

SONY®



Production Switcher Systems

MVS-8000G Series

DVS-9000 Series



The Perfect Answer to Creative Broadcasting Demands



The increased complexity of today's broadcasting calls for much quicker and more reliable operability, and a higher level of system flexibility that can meet virtually every customer's specific production needs. Demands for more sophisticated content, together with high-definition and DTV agendas, have been presenting even more challenges to live production operations. Responding to this continuing transition, Sony offers the MVS-8000G and DVS-9000 Series of Digital Switchers, providing unique solutions to such emerging requirements in both live and post-production environments. The MVS-8000G Series inherits the same architecture as the MVS-8000A Series, which

has been widely accepted by many technical directors, yet it also provides powerful new features such as a Resizer function (internal 2D DME) and built-in format converter. The new MVS-8000G Series starts from a standard-definition configuration as standard, and can be upgraded to multi-format configurations according to growing user requirements. The DVS-9000 Series squarely addresses top-quality yet cost-effective SD programming, while the MVS-8000G Series offers top-quality multi-format operation across a variety of SD and HD formats. The design philosophy behind both of these switcher systems was to build an architecture based on extensive feedback from prominent technical directors and experienced engineers. The result is customizable control panels with highly intelligible indicators and buttons, advanced networking with system peripherals, integrated control and maintenance, powerful M/E functions and

effects, complete system scalability, and special considerations for use in mixed PC and AV environments. Due to their common architecture, MVS-8000G and DVS-9000 Series Switchers also share the same optional accessories, including control panels, remote panels, and peripherals. Their system control structure and setup/effect data are also compatible, making it easy to establish a mixed MVS-8000G and DVS-9000 Series environment providing simultaneous SD and HD production. What's more, MVS-8000G and DVS-9000 Series Switchers can be further enhanced by the addition of two extremely powerful optional software packages: plug-in editor and system manager software. With the MVS-8000G and DVS-9000 Series, broadcasters and post-production facilities around the world can secure the optimal combination of high quality and return on investment.



Flexibility for Today and Tomorrow

MVS-8000G Series Multi-Format Switchers

MVS-8000G Series Production Switchers are so flexible that users can choose from either a standard-definition (SD) or multi-format configuration. If they initially select the SD configuration, the system can be easily upgraded to the SD/HD multi-format configuration with the simple addition of optional BZS-8500M/8510M/8520M/8530M Software. MVS-8000G Series Switchers can operate in any of the following formats:

High-definition	1080i/60, 59.94, 50
	1080P/30, 29.97, 25, 24, 23.976
	720P/59.94, 50
Standard-definition	480i/59.94
	576i/50

DVS-9000 Series Standard Definition Switchers

DVS-9000 Series Digital Switchers are designed exclusively for standard definition and offer 525/625 switchable operation. The DVS-9000 Series builds on the advanced technology and cutting-edge architecture of the MVS-8000G Series, thus offering the same level of operational convenience and system flexibility. In addition, the system-control structure and setup/effect data are compatible with MVS-8000G Series Switchers, enabling the user to configure a mixed DVS/MVS environment.

Built-in Format Converter

One of the unique and most powerful features of MVS-8000G Series Switchers is that a format conversion capability can be incorporated simply by adding the MKS-8450G 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. By adding the MKS-8450G Format Converter Board, format conversion for eight inputs and two outputs becomes available. Adding another MKS-8450G Board makes these conversions possible for 16 inputs in total. Furthermore, when the MKS-8160G 24-Output Board Set* is installed, two more format-conversion outputs are provided.

With this feature, an external format converter is not required, allowing any type of signal to be seamlessly handled in the switcher system, as well as minimizing the cost of the entire system.

* The MVS-8000GSF cannot accept the optional MKS-8160G Board.

Scalable Processor Configurations

The processors of both the MVS-8000G and DVS-9000 Series can be configured to suit the exact needs of each particular user in terms of operation, resolution, frame rate, number of I/Os, number of M/E banks, and more. Another great benefit is that these switchers can be upgraded as user needs grow, simply by installing the appropriate option board.

The MVS and DVS Series both offer the choice of a full-size or compact processor, depending on user needs and scale of operation. Full-size MVS-8000G and DVS-9000 Switcher Processors can be configured for 2-, 2.5-, 3-, 3.5-, or 4-M/E operation. These processors also support up to 80 inputs, 48 assignable outputs, and 8 monitor outputs – enough for the largest of program requirements.

Compact MVS-8000GSF and DVS-9000SF Switcher Processors can be configured for 1-, 1.5-, 2-, or 2.5- M/E operation. Both units are available with up to 34 inputs and 24 outputs.

On both the full-size and compact processors, all outputs can be assigned for program, preview, key preview, clean, or auxiliary. Optional Simple P/P Software BZS-8250 adds simple mix/effect functionality including two keys, background, and key transitions. This software upgrades 1-, 2-, and 3-M/E switcher processors to 1.5-, 2.5-, and 3.5-M/E, respectively.

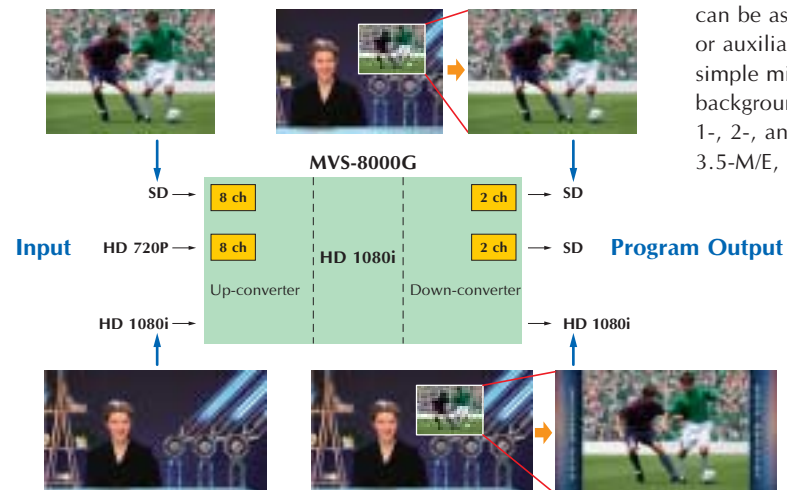






Fig 1 Example of format conversion






Choose your definition.

Switcher processors

	Multi-format	SDTV
2 to 4 M/E	<p>MVS-8000G 8U 80 inputs and 48 outputs 8 monitor outputs Supports up to 8 (external) DME channels Resizer (simple 2D DME) per every keyer Up to 16 channels Input Format Converter Up to 4 channels Output Format Converter</p> 	<p>DVS-9000 8U 80 inputs and 48 outputs 8 monitor outputs 4 DME channels</p> 
1 to 2.5 M/E	<p>MVS-8000GSF 4U 34 inputs and 24 outputs Supports up to 4 (external) DME channels Resizer (simple 2D DME) per every keyer Up to 16 channels Input Format Converter Up to 2 channels Output Format Converter</p> 	<p>DVS-9000SF 4U 34 inputs and 24 outputs 4 DME channels</p> 

Any CCP-8000 and CCP-9000 control panel can control any processor

Control panels

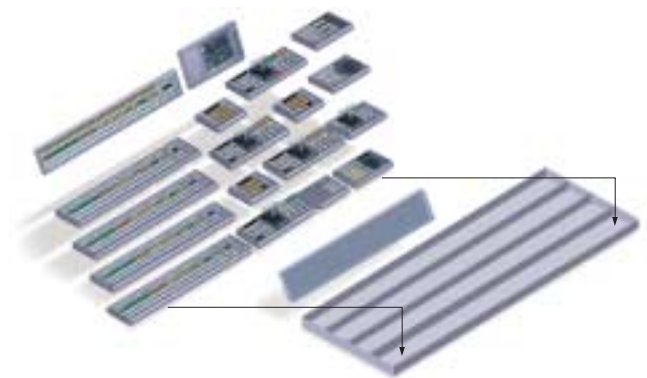
	CCP-8000 Customizable control panels	CCP-9000 Compact control panels	
3.5 or 4 ME			
2.5 or 3 ME			1.5 or 2 ME
1.5 or 2 ME			1 ME

Customizable Control Panel

The MVS-8000G Series and DVS-9000 Series share the same control panels, which have been designed with special care and attention. Two control panel lineups are available: the customizable CCP-8000 Series and the compact CCP-9000 Series.

The CCP-8000 Series incorporates a modular design in which each control area is provided as a separate module. Users can locate modules in the M/E base chassis according to their personal layout preferences. The M/E base chassis is offered in 16-, 24-, or 32-button styles, and M/E banks are available in 1.5-, 2-, 2.5-, 3-, 3.5-, or 4-M/E configurations. There are three choices of transition and key control modules, covering simple to complex video-layering requirements.

The CCP-9000 Series comprises compact control panels, available in 1-, 1.5-, or 2-M/E configurations with 12 crosspoint buttons and a built-in redundant power supply. These control panels are well suited for use in small-scale OB vehicles and edit suites, or as sub-M/E remote panels for the MVS/DVS Series.



Comprehensive Control System

Networking Functions

The MVS-8000G and DVS-9000 Series provide sophisticated network capabilities to allow an extremely efficient and innovative style of operation. Two Ethernet-based networks are provided: the Control LAN and the Data LAN. The Control LAN is a dedicated network that allows efficient resource sharing among MVS/DVS Series Switcher Processors and CCP Series Control Panels. Using this network, multiple control panels can simultaneously share a single switcher processor on an M/E basis (for efficient multi-tasking). Conversely, a single control panel can simultaneously control multiple switcher processors to deliver the same program in multiple formats. The second network, the Data LAN, provides a connection across the MVS/DVS Series to all key components and Sony peripherals. This network is used for remote administrative tasks such as status monitoring, software upgrades, and configuration, as well as maintenance and facility management tasks. Image file transfers are also available for sharing graphics and titling resources. This second network can extend across a LAN or WAN, and even reach out over the Internet via a gateway.

System Management Software

Sony System Management Software running on a PC enables integrated management of all Sony live-production products configured around and networked to MVS-8000G/DVS-9000 Series Switchers. This function enables centralized control of MVS/DVS Series Switchers, PFV-SP Series Signal Processing Units from a single user interface. This system 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 possible, allowing a second user to view and manipulate stored images. Two types of system management software are available: server/client BZPS-8000 Software and standalone BZPS-8000L Software. BZPS-8000 Software is suitable for

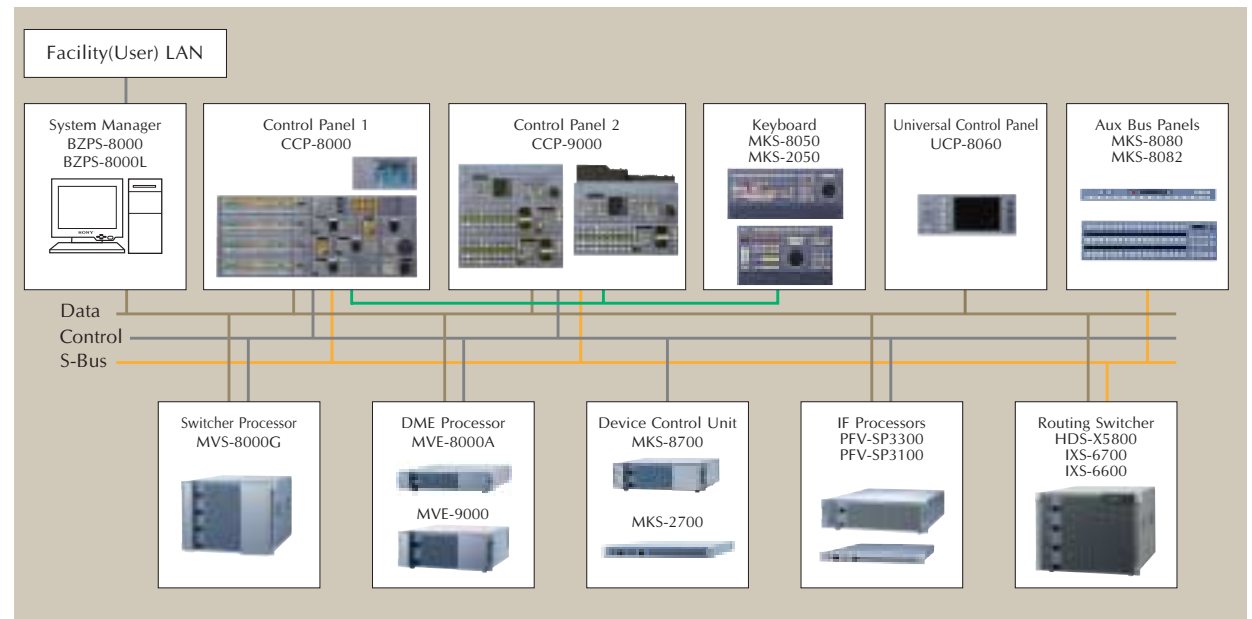
large-scale systems, and allows up to 10 client PCs to access the switchers via a server PC connected to the Data LAN. In this type of configuration, BZPS-8000 Software* is installed on every client PC and a single server PC. This system provides many features, such as centralized management of setup, effect, and image files on the server PC. The other available software, the BZPS-8000L, can be installed on just a single client PC, which can then be connected directly to the Data LAN, allowing for simple and cost-effective system integration.

* A single BZPS-8000 Software license allows for installation on one server PC and multiple client PCs (see actual licenses for details).

Powerful Device Control

External VTRs, DDRs, and P-bus devices can all be controlled directly from the MVS-8000G/DVS-9000 Series Control Panel using MKS-8700 or MKS-2700 Device Control Units. Each unit connects to the control panel and provides control of such external devices via RS-422A, P-bus, or GPI. The MKS-8700 can have up to 30 RS-422A control ports or up to 270 GPIs, while the MKS-2700 Comprehensive Control System has 6 RS-422A ports and 34 GPIs as standard. Moreover, device control is provided on the same timeline as switcher events. When integrating a VDCP-controlled disk recorder, clip management is provided, allowing different server clips to be recalled and played back as part of a switcher timeline. The new MKS-8036A Device Control Module provides device controls such as a jog/shuttle dial, control buttons, and timecode displays. This gives operators quick, intuitive and familiar control of connected VTRs, and disk recorders. Playback control of internal frame memory clips is also possible with this module.

Efficient Control System



Plug-in Editing Control Software

One of the distinct advantages of the MVS-8000G/DVS-9000 Series Switchers is the ability to integrate machine control functions. Optional plug-in BZS-8050 Control Software and MKS-8050 and MKS-2050 Editing Keyboards take this ability a stage further, and add powerful linear editing capabilities to MVS-8000G, DVS-9000, and MFS-2000 Series Switchers. BZS-8050 Editing Control Software offers a similar level of functionality to the popular BVE-2000 Editor, plus some key functions available on the BVE-9100 Editor. Furthermore, this software provides a variety of beneficial new features that include direct keys for source selection, and direct device control from the plug-in editor. Two types of editing keyboards are available – the MKS-8050 and MKS-2050 – which make the editing control software suitable for operations ranging from small-scale editing systems to large-scale post-production mastering. A Character Superimpose function including Timecode and Recorder/Player status is available. With the addition of these editing capabilities, Sony switchers are truly maximized for effectiveness in broadcast stations and post-production facilities.



Combining Sony Switchers with Sony Routing Systems

The integration of MVS-8000G and DVS-9000 Series Switchers with S-bus-controlled routers, such as IXS-6000 Series Routing Systems, brings a number of great benefits such as bidirectional operational control, source name exchange, and tally management. Crosspoints of the IXS-6000 Series can be selected via the AUX BUS module panel of the MVS-8000G or DVS-9000 Switcher. They can also be recalled as a router snapshot via the switcher control panel.

Intelligent Tally Functions

MVS-8000G/DVS-9000 Series 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 – and extra parallel tally ports can be obtained simply by adding tally boards to the MKS-8700 or by using the MKS-2700. Using the S-bus interface, MVS-8000G/DVS-9000 Series Switchers can provide tally outputs to router control panels via a simple coaxial cable connection.



Expand Your Creativity

Creative M/E Functionality

The MVS-8000G/DVS-9000 Series inherits many of the features of the well-proven DVS-7000 Series, but with significant enhancements. Each M/E on the MVS-8000G/DVS-9000 Series is equipped with four keyers, allowing sophisticated layering from a single M/E. Separate from the main fader, each keyer has its own auto-transition controls, which allow users to insert or remove keys on an individual basis with independent wipes, DME wipes, and dissolves. For further flexibility, each keyer in every M/E also offers chroma keying and color vector keying, eliminating restrictions of selectable key types. These fully featured M/Es allow total interoperability of effects on all M/Es.

Independent M/E Architecture

Each M/E of the MVS-8000G and DVS-9000 Series Switchers, including the PGM/PST bus, is equipped with powerful functionality. Snapshot settings, keyframe settings, and various setups such as crosspoint assignments, 4:3/16:9 modes, and bus toggle on/off can be independently designated per M/E. This architecture allows the user to efficiently assign multiple tasks to a single MVS-8000G/DVS-9000 Series Processor when required.

A Variety of Versatile Effects

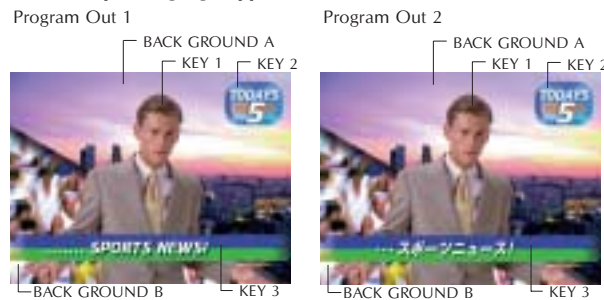
Market-acclaimed Finekey technology allows fine adjustment of key position and border widths on a subpixel level within the range of 8H on the MVS-8000G and DVS-9000 Series. Sony's unique Processed Key mode and DME-link function are also provided, with additional power and convenience. Up to four video signals composed in the background can be processed through the DME within a single keyer, allowing for even greater operational flexibility.

Multi-Program Mode

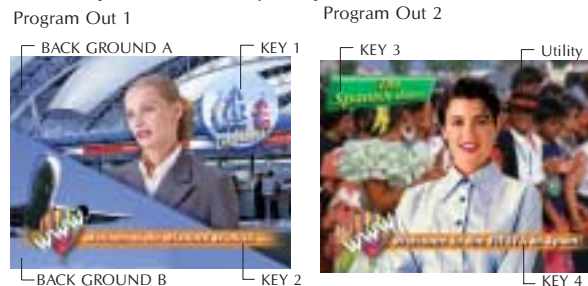
Multi-Program mode, available on each M/E of the MVS-8000G/DVS-9000, enables four independent PGM outputs. Each output can contain any combination of the four M/E keyers over either the main M/E PGM, or a utility bus background signal. This allows the user to perform versioning of the same program, without the need to purchase an external keyer. Multi-Program 2* mode, which is an extended function of Multi-Program mode, is also beneficial for expanding the use of the system mix effects banks. This function allows one M/E to be separated into two sections – a main M/E and a sub M/E – enabling the user to create two programs within a single M/E.

What's more, Multi-Program 2 mode also enables two independent PGM outputs at the same time, even when there are only enough resources to create one program. This is convenient especially when simultaneously

<For Multiple Language Applications>



<For Independent Secondary Composition>



broadcasting sports such as baseball and football for two different destinations (areas of home and away teams for example). With this mode, one operator can create two programs that are each tailored for these destinations on a single switcher. (Fig 1)

Keyers can be inserted into both the main and sub programs as shown below. (Fig 2)

* BZS-8200 Multi-Program 2 Software is required. This function is only available on MVS-8000G and MVS-8000GSF systems.

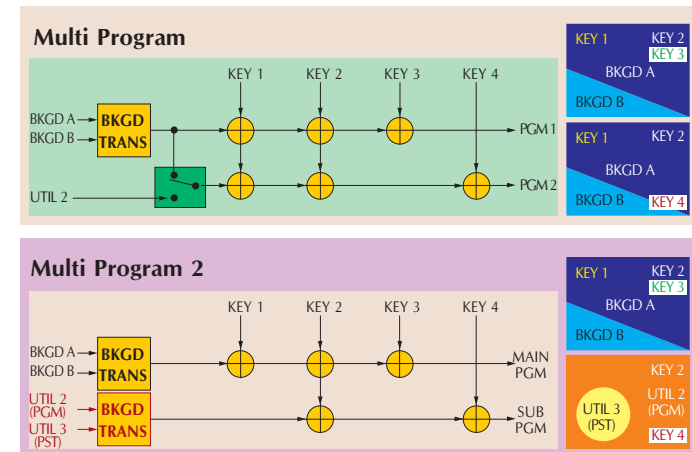


Fig 1 Multi-Program Block Diagram example



Fig 2 "Home and Away" Operation

Resizer Function

The MVS-8000G/8000GSF provides a useful Resizer function that gives simple 2D DME effects with adjustable parameters such as size, position, and aspect to every keyer. This can be activated for DME wipe transition, and keyframes. A variety of effects – such as drop shadow, mosaic, and blur – can be applied to resized images. All these effects can be created without the use of an external DME, bringing great advantages for both simple operations and minimized system cost.

Side Flags Function*

Side Flags is a function of the MVS-8000G/DVS-9000 Series Switchers that allows a 4:3 image to automatically form a 16:9 image by adding desired graphics to both sides of the 4:3 image. This is convenient when handling 4:3 and 16:9 material at the same time. When any 4:3 material is selected as a crosspoint, a 16:9 image can be created using dedicated hardware that does not compromise system functionality, in other words without the use of any keyer in each M/E. In addition, Crop mode is provided when 4:3 pictures are used in DME wipe operations. This mode allows the margins between 16:9 and 4:3 pictures to be cropped if desired. Furthermore, if this 4:3 image is used in the next background picture, it appears as a 16:9 picture accompanied with pre-assigned Side Flag graphics. In this case, the Side Flag portions appear like vertical wipe effects.

* This function is not supported in SD mode.

Enhanced Frame Memory System

The MVS-8000G/DVS-9000 Series of Switchers provide a high-capacity "frame memory system" that enables video frames to be captured and stored as still images. The system also allows a sequence of frames to be recorded as a video clip (called a "frame memory clip").

The "frame memory system" consists of either one or two optional MKS-8442G Frame Memory Boards. One board can store a vast number of frames (either as still images or frame memory clips) while installing two boards can double the frame storage capacity (see the chart below for details).

Up to eight still images and frame memory clips that have been stored can be used simultaneously as video or key. What's more, these still images and frame memory clips can be easily exchanged between the MVS-8000G/DVS-9000 Series of Switchers and external PCs or graphic workstations via Ethernet or removable media.

Total frame storage capacity (approximate):

The numbers below represent the approximate number of combined still images and frame memory clips that can be stored; however, the following conditions apply when storing still images with two MKS-8442G boards installed: the figures in parentheses show the maximum storage for still images (i.e. the maximum number of still images is half of the total storage capacity; however, additional frame memory clips can still be stored up to the full capacity).

Formats	When one MKS-8442G board is installed	When two MKS-8442G boards are installed
1080i	1000	2000 (1000)
720P	2000	4000 (2000)
480i	5000	10000 (5000)
576i	4000	8000 (4000)

Easy and Efficient Operation

MVS-8000G/DVS-9000 Series Switchers have a large color touch-screen menu for efficient and intuitive system control. Button indications have also been greatly enhanced over previous generation switchers. Crosspoint source-name displays, FlexiPad™, and Shot Box™ buttons all incorporate a backlit three-color LCD indicator to which preset pattern icons or text can be imported and displayed. These indicators help to keep the operator informed at all times of crosspoint and button assignments. Optional remote-control panels, such as AUX Bus Remote, Keyer Remote (Universal Control Panel), and M/E Remote panels, allow convenient operating environments for live use.

Programmable Macros

Having a dedicated button for each function on the MVS-8000G/DVS-9000 Series is handy, but MVS/DVS Series Switchers take operational convenience a step further. The MVS-8000G/DVS-9000 Series makes it easy to program macros.

Using the FlexiPad module, or the 10-key pad module, users can simply record operational sequences, then store and assign them to any desired button. Macros are extremely useful in live environments when time is critical and there is no tolerance for making operational mistakes. Once programmed, macros can be edited either directly from the control panel or by using the touch-screen menu display.

Sophisticated Digital Multi-Effects (DME)

For MVS-8000G Switcher

MVE-8000A

The MVE-8000A DME Processor is integrated with the MVS-8000G Series Switcher Processor via a dedicated video interface that avoids sacrificing the switcher's input and output capability. This integrated DME Processor supports the same multiple frame rates as the MVS Switcher, and all resolutions and frame rates are supported without board swapping. Up to eight* channels of integrated DME can be fitted when two DME Processors are connected for the MVS-8000G. Each channel is freely assignable to any key or transition in the MVS Switcher.

4:3/16:9 mode selection, global axis control, and multiple timeline capability are independently supported for each DME channel. In addition to providing the same variety of standard effects commonly used today, the functionality and operability of this DME have been especially refined for live production. This new level of close integration between switcher and DME results in creative preset patterns.

* Up to four channels for the MVS-8000GSF.

MVE-9000

The MVE-9000 Multi-Format DME Processor is another highly advanced DME Processor for the MVS-8000G Series Switcher. In addition to the feature sets provided by the MVE-8000A, it delivers stunning picture quality and a wide assortment of features for the creation of striking special effects in live events and post-production.

A rich variety of effects is provided, such as Depth Combine, Dim/Fade, Wipe Crop, Art Edge, Key Border, Spot Lighting, Texture Lighting, Flex Shadow, and Wind – as well as other effects available on the MVE-8000A.

For DVS-9000 Series Switcher

BKDS-9470

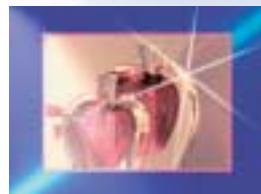
The DVS-9000 Series Switcher Processor offers four channels of high-quality DME by installing the BKDS-9470 DME Board Set. Each DME channel provides external video input for use as the background or border/trail source. The four SDI monitor outputs on the DME board allow monitoring of either the video with graphic, the video without graphic, or the key. This DME board can perform 2D, 3D, and nonlinear effects including Digital SKETCH, Digital SPARKLE, and up to four channels of Intersect Combine. Also, powerful lighting effects can be added to nonlinear and 3D-effect patterns, with easy setup of color and shape for the light source.

Texture Lighting Software

Optional texture lighting software is supported for both the MVE-9000 Multi-Format DME Processor and the DVS-9000 Series Switcher Processor with the optional BKDS-9470 DME Board Set installed.

This software adds a texture lighting function that enables the user to map a texture pattern onto a DME effect using the spotlight function. The Real Lighting function can add realistic lighting to several nonlinear effect patterns. Up to four light sources are available per DME channel. With the Test Sphere function, the position and brightness of light sources can be confirmed with ease.

It's the advent of a new generation in creative programming for broadcast stations and post-production facilities.



System Configuration

Center Control Panel CCP-8000 Series



32 XPT Module MKS-8017A



24 XPT Module MKS-8018A



16 XPT Module MKS-8019A



32 AUX BUS Module MKS-8013A



24 AUX BUS Module MKS-8014A



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

Center Control Panel CCP-9000 Series



1 M/E Control Panel
MKS-9011A



2 M/E Control Panel
MKS-9012A



DSK Fader Module
MKS-8032A



Flexipad Module
MKS-8024A



Blank Panel (1/2)
MKS-8041

Remote Panel



Utility/Shot Box Module
MKS-8033A



DSK/FTB Module
MKS-8034ADK



Blank Panel (1/3)
MKS-8040



Universal Control Panel *
UCP-8060



AUX BUS Remote Panel *
MKS-8080

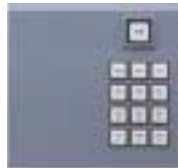


AUX BUS Remote Panel *
MKS-8082

* Rack-mount brackets for these panels are included.



Key Control Module
MKS-8035A



FTB Module
MKS-8034AFB



Blank Panel (1/6)
MKS-8042



System Control Unit MKS-8010A

Backup Power Supply Unit HK-PSU02

Panel Cable SWC-5002/5005/5010

Extension Adaptor MKS-8075A

Memory Card USB Adaptor MKS-8076

Switcher Processors

MULTI-FORMAT SWITCHER PROCESSOR



MVS-8000G



MVS-8000GSF

PRODUCTION SWITCHER PROCESSOR



DVS-9000



DVS-9000SF

17 Input Board	MKS-8110G
Additional 12 Input Board	MKS-8111G *1
12 Output Board	MKS-8162A *2
24 Output Board Set	MKS-8160G *1
8 Monitor Output Board	MKS-8161M *1
Mix/Effect Board	MKS-8210G
Frame Memory Board	MKS-8442G
Format Converter Board	MKS-8450G
DME Interface Board	MKS-8170G *1
Simple PP Software	BZS-8250
Multi Program 2 Software	BZS-8200
Color Corrector Software	BZS-8420 *3
Switcher Upgrade Software (Upgrade SD to Multi-format)	BZS-8500M *1
Switcher Upgrade Software (Upgrade SD to Multi-format)	BZS-8510M *2
Mix/Effect Upgrade Software (Upgrade SD to Multi-format)	BZS-8520M
Mix/Effect Upgrade Software (Upgrade SD to Multi-format)	BZS-8530M *1
Power Supply Unit	HK-PSU04

*1 For MVS-8000G only

*2 For MVS-8000GSF only

*3 Optional MKS-8442G board is required.

Standard configuration:

The MVS-8000G is supplied with one 17 input board, one 24 output board, two mix/effect board sets, and two power supply units. The MVS-8000GSF is supplied with one 17 input board, one 12 output board, one mix/effect board set, and one power supply unit.

24 Output Board Set	BKDS-9160 *4
8 Monitor Output Board	BKDS-9161 *4
12 Output Board	BKDS-9162 *5
Mix/Effect Board	BKDS-9210
DME Board Set	BKDS-9470
17 Input Board	MKS-8110 SD
Additional 12-Input Board	MKS-8111 SD *4
Simple P/P Software	BZS-9250
Color Corrector Software	BZS-9420
Texture Lighting Software	BZS-9471
Power Supply Unit	HK-PSU04

*4 For DVS-9000 only

*5 For DVS-9000SF only

Standard configuration:

The DVS-9000 is supplied with one 17 input board, one 24 output board, two mix/effect board sets, one frame memory board set, and two power supply units. The DVS-9000SF is supplied with one 17 input board, one 12 output board, one mix/effect board set, one frame memory board set, and one power supply unit.

DME Processor



Multi-Format DME Processor MVE-8000A

MVS Interface Board MKE-8020A

Input/Output Board (for SDI) MKE-8021A

Effects Board (2 channel) MKE-8040A

Power Supply Unit HK-PSU-02



Multi-Format DME Processor MVE-9000

MVS Interface Board MKE-9020M

Input/Output Board MKE-9021M

Advanced Effects Board (1 channel) MKE-9040M

Texture Lighting Software BZDM-9050

Plug-in Editor

Editing Control Software BZS-8050



Editing Keyboard MKS-8050



Editing Keyboard MKS-2050

Device Control Unit



Device Control Unit MKS-8700

Tally/GPI Output Board MKS-8701

Serial Interface Board MKS-8702

Backup Power Supply Unit HK-PSU03



Device Control Unit MKS-2700

Backup Power Supply Unit HK-PSU-01

System Management Software

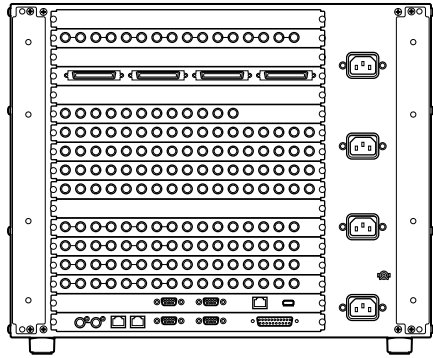
System Management Software BZPS-8000

System Management Software (Standalone type) BZPS-8000L

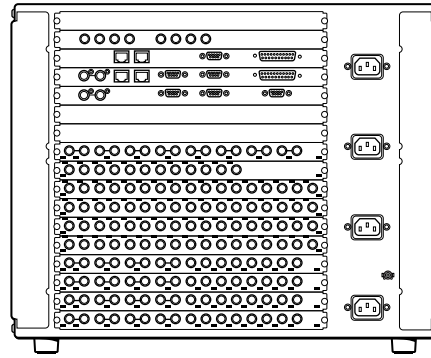
Switcher Setup Software BZPS-8001

PFV-SP Setup Software BZPS-8002

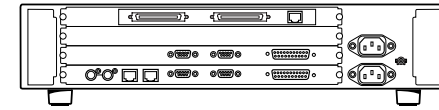
Rear Panel



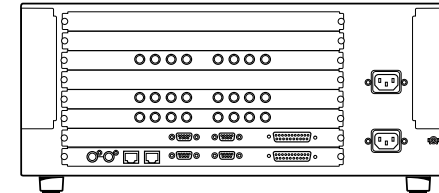
MVS-8000G
(Full option)



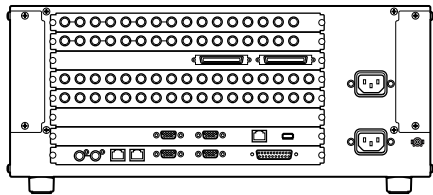
DVS-9000
(Full option)



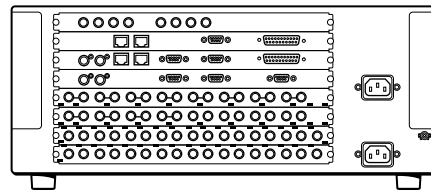
MVE-8000A
(with MVS Interface Board MKE-8020A)



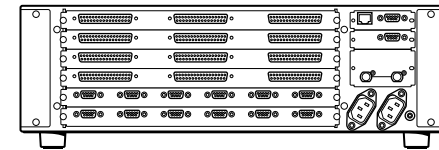
MVE-9000
(with Input/Output Board MKE-9021M)



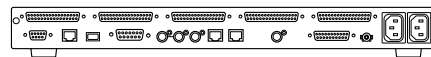
MVS-8000GSF
(Full option)



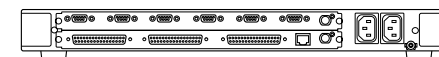
DVS-9000SF
(Full option)



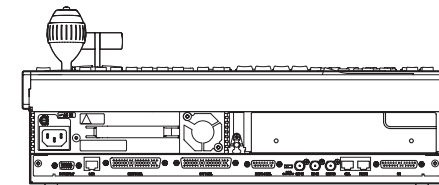
MKS-8700
(with Tall/GPI Output Board MKS-8701 x 3
Serial Interface Board MKS-8702 x 2)



MKS-8010A



MKS-2700



MKS-9011A/9012A

The figures show the rear panels in which optional boards are installed.

Specifications

General		
Power requirement	AC 100 to 240 V, ± 10% 50/60 Hz	
Power consumption		
MVS-8000G	12 to 5 A	
MVS-8000GSF	7 to 3 A	
DVS-9000	8.6 to 4.2 A	
DVS-9000SF	5.5 to 2.5 A	
CCP-8000 Series	2.5 to 1.1 A	
CCP-9000 Series	1.1 to 0.5 A	
MVE-8000A	2.5 to 1.0 A	
MVE-9000	6.0 to 2.5 A	
MKS-8700	1.4 to 0.8 A	
MKS-2700	0.7 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-8000G	482 x 354 x 520 mm (19 x 14 x 20 1/2 inches)	
MVS-8000GSF	482 x 176 x 520 mm (19 x 7 x 20 1/2 inches)	
DVS-9000	482 x 354 x 520 mm (19 x 14 x 20 1/2 inches)	
DVS-9000SF	482 x 176 x 520 mm (19 x 7 x 20 1/2 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 1/4 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-9000 Series	1 M/E Control Panel 440 x 175 x 385.3 mm (17 3/8 x 7 x 15 1/4 inches) 2 M/E Control Panel 440 x 186.6 x 442 mm (17 3/8 x 7 3/8 x 17 1/2 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)	
MVE-9000	482 x 194 x 520 mm (19 x 7 3/4 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)	
Mass (Approx.)		
MVS-8000G	49 kg (108 lb) (fully loaded)	
MVS-8000GSF	28 kg (61 lb 12 oz) (fully loaded)	
DVS-9000	43 kg (94 lb 13 oz)	
DVS-9000SF	25 kg (55 lb 8 oz)	
CCP-8000 Series	Main Panel	4 M/E, 32-crosspoint buttons: 30 kg (66 lb 2 oz)
	Auxiliary Bus Panel	32-crosspoint buttons: 3.7 kg (8 lb 2 oz)
	Menu Panel	2.2 kg (4 lb 13 oz)
	System Control Unit	11.5 kg (25 lb 6 oz)
CCP-9000 Series	Main Panel	2 M/E, 12-crosspoint buttons: 12.5 kg (27 lb 9 oz) 1 M/E, 12-crosspoint buttons: 11.5 kg (25 lb 6 oz)
	Menu Panel	2.2 kg (4 lb 13 oz)
	MKS-8700	8 kg (39 lb 10 oz) (fully loaded)
MKS-2700	9.8 kg (21 lb 10 oz)	
MVE-8000A	16 kg (35 lb 4 oz) (fully loaded)	
MVE-9000	27 kg (59 lb 8 oz) (fully loaded)	
Memory Card/USB Adaptor	1.2 kg (2 lb 10 oz) (with module)	
Extension Adaptor	1.5 kg (3 lb 4 oz) (with module)	

Video inputs/outputs	
MVS-8000G/8000GSF	
Primary inputs	MVS-8000G: Max. 80/MVS-8000GSF: Max. 34, BNC x 1 each SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Assignable outputs	MVS-8000G: Max. 48/MVS-8000GSF: Max. 24, OUT 1, 2, 13 to 16, 25, 26, 37 to 40: BNC x 2 each OUT 3 to 12, 17 to 24, 27 to 36, 41 to 48, FC1 to 4: BNC x 1 each SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Monitor outputs	MVS-8000G: Max. 8, BNC x 2 each SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Integrated DME I/O	MDR 68-pin x 4 (inputs/outputs: 2 CH x 4), LVDS
DVS-9000/9000SF	
Primary inputs	DVS-9000: Max. 80/DVS-9000SF: Max. 34, BNC x 1 each SMPTE259M-C (SDTV)
Assignable outputs	DVS-9000: Max. 48/DVS-9000SF: Max. 24, OUT 1 to 4, 13 to 16, 25 to 28, 37 to 40: BNC x 2 each OUT 5 to 12, 17 to 24, 29 to 36, 41 to 48: BNC x 1 each SMPTE259M-C (SDTV)
Monitor outputs	DVS-9000: Max. 8, BNC x 2 each SMPTE259M-C (SDTV)
Built-in DME	
External inputs	BNC x 4 SMPTE259M-C (SDTV)
Monitor outputs	BNC x 4 SMPTE259M-C (SDTV)
MVE-8000A	
MKE-8020A	
Video inputs/Video outputs MVS interface	MDR 68-pin x 2 (inputs/outputs: 2 CH x 2), LVDS
MKE-8021A	
Video inputs Video/Key	BNC x 8, SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Video outputs Video/Key	BNC x 8, SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Monitor outputs	BNC x 4, SMPTE292M (HDTV), SMPTE259M-C (SDTV)
MVE-9000	
MKE-9020M	
Video inputs/Video outputs MVS interface	MDR 68-pin x 2 (inputs/outputs: 2 CH x 2), LVDS
MKE-9021M	
Video inputs Video/Key	BNC x 8, SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Video outputs Video/Key	BNC x 8, SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Ext Video In	BNC x 4, SMPTE292M (HDTV), SMPTE259M-C (SDTV)
Monitor outputs	BNC x 4, SMPTE292M (HDTV), SMPTE259M-C (SDTV)

Reference	
MVS-8000G/8000GSF, DVS-9000/9000SF, Device Control Unit, DME Processor, System Control Unit	
Reference inputs	BNC x 2, 75 Ω with loop-through output HDTV systems: HD tri-level sync/SDTV analog sync SDTV systems: Analog black burst/analog sync
MVE-8000A	
Reference inputs	BNC x 2, 75 Ω with loop-through output Analog black burst or HD tri-level sync
MVE-9000	
Reference inputs	BNC x 2, 75 Ω with loop-through output Analog black burst or HD tri-level sync

Control	
MVS-8000G/8000GSF	
Control LAN	RJ-45 x 1, 100BASE-TX
Data LAN	RJ-45 x 1, 100BASE-TX
Remote 1 to 4	D-sub 9-pin, RS-422A
Terminal	D-sub 9-pin, RS-232C
GPI	D-sub 25-pin, TTL level inputs x 8, relay contact outputs x 4, open collector outputs x 4
FM Data	RJ-45 x 1, 100BASE-TX
FM Device	Complies with IEEE 1394
DVS-9000/9000SF	
Control LAN	RJ-45 x 1, 100BASE-TX
Data LAN	RJ-45 x 1, 100BASE-TX
Remote 1 to 4	D-sub 9-pin, RS-422A
Terminal	D-sub 9-pin, RS-232C
GPI	D-sub 25-pin, TTL level inputs x 8, relay contact outputs x 4, open collector outputs x 4
Extension	BNC x 1
Built-in DME	
Control LAN	RJ-45 x 1, 100BASE-TX
Data LAN	RJ-45 x 1, 100BASE-TX
Editor 1 to 4	D-sub 9-pin, RS-422A
GPI	D-sub 25-pin, TTL level inputs x 8, relay contact outputs x 4, open collector outputs x 4
CCP-8000 Series (System Control Unit)	
Control LAN	RJ-45 x 1, 100BASE-TX
Data LAN	RJ-45 x 1, 100BASE-TX
Peripheral LAN	RJ-45 x 1, 100BASE-TX
GPI	D-sub 25-pin, TTL level inputs x 8, relay contact outputs x 4, open collector outputs x 4
REMOTE	BNC x 1, S-BUS
LTC input	BNC x 1
Device	USB-type A
Main Panel	D-sub 50-pin
Menu Panel	D-sub 50-pin
Ext Panel 1 to 3	D-sub 50-pin

Control	
CCP-9000 Series	
Control LAN	RJ-45 x 1, 100BASE-TX
Data LAN	RJ-45 x 1, 100BASE-TX
Peripheral LAN	RJ-45 x 1, 100BASE-TX
GPI	D-sub 25-pin, TTL level inputs x 8, relay contact outputs x 4, open collector outputs x 4
REMOTE	BNC x 1, S-BUS
Device	USB-type A
Main Panel	D-sub 50-pin
Menu Panel	D-sub 50-pin
Ext Panel	D-sub 50-pin
MVE-8000A (DME Processor)	
Control LAN	RJ-45 x 1, 100BASE-TX
Data LAN	RJ-45 x 1, 100BASE-TX
REMOTE	D-sub 9-pin x 4, RS-422A
GPI	D-sub 25-pin, TTL level inputs x 8, relay contact outputs x 4, open collector outputs x 4
MVE-9000 (DME Processor)	
Control LAN	RJ-45 x 1, 100BASE-TX
Data LAN	RJ-45 x 1, 100BASE-TX
REMOTE	D-sub 9-pin x 4, RS-422A
GPI	D-sub 25-pin x 2, dry contact or open collector inputs x 16, relay contact outputs x 8, open collector outputs x 8
MKS-8700 (Device Control Unit)	
Peripheral LAN	RJ-45 x 1, 100BASE-TX
Serial tally 1 to 2	D-sub 9-pin, RS-422A
TALLY/GPI inputs	D-sub 37-pin x 3, TTL level inputs x 34 each
TALLY/GPI outputs *	D-sub 37-pin, relay contact outputs 18ch, up to 270 ch in step of 5 ch in a frame
REMOTE *	D-sub 9-pin, 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 x 1, 100BASE-TX
TALLY/GPI inputs	D-sub 37-pin x 1, TTL level inputs x 34
TALLY/GPI outputs	D-sub 37-pin x 2, TTL level inputs x 18 each
REMOTE	D-sub 9-pin x 6, RS-422A, various protocols

*TALLY/GPI and REMOTE ports are alternatively installed. Mixed configuration of TALLY/GPI and REMOTE ports is supported.

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