

3G/HD/SD/ANALOG/HDMI/DVI MIXED HIGH RESOLUTION MULTI VIEWER

MV-1200/1210/1220



Compact (1U) multi viewer for monitoring, featuring up to 16 inputs. Build a versatile, flexible 4K (UHD) editing environment.

Three models available

- MV-1200*: HDMI 4 inputs/1 output (standard).
Up to 16 inputs/6-monitor outputs (SDI/HDMI mixed, optional*)
- MV-1210*: SDI 4 inputs/1 output (standard).
Up to 16 inputs/6-monitor outputs (SDI/HDMI mixed, optional*)
- MV-1220: SDI 8 inputs/2 outputs + HDMI 1 output (standard).
Up to 16 inputs/7-monitor outputs (optional*)

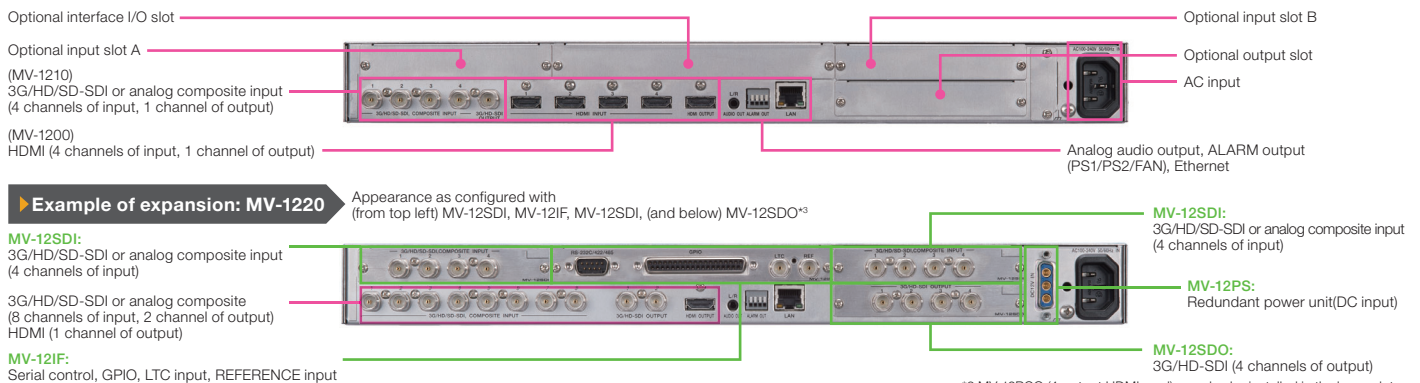
*1 Use of MV-12EXP option allows both SDI/HDMI input and output.

*2 Combine up to 2 optional input cards; MV-12SDI (3G/HD/SD-SDI, Composite x 4); MV-12PCI (DVI/HDMI x 4); or the MV-12IF interface card (GPIO, serial control; LTC input, genlock input), as needed.

Features

- HDMI 2.0 LEVEL B output, using MV-12PCO
 - 3840 x 2160, YUV 4:2:0
- Versatile Mixed-Source Environment
 - Supports mixed signals including: 3G-SDI (Level A/B), HD-SDI, SD-SDI, Composite, HDMI, or DVI sources. Asynchronous input is also supported.
 - The multi viewer accepts an array of formats and frame rates including NTSC, PAL, 1080/59.94i, 1080/50i, and 30/29.97/25/24/23.98p or PsF. (No frame rate conversion)
- HD to 4K up-resizing, using MV-12PCO and MV-12SDO
- Logo display in title areas
 - Import a bitmap from the logo registration screen, or generate and register a logo using a web browser.
- Layout Manager
 - Customize layouts, using the software in Windows to adjust image size, position, title display, and other settings.
 - Store layouts on the viewer.
 - Recall saved layouts directly from the front panel control.
- Video can be streamed from the multi viewer over Ethernet.
- Capture specified frames of streamed video.
- Audio Level Display for up to 16 channels
- Audio Monitoring Output
- Flashing borders or error icons/messages to identify screens with errors
- Tally, Title, and Timecode
- Time of day, Timer, and Information Display
- View error logs or user text in the Information Display.
- Input Lock enables genlock without using reference signals.
- Can display time based on a 30-hour clock.
- Register up to 24 schedule timers per day for 1 week.
- Cropping
 - Specify 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).
- Detects frozen frames. (Y/C and Y only)

A variety of optional cards to expand your network connectivity



Accessories

EIA Rack mount brackets, AC cord, rubber feet, HDMI cable lacing bracket,
 CD-ROM (installation disc: layout manager, live viewer including operation manuals (PDF)), quick setup guide

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MV-1200/1210/1220

Specifications

Video format		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) * Note that PsF signals are treated as interlaced, therefore flickering may occur in some cases.
Video input		SDI/analog composite switching (Mixed input, asynchronous acceptable)
3G/HD/SD-SDI (MV-1210, MV-1220, MV-12SDI)		3G-SDI: 3.0 Gbps (5C-FB (Belden 1694A): 70 m max.) HD-SDI: 1.5 Gbps (5C-FB (Belden 1694A): 100 m max.) SD-SDI: 270 Mbps (5C-2V (Belden 8281): 200 m max.) - Quantization: Y: 10-bit, C: 10-bit - Number of inputs: MV-1210 - 4 inputs, MV-1220 - 8 inputs, MV-12SDI - 4 inputs
Analog composite (MV-1210, MV-1220, MV-12SDI)		Analog composite: 1.0 Vp-p - Quantization: Y: 10-bit, C: 10-bit - Number of inputs: MV-1210 - 4 inputs, MV-1220 - 8 inputs, MV-12SDI - 4 inputs
HDMI (MV-1200, MV-12PCI)		- Quantization (*1): R: 8-bit, G: 8-bit, B: 8-bit, or Y: 10-bit, C: 10-bit (4:4:4) - Resolution PC: 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1360 x 768, 1366 x 768, 1440 x 900, 1680 x 1050, 1600 x 1200, 1920 x 1200 Refresh rate: 50/60 Hz VIDEO (SMPTE-compliant): 1920 x 1080i/p, 1280 x 720p, 525/60i (*2), 625/50i (*2) Refresh rate: 60 Hz - HDCP-compliant - Number of inputs: 4 included, 4 per MV-12PCI
Audio input	Embedded	- Sampling frequency: 48 kHz (sync to input video signals) - Quantization: 16-bit to 24-bit - 16 channels for each SDI (*3) input (4 groups, 8 stereo pairs)
	HDMI	- Sampling frequency: 48 kHz - Quantization: 16-bit to 24-bit - 8 channels per HDMI input signal
LTC input (MV-12IF)		BNC x1 SMPTE-compliant timecode: within 1.0 Vp-p \pm 6 dBm
Video output	HDMI (MV-1200, MV-1220)	HDMI (TYPE A): 1 output (MV-1220 does not support HDCP) - Quantization: Y: 10-bit, C: 10-bit (4:4:4), or R: 8-bit, G: 8-bit, B: 8-bit (4:4:4) - Resolution: 1920 x 1080, 1280 x 720 - Frequency: 59.94 Hz, 50 Hz - Range: limited
	HDMI (MV-12PCO)	HDMI (TYPE A): 4 outputs - Quantization: Y: 10-bit, C: 10-bit (4:4:4), Y: 8-bit, C: 8-bit (4:2:0), or R: 8-bit, G: 8-bit, B: 8-bit (4:4:4) - Resolution: 3840 x 2160, 1920 x 1080, 1980 x 720 - Frequency: 59.94 Hz, 50 Hz - Range: limited - HDMI2.0 Level B output mode (Enables 4K output with one HDMI cable)
	3G/HD-SDI (MV-1220, 1210)	75 Ω BNC x 1 (MV-1210) 75 Ω BNC x 2 (MV-1220) - 3G-SDI: 3 Gbps 1080/59.94p, 1080/50p (Level-A) - HD-SDI: 1.5 Gbps 1080/59.94i, 1080/50i, 720/59.94p, 720/50p

	3G/HD-SDI (MV-12SDO)	75Ω BNC x 4 (4K output supported in quad display of 3840 x 2160 signals) Quantization: Y: 10-bit, C: 10-bit (4:2:2) - 3G-SDI: 3 Gbps 1080/59.94p, 1080/50p (Level-A) - HD-SDI: 1.5 Gbps 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
Audio output	Analog	Stereo mini jack x 1 (monaural x 2), unbalanced - Output impedance: 100Ω or less - Output level: -10 dBV - Maximum output level: +5 dBV - Sampling frequency: 48 kHz - Quantization: 24-bit
	Embedded (SDI)	- Number of outputs: 4 groups (8 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
Alarm output (relay)		3 types of alarm output: Power 1, Power 2, Fan
Genlock input		- REF IN (MV-12IF) BB: NTSC: 0.429 Vp-p/PAL: 0.45 Vp-p, Tri-level sync: 0.6 Vp-p 75Ω BNC - INPUT LOCK (Main SDI IN1)
Video input/output delay (*4)		HDMI/SDI output < Main SDI1-2/HDMI Out > 0.5-1 frame (in Field mode) 1-2 frames (in Frame mode) < Option Out1-4 (in 2K layout mode)> Main SDI1-2/HDMI Out delay + 0.5 frames (Line Delay Mode OFF) Main SDI1-2/HDMI Out delay + dozens lines (Line Delay Mode ON) <Option Out1-4 (in 4K layout mode)> Main SDI1-2/HDMI Out + 0.5 frames
Count up/down timer (*5), Schedule timer		Can be displayed in information window. (Internal clock or LTC is selectable for schedule timer.)
Background display		Store and display background images - Max. size: 1920 x 1080 (2K layout mode), 3840 x 2160 (4K layout mode)
Logo display		Store and display logo images - Max. size: 1024 x 512
Screen layout		User customized layout - Layouts for each output can be saved on the viewer
Title display		Character limit: Max. 16 characters x 2 lines for each input channel Supported characters: - Letters, numbers, symbols, Korean characters 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 (*9)		Up to 16 audio channels of audio level metering per input
Time code display		- Display for 3G/HD/SD-SDI ancillary timecode (ATC) (*6) - Reader mode (*7)
Video monitoring		Detects video loss, frozen frames, incorrect luminance/black level, and CRC/HDCP error.
Audio monitoring		Detects audio loss, silence, and excessive audio levels.
Interface (standard)		LAN: 100BASE-TX/1000BASE-T, RJ-45 x 1 (CAT 5e-compliant)

Interface (optional)	Installing MV-12IF adds the following
RS-232C/RS-422/ RS-485	9-pin D-sub (male) x 1 - Baud rate: 9600/19200/38400/57600/115200 bps - Data length: 8-bit - Stop bit: 1-bit - Parity: none/odd/even
GPIO	37-pin D-sub (female) x 1 - Up to 36-pin for input/18-pin for output (selectable, and can be used for input and output)
Layout Manager	Windows® software for customizing window sizes and positions, switching windows , and registering backgrounds and logos (Windows software)
Live Viewer	Software for video streaming (Windows® software)
Data backup	Stores settings internally to the memory (rewrite capacity: approx. 100,000 times) (*8)
Backup battery	Internal lithium battery (to maintain time)
Temperature/humidity	0°C to 40°C / 30% to 90% (no condensation)
Power/consumption	100 V AC to 240 V AC ±10%, 50/60 Hz <MV-1200/1210> (*10) 130 VA (130 W) at AC100V to 120V 145 VA (123 W) at AC200V to 240V <MV-1220> (*11) 117 VA (115 W) at AC100V to 120V 125 VA (109W) at AC200V to 240V
Dimensions/weight	430 (W) x 44 (H) x 425 (D) mm EIA 1RU / 6.3 kg 480 (W) (Including rack mount brackets)
Accessories	Quick Setup Guide, AC Cord (AC cord clamp included), Rack mount brackets, CD-ROM (Layout Manager, Live Viewer, Operation manuals)
Consumables	Cooling fan: Replace every 5 years Backup battery CR2032: Replace every 5 years Battery: Replace every 5 years
Options	MV-12PS: Redundant power supply MV-12PCI: 4-input HDMI card MV-12PCO : 4-output HDMI card MV-12SDI: 4-input SDI card MV-12SDO : 4-output SDI card MV-12IF: Interface options MV-12SNMP:SNMP-compatible software MV-12EXP: 4-input 1-output expansion software
Other Options	HVS-AUX16A/16B/32A/64A: Auxiliary unit (Connectable max. 6 units)

(*1) Internally converted from 4:4:4 to 4:2:2

(*2) HDMI only

(*3) For 3G-SDI Level-B, only Link-A audio is supported, not Link-B.

(*4) Using interlaced input

(*5) Stopwatch/timer uses an internal crystal oscillator: ±50 ppm within operating temperature. (0°C to 40°C)

(*6) Ancillary time code (ATC) is not passed through.

(*7) Time code from LTC input is not displayed.

(*8) Frequent setting changes may impair data retention.

(*9) When input audio frequency is under 60Hz, audio level may not be displayed correctly.

(*10) When the following listed modules are installed to MV-1200/1210 (with MV-12PS)

MV-12SDI x 2, MV-12SDO, MV-12IF x 1

(*11) When the following listed modules are installed to MV-1220 (with MV-12PS)

MV-12SDI x 2, MV-12PCO, MV-12IF x 1

External Dimensions

(All dimensions in mm.)

