HD/SD Portable Video Switcher

HVS-300HS/300RPS
"1M/E HANABI Portable"

FOR.®
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

花火
HANABI

HD/SD Portable Video Switcher

HVS-300HS/300RPS
"1M/E HANABI Portable"

HVS-300HS: The New Standard in Small HD/SD Switchers!

Unrivalled Features, Unequalled Cost Performance

The HVS-300HS and the HVS-300RPS is the newest addition to FOR-A's popular Hanabi series and represents one of the most powerful, compact, broadcast level switchers on the market.

Although small, the HVS-300HS 1 Rack Unit main frame (HVS-300RPS is 2U) is packed with features including frame synchronizing and re-sizing engine on every channel which allow any Standard Definition equipment to be used in full HD mode. It also has plenty of wipe patterns including 2D and 3D DVE transitions. The HVS-300 series also has keyer with chroma key, DSK, dual Picture-in-Picture, 16-channel Multi Viewer, Still Stores and much more.

It is perfectly suited for a wide-range of applications including studio, live event, sports, Flypacks, ENG/SNG OB vehicles, House of Worship, news, live staging and corporate productions.

HVS-300HS + HVS-300U

4 Control Panels

The HVS-300HS has 4 types (HVS-300RPS has 3 types) of control units. These control units are available to suit any working environment and provide a level of redundancy to support any operator or engineers production needs.

HVS-30OU: Operation Unit

The HVS-30OU control unit is a traditional type of control panel with large bus buttons, AUX buttons, a fader, and function buttons laid out to maximize ease of operation.
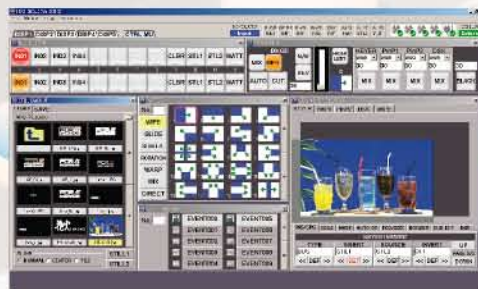
HVS-30FP: Front Control Panel

The HVS-30FP, is a simple and compact HVS-300HS control unit to fit on the front of the main unit and can be installed into a 1U rack space.
(HVS-30FP cannot be installed in HVS-300RPS.)

HVS-30RU: Remote Control Unit

The HVS-30RU remote control unit can be used for remote switching or as an AUX remote contol.

HVS-30GUI: Remote Control Software

The HVS-300HS and HVS-300RPS also can be controlled via the remote control software graphical user interface the HVS-30GUI. The HVS-30GUI can be installed on any PC and will provide users with full remote switcher control over LAN.

The HVS-300HS and the HVS-300RPS Main Features

Whether you work in HD, SD or a combination of both, there are enough inputs and outputs to suit any of your production needs.

Compact Main Frame

The HVS-300HS incorporates up to 12 inputs and 8 outputs, Frame Synchronizer, Re-sizing Engine, Still Store, Keyer with Chroma Key, DSK, and a wide array of other functions in a compact EIA 1U size.

1U

Redundant Power Model: HVS-300RPS

The HVS-300RPS model has in addition a redundant power supply installed in a 2U frame. All input, output, system features and additional I/O options are same the HVS-300HS 1U model.

2U

Input/Output

4 HD/SD-SDI inputs and outputs are provided in the standard configuration. This includes 2 PGM outputs and 2 AUX outputs. With optional I/O cards we can provide up to a maximum 12 Inputs and 8 Outputs, including analog component, analog composite, DVI, and RGB.

Supported Formats;
1080/60i, 1080/59.94i, 1080/50i, 1080/24PsF, 1080/23.98PsF
*720/60p, 720/59.94p, 720/50p, 525/60 (NTSC), 625/50 (PAL)*

Frame Synchronizers

Each input is fitted with its own frame synchronizer which can be turned on or off for minimum delay.
This also allows any sources without genlock capability (such as consumer devices or computers) to be used. When "genlocking" everything, we provide Black Burst or Tri-level sync output. Proc Amp features are also provided for each input.

Up-converter/Re-sizing Engine

Up-converter/ re-sizing engine is provided on every input. Should you need to use Standard Definition equipment in HD mode, just plug in. This is ideal for users making the transition to HD production.

HD
SD
PC
HVS-300HS or HVS-300RPS
Auto Re-sizing and Smooth Switching
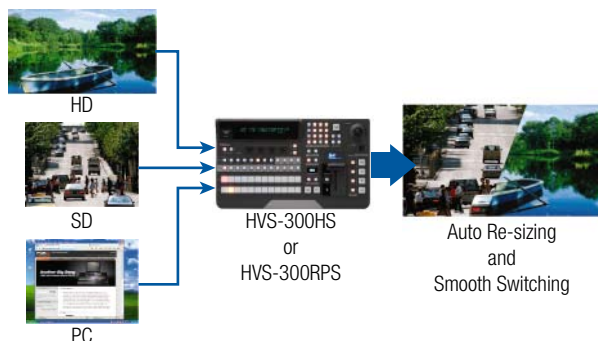
Interfaces

The HVS-300HS and the HVS-300RPS also supports many types of interfacing, such as RS-422, Editor, ARCNET, Ethernet, GPI and Tally.

Keyer/DSK

One Keyer and one DSK are as standard features for the HVS-300HS and the HVS-300RPS. The Keyer provides an easy to use broadcast level Chroma Key. Both Keyer and DSK are equipped with a 2D DVE for positioning graphics or over the shoulder shots.

Transitions/DVEs

For transitions the switcher offer CUT, MIX and over 100 wipe patterns, plus 56 2D/3D-DVE Wipe patterns. It also has separate transitions for the keyers and picture in picture functions. And these effects are can be modified from standard patterns.

2 Still Stores

The switcher also comes with 2 dedicated still stores, which can upload or download images (JPEG and TARGA) via the USB port.
The USB port also makes up&down-loading user settings quick and easily.

4/10/16 Split Multi Viewer

One of the most popular new features of our switcher is its built in 16-channel multi viewer, a standard feature of the HVS-300HS and the HVS-300RPS. You can freely assign any input or output (program or preview) to the multi viewer, using either its 4, 10 or 16 channel display. The multi viewer also features tally and titling functions so that users always know which signals are going to each output.

Quad-Split   10-Split   16-Split
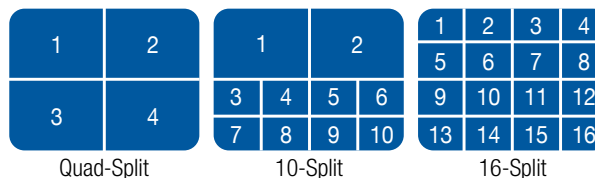
2 Picture-in-Picture

For box shots, over the shoulder shots and graphic display, there are two dedicated Picture-in-Picture channels that can display a compressed image of any input from 1% to 25%. These are in addition to the keyer DVEs. Users can also Expand, Squeeze, Crop and add Borders with the dual Picture-in-Picture mode.
These effects can be assigned to user buttons so that fade-ins, fade-outs, slide-ins and slide-outs for Picture-in-Picture transitions can be operated by single button operations.
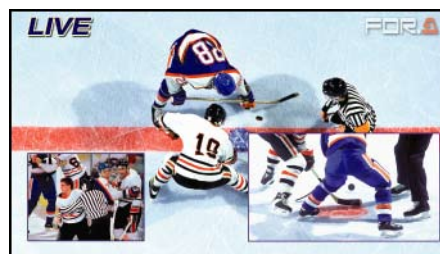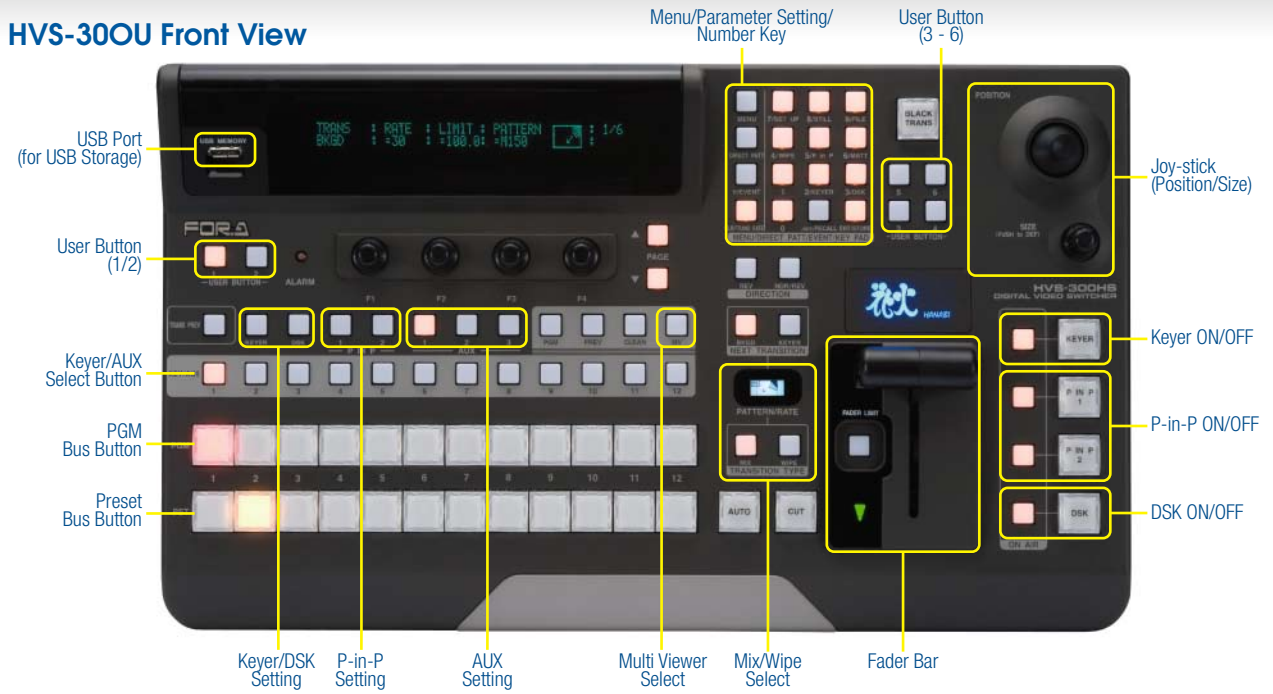

OSD (On-screen Display)

OSD image

OSD is provided for access to controls from every control panels to allow switcher settings to be displayed on a preview output so that configurations can easily be modified and status verified at a glance.
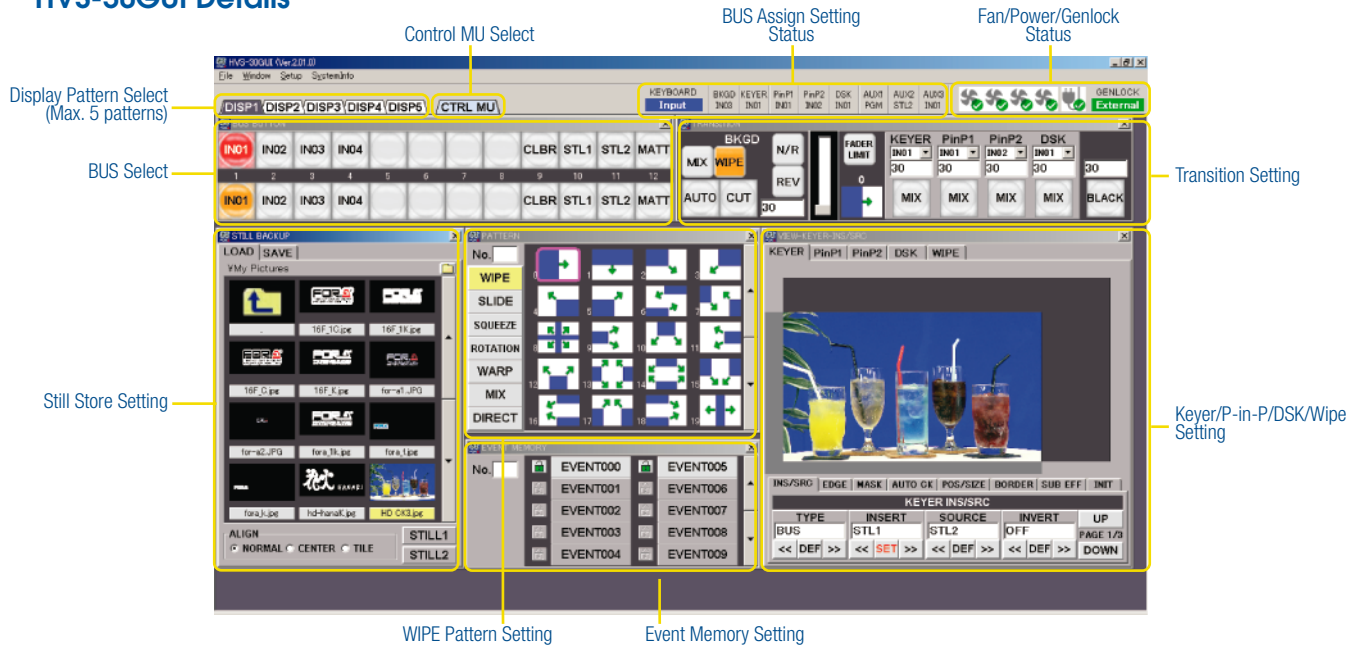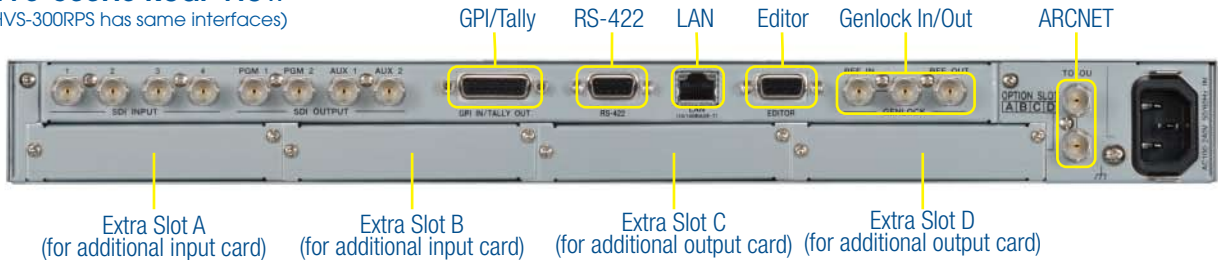
HVS-30OU Front View

- Menu/Parameter Setting/ Number Key
- User Button (3 - 6)
- USB Port (for USB Storage)
- Joy-stick (Position/Size)
- User Button (1/2)
- Keyer/AUX Select Button
- Keyer ON/OFF
- PGM Bus Button
- P-in-P ON/OFF
- Preset Bus Button
- DSK ON/OFF
- Keyer/DSK Setting
- P-in-P Setting
- AUX Setting
- Multi Viewer Select
- Mix/Wipe Select
- Fader Bar

HVS-30FP and HVS-30RU Front View

- Mix/Wipe Select
- Transition Rate Setting
- User Button (1/2)
- PGM Bus Button
- Preset Bus Button
- Wipe/DVE Select
- Keyer/DSK ON/OFF

HVS-30GUI Details

- Control MU Select
- BUS Assign Setting Status
- Fan/Power/Genlock Status
- Display Pattern Select (Max. 5 patterns)
- BUS Select
- Transition Setting
- Still Store Setting
- Keyer/P-in-P/DSK/Wipe Setting
- WIPE Pattern Setting
- Event Memory Setting

HVS-300HS Rear View
(HVS-300RPS has same interfaces)

- GPI/Tally
- RS-422
- LAN
- Editor
- Genlock In/Out
- ARCNET
- Extra Slot A (for additional input card)
- Extra Slot B (for additional input card)
- Extra Slot C (for additional output card)
- Extra Slot D (for additional output card)

Options

The HVS-300HS/300RPS can have up to 12 inputs and 8 outputs when optional I/O cards are installed. There are four extra slots available, 2 for inputs and 2 for outputs. These can be used with optional I/O cards for HD/SD-SDI, Analog Component, Analog Composite, DVI and Analog RGB signals.

HVS-30HSDI HD/SD-SDI Input Card

Rear Panel

The optional HD/SD-SDI input card provides 4 extra inputs.

HVS-30HSDO HD/SD-SDI Output Card

Rear Panel

The optional HD/SD-SDI output card provides 2 additional outputs. The HD/SD-SDI output cards have a 3rd down-converted SD output as well.

HVS-30HSAI Analog Video Input Card

Rear Panel

The analog input card provides 2 analog inputs. These can be set up as composite, component or one of each.

HVS-30HSAO Analog Video Output Card

Rear Panel

The analog output card provides 2 analog outputs. These can be set up as composite, component or one of each. Of course the composite output is down converted in HD mode.

HVS-30PCIN PC (DVI/VGA) Input Card

Rear Panel

For computer-based applications we have an input card with one DVI-D and one VGA connector with resolutions ranging from VGA to WUXGA.

Input Resolutions:	
HD mode	
1080i/PsF	1024 x 768 (XGA), 1280 x 1024 (SXGA), 1600 x 1200 (UXGA), 1280 x 768 (WXGA), 1680 x 1050 (WSXGA), 1920 x 1200 (WUXGA)
720p	1024 x 768 (XGA), 1280 x 1024 (SXGA), 1280 x 768 (WXGA)
SD mode	640 x 480 (VGA), 800 x 600 (SVGA), 1024 x 768 (XGA)
Not supported of HDCP	

HVS-30PCO PC (DVI/VGA) Output Card

Rear Panel

For computer-based applications we have an output card with one DVI-D and one VGA connector with resolutions ranging from VGA to WUXGA.

Output Resolutions:	
HD mode	
1080i/PsF	1280 x 1024 (SXGA), 1600 x 1200 (UXGA), 1680 x 1050 (WSXGA), 1920 x 1200 (WUXGA)
720p	1280 x 1024 (SXGA), 1280 x 768 (WXGA)
SD mode	800 x 600 (SVGA)
Not supported of HDCP	

Input Card Configuration

Input Port 1	Input Port 2	Number of inputs
-	-	HD/SD-SDI x 4 (standard)
HVS-30HSAI	-	HD/SD-SDI x 4, Analog x 2
HVS-30HSAI	HVS-30HSAI	HD/SD-SDI x 4, Analog x 4
HVS-30HSAI	HVS-30PCIN	HD/SD-SDI x 4, Analog x 2, PC x 2
HVS-30PCIN	-	HD/SD-SDI x 4, PC x 2
HVS-30PCIN	HVS-30PCIN	HD/SD-SDI x 4, PC x 4
HVS-30HSDI	-	HD/SD-SDI x 8
HVS-30HSDI	HVS-30HSAI	HD/SD-SDI x 8, Analog x 2
HVS-30HSDI	HVS-30PCIN	HD/SD-SDI x 8, PC x 2
HVS-30HSDI	HVS-30HSDI	HD/SD-SDI x 12

Output Card Configuration

Output Port 1	Output Port 2	Number of outputs
-	-	HD/SD-SDI x 4 (standard)
HVS-30HSAO	-	HD/SD-SDI x 4, Analog x 2
HVS-30HSAO	HVS-30HSAO	HD/SD-SDI x 4, Analog x 4
HVS-30HSAO	HVS-30PCO	HD/SD-SDI x 4, Analog x 2, PC x 2
HVS-30PCO	-	HD/SD-SDI x 4, PC x 2
HVS-30PCO	HVS-30PCO	HD/SD-SDI x 4, PC x 4
HVS-30HSDO	-	HD/SD-SDI x 6 (+SD-SDI x 1)
HVS-30HSDO	HVS-30HSAO	HD/SD-SDI x 6 (+SD-SDI x 1), Analog x 2
HVS-30HSDO	HVS-30PCO	HD/SD-SDI x 6 (+SD-SDI x 1), PC x 2
HVS-30HSDO	HVS-30HSDO	HD/SD-SDI x 8 (+SD-SDI x 2)

HVS-AUX8
HVS-AUX16 AUX Remote Panel

HVS-AUX8

HVS-AUX16

We have optional AUX remote panels with either 8 or 16 buttons. The 8-button panel is half a rack wide, and the 16-button panel is of a full rack width. One can daisy-chain multiple AUX remote control units via ARCNET. Furthermore, a cable extension kit is available so that the button panel can be detached from the main unit.

HVS-TALOC20/32
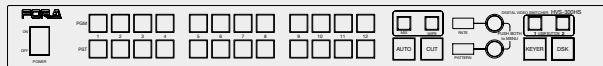## HVS-TALR20/32 Tally Interface Unit

HVS-TALOC32

Tally Interface with power supply: There are 4 types available for both Open Collector and Relay systems with choices of 20 or 32 contacts respectively.
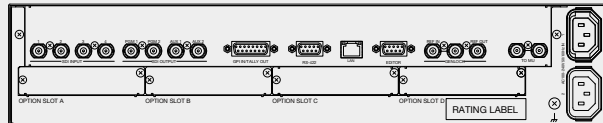
 -HVS-TALOC20: Open Collector system with 20 contacts
 -HVS-TALOC32: Open Collector system with 32 contacts
 -HVS-TALR20: Relay system with 20 contacts
 -HVS-TALR32: Relay system with 32 contacts

HVS-30ED Editor Interface Software
Interface software to connect with an Editor: It is BVS-3000 and GVG-100 Protocol compliant.
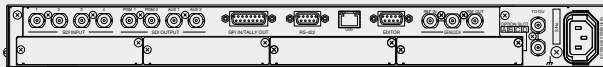
Dimensions

HVS-30FP/30RU Front View

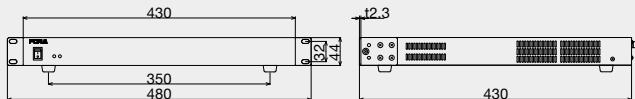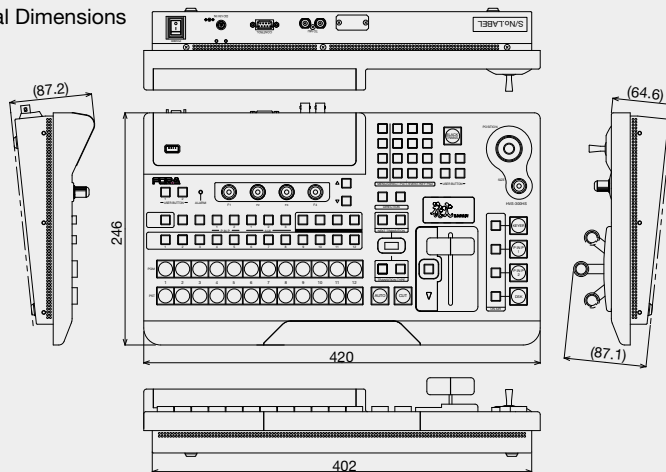HVS-300HS Rear View

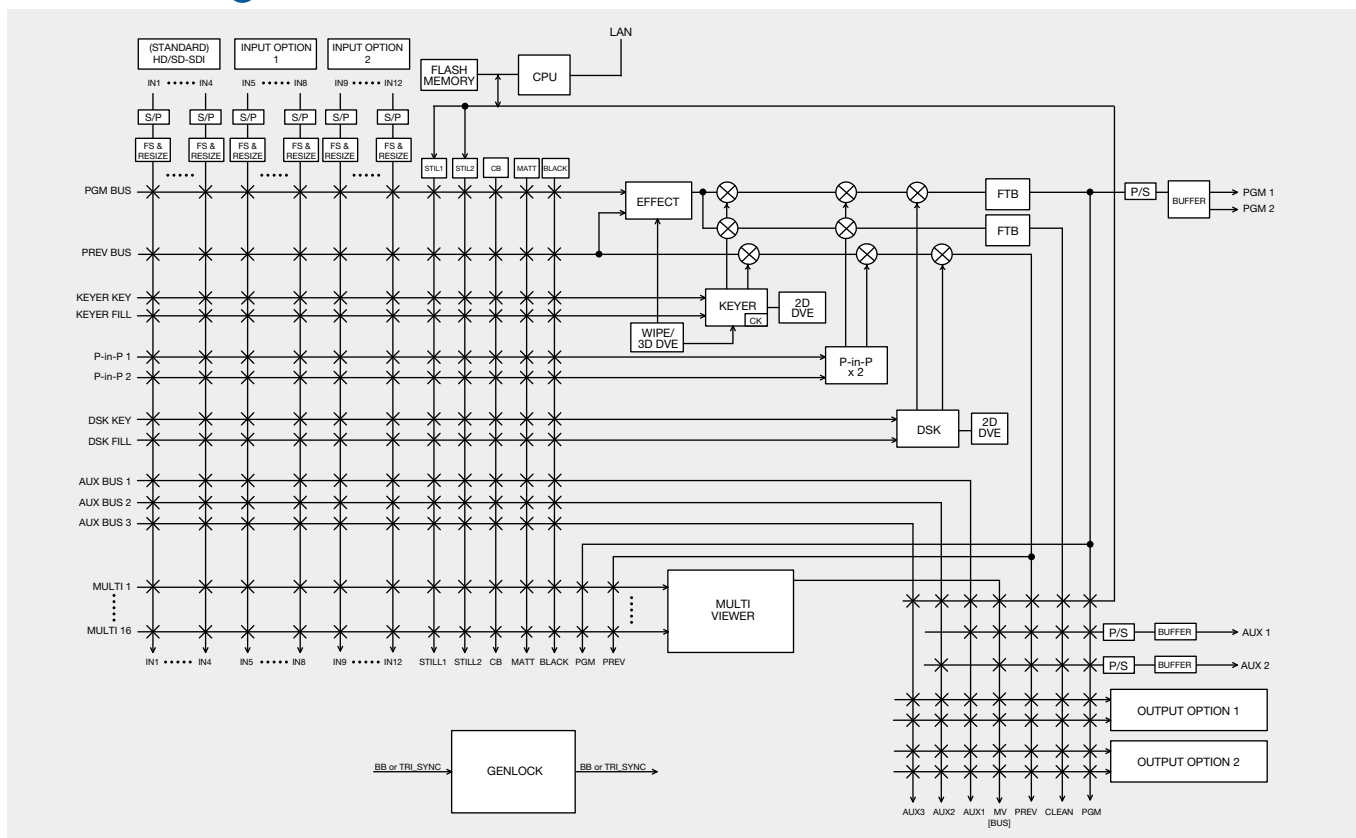HVS-300RPS Rear View

HVS-300HS External Dimensions

430
32
44
350
480
t2.3
430

HVS-300RPS External Dimensions

430
76
88
480
t2.3
86
430
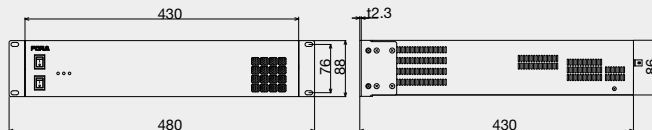
HVS-30OU External Dimensions

(87.2)
246
420
(64.6)
(87.1)
402

Block Diagram

Specifications

	HD mode	SD mode
Standard	1080/60i, 1080/59.94i, 1080/50i, 1080/24PsF, 1080/23.98PsF, 720/60p, 720/59.94p, 720/50p (selectable at menu)	525/60 (NTSC), 625/50 (PAL) (selectable at menu)
Processing	4:2:2:4, 10-bit, digital component	
Quantization	Y: 10-bit, C: 10-bit, KEY: 10-bit	
Video Input	HD-SDI: 1.485Gbps or 1.485/1.001Gbps, or SD-SDI: 270Mbps, 75Ω, 4 inputs, BNC	SD-SDI: 270Mbps, 75Ω, 4 inputs, BNC
Video Input (Option)	HD-SDI: 1.485Gbps or 1.485/1.001Gbps, or SD-SDI: 270Mbps, 75Ω, BNC	SD-SDI: 270Mbps, 75Ω, BNC
	DVI: DVI-D connector, Resolution (XGA - WUXGA) (HDCP incompatible)	DVI: DVI-D connector, Resolution (VGA - XGA) (HDCP Incompatible)
	VGA: 15-pin D-sub (female), Resolution (XGA - WUXGA), R/G/B: 0.7Vp-p, H/V: TTL	VGA: 15-pin D-sub (female), Resolution (VGA - XGA), R/G/B: 0.7Vp-p, H/V: TTL
	HD analog component: Y: 1.0Vp-p, PB/PR: 0.7Vp-p, 75Ω, BNC	SD Analog component: Y: 1.0Vp-p, R-Y/B-Y: 0.7Vp-p, 75Ω, BNC
	SD analog component: Y: 1.0Vp-p, R-Y/B-Y: 0.7Vp-p, 75Ω, BNC	
	Analog composite: 1.0Vp-p, 75Ω, BNC	Analog composite: 1.0Vp-p, 75Ω, BNC
Reference Input	BB: NTSC: 0.429Vp-p/PAL: 0.45Vp-p, or Tri-level sync: ±0.3Vp-p, 75Ω or loopthrough, 1 input, BNC	BB: NTSC: 0.429Vp-p/PAL: 0.45Vp-p, 75Ω or loopthrough, 1 input, BNC
Video Output	HD-SDI: 1.485Gbps or 1.485/1.001Gbps, 75Ω, 4 outputs, BNC (PGM x 2, AUX x 2)	SD-SDI: 270Mbps, 75Ω, 4 outputs, BNC (PGM x 2, AUX x 2)
Video Output (Option)	HD-SDI: 1.485Gbps or 1.485/1.001Gbps, 75Ω, BNC	SD-SDI: 270Mbps, 75Ω, BNC
	HD Analog component: Y: 1.0Vp-p, PB/PR: 0.7Vp-p, 75Ω, BNC	SD Analog component: Y: 1.0Vp-p, R-Y/B-Y: 0.7Vp-p, 75Ω, BNC
	DVI: DVI-D connector, Resolution (SXGA - WUXGA) (HDCP incompatible)	DVI: DVI-D connector, Resolution (SVGA) (HDCP Incompatible)
	VGA: 15-pin D-sub (female), Resolution (SXGA - WUXGA), R/G/B: 0.7Vp-p, H/V: TTL	VGA: 15-pin D-sub (female), Resolution (SVGA), R/G/B: 0.7Vp-p, H/V: TTL
Reference Output	BB: NTSC: 0.429Vp-p/PAL: 0.45Vp-p, or Tri-level sync: ±0.3Vp-p, 75Ω, 1 output, BNC	BB: NTSC: 0.429Vp-p/PAL: 0.45Vp-p, 75Ω, 1 output, BNC
I/O Delay	1H (minimum delay)	
	1 frame - 2 frame + 1H (Using frame synchronizer or Input re-sizing engine)	
	2 frame - 3 frame + 1H (Using frame synchronizer or Input re-sizing engine + DVE)	
	3 frame - 4 frame + 1H (Using frame synchronizer or Input re-sizing engine + Output re-sizing engine + DVE)	
Multi Viewer	Screen display type: Quad, 10-Split, 16-Split	
	Title Display (up to 8 alphanumeric characters for each input), On-Air tally indication (red/green)	
	Delay: 1 frame relative to PGM output	
Backup Device	USB memory device	
Interfaces	EDITOR: 1 port, 9-pin D-sub (female)	
	RS-422: 1 port, 9-pin D-sub (female)	
	GPI IN/TALLY: 1 port, 15-pin D-sub (female) (12 in/outputs)	
	ARCNET: 1 port, 75Ω or loopthrough, BNC	
	Ethernet: 10/100Base-T, 1 port, RJ-45	
Temperature / Humidity	0ºC - 40ºC / 30% - 90% (no condensation)	
Power / Consumption	HVS-300HS: 100VAC - 240VAC ±10%, 50/60Hz / Max. 193VA at 100VAC (191W), 220VA at 200VAC (211W)	
	HVS-300RPS: 100VAC - 240VAC ±10%, 50/60Hz / Max. 240VA at 100VAC (235W), 264VA at 200VAC (219W)	
	HVS-300HS + HVS-30FP: 100VAC - 240VAC ±10%, 50/60Hz / Max. 242VA (216W)	
	HVS-30OU: 100VAC - 240VAC ±10%, 50/60Hz / 33VA (16W)	
	HVS-30RU: 100VAC - 240VAC ±10%, 50/60Hz / 13VA (5W)	
Dimensions / Weight	HVS-300HS: 430 (W) x 44 (H) x 430 (D) mm / Approx. 8kg (full option: 10kg)	
	HVS-300RPS: 430 (W) x 88 (H) x 430 (D) mm / Approx. 9kg (full option: 11kg)	
	HVS-300HS+HVS-30FP: 430 (W) x 44 (H) x 446 (D) mm / Approx. 9kg	
	HVS-30OU: 420 (W) x 87.2(H) x 246 (D) mm / Approx. 3kg	
	HVS-30RU: 430 (W) x 44 (H) x 42 (D) mm / Approx. 1.5kg	
Accessories	HVS-300HS/300RPS: Operation manual, AC cord, Rack mount brackets	
	HVS-30OU: AC adapter, AC cord retaining clips *Rack mount brackets are option	
	HVS-30FP: None	
	HVS-30RU: AC adapter, AC cord retaining clips, Rack mount brackets	
Options	HVS-30HSDI: HD/SD digital input card	HVS-30HSDO: HD/SD digital output card
	HVS-30HSAI: HD/SD analog input card	HVS-30HSAO: HD/SD analog output card
	HVS-30PCIN: PC input card	HVS-30PCO: PC output card
	HVS-AUX8: Aux Control Box (8-button type)	HVS-TALOC20/32: Tally open collector unit (20/32 terminal)
	HVS-AUX16: Aux Control Box (16-button type)	HVS-TALR20/32: Tally relay unit (20/32 terminal)
	HVS-30ED: Editor interface software	

PC Requirements for HVS-30GUI

OS	Microsoft® Windows® XP Professional SP2 or higher
	Microsoft® Windows® Vista Home Premium or higher
CPU	Intel® Pentium 4 Processor 1.2GHz or higher
Memory	512MB or more
HDD	20MB or more free space
Graphics	1280 x 768 pixels or higher resolution, 24-bit color, Graphics card with 64MB or more memory (OpenGL 1.0 or 2.0 supported)
Interfaces	Ethernet: 10Base-T/100Base-TX, 1 port