PRODUCTION SWITCHER SYSTEM

MVS-8000X / MVS-7000X / MVS-6500 Series / MVS-3000

SONY
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Sony's
MVS Family of Switchers

MVS-8000X

MVS-7000X

Over the years, Sony's switchers have been widely accepted by many users and have acquired an extraordinary reputation for distinguished features and long-term reliability.

Pursuing the ultimate multi-format system for today and tomorrow, Sony proudly introduces its flagship model, the MVS-8000X. This 3G-ready, high-end switcher system delivers plenty of production capabilities, combined with significant enhancements in operability and flexibility, when compared to previous generations. With the MVS-8000X, users around the world can secure an optimal future strategy, harnessing ultimate quality combined with significant return on investment.

MVS-6530

MVS-6520

MVS-3000

The MVS-7000X, the companion model of the MVS-8000X, is designed for smaller configurations than its larger brother. Nonetheless, it maintains the same powerful features including high-performance keyers, resize engines, and multi-viewer outputs. Plus of course it is also 3G-ready for future broadcast requirements. Users can additionally reconfigure the system in a variety of selectable mix/effect modes and also install optional DME boards which offer visual effects of superb quality.

Based on feedback from our 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 three new switcher models (MVS-6530, MVS-6520 and MVS-3000) inherit cutting-edge technologies from the well-established MVS Series of switchers. Each model also incorporates a newly designed control panel, which includes color source buttons and OLED source name displays.

The MVS-6530 and MVS-6520 are suitable for medium-size productions and are available in 3-M/E and 2-M/E configurations. This innovative new switcher and its attractive control panel surely provide you with an optimal system configuration to inspire your creativity. The MVS-3000 2-M/E switcher has a specifically designed control panel, and 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.

All three new models include high-performance keyers with chromakey functionality and resizers (not every keyer), color correction, and multi-viewer outputs, offering the perfect balance between size and specification.

Broad Lineup

MVS-8000X Multi-format Switcher

Model	**MVS-8000X** 3G-ready
M/E configuration	2 – 5
Input	Up to 164 inputs (200 BNC connectors)
Output	Up to 68 outputs (100 BNC connectors)
Keyer	-8 keyers per M/E bank (1080i/1080PsF/720p/480i/576i mode) -4 keyers per M/E bank (1080p mode)
DME	Up to 8 (external) DME channels
Resizer	Resizer (2.5D DME) per every keyer
Color correction	Full-function color correction, 2 channels
Multi-viewer	Up to 2 channels,10 or 4 splits (output only)
Processor size	10RU

MVS-7000X Multi-format Switcher

Model	**MVS-7000X** 3G-ready
M/E configuration	1 – 5
Input	Up to 80 inputs
Output	Up to 48 outputs
Keyer	Up to 8 keyers per M/E bank (1080i/1080PsF/720p/480i/576i mode) -4 keyers per M/E bank (1080p mode)
DME	Up to 4 (internal), 8 (internal + external) DME channels
Resizer	Resizer (2.5D DME) per every keyer
Color correction	Full-function color correction, 2 channels
Multi-viewer	Up to 2 channels,10 or 4 splits (output only)
Processor size	8RU

MVS-6500 Multi-format Switcher Series (MVS-6530, MVS-6520)

Model	**MVS-6530** NEW	**MVS-6520** NEW
M/E configuration	3	2
Input	48 inputs	32 inputs
Output	32 outputs	16 outputs
Keyer	-4 keyers per M/E bank -8 keyers in P/P bank	-4 keyers per M/E, P/P bank
DME	Supports 2 (internal) channels	
Resizer	-2 resizers per M/E bank -4 resizers per P/P bank -2.5D DME	-2 resizers per M/E bank -2.5D DME
Color correction	Primary color correction for all inputs and AUX outputs	
AUX trans	Mix	
Multi-viewer	2 channels, 10 or 4 splits	
Processor size	4RU	

MVS-3000 Multi-format Switcher

Model	**MVS-3000** NEW
M/E configuration	2
Input	32 inputs
Output	16 outputs
Keyer	-4 keyers per M/E bank
Resizer	-2 resizers per M/E bank -2.5D DME
Color correction	Primary color correction for all inputs and AUX outputs
Multi-viewer	2 channels, 10 or 4 splits
Processor size	4RU

Outstanding Scalability

Scalable Processor Configurations

The processors of the MVS-8000X and MVS-7000X 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.

Multi-viewer System

All MVS Series switchers provide multi-viewer outputs directly from the main processor chassis. This cuts down on the need for expensive external multi-viewers. Each multi-viewer output can be set in either 10- or 4-way split operation, and signals are delegated to each separate pane accordingly. The multi-viewer also supports switcher name and border tally indicators.

Built-in Format Converter

One convenient feature of MVS switchers is that a format conversion capability can be incorporated by adding an extra format converter board.* This option provides up-conversion and down-conversion between HD (1080i and 720p) and SD (480i and 576i), and cross-conversion between 1080i and 720p at both inputs and outputs. With these capabilities, there is no need for external format conversion. A variety of signal formats can be handled within the switcher system, which minimizes overall system cost.

* MKS-8450X for the MVS-8000X and MVS-7000X. MKS-6550 for the MVS-6500 Series and MVS-3000.

Example of format conversion

New Control Panel for Convenient Operability (MVS-6500 Series, MVS-3000)

The latest MVS-6500 Series and MVS-3000 switchers are complemented by new ICP Series control panels. These matt-black panels are designed for easy operation in a fixed configuration.

Their design is based on the proven CCP style, and current operators feel instantly at home with the new panel. Additionally, OLED source name displays and RGB color source buttons are included for optimal visibility and great operability.

The ICP-6500 Series is designed to complement the new MVS-6530 and MVS-6520 processors, while the compact ICP-3000 has been designed specifically for the MVS-3000 system.

Flexible M/E Configuration (MVS-7000X)

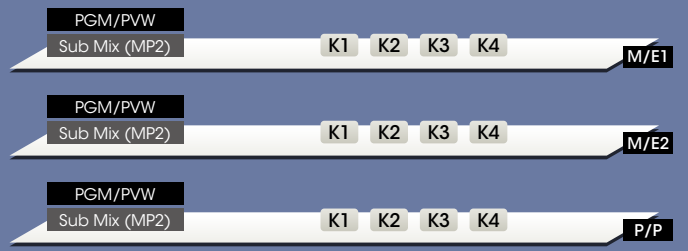
The MVS-7000X provides you with the ability to purchase the exact amount of M/E resource dependent on programming requirements. Each M/E board can be configured to utilize the board's full resource, therefore whichever standard you are working in, you can be economical in terms of hardware and costs.

The M/E board can be broken down as follows:

In 1080p the board provides:

- 1 M/E bus giving PGM/PVW, 4 keyers, and the option to use a sub-mix (second PGM/PVW with separate output)
- The switcher can work with up to 3 M/E cards in 1080p configuration

1080p — 1 M/E per board, up to 3 M/E, 4 keyers per M/E
Multi-PGM2 (MP2) Available



In 1080i or 720p, the options are as follows:

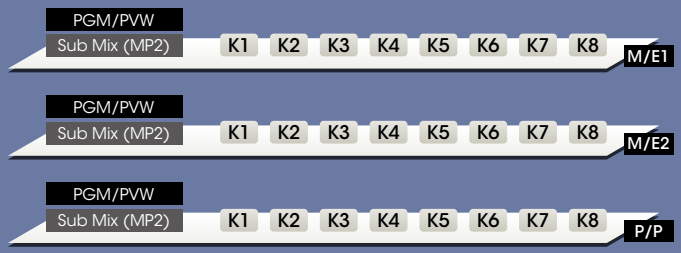
A. 1 M/E bus giving PGM/PVW, 8 keyers and the sub-mix function.
Up to 3 M/E boards can be installed in the processor in this configuration.

B. 2 M/E buses (assignable to any bank on the panel) each giving PGM/PVW, 4 keyers and the sub-mix function.
In this mode, 2 M/E boards can be installed in the processor at the same time as well as a P/P card totaling 5 M/Es across the switcher.

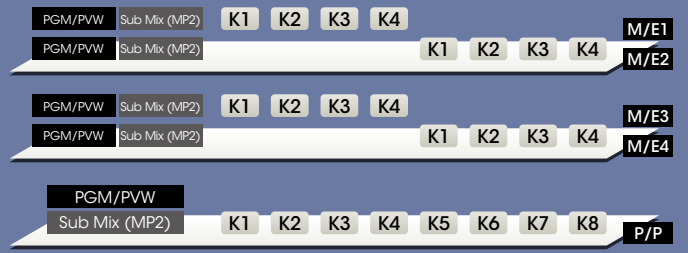
C. 3 M/E buses each giving PGM/PVW, M/E 1 = 2 Keys, M/E 2 = 2 Keys and P/P = 4 Keys (no sub-mix available in this configuration)
Only 1 M/E card is installed in the processor in this mode.

D. 4 M/E buses each giving 2 keys for each M/E bus.

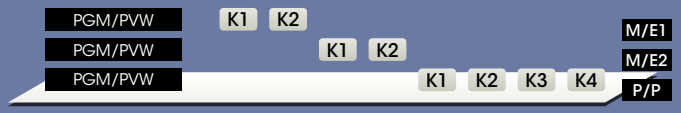
A 1080i/720p/SD — 1 M/E per board, up to 3 M/E,
8 keyers per M/E
Multi-PGM2 (MP2) Available



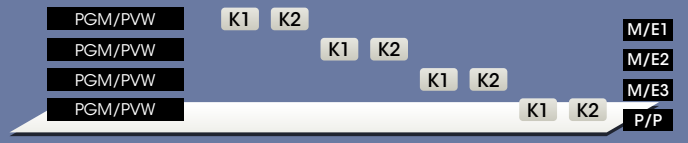
B 1080i/720p/SD — 2 M/E per board, up to 5 M/E,
4 keyers per M/E, 8 keyers per P/P
Multi-PGM2 (MP2) Available



C 1080i/720p/SD — 3 M/E per board
2 keyers per M/E, 4 keyers per P/P



D 1080i/720p/SD — 4 M/E per board
2 keyers per M/E



Thanks to powerful M/E mode selection, the MVS-7000X system can be configured to meet user requirements with the minimal purchase of a mix/effect board and by using multi-program 2 mode. The system can be simply reconfigured, via a menu selection, at any time.

Customizable Control Panel (MVS-8000X, MVS-7000X)

MVS-8000X and MVS-7000X switchers utilize the same control panels, which have been designed as a result of customer feedback. A lineup of three control panels is available: the fully modular CCP-8000 Series, two fixed-configuration, 24-button panels (CCP-6324 and CCP-6224), and narrower 12-button 19-inch panels (MKS-9011 and MKS-9012).

CCP-8000 Series panels have a modular design. Users can position modules in the base chassis according to their layout preferences. The M/E base chassis is offered in 16-, 24-, or 32-button widths and 2-4 M/E bus depths. The panel can therefore be customized with a wide variety of modules to suit each user's exact requirements.

Fixed-configuration CCP-6000 Series panels are designed for ease of use where space is at a premium.

These modular panels can also integrate Flexi-Pad and ShotBox buttons, allowing instant recall of many preset effects, macros, or menu shortcuts. These modules incorporate backlit three-color LCD indicators which can display either register names or preset pattern icons. These displays greatly enhance operation, making it easy for the user to instantly recall a pre-recorded sequence or effect.

The compact 19"-wide CCP-9000 Series control panels are designed for installation in the smallest spaces and are hence ideal for remote M/E working. They are available in 1-M/E or 2-M/E configurations with 12 cross point buttons and a built-in redundant power supply.

All panels can be operated either from the optional touchscreen menu panel or in combination with a VGA monitor and USB mouse.

Additionally, remote control panels such as AUX and M/E bus, as well as a keyer remote (Universal Control Panel), can all be integrated under the control system for remote operation, providing optimum operation in live production.

Expand Your Creativity

Creative M/E Functionality

MVS switchers are equipped with four or eight keyers on each M/E bus (depending on set-up configuration).*1 These provide sophisticated layering options inside the M/E bus. The majority of these keyers also include a resize function for effective graphics manipulation (size, position, and rotation).

Separate from the main fader, each keyer includes its own auto-transition controls, which allow users to insert or remove keys individually with independent wipes, DME wipes*2, and dissolves. For further flexibility, each keyer also offers chroma keying and color vector keying, eliminating restrictions of selectable key types.

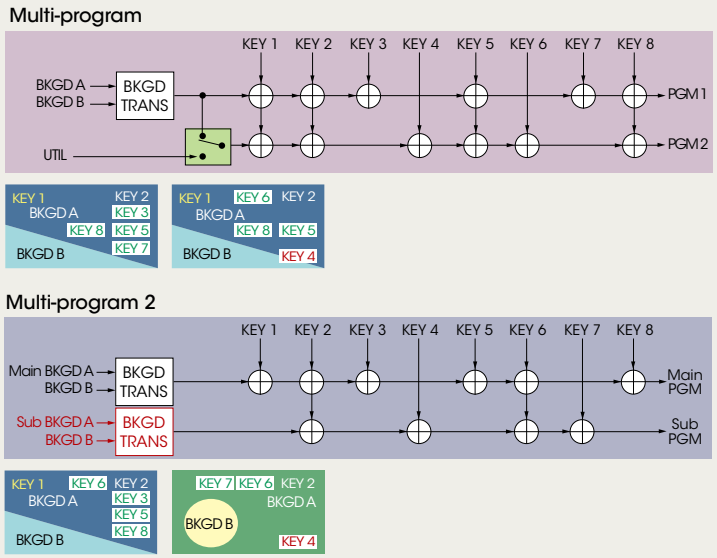
*1 Four keyers when the signal is 1080p.
*2 Not applicable for the MVS-3000.

Multi-program mode (Fig1, Fig2)

Each M/E bus in the MVS system can be configured to operate in multi-program mode. This facility provides four independent program outputs on each M/E. Each separate program O/P can then be configured with any combination of M/E keyers. In addition to the expanded program O/Ps, clean and key as well as M/E PVW signals are still produced.

An extended function of this, multi-program 2 mode (optional), 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 as shown below.

*1 BZS-8200X Multi-program 2 Software for the MVS-8000X; BZS-7200X; Multi-program 2 Software for MVS-7000X.
*2 This function causes a 1H delay.
*3 This figure shows an MVS-8000X Series example. There are up to four keys in 1080p mode (MVS-8000X, MVS-7000X).



(Fig 1) **Multi-program Block Diagram example***

* This figure shows an example for the MVS-8000X Series. There are up to four keys in 1080p mode (MVS-8000X, MVS-7000X).

(Fig 2) **"Home and Away" Operation**

AUX Transitions

In addition to the M/E mix, the MVS-6500 Series 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.

Color Correction Function*1

Two-channel, full-featured, primary and secondary color correction is an option available for the MVS-8000X and MVS-7000X. This powerful color corrector function can be applied to any input or internal M/E and P/P bank output signals.*2 In-vision studio monitors can therefore be optimized to provide true color reproduction when included in the camera image.

MVS-6500 Series and MVS-3000 switchers provide primary color correction for all inputs and AUX bus outputs.

*1 Options required: BZS-8420X Color Correction Software for the MVS-8000X; BZS-7420X Color Correction Software for the MVS-7000X.
*2 This function causes a 1H delay.

Stereoscopic 3D Signal Production Capability (MVS-8000X, MVS-7000X)

To support today's demand for stereoscopic 3D programming, MVS-8000X and MVS-7000X processors are able to operate in 3D mode.

Left- and right-eye signals for 3D video can be combined either into a single 3G link or kept as separate 1.5G (dual-link) signals. In dual-link operation, once the operation mode is set, automatic link settings can be applied to link the left and right sources together, thus greatly simplifying set-up. The operator therefore treats the two signals as one. By incorporating the optional DME unit, 2D graphics objects can be manipulated in 3D space, providing great on-screen effects.

Resizer Function

A powerful resizer function is provided that gives simple 2.5D DME effects (Fig1) for every keyer in the MVS-8000X and MVS-7000X, and half the keyers in the MVS-6500 Series and MVS-3000. 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 the parameters can be memorized as part of a switcher snapshot, keyframe, or macro effect.
All these effects can be created without the use of an optional DME, bringing great advantages for both simple operation and minimized system cost.

(Fig 1)

Enhanced Frame Memory System

All MVS Series switchers provide an internal high-capacity frame store with the ability to handle both individual images (stills) and animation sequences (clips).

The frame memory feature is supplied as standard in the MVS-6500 Series and MVS-3000 units, and is optionally available for the MVS-8000X and MVS-7000X.* The chart below highlights the capacity of the frame memory system for different operating formats.

Each frame memory card supports eight-channel playback from on-board RAM storage, and images can be imported via Ethernet or USB connections. Audio data is also supported.

Individual frame memory images or animation sequences can be instantly viewed and recalled via touch-screen menu operation.

* The MKS-8440X.

Total Frame Storage Capacity

The following chart details the approximate number of combined still images and frame memory clips that can be stored. The numbers below are achieved when none of the clips stored in memory include audio data. Numbers decrease when clips include audio data.

Model		MVS-8000X MVS-7000X	MVS-6500 Series (MVS-6530/MVS-6520)	MVS-3000
Formats	1080i	2000	1000	1000
	1080p	2000	NA	NA
	720p	4600	2300	2300
	480i	11200 (5600)	5600	5600
	576i	9600 (4800)	4800	4800

Clip Transition Effects

All MVS family switchers provide clip transition effects that enable transition, together with audio, using a frame memory sequence. During a clip transition, a computer-generated image, such as a logo, moves across the picture from one side to the other, while the transition is performed behind the image. This effect is useful for sports broadcasting. Although highly sophisticated, the effect can be performed with simple settings. Various types of transition such as Mix, Wipe, DME Wipe, and Preset Color Mix can be applied in a background transition according to the motion of the clip. A transition can be operated both backwards and forwards with the fader lever.

Programmable Macros

While having a dedicated button for each function is convenient, all MVS switchers also have easy-to-program macros.

Using the Flexi-Pad or 10-key PAD module, you can record operation sequences, then store and assign them to any desired button. 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 the Flexi-Pad or 10-key PAD module, or by trigger on a timeline to execute automatically in a sequence. Macros can be recalled remotely and can replace other panel buttons as a macro-only, by pressing the pre- and post-macro buttons simultaneously.

3D Digital Multi Effect – DME

Sony's powerful DME options can add creative variety and sophistication to any broadcast. Using an internal video source, a DME manipulates the image to create 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. 3D DME effects differ from keyer resizers by being able to manipulate images in the Z plane.

For MVS-8000X switchers – MVE-8000A

The MVE-8000A DME processor can be integrated with MVS-8000X and MVS-7000X switcher processors via a dedicated video interface that avoids sacrificing switcher input and output capability.

Up to eight channels of integrated DME are utilized when two DME processors are connected. Each channel can be assigned to any key or transition in the MVS switcher. Impressive effects such as Digital SPARKLE Effects, 3D Linear Transformation, Video Modify, Freeze, Light/Trail, Input/Output Effect, Digital SKETCH, Metal, and Glow can be produced.

For the MVS-7000X Switcher – Built-in DME Processor MKS-7470X/7471X

The MVS-7000X processor supports optional DME boards. No external device connection is required in this highly cost- effective solution. 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.

For MVS-6500 Series Switchers – Built-in DME Processor MKS-6570

The MVS-6500 processor offers the option of two channels of internal digital multi-effects (DME) with installation of the MKS-6570 DME board. This switcher supports brilliant non-linear effects as well as frequently used DME patterns. For example, the following effects can be performed: Digital SPARKLE Effects*, 3D Linear Transformation, Video Modify, Freeze, Light/Trail, Input/Output Effect, Digital SKETCH, Metal, and Glow. These capabilities ensure the highly affordable MVS-6500 Series is user friendly.

* These non-linear effects are supported on a single channel.

For MVS-8000X, MVS-7000X Series Switchers – MPE-200 with MPES-FX01

MVS-8000X and MVS-7000X switchers support Sony's Programmable Effector (combination of MPE-200 hardware and MPES-FX01 software), helping to create advanced and striking visual effects in many different applications. This delivers real-time rendering of 3D computer graphic (CG) images with up to four video inputs. It also improves production workflow, saving time and cost, particularly when producers want to modify visual effects in a studio control room or OB vehicle using tools such as Autodesk Maya and 3ds Max. With these capabilities, the innovative Programmable Effector delivers the flexibility, operability, and performance required for a broad range of live production applications.


AUTO TRANS
CUT
KEY 1 TRANS
KEY 2 TRANS
KEY 3 TRANS
KEY 4 TRANS
DSK1 TRANS
DSK2 TRANS
DSK3 TRANS
DSK4 TRANS
CG1
CG2
FM1
FM3
VTR1
FM5
FM7

Networking Functions

MVS-8000X and MVS-7000X switchers can be operated with two Ethernet-based networks: Control LAN and Data LAN.

- Control LAN
  Allows efficient resource sharing among switchers and their CCP Series control panels
- Data LAN
  Provides a connection across all switchers to all key components and Sony's peripherals

The MVS-6500 Series and MVS-3000 switchers can be operated with a single Ethernet-based network. This integrated LAN enables easier connection to devices.

System Management Software BZPS-8000, BZPS-8000L

Sony's System Management Software enables integrated management of all Sony's live production products configured around and networked to MVS-8000X and MVS-7000X switchers. This enables centralized control from a single user interface for all switchers, PFV-SP Series signal processing units, and other devices.

This software allows remote setup, maintenance, and operation of each device connected to the network, as well as efficient file management of setup, effect, and image data. In addition, remote control of the internal switcher frame memory is supported, allowing a second user to view and manipulate stored images.

Powerful Device Control

External DDRs, VTRs, and P-bus devices can all be controlled directly from the control panels of MVS-8000X and MVS-7000X switchers using MKS-8700 or MKS-2700 Device Control Units. The MVS-6500 Series and MVS-3000 switchers have integrated device control and so do not require the use of an additional unit, simplifying system installation. Devices can be controlled on the same timeline as switcher events or as part of macro events. When integrating a Sony disk 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.

The MKS-8036A Device Control Module provides device controls such as a jog/shuttle dial, control buttons, and time-code displays. This gives operators quick, intuitive, and familiar control of connected VTRs and disk recorders. Playback control of internal frame memory clips is supported with this module.

Plug-in Editing Control Software

Optional plug-in BZS-8050 Control Software and MKS-8050 and MKS-2050 Editing Keyboards add powerful linear editing capabilities to MVS-8000X, MVS-7000X and MVS-6500 Series switchers. BZS-8050 Editing Control Software offers a similar level of functionality to the popular BVE-2000 Editor, along with some key functions available on the BVE-9100 Editor.

Intelligent Tally Functions

All MVS 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.

Choose Your Definition

Switcher processors

For MVS X-Series

Multi-format		Multi-format	
2 to 5 M/E	**MVS-8000X** 	1 to 5 M/E	**MVS-7000X** 

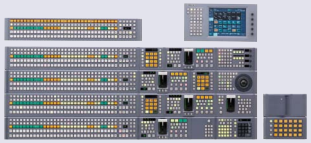
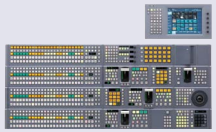
For MVS-6500 Series

Multi-format	
3 M/E	**MVS-6530** 
2 M/E	**MVS-6520** 

For MVS-3000

Multi-format	
2 M/E	**MVS-3000** 

Control panels

	CCP-8000 Customizable	CCP-6000 Practical	CCP-9000 Compact
3.5 or 4 M/E			
2.5 or 3 M/E			
1.5 or 2 M/E			
1 M/E			

ICP-6500	
3 M/E	
2 M/E	

ICP-3000	
2 M/E	

Switcher Processors

Multi-format Switcher Processor
MVS-8000X

20 Input Board	MKS-8110X
Output Processor Board Set	MKS-8160X
DME Interface Board Set	MKS-8170X
Cross Point Board Set	MKS-8180X
Mix/Effect Board	MKS-8210X
Frame Memory Board Set	MKS-8440X
Format Converter Board	MKS-8450X
Power Supply Unit	HK-PSU05
Multi-program 2 Software	BZS-8200X
Color Corrector Software	BZS-8420X
Upgrade Software for 3D or 1080P	BZS-8560X

Standard configuration:
The MVS-8000X system is supplied with one 20 primary inputs, 24 assignable outputs, two mix/effect board sets, and three power supply units.

Multi-format Switcher Processor
MVS-7000X

20 Input Board	MKS-8110X
Output Board Set	MKS-8160X
Frame Memory Board	MKS-8440X
Format Converter Board	MKS-8450X
DME Output Connector Board	MKS-7171X
Mix/Effect Board	MKS-7210X
DME Board Set	MKS-7470X
Additional DME Board	MKS-7471X
Power Supply Unit	HK-PSU05
Multi-program 2 Software	BZS-7200X
Color Corrector Software	BZS-7420X
Switcher Upgrade Software (Upgrade Multi Format to 1080p + 3D)	BZS-7560X
DME Upgrade Software (Upgrade Multi Format to 1080p + 3D)	BZS-7561X
Switcher Upgrade Software (Upgrade SD to Multi Format for Frame)	BZS-7500X
Switcher Upgrade Software (Upgrade SD to Multi Format for 1st Mix Board)	BZS-7510X
Switcher Upgrade Software (Upgrade SD to Multi Format for 2nd Mix Board)	BZS-7520X
Switcher Upgrade Software (Upgrade SD to Multi Format for 3rd Mix Board)	BZS-7530X
DME Upgrade Software (Upgrade SD to Multi Format for 1st DME Board)	BZS-7540X
DME Upgrade Softwarev (Upgrade SD to Multi Format for 2nd DME Board)	BZS-7541X

Standard configuration:
The MVS-7000X system is supplied with one 20 primary inputs, 24 assignable outputs, and two power supply units.

Multi-format Switcher Processor
MVS-6530/MVS-6520

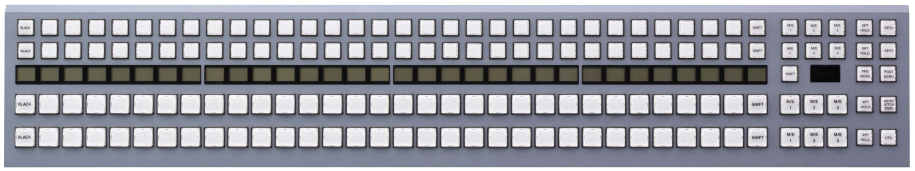
Format Converter Board	MKS-6550
DME Board	MKS-6570

Standard configuration:
The MVS-6530 system is supplied with 48 primary inputs, 32 assignable outputs, and two power supply units.
The MVS-6520 system is supplied with 32 primary inputs, 16 assignable outputs, and two power supply units.

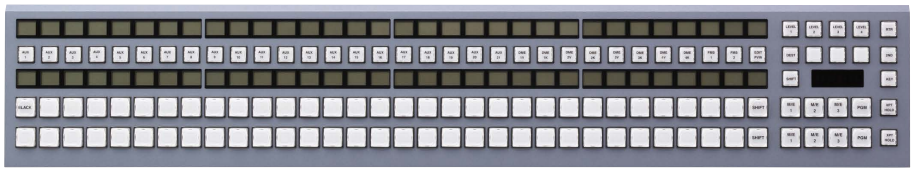
Multi-format Switcher Processor
MVS-3000

Format Converter Board	MKS-6550

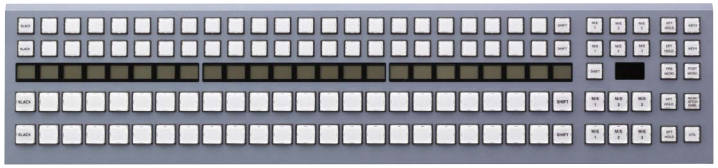
Standard configuration:
The MVS-3000 system is supplied with 32 primary inputs, 16 assignable outputs, and two power supply units.



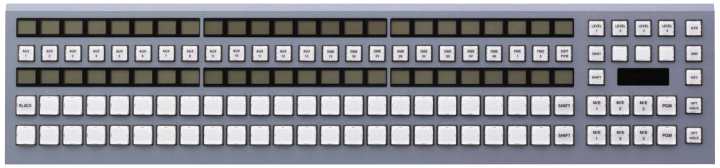
32 XPT Module MKS-8017A



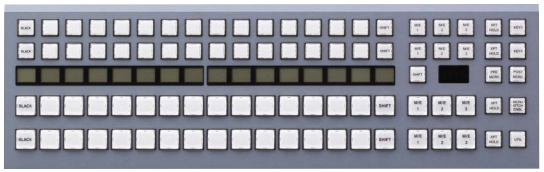
32 AUX BUS Module MKS-8013A



24 XPT Module MKS-8018A



24 AUX BUS Module MKS-8014A



16 XPT Module MKS-8019A

16 AUX BUS Module MKS-8015A

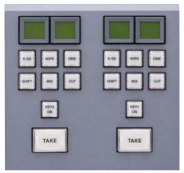
Standard Transition Module
MKS-8020A

Simple Transition Right Module
MKS-8021A

Simple Transition Compact R Module
MKS-8021ASC

Simple Transition Left Module
MKS-8022A

Simple Transition Compact L Module
MKS-8022ASC



Compact Key Transition Module
MKS-8023AB

Compact Transition Right Module
MKS-8027A

Compact Transition Left Module
MKS-8028A

10-Key PAD Module
MKS-8026A

Key Frame Module
MKS-8030A

Track Ball Module
MKS-8031ATB

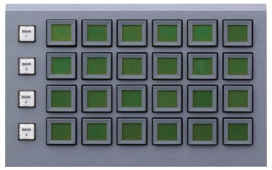
Joystick Module
MKS-8031AJS

Device Control Module
MKS-8036A

Memory Stick™ / USB Module
MKS-8025MS

Menu Panel
MKS-8011A

DSK Fader Module
MKS-8032A



Utility/Shot Box Module
MKS-8033A

Key Control Module
MKS-8035A

Flexi-Pad Module
MKS-8024A

DSK/FTB Module
MKS-8034ADK

FTB Module
MKS-8034AFB

Blank Panel (1/2)
MKS-8041

Blank Panel (1/3)
MKS-8040

Blank Panel (1/6)
MKS-8042

System Control Unit MKS-8010B

Backup Power Supply Unit HK-PSU02

Panel Cable SWC-5002/5005/5010

Extension Adaptor MKS-8075A

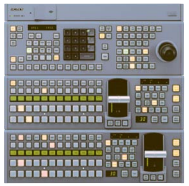
Memory Card USB Adaptor MKS-8076

Center Control Panel CCP-6000 Series

3 M/E Control Panel
CCP-6324

2 M/E Control Panel
CCP-6224

Center Control Panel CCP-9000 Series



2 M/E Control Panel
MKS-9012A

1 M/E Control Panel
MKS-9011A

Center Control Panel ICP-6500 Series

3 M/E Control Panel
ICP-6530

2 M/E Control Panel
ICP-6520

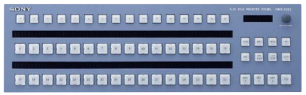
Menu Panel
ICP-6511

Center Control Panel ICP-3000

2 M/E Control Panel
ICP-3000

Remote Panel

AUX BUS Remote Panel*
MKS-8080



AUX BUS Remote Panel*
MKS-8082

Universal Control Panel*
UCP-8060

* Rack-mount brackets for these panels are included.

DME Processor

Multi-Format DME Processor
MVE-8000A

MVS Interface Board MKE-8020A
Input/Output Board (for SDI) MKE-8021A
Effects Board (2CH) MKE-8040A
Power Supply Unit HK-PSU-02
DME Upgrade Software BZDM-8560
(1080P/59.94,50, Dual-link, 3D)

Device Control Unit

Device Control Unit
MKS-8700

Tally/GPI Output Board MKS-8701
Serial Interface Board MKS-8702

Multi Image Processor

Multi Image Processor
MPE-200

Stereo Image Processor MPES-3D01
2D/3D Converter MPES-2D3D1
Programmable Effector MPES-FX01
Virtual Camera Solution MPES-VC01
3D Quality Control MPES-3DQC

Plug-in Editor

Editing Control Software
BZS-8050

Editing Keyboard
MKS-8050

Editing Keyboard
MKS-2050

Device Control Unit
MKS-2700

Backup Power Supply Unit HK-PSU-01

System Management Software

System Management Software BZPS-8000
System Management Software (Standalone type) BZPS-8000L
Switcher Setup Software BZPS-8001
PFV-SP Setup Software BZPS-8002

Specifications

General			
Power requirement			AC 100 V to 240 V, ±10% 50/60 Hz
Power consumption	MVS-8000X		15 A to 6.5 A
	MVS-7000X		15 A to 6.5 A
	MVS-6530		4 A to 1.7 A
	MVS-6520		4 A to 1.7 A
	MVS-3000		4 A to 1.7 A
	CCP-8000 Series		2.5 A to 1.1 A
	ICP-6530		1.1 A to 0.65 A
	ICP-6520		0.95 A to 0.6 A
	ICP-3000		0.95 A to 0.6 A
	CCP-9000 Series		1.1 A to 0.5 A
	MVE-8000A		2.5 A to 1.0 A
	MKS-8700		1.4 A to 0.8 A
	MKS-2700		0.7 A to 0.5 A
Operating temperature			5°C to 40°C (41°F to 104°F)
Storage temperature			-20°C to +60 °C (-4°F to +140°F)
Operating humidity			10% to 90% (Non-condensing)
Dimensions (W x H x D)	MVS-8000X (W x H x D)		440 x 443 x 497 mm (17 3/8 x 17 1/2 x 19 5/8 inches)
	MVS-7000X (W x H x D)		440 x 355 x 497 mm (17 3/8 x 14 x 19 5/8 inches)
	MVS-6530 (W x H x D)		482 x 176 x 486 mm (19 x 7 x 19 1/4 inches)
	MVS-6520 (W x H x D)		482 x 176 x 486 mm (19 x 7 x 19 1/4 inches)
	MVS-3000 (W x H x D)		482 x 176 x 486 mm (19 x 7 x 19 1/4 inches)
	CCP-8000 Series	Main Panel	4 M/E, 32-crosspoint buttons: 1443 (with mount bracket) x 98.5 x 528 mm (56 7/8 x 4 x 20 7/8 inches)
			3 M/E, 24-crosspoint buttons: 1291 (with mount bracket) x 98.5 x 528 mm (50 7/8 x 4 x 20 7/8 inches)
			2 M/E, 16-crosspoint buttons: 1139 (with mount bracket) x 98.5 x 396 mm (44 7/8 x 4 x 15 5/8 inches)
		Auxiliary Bus Panel	32-crosspoint buttons: 782 (with mount bracket) x 132 x 80 mm (30 7/8 x 5 1/4 x 3 1/4 inches)
			24-crosspoint buttons: 630 (with mount bracket) x 132 x 80 mm (24 7/8 x 5 1/4 x 3 3/4 inches)
			16-crosspoint buttons: 478 (with mount bracket) x 132 x 80 mm (18 7/8 x 5 1/4 x 3 1/4 inches)
		Menu Panel	424 x 220 x 46 mm (16 3/4 x 8 3/4 x 1 13/16 inches)
		System Control Unit	482 x 43.6 x 520 mm (19 x 1 3/4 x 20 1/2 inches)
	CCP-6324	3 M/E Control Panel	1071 x 92 x 396 mm (42 1/4 x 3 5/8 15 5/8 inches)
	CCP-6224	2 M/E Control Panel	1071 x 87 x 264 mm (42 1/4 x 3 1/2 10 1/2 inches)
	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)
	CCP-9000 Series	2 M/E Control Panel	440 x 186.6 x 442 mm (17 3/8 x 7 3/8 x 17 1/2 inches)
		1 M/E Control Panel	440 x 175 x 385.3 mm (17 3/8 x 7 x 15 1/4 inches)
		Menu Panel	424 x 220 x 46 mm (16 3/4 x 8 3/4 x 1 13/16 inches)
	MKS-8700		482 x 132 x 520 mm (19 x 5 1/4 x 20 1/2 inches)
	MKS-2700		440 x 43.6 x 520 mm (17 3/8 x 1 3/4 x 20 1/2 inches)
	MVE-8000A		440 x 87.5 x 520 mm (17 3/8 x 3 1/2 x 20 1/2 inches)
	Memory Stick/USB Adaptor		263 (with mount bracket) x 132 x 78.5 mm (10 3/8 x 5 1/4 x 3 1/8 inches)
	Extension Adaptor		263 (with mount bracket) x 132 x 78.5 mm (10 3/8 x 5 1/4 x 3 1/8 inches)

General			
Mass	MVS-8000X		58 kg (127 lb 14 oz) (when equipped with all installable option boards and option power supply unit)
	MVS-7000X		49 kg (108 lb 0.24 oz) (fully loaded)
	MVS-6530		21 kg (46 lb 4.8 oz) (fully loaded)
	MVS-6520		20 kg (44 lb 1.5 oz) (fully loaded)
	MVS-3000		19 kg (41 lb 14 oz) (fully loaded)
	CCP-8000 Series	Main Panel	4 M/E, 32-crosspoint buttons: 30 kg (66 lb 2.2 oz)
		Auxiliary Bus Panel	32-crosspoint buttons: 3.7 kg (8 lb 2.5 oz)
		Menu Panel	2.2 kg (4 lb 14 oz)
		System Control Unit	11.5 kg (25 lb 5.7 oz)
	CCP-6324		16 kg (35 lb 4 oz)
	CCP-6224		11 kg (24 lb 4 oz)
	ICP-6530		20 kg (44 lb 1.5 oz)
	ICP-6520		14 kg (30 lb 14 oz)
	ICP-3000		14 kg (30 lb 14 oz)
	CCP-9000 Series	Main Panel	2 M/E, 12-crosspoint buttons: 12.5 kg (27 lb 8.9 oz)
			1 M/E, 12-crosspoint buttons: 11.5 kg (25 lb 5.7 oz)
		Menu Panel	2.2 kg (4 lb 14 oz)
	MKS-8700		22 kg (48 lb 8 oz) (fully loaded)
	MKS-2700		10 kg (22 lb 0.74 oz)
	MVE-8000A		16 kg (35 lb 4.4 oz) (fully loaded)
	Memory Card/USB Adaptor		0.6 kg (1 lb 5.2 oz) (with module)
	Extension Adaptor		0.6 kg (1 lb 5.2 oz) (with module)

Video inputs/outputs	
MVS-8000X	
Inputs (Max.) (BNC)	20 for Premium inputs, 144 for Primary inputs, 20 for DME, 16 for Format converter
Outputs (Max.) (BNC)	48 for Outputs, 20 for M/E outputs, 4 for Duplicate outputs for OUT23/24/47/48, 20 for DME, 4 for Format Converter, 4 for Multi Viewer (2 x 2)
Signal format	SMPTE424M/SMPTE292M/SMPTE259M-C
MVS-7000X	
Inputs (Max.) (BNC)	80 for Primary inputs, 20 for DME
Outputs (Max.) (BNC)	48 for Outputs, 4 for Duplicate outputs for OUT23/24/47/48, 20 for DME, 4 for Format Converter, 4 for Multi Viewer (2CH x 2)
Signal format	SMPTE424M/SMPTE292M/SMPTE259M-C
MVS-6530	
Primary inputs	48, BNC (x1 each) SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Assignable outputs	32, BNC (x1 each) SMPTE292M (HDTV), SMPTE259M-C (SDTV)
MVS-6520	
Primary inputs	32, BNC (x1 each) SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Assignable outputs	16, BNC (x1 each) SMPTE292M (HDTV), SMPTE259M-C (SDTV)
MVS-3000	
Primary inputs	32, BNC (x1 each) SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Assignable outputs	16, BNC (x1 each) SMPTE292M (HDTV), SMPTE259M-C (SDTV)

Supported Formats		
	HD	SD
MVS-8000X	1080/59.94p*1, 1080/50p*1, 1080/59.94i, 1080/50i, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.976PsF, 720/59.94p, 720/50p	480/59.94i, 576/50i
MVS-7000X	1080/59.94p*2, 1080/50p*2, 1080/59.94i*3, 1080/50i*3, 1080/29.97PsF, 1080/25PsF*3, 1080/24PsF*3, 1080/23.976PsF*3	480/59.94i, 576/50i
MVS-6530/MVS-6520	1080/59.94i, 1080/50i, 1080/23.976PsF, 1080/24PsF, 720/59.94p, 720/50p	480/59.94i, 576/50i
MVS-3000	1080/59.94i, 1080/50i, 1080/23.976PsF, 1080/24PsF, 720/59.94p, 720/50p	480/59.94i, 576/50i

*1 The MVS-8000X requires optional BZS-8560X Switcher Upgrade Software.
*2 The MVS-7000X requires optional BZS-7560X Switcher Upgrade Software.
*3 The MVS-7000X requires optional BZS-7560X/7510X/7520X/7530X Switcher Upgrade Software.

Reference		
MVS-8000X/MVS-7000X/MVS-6530/MVS-6520/MVS-3000		
Reference input		BNC (x2), 75 Ω with loop-through output HD tri-level sync or Analog black burst
MVE-8000A		
MKE-8020A	Video inputs/Video outputs MVS interface	MDR 68-pin (x2) (inputs/outputs: 2 CH x 2), LVDS
MKE-8021A	Video inputs Video/Key	BNC (x8), SMPTE292M (HDTV), SMPTE259M-C (SDTV)
	Video outputs Video/Key	BNC (x8), SMPTE292M (HDTV), SMPTE259M-C (SDTV)
	Monitor outputs	BNC (x4), SMPTE292M (HDTV), SMPTE259M-C (SDTV)

Control	
MVS-8000X/MVS-7000X	
Control LAN	RJ-45 (x1), 100BASE-TX
Data LAN	RJ-45 (x1), 100BASE-TX
Remote 1 to 4	D-sub 9-pin (x1), RS-422A
GPI	D-sub 25-pin, TTL level inputs (x8), relay contact outputs (x4), open collector outputs (x4)
FM Data	RJ-45 (x1), 100BASE-TX
FM Device	USB-type A (x2), USB 2.0
MVS-6530/MVS-6520/MVS-3000	
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

Control	
CCP-8000/CCP-6000 Series (System Control Unit: MKS-8010B)	
Control LAN	RJ-45 (x1), 100BASE-TX
Data LAN	RJ-45 (x1), 100BASE-TX
Peripheral LAN	RJ-45 (x1), 100BASE-TX
GPI	D-sub 25-pin, TTL level inputs (x8), relay contact outputs (x4), open collector outputs (x4)
REMOTE	BNC (x1), S-BUS
LTC input	BNC (x1)
Device	USB-type A (x1)
Main Panel	D-sub 50-pin (x1)
Menu Panel	D-sub 50-pin (x1)
Ext Panel 1 to 2	D-sub 50-pin (x1)
Ext Display, Menu Display	High-Density D-sub 15-pin, Analog RGB
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)
CCP-9000 Series	
Control LAN	RJ-45 (x1), 100BASE-TX
Data LAN	RJ-45 (x1), 100BASE-TX
Peripheral LAN	RJ-45 (x1), 100BASE-TX
GPI	D-sub 25-pin, TTL level inputs (x8), relay contact outputs (x4), open collector outputs (x4)
REMOTE	BNC (x1), S-BUS
Device	USB-type A (x1)
Main Panel	D-sub 50-pin (x1)
Menu Panel	D-sub 50-pin (x1)
Ext Panel	D-sub 50-pin (x1)
MVE-8000A (DME Processor)	
Control LAN	RJ-45 (x1), 100BASE-TX
Data LAN	RJ-45 (x1), 100BASE-TX
REMOTE	D-sub 9-pin (x4), RS-422
GPI	D-sub 25-pin, TTL level inputs (x8), relay contact outputs (x4), open collector outputs (x4)
MKS-8700 (Device Control Unit)	
Peripheral LAN	RJ-45 (x1), 100BASE-TX
Serial tally 1 to 2	D-sub 9-pin (x1), RS-422A
TALLY/GPI inputs	D-sub 37-pin (x3), TTL level inputs (x34 each)
TALLY/GPI outputs*	D-sub 37-pin (x1), relay contact outputs 18ch, up to 270 ch in step of 5 ch in a frame
REMOTE*	D-sub 9-pin (x1), RS-422A, various protocols, up to 30 ports in steps of 6 ports in a frame
MKS-2700 (Device Control Unit)	
Peripheral LAN	RJ-45 (x1), 100BASE-TX
TALLY/GPI inputs	D-sub 37-pin (x1), TTL level inputs (x34)
TALLY/GPI outputs	D-sub 37-pin (x2), TTL level inputs (x18 each)
REMOTE	D-sub 9-pin (x6), RS-422A, various protocols

* Either TALLY/GPI or REMOTE ports are installed. A mixed configuration of TALLY/GPI and REMOTE ports can be supported.

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