60Hz (WXGA)**, 1600 x 1200/60Hz (UXGA)**, 1920 x 1200 /60Hz (WUXGA)**, 1920 x 1080/50i (HDTV)
1080/29.97PsF	1024 x 768/60Hz (XGA), 1280 x 1024/60Hz (SXGA), 1280 x 768/60Hz (WXGA), 1600 x 1200/60Hz (UXGA), 1920 x 1200/60Hz (WUXGA), 1920 x 1080/29.97PsF (HDTV)
1080/25PsF	1024 x 768/60Hz (XGA)**, 1280 x 1024/60Hz (SXGA)**, 1280 x 768/60Hz (WXGA)**, 1600 x 1200/60Hz (UXGA)**, 1920 x 1200 /60Hz (WUXGA)**, 1920 x 1080/25PsF (HDTV)
720/59.94p	1024 x 768/60Hz (XGA), 1280 x 1024/60Hz (SXGA), 1280 x 768/60Hz (WXGA), 1280 x 720/59.94p (HDTV)
720/50p	1024 x 768/60Hz (XGA)**, 1280 x 1024/60Hz (SXGA)**, 1280 x 768/60Hz (WXGA)**, 1280 x 720/5op (HDTV)
• SD mode	
625/50i	640 x 480/60Hz (VGA)**, 800 x 600/60Hz (SVGA)**, 1024 x 768/60Hz (XGA)**, 720 x 576/50i (SDTV, PAL)
525/60i	640 x 480/60Hz (VGA), 800 x 600/60Hz (SVGA), 1024 x 768/60Hz (XGA), 720 x 480/60i (SDTV, NTSC)

* HDCP-incompatible

** Video signal disturbances may occur in 25 or 50 system frame rate formats, when Input images are played at a 60Hz refresh rate.

HVS-100PCO

PC (HDMI/VGA) Output Card



HDMI and VGA terminals have been mounted onto a single card. 2 output channels are possible using both.

Resolutions supported by the output cards	
• HD mode*	
1080/59.94p	1280 x 1024/60Hz (SXGA), 1600 x 1200/60Hz (UXGA), 1680 x 1050/60Hz (WSXGA), 1920 x 1200/60Hz (WUXGA), 1920 x 1080/59.94p (HDTV)
1080/50p	1280 x 1024/60Hz (SXGA)**, 1600 x 1200/60Hz (UXGA)**, 1680 x 1050/60Hz (WSXGA)**, 1920 x 1200/60Hz (WUXGA)**, 1920 x 1080/50p (HDTV)
1080/29.97p	1280 x 1024/60Hz (SXGA), 1600 x 1200/60Hz (UXGA), 1680 x 1050/60Hz (WSXGA), 1920 x 1200/60Hz (WUXGA), 1920 x 1080/29.97p (HDTV)
1080/25p	1280 x 1024/60Hz (SXGA)**, 1600 x 1200/60Hz (UXGA)**, 1680 x 1050/60Hz (WSXGA)**, 1920 x 1200/60Hz (WUXGA)**, 1920 x 1080/25p (HDTV)
1080/24p	1920 x 108024p (HDTV)
1080/23.98p	1920 x 108023.98p (HDTV)
1080/59.94i	1280 x 1024/60Hz (SXGA), 1600 x 1200/60Hz (UXGA), 1680 x 1050 /60Hz (WSXGA), 1920 x 1200/60Hz (WUXGA), 1920 x 1080/59.94i (HDTV)
1080/50i	1280 x 1024/50Hz (SXGA), 1280 x 1024/60Hz (SXGA)**, 1600 x 1200/50Hz (UXGA), 1600 x 1200/60Hz (UXGA)**, 1680 x 1050/50Hz (WSXGA), 1680 x 1050/60Hz (WSXGA)**, 1920 x 1200/50Hz (WUXGA), 1920 x 1200/60Hz (WUXGA)**, 1920 x 1080/50i (HDTV)
1080/29.97PsF	1280 x 1024/60Hz (SXGA), 1600 x 1200/60Hz (UXGA), 1680 x 1050 /60Hz (WSXGA), 1920 x 1200/60Hz (WUXGA), 1920 x 1080/29.97PsF (HDTV)
1080/25PsF	1280 x 1024/50Hz (SXGA), 1280 x 1024/60Hz (SXGA)**, 1600 x 1200/50Hz (UXGA), 1600 x 1200/60Hz (UXGA)**, 1680 x 1050/50Hz (WSXGA), 1680 x 1050/60Hz (WSXGA)**, 1920 x 1200/50Hz (WUXGA), 1920 x 1200/60Hz (WUXGA)**, 1920 x 1080/25PsF (HDTV)
720/59.94p	1280 x 1024/60Hz (SXGA), 1280 x 768/60Hz (WXGA), 1280 x 720/59.94p (HDTV)
720/50p	1280 x 1024/50Hz (SXGA), 1280 x 1024/60Hz (SXGA)**, 1280 x 768/50Hz (WXGA), 1280 x 768/60Hz (WXGA)**, 1280 x 720/50p (HDTV)
• SD mode	
625/50i	800 x 600/50Hz (SVGA), 800 x 600/60Hz (SVGA)**, 720 x 576/50i (SDTV, PAL)
525/60i	800 x 600/60Hz (SVGA), 720 x 480/60i (SDTV, NTSC)

* HDCP-incompatible

** Video signal disturbances may occur in 25 or 50 system frame rate formats, when Output images are played at a 60Hz refresh rate.

HVS-100TB2

Thunderbolt™ 2 Expansion Card

The Expansion Card has a Thunderbolt™2 I/O, high speed transfer standard. It has capability to transfer simultaneously up to 4 Full HD video, multiple audio, and control signals by just one cable. It is also available to transfer one 4K(UHD) video for input or output.*

*require in the future

HVS-100PSM/100PSO

Redundant Power Supply Unit

- HVS-100PSM: For the HVS-100
- HVS-100PSO: For the HVS-100OU Control Panel

Options for the HVS-110

HVS-110PSM

Redundant Power Supply Unit

For the HVS-110

Options for the HVS-100/110

HVS-TALOC32
HVS-TALR32

Tally Interface Unit

HVS-TALOC32

Open collector-type HVS-TALOC32 or relay-type HVS-TALR32 can be connected. They are both half-rack size, and up to 3 units can be connected to the HVS-100 or HVS-110.

- HVS-TALOC32: open collector system with 32 terminals
- HVS-TALR32: relay system with 32 terminals

HVS-100EXP3G

3Gbps Expansion Software

Software to support 1080p format and 4K Square Division transmission methods.

HVS-100VR

Virtual Link Software

Software for establishing a link between FOR-A Virtual System and HVS-100/110 to build a compact virtual studio system comprised of multiple cameras and small number of CG/combine processors.

HVS-100ED

Editor Interface Software

Interface software to connect with an external device that supports BVS-3000/DVS and GVG-100 protocols.

HVS-100ARC

ARCNET Card

This enables connection to HVS-AUX8/AUX16.

HVS-AUX8

AUX Remote Control Panel

HVS-AUX8

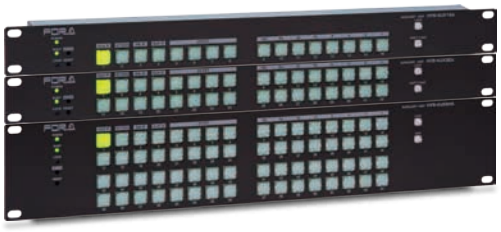
Half-rack sized AUX remote control panel with 8 buttons.
5 units can be daisy-chained via ARCNET. A panel extension kit enables the button interface to be extended.

- HVS-AUX8RK: Panel extension kit (for HVS-AUX8)

HVS-AUX16A/32A/64A

AUX Remote Control Panel

AUX remote control panels with either 16, 32 or 64 buttons. The16-button panel and the 32-button panel are 1U in size and the 64-button panel is 2U in size. 5 AUX remote control units can be daisy-chained via Ethernet.



HVS-AUX16A

HVS-AUX32A

HVS-AUX64A

HVS-AUX16B

AUX Remote Control Panel

Desktop type of AUX remote control panels with 16 buttons.

HVS-AUX16B

HVS-100/110 Specifications

	HVS-100	HVS-110
Video Formats	1080/59.94i, 1080/50i, 1080/29.97p, 1080/25p, 1080/24p, 1080/23.98p, 1080/24PsF, 1080/23.98PsF, 1080/25PsF, 1080/29.97PsF, 720/59.94p, 720/50p	
	1080/59.94p and 1080/50p Level A (HVS-100EXP3G)	
	525/60 (NTSC), 625/50 (PAL)	
Video Inputs	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps, 75Ω, BNC x 8	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps, 75Ω, BNC x 12
	(FSs on 8 inputs, resize engines on 4 inputs)	(FSs on 8 inputs, resize engines on 4 inputs)
Video Inputs (optional)		
HVS-100DI-A	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps, 75Ω, BNC x 4 (FS 4 ch, resize engines 2 ch (out of 4 inputs))	—
HVS-100EXP3G	3G-SDI (Level A/Level B): 3 Gbps	
HVS-100AI	HD analog component, SD analog component, analog composite	—
HVS-100PCI HDCP-incompatible at all resolutions	HDMI: XGA to WUXGA (1080i, 1080/59.94p, 50p, 29.97p, 25p, 24p, 23.98p),	—
	XGA to SXGA (720p), VGA to XGA (SD)	
	RGB: XGA to WUXGA (1080i, 1080/59.94p, 50p), XGA to SXGA (720p),	—
	VGA to XGA (SD)	
Number of Video Inputs	Standard: HD-SDI x 8 / Max.: Refer to "I/O Expansion Card Configuration."	Standard: HD-SDI x 12
Video Outputs	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps, 75Ω, BNC x 4, HDMI x 1	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps, 75Ω, BNC x 8, HDMI x 1
Video Outputs (optional)		
HVS-100DO	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps, 75Ω, BNC x 2	—
HVS-100EXP3G	3G-SDI (Level A): 3 Gbps	
HVS-100AO	HD analog component, SD analog component, analog composite	—
HVS-100PCO HDCP-incompatible at all resolutions	HDMI: SXGA to WUXGA/HDTV (1080i, 1080/59.94p, 50p, 29.97p, 25p, 24p,	—
	23.98p), SXGA to WXGA/HDTV (720p), SVGA/SDTV (SD)	
	RGB: SXGA to WUXGA/HDTV (1080i, 1080/59.94p, 50p, 29.97p, 25p, 24p,	—
	23.98p), SXGA to WXGA/HDTV (720p), SVGA (SD)	
Number of Video Outputs	Standard: HD-SDI x 4, HDMI x 1,	Standard: HD-SDI x 8, HDMI x 1
	Max.: Refer to "I/O Expansion Card Configuration."	
Signal Processing	4: 2: 2: 4, digital component	
Quantization	HD/SD-SDI: 10-bit	
Effect	WIPE: 100 patterns, border and softness / 2.5D DVE: 56 patterns or more DVE WIPEs	
Transition	Available controller: Fader controller, AUTO or CUT button / Type: MIX or WIPE (DVE included)	
Still/Clip Store	2 channels (with backup feature). Each store can hold up to 227 frames of HD video	
Keyer/DSK	4 channels (KEYER x 2 + DSK x 2), includes 2D DVE that can be freely assigned	
	An advanced, high quality Chroma keyer can be assigned to any one of the two Keyers or two DSKs.	
Multi-viewer	2/4/5/7/9/10/11/14/15/16-way split views with title, tally and audio level meter display and 1 frame delay for PGM output	
Proc. Amp.	Equipped with all inputs	
Event Memory	100 events (complementary transition available when loading events)	
Macro Function	30 commands (up to 230 series of operations can be registered per command)	
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 (to be terminated with 75Ω terminator, if unused)	
System Phase Adjust	Horizontal: -1H to +1H	
Genlock Output	BB: NTSC: 0.429 Vp-p/PAL: 0.45 Vp-p or Tri-level Sync: 0.6 Vp-p, 75Ω, BNC x 1	
I/O Delay	1H (minimum delay)	
	0 to 1 frames +1H (when FS or re-size engine used)	
	1 to 2 frames +1H (when FS or re-size engine plus DVE used)	
	2 to 3 frames +1H (when FS or re-size engine plus output resize engine and DVE used)	
External Memory	USB flash drive	
Interface	Ethernet (10/100Base-TX): RJ-45 x 1	
	TO OU: RJ-45 x 1	—
	GPI-IN/OUT: 25-pin D-sub (female) x 1 (24 inputs/24 outputs), TTL negative logic pulse or Make-contact	
	RS-422: 9-pin D-sub (female) x 2 (for the HVS-30RU and tally unit connection or EDITOR port (BVS-3000 and GVG-100 protocols))	
Interface (optional)	ARCNET: 75Ω, BNC x 2, loop-through (to be terminated with 75Ω terminator, if unused.) (for control panel and AUX remote panel connection)	
Temperature / Humidity	0°C to 35°C / 10% to 90% (no condensation)	
Power / Consumption	HVS-100: 100 V AC to 240 V AC ±10%, 50/60 Hz / Approx. 120 W (full option: 200 W)	100 V AC to 240 V AC ±10%, 50/60 Hz / Approx. 120 W
	HVS-100OU: 100 V AC to 240 V AC ±10%, 50/60 Hz / Approx. 14 W	
Dimensions / Weight	HVS-100: Approx. 430 (W) x 88 (H) x 225 (D) mm / Approx. 5 kg	Approx. 420 (W) x 129.3 (H) x 246 (D) mm / Approx. 4 kg
	(incl. optional cards: Approx. 7 kg at most)	
	HVS-100OU: Approx. 420 (W) x 87.2 (H) x 246 (D) mm / Approx. 2.6 kg	
Consumables	Power supply unit (to be replaced every 5 years), Cooling fan (to be replaced every 4 years)	
Accessories	CD-ROM (user's manual), Quick setup guide, Rack mount brackets for main unit,	CD-ROM (user's manual), Quick setup guide, AC power adaptor
	AC cord, Main unit and control panel connecting cable (10 m)	
Options	For details, see "Options" in the body text.	

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