SONY

PRODUCTION SWITCHER SYSTEM

XVS-8000 / XVS-7000 / XVS-6000 / MVS-6530 / MVS-3000A

IP Live Production System

4K

The Powerful Switcher Family from Sony

In response to rapidly growing demands for 4K production and IP interfacing, Sony proudly introduces the XVS Series (XVS-8000/ 7000/ 6000) of production switchers. The XVS Series inherits excellent, versatile features from the widely accepted MVS Series of switchers including enhanced frame memory, format conversion, multi-viewer capabilities, and a wide range of input and output video formats. The XVS Series is also good fit for growing needs for HDR(High Dynamic Range)imaging.
The XVS Series utilizes the ICP-X7000 – a modular control panel that gives you the freedom to determine your own panel configurations. This control panel is equipped with OLED displays, LED indicators, a newly developed LCD button pad, and original RGB buttons for more accurate and user friendly operation, accommodating a broad range of users.

With innovative, high performance and sophisticated operability, the XVS Series provides highly reliable production switchers to boost user creativity in many different applications.

IP Live
Production System

4K

XVS-8000

XVS-7000

XVS-6000

Based on feedback from long association with production and postproduction operations, Sony has developed a complimentary line-up of models suitable for new areas of application, such as small regional broadcast operations, houses of worship, schools, and stadiums.

The MVS-6530 and MVS-3000A inherit cutting-edge technologies from the well-established MVS-Family of Switchers. Both models incorporate a dedicated control panel, which directly inherits operability and functionality from the high-end MVS Series switcher systems, as well as adopting the latest devices such as color source buttons and OLED source name displays.
The MVS-6530 is suitable for medium-size productions and is available in 3-M/E configuration. This innovative switcher is sure to provide users with optimal system configuration to inspire creativity. The MVS-3000A 2-M/E switcher is ideally suited not only for production studios but also for stadiums, houses of worship, and outside broadcast (OB) vehicles requiring a high-functionality switcher in a limited space. Both models include high-performance keyers with chromakey functionality and resizers, color correction, and multi-viewer outputs, offering the perfect balance between size and specification.

MVS-6530

MVS-3000A

Broad Lineup

		XVS-8000 (4K/IP-READY)		XVS-7000 (4K/IP-READY)		XVS-6000 (4K/IP-READY)		MVS-6530	MVS-3000A
									
		4K	HD	4K	HD	4K	HD	HD	HD
M/E	Standard	1-5	1-5	1-3	1-3	1-2	1-2	3	2
	Split	—	1-10*1	—	1-6	—	1-4	—	—
Input*2		Up to 40	Up to 160	Up to 28	Up to 112	Up to 16	Up to 64	48 inputs	32 inputs
Output*2		Up to 12 + 4FC	Up to 48 + 16FC	Up to 12 + 4FC	Up to 48 + 16FC	Up to 6 + 4FC	Up to 24 + 16FC	32 outputs	16 outputs
Keyer	Standard	4 keyers per M/E (2 Full and 2 Sub)"	8 keyers per M/E	4 keyers per M/E (2 Full and 2 Sub)	8 keyers per M/E	4 keyers per M/E (2 Full and 2 Sub)	8 keyers per M/E	4 keyers per M/E 8 keyers in P/P	4 keyers per M/E
	Split	—	4 keyers per M/E	—	4 keyers per M/E	—	4 keyers per M/E	—	—
DME		—	Up to 4 ch	—	Up to 4 ch	—	Up to 2 ch	Supports 2 (internal) channels	
2.5D Resizer (Simple DME)		every Full keyer Up to 10 Resizer	every keyer Up to 40 Resizer	every Full keyer Up to 6 Resizer	every keyer Up to 24 Resizer	every Full keyer Up to 4 Resizer	every keyer Up to 16 Resizer	2 resizers per M/E 4 resizers per P/P	2 resizers per M/E
Color correction		Primary color correction for all inputs and AUX outputs							
AUX Transition		Cut, Mix							
Multi-viewer		2 channels 4, 10, 13, 16 splits						2 channels 4, 10, 16 splits	
Processor size		10RU		8RU		6RU		4RU	

*1 10 M/E total in the XVS-8000 processor. Up to 6M/E can be controlled per logical switcher.
*2 The number of I/O ports is determined by your selection of option boards and signal formats.

Wide range of processors to suit any production environment

Switcher processors

Multi-Format (4K/HD)			
2 to 5 M/E	XVS-8000 	XVS-7000 	XVS-6000 

For XVS Series

Multi-Format (HD/SD)	
3 M/E	MVS-6530 

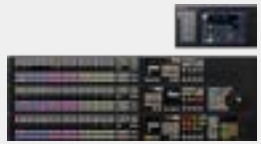
For MVS-6530

Multi-Format (HD/SD)	
2 M/E	MVS-3000A 

For MVS-3000A

Control panels

ICP-X7000 Customizable	
4 M/E	
3 M/E	
2 M/E	
1 M/E	

ICP-6530	
3 M/E	

ICP-6520	
2 M/E	

ICP-3000	
2 M/E	

ICP-3016	
2 M/E	

ICP-6520	
2 M/E	

ICP-3000	
2 M/E	

ICP-3016	
2 M/E	

XVS-8000/XVS-7000/XVS-6000

Beneficial Functions for 4K Productions

Powerful XVS Series Switchers accept 4K content just as they accept HD content. The XVS-8000 supports full 5 M/E operation in 4K, with 40 inputs and 12 assignable outputs, 4 FC outputs and 20 keyers (10 full keys + 10 sub keys), providing you with flexibility and creativity for 4K production. The XVS-7000 supports full 3 M/E operation in 4K, with 28 inputs and 12 assignable outputs and 12 keyers (6 full keys + 6 sub keys) And the XVS-6000 supports full 2 M/E operation in 4K, with 16 inputs and 6 assignable outputs and 8 keyers (4 full keys + 4 sub keys)
The frame memory feature is also available for 4K production, enabling you to store and recall up to four channels of on-board graphics and animations. Not only for dedicated 4K production, the XVS series offers dual format production such as 4K and HD (1080P) within a single processor introducing a flexible production style and reducing required production sources.

Scalable Processor Configurations XVS

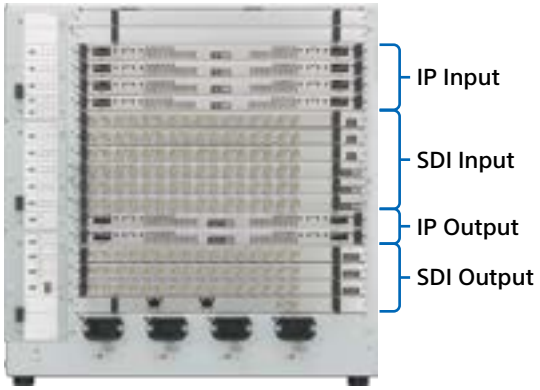
The processors of the XVS-8000, 7000 and 6000 can be configured to suit the exact needs of each particular user with regard to operation, resolution, frame rate, number of inputs and outputs, M/E banks and more.
Another great benefit is that these switchers can be upgraded as your needs grow, simply by installing the appropriate option boards and software licenses.
M/E split function allows you to use a single M/E as two separate M/E system; this means five M/Es can be doubled to ten in a single processor frame, with Sony's Multi Program 2 software providing two independent program outputs on each M/E, for complete dual operation (main/sub) from a single M/E bus (Not available for 4K)

FEATURES

IP-Ready Live Production Switcher

The XVS Series can be configured fully SDI, fully IP, or with a combination of SDI and IP interfaces. It provides not only flexible I/O configuration but also smooth migration from SDI to IP, simply by replacing input and output connector boards in a single processor.

I/O Configuration example



XVS-8000 (Rear)

Sony's IP input/output boards support Sony's networked media interface (NMI) as well as other standard IP formats such as SMPTE ST 2110.

XKS-Q8111 QSFP+ IP Input Connector Board

By using QSFP+ 40 Gbps IP input and output boards*1, you greatly reduce the number of required cables. For example, 16x HD signals or 4x 4K signals can be transferred with a single fiber cable in NMI.
*1 XKS-Q8111/XKS-Q8166 IP input/output connector board

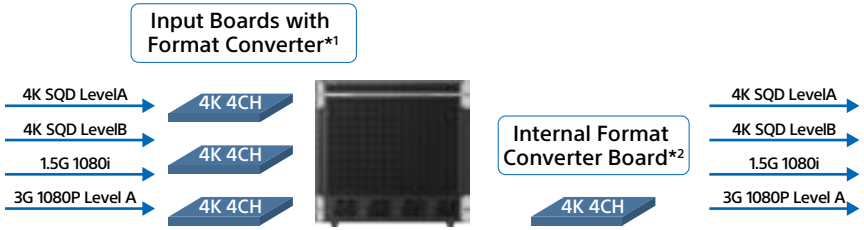
The XVS Series IP connection supports SMPTE 2022-7 Seamless Protection Switching, which always provides network redundancy for video and audio interfaces over IP.

Convenient Format Conversion (FC)

Operating with various video formats usually requires the preparation of an external converter to align each video format into a single format. With XVS Series switchers, you can simply use the built-in format conversion options for effortless operation. A variety of up- and down- conversion options are available for switcher inputs and outputs. The XVS switcher has an input format converter option, internal inbound format converter option, and internal outbound format converter option.
Supported signal formats at FC:

- System Format = 4K 1080i, 1080p Level-A/B, 4K 2SI Level-A/B, 4K SQD Level-A/-B
- System Format = 1080p 1080i, 1080p Level-A/-B
- System Format = 1080i 480i, 576i, 1080i, 720p

Format Conversion Example : XVS Switcher



System Format : 4K 2SI Level A

*1 XKS-S8111 - SDI Input and FC Connector Board
*2 XKS-8460 - Format Converter Board

Frame Delay Function, Frame Synchronizer Function

Input signals can be delayed up to 15 or 8 frames by using an optional format converter. This is useful for adjusting timing to a virtual set or computer graphic – elements that usually have signal delays. Thanks to this internal frame delay function, simple system configuration is available without any external delay devices. Frame delay is also useful when both SDI and IP signals are fed to the switcher, as IP signals tend to delay against SDI signals.

The format converter can also be used as a frame synchronizer. This helps when connecting non-genlocked signals. It also offers an input CCR (color corrector) function. Output CCR is standard for AUX bus outputs.

Non-Volatile High Capacity Frame Memory

All Sony switchers provide an internal high-capacity frame store with the ability to handle both individual images (stills) and animation sequences (clips). The XVS Series is equipped with non-volatile, high-capacity frame storage.
Approximately 5,500 frames*3 can be stored in onboard working memory and recalled instantly to 20 frame memory channels. Approximately 64,000*3 frames can be stored in the onboard SSD for extreme high-speed transfer of image data to and from onboard working memory. Audio data is also supported. Individual frame memory images or animation sequences can be instantly viewed and recalled via touch-screen menu operation.
*3 Based on 1080/59.94i resolution

Storage Capacity

The following chart details the approximate frame memory capacities.

System Format	RAM Capacity (approx. frames)		SSD Capacity (approx. frames)	
	59.94	50	59.94	50
4K	1,380	1,150	16,000	13,000
1080i, 1080p, 720p	5,500	4,600	64,000	53,000

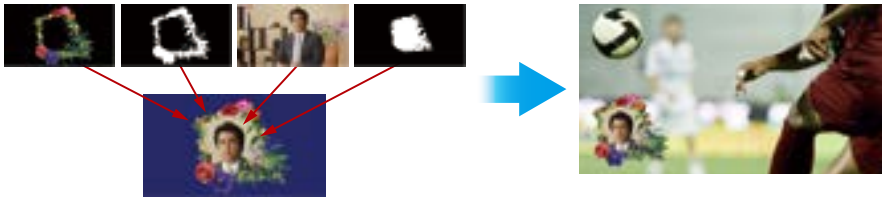
Resizer and CG Border

A powerful resizer function is provided that gives simple 2.5D DME effects (Fig.1) for every keyer in HD, or for half of a keyer in 4K. With adjustable parameters such as size, position, and aspect, as well as mosaic and defocus effects, this functionality is very useful for optimizing the on-screen composition.

These resizers can also be activated for clip transitions and CG borders. Parameters can be memorized as part of a switcher snapshot, keyframe, or macro effect.

Resizer function (Fig.1)

All these effects can be created without the use of an optional DME, bringing great advantages for both simple operation and minimized system cost.
CG border*1(Fig.2) is a great feature allowing graphics to be used as a key resizer border. By enabling CG border, the picture positon and size inside the graphics can be easily adjusted (Fig.3).
Then the entire image – both the graphics and the inside picture – can be moved together in the picture frame.
The below picture provides the example of two anchors displayed with a CG border in a sports game live cast.
*1 CG border is not available in 4K.



CG Border (Fig.2)

CG Border (Fig.3)

Clip Transition Effects

Sony switchers provide clip transition effects that enable transition, together with audio, using a frame memory sequence. During a Clip Transition, a CG image, such as a logo, moves across the picture from one side to other, while the transition is performed behind the image.
Clip Transition is becoming more popular, not only for a replay transition in sports but also for scripted news shows. You can select a frame memory Clip Transition (CG Wipe) as the transition type just as easily in the same way as selecting Mix, Wipe, and DME-Wipe. Fader operation is also available.

Sony's comprehensive GUI menu provides intuitive operation for precise timing and position adjustment for perfect matching between the transition and the CG clip.

Programmable Macros

While having a dedicated button for each function is convenient, Sony switchers also have easy-to-program macros.
Using the Flexi-Pad, Utility/Shot Box, or 10-key Pad module, you can record operation sequences, then store and assign them to desired buttons. Macros are useful in live environments where time is critical and operation errors are not tolerated. In addition to using macros to record complex panel operations, macros can also be used to record menu operations. Macros can be edited either directly from the control panel or with the touch-screen menu display.
Once programmed, macros can be executed in several ways: By recall/run from a button on the Flexi-Pad or XPT Pad, or by trigger on a timeline to execute automatically in a sequence. Macros can also be recalled by other panel buttons as a macro-only or together with the original function. The attached Macro on XPT buttons can be displayed on the OLED source name display, so that the operator can easily confirm the attached Macro.

Aux Mix Transition

In addition to the M/E mix, the All Sony switcher provides a highly useful AUX bus mix capability. This greatly expands the production power of your system and allows for AUX bus dissolves on any pair of AUX bus outputs – perfect for independent mixing on in-vision monitors. It frees up valuable M/E resources.

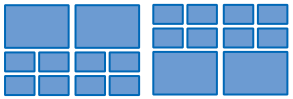
3D Digital Multi Effect (DME)

Sony's powerful internal DME options can add creative variety and sophistication to any broadcast. You can use DMEs to manipulate the image, creating the impression of 3D effects. Common examples are page turns, where live video appears to roll back on itself, displaying moving video on the front and back surfaces.

This built-in DME processor allows you to exploit creative effects with stunning picture quality including Depth Combine, Dim/Fade, Wipe Crop, Art Edge, Key Border, Spot Lighting, Texture Lighting, Flex Shadow, and Wind. Unlike keyer resizers, 3D DME*1 effects can manipulate images in the Z plane.
*1 3D DME is not available in 4K

Two-Channel Multi-Viewer

XVS Series switchers provide a standard two-channel multi-viewer feature. Each channel display can be split into 4, 10, 13, and 16 sections. This provides a cost effective way to avoid expensive external multi-viewer systems. The multi-viewer also supports source name and tally indicators. 4K format is available for Multi-Viewer output.



10-way split screen

13-way split screen

Outstanding Scalability and Flexibility

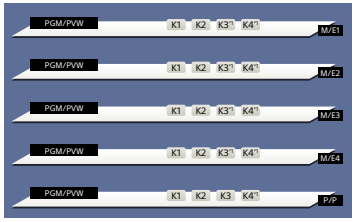
Flexible M/E Configuration

The XVS series provides you with the flexibility to configure the necessary amount of M/E resources dependent on the production needs, and to save the cost.

The configuration can be easily changed suit to the signal format you are working on, e.g. 4K or HD.

With the Resource Sharing*1 feature, the flexibly is further enhanced. The XVS switcher can be used in multiple control rooms at the same time.
*1 See the page11

In 4K (per one M/E board)
- 1M/E with 4 keyers (2 Full + 2 Sub)
- PGM/PVW buses
- 4 program outputs (PGM, PVW, CLEAN, Key-PVW)



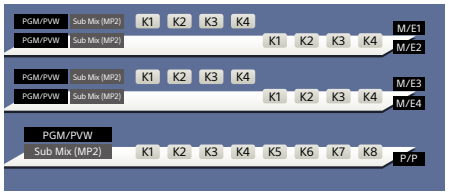
In 1080p, 1080i, or 720p (per one M/E board)

A. Standard mode
- 1M/E with 8 keyers

B. M/E Split mode
- 2M/E with 4 keyers each
- 6 program outputs (Multiple PGMs, PVW, CLEAN, K-PVW) at each Split M/E
  In Both the modes, MP2 (Multi Program 2) option provides sub-mix function to make the number of M/E double.

A 1080P / 1080i / 720p

B 1080P / 1080i / 720p



The XVS switcher can be easily reconfigured by a Setup menu selection, suit to the signal format you are working on, or according to the production scale.

Creative M/E Functionality*2

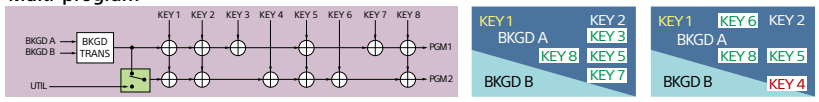
XVS series are equipped with eight keyers on each M/E bus. Each keyer includes resizer function for picture manipulation (size, position, and rotation).
For further flexibility, it also offers chroma keying and color vector keying at any keyer.
Separate from the main fader, each keyer has its own auto-transition controls, which allow users to insert or remove keys individually with independent wipes, DME wipes, and dissolves.
*2 In 4K, resizer, chromakey and color vector key are available at the Full keyer only. DME wipe is not available.

Multi-program mode (Fig1, Fig2)

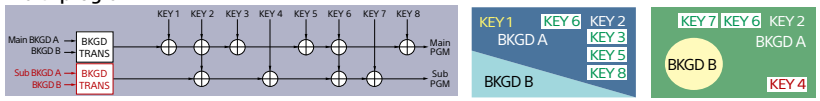
Each M/E bus can be configured with two types of multi-program modes, Multi-program (MP)*3 or Multi-program 2 (MP2)*4.
In MP mode, each separate program output can be configured with any combination of M/E keyers.
MP2 expands the use of the M/E banks and provides complete dual operation (main/sub) from a single M/E bus. This mode is especially convenient when broadcasting sports for two different destinations (for home and away teams) simultaneously, or in multiple languages. Keyers can be inserted into both main- and sub-programs.

Both the Multi-program mode does not eliminate other M/E outputs. Clean and Key PVW as well as M/E PVW signals are still produced in addition to the expanded program outputs.
*3 Multi-program mode is not available in 4K.
*4 MP2 requires optional XZS-8200/7200/6200 Multi Program 2 Software.

Multi-program



Multi-program 2



(Fig 1) Multi-program Block Diagram example

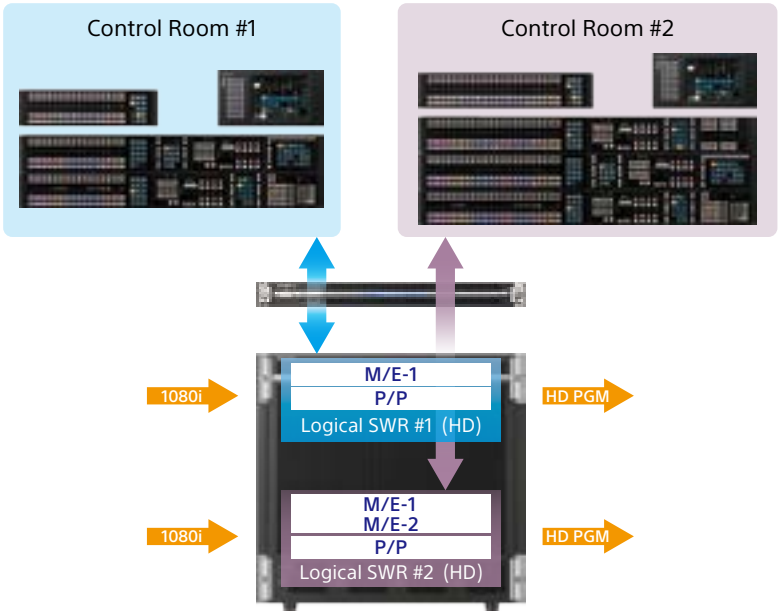
(Fig 2) "Home and Away" Operation

Resource Sharing

A single XVS processor can be divided into two logical switchers. Most of the switcher resources, such as input ports, output ports, ME, and other resources, can be assigned to each logical switcher. This simply creates two independent switchers in one processor frame. HD + HD, 4K + 4K, or 4K + HD configurations are available*1.
*1 In 4K + HD resource share mode, HD is 1080p only.

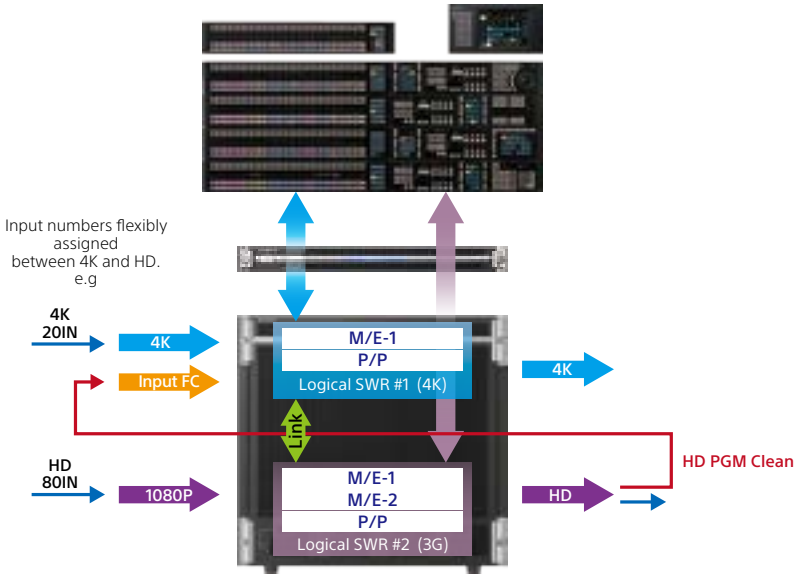
Two logical switchers can be used independently or linked.
When they are independent, each of these two logical switchers can be used for separate production in two control rooms. : [Case-A]
When they are linked, you can achieve simultaneous production in 4K and HD. : [Case-B]

[Case-A]
For Two Independent Production



One processor can be shared by two control rooms for individual Live production.

[Case-B]
For 4K/HD Linked Production



One processor can be used for 4K and HD Dual Simul production. (4K/HD M/E Link)

- One production crew with one switcher processor can create both 4K and HD programs at the same time.
- The pre-switched HD signal is fed to the 4K layer through the input format converter, which can efficiently utilize HD sources in 4K production in a single switcher processor.
- By adding the HDRC-4000 converter box, instead of using the XVS production switcher's input format converter, as a tie-line connection between the two logical switchers, you can achieve efficient SDR-HDR conversion.

Outstanding Scalability and Flexibility

Remote Production

Thanks to its IP interface, the XVS production switcher is primed for remote production with its cost-saving benefits. Take for example sports game production when only the camera team needs to be on location and other production crew can operate from home base. With the switcher's IP I/O capabilities, camera streams on location can be sent to home base and switched locally (Fig.1).

The XVS production switcher goes a step further by enabling remote control of any switcher processor from any network connected panel. By placing the switcher processor on location at the live event and the panel at home base, this reduces the amount of bandwidth required to send IP camera streams. You can simply transmit the XVS production switcher's multi-viewer feeds and program, and preset to home base, enabling the switcher operator to view, select, and switch sources utilizing as few as four IP streams (Fig.2).

Key benefits
- Switch live events from centralized location
- Save on time & travel expenses
- Send minimum crew on location
- Improve utilization of key personnel
- Augment local programming with remote sources
- Simplify & lower the cost of remote truck construction

Fig.1

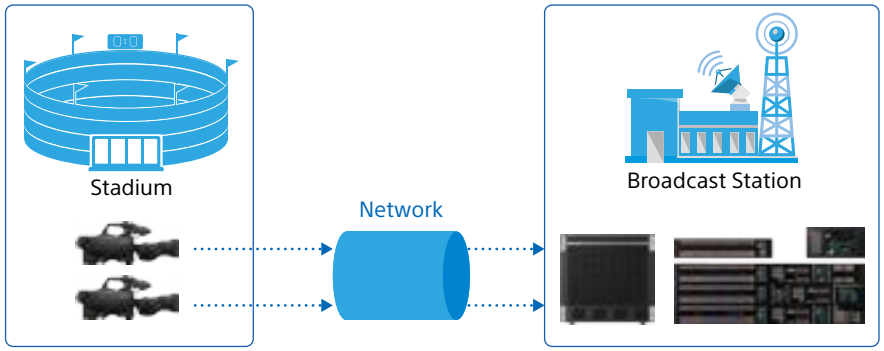
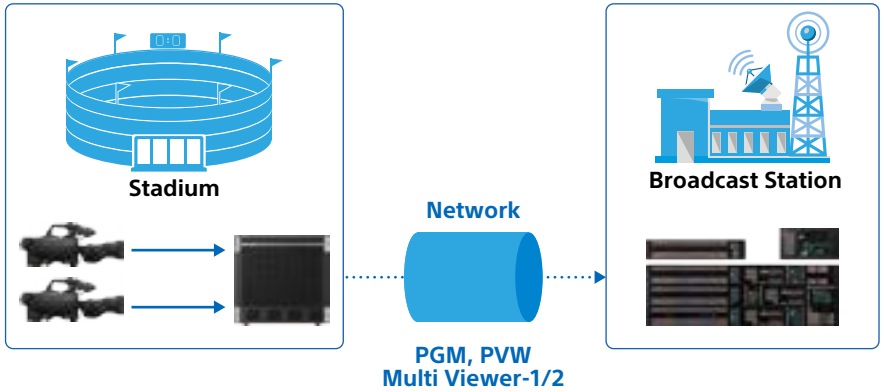
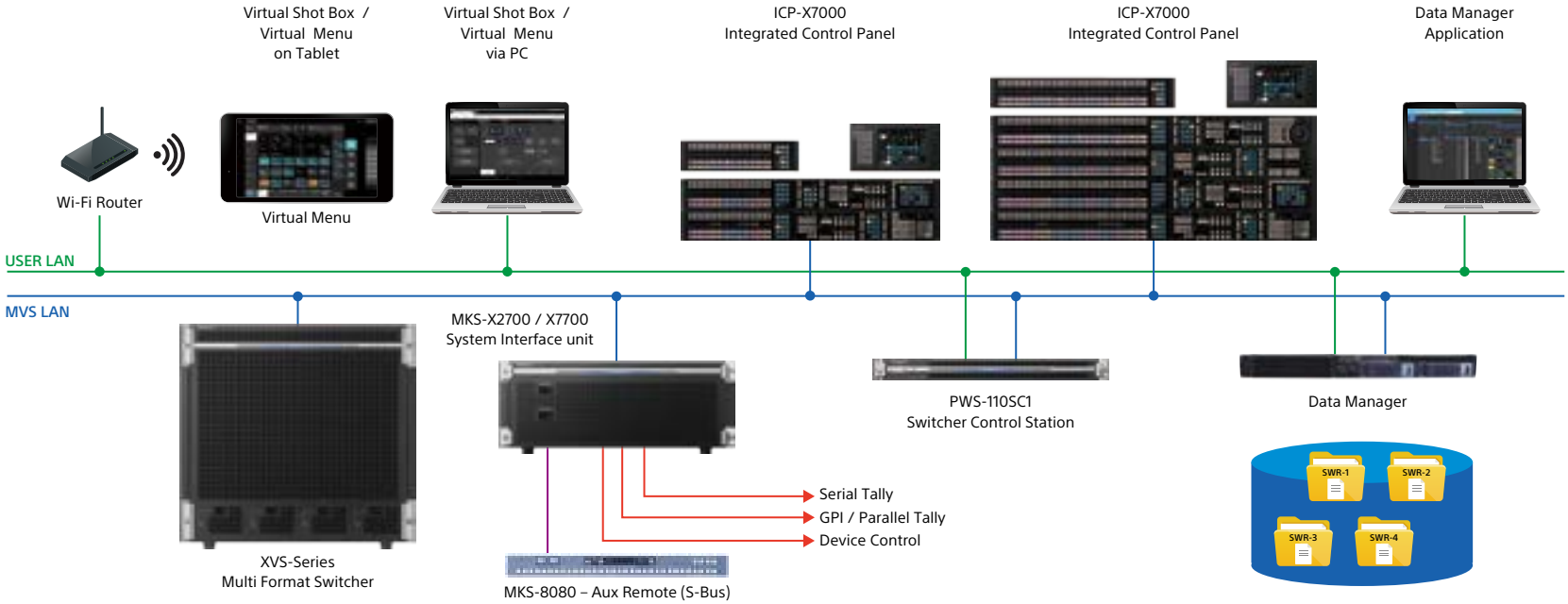


Fig.2



Greater Freedom of Control

The XVS Series can be partly operated remotely via Ethernet using a web applications called Virtual Shot Box and Virtual Menu.
These web applications can be used on any device with a web browser installed with Ethernet connection;
this means that wireless operation is also supported using mobile devices.

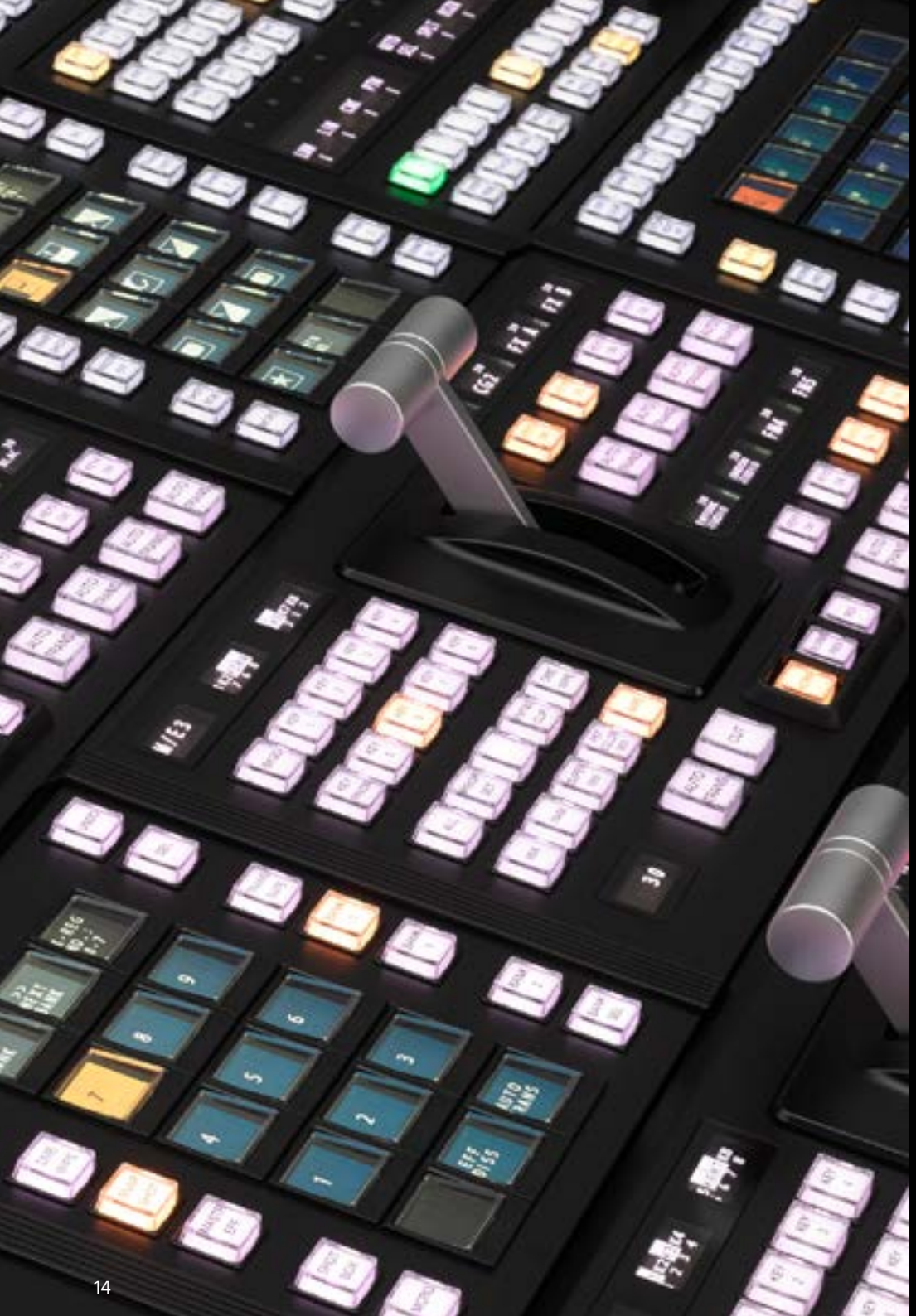


Virtual Menu

In addition to the dedicated menu panel, web based Menu operation is available with the Virtual Menu software option. It is useful as a secondary menu operation, for a remote control, or for emergency backup.

Virtual Shot Box

Virtual Shot Box is a GUI-based execution tool that adds to the conventional switcher control panel. Buttons and functions on the Virtual Shot Box can be customized providing flexible assignment options of macro, snapshot, shot box, XPT switching, keyer control, and other functions. There are many possibilities using this application. For example, you can use it with the control panel as a second shot box panel or to assist main switcher operator from any location. In addition, direct control to switch on-set images can be provided to the anchor or on-air talent.



ICP-X7000 Control Panel Series

Sony's CCP-8000 Series MVS Control Panel has firmly established a stellar reputation since its debut in 2001. Now this control panel evolves as the ICP-X7000 Series.

With this series, highly rated Sony switcher operability is enhanced further than before with devices such as OLED display, RGB XPT buttons, and Sony original LCD button pad. There is also a re-designed panel button layout which provides operators with steady status recognition and the confidence of button push accuracy, particularly when both speed and accuracy are needed in live production.

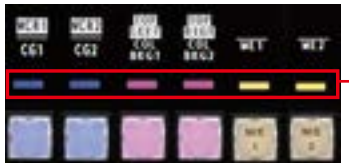
The functions of the ICP-X7000 Series Control Panel are highly assignable. The XPT pad allows for more functions to be assigned to more buttons on the control panel, all based on operator preference.

Sony is the pioneer of the modular style of design with its original CCP-8000. Now the ICP-X7000 Series Control Panel inherits all of this modular capability, providing very flexible panel configurations to best suit varying needs.
In addition, the ICP-X7000 can be divided row by row, achieving a highly flexible panel mounting layout or split for backbench control.

Panel Modules

XPT Color Indicator (LED)

- Source color can be changed by RGB parameters

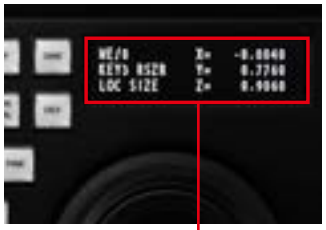


XPT Pad

- Up to 14 assignable pages
- XPT Pad brings easy access to panel setup changes and macro functions
- Assignable functions such as:
  - Source Name Display mode
  - Key Bus assignment
  - Macro Recall
  - Status Display
  - MP2 Control
  - Bus Protect, and more

Status Display for Trackball

- Values for adjustable parameters can be checked on the panel (an alternative to looking at the menu page)



FlexiPad

- Useful for Key Snapshot, Key transition-type changes, and register recall such as Snapshot, Macro, ShotBox, etc

Source Name Display

- Single or dual names, up to 4 lines (16 characters)
- Source Name, Bus Name, or attached Macro Name can be displayed

Utility and ShotBox

- 24-color LCD buttons with 17 assignable buttons
- Utility/ShotBox recall, Keyframe/Macro editing, and Transition rate change

Status Display for Transition

- Transition-related information is displayed on the panel

M/E (Main/Sub) Name

Keyer Name
Key On/Off status
Key Priority
Main/Sub assignment

8Keyer Control

Key Source Name
DME Ch
Resizer On/Off status
Transition Time

Status Display for 10Key Pad

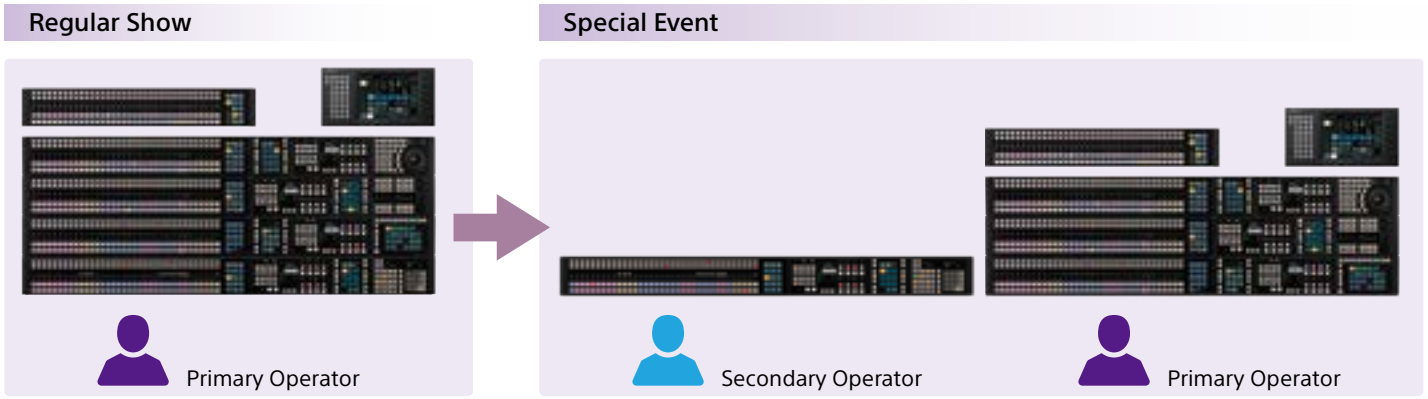
- Selected region names are displayed (convenient especially when multiple regions are assigned to one button)

Flexible Design

Flexible Panel Layout

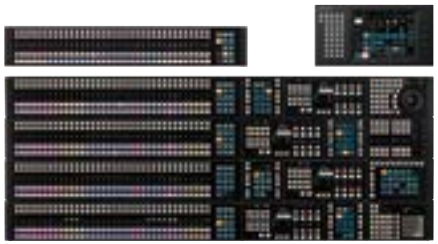
Easy Layout Change

Easy panel reconfiguration, ideal for a special event or remote operation



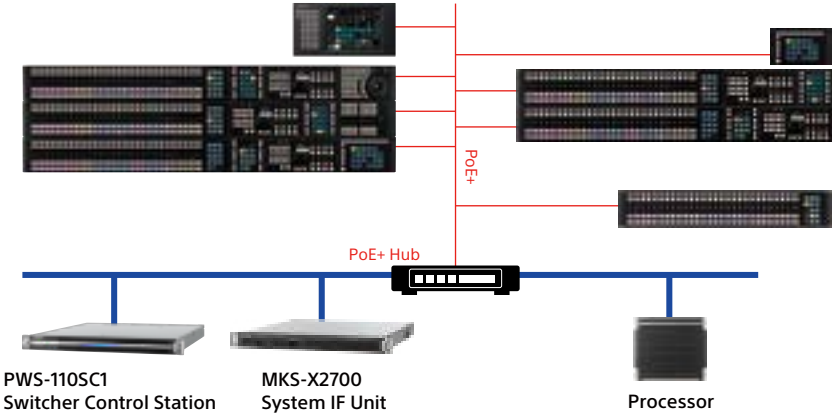
Technology Background

Panel rows can be combined together or separated row by row which enables very flexible mounting.



Combined

Separated



Each panel row is connected by single PoE+ (Power over Ethernet Plus) cable, which can be extended up to 100 meters.

Comprehensive Device Control System

Powerful Device Control

External video servers, VTRs, and P-bus devices can all be controlled directly from the switcher control panel using MKS-X7700 or MKS-X2700 Device Control Units. Devices can be controlled on the same timeline as switcher events or as part of macro events. When integrating on the Odetics protocol or VDCP-controlled disk recorder, clip management is also provided, allowing different server clips to be recalled and played back as part of a switcher timeline or macro.
Clip Name, Current Timecode, Start Timecode, Stop Timecode are displayed on the track ball module of the ICP-X7000 control panel, and the operator can confirm the status of each device.

Intelligent Tally Functions

All Sony switchers provide an intelligent and multi-functional tally system, which seamlessly integrates the switcher and router tally functions. Multiple on-air and recording tallies can easily be programmed on the switcher system, so that even complex tally requirements are accommodated. High-speed parallel tally and multiple functional serial tally are available.

Integrated Switcher Control

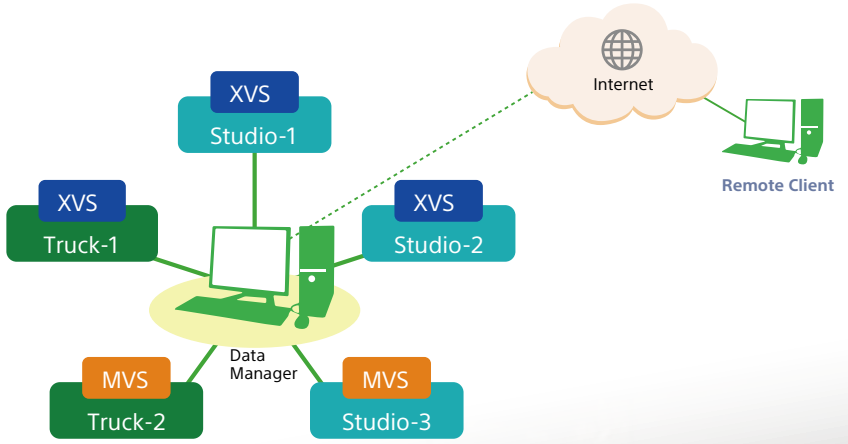
The PWS-110SC1 Switcher Control Station is a main engine in the XVS switcher system and runs the reliable Linux operating system. It provides substantial power to control all of the XVS components, as well as the web server to support the Virtual Shot Box and Virtual Menu applications. This unit also supports a user LAN which can be configured to enable external web-based connections.

PWS-110SC1

Data Management

Data Manage

Data Manager is a web application tool which can be used for networked Data sharing among the multiple XVS and MVS switchers, and also for backup/restore.
- Data Backup/Restore
- Data Copy/Sharing
  Frame Memory
  Switcher Setup data (Snapshot, Macro, Keyframe, etc)



MVS-6530/ MVS-3000A

The ideal, full-featured switcher with a small footprint

MVS-6530 / MVS-3000A

The MVS-3000A and MVS-6530 are ideal full-featured SD/HD switchers with a small footprint which inherit cutting-edge technologies from the well-established MVS family of switchers.

- Choice of four control panels and dedicated menu panel
- Variety of functions inherited from top-of-the-line flagship models
  - 3D non-linear DME, 2.5D resizer, frame memory / CG wipe, AUX mix transition
  - Multi-viewer outs, input/output color correction
  - Built-in format converters with frame sync and frame delay function
  - Support for Sony's ELC Live Automation (MVS-6530 only)

ICP-6500 / ICP-3000 Series panels

ICP-6500 and ICP-3000 Series panels are little brothers of the ICP-X7000 panel, and work well with MVS-6530 and MVS-3000A switchers. These panels are designed for easy operation in a fixed configuration, inheriting proven Sony MVS switcher operation style - current operators say they feel instantly at home with these panels. They adopt OLED source name displays and RGB source buttons as well for optimal visibility and great operability.

ICP-3016

ICP-3000

ICP-6520

ICP-6530

Operation Panel

Multi-function Flexi Pad Block

The Flexi Pad is used for creating and recalling various switching functions for easy operation.

- Macro / ShotBox direct execution
- Snapshot / Wipe Snapshot / DME-Wipe Snapshot recall
- Keyframe (Timeline) Effect building / recall
- Transition Rate setting
- Key adjustment and control

Key Control | Wipe Snapshot | ShotBox

Dedicated Menu Panel

The menu panel provides comprehensive setup operations.

M/E Setup | Frame Memory | Timeline

Device Control Block

This provides an easy-to-use trackball for fine adjustment, and direct access buttons.

- Resizer / DME adjustment (Size, Position, Rotation, etc.)
- DDR / VTR control (Play, Stop, Jog / Shuttle, etc.)

Crosspoint Block

This provides enhanced button visibility for increased operational efficiency.

- OLED Source Name display (up to 12 characters)
- RGB Crosspoint buttons
  Light-emitting buttons with selectable coloring for easy grouping of sources
- Assignable Delegation buttons
  (Key 1-4, AUX1-16, Utility / ShotBox, Macro)

Key Transition Block

This block provides direct access to key transition type selection, transition execution, and key snapshot recall.

- Key Cut / Auto Transition
- Key Source Name Display
- Key Transition Type
- Key Snapshot

Convenient Functions of the ICP-6520/6530 Panels

The ICP-6520/6530 panels has dedicated buttons specifically for M/E re-entry, XPT Hold, and Aux Mix enable. This panel also has assignable buttons such as Pre Macro and Post Macro.

Next Transition Block

The Next Transition Block enables extremely flexible operation for transitions, with 19 assignable buttons.

- Next Transition delegation (BKGD, Key1-4, Key Priority)
- Transition Type (WIPE, MIX, CLIP Transition, etc.)
- Transition Rate Display

Aux Bus Remote Panel (Option)

For AUX bus switching, this supports single destination switching (MKS-8080).
Up to 16 panels can be simply connected in cascade using standard BNC cables.

MKS-8080

Variety of Useful Functions

Multi-viewer Function

This function displays multi-viewing sources including input and output sources by 4-, 10-, or 16-way split screen mode. Two channels can be output independently, enabling you to view up to 32 sources at one time. The multi-viewer can also display source name and tally.
The Multi-viewer function helps you build a simple system with minimal displays, and is also a cost-effective way to create a monitor wall.


4-way split screen


10-way split screen

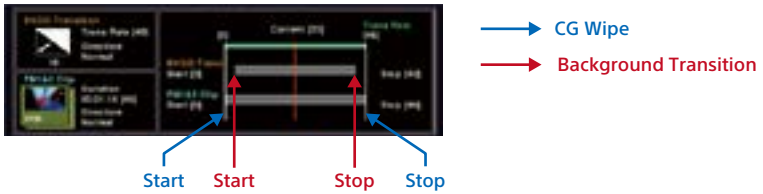

16-way split screen

Flexible and Intuitive CG Wipe Function

CG Wipe is becoming more popular for transitions, not only for slow-motion in sports but also for scripted shows. You can select a frame memory Clip Transition (CG Wipe) as the transition type just as easily and in the same way as selecting Mix, Wipe, and DME-Wipe.


A CG Wipe with background transition

The CG Wipe (moving image) is played back linked to a mix, cut, or wipe transition in the background. You can set the timing of both the start and stop.



Aux Mix Transition

Many of today's productions are utilizing aux outputs to feed on-set studio monitor screens and web feeds. Aux Mix allows you to perform mix transitions on these outputs, without consuming extra M/E resources.

Color Correction

The RGB Color Correction function is available for every video input and auxiliary output. In-vision studio monitors can therefore be optimized to provide faithful color reproduction when included in the camera image.

Powerful Key Resizers (2.5D x 4 Channels)

The Picture-in-Picture function (P in P) is mandatory for any news program. Also size and position adjustments are often required when creating CG effects. P-in-P is easily created by resizing and repositioning images, and both X- and Y-axis rotations are possible (2.5D). Even Defocus and Mosaic effects are available.

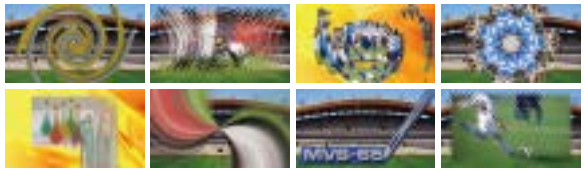

2D : without rotation


2.5D with rotation

Gorgeous 3D DME with Non-linear Effect (Option)

To make your program more attractive, the Digital Multi Effect (DME) function offers a creative solution. Sony's DME provides popular non-linear effects and easy operation via the intuitive menu system, and control panel trackball section. Two channels are available for 3D DME effects, while one of the two channels is used for non-linear type effects.

Digital SPARKLE Effects



Page Turn

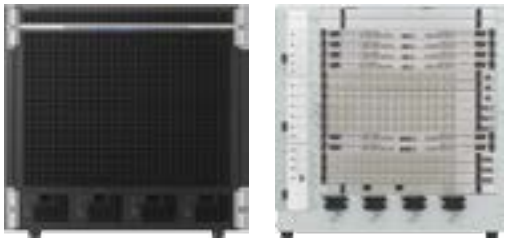
Corner Pinning

Side Flags

Many operators still handle HD and SD materials at the same time. The internal Format Converter function and Side Flags function assist operators with these materials. The Side Flags function allows an up-converted 4:3 SD image to automatically form a 16:9 HD image by adding desired graphics to both sides of the 4:3 image without using any of the system's key resources.

Switcher Processors

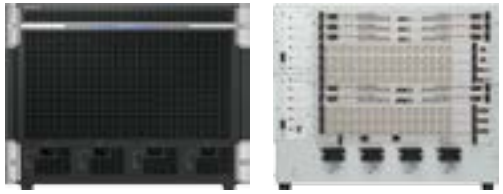
Multi-format Switcher Processor
XVS-8000



Multi-format Switcher Processor	XVS-8000
SDI Input Connector Board	XKS-S8110
SDI Input & FC Connector Board	XKS-S8111
IP Input Connector Board	XKS-T8110
QSFP IP Input & FC Connector Board	XKS-Q8111
Output Processor Board	XKS-8160
SDI Output Connector Board	XKS-S8165
IP Output Connector Board	XKS-T8165
QSFP IP Output & FC Connector Board	XKS-Q8166
MIX/EFFECT Board	XKS-8210
Frame Memory Board	XKS-8440
Format Converter Board	XKS-8460
HD DME Board	XKS-8470
Switcher Upgrade Software (MIX/EFFECT 1st Board 4K)	XZS-8510
Switcher Upgrade Software (MIX/EFFECT 2nd Board 4K)	XZS-8520
Switcher Upgrade Software (MIX/EFFECT 3rd Board 4K)	XZS-8530
Switcher Upgrade Software (MIX/EFFECT 4th Board 4K)	XZS-8540
Switcher Upgrade Software (MIX/EFFECT 5th Board 4K)	XZS-8550
Multi Program2 Software	XZS-8200
Virtual Shot Box Base Software	BZPS-7020
Virtual Shot Box Additional Software	BZPS-7021
Virtual Menu Base Software	BZPS-7030
Virtual Menu Additional Software	BZPS-7031

Standard configuration
The XVS-8000 system is supplied with four power supply units (2+2 redundancy).

Multi-format Switcher Processor
XVS-7000



Multi-format Switcher Processor	XVS-7000
SDI Input Connector Board	XKS-S8110
SDI Input & FC Connector Board	XKS-S8111
IP Input Connector Board	XKS-T8110
QSFP IP Input & FC Connector Board	XKS-Q8111
Output Processor Board	XKS-8160
SDI Output Connector Board	XKS-S8165
IP Output Connector Board	XKS-T8165
QSFP IP Output & FC Connector Board	XKS-Q8166
MIX/EFFECT Board	XKS-7210
Frame Memory Board	XKS-8440
Format Converter Board	XKS-8460
HD DME Board	XKS-8470
Switcher Upgrade Software (MIX/EFFECT 1st Board 4K)	XZS-7510
Switcher Upgrade Software (MIX/EFFECT 2nd Board 4K)	XZS-7520
Switcher Upgrade Software (MIX/EFFECT 3rd Board 4K)	XZS-7530
Multi Program2 Software	XZS-7200
Virtual Shot Box Base Software	BZPS-7020
Virtual Shot Box Additional Software	BZPS-7021
Virtual Menu Base Software	BZPS-7030
Virtual Menu Additional Software	BZPS-7031

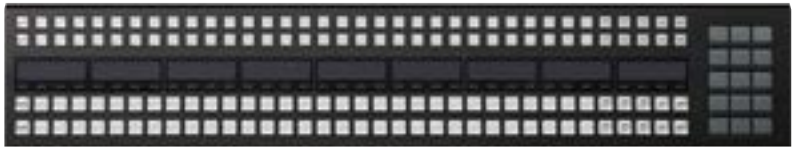
Standard configuration
The XVS-7000 system is supplied with four power supply units (2+2 redundancy).

Multi-format Switcher Processor
XVS-6000

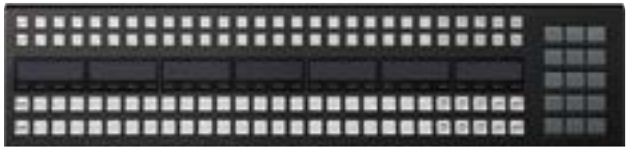
Multi-format Switcher Processor	XVS-6000
SDI Input Connector Board	XKS-S8110
SDI Input & FC Connector Board	XKS-S8111
IP Input Connector Board	XKS-T8110
QSFP IP Input & FC Connector Board	XKS-Q8111
SDI Output Connector Board	XKS-S8165
IP Output Connector Board	XKS-T8165
QSFP IP Output & FC Connector Board	XKS-Q8166
MIX/EFFECT Board	XKS-7210
Frame Memory Board	XKS-8440
Format Converter Board	XKS-8460
HD DME Board	XKS-8470
Switcher Upgrade Software (MIX/EFFECT 1st Board 4K)	XZS-6510
Switcher Upgrade Software (MIX/EFFECT 2nd Board 4K)	XZS-6520
Multi Program2 Software	XZS-6200
Virtual Shot Box Base Software	BZPS-7020
Virtual Shot Box Additional Software	BZPS-7021
Virtual Menu Base Software	BZPS-7030
Virtual Menu Additional Software	BZPS-7031

Standard configuration
The XVS-6000 system is supplied with one mix/effect board, and two power supply units (1+1 redundancy).

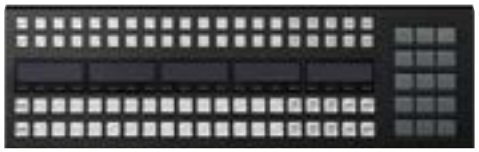
Control Panel ICP-X7000 Series



36 XPT Module
MKS-X7017



28 XPT Module
MKS-X7018



20 XPT Module
MKS-X7019

Standard Transition Module
MKS-X7020

Simple Transition Module
MKS-X7021

Key Transition Module
MKS-X7023

10-Key PAD Module
MKS-X7026

Track Ball Module
MKS-X7031TB

Menu Panel
MKS-X7011

Key Fader Module
MKS-X7032

Utility/Shot Box Module
MKS-X7033

Key Control Module
MKS-X7035

Flexi-Pad Module
MKS-X7024

Blank Panel (1/2)
MKS-X7041

Blank Panel (1/3)
MKS-X7040

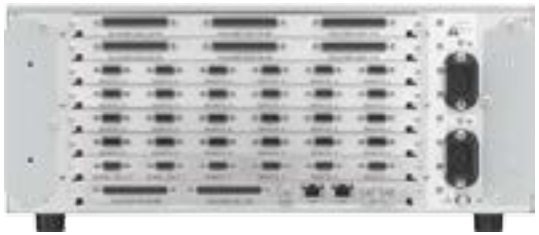
Extension Adaptor
MKS-X7075

CPU Module
MKS-X7099

*The MKS-X7099 module is mounted on each panel row during factory production. Single orders are therefore not available.

Control Panel ICP-X7000 Series

Switcher Control Station
PWS-110SC1



System Interface Unit
MKS-X7700

Tally/GPI Output Board MKS-X7701
Serial Interface Board MKS-X7702

System Interface Unit
MKS-X2700

System Configuration

Multi-format Switcher Processor
MVS-6530

Format Converter Board	MKS-6550
DME Board	MKS-6570

Standard configuration:
The MVS-6530 system is supplied with 48 primary inputs, 32 assignable outputs, and two power supply units.

Multi-format Switcher Processor
MVS-3000A

Format Converter Board	MKS-6550
DME Board	MKS-6570

Standard configuration:
The MVS-3000A system is supplied with 32 primary inputs, 16 assignable outputs, and two power supply units.

Control Panel ICP-6500 and 3000 Series

3 M/E Control Panel (24 XPT)
ICP-6530

2 M/E Control Panel (24 XPT)
ICP-6520

2 M/E Control Panel (24 XPT)
ICP-3000

2M/E Control Panel (16 XPT)
ICP-3016

Menu Panel
ICP-6511

Remote Panel

AUX BUS Remote Panel*
MKS-8080

* Rack-mount brackets for these panels are included.

Specifications

XVS-8000 / XVS-7000 / XVS-6000

General			
Power requirement	XVS-8000/XVS-7000/XVS-6000		100 V to 240 V ± 10 % AC 50/60 Hz
	ICP-X7000 Series		42.5 V to 57 V (PoE+), 12V DC
	Others		AC 100 V to 240 V, ±10% 50/60 Hz
Power consumption	XVS-8000/XVS-7000		22 A to 9.2 A (when equipped with all installable option boards)
	XVS-6000		11 A to 4.6 A (when equipped with all installable option boards)
	ICP-X7000 Series		0.6 A (PoE+), 2.1 A DC
	MKS-X7075		0.35 A (PoE+), 1.2 A DC
	MKS-X7011		0.5 A (PoE+), 1.6 A DC
	PWS-110SC1		4 A to 1.5 A
	MKS-X7700		1.0 A to 0.5 A
	MKS-X2700		0.5 A to 0.3 A
Operating temperature	XVS-8000/XVS-7000/XVS-6000		5 ºC to 40 ºC (41 ºF to 104 ºF)
	PWS-110SC1		5˚C to 35˚C (41˚F to 95˚F)
	Others		5˚C to 40˚C (41˚F to 104˚F)
Storage temperature	XVS-8000/XVS-7000/XVS-6000		- 20 ºC to 60 ºC (- 4 ºF to 140 ºF)
Operating humidity	XVS-8000/XVS-7000/XVS-6000		10 % to 90 %
Dimensions (W x H x D)	XVS-8000		440 x 443.6 x 582.9 mm (17 3/8 × 17 1/2 × 23 inches) (excluding projections)
	XVS-7000		440 x 354.4 x 585 mm (17 3/8 × 14 × 23 inches) (excluding projections)
	XVS-6000		440 x 265.9 x 585 mm (17 3/8 × 10 1/2 × 23 inches) (excluding projections)
	ICP-X7000 Series	Main Panel	4 M/E, 36-crosspoint buttons: 1522 (with mount bracket) x 130 x 588 mm (60 x 5 1/8 x 23 1/4 inches)
			3 M/E, 28-crosspoint buttons: 1368 (with mount bracket) x 123 x 442 mm (53 7/8 x 4 7/8 x 17 1/2 inches)
			2 M/E, 20-crosspoint buttons: 1214 (with mount bracket) x 116 x 295 mm (47 7/8 x 4 5/8 x 11 5/8 inches)
			1 M/E, 20-crosspoint buttons: 1214 (with mount bracket) x 93.5 x 149 mm (47 7/8 x 3 3/4 x 5 7/8 inches)
		Auxiliary Bus Panel	36-crosspoint buttons: 863 (with mount bracket) x 94.6 x 146 mm (34 x 3 3/4 x 5 3/4 inches)
			28-crosspoint buttons: 708 (with mount bracket) x 94.6 x 146 mm (27 7/8 x 3 3/4 x 5 3/4 inches)
			20-crosspoint buttons: 554 (with mount bracket) x 94.6 x 146 mm (21 7/8 x 3 3/4 x 5 3/4 inches)
		Menu Panel	424 x 221 x 46 mm (16 3/4 x 8 3/4 x 1 13/16 inches)
		Extension Adaptor	262 (with mount bracket) x 146 x 93 mm (10 3/8 x 5 3/4 x 3 3/4 inches)
	PWS-110SC1	Switcher Control Station	482 x 44 x 634 mm (19 x 1 3/4 x 25 inches)
	MKS-X7700		482 x 176 x 486 mm (19 x 7 x 19 1/4 inches)
	MKS-X2700		482 x 44 x 520 mm (19 x 1 3/4 x 20 1/2 inches)

General			
Mass	XVS-8000		Approx. 63 kg (138 lb 14 oz) (when equipped with all installable option boards)
	XVS-7000		Approx. 53 kg (116 lb 14 oz) (when equipped with all installable option boards)
	XVS-6000		Approx. 43 kg (94 lb 13 oz) (when equipped with all installable option boards)
	ICP-X7000 Series	Main Panel	4 M/E, 36-crosspoint buttons: 39 kg (85 lb 16 oz)
			3 M/E, 28-crosspoint buttons: 30 kg (66 lb 2.2 oz)
			2 M/E, 20-crosspoint buttons: 22 kg (48 lb 8.0 oz)
			1 M/E, 20-crosspoint buttons: 12 kg (26 lb 7.3 oz)
		Auxiliary Bus Panel	36-crosspoint buttons: 4.4 kg (9 lb 11.2 oz)
			28-crosspoint buttons: 3.8 kg (8 lb 6.0 oz)
			20-crosspoint buttons: 3.2 kg (7 lb 0.88 oz)
		Menu Panel	2.5 kg (5 lb 18.2 oz)
		Extension Adaptor	2 kg (4 lb 6.5 oz)
	PWS-110SC1	Switcher Control Station	14 kg (30 lb 14 oz)
	MKS-X7700		15 kg (33 lb 1.1 oz) (fully loaded)
	MKS-X2700		8 kg (17 lb 10 oz)

Video inputs/outputs	
XVS-8000	
Inputs (Max,) (BNC)	160 for primary inputs
Outputs (Max,) (BNC)	48 for outputs, 20 for Format Converter (16 for assignable, 4 for duplicated), 8 for Multi Viewer (4 heads per channel)
Signal format	SMPTE424M/SMPTE292M
Signal Processing	4 : 2 : 2 digital component
Quantization	HD-SDI : 10-bit
XVS-7000	
Inputs (Max,) (BNC)	112 for primary inputs
Outputs (Max,) (BNC)	48 for outputs, 16 for Format Converter, 8 for Multi Viewer (4 heads per channel)
Signal format	SMPTE424M/SMPTE292M
Signal Processing	4 : 2 : 2 digital component
Quantization	HD-SDI : 10-bit
XVS-6000	
Inputs (Max,) (BNC)	64 for primary inputs
Outputs (Max,) (BNC)	24 for outputs, 16 for Format Converter, 8 for Multi Viewer (4 heads per channel)
Signal format	SMPTE424M/SMPTE292M
Signal Processing	4 : 2 : 2 digital component
Quantization	HD / SD-SDI : 10-bit

Supported Formats		
	4K	HD
XVS-8000	3840x2160/59.94P*1, 3840x2160/50P*1, 3840x2160/29.97PsF*2, 3840x2160/25PsF*2, 3840x2160/24PsF*2, 3840x2160/23.98PsF*2	1080/59.94P*3, 1080/50P*3, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF, 1080/59.94i, 1080/50i, 720/59.94P, 720/50P
XVS-7000		
XVS-6000		

*1 SMPTE ST 425-5, Level A, 2-sample interleave division (2SI) and square division (SQD) compliant.
*2 Square division (SQD) compliant.
*3 SMPTE ST 425-1, Level A compliant.

Reference	
XVS-8000/XVS-7000/XVS-6000	
Reference input	BNC (x2), 75 Ω with loop-through output HD tri-level sync or Analog black burst

Control	
XVS-8000/XVS-7000/XVS-6000	
NETWORK A	RJ-45 (x1), 1000BASE-T
NETWORK B	RJ-45 (x1), 1000BASE-T
ICP-X7000 Series	
LAN	RJ-45 (x1), 1000BASE-T(PoE+)
MKS-X7011	
LAN	RJ-45 (x1), 1000BASE-T(PoE+)
Device	USB-type A (x1), USB 2.0
PWS-110SC1 (Switcher Control Station)	
LAN	RJ-45 (x1), 1000BASE-T, 100BASE-TX
USB	USB-type A (x6), USB 3.0
HDMI	Type A (x1), HDMI Ver.1.4a
DisplayPort	DisplayPort (x1), Displayport Ver. 1.1a
MKS-X7700 (System Interface Unit)	
MVS LAN	RJ-45 (x1), 1000BASE-T
UTIL LAN	RJ-45 (x1), 1000BASE-T
Serial tally	D-sub 9-pin (x2), RS-422A
TALLY/GPI inputs	D-sub 37-pin (x2),TTL level inputs (x34 each)
REMOTE	D-sub 9-pin (x4) , RS-422A, various protocols
S-BUS	BNC (x1), S-BUS protocol
Optional	
TALLY/GPI outputs*4 (MKS-X7701 Taly/GPI Output Board)	D-sub 37-pin (x3), relay contact outputs 18 ch, up to 324 ch in step of 54 ch in a frame
REMOTE*4 (MKS-X7702 Serial Interface Board)	D-sub 9-pin (x6), RS-422A, various protocols, up to 36 ports in steps of 6 ports in a frame
MKS-X2700 (System Interface Unit)	
MVS LAN	RJ-45 (x1), 1000BASE-T
UTIL LAN	RJ-45 (x1), 1000BASE-T
Serial tally	D-sub 9-pin (x2), RS-422A
TALLY/GPI inputs	D-sub 37-pin (x1), TTL level inputs (x34 each)
TALLY/GPI outputs	D-sub 37-pin (x2), relay contact outputs (x18 each)
REMOTE	D-sub 9-pin (x6), RS-422A, various protocols
S-BUS	BNC (x1), S-BUS protocol

*4 Mixed configuration of optional boards is availlable for six slots.

Specifications

MVS-6530 / MVS-3000A

General			
Power requirement	MVS-6530/MVS-3000A		AC 100 V to 240 V, ±10% 50/60 Hz
	ICP-6530/ICP-6520/ICP-3000/ICP-3016		
	ICP-6511		DC 12V ±10%
Power consumption	MVS-6530/MVS-3000A		4 A to 1.7 A
	ICP-6530		1.1 A to 0.65 A
	ICP-6520		0.95 A to 0.6 A
	ICP-3000		
	ICP-3016		
Operating temperature	MVS-6530/MVS-3000A		5˚C to 40˚C (41˚F to 104˚F)
	ICP-6530/ICP-6520/ICP-3000/ICP-3016		
Dimensions (W x H x D)	MVS-6530		482 x 176 x 486 mm (19 x 7 x 19 1/4 inches)
	MVS-3000A		
	ICP-6530	3 M/E Control Panel	1154 x 126 x 396 mm (45 1/2 x 5 x 15 5/8 inches)
	ICP-6520	2 M/E Control Panel	1154 x 120 x 264 mm (45 1/2 x 4 3/4 x 10 1/2 inches)
	ICP-3000	2 M/E Control Panel	821 x 126 x 396 mm (32 3/8 x 5 x 15 5/8 inches)
	ICP-3016	2 M/E Control Panel	666 x 120 x 396 mm (26 x 4 3/4 x 15 5/8 inches)
	ICP-6511	Menu Panel	424 × 220 × 46 mm (16 3/4 × 8 3/4 × 1 13/16 inches)

General		
Mass	MVS-6530	21 kg (46 lb 4.8 oz) (fully loaded)
	MVS-3000A	20 kg (44 lb 1.5 oz) (fully loaded)
	ICP-6530	20 kg (44 lb 1.5 oz)
	ICP-6520	15 kg (33 lb 1.1 oz)
	ICP-3000	14 kg (30 lb 14 oz)
	ICP-3016	12 kg (26 lb 7.3 oz)
	ICP-6511	2.3 kg (5 lb 1.1 oz)

Video inputs/outputs	
MVS-6530	
Primary inputs	48, BNC (x1 each), SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Assignable outputs	32, BNC (x1 each), SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Signal processing	4 : 2 : 2 digital component
Quantization	HD / SD-SDI : 10-bit
MVS-3000A	
Primary inputs	32, BNC (x1 each), SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Assignable outputs	16, BNC (x1 each), SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Signal processing	4 : 2 : 2 digital component
Quantization	HD / SD-SDI : 10-bit

Supported Formats		
	HD	SD
MVS-6530	1080/59.94i, 1080/50i, 1080/23.976PsF, 1080/24PsF, 720/59.94p, 720/50p	480/59.94i, 576/50i
MVS-3000A		

Reference	
MVS-6530/MVS-3000A	
Reference input	BNC (x2), 75 Ω with loop-through output HD tri-level sync or Analog black burst

Control	
MVS-6530/MVS-3000A	
MVS LAN	RJ-45 (x1), 1000BASE-T
Remote 1 to 4	D-sub 9-pin (x1), RS-422A
Remote S1 to S2	D-sub 9-pin (x1), RS-422A
S-BUS	BNC (x1), S-BUS
Serial Tally	D-sub 9-pin (x1), RS-422A
Tally / GPI	D-sub 25-pin (x3), TTL level inputs (x18), open collector outputs (x48)
FM Device	USB-type A (x1), USB 2.0
ICP-6530/ICP-6520/ICP-3000	
MVS LAN	RJ-45 (x1), 1000BASE-T
USB	USB-type A (x4), USB 2.0
Ext Display, Menu Display	DVI-D OUT (x1) (SVGA 600 x 800 only)
ICP-6511	
Device	USB 2.0 (type-Ax1, type-Bx1)
DVI-D IN	DVI-D IN (x1) (SVGA 800 x 600 only)

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