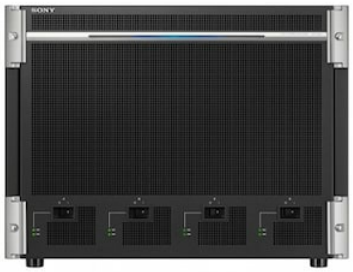
SONY

XVS-7000

Mid-range 4K/3G/HD video switcher for IP and SDI



NETWORKED LIVE

Overview

Flexible switcher for HD live production operations upgradable for 4K and IP at any time

The XVS-7000 multi-format video switcher delivers massive benefits in terms of flexibility and operability for mid-range productions, giving you the ability to realise a powerful mixed environment with SDI and IP. Utilising the flexible ICP-X7000 X-Panel assignable modular design, you can configure the control panel to suit your specific operations.

The XVS-7000 features 6 M/E, 112 inputs, 48 assignable outputs and format convertor outputs, plus up to 24 keyers in HD. According to your production environment and workflow requirements, the XVS-7000 is upgradable to 4K production switcher with powerful 4K features, as well as IP and SDI mixed production capabilities.

Ready for IP Live

A core component of Sony's IP Live production system, the XVS-7000 supports the SMPTE ST 2110 suite of open standards for professional media over managed IP networks, enabling a mixed IP and SDI production environment. 100G IP boards support 4K and HD in a single stream, with on-board format conversion* offered.

* Format converter on 100G IP board is available at the Input side only.

12G-SDI based live switcher

The XVS-7000 supports 12G-SDI interfaces functioning on-board format conversion for incoming video signal to offer greater options for applications such as in-house studios, OB vehicles and flypacks.

Powerful 4K production capabilities

4K production capabilities include 3 M/E, 28 inputs, 12 assignable outputs, plus up to 6 full keyers and 6 sub keyers, enabling simultaneous 4K and HD operation. Key freeze is a new feature in 4K to store a still image in a 4K full keyer. With the optional mix effect board XKS-7215 the number of full keyers can be increased up to 12.

4K 3D Digital Multi Effects (DME)

The newly developed 4K DME board offers up to 2 channels of floating 4K 3D DME capability.

Evolutionary switcher controller

The XVS-7000 utilises the ICP-X7000 X-Panel for very flexible panel configuration with a modular style design, OLED display, RGB XPT buttons and LCD button pad. The button layout is also re-designed. The X-Panel has a flexible mounting style for flat or curved mounting, or even for splitting into two positions.

Switcher Processor Options
Multi-format Switcher Processor

- XKS-S8110 - SDI Input Connector Board
- XKS-S8111 - SDI Input and FC Connector Board
- XKS-S8112 - 12G-SDI Input Board
- XKS-C8111 - 100G IP Input Board
- XKS-8160 - Output Processor Board
- XKS-S8165 - SDI Output Connector Board
- XKS-S8167 - 12G-SDI Output Board
- XKS-C8166 - 100G IP Output Board
- XKS-7210 - Mix Effect Board

- XKS-7215 - Mix Effect Board
- XKS-8440 - Frame Memory Board
- XKS-8460 - Format Converter Board
- XKS-8470 - HD DME Board
- XKS-8475 - DME Board
- XZS-7200 - Multi Program 2 Software
- XZS-7510 - Switcher Upgrade Software (4K Upgrade for 1st ME Board)
- XZS-7520 - Switcher Upgrade Software (4K Upgrade for 2nd ME Board)
- XZS-7530 - Switcher Upgrade Software (4K Upgrade for 3rd ME Board)
- XZS-7600 - HDR Conversion Software (for 12G-SDI Input Board)

Switcher Control Panel
ICP-X7000 Series

- MKS-X7011 – Menu Panel
- MKS-X7017 – 36 XPT Module
- MKS-X7018 – 28 XPT Module
- MKS-X7019 – 20 XPT Module
- MKS-X7020 – Standard Transition Module
- MKS-X7021 – Simple Transition Module
- MKS-X7023 – Key Transition Module
- MKS-X7024 – FlexiPad Module
- MKS-X7026 – 10-key Pad Module
- MKS-X7031TB – Track Ball Module
- MKS-X7032 – Key Fader Module
- MKS-X7033 – Utility/Shot Box Module
- MKS-X7035 – Key Control Module
- MKS-X7040 – Blank Panel (1/3)
- MKS-X7041 – Blank Panel (1/2)
- MKS-X7042 – Blank Panel (1/6)
- MKS-X7075 – Extension Adapter
- PWS-110SC1 – Switcher Control Station

Aux Bus Remote Panel

- MKS-R1620 – 16 Button Remote Control Panel
- MKS-R3210 – 32 button Remote Control Panel

Device Control Unit

- MKS-X2700 – System Interface Unit
- MKS-X7700 – System Interface Unit
- MKS-X7701 – Tally/GPI Output Board
- MKS-X7702 – Serial Interface Board

Virtual Shot Box Software

- BZPS-7020 - Virtual Shot Box Base Software
- BZPS-7021 - Virtual Shot Box Additional Software

Virtual Menu

- BZPS-7030 - Virtual Menu Base Software
- BZPS-7031 - Virtual Menu Additional Software

Virtual Panel

- BZPS-7040 - Virtual Panel Base Software
- BZPS-7041 - Virtual Panel Additional Software

Automation Software

- BZPS-7700 Automation Interface Software

SNMP Agent Software

- XZS-C81SN – ST2110 SNMP Agent Software

Features

SMPTE ST 2110 over 100G IP interface in 4K and HD

Sony's IP Live Production System enables efficient, flexible workflows with support – via 100G based IP interface boards – for SMPTE ST 2110 Media Transport and AMWA NMOS Control and Management Layer standards. While conventional systems require multiple cabling types to carry various signals (video, audio, reference, metadata and control data), SMPTE ST 2110 requires only a single network cable connection through

standard network switches. The 100G IP board supports input or output conversion. Remote monitoring with SNMP Agent Software is also available.

12G-SDI interfaces

12G-SDI input and output boards further expand the line-up of XVS interface options. The 12G-SDI interface boards have on-board input format converter, and input signal can be converted to an appropriate video signal.

Highly flexible, scalable configuration

The XVS-7000 can be freely configured to suit specific needs in terms of operation, resolution, frame rate, number of inputs/outputs, number of M/E banks and more.

Upgradable to 4K operations

The XVS-7000 is easily upgradable to 4K production, allowing users to adapt the switcher as their workflows demand it. The processors of the XVS-7000 can be configured to suit the exact needs of each particular user in terms of operation, resolution, frame rate, number of I/Os, number of M/E banks, and more. All inputs and outputs can be assignable for 4K. The switcher allows up and down format conversion between 4K, HD and SD. 4K CG wipe is also available.

6 M/E for large HD production systems

6 M/E functionality enables you to operate in large HD productions.*

* 6M/E is available with Split M/E feature.

112 inputs and 48 assignable outputs for HD

All inputs can have format converter capability depending on the Input option configuration. An additional format converter outputs* and 2 multi-viewer outputs are also available.

* The number of additional Format Converter outputs depends on format selection, from 4 to 16.

Resource sharing for multiple productions

Support for resource sharing enables a flexible and efficient production environment, with a single processor configurable to perform multiple disparate tasks. Processing features such as inputs/outputs and mix effect banks can be allocated to different control panels either within or outside the facility, providing the ultimate in scalable local and/or remote operations.

Variety video format support

4K 2160p (2SI/SQD) /59.94, 50
4K 2160PsF (1.5G quad-link) / 29.97, 25, 24, 23.98
1080p Level-A / 59.94,50
1080i / 59.94,50
1080PsF / 29.97, 25, 24, 23.98
720p / 59.94, 50

Up and down conversion between 4K, HD and SD

The XVS-7000 switcher allows up/down/cross/level conversion between 4K, HD and SD using optional format converter board XKS-8460 as well as the 100G IP, 12G SDI, or 3G-SDI input boards. These options provide up and down conversion between 4K (2160p) and HD (1080p, 1080i), and between HD (1080p, 1080i and 720p) and SD (480i and 576i), cross-conversion between 4K 2SI and 4K SQD, and between 1080i and 720p.

HDR conversion for Sony SR-Live workflow

SDR to HDR conversion (or vise versa) for source input is supported on 12G-SDI input board by an optional license. The HDRC channel assignment and HDRC parameter settings are available by operational menu. (version up required)

Sophisticated layering on M/E cards

Eight keyers in HD or four keyers in 4K on individual M/E cards that permit sophisticated layering techniques. Each keyer has its own auto-transition control separately from the main fader,

allowing insertion or removal of keys on an individual basis with independent wipes, DME wipes, or dissolves. All full keyers with 2.5D resizer and chroma key are available in both 4K and HD, as well as additional Sub Keyers* with linear and luminance key in 4K.

* Sub keyer is an additional another keyer which allows linear and luminance keying for 4K content. In new Mix Effect board XKS-7215, all keyers will be full keyer.

Variety of M/E mode selections

Using the advanced mix effect modes in the XVS-7000, one bank can be configured to control not only the main M/E output, but also a sub mix from that M/E. This Multi Program 2 mode is perfect for producing multiple outputs of the same event, for example "clean" and "dirty" feeds of a soccer match from within the same M/E.

Adjustable resizer function for each keyer

The resizer function allows you to create simple 2.5D DME effects with every keyer, with adjustable parameters such as Expand, Shrink, Locate, Rotate X, and Rotate Y.

Precise effects

Fine key technology allows precise adjustment of key positions and border widths on a sub-pixel level within the range of 8H on these switchers. For additional power and user convenience, the XVS-7000 also features Sony's unique Processed Key mode and DME-link function.

Enhanced frame memory system with CG wipe

HD CG wipe is available, together with audio. The processor has an enhanced frame memory system, whereby instant recall of up to 5,000 frames (equivalent to an approx. 160 seconds movie) are available as source in HD. Additionally, more frames are directly available from the embedded large capacity SSD drive.

Mix function on aux bus outputs

The switcher provides a mix transition, rather than a hard cut on aux bus outputs.

Colour correction function

Colour correction (CCR) is available on every aux output as standard. CCR is also available for inputs where the format conversion is available.

Simplified live operations with programmable macros

Macros are extremely useful in live environments when time is critical and there is no tolerance for making operational mistakes. Using the FlexiPad module, or the UTIL/ShotBox module, users can simply record operational sequences, then store and assign them to any desired button. Not only can macros record complex panel operational sequences, but menu operation can also be recorded as a Menu macro. Macros can be edited either directly from the control panel or by using the touch-screen menu display. Software version 3.4 later, multiple Macro can run simultaneously.

Optional integrated DME processor

Up to four channels in HD or two channels in 4K of 3D DMEs, not only 3D linear effects but 3D non-linear effects, for 4K system is available via new 4K DME option boards.

External device control

External devices such as video servers and graphics systems can be controlled using MKS-X7700 or MKS-X2700 device control units via RS-422 and IP. The system supports a variety of remote protocols including VDCP, Odetics, AMP and Rosstalk.

Intelligent multi-functional tally system

The XVS-7000 provides an intelligent multi-functional tally system that seamlessly integrates switcher and router tally functions via parallel tally ports, serial tally ports and IP port. Multiple on-air

and recording tallies can easily be programmed on the switcher system so that even complex tally requirements are accommodated. Extra parallel tally ports can be obtained simply by adding tally boards to the MKS-X7700 or by using the MKS-X2700.

Flexible X-Panel assignable modular design

The ICP-X7000 X-Panel offers flexible panel configuration with a modular style design, OLED display, RGB XPT buttons and LCD button pad. The button layout is also re-designed. The X-Panel has a flexible mounting style for flat or curved mounting, or even for splitting into two positions. XPT FlexiPad allows function mapping customisation according to your operators' preferences.

Multi-panel configurations increase your options

Up to four control panels can be connected to further increase production options.

More Freedom of control with Virtual Panel, Virtual Menu, and Virtual Shot Box

The XVS Series switcher can be controlled remotely via Ethernet using Virtual Panel, Virtual Menu and Virtual Shot Box web applications.
Virtual Panel is a GUI version of the control panel which can be easily configured to suit user preferences. In Virtual Shot Box, buttons and functions are customisable to allow assignment of macro, snapshot, shotbox, XPT switching and other functions as you wish, whereas the operational menus on the Menu Panel MKS-X7011 can be utilised in the Virtual Menu application by which the engineering operation can be free.
These applications can be used on a PC or a tablet* with a web browser and network connection.
* Tablet PC is not recommended for Virtual Panel.

There are many possibilities using these applications. For

example, Virtual Shot Box can be used with the control panel as additional shot box buttons or assist the main switcher operator from any location. In addition the anchor or talent can use it themselves, switching on-air images from a sports arena and more.

Remote operation by new Inter-Group connection

For customers needing scalable and flexible systems in multi-studio and remote setups, the XVS series switcher is capable of supporting network routing function to enable multiple LAN/WAN network connectivity. This allows the remote operation capabilities by connecting the processor and the panel over Layer 3 network. The control panel can be located at a remote site away from the processor to support remote production over the long distance.

With optional Virtual Panel, Virtual Menu, and Virtual Shot Box software, the XVS Series switcher can be configured to best fit for remote production. (version up required)

Specifications

General	
Power requirements	100 to 240 V ± 10% AC 50/60 Hz
Current consumption	22A to 9.2A (when equipped with all installable option boards)
Operating temperature	5°C to 40°C (41°F to 104°F)
Performance guaranteed temperature	10°C to 35°C (50°F to 95°F)

Storage temperature	- 20°C to 60°C (- 4°F to 140°F)
Operating humidity	10% to 90%
Dimensions (W/H/D) (excluding projections)	440 x 354.4 x 582.9 mm
Mass	Approx. 60 kg (132 lb 4 oz) (when equipped with all installable option boards)

Remote Control Connector

NETWORK (MVS LAN)	RJ-45, complies with 1000BASE-T standard
NETWORK (UTL LAN*)	RJ-45, complies with 1000BASE-T standard

Reference Input

Reference input	REF IN BNC type, 75Ω with loop-through output HDTV systems: HD tri-level sync / SDTV analog black burst / SDTV analog sync SDTV systems: Analog black burst / analog sync

AC Input

AC IN A, B, C, D	3-pin AC connector

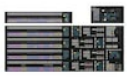
Input/Output

Maximum number of inputs	• BNC (x 112) for primary inputs**
Maximum number of outputs	• BNC (x 48) for outputs** • BNC (x 16) for format converter outputs** • BNC (x 8) for Multi Viewer (2CH)**

Notes

*	For future use
**	Alternative connections for QSFP+ and QSFP28 are available

Related products



ICP-X7000

Control panel for MLS-X1 and XVS series switchers

XVS-6000

Entry-level 4K/3G/HD video switcher for IP and SDI

XVS-8000

4K/3G/HD multi-format IP-ready video switcher

XVS-9000

4K / 3G / HD multi-format IP-ready video switcher

PWS-110NM1

IP Live System Manager Station

OTM-100GSR

QSFP28 Optical Transceiver Module (SR)

Gallery