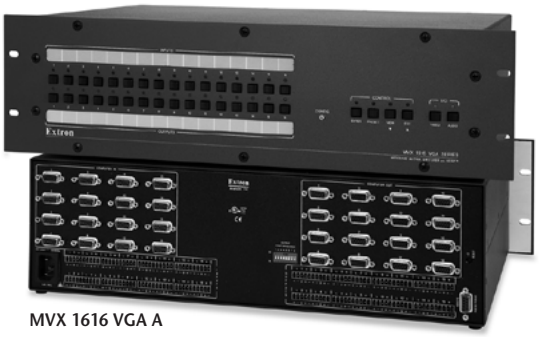
MVX Series

VGA AND STEREO AUDIO MATRIX SWITCHERS

- Eight models in I/O sizes from 4x4 to 16x16
- 300 MHz (-3 dB) RGB video bandwidth, fully loaded
- Computer-video inputs and outputs on 15-pin HD connectors
- Balanced and unbalanced audio outputs
- Audio input gain and attenuation
- Audio breakaway
- Global presets
- RS-232 serial control
- Compact, rack-mountable enclosure



MVX 1616 VGA A

MVX 128 VGA A

MVX 88 VGA A

The Extron MVX Series Matrix Switchers are designed to route most common high resolution computer-video signals with stereo audio. Available in I/O sizes from 4x4 to 16x16, the MVX Series offers wideband switching performance with the convenience of 15-pin HD connectors for all computer-video connections. MVX Series Matrix Switchers are ideal for applications such as conference rooms, classrooms, mobile and emergency operation centers, and video conference rooms.

DESCRIPTION

The Extron **MVX Series** Matrix Switchers are designed to route VGA-UXGA computer-video signals with stereo audio. Available in I/O sizes from 4x4 to 16x16, including a new 12x12 size, the MVX Series offers wideband switching performance with the convenience of 15-pin HD connectors for all computer-video connections. MVX Series models from 4x4 to 8x8 accept unbalanced stereo audio on 3.5 mm stereo mini jacks, while the 12x8 to 16x16 sizes accept either balanced or unbalanced stereo audio on captive screw connectors. All models output balanced or unbalanced stereo audio on captive screw connectors. Using pre-terminated cable assemblies, such as Extron's VGA with Audio Cables, eliminates crimping and makes installations faster and easier.

All MVX Series models are equipped with a full range of control capabilities, including a standard QS-FPC™ - QuickSwitch Front Panel Controller, which provides a discrete button for each input and output, allowing for simple, intuitive operation. In addition, all models are equipped with RS-232 serial control utilizing Extron's SIS™ – Simple Instruction Set command protocol. They can be remotely controlled with the optional Extron MKP 2000 or MKP 3000 X-Y remote control panels, or via a third party control system. An optional handheld IR remote control is also available for 4x4 and 8x8 models.

FEATURES

- **300 MHz (-3 dB) RGB video bandwidth, fully loaded** – Designed for routing most common high resolution computer-video rates without signal degradation. The MVX Series provides a minimum 300 MHz (-3 dB) of RGB video bandwidth at full performance capability when one input drives all outputs.
- **Compatible with RGBHV, RGBS, RGsB, and HDTV component video**
- **Audio breakaway** – Provides the capability to break an audio signal away from its corresponding video signal, allowing the audio channels to be operated as a separate matrix switcher.
- **View I/O mode** – Allows users to easily view which individual inputs and outputs are actively connected.
- **QS-FPC - QuickSwitch Front Panel Controller** – Provides a discrete button for each input and output, allowing for simple, intuitive operation.
- **Global presets** – Individual I/O configurations may be saved and recalled either from the QuickSwitch front panel or through the serial controls. This time-saving feature allows you to set up I/O configurations and keep them in memory for future use.
- **Front panel security lockout** – Ideal for unsecured environments, this feature locks out all front panel functions; however, these same functions are available through RS-232 serial control.
- **RS-232 control port** – Using serial commands, the MVX Series can be controlled and configured via the included Windows®-based control software, or integrated into third-party control systems. Extron products use the SIS - Simple Instruction Set command protocol, a set of basic ASCII code commands that allow for quick and easy programming. The RS-232 port also makes it easy to install firmware updates.

FEATURES (Cont.)

- **Rack mountable** – All models are housed in metal, rack-mountable enclosures.
- **Optional remote control panels and keypads** – Provide the flexibility to control a MVX Series matrix switcher from a remote location.
- **Internal international power supply** – The 100-240VAC, 50/60 Hz, autoswitchable, internal power supply provides worldwide power compatibility.

UNIQUE FEATURES FOR 4X4 TO 8X8 MODELS

- **Switchable audio output levels** – Output levels can be switched between +4 dBu professional and -10 dBv consumer levels, allowing a mix of professional- and consumer-level audio equipment.
- **Unbalanced stereo audio** – Accepts unbalanced PC audio on convenient 3.5 mm mini stereo jacks. Audio output is buffered and can be output as a balanced or unbalanced signal.
- **Triple Action Switching™ RGB Delay** – Blanks the screen when switching to a new source. The new sync signals precede the RGB signals, so there is no glitch shown during the transition. The time delay between the RGB and sync signals is adjustable up to five seconds.
- **Includes removable rack ears**
- **Optional IR 501 handheld IR remote control** – Provides remote control from up to 30 feet (9 meters) away.

UNIQUE FEATURES FOR 12X8 TO 16X16 MODELS

- **ADSP™ - Advanced Digital Sync Processing** – An exclusive, all-digital process that regenerates the sync signal waveform and restores incoming sync level to 5.0 V p-p specifications. This ensures a stable image for improved signal compatibility with any LCD, DLP, plasma, or other digital display device.
- **Front panel I/O label windows** – I/O buttons may be labeled with names, alphanumeric characters, or bitmap icons for easy and intuitive input and output selection.
- **Balanced and unbalanced stereo audio** – Accepts both balanced and unbalanced stereo audio signals on captive screw connectors.
- **Audio output volume control** – Can be set dynamically for each channel through the front panel or serial control, eliminating the need for audio preamplifiers in many system designs.

VIDEO

Gain	Unity
Bandwidth	300 MHz (-3 dB), fully loaded
Crosstalk	
MVX 44/48/84/88	<-60 dB nominal @10 MHz,<-39 dB@ 100 MHz
MVX 128/1212/168/1616	-80 dB@ 1MHz; -55 dB @ 10 MHz; -37 dB @ 100 MHz
Switching speed	
MVX 44/48/84/88	50 ns (max.)
MVX 128/1212/168/1616	200 ns (max.)

VIDEO INPUT

Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB 0.3 Vp-p for R-Y and B-Y of component video, and for C of S-video
Min/max levels	0.3 V to 2.0Vp-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	15 kHz to 145 kHz
Vertical frequency	30 Hz to 170 Hz
Return loss	<-40 dB @ 5 MHz
DC offset (max. allowable)	1.5 V

VIDEO OUTPUT

Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB 0.3 Vp-p for R-Y and B-Y of component video, and for C of S-video
Min/max levels	0.3 V to 2.0Vp-p (follows input)
Horizontal frequency	15 kHz to 145 kHz
Vertical frequency	30 Hz to 170 Hz
Return loss	<-40 dB @ 5 MHz
DC offset (max. allowable)	
MVX 44/48/84/88	<20 mV with input at 0 offset
MVX 128/1212/168/1616	±5 mV with input at 0 offset

SYNC

Input type	RGBHV, RGBS, RGsB, RsGsBs
Output type	RGBHV, RGBS, RGsB, RsGsBs (follows input)
Standards	Computer scan rates NTSC 3.58, NTSC 4.43, PAL, SECAM
Input level	0.5 V to 5.0 Vp-p
Output level	AGC to TTL: 5.0 Vp-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	
MVX 44/48/84/88	H = 90ns nominal; V = 160ns nominal
MVX 128/1212/168/1616	30ns
Max rise / fall time	4ns
Polarity	Positive or negative (follows input)

AUDIO

Gain	
MVX 44/48/84/88	Adjustable
MVX 128/1212/168/1616	Unbal. = -6 dB; Bal. = 0 dB
Frequency response	20 Hz to 20 kHz, ±0.2 dB
THD + Noise	0.05% @ 1kHz at nominal level
S/N	>90 dB at maximum output (unweighted)
Crosstalk	<-80 dB @ 1 kHz, fully loaded
Stereo channel separation	>80 dB @ 1 kHz
CMRR	>75 dB @ 20 Hz to 20 kHz

AUDIO INPUT

Impedance	
MVX 44/48/84/88	>18k ohms unbalanced, DC coupled
MVX 128/1212/168/1616	>10k ohms bal / unbal, DC coupled
Nominal level	
MVX 44/48/84/88	-10 dBV (default), +4 dBu
MVX 128/1212/168/1616	0 dBV, 0 dBu
Maximum level	
MVX 44/48/84/88	+12 dBV, (unbalanced) at 1%THD+N
MVX 128/1212/168/1616	+19.5 dBu, bal/unbal, at 0.01% THD+N
Input gain	
MVX 44/48/84/88	-18 dB to +10 dB, adjustable per input
MVX 128/1212/168/1616	-18 dB to +24 dB, adjustable per input

NOTE: 0 dBu = 0.775 V, 0 dBV = 1 V, 0 dBV ≈ 2 dBu.

AUDIO OUTPUT

Impedance	50 ohms unbalanced, 100 ohms balanced
Gain Error	±0.3 dB channel to channel
Nominal level	
MVX 44/48/84/88	+4 dBu (default), balanced, "Pro" -10 dBV, unbalanced, "Consumer"
MVX 128/1212/168/1616	0 to 64 (-98 dB to 0 dB) in 1 dB increments from steps 1 to 64, 35 dB increment from step 0 to 1
Maximum level	
MVX 44/48/84/88	
Hi-Z	>+22 dBu, balanced at 1%THD+N >+14 dBV, unbalanced at 1%THD+N
600 ohms	>+20 dBu, balanced at 1%THD+N >+12 dBV unbalanced at 1%THD+N
MVX 128/1212/168/1616	
Hi-Z	>-21 dBu, bal/unbal, at 0.01% THD+N
600 ohms	>+15 dBm, bal/unbal, at 0.01% THD+N

CONTROL/REMOTE – SWITCHER

Serial control port	
MVX 44/48/84/88	1 RS-232, 9-pin female D connector
MVX 128/1212/168/1616	1 RS-232 or RS-422, 9-pin female D connector
Baud rate and protocol	
MVX 44/48/84/88	9600 baud, 8-bit, 1 stop bit, no parity
MVX 128/1212/168/1616	9600-115200 baud, 8-bit, 1 stop bit, no parity
Control pin configurations	
MVX 44/48/84/88	2=TX, 3=RX, 5=GND, 9=hardwired IR input
MVX 128/1212/168/1616	RS-232: 2=TX, 3=RX, 5=GND RS-422: 2=TX-, 3=RX-, 5=GND, 7=Rx+, 8=Tx+
IR controller module	
MVX 44/48/84/88	IR 501 (optional handheld IR remote control)
Program control	Extron's control/configuration program for Windows®; Extron's Simple Instruction Set (SIS™)

GENERAL

Power	100 VAC to 240 VAC, 50/60 Hz, 30 watts, internal, autoswitchable
Rack mount	Yes, with included brackets
Enclosure type	Metal
Enclosure dimensions	
MVX 44/48/84/88	1.75" H x 17.4" W x 8.5" D (1U high, full rack wide) 4.4 cm H x 44.2 cm W x 21.6 cm D
MVX 128	3.5" H x 19.0" W x 9.4" D (2U high, full rack wide) 8.9 cm H x 48.3 cm W x 23.9 cm D
MVX 1212/168/1616	5.25" H x 19.0" W x 9.4" D (3U high, full rack wide) 8.9 cm H x 43.2 cm W x 23.9 cm D (Depth excludes connectors. Width excludes rack ears.)
Product weight	
MVX 44/48/84/88	7.0 lbs (3.2 kg)
MVX 128	21 lbs (10 kg)
MVX 1212/168/1616	14.4 lbs (6.5 kg)
Shipping weight	
MVX 44/48/84/88	10 lbs (5 kg)
MVX 128	25 lbs (12 kg)
MVX 1212/168/1616	21 lbs (10 kg)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF	30,000 hours
Warranty	3 years parts and labor

All nominal levels are at ±10%

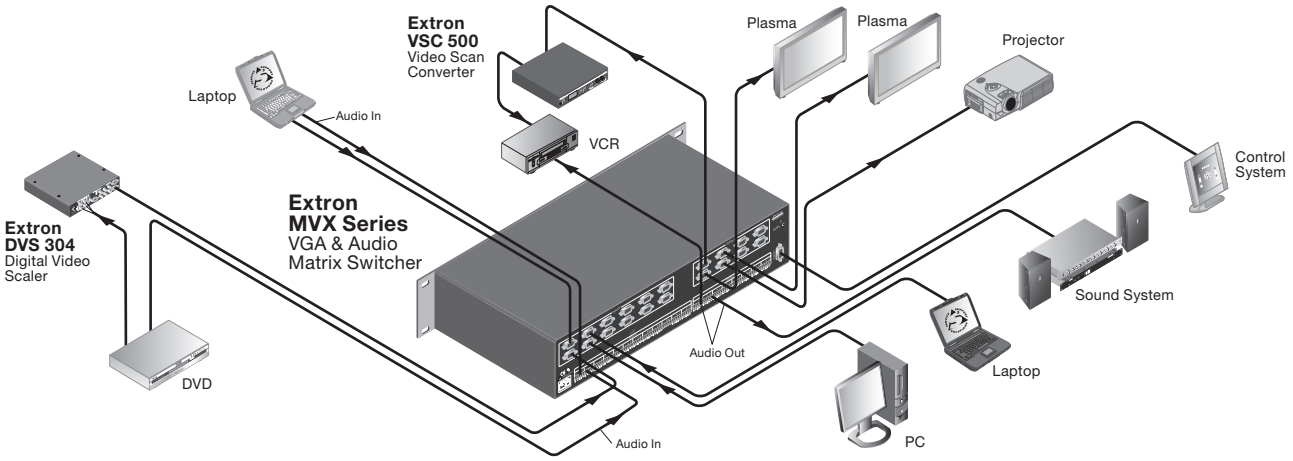
Model	Description	Part Number
MVX 44 VGA A	4x4 VGA and Stereo Audio	60-635-21
MVX 48 VGA A	4x8 VGA and Stereo Audio	60-636-21
MVX 84 VGA A	8x4 VGA and Stereo Audio	60-637-21
MVX 88 VGA A	8x8 VGA and Stereo Audio	60-638-21
MVX 128 VGA A	12x8 VGA and Stereo Audio	60-799-01
MVX 168 VGA A	16x8 VGA and Stereo Audio	60-838-01
MVX 1212 VGA A	12x12 VGA and Stereo Audio	60-858-01
MVX 1616 VGA A	16x16 VGA and Stereo Audio	60-839-01

Optional Accessories

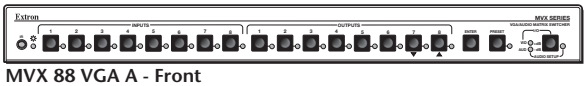
IR 501	Handheld IR Remote	70-336-01
MKP 2000	X-Y Remote Control	60-682-0X
MKP 3000	X-Y Remote Control with LCD Display	60-709-0X

Specifications are subject to change without notice.

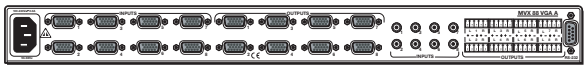
APPLICATION DIAGRAM



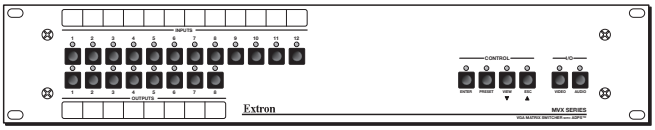
PANEL DRAWINGS



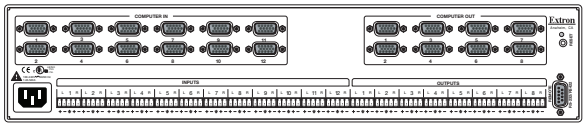
MVX 88 VGA A - Front



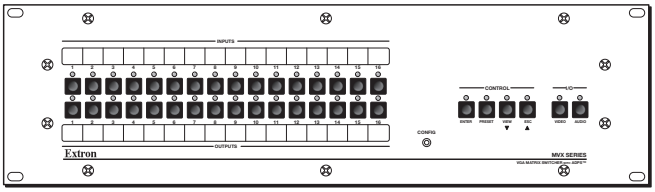
MVX 88 VGA A - Back



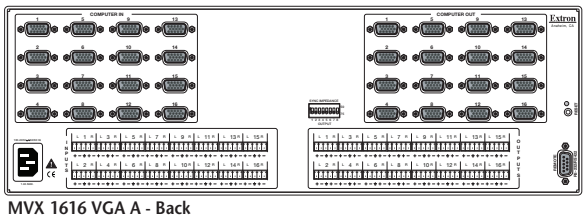
MVX 128 VGA A - Front



MVX 128 VGA A - Back



MVX 1616 VGA A - Front



MVX 1616 VGA A - Back

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