MVX Series

VGA AND STEREO AUDIO MATRIX SWITCHERS

- ■ **Eight models in I/O sizes from 4x4 to 16x16**

- ■ **Ultra-wideband performance 350 MHz to 500 MHz (-3 dB), depending on model**

- ■ **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**
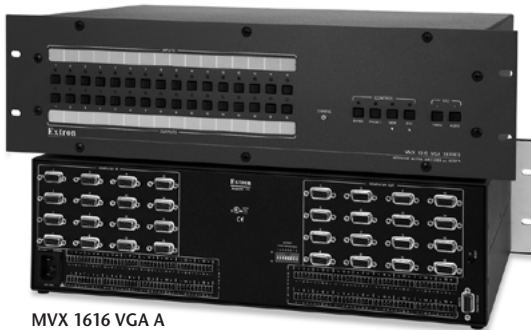
MVX 1616 VGA A

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.

Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

SERVICE SUPPORT SOLUTIONS 3

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 to 8x8 models.

FEATURES

- **Ultra-wideband performance** – **350 MHz to 500 MHz (-3 dB), depending on model** – MVX Series models in I/O sizes from 4x4 to 12x8 provide a minimum of 350 MHz (-3 dB) RGB video bandwidth, fully loaded. Larger sizes, from 12x12 to 16x16, provide a minimum of 500 MHz (-3 dB) 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
  44-128 models.................................. 350 MHz (-3 dB), fully loaded
  1212-1616 models............................ 500 MHz (-3 dB), fully loaded
Crosstalk
  44-88 models.................................. <-60 dB nominal @ 10 MHz, <-39 dB @ 100 MHz
  128 model .... -80 dB @ 1 MHz, -55 dB @ 10 MHz, -37 dB @ 100 MHz
  1212/168/1616 Series........................ -90 dB @ 1 MHz, 78 dB @ 5 MHz, -70 dB @ 10 MHz, -60dB @ 30 MHz, -52 dB @ 100 MHz

VIDEO INPUT

Number/signal type............................ VGA–UXGA RGBHV, RGBS, RGsB, RsGsBs, HDTV, component video (bi-level and tri-level sync), S-video, composite video
Nominal level .... 1 Vp-p for Y of component video and S-video, and for composite video
  0.7 Vp-p for RGB and for R-Y and B-Y of component video
  0.3 Vp-p for C of S-video
Minimum/maximum levels
  44-128 models.................................. Analog: 0.3 V to 2.0 Vp-p with no offset
  1212-1616 models............................ Analog: 0.5 V to 2.0 Vp-p with no offset
Horizontal frequency .... 15 kHz to 145 kHz
Vertical frequency .... 30 Hz to 170 Hz

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 and for R-Y and B-Y of component video
  0.3 Vp-p for C of S-video
Minimum/maximum levels
  44-128 models.................................. 0.3 V to 2.0 Vp-p (follows input)
  1212-1616 models............................ 0 V to 2.0 Vp-p (follows input)
Return loss.. <-40 dB @ 5 MHz

SYNC

Input type.. RGBHV, RGBS, RGsB, RsGsBs
Output type.. RGBHV, RGBS, RGsB, RsGsBs (follows input)
Standards .... Computer scan rates and also NTSC 3.58, NTSC 4.43, PAL, SECAM
Input level .... 0.5 V to 5.0 Vp-p
Output level .... AGC to TTL: 4.0 V to 5.0 Vp-p, unterminated
Input impedance.................................. 510 ohms
Output impedance
  44-128 models.................................. 75 ohms
  1212-1616 models............................ Inputs 1 to 8: 75 or 50 ohms, switchable
  Inputs 9 to 12 or 16: 75 ohms
Polarity .... Positive or negative (follows input)

AUDIO

Frequency response
  44-128 models.................................. 20 Hz to 20 kHz, ±0.2 dB
  1212-1616 models............................ 20 Hz to 20 kHz, ±0.05 dB
THD + Noise
  44-128 models.................................. 0.05% @ 1 kHz, 0.3 % @ 20 kHz at nominal level
  1212-1616 models............................ 0.03% @ 1 kHz at nominal level
S/N
  44-128 models.................................. >90 dB, balanced, at maximum output (unweighted)
  1212-1616 models............................ >100 dB, balanced, at maximum output (21 dBu) (unweighted)

AUDIO INPUT

Impedance
  44-88 models.................................. >18k ohms unbalanced, DC coupled
  128-1616 models............................... >10k ohms unbalanced/balanced, DC coupled
Nominal level
  44-88 models.................................. -10 dBV (316 mV) (default)
  128-1616 models............................... -10 dBV (316 mVrms), 0 dBu (775 mV)
Maximum level
  44-88 models.................................. >+12 dBV (4 V), (unbalanced) at 1% THD+N
  128-1616 models............................... +19.5 dBu, (balanced or unbalanced) at 0.01% THD+N
Input gain
  44-88 models.................................. -18 dB to +10 dB, adjustable per input
  128-1616 models............................... -18 dB to +24 dB adjustable per input
NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

AUDIO OUTPUT

Nominal level (output volume range)
  44-88 models.................................. +4 dBu (1.23 V) (default) balanced (pro), or -10 dBV (316 mV) unbalanced (consumer), selectable
  128-1616 models............................... 0 to 64 (-75.8 dB to 0 dB) in 1 dB increments
Maximum level (Hi-Z)
  44-88 models.................................. >+22 dBu, balanced; >+14 dBV, unbalanced at 1% THD+N
  128-1616 models............................... >+21 dBu, balanced or unbalanced, at 0.1% THD+N
Maximum level (600 ohm)
  44-88 models.................................. >+20 dBu, balanced; >+12 dBV unbalanced at 1% THD+N at default settings
  128-1616 models............................... >+15 dBm, balanced or unbalanced, at 0.1% THD+N at default settings

CONTROL/REMOTE — SWITCHER

Serial control port
  44-88 models.................................. 1 RS-232, 9-pin female D connector
  128 model .... 1 RS-232 or RS-422, 9-pin female D connector
  1212-1616 models............................ 1 bidirectional RS-232 or RS-422, rear panel 9-pin female D connector
  1 bidirectional RS-232, front panel 2.5 mm mini stereo jack
Baud rate and protocol
  44-88 models.................................. 9600, 8-bit, 1 stop bit, no parity
  128-1616 models............................... 9600 (default), 19200, 38400, 115200 baud (adjustable); 8 data bits, 1 stop bit, no parity
IR controller module
  44-88 models.................................. IR 501 (optional)
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, internal
  44-128 models.................................. 30 watts
  1212-1616 models............................ 48 watts
Enclosure dimensions
  44-88 models.................................. 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) (Depth excludes connectors and knobs. Width excludes rack ears.)
  128 model .... 3.5" H x 17.0" W x 9.4" D (2U high, full rack wide) (8.9 cm H x 43.2 cm W x 23.9 cm D) (Depth excludes connectors and knobs. Width excludes rack ears.)
  1212-1616 models............................ 5.25" H x 17.0" W x 9.4" D (3U high, full rack wide) (13.3. cm H x 43.2. cm W x 23.9. cm D) (Depth excludes connectors. Width excludes rack ears.)
Product weight
  44-88 models.................................. 7.0 lbs (3.2 kg)
  128 model .... 9.4 lbs (4.3 kg)
  1212-1616 models............................ 14.4 lbs (6.5 kg)
Regulatory compliance
  Safety... CE, c-UL, UL
  EMI/EMC.. CE, C-tick, FCC Class A, ICES, VCCI
MTBF .... 30,000 hours
Warranty .... 3 years parts and labor
NOTE: All nominal levels are at ±10%.
NOTE: Specifications are subject to change without notice.

| 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

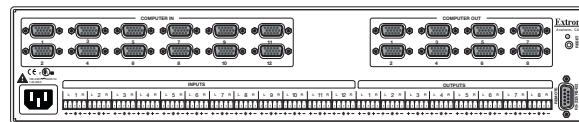# APPLICATION DIAGRAM
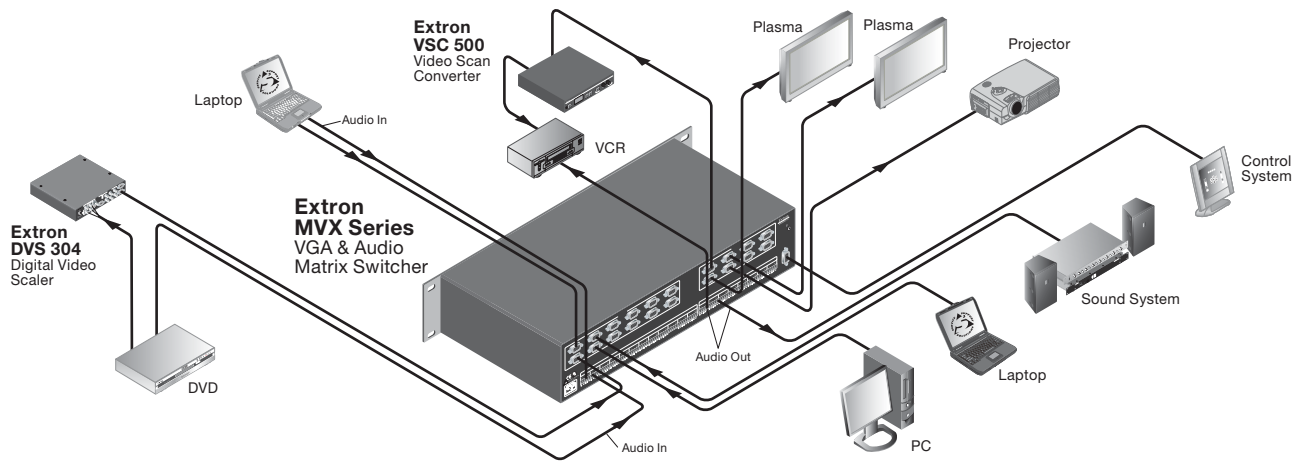
PANEL DRAWINGS

MVX 88 VGA A - Front
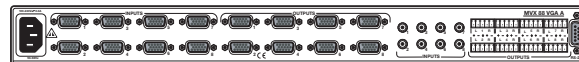
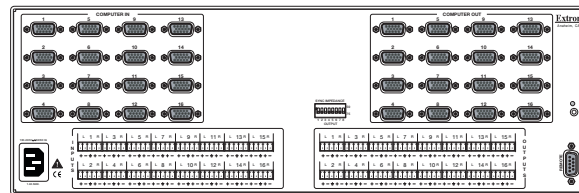**MVX 88 VGA A - Back**
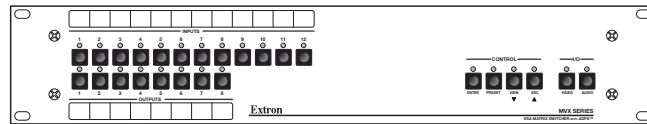
MVX 128 VGA A - Front

MVX 128 VGA A - Back
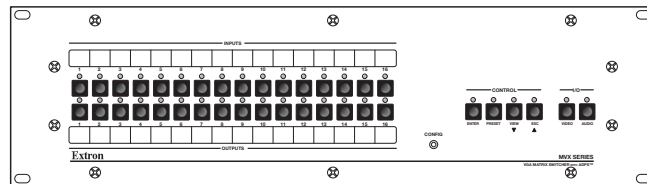
MVX 1616 VGA A - Front

MVX 1616 VGA A - Back

09-07
68-1250-01
REV. D