FOR-A®

3G/HD/SD PORTABLE VIDEO SWITCHER

HVS-100/110

HANABI

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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 previous models, 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 5, 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. 3 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; 9 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

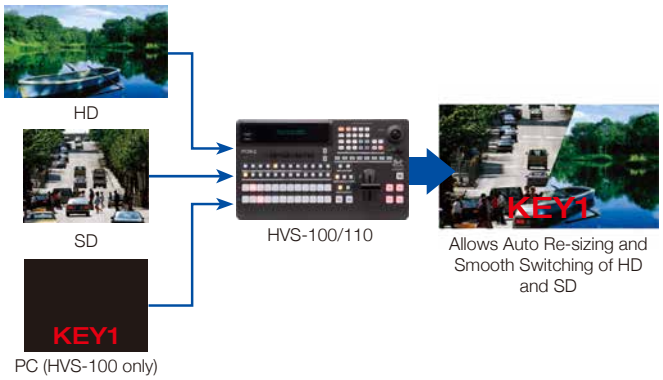
Every input in the HVS-100 and 8 inputs in the HVS-110 are fitted with frame synchronizers that enable switching of synchronous and asynchronous video signals. Installation of optional expansion cards supports asynchronous picture input from PCs, etc. Each input is also equipped with a process amplifier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

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.)

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).



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

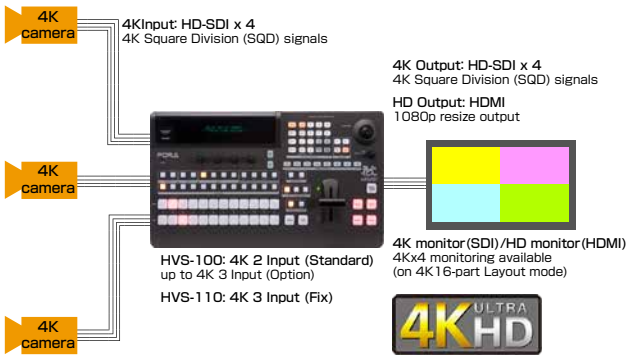
An advanced, high quality Chroma keyer can be assigned to any one of the two M/E Keyers or two Downstream Keyers.

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).

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

HVS-100/110 units support Progressive Segmented Frame formats such as 1080/59.94p, 50p, 29.97p, 25p, 24p, 23.98p and able to use 4K camera Square Division (SQD) signals on 29.97p, 25p, 24p and 23.98p.



Abundant Transitions and DVEs

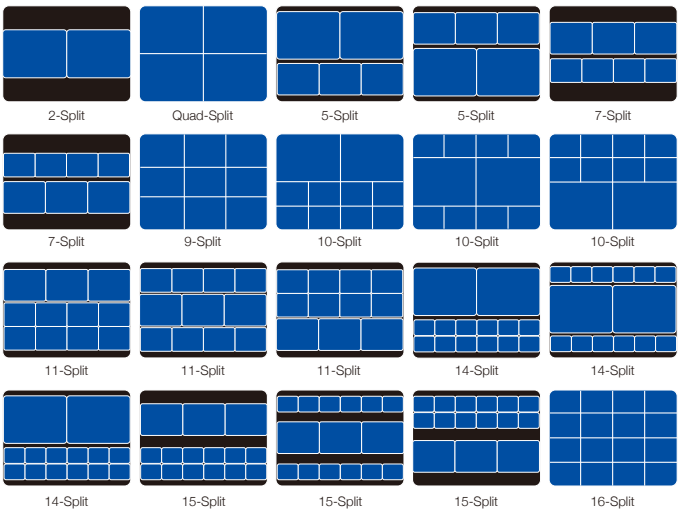
Cut, mix and wipe can be chosen for the transition. Diverse DVE wipes include 100 2.5D wipe patterns. Along with wipes, effects like mosaic and defocus are also provided.

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.

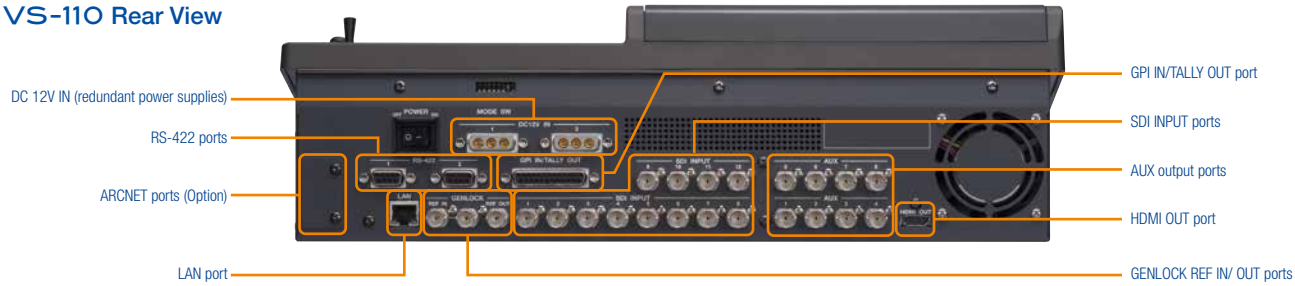
Other

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

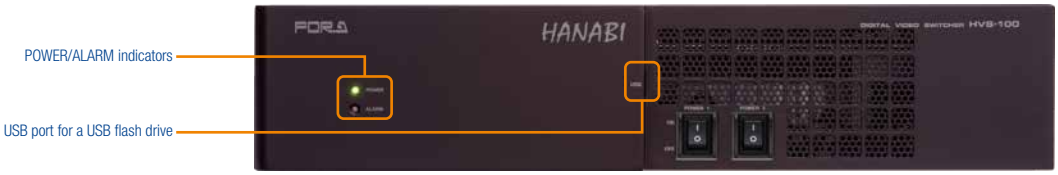
HVS-1000U/HVS-110 Front View

HVS-1000U Rear View

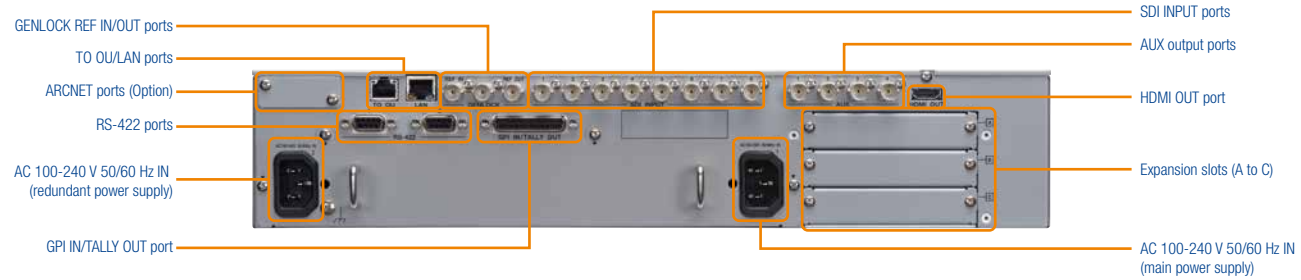
HVS-110 Rear View



HVS-100 Front View



HVS-100 Rear View

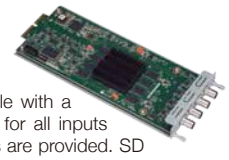


Options

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 HDMI and RGB in addition to HD/SD-SDI.

HVS-100DI-A



4 Channel Digital Input Card

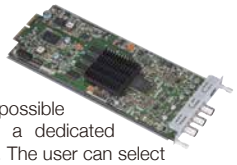
4 channels of HD/SD-SDI input are possible with a single card. A frame synchronizer function for all inputs and re-size (expansion) function for 2 inputs are provided. SD images can be processed internally as HD images.

HVS-100DO

2 Channel Digital 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.

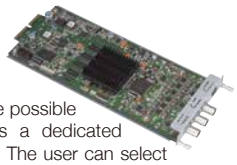
HVS-100AI



2 Channel Analog 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



2 Channel Analog 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

2 Channel VGA/HDMI Input Card

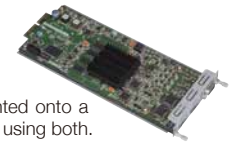
HDMI and VGA terminals have been mounted onto a single card. 2 input channels are possible using both.

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



2 Channel VGA/HDMI 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.

Options

HVS-100

HVS-100PSM/100PSO
Redundant Power Supply Unit

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

HVS-110

HVS-110PSM
Redundant Power Supply Unit

EIA Rack Mount Brackets

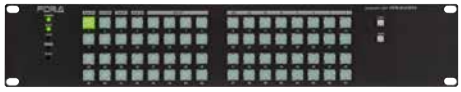
HVS-100/110

HVS-AUX16A/16C/32A/64A
AUX Bus Control Box (Ethernet connection)


HVS-AUX16A


HVS-AUX16C


HVS-AUX32A


HVS-AUX64A

AUX bus control boxes with either 16, 32 or 64 buttons. The16-button control boxes and the 32-button control box are 1RU in size and the 64-button control box is 2RU in size. 5 AUX bus control boxes can be daisy-chained via Ethernet.

HVS-AUX16B/16D
AUX Bus Control Box (Ethernet connection)


HVS-AUX16B


HVS-AUX16D

Desktop type of AUX bus control boxes with 16 buttons.

HVS-TALR32
HVS-TALOC32
Tally Control Unit (via RS-422)


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 type with 32 terminals.
- HVS-TALR32: relay type 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-100IS
Infinity Set Link Software

Software to add support to connect HVS-100/110 to PC installed InfinitySet* and switch videos from InfinitySet via HVS-100/110 control panel.
*Advanced Virtual Set Solution developed by Brainstorm.

HVS-100ED
Editor Control Software

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

HVS-100ARC
Arcnet I/F Card

This enables connection to HVS-AUX8/16/32*.
*For details, contact your FOR-A dealer.

Accessories

HVS-100

AC cord, quick setup guide, CD-ROM, and EIA rack mount brackets.

HVS-110

AC adaptor, quick setup guide, and CD-ROM.

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HVS-100/110 Datasheet

1. Specifications

HVS-100 Basic specifications

Temperature	0°C to 40°C
Humidity	30% to 90% (no condensation)
Power	100VAC to 240 VAC ±10%, 50/60Hz
Consumption	Standard: 106 W (at 100-120 VAC), 97 W (at 220-240 VAC) Full Option: 207 W (at 100-120 VAC), 198 W (at 220-240 VAC)
Dimensions	430 (W) x 225 (D) x 88 (H) mm 480 (W) (Including rack mount brackets)
Weight	5.3 kg (in Standard), 6.9 kg (in Full Option)
Consumables (at 24-hour operation)	Power supply unit: Replace every 5 years. HVS-100PSM: Replace every 5 years. Cooling fan: Replace every 4 years

HVS-100 Technical specifications

Video formats	1080i/59.94, 50 1080p/23.98, 24, 25, 29.97 1080PsF/23.98, 24, 25, 29.97 720p/59.94, 50 525/60 (NTSC), 625/50 (PAL)	
HVS-100EXP3G	1080p/59.94, 50	
Video input	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps 75Ω BNC x 8	
Video input (option)	Max. 2 cards. (Max. 3 cards including input/output cards.)	
HVS-100EXP3G	3G-SDI (Level-A/Level-B): 3Gbps	
HVS-100DI-A	HD-SDI: 1.5 Gbps or SD-SDI: 270Mbps 4 inputs or 2 inputs BNC	
HVS-100AI	HD/SD analog component or analog composite 1.0 Vp-p 2 inputs BNC	
HVS-100PCI (RGB)	1080p: XGA to WUXGA (1080p/50, 59.94), HDTV 1080i: XGA to WUXGA, HDTV 720p: XGA to WXGA, HDTV SD: VGA to XGA , SDTV 2 inputs (HDCP not compatible) HDMI (type A), VGA	
Number of video inputs	Standard: 8	(SDI x 8)
	Max.: 14	(SDI x 14) or (SDI x 12 and Analog/RGB x 2)
Video output	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps 75Ω BNC x 4 (AUX1-AUX4. Crossfade switching available)	
	HDMI:	HDTV (1080p 1080i, 720p) SDTV (SD) (HDCP not compatible) HDMI (type A) x 1
Video output (option)	Max. 2 cards. (Max. 3 cards including input/output cards.)	

HVS-100EXP3G	3G-SDI (Level-A): 3Gbps	
HVS-100DO	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps 2 outputs BNC	
HVS-100AO	HD/SD analog component or analog composite 1.0 Vp-p 2 outputs BNC	
HVS-100PCO (HDMI: RGB)	2 outputs (HDCP not compatible), HDMI (type A), VGA 1080p: XGA～WUXGA (except 1080p/23.98, 24), HDTV 1080i: SXGA to WUXGA, HDTV 720p: SXGA, WXGA, HDTV SD : SVGA, SDTV	
(VGA)	1080i: SXGA to WUXGA (RGB), HDTV (YPbPr) 720p: SXGA, WXGA (RGB), HDTV (YPbPr) SD : SVGA (RGB)	
Number of video outputs	Standard: 5	(SDI x 4, HDMI x1)
	Max.: 9	(SDI x 4, HDMI x1, SDI/Analog/RGB x 4)
Genlock input	BB: NTSC: 0.429 Vp-p/PAL: 0.45Vp-p or Tri-level Sync: 0.6 Vp-p 75Ω BNC x 1, loop-through (Terminate with 75Ω terminator, if unused.)	
Genlock phase adjust	Horizontal: ±1H	
Genlock output	BB: NTSC: 0.429 Vp-p/PAL: 0.45Vp-p or Tri-level Sync: 0.6 Vp-p 75Ω BNC x 1	
Signal processing	4:2:2 Digital component	
Quantization	HD/SD-SDI: 10-bit	
FS / Process Amp	Frame Synchronizer and Process Amp features on each input	
Effect		
Pattern	WIPE	100 patterns, Border and Softness
	2D DVE	36 patterns
Sub-effect channel	x 2 (SBEF1 and SBEF2) available on inputs	
Transition	Execution: Fader lever, AUTO or CUT button Type: MIX or WIPE (DVE included)	
Still/Clip memory	2 still buffers with backup feature 2 clip buffers, Recording capacity: 7.5 seconds (HD video)for each	
Key		
KEY/DSK	x 4 (KEY x 2 and DSK x 2) Luminance, Full or Bus key, KEY1, KEY2: Edge/shadow effects DSK1, DSK2: Direct display on AUX outputs possible	
Chroma key channel	x 1 (used for switcher source / direct output)	
DVE channel	x 4 (2D) Available on BKGD, KEY and DSK	
Multiviewer channel	x 1 with 2/4/5/7/9/10/11/16-way split views Display: Title, Tally, Audio Level Meter, Safety Area and Frame Border Layout backup: Up to 8 patterns 1 frame delay relative to PGM output	

Event memory	100 events	
Video phase adjust	±0.5 H (1080/50p Level-B: -0.3 H to +0.7H)	
I/O delay	Minimum delay:	HD: 1H, SD: 1H
	If FS or Up-resize engine used:	1-2 frames + Minimum delay
	If FS or Up-resize engine plus DVE used:	2-3 frames + Minimum delay
	FS or Up-resize engine plus Output resize engine and DVE used:	3-4 frames + Minimum delay
Interfaces		
TO OU	For HVS-100OU connection, RJ-45 x 1	
LAN	100Base-TX/100BASE-T RJ-45 x 1	
GPI IN/TALLY OUT	25-pin D-sub (female) x 1 (inch screw) 24-input/output (GPI input/output and tally output programmable) Open collector or no-voltage contact input, open collector output	
RS-422	9-pin D-sub (female) x 2 (with inch screws) * For VTR, router and tally unit connection	
USB MEMORY (Front side)	For USB flash drive connection, USB1.1, Type A connector x 1	

HVS-100 Options

HVS-100ARC	Arcnet I/F Card
HVS-100ED	Editor Control Software
HVS-100EXP3G	3Gbps Expansion Software
HVS-100PSM	MU Redundant Power Supply Unit
HVS-100DI-A	4 Channel Digital Input Card
HVS-100AI	2 Channel Analog Input Card
HVS-100PCI	2 Channel VGA/HDMI Input Card
HVS-100DO	2 Channel Digital Output Card
HVS-100AO	2 Channel Analog Output Card
HVS-100PCO	2 Channel VGA/HDMI Output Card
HVS-100VR	Virtual Link Software
HVS-100IS	Infinity Set Link Software

HVS-100 Accessories

AC cord, Quick setup guide, CD-ROM, and EIA rack mount brackets

HVS-100OU Basic specifications

Temperature	0°C to 40°C
Humidity	30% to 90% (no condensation)
Power	100VAC to 240 VAC ±10%, 50/60Hz DC 12V (Supplied from the AC adapter)
Consumption	13W (at 100-120V AC), 14W (at 100-120V AC)
Dimensions	420 (W) x 246 (D) x 87.2 (H) mm
Weight	2.6 kg
Consumables (at 24-hour operation)	Power supply unit: Replace every 5 years. HVS-100PSO: Replace every 5 years.

HVS-100OU Technical specifications

Interfaces	
TO MU (LAN)	For HVS-100 connection, RJ-45 x 1

HVS-100OU Options

HVS-100PSO	OU Redundant Power Supply Unit
EIA Rack Mount Brackets	

HVS-100OU Accessories

MU and Control panel connecting cable, and AC adapter

HVS-110 Basic specifications

Temperature	0°C to 40°C
Humidity	30% to 90% (no condensation)
Power	100VAC to 240 VAC ±10%, 50/60Hz DC 12V / 16 A (Supplied from the AC adapter)
Consumption	100 W (at 100-120 VAC) , 99 W (at 220-240 VAC)
Dimensions	420 (W) x 246 (D) x 129.3 (H) mm
Weight	5.6 kg (in Standard (including AC adapter)), 6.4 kg (with HVS-110PSM installed)
Consumables (at 24-hour operation)	Power supply unit: Replace every 5 years. HVS-110PSM: Replace every 5 years. Cooling fan: Replace every 4 years

HVS-110 Technical specifications

Video Formats	1080i/59.94, 50 1080p/23.98, 24, 25, 29.97 1080PsF/23.98, 24, 25, 29.97 720p/59.94, 50 525/60 (NTSC), 625/50 (PAL)	
HVS-100EXP3G	1080p/59.94, 50	
Video Input	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps 75Ω BNC x 12	
HVS-100EXP3G	3G-SDI (Level-A/Level-B) : 3Gbps	
Video Output	HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps 75Ω BNC x 8 (AUX1-AUX8. Crossfade switching available)	
HVS-100EXP3G	3G-SDI (Level-A): 3Gbps	
	HDMI:	HDTV (1080i, 720p) SDTV (SD) HDCP unsupported HDMI type A connector x 1
Genlock Input	BB: NTSC: 0.429 Vp-p/PAL: 0.45Vp-p or Tri-level Sync: 0.6 Vp-p 75Ω BNC x 1, loop-through (Terminate with 75Ω terminator, if unused.)	
Genlock phase adjust	Horizontal: ±1H	
Genlock Output	BB: NTSC: 0.429 Vp-p/PAL: 0.45Vp-p or Tri-level Sync: 0.6 Vp-p 75Ω BNC x 1	
Signal Processing	4:2:2 Digital component	
Quantization	HD/SD-SDI: 10-bit	
FS / Process Amp	Frame Synchronizer feature on INPUT01-08 Process Amp feature on each input	
Effect		
Pattern	WIPE	100 patterns, Border and Softness
	2D DVE	36 patterns
Sub-effect channel	x 2 (SBEF1 and SBEF2) available on inputs	
Transition	Execution: Fader lever, AUTO or CUT button Type: MIX or WIPE (DVE included)	

Still/Clip Memory	2 still buffers with backup feature 2 clip buffers, Recording capacity: 7.5 seconds (HD video)for each	
Key		
KEY/DSK	x 4 (KEY x 2 and DSK x 2) Luminance, Full or Bus key, KEY1, KEY2: Edge/shadow effects DSK1, DSK2: Direct display on AUX outputs possible	
Chroma key channel	x 1 (used for switcher source / direct output)	
DVE channel	x 4 (2D) Available on BKGD, KEY and DSK	
Multiviewer channel	x 1 with 2/4/5/7/9/10/11/16-way split views Display: Title, Tally, Audio Level Meter, Safety Area and Frame Border Layout backup: Up to 8 patterns 1 frame delay relative to PGM output	
Event Memory	100 events	
Video phase adjust	±0.5 H (1080/50p Level-B: -0.3 H to +0.7H)	
I/O Delay	Minimum delay:	HD: 1H, SD: 1H
	If FS or Up-resize engine used:	1-2 frames + Minimum delay
	If FS or Up-resize engine plus DVE used:	2-3 frames + Minimum delay
	FS or Up-resize engine plus Output resize engine and DVE used:	3-4 frames + Minimum delay
Interfaces		
LAN	100Base-TX/1000BASE-T RJ-45 x 1	
GPI IN/TALLY OUT	25-pin D-sub (female) x 1 (inch screw) 24-input/output (GPI input/output and tally output programmable) Open collector or no-voltage contact input, open collector output	
RS-422	9-pin D-sub (female) x 2 (with inch screws) * For VTR, router, tally unit and editor connection	
USB MEMORY (Front side)	For USB flash drive connection, USB1.1, Type A connector x 1	

HVS-110 Options

HVS-100ARC	Arcnet I/F Card
HVS-100ED	Editor Control Software
HVS-100VR	Virtual Link Software
HVS-100IS	Infinity Set Link Software
HVS-100EXP3G	3Gbps Expansion Software
HVS-110PSM	Redundant Power Supply Unit
EIA Rack Mount Brackets	

HVS-110 Accessories

AC adaptor, Quick setup guide, and CD-ROM

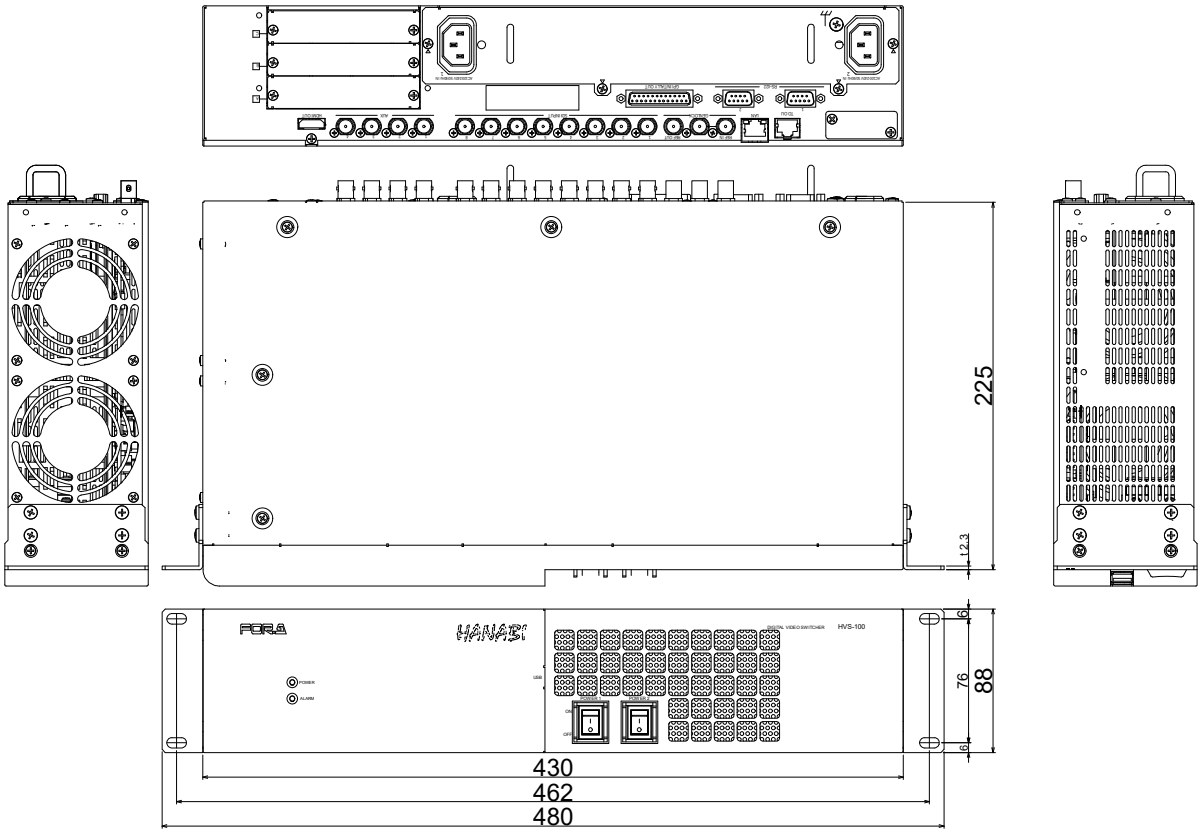
HANABI Series Options

HVS-AUX16A/16B/16C/16D/32A/64A	AUX Bus Control Box (Ethernet connection)
HVS-TALR32	Tally Control Unit (Relay type) (via RS-422)
HVS-TALOC32	Tally Control Unit (Open Collector type) (via RS-422)

2. External Dimensions

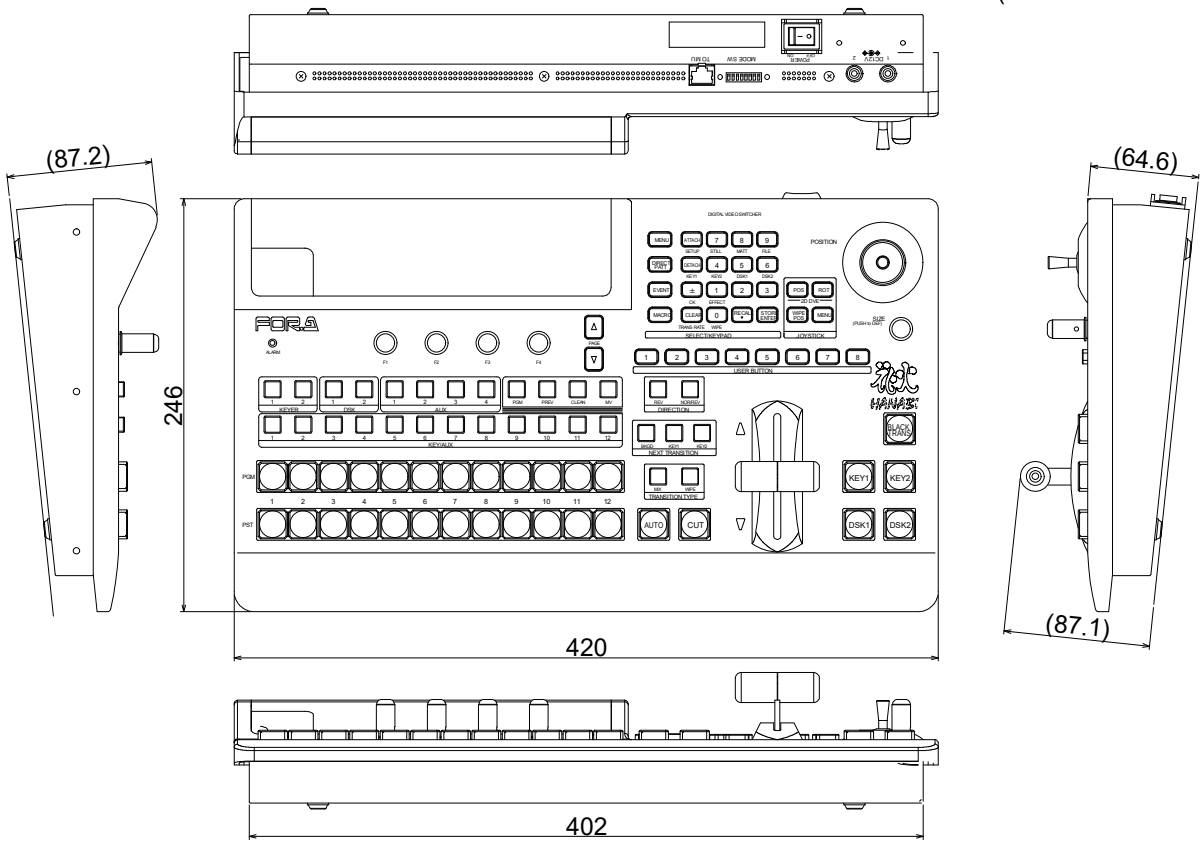
HVS-100

(All dimensions in mm.)



HVS-100OU

(All dimensions in mm.)



HVS-110

(All dimensions in mm.)