2ME Live Switcher with wide system adaptability and intuitive operability provides high reliability.
Excellent Live Operability
Meets Creativity

Excellent Value System Capability

32 SDI and two DVI inputs, 16 SDI outputs

Despite its compact 3RU body, this mainframe provides wide variety of inputs/outputs with frame synchronizer, format converter, and color correctors. Colors can be adjusted to correspond to different video source formats, camera properties, and displays, enabling trouble-free production.

[Input]
- 34 inputs in total, with 32 SDI and two DVI inputs.
- All SDI inputs are provided with a 10 bit frame synchronizer.
- Eight inputs equipped with color correctors.
- Four inputs equipped with up-converters. Signals can be delayed by up to eight frames.

[Output]
- 16 SDI outputs with two outputs per channel.
- Four outputs equipped with color correctors.
- Two outputs equipped with downconverters.

Supported Formats

<table>
<thead>
<tr>
<th>SDI</th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDI</td>
<td>480/59.94i, 576/50i</td>
<td>720/59.94p, 50p</td>
</tr>
<tr>
<td>HD/SD</td>
<td>1080/59.94i, 50i</td>
<td>1080/24PsF</td>
</tr>
<tr>
<td>HD/SD</td>
<td>1080/23.98PsF</td>
<td>1080/25PsF, 29.97PsF</td>
</tr>
<tr>
<td>HD/SD</td>
<td>1080/59.94p, 50p</td>
<td>1080/59.94p, 50p (3G mode)</td>
</tr>
<tr>
<td>DVI-D</td>
<td>XGA, 60Hz, 1024 x 768</td>
<td>720/59.94p, 50p</td>
</tr>
<tr>
<td>DVI-D</td>
<td>WXGA, 60Hz, 1280 x 768</td>
<td>1080/59.94p, 50p</td>
</tr>
<tr>
<td>DVI-D</td>
<td>SXGA, 60Hz, 1280 x 1024</td>
<td>1080/59.94p, 50p</td>
</tr>
<tr>
<td>DVI-D</td>
<td>UXGA, 60Hz, 1600 x 1200</td>
<td>1080/59.94p, 50p</td>
</tr>
<tr>
<td>DVI-D</td>
<td>WUXGA, 60Hz, 1920 x 1200</td>
<td>1080/59.94p, 50p</td>
</tr>
</tbody>
</table>

Excellent Live Operability
Meets Creativity

32 SDI and two DVI inputs, 16 SDI outputs

Despite its compact 3RU body, this mainframe provides wide variety of inputs/outputs with frame synchronizer, format converter, and color correctors. Colors can be adjusted to correspond to different video source formats, camera properties, and displays, enabling trouble-free production.

[Input]
- 34 inputs in total, with 32 SDI and two DVI inputs.
- All SDI inputs are provided with a 10 bit frame synchronizer.
- Eight inputs equipped with color correctors.
- Four inputs equipped with up-converters. Signals can be delayed by up to eight frames.

[Output]
- 16 SDI outputs with two outputs per channel.
- Four outputs equipped with color correctors.
- Two outputs equipped with downconverters.

Some functions differ when 3G mode is selected. See page 5 for details.

System Functionality

32 SDI and two DVI inputs and 16 SDI outputs, with a wide variety of keyers and DVEs. Versatile transition modes and extensive video production features are achieved with high cost effectiveness. Functions are scalable using plug-in software.

Operability

Intuitive operation is realized by Multi-Selection Panel, cross point buttons with color grouping function, and an OLED source name display panel. These function to enhance visibility helps quick and accurate switching.

Reliability

The power supply for the mainframe and control panel is redundant. Up to three panels can be operated through an IP connection to provide stable system operation.

*1: Some functions differ when 3G mode is selected. See page 5 for details.
Effects to Enhance Your Creativity

Diverse DVE Transitions*1

In addition to wipe, mix, and cut transitions, DVE transitions with 3D DVE 2ch, such as size reduction and sliding, can be performed. Diverse rendering of image effects such as mosaic or defocus are possible.

- 4ch of 3D DVE and 2ch of 2D DVE systems are provided to support background and keys for each ME.
  - *1 Some functions differ when 3G mode is selected. See page 5 for details.

Various Keys*2

- Primatte®: High-Quality Chroma Key (picture simulated)
- Primatte® is a registered trademark of IMAGICA DIGIX Inc. The copyright of Primatte® belong to IMAGICA DIGIX Inc.
- Chroma key: By implementing the Primatte® algorithm, real time and high quality key composition is possible.
- PinP: 4ch per ME (8ch total). Through the flying key effect, move, expand and shrink the input key signals using DVE effects.
- Key preset: Key Preset function allows easy store and recall of the settings for key. Four settings for each channel of key and four settings for each channel of DSK can be registered.
- Upstream key: 4ch of USK are convenient for usage such as adding the CG sources to fill the gap of 4:3 image to 16:9 image.
- Downstream key: 4ch are available. Can be assigned to PGM1/PGM2.

Upstream Key

- DOWNSTREAM KEY (USK)
- Upstream key (USK).
- 4ch per ME (8ch in total), plus 4ch of DSK, for a total 12keyers, with 4ch of upstream key (USK).
- 4ch of 3D DVE and 2ch of 2D DVE systems are provided to support background and keys for each ME.

Available Functions

<table>
<thead>
<tr>
<th>Key Types</th>
<th>USK</th>
<th>KEY</th>
<th>DSK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luminance key</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear key</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chroma key</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full key</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Picture in Picture</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Available Functions**

<table>
<thead>
<tr>
<th>Function</th>
<th>USK</th>
<th>KEY</th>
<th>DSK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primatte® Key</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primatte® High-Quality Chroma Key (picture simulated)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional Chroma Key (picture simulated)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key Types**

- Primatte®: High-Quality Chroma Key (picture simulated)
- Primatte® is a registered trademark of IMAGICA DIGIX Inc. The copyright of Primatte® belong to IMAGICA DIGIX Inc. The patents for Primatte® belong to IMAGICA DIGIX Inc.

Memory Functions*3

Using memory function, setting, video and effects can be easily stored and recalled. It allows quick operation of switching and recalling effects in live video production, supports efficient operation and making it easy to perform video effects for more complicated operations.

- **Shot memory**: This function recalls background transition patterns or other video effects, including PinP size, position, border width, and key on (maximum of 81 memories). Effect dissolve can be set to ensure smooth switching from the current key to the next effect registered in shot memory.
- **Event memory**: This function allows continuous image effects to be to registered and played back in a timeline.
- **Macro memory**: This function allows record and playback of a series of operations on the Control Panel. It can also record and playback setting information, such as input/output and keys. Macro memories can be played back by assigning them to the cross point buttons, such as macro bus, PGM, and PST.
- **Video memory**: Moving image (Clip) and still image (Still) can be recorded in 4ch each (maximum of 81 memories)*2 for use as video sources. Maximum 60 seconds of moving images can be saved in standard mode, and Maximum 30 seconds in high image quality mode. Moving image (Clip) allows audio recording and playback.

Intuitive Switching

- **Multi-Selection Panel**: A color panel that can display thumbnail images with high visibility. The switches provide a tactile response which allows quick and precise memory operation.
- **Animation wipe**: With moving images (clip) and still images (still) recorded in video memory, animation wipes can be created easily.

**Key Formations**

- 4ch MultiViewer output function is provided as standard, enabling displays of up to 16 split screens (a total of nine patterns).
- All of these functions are available without the need for a specialized device.
- MultiViewer can be selected from a total of nine patterns, including four split, five split (two patterns, six split (two patterns), nine split,10 split (two patterns), and 16 split.
- Source names, tally, audio level meters, clock and safety markers can be displayed.
- Select between fit mode, in which the video image is the same size as the split frame, and squeeze mode, which places the source name and level meter outside the image.

- *1 Some functions differ when 3G mode is selected. See page 5 for details.
- *2 Some functions differ when 3G mode is selected. See page 5 for details.
- *3 Some functions differ when 3G mode is selected. See page 5 for details.

- **Video memory**: Moving image (Clip) and still image (Still) can be recorded in 4ch each (maximum of 81 memories)*2 for use as video sources. Maximum 60 seconds of moving images can be saved in standard mode, and Maximum 30 seconds in high image quality mode. Moving image (Clip) allows audio recording and playback.

**Intuitive Switching**

- **Multi-Selection Panel**: A color panel that can display thumbnail images with high visibility. The switches provide a tactile response which allows quick and precise memory operation.
- **Animation wipe**: With moving images (clip) and still images (still) recorded in video memory, animation wipes can be created easily.
Flexible Scalability and Secure Operability

System Scalability*

1. 16 AUX buses are provided. MIX transition is available from the AUX1 to AUX4 buses.
2. The system can be operated from a PC via a network connection.
3. Various interfaces and plug-in software installation capability to expand the connectivity with other devices. Five plug-in software is provided and customized plug-in software can be created using SDK.

EXT_Control
This software allows sending and receiving information on source switching or source name for AV-HS6000 buses between external devices such as system controllers or tally interfaces connected via network.

P2_Control
This software allows control of Panasonic P2 devices via RS-422 serial communications.

GVG200
This software allows control such as crosspoint switching or transition on GVG200 protocol compliant external controllers, editors, etc. by RS-422 serial communications. (External controllers and control software are sold separately)

AUX_IP
This software allows crosspoint switching from a remote operation panel (VS-R45) via an IP network. (VS-R45 is a product of Venetex Corp.)

Serial TALLY
This software provides tally output and source names to an external tally display or Serial TALLY (VS-R45) via an IP network. (VS-R45 is a product of Venetex Corp.)

Backup System for Peace of Mind

A redundant power supply is provided for the mainframe and control panel.

- Operation of up to three control panels is possible through an IP connection
- ME rows can be switched by swapping the ME panel and changing the output of the system when ME faults.
- A web browser is provided to allow access to the GUI menu from a remote PC.
- System settings and memory information can be stored on SD cards, PC’s, and other optional storage devices.

Flexible Scalability and Secure Operability

System Scalability*

1. 16 AUX buses are provided. MIX transition is available from the AUX1 to AUX4 buses.
2. The system can be operated from a PC via a network connection.
3. Various interfaces and plug-in software installation capability to expand the connectivity with other devices. Five plug-in software is provided and customized plug-in software can be created using SDK.

EXT_Control
This software allows sending and receiving information on source switching or source name for AV-HS6000 buses between external devices such as system controllers or tally interfaces connected via network.

P2_Control
This software allows control of Panasonic P2 devices via RS-422 serial communications.

GVG200
This software allows control such as crosspoint switching or transition on GVG200 protocol compliant external controllers, editors, etc. by RS-422 serial communications. (External controllers and control software are sold separately)

AUX_IP
This software allows crosspoint switching from a remote operation panel (VS-R45) via an IP network. (VS-R45 is a product of Venetex Corp.)

Serial TALLY
This software provides tally output and source names to an external tally display or Serial TALLY (VS-R45) via an IP network. (VS-R45 is a product of Venetex Corp.)

Backup System for Peace of Mind

A redundant power supply is provided for the mainframe and control panel.

- Operation of up to three control panels is possible through an IP connection
- ME rows can be switched by swapping the ME panel and changing the output of the system when ME faults.
- A web browser is provided to allow access to the GUI menu from a remote PC.
- System settings and memory information can be stored on SD cards, PC’s, and other optional storage devices.

3G format compatibility

AV-HS6000 can be used as a 1.5 ME switcher compatible with 3G video formats when it is set to 3G mode.

Software Control Panel AV-SF6000G

(Free download)

The AV-HS6000 control panel is also available as a PC based application software. Equipped with the MJPEG codec, it allows display of video and image in the application. Intuitive and simple operations while viewing source video or using the display as a sub-panel is possible.

AV-HS6000 mode

- Switches between Control Mode, Menu Panel, and Video Status modes.
- Displays mainframe communications status and error status.
- Switches between connected mainframes by inputting the IP address.
- Allows free arrangement of sources displayed on the input and output windows.

Input and output windows

- Displays PGM and PST for the selected ME.
- Displays DSK PGM1 for PGM when DSK (+DSK) button is selected.
- Displays Next Transition setting status superimposed on window for PST.

Control Mode screen

Mode selection part

- Switches ME to be operated.
- Selects PST, PGM, UTIL 1 to 2, and KEY 1 to 4.
- Source assignment part

- Selects movie to be assigned to the bus selected with operation menu part.
- A total of 54 sources can be displayed on three pages by displaying 18 sources on one page and switching pages.
- Displays tally status in red and green frames.

Operation menu part

- Controls shot memory, event memory, and macro memory.
- Video memory (stills/clip) can be controlled.

- Stills and clips can be loaded from the built-in SSD or a PC.

Operation menu part–1

- Operates transitions (fader, AUTO, CUT).
- Selects key type and transition type for KEY 1 to 4 and sets transition time.
- Sets key type for DSK 1 to 4.

Operation menu part–2

- Displays thumbnail for source assigned to KEY and DSK.

Examples of Other Major Screens

Menu Panel screen

Displays menu panel operation display, showing ME1, ME2 and PGM on left side. It is possible to operate menu panel or to check the result while checking the PGM output.

Video Status screen

Video sources of all inputs, all outputs, all buses, and MultiView screen are displayed in a list.
Operability Enhanced with Ergonomically Designed Panels

The graphical user interface combines excellent visibility with ease of operation.

**Control Panel**

**AV-HS60C1** (single power supply model)
**AV-HS60C2** (redundant power supply model)

**ME1 KEY bus selector buttons**  
*(KEY BUS DELEGATION)*

- Switches bus column and functions operated by ME1 KEY bus
  1. Select KEY 1 to 4 key source/key fill bus
     (key source/key fill link coupling function available)
  2. Select AUX1 to 16 bus (AUX1 to 4 support the MIX transition function)
  3. Select Display <DISP> bus  
     *(This bus selects images to be displayed on Menu Panel (AV-HS60C3))*
  4. Select Utility bus  
     *(This bus selects sources to be inserted in the border background or key edge)*
  5. Select MACRO bus  
     *(This bus plays back the macro memory)*

- Source name display panel
  - Displays crosspoint numbers, source display names, and macro names. Bitmap characters can be displayed for source names.

- Crosspoint buttons
  1. Eight colors can be used for grouping to matched sources
  2. Switching is possible among 24 crosspoints x four pages (96 total crosspoints)
  3. Assign and playback the macro memory

**ME2 KEY bus selector buttons**  
*(KEY BUS DELEGATION)*

- Switches bus column and functions operated by ME2 KEY bus
  1. Select KEY 1 to 4 key source/key fill bus
     (key source/key fill link coupling function available)
  2. Select DSK 1 to 4 key source/key fill bus
     (can be assigned to PGM1/PGM2)
  3. Select Utility bus  
     *(This bus selects sources to be inserted in the border background or key edge)*
  4. Select MACRO bus  
     *(This bus plays back the macro memory)*

**Multi-Selection Panel**

- Easy-to-use colored switches with tactile response
  - Wipe patterns, Event memory, Shot memory, Video memory (CLIP/STILL) can be registered and recalled.

**Crosspoint area**
Operability Enhanced with Ergonomically Designed Panels

Large and easy-to-use touch panel

**Menu Panel**

**AV-HS60C3G**

- 10.1-type (256.5 mm) Menu Panel with touch screen allows quick and easy menu operation
- Display mode can be selected for either full screen or split screen (WFM/VECT).
- On-screen software keyboard/numerical keypad available
- General-purpose DVI monitor can be used instead of Menu Panel

*When using software control panel AV-SF6000G, menu panel and DVI monitor do not display moving video, WFM, or VECT.*

---

**Menu Panel**

- Top menu buttons
- Menu screen
- Split-screen buttons
- Rotary encoders

---

**Output screen to DVI monitor**

---

**Memory Card Slot**

- Settings and log data can be stored/accessed on an SD memory card or SDHC memory card
*SD memory card and SDHC card are sold separately*

---

**Positioner**

- Provides cursor operation for positioning WIPE / PinP, size adjustment, chroma key

---

**Transition**

1. Background/key transition: operate fader, AUTO, or CUT transitions
2. Select transition type: select from WIPE, MIX, or NAM transitions
3. Switch on/off the macro memory attachment function (macro attach): enable/disable the macro memory play back trigger assigned to PGM bus, PST bus, or AUX bus buttons
4. Fader play back of the event memory (EMEM link): performs fader operation of the event memory
5. ME change: switches the Control Panel ME1/ME2 columns

---

**Key, DSK operation**

1. KEY/DSK transition: operates KEY 1 to 4, DSK 1 to 4 AUTO, CUT transition of each ME
2. Key preset: For KEY 1 to 4 and DSK 1 to 4 of each ME, register and access key preset
Specifications

Mainframe AV-HS60U1/E, AV-HS60U2/E

Power Supply
- AC 100 V to 240 V, 50 Hz/60 Hz (AV-HS60U1/E supports redundant power supply)

Power Consumption
- 71 W

Ambient Operating Temperature
- 0°C to 40°C (32°F to 104°F)

Operating Humidity
- 10% to 90% (no condensation)

Storage Temperature
- -20°C to 55°C (-4°F to 131°F)

Storage Humidity
- 10% to 90% (no condensation)

Weight
- Approx. 1.7 kg (3.7 lbs.) (excluding accessories)

Dimensions (WxHxD)
- 29.85 mm × 4.0 mm × 50.8 mm

Accessories
- LAN Cable: 1 cable (used to connect with the Mainframe AV-HS60U1/AV-HS60U2)
- Switch blank cap (small): 8 caps
- Switch blank cap (large): 16 caps
- AC Cable: 2 cables

Menu Panel AV-HS60C1S/E

Power Supply
- AC 110 V to 220 V, 50 Hz/60 Hz
- 4.8 W

Dimensions (WxHxD)
- 31/32 inches × 1 inches × 5/32 inches (excluding protrusions)

Power Consumption
- 60 mW

Temperature
- 0°C to 40°C (32°F to 104°F)

Humidity
- 10% to 90% (no condensation)

Weight
- Approx. 1.7 kg (3.7 lbs.) (excluding accessories)

Dimensions (WxHxD)
- 10 inches (25.4 cm) × 1 1/2 inches (3.8 cm) × 1 inch (2.5 cm) (including protrusions)

Menu Panel AV-HS60C2E

Power Supply
- AC 110 V to 220 V, 50 Hz/60 Hz
- 4.8 W

Dimensions (WxHxD)
- 31/32 inches × 1 inches × 5/32 inches (excluding protrusions)

Power Consumption
- 60 mW

Temperature
- 0°C to 40°C (32°F to 104°F)

Humidity
- 10% to 90% (no condensation)

Weight
- Approx. 1.7 kg (3.7 lbs.) (excluding accessories)

Dimensions (WxHxD)
- 10 inches (25.4 cm) × 1 1/2 inches (3.8 cm) × 1 inch (2.5 cm) (including protrusions)

Control Panel AV-HS60C0C/E, AV-HS60C0C/E

Power Supply
- AC 100 V to 240 V, 50 Hz/60 Hz (AV-HS60C0C/E supports redundant power supply)

Power Consumption
- 48 W

Operating Ambient Temperature
- 0°C to 40°C (32°F to 104°F)

Storage Temperature
- -20°C to 55°C (-4°F to 131°F)

Weight
- Approx. 7.0 lb (3.2 kg)

Dimensions (WxHxD)
- 1 1/16 inches (2.7 cm) × 1 1/4 inches (3.2 cm) × 1 1/2 inches (3.8 cm)

Accessories
- Connecting cable (both female ends) for the Control Panel AV-HS60C1S/E
- Connecting cable (both female ends) for the Control Panel AV-HS60C2E
- Screen for the screen for mounting the Control Panel AV-HS60C0C/E

Storage Module AV-HS60D1E

Weight
- Approx. 3.13 lb (1.42 kg)

Dimensions (WxHxD)
- 31/32 inches × 1 inches × 1 3/16 inches (excluding protrusions)

Accessories
- AV-HS60U1/E Installation Guide

**Due to device characteristics, this storage module AV-HS60D1E is subject to data damage and performance degradation if the above storage condition is exceeded.**
Factories of AVC Networks Company have received ISO14001:2004-the Environmental Management System certification. (Except for 3rd party’s peripherals.)