MVX 44 VGA A
4x4 VGA and Stereo Audio Matrix Switcher

Key Features

- 300 MHz (-3 dB) RGB video bandwidth, fully loaded
- Triple Action Switching™ for RGB delay
- Audio input gain and attenuation
- Switchable audio output levels
- Optional IR 501 handheld remote control

Model	Version Description	Part #
MVX 44 VGA A	4x4 VGA and Stereo Audio	60-635-21

DESCRIPTION

The MVX 44 VGA A is designed to route high resolution computer-video and stereo audio signals. Convenient 15-pin HD connectors are used for all computer-video input and output connections. Unbalanced stereo audio is input on 3.5 mm stereo mini jacks, while balanced or unbalanced stereo audio is output 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.

In addition, the MVX 44 VGA A comes standard with the QS-FPC™ - QuickSwitch Front Panel Controller, which allows for touch-of-a-button input and output selection directly from the front panel. It can also be controlled through RS-232 serial control utilizing Extron's SIS™ - Simple Instruction Set commands, the optional Extron IR 501 remote control, the optional Extron MKP 2000 or MKP 3000 X-Y remote control panels, or via a third party control system.

Features

- **Inputs: VGA on female 15-pin HD connectors; audio on 3.5 mm stereo mini jacks**

- **Outputs: Video on female 15-pin HD connectors; audio on captive screw connectors**

- **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.

- **Triple Action Switching™ for RGB delay** — RGB delay blanks the screen when the matrix switcher switches to a new source. The new sync signals precede the RGB signals, so there is no glitch during the transition.

- **Switches both balanced and unbalanced stereo audio** — Output on captive screw connectors.

- **Audio input gain and attenuation** — Allows users to set the level of gain or attenuation for each audio input channel, eliminating noticeable volume differences when switching between sources.

- **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.

- **Optional IR 501 handheld remote control**

- **Audio breakaway** — Provides the capability to break an audio signal away from its corresponding video signal, allowing the audio and video signals from one source to be switched to different destinations.

- **View I/O mode** — Easily view which 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** — Frequently-used I/O configurations may be saved and recalled from the front panel or via serial control. This time-saving feature allows you to set up I/O configurations and store them in memory for future use.

- **Front panel security lockout** — Prevents unauthorized use when the matrix switcher is installed in an unsecured environment where easy access is not desirable. In lock-out mode, a special button combination is required to operate the front panel.

- **RS-232 control port** — Using RS-232 serial commands, the MVX Series can be controlled and configured via the Extron Windows®-based control program, 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 serial port also makes it easy to install firmware updates.

- **Control software** — Provides a graphical, drag-and-drop interface for I/O configuration and other customization functions via RS-232 remote control. This software also offers an emulation mode for configuration of an offsite matrix switcher; the I/O configuration may be saved for future downloading to the matrix switcher.

- **Optional control panels and keypads** — Optional X/Y control panels, bus control panels, and keypads provide the flexibility to control an MVX Series matrix switcher from a remote location.

- **1U, rack-mountable metal enclosure**

- **Internal international power supply** — For worldwide compatibility, all models are equipped with an internal, autoswitching power supply that meets or exceeds all appropriate safety certifications.

OPTIONAL ACCESSORIES
- SYM BNCF Series   15-pin HD Male to BNC Female Mini High Resolution C

SPECIFICATIONS

MVX VGA A Series Matrix Switchers

Video

Routing

MVX 44 VGA A	4 x 4 matrix
MVX 48 VGA A	4 x 8 matrix
MVX 84 VGA A	8 x 4 matrix
MVX 88 VGA A	8 x 8 matrix
MVX 128 VGA A	12 x 8 matrix

Gain   Unity
Bandwidth   300 MHz (-3 dB), fully loaded

Crosstalk

MVX 128 VGA A	-80 dB @ 1 MHz, -55 dB @ 10 MHz, -37 dB @ 100 MHz
All other models	<-60 dB nominal @ 10 MHz, <-39 dB @ 100 MHz

Switching speed

MVX 128 VGA A	200 ms (max.)
All other models	20 ms (max.)

Video input

Number/signal type

MVX 44/48 VGA A	4 VGA–UXGA RGBHV, RGBS, RGsB, RsGsBs, component video (bi-level and tri-level sync), S-video, composite video
MVX 84/88 VGA A	8 VGA–UXGA RGBHV, RGBS, RGsB, RsGsBs, component video (bi-level and tri-level

	sync), S-video, composite video
MVX 128 VGA A	12 VGA–UXGA RGBHV, RGBS, RGsB, RsGsBs, component video (bi-level and tri-level sync), S-video, composite video
Connectors	
MVX 44/48 VGA A	4 female 15-pin HD
MVX 84/88 VGA A	8 female 15-pin HD
MVX 128 VGA A	12 female 15-pin HD
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	Analog: 0.3 V to 2.0 Vp-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

Number/signal type	
MVX 44/84 VGA A	4 VGA–UXGA RGBHV, RGBS, RGsB, RsGsBs, component video (bi-level and tri-level sync), S-video, composite video
MVX 48/88/128 VGA A	8 VGA–UXGA RGBHV, RGBS, RGsB, RsGsBs, component video (bi-level and tri-level sync), S-video, composite video
Connectors	
MVX 44/84 VGA A	4 female 15-pin HD
MVX 48/88/128 VGA A	8 female 15-pin HD
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	0.3 V to 2.0 Vp-p (follows input)
Impedance	75 ohms
Return loss	<-40 dB @ 5 MHz
DC offset (max. allowable)	
MVX 128 VGA A	±5 mV with input at 0 offset
All other models	<20 mV with input at 0 offset
Switching type	Triple-Action™

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	75 ohms
Max. propagation delay	
MVX 128 VGA A	30 ns nominal
All other models	Horizontal: 90 ns nominal
	Vertical: 160 ns nominal
Max. rise/fall time	4 ns
Polarity	Positive or negative (follows input)

Audio

Routing	
MVX 44 VGA A	4 x 4 stereo matrix
MVX 48 VGA A	4 x 8 stereo matrix
MVX 84 VGA A	8 x 4 stereo matrix
MVX 88 VGA A	8 x 8 stereo matrix
MVX 128 VGA A	12 x 8 stereo matrix
Throughput gain	
MVX 128 VGA A	Unbalanced output: -6 dB
	Balanced output: 0 dB
All other models	Adjustable. At default (when input gain is set to 0 dB and output level is set to "Pro"), overall gain is

12 dB for balanced output. The gain range is -6 dB to +22 dB for balanced output when the output level is set to "Pro".

Frequency response	20 Hz to 20 kHz, ±0.2 dB
THD + Noise	0.05% @ 1 kHz, 0.3 % @ 20 kHz at nominal level
S/N	>90 dB, balanced, at maximum output (unweighted)
Crosstalk	<-65 dB @ 20 kHz, <-80 dB @ 1 kHz (fully loaded) or below 60 Hz
Stereo channel separation	>80 dB @ 1 kHz, >55 dB @ 20 Hz to 20 kHz
CMRR	>75 dB @ 20 Hz to 20 kHz

Audio input

Number/signal type

MVX 44/48 VGA A	4 stereo, unbalanced
MVX 84/88 VGA A	8 stereo, unbalanced
MVX 128 VGA A	12 stereo, balanced or unbalanced

Connectors

MVX 44/48 VGA A	4 female 3.5 mm stereo mini jacks: tip (L), ring (R), sleeve (GND)
MVX 84/88 VGA A	8 female 3.5 mm stereo mini jacks: tip (L), ring (R), sleeve (GND)
MVX 128 VGA A	(12) 3.5 mm captive screw connector, 5 pole

Impedance

MVX 128 VGA A	>10k ohms unbalanced/balanced, DC coupled
All other models	>18k ohms unbalanced, DC coupled

Nominal level

MVX 128 VGA A	0 dBV, 0 dBu
All other models	-10 dBV (316 mV) (default), but also compatible with +4 dBu (1.23 V), 0 dBu (0.775V), -20 dBV (100 mV)

Maximum level

All other models	>+12 dBV (4 V), (unbalanced) at 1% THD+N

Input gain

MVX 128 VGA A	-18 dB to +24 dB, adjustable per input by RS-232/422, Ethernet, or front panel
All other models	-18 dB to +10 dB, adjustable per input; default = 0 dB. (This is referenced to the internal bus signal level. It can be verified by measuring the unbalanced output when the output level is set to "Consumer".)

NOTE   *0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu*

Audio output

Output gain	0 dB unbalanced (consumer) or +12 dB balanced (pro), selectable; default = +12 dB, balanced, when output level is set to "Pro"

Number/signal type

MVX 44/84 VGA A	4 stereo, balanced/unbalanced
MVX 48/88/128 VGA A	8 stereo, balanced/unbalanced

Connectors

MVX 44/84 VGA A	(4) 3.5 mm captive screw connectors, 5 pole
MVX 48/88/128 VGA A	(8) 3.5 mm captive screw connectors, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1 dB channel to channel

Nominal level (output volume range)

MVX 128 VGA A	0 to 64 (-75.8 dB to 0 dB) in 1 dB increments from steps 1 to 64, 12 dB increment from step 0 to 1
All other models	+4 dBu (1.23 V) (default) balanced (pro), or -10 dBV (316 mV) unbalanced (consumer), selectable

Maximum level (Hi-Z)

MVX 128 VGA A	>+21 dBu, balanced or unbalanced, at 0.1% THD+N at default settings
All other models	>+22 dBu, balanced; >+14 dBV, unbalanced at 1% THD+N at default settings

Maximum level (600 ohm)

MVX 128 VGA A	>+15 dBm, balanced or unbalanced, at 0.1% THD+N at default settings
All other models	>+20 dBu, balanced; >+12 dBV unbalanced at 1% THD+N at default settings

Control/remote — switcher

Serial control port

MVX 128 VGA A	1 RS-232 or RS-422, 9-pin female D connector
All other models	1 RS-232, 9-pin female D connector

Baud rate and protocol

|	
MVX 128 VGA A	9600 (default), 19200, 38400, 115200 baud (adjustable); 8 data bits, 1 stop bit, no parity
All other models	9600, 8-bit, 1 stop bit, no parity
Control pin configurations	
MVX 128 VGA A	RS-232: 2 = TX, 3 = RX, 5 = GND RS-422: 2 = TX-, 3 = RX-, 5 = GND, 7 = RX+, 8 = Tx+
All other models	2 = TX, 3 = RX, 5 = GND, 9 = hardwired IR input
IR controller module	IR 501 (optional remote control for MVX 44/48/84/88 VGA A models)
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
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Convection, vented
Rack mount	Yes, with included 1U, full rack width rack and through-desk mounting kit, part #70-077-03 (MBD 149) Furniture mountable with optional under-desk mounting kit, part #70-222-01 (MBU 149)
Enclosure type	Metal
Enclosure dimensions	
MVX 128 VGA A	3.5" H x 17.4" W x 9.4 D (2U high, full rack wide) 8.9 cm H x 44.2 cm W x 23.9 cm D (Depth excludes connectors and knobs. Width excludes rack ears.)
All other 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.)
Product weight	
MVX 128 VGA A	21 lbs (9.5 kg)
All other models	7.0 lbs (3.2 kg)
Shipping weight	
MVX 128 VGA A	25 lbs (12 kg)
All other models	10 lbs (5 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
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.*

(7.52-102407-D9)

DIAGRAM
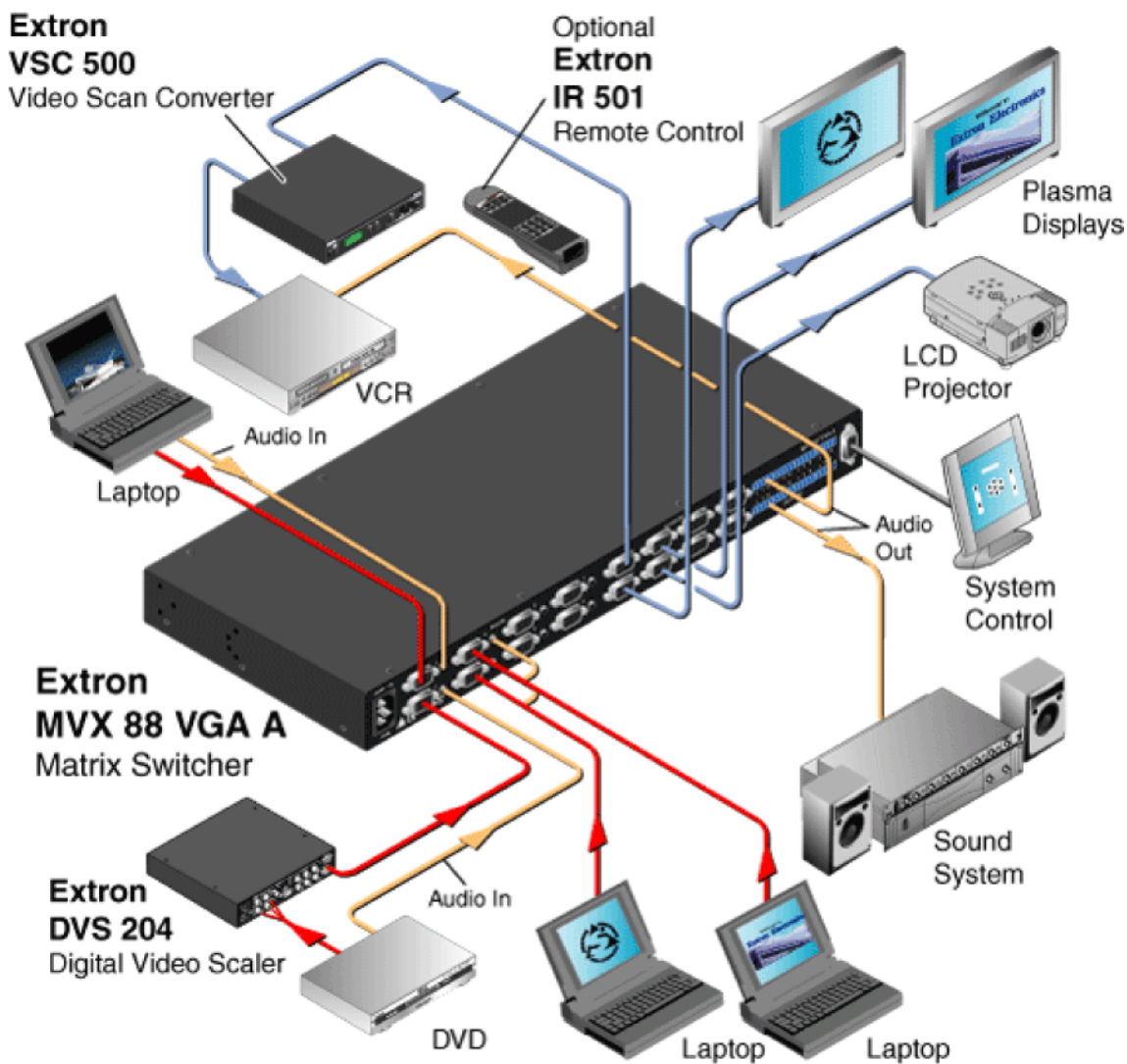
PANEL DRAWING
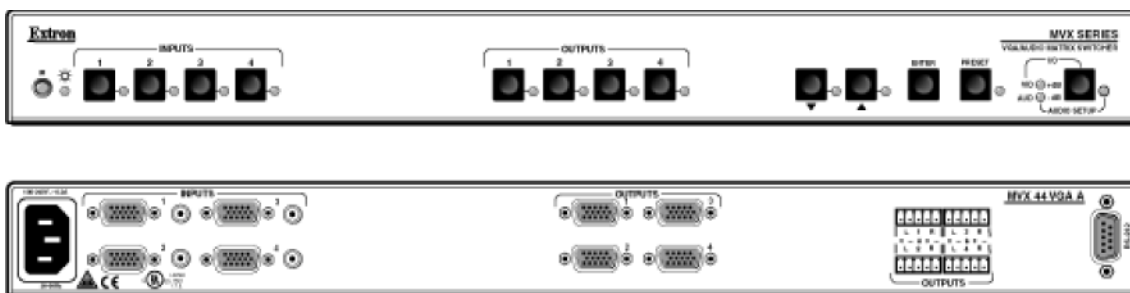
© 2008 Extron Electronics. Specifications are subject to change without notice.