

HD/SD 1.5M/E Video Switcher
HVS-350HS "1.5M/E HANABI"

FOR.A[®]
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

花火
HANABI

HD/SD 1.5M/E Video Switcher

HVS-350HS "1.5M/E HANABI"



HVS-350HS: The New Innovations to The Video Switcher Genre

Compact, Full Range of Functionality, Affordable Switcher

Announcing a 1.5M/E model in the FOR-A HVS-300 Series of portable video switchers noted for plentiful functions and excellent cost-performance. The HVS-350HS is the video switcher pushing functionality and operability to new heights. Like the HVS-300HS, it offers a full range of functionality, including mixed HD/SD input, frame synchronizer, 2D and 3D wipe effects, DVE, keyer with chroma key (2 channels), DSK (4 channels), still stores (4 channels), picture in picture (2 channels) and 16-split multiviewer (2 channels). It retains the unique specifications that allow selection of operation style and can be used on all types of locations for almost anything (live, events, news, outside broadcasting vans, sports, editing, presentations, etc.). The HVS-350HS offers new innovations to the video switcher genre.



Five Operation Styles

The HVS-350HS comes programmed with 5 operation styles. Choose the operation style that best fits your application and conditions. Multiple operation units can be combined.

HVS-350U: 1.5M/E Control Panel



This Control Panel is optimized for HVS-350HS functions. Provides 20 bus buttons, dedicated fade levers for M/E and P/P buses respectively, 3-axis joystick, and direct buttons for various functions, all in an easy to use arrangement. The operation interface has a USB interface. It can also be used for saving or reading still store content, backing up various parameters, etc. ARCNET is used for connecting to the main unit, which enables extending the connection up to 100 meters with a single BNC cable.

HVS-35ROU: 1.5M/E Rack Size Control Panel



A Control Panel designed to rack-mounting size while retaining the operability of the HVS-350U. It has 12 bus buttons. Other buttons and functions are as in the HVS-350U.

HVS-300U: 1M/E Control Panel



This is the control panel for the 1M/E video switcher HVS-300HS, but it allows operation of the M/E bus or P/P bus of the HVS-350HS. Like the HVS-35ROU, it is rack-mountable. Though there are limits on functions accessible from the buttons, the use of GPI and OSD functions together enables various operations with the HVS-350HS.

HVS-30RU: Remote Control Panel



As with the HVS-300U, this is a 1U size compact panel developed for the HVS-300HS, but it comes with authentic bus buttons on the operating interface, a compact liquid crystal display enabling selection of wipe patterns, and major buttons such as a rotary encoder. The use of GPI and OSD functions together enables various operations on the HVS-350HS. It can also function as the AUX remote panel of the HVS-350HS main unit.

HVS-35GUI: Remote Control Software



Control software that is used by installing to a PC. The intuitive function window enables full control of the HVS-350HS. Also provided are power source and fan status displays, a function to switch among display layouts for 5 patterns, keyboard shortcuts and many other functions that software makes possible. (A separate PC is required to use.)

HVS-350HS Main Features

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

3U Compact Frame

The HVS-350HS unit size is 3U. Inside is a full range of functionality. It has a large fan and efficient cooling process. Ideal for situations when unit must be set close to operations desk or used in a quiet environment. It can also be equipped with a secondary power source for excellent redundancy (option).

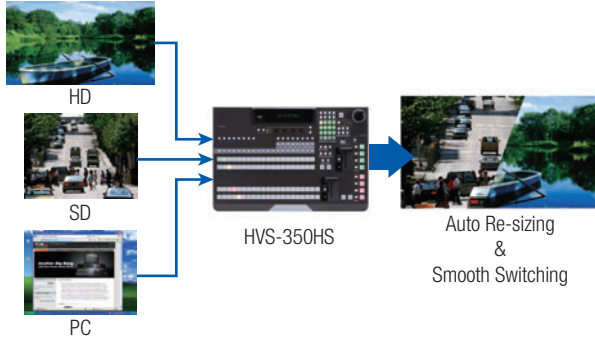


Frame Synchronizers

A frame synchronizer function comes standard for input. This enables asynchronous signals to be switched as is. Aside from HD/SD mixed input, installation of option board supports asynchronous picture input, e.g. from PC. Also comes equipped with Proc Amp function capable of adjusting video level, chroma level, etc. of input signal.

Re-sizing Engine

A re-size engine (expansion) is provided on 4 of the 8 standard inputs and the optional input board HVS-30HSDI. This achieves a fully mixed SD and HD environment with a switcher alone, with no need to connect an external device such as an up-converter. This is naturally suitable for re-sizing not only SD signals but also PC video. (The HVS-30HSDI-A option does not have a re-size function)



Event Memory

When reading out events from current settings, you can call them up while assisting the transition to the event's registered status. Freely set the events to be called up and the time to assist to the registered status. Doing the same thing with previous video switchers requires using a sequence function, a time-consuming job that includes selecting patterns. In contrast, the HVS-350HS can switch seamlessly to a recorded state with the same operation as the event memory, making this function very useful for live performances, etc.

Sequence Function

The sequence function, moreover, can register up to 10 patterns. BKGD and keyer/DSK 2D DVE parameter settings, picture in picture settings and others can be registered as key frames.

Using the HVS-35GUI, data on each key frame in a sequence is displayed in a timeline, so it is easy to check the correlation between movement and key frames.

Additionally, the HVS-350U/35ROU have 12 user buttons, the HVS-300U has 6, and the HVS-30FP/30RU have 2, and event memory or sequence function can be registered on any user button.

2 keyer and 4 DSK

Two keyer channels and 4 DSK channels come standard. The keyer also has a chroma key function. And since the keyer and DSK each have their own dedicated 2D DVE, scale effects or other 2D effects can be individually added to them.

Abundant DVEs and Transitions

Besides the 2D DVEs that come with the keyer and DSK, two channels of 3D DVEs come standard. The 3D DVEs can be assigned freely, allowing you to assign them to the background as well as Keyer 1 and Keyer 2.

Cut, mix and wipe can be chosen for the M/E bus transition. Only cut and mix are available for the P/P bus. Wipe patterns include 100 2D wipe patterns and 68 DVE wipe patterns such as page turn. Along with wipes, effects like mosaic and defocus are also provided.

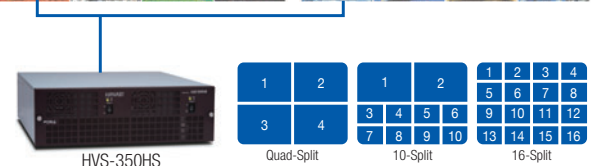
4 Still Stores

Four still store channels are provided standard. Externally created still data can be sent to the main unit via Ethernet. Reading through USB memory is also supported when connected to HVS-350U/35ROU/300U. Backup function stores data internally and allows reading of saved data after restarting power. Supported file formats are JPEG, TGA and BMP.

Dual Channels 4/10/16 Split Multi Viewer

A multiviewer function, capable of displays of up to 16 splits, comes standard with 2 channels. Supports 4-split, 10-split and 16-split display patterns. The ability to make different display patterns and channel settings for each ensures flexible operation. Display channels can be freely assigned, allowing assignment of not only input source but also output picture such as PGM or PREV. Each channel offers title display and tally display functions.

With the addition of the AUX assignment function, all the channels from input to output can now be checked on the multiviewer.



2 Picture-in-Picture

Two channels of dedicated Picture-in-Picture (P-in-P) circuits are provided, separate from the wipe effect function. The picture can be enlarged, shrunk, repositioned, cropped or given a border. Register an operation in advance to a user button, and just that one button is all it takes to fade, slide or zoom in or out or perform other operations. Making full use of P-in-P, keyer and DSK 2D DVE lets you display P-in-P screen with up to 8 pictures.



Input/Output

HD/SD-SDI 8 input/8 output come standard. Support for mixed input of HD and SD signal comes standard. The 8 output channels include M/E PGM (1 channel), PGM (1 channel) and AUX (6 channels). AUX can be assigned for preview or multiviewer. Inputs and outputs can be expanded to 24 and 12 respectively. Aside from HD/SD-SDI, other inputs and outputs can be installed, including analog component, analog composite, DVI and RGB.

Support Formats;

1080/60i, 1080/59.94i, 1080/50i, 1080/30PsF, 1080/29.98PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF, 720/60p, 720/59.94p, 720/50p, 525/60 (NTSC), 625/50 (PAL)

Input Card Configuration

Input port 1	Input port 2	Input port 3	Input port 4	Total inputs
—	—	—	—	HD/SD-SDI x 8 (standard configuration)
HVS-30HSAI	—	—	—	HD/SD-SDI x 8, Analog x 2
HVS-30HSAI	HVS-30HSAI	—	—	HD/SD-SDI x 8, Analog x 4
HVS-30HSAI	HVS-30HSAI	HVS-30HSAI	—	HD/SD-SDI x 8, Analog x 6
HVS-30HSAI	HVS-30HSAI	HVS-30HSAI	HVS-30HSAI	HD/SD-SDI x 8, Analog x 8
HVS-30PCIN	—	—	—	HD/SD-SDI x 8, PC x 2
HVS-30PCIN	HVS-30PCIN	—	—	HD/SD-SDI x 8, PC x 4
HVS-30PCIN	HVS-30PCIN	HVS-30PCIN	—	HD/SD-SDI x 8, PC x 6
HVS-30PCIN	HVS-30PCIN	HVS-30PCIN	HVS-30PCIN	HD/SD-SDI x 8, PC x 8
HVS-30HSAI	HVS-30PCIN	—	—	HD/SD-SDI x 8, Analog x 2, PC x 2
HVS-30HSAI	HVS-30PCIN	HVS-30PCIN	—	HD/SD-SDI x 8, Analog x 2, PC x 4
HVS-30HSAI	HVS-30PCIN	HVS-30PCIN	HVS-30PCIN	HD/SD-SDI x 8, Analog x 2, PC x 6
HVS-30HSAI	HVS-30HSAI	HVS-30PCIN	—	HD/SD-SDI x 8, Analog x 4, PC x 2
HVS-30HSAI	HVS-30HSAI	HVS-30PCIN	HVS-30PCIN	HD/SD-SDI x 8, Analog x 4, PC x 4
HVS-30HSAI	HVS-30HSAI	HVS-30HSAI	HVS-30PCIN	HD/SD-SDI x 8, Analog x 6, PC x 2
HVS-30HSDI/30HSDI-A	—	—	—	HD/SD-SDI x 12
HVS-30HSDI/30HSDI-A	HVS-30HSAI	—	—	HD/SD-SDI x 12, Analog x 2
HVS-30HSDI/30HSDI-A	HVS-30HSAI	HVS-30HSAI	—	HD/SD-SDI x 12, Analog x 4
HVS-30HSDI/30HSDI-A	HVS-30HSAI	HVS-30PCIN	—	HD/SD-SDI x 12, Analog x 2, PC x 2
HVS-30HSDI/30HSDI-A	HVS-30HSAI	HVS-30PCIN	HVS-30PCIN	HD/SD-SDI x 12, Analog x 2, PC x 4
HVS-30HSDI/30HSDI-A	HVS-30HSAI	HVS-30HSAI	HVS-30PCIN	HD/SD-SDI x 12, Analog x 4, PC x 2
HVS-30HSDI/30HSDI-A	HVS-30HSAI	HVS-30HSAI	HVS-30HSAI	HD/SD-SDI x 12, Analog x 6
HVS-30HSDI/30HSDI-A	HVS-30PCIN	—	—	HD/SD-SDI x 12, PC x 2
HVS-30HSDI/30HSDI-A	HVS-30PCIN	HVS-30PCIN	—	HD/SD-SDI x 12, PC x 4
HVS-30HSDI/30HSDI-A	HVS-30PCIN	HVS-30PCIN	HVS-30PCIN	HD/SD-SDI x 12, PC x 6
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	—	—	HD/SD-SDI x 16
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSAI	—	HD/SD-SDI x 16, Analog x 2
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30PCIN	—	HD/SD-SDI x 16, PC x 2
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSAI	HVS-30PCIN	HD/SD-SDI x 16, Analog x 2, PC x 2
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSAI	HVS-30HSAI	HD/SD-SDI x 16, Analog x 4
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30PCIN	HVS-30PCIN	HD/SD-SDI x 16, PC x 4
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	—	HD/SD-SDI x 20
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSAI	HD/SD-SDI x 20, Analog x 2
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30PCIN	HD/SD-SDI x 20, PC x 2
HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HVS-30HSDI/30HSDI-A	HD/SD-SDI x 24

Output Card Configuration

Output port 1	Output port 2	Total outputs
—	—	HD/SD-SDI x 8 (standard configuration)
HVS-30HSAO	—	HD/SD-SDI x 8, Analog x 2
HVS-30HSAO	HVS-30HSAO	HD/SD-SDI x 8, Analog x 4
HVS-30HSAO	HVS-30PCO	HD/SD-SDI x 8, Analog x 2, PC x 2
HVS-30PCO	—	HD/SD-SDI x 8, PC x 2
HVS-30PCO	HVS-30PCO	HD/SD-SDI x 8, PC x 4
HVS-30HSDO	—	HD/SD-SDI x 10 (+SD-SDI x 1)
HVS-30HSDO	HVS-30HSAO	HD/SD-SDI x 10 (+SD-SDI x 1), Analog x 2
HVS-30HSDO	HVS-30PCO	HD/SD-SDI x 10 (+SD-SDI x 1), PC x 2
HVS-30HSDO	HVS-30HSDO	HD/SD-SDI x 12 (+SD-SDI x 2)

Input Card Option

HVS-30HSDI: HD/SD Input Card
HVS-30HSDI-A: HD/SD Input Card (no resize)
HVS-30HSAI: HD/SD Analog Input Card
HVS-30PCIN: PC (DVI/VGA) Input Card

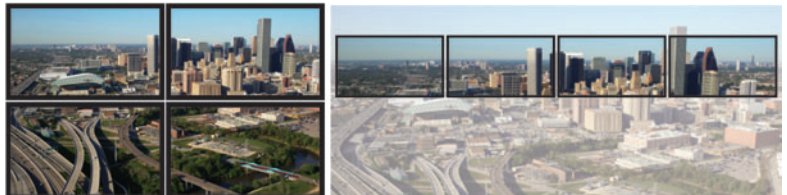
Output Card Option

HVS-30HSDO: HD/SD Output Card
HVS-30HSAO: HD/SD Analog Output Card
HVS-30PCO: PC (DVI/VGA) Output Card

Multi-monitor (Video-wall)

With the DSK free assignment function on, the HVS-350HS alone is sufficient to achieve a multi-monitor environment in which multiple monitors are connected. You can easily achieve a multi-monitor setup on up to four screens by assigning four channels of DSK to four AUX channels and using the standard feature 2D DVE for the DSK in a state where the same source has been selected for each channel to enlarge the display of a portion of the video and transform and transition to match the arrangement of monitors.

Usually, a separate processor would be required for multi-monitor use, but with the HVS-350HS, a switcher alone can output for multi-monitor use separately from the main channel. This unique feature is a great help in every aspect of production including operations, equipment and systems.



AUX Transition

Supports not only M/E and P/P bus, but also AUX bus transition switching. As a result, when displaying videos on a separate monitor besides the main system, you can actively use AUX to expand the range of your production.

Free DSK Assignment

Offers four channels of DSK that you can freely assign. Assign to any of M/E, P/P or AUX. Also, with DSK, M/E composite results can be used as an input source, so even a 1.5 M/E switcher can be operated as a 2 M/E switcher.

Interfaces

External interfaces include an Editor port for connecting to an editing machine, GPI port supporting up to 10 inputs and 20 outputs, RS-422 port for connecting an HVS-30RU, etc., ARCNET port for connecting an operation unit or AUX remote panel, and Ethernet port used during PC control.

OSD (On-screen Display)

The PREV or AUX monitor settings screen can be displayed on-screen. This lets you make various settings while viewing the picture. Of course, stable output is guaranteed with PGM, even when the menu is on display.



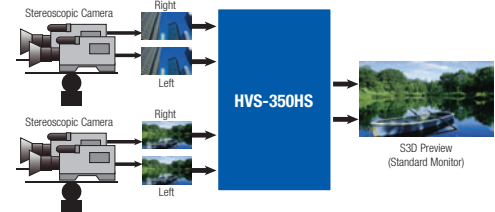
OSD image

S3D Preview Function

The HVS-350HS offers a stereo 3D option, enabling not only simultaneous switching of the two channels left and right, but also simultaneous output on the two channels left and right. Field sequential output* is also possible, making it easy to check video. While not meant for regular viewing, since switching takes place in field units, it is valuable for checking the status of stereo 3D video onsite.

*Field sequential output:

A function that outputs two output video feeds alternately in field units from one channel of output. This makes it possible to preview the status of S3D video using only an interlaced monitor and shutter glasses.



Options

With the HVS-350HS, you can add just the input and output formats you need, in just the amount needed. There are 4 expansion slots for input and 2 for output. Aside from HD/SD-SDI, other inputs and outputs can be installed, including analog component, analog composite, DVI and RGB.

HVS-30HSDI HVS-30HSDI-A HD/SD-SDI Input Card



4 channels of HD/SD-SDI input card. 2 types of card available; HVS-30HSDI has a frame synchronizer function and re-size (expansion) function provided for all inputs, and SD images can be processed internally as HD images.

HVS-30HSDI-A has a frame synchronizer function (no resize) provided for all inputs. It is an expansion card with excellent cost-performance.

HVS-30HSAI Analog Video Input Card



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

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



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	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)

HDCP incompatible; DVI-D and VGA input not supported in 1080PsF format.

HVS-AUX8/16/32 AUX Remote Panel



An 8-button or 16/32-button type AUX remote control panel is provided. The 8-button unit is half-rack size and 16/32-button unit is 1U rack size; ARCNET allows cascading connection of as many as 5 units. With the panel extension kit, each panel can be used with a longer button interface.

- HVS-AUX8/16/32: AUX remote panel (8/16/32 buttons)
- Extensions kit: HVS-AUX8RK (for HVS-AUX8), HVS-AUXRK (for HVS-AUX16/32)

HVS-35S3D 3D Monitoring Software

A stereoscopic 3D option enables not only simultaneous switching of the two channels left and right, but also simultaneous output on the two channels left and right. Field sequential output is also possible, making it easy to check video. While not meant for regular viewing, since switching takes place in field units, it is valuable for checking the status of stereoscopic 3D video onsite.

HVS-30HSDO HD/SD-SDI Output Card



2 channels of HD/SD-SDI output card. Dedicated down-convert output also provided for 2 output terminals. This realizes simultaneous output of HD and SD.

HVS-30HSAO Analog Video Output Card



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

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



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	1280 x 1024 (SXGA), 1600 x 1200 (UXGA), 1680 x 1050 (WSXGA), 1920 x 1080 (HDTV), 1920 x 1200 (WUXGA)
720p	1280 x 1024 (SXGA), 1280 x 768 (WXGA)
SD mode	800 x 600 (SVGA)

HDCP incompatible; DVI-D and VGA output not supported in 1080PsF format.

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



Open collector-type HVS-TALOC20/32 or relay-type HVS-TALR20/32 can be connected. They are both half-rack size, and as many as 4 units can be connected to 1 HVS-350HS.

- HVS-TALOC20/32: Open Collector system with 20/32 terminals
- HVS-TALR20/32: Relay system with 20/32 terminals

HVS-30TALR Tally Interface Card

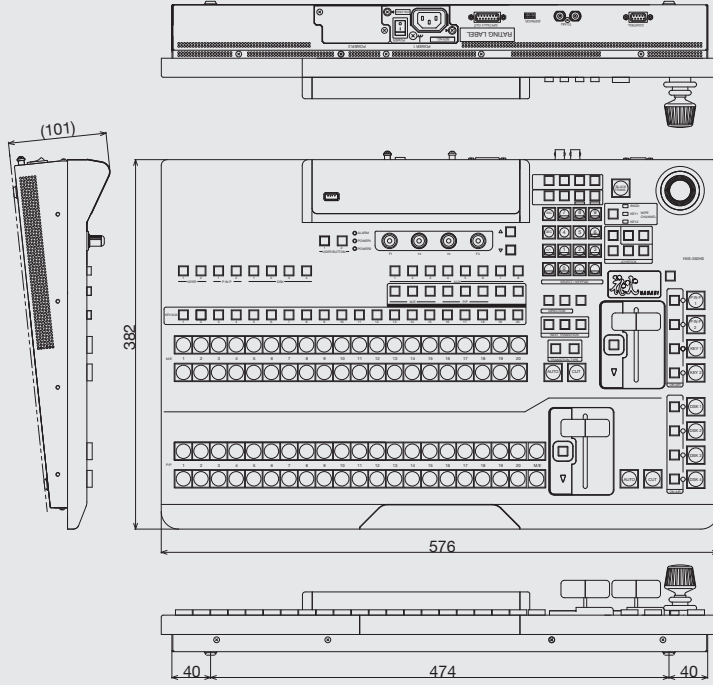
Tally relay interface card (18 terminals). Up to 2 cards can be installed (the slot is shared with I/O cards).

HVS-35ED Editor Interface Software

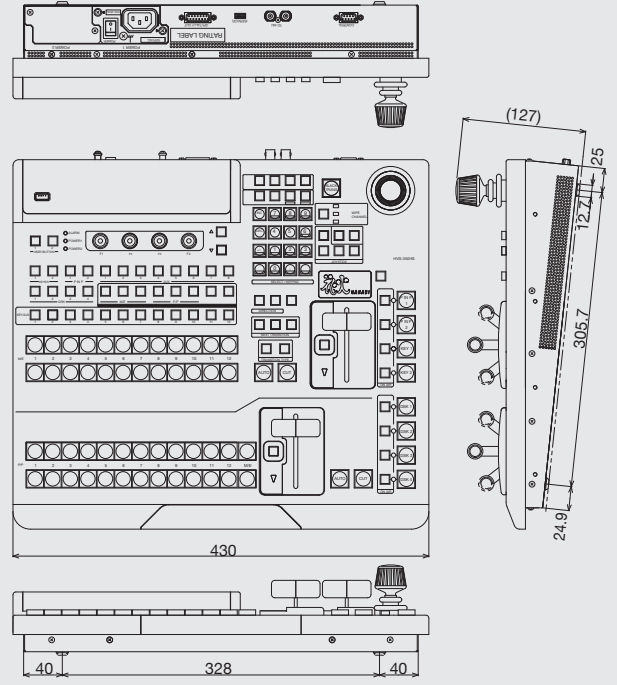
This is a software for supporting editing machine protocol. It supports BVS/DVS and GVG protocol.

Dimensions

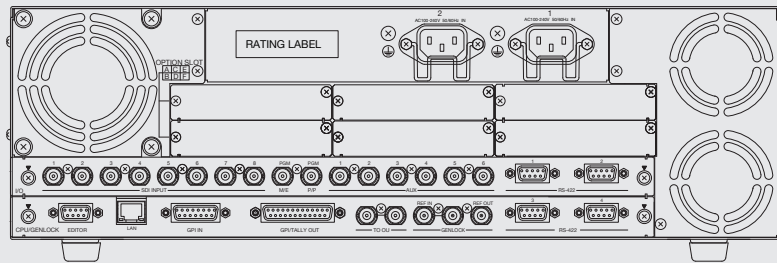
HVS-350U External Dimensions



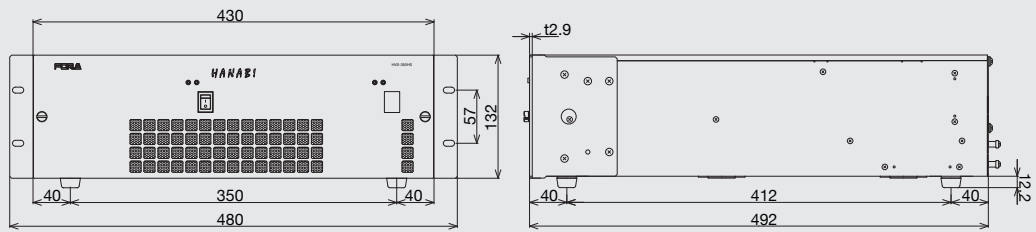
HVS-35ROU External Dimensions



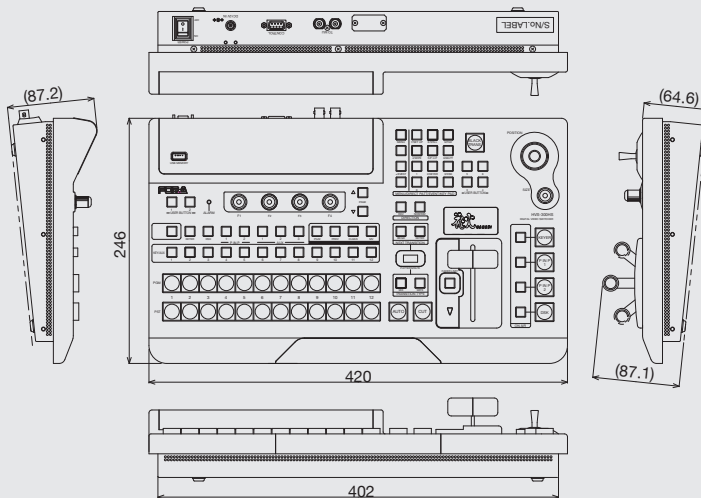
HVS-350HS Rear View



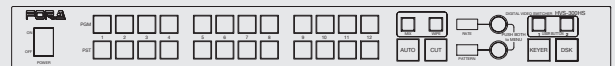
HVS-350HS External Dimensions



HVS-300U External Dimensions



HVS-30RU Front View



Specifications

	HD mode	SD mode
Standards	1080/60i, 1080/59.94i, 1080/50i, 1080/30PsF, 1080/29.98PsF, 1080/25PsF, 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 Inputs	HD-SDI: 1.485Gbps or 1.485/1.001Gbps, or SD-SDI: 270Mbps, 75Ω, 8 inputs, BNC	SD-SDI: 270Mbps, 75Ω, 8 inputs, BNC
Video Inputs (option) *FS for every inputs	Selectable as below. Refer to combination chart	
	HD-SDI: 1.485Gbps or 1.485/1.001Gbps, or SD-SDI: 270Mbps, 75Ω, BNC	SD-SDI: 270Mbps, 75Ω, BNC
	HD analog component: Y: 1.0Vp-p, Pb/Pr: 0.7Vp-p, 75Ω, BNC or dedicated connector	SD Analog component: Y: 1.0Vp-p, R-Y/B-Y: 0.7Vp-p, 75Ω, BNC or dedicated connector
	SD analog component: Y: 1.0Vp-p, R-Y/B-Y: 0.7Vp-p, 75Ω, BNC or dedicated connector	
	Analog composite: 1.0Vp-p, 75Ω, BNC or dedicated connector	Analog composite: 1.0Vp-p, 75Ω, BNC or dedicated connector
	DVI: DVI-D connector, Resolution (XGA - WUXGA), R/G/B: 0.7Vp-p, H/V: TTL (HDCP Incompatible)	DVI: DVI-D connector, Resolution (VGA - XGA) (HDCP Incompatible)
	VGA: 15-pin mini D-sub (female), Resolution (XGA - WUXGA), R/G/B: 0.7Vp-p, H/V: TTL	VGA: 15-pin mini D-sub (female), Resolution (VGA - XGA), R/G/B: 0.7Vp-p, H/V: TTL
Genlock 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 Outputs	HD-SDI: 1.485Gbps or 1.485/1.001Gbps, 75Ω, 8 outputs, BNC (M/E PGM x 1, PGM x 1, AUX x 6)	SD-SDI: 270Mbps, 75Ω, 8 outputs, BNC (M/E PGM x 1, PGM x 1, AUX x 6)
Video Outputs (option)	Selectable as below. Refer to combination chart	
	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 or dedicated connector	SD analog component: Y: 1.0Vp-p, R-Y/B-Y: 0.7Vp-p, 75Ω, BNC or dedicated connector
		Analog composite: 1.0Vp-p, 75Ω, BNC or dedicated connector
	DVI: DVI-D connector, Resolution (SXGA - WUXGA) (HDCP incompatible)	DVI: DVI-D connector, Resolution (SVGA) (HDCP Incompatible)
	VGA: 15-pin mini D-sub (female), Resolution (SXGA - WUXGA), R/G/B: 0.7Vp-p, H/V: TTL	VGA: 15-pin mini D-sub (female), Resolution (SVGA), R/G/B: 0.7Vp-p, H/V: TTL
Genlock 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/P-in-P)	
	3 frame - 4 frame + 1H (Using frame synchronizer or Input re-sizing engine + Output re-sizing engine + DVE/P-in-P)	
Multi Viewers	2 outputs (Independent display)	
	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	
External Backup Device	USB memory device (for HVS-350U/35ROU/300U)	
Interfaces	EDITOR: 1 port, 9-pin D-sub (female)	RS-422: 4 port, 9-pin D-sub (female)
	GPI IN: 1 port, 15-pin D-sub (female) (10 inputs)	GPI/TALLY OUT: 1 port, 25-pin D-sub (female) (20 outputs)
	ARCNET: 1 port, 75Ω or loopthrough, BNC	Ethernet: 100BASE-TX/1000BASE-T, 1 port, RJ-45
Temperature / Humidity	0°C - 40°C / 30% - 90% (no condensation)	
Power / Consumption	HVS-350HS: 100VAC - 240VAC±10% 50/60Hz / Standard: Approx. 340VA at 100VAC, Full option: 520VA at 100VAC, 528VA at 200VAC	
	HVS-350U: 100VAC - 240VAC±10% 50/60Hz / Approx. 25VA at 100VAC, 33VA at 200VAC	HVS-35ROU: 100VAC - 240VAC±10% 50/60Hz / Approx. 28VA at 100VAC, 37VA at 200VAC
	HVS-300U: 100VAC - 240VAC±10% 50/60Hz / Approx. 33VA	HVS-30RU: 100VAC - 240VAC±10% 50/60Hz / Approx. 13VA
Dimensions / Weight	HVS-350HS: 430 (W) x 132 (H) x 492 (D) mm / Approx. 17kg (with full option: Approx. 20kg)	HVS-350U: 576 (W) x 127 (H) x 382 (D) mm / Approx. 8.5kg
	HVS-35ROU: 430 (W) x 127 (H) x 382 (D) mm / Approx. 7.5kg	HVS-300U: 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-350HS: Operation manual, AC cord, Rack mount brackets	HVS-350U: AC cord *Rack mount brackets are optional
	HVS-35ROU: AC cord *Rack mount brackets are optional	HVS-35GUI: Operation manual, CD-ROM
	HVS-300U: AC adapter, AC cord retaining clips *Rack mount brackets are option	HVS-30RU: AC adapter, AC cord retaining clips, Rack mount brackets
Options	HVS-30HSDI: HD/SD digital input card	HVS-30HSDI-A: HD/SD digital input card (no resize function)
	HVS-30HSDO: HD/SD digital output card	HVS-30HSAI: HD/SD analog input card
	HVS-30HSAO: HD/SD analog output card	HVS-30PCIN: PC (DVI, RGB) input card
	HVS-30PCO: PC (DVI, RGB) output card	HVS-AUX8: Aux Control Box (8-button type)
	HVS-AUX16: Aux Control Box (16-button type)	HVS-AUX32: Aux Control Box (32-button type)
	HVS-TALOC20/32: Tally open collector unit (20/32 terminal)	HVS-TALR20/32: Tally relay unit (20/32 terminal)
	HVS-30TALR: Tally interface card (18 relay terminal)	HVS-35PSM: Redundant power supply unit for HVS-350HS
	HVS-35PSO: Redundant power supply unit for HVS-350U/35ROU	HVS-35ED: Editor interface software
	HVS-35S3D: 3D monitoring software	HVS-35VR: Virtual link software

PC Requirements for HVS-35GUI

OS	Microsoft® Windows® XP SP3 or higher
	Microsoft® Windows® 7 Home Premium or higher
	Microsoft® Windows® Vista Home Premium or higher
CPU	Intel® Pentium 4 Processor 1.2GHz or higher
Memory	512MB or more recommended
HDD	20MB or more free space
Interfaces	Ethernet: 100Base-TX/1000BASE-T, at least 1 port
Graphics	1280 x 768 pixels or better, 24-bit full color, Graphics card with 64MB or more memory (OpenGL 1.0 or 2.0 supported)

FOR-A COMPANY LIMITED

Head Office : 3-8-1 Ebisu, Shibuya-ku, Tokyo 150-0013, Japan

FOR-A Corporation of America Corporate Office : 11155 Knott Ave., Suite G&H, Cypress, CA 90630, USA

FOR-A Corporation of America East Coast Office : 2 Executive Drive, Suite 670, Fort Lee Executive Park, Fort Lee NJ 07024, USA

FOR-A Corporation of America Distribution & Service Center : 2400 N.E. Waldo Road, Gainesville, FL 32609, USA

FOR-A Latin America & the Caribbean : 5200 Blue lagoon Drive, Suite 760, Miami, FL 33126, USA

FOR-A Corporation of Canada : 346A Queen Street West, Toronto, Ontario M5V 2A2, CANADA

FOR-A UK Limited : UNIT C71, Barwell Business Park, Leatherhead Road, Chessington Surrey, KT9 2NY, UK

FOR-A Italia S.r.l. : Via Volturmo, 37, 20047, Brugherio MB, ITALY

FOR-A Corporation of Korea : 801 Dangsang Bld., 53-1 Dangsang-dong, Youngdeungpo-gu, Seoul 150-800, KOREA

FOR-A China Limited : 708B Huateng Building, No. 302, 3 District, Jinsong, Chaoyang, Beijing 100021, CHINA

ISO 9001 and 14001 certified (Sakura R&D)

Homepage: <http://www.for-a.com/>

Tel : +81 (0)3-3446-3936 Fax : +81 (0)3-3446-1470

Tel : +1 714-894-3311 Fax : +1 714-894-5399

Tel : +1 201-944-1120 Fax : +1 201-944-1132

Tel : +1 352-371-1505 Fax : +1 352-378-5320

Tel : +1-305-931-1700 Fax : +1-305-264-7890

Tel : +1 416-977-0343 Fax : +1 416-977-0657

Tel : +44 (0)20-8391-7979 Fax : +44 (0)20-8391-7978

Tel : +39 039-881-086/103 Fax : +39 039-878-140

Tel : +82 (0)2-2637-0761 Fax : +82 (0)2-2637-0760

Tel : +86-(0)10-8721-6023 Fax : +86-(0)10-8721-6033