

## IP HIGH RESOLUTION MULTI VIEWER

# MV-1640IP



Multi-viewer that accepts up to 16 IP inputs for HD (3G/1.5G); or four IP inputs for 4K\*1 in redundant SMPTE ST 2110 environments\*2\*3 for output via 12G-SDI or HDMI to 4K monitors.

An optimal choice for supporting an IP system that also maintains the features and usability of existing baseband systems.

### Supports IP/SDI\*4 input, SDI/HDMI output and ideal for to check IP materials

- Video inputs: Total of 32 inputs are supported.  
Up to 16 inputs for HD or up to four inputs for 4K\*1.  
In addition, 16 inputs for 3G/HD/SD-SDI\*4.
- Video outputs: 3G/HD-SDI 4 or 12G-SDI 1 outputs HDMI 1 output  
HDMI 2.0 Level-B output, 3840 x 2160, YUV 4:2:0
- Up to five monitor outputs, 25 windows\*5

### Features

- Compatible with SFP28 modules and making the unit ready for either 10 or 25 GbE environments
- Uses NMOS IS-05 for stream switching.
- Realizes minimum delay of one field (16.6ms) from IP to baseband output.
- Cascading input is supported\*4.  
Combines multiple Multi viewers and displays into more than 16 IP split screens - with low delay.
- Layout Manager
  - Customizes layouts, using the software in Windows® to adjust image size, position, title display, and other settings.
  - Stores layouts on the viewer.
  - Recalls saved layouts directly from the front panel control.
- HD to 4K up-resizing and 4K to 2K down-resizing
- Captures specified frames of streamed video.
- Cropping
  - Specifies areas to crop in pixels or by percent.
  - Background image is shown outside cropped areas.
  - Aspect ratio also maintained after partial cropping (of one side, for example).
- Logo display in title areas
  - Stores and displays 4 logo images.
- Tally, Title, and Timecode® Display
- Time of day, Timer, and Information Display
- Can display time based on a 30-hour clock.
- Registers up to 24 schedule timers per day for 1 week.
- Supports external interfaces, and control protocols (including monitoring). SNMP function
- Detects frozen frames. (Y/C and Y only)
- Views error logs or user text in the Information Display.
- Flashing borders or error icons/messages to identify screens with errors
- Audio Level Display
- Audio Monitoring Output

\*1 Uncompressed video input only, to be supported. \*2 SMPTE ST 2110-10/20/30/40 (time code) \*3 SMPTE ST 2022-7 \*4 With MV-1640SDI installed

\*5 Number of windows are planned to be increased when output mode is added. \*6 To be supported

**Specifications**

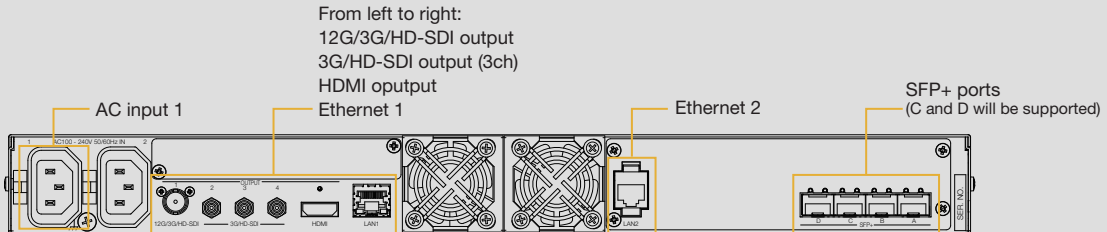
<b>Video input</b>	
IP	4K: 2160/59.94p *1, 2160/50p *1 4 inputs (uncompressed) HD: 1080/59.94i, 1080/50i *1, 1080/59.94p, 1080/50p *1 16 inputs (uncompressed) VoIP standard: ST2110-10/20/30/40, ST2022-6 *1/7 Ethernet standard: 25GBASE-SR, 25GBASE-LR *1 VoIP control: IGMP V3, NMOs : IS-04/05 I/F setting: Ember+ *1
SDI (optional)	3G-SDI: 1080/60p, 1080/59.94p, 1080/50p (Level-A/B) HD-SDI: 1080/60i, 1080/59.94i, 1080/50i, 720/60p, 720/59.94p, 720/50p, 1080/30p, 1080/29.97p, 1080/25p, 1080/24p, 1080/23.98p, 720/24p, 720/23.98p, 1080/30PsF, 1080/29.97PsF, 1080/25PsF, 1080/24PsF, 1080/23.98PsF, 1035/60i, 1035/59.94i SD-SDI: 525/60 (NTSC) ,625/50 (PAL) *PsF signal will be achieved as an interlace in internal process. Some videos will show flicker.
LTC	1 input (with interface option) SMPTE compliant timecode within 1.0Vp-p±6dB
Genlock	1 input (with interface option) BB: 0.429V(p-p)(NTSC), 0.45V(p-p)(PAL), Tri level sync: 0.6V(p-p)
<b>Video output</b>	
SDI	75Ω BNC 12G 1 output or HD 3 outputs Quantization: Y: 10-bit, C: 10-bit 12G-SDI*2: 2160/59.94p, 2160/50p *1 3G-SDI: 3Gbps 1080/59.94p, 1080/50p *(only Level-A) HD-SDI: 1.5Gbps 1080/59.94i, 1080/50i *1, 720/59.94p, 720/50p *1
HDMI	HDMI connector (TYPE A) 1 output Quantization: R: 8-bit, G: 8-bit, B: 8-bit Resolution: 1920 x 1080, 1280 x 720, 3840 x 2160 Refresh rate: 59.94, 50Hz *1 HDMI2.0-Level-B(4:2:0) selectable
IP	To be supported
<b>Audio output</b>	
Embedded(SDI)	Number of outputs: 2 groups *3(4 stereo pairs) per output Sampling frequency: 48 kHz Quantization: 24-bit
Embedded(HDMI)	Number of outputs: 4 stereo pairs per output Sampling frequency: 48 kHz Quantization: 24-bit
Video/Clock display windows	Up to 25*4 windows
Monitor output	4K 1 output or 2K 4 outputs
Clock display	Time based on internal clock or LTC time code Time correction via GPI or Sntp Internal clock accurate to within 15 seconds/month (at 25C*)

Count up/down timer*5, Remaining time counter	Can be displayed in clock display window. (Internal clock or LTC is selectable for remaining time counter.)
Background display	Stores and displays 1 4K size background image. Max. size: 3840 x 2160
Logo display	Stores and displays 4 logo images. Max. size: 1024 x 512
Screen layout	User customized layout Can be saved max. 16 layouts on main unit
Title display	Character limit: Max. 16 characters x 2 lines for each input channel Supported characters: Letters, numbers, symbols, and Japanese kana/kanji(JIS 1 and 2)
Tally display	Indicated as a frame (red/green/amber) or marker (red/green/amber) on each input window.
Audio level display	Audio level metering
Video monitoring	Detects video loss, frozen frames, incorrect luminance/black level.
Audio monitoring	Detects audio loss, silence, and excessive audio levels.
<b>Interface (standard)</b>	
LAN	100BASE-TX/1000BASE-T, RJ-45 x 2 (CAT 5e-compliant)
SNMP	Supports GET and TRAP.
<b>Interface (optional)</b>	
GPI-IO	50-pin D-sub (female) x 1, up to 45-pin for input 23 of them are I/O selectable
Layout Manager	Customizing window sizes and positions, switching windows, and registering backgrounds and logos (Windows® software)
Data backup	Stores settings internally to the memory. (rewrite capacity: approx. 100,000 times)*6
Backup battery	Electrical Double Layer Capacitor (10 days)
Temperature/humidity	0°C to 40°C / 30% to 90% (no condensation)
Power	100 V AC to 240 V AC ±10%, 50/60 Hz
Dimensions/weight	430 (W) x 44 (H) x 500 (D) mm, EIA 1RU/9.7kg
Consumables	Cooling fan: Replace every 5 years. Battery: Replace every 5 years.
Accessories	Quick Setup Guide, Power cable (with outlet tether), Rack mount brackets, CD-ROM (Layout Manager, Live Viewer, Operation manuals(PDF))
Options	MV-1640SDI: SDI input option MV-1640IF: Interface option board (GPIO/LTC/REF) MV-1640PS: Redundant power supply unit MV-1640NSLINK: NS-BUS supported software

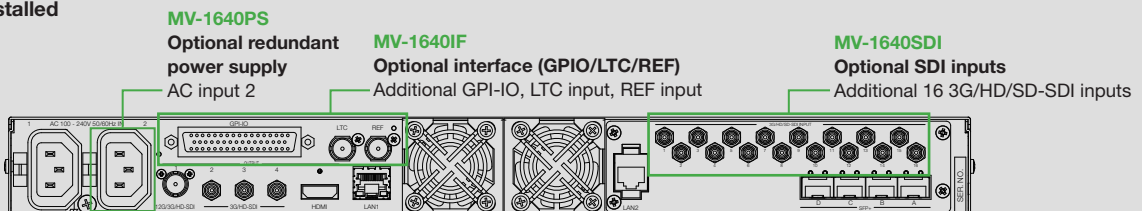
\*1 To be supported  
\*2 12G-SDI supports only 2SI multi-stream format.  
\*3 One group consists of four audio channels.  
\*4 Total number of video and clock  
\*5 Count up/down timer, uses an internal crystal oscillator: ±50 ppm within operating temperature. (0°C to 40°C)  
\*6 Frequent setting changes may impair data retention.  
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**Rear View**

**Standard**



**With options installed**



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