# MVX Plus 128 VGA A

## VGA AND STEREO AUDIO MATRIX SWITCHER
## WITH ADSP™ AND IP LINK®

■ **300 MHz (-3 dB) RGB bandwidth, fully loaded**

■ **ADSP™ - Advanced Digital Sync Processing**

■ **DSVP™ - Digital Sync Validation Processing**

■ **Inputs and outputs on 15-pin HD connectors**

■ **Large easy to label tri-color backlit buttons**

■ **Balanced and unbalanced audio routing**

■ **Audio input gain and attenuation**

■ **Audio output volume control**

■ **Audio breakaway**

■ **Global presets**

■ **RS-232 serial control**

■ **IP Link® Ethernet monitoring and control**



The Extron MVX Plus 128 VGA A is a compact, 12x8 matrix switcher for VGA and stereo audio. Equipped with convenient 15-pin HD connectors and 300 MHz (-3dB) RGB video bandwidth, the MVX Plus 128 VGA A is ideal for classrooms, computer training facilities, rental and staging, mobile/field operation centers, and other applications where computer-video signal routing is needed.

# Extron® Electronics

# DESCRIPTION

The **MVX Plus 128 VGA A** is designed to route high resolution computer-video and stereo audio signals. It combines the performance of a wideband switcher with the convenience of 15-pin HD connectors for all computer-video input and output connections. Balanced or unbalanced stereo audio is input and output on captive screw connectors. The use of pre-terminated cable assemblies, such as Extron's VGA Cables, eliminates crimping and makes installations faster and easier.

The MVX Plus 128 VGA A is housed in a rugged, compact 2U metal enclosure, and includes RS-232 and IP Link® Ethernet control capability. A standard QS-FPC™ - QuickSwitch Front Panel Controller allows for simple, touch-of-a-button input and output selection directly from the front panel. The matrix switcher can also be controlled from a remote location using the optional MKP 2000 and MKP 3000 Matrix Switcher X-Y Remote Control Panels.

The MVX Plus 128 VGA A features exclusive Extron technologies, such as ADSP™ - Advanced Digital Sync Processing, an all-digital process that corrects and restores the sync signal as it passes through the switcher, and DSVP™ - Digital Sync Validation Processing for verifying active sources.

# 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 Plus 128 VGA A provides 300 MHz (-3dB) of RGB video bandwidth at full performance capacity when one input signal drives all outputs.

- **ADSP™** – Advanced Digital Sync Processing technology – An exclusive, all-digital process that regenerates the sync signal waveform and restores sync level to 5.0 V p-p, TTL specifications. This ensures a stable sync signal for improved signal compatibility with any LCD, DLP™, plasma, or other digital display device.

- **DSVP™** – Digital Sync Validation Processing – Verifies active sources by polling all inputs for valid sync signals. DSVP then transmits the horizontal and vertical sync information to the user through the serial or IP Link ports.

- **RGBHV Switching** – Switches separate horizontal and vertical sync to ensure proper sync polarity, providing a more stable image. Fully compatible with RGBS, RGsB, HDTV, component video, S-video, and composite video signals.

- **Tri-color, backlit buttons can be custom labeled for easy identification** – The buttons illuminate red, green, or amber, depending on function, for ease of use in low-light environments.

- **Triple-Action Switching™ for 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 through front panel, IP Link, or serial control.

- **Audio output volume control** – Can be set dynamically for each channel through the front panel, IP Link, or serial control, eliminating the need for an audio preamplifier in many system designs.

- **Balanced and unbalanced audio** – Balanced or unbalanced stereo audio signals are input and 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 differences when switching between sources.

# FEATURES (Cont.)

- **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.

- **Buffered I/O** – Each input and output is individually buffered to provide maximum performance and virtually no crosstalk or signal interference between channels.

- **View I/O mode** – Users can easily view which inputs and outputs are actively connected.

- **I/O grouping** – Allows the matrix switcher to be virtually divided into smaller sub-switchers, making installation and control easier. I/O grouping allows specific outputs, like those designated for a specific video format, to be grouped together.

- **Rooming** – The matrix switcher can be programmed to group selected outputs into specific rooms, each with its own set of unique presets. Each room can support eight to 16 outputs with 10 different presets. A total of up to 10 rooms are available.

- **Global presets** – Frequently used I/O configurations may be saved and recalled either from the QS-FPC™ - QuickSwitch Front Panel Controller, IP Link, or serial control. This time-saving feature allows I/O configurations to be set up and stored in memory for future use.

- **QS-FPC™ - QuickSwitch Front Panel Controller** – Provides a discrete button for each input and output, allowing for simple, intuitive operation.

- **Front panel security lockout** – Prevents unauthorized use in non-secure environments. In lockout mode, a special button combination is required to operate the switcher from the front panel controller.

- **IP Link Ethernet monitoring and control** – Engineered to meet the needs of professional A/V environments, IP Link enables the MVX Plus 128 VGA A to be proactively monitored and managed over a LAN, WAN, or the Internet, using standard TCP/IP protocols. IP Link provides for remote selection of input and output ties, adjustment and control of audio input and output levels, and advanced system diagnostics.

- **IP Link enhanced diagnostics** – Provides for monitoring of internal product operating temperature and power supply voltages, e-mail notification of input signal loss, and other critical service information.

- **RS-232 and RS-422 control** – Using the RS-232 and RS-422 control port, the MVX Plus 128 VGA A 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 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 and RS-422 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** – Provide the flexibility to control a MVX Plus 128 VGA A matrix switcher from a remote location.

- **Rack mountable** – The MVX 128 Plus 128 VGA A is housed in a compact 2U, 19-inch wide, rack-mountable metal enclosure.

- **Internal international power supply** – For worldwide compatibility, the MVX Plus 128 VGA A is equipped with an internal, autoswitching power supply.

## VIDEO

| | |
|---|---|
| Routing | 12 x 8 matrix |
| Gain | Unity |
| Bandwidth | 300 MHz (-3 dB) , fully loaded |
| 0 - 10 MHz | no more than +0.1 dB to -0.1 dB |
| 0 - 130 MHz | no more than +0.8 dB to -0.8 dB |
| Crosstalk | -80 dB @ 1 MHz, -55 dB @ 10 MHz, -45 dB @ 30 MHz, -37 dB @ 100 MHz |
| Switching speed | 200 ns (max.) |

## VIDEO INPUT

| | |
|---|---|
| Number/signal type | 12 RGBHV, RGBS, RGsB, RsGsBs, HDTV component video, component video, S-video, composite video |
| Connectors | 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 0.3 Vp-p for R-Y and B-Y of component video, and for C of S-video |
| Minimum/maximum levels | Analog: 0.5 V to 2.0 Vp-p with no offset |
| Impedance | 75 ohms |
| Return loss | <-30 dB @ 5 MHz |
| DC offset (max. allowable) | 1.5 V |

## VIDEO OUTPUT

| | |
|---|---|
| Number/signal type | 8 RGBHV, RGBS, RGsB, HDTV component video, component video, S video, composite video (follows input type) |
| Connectors | 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 0.3 Vp-p for R-Y and B-Y of component video, and for C of S-video |
| Minimum/maximum levels | 0 V to 2.0 Vp-p (follows input) |
| Impedance | 75 ohms |
| Return loss | -30 dB @ 5 MHz |
| DC offset | ±5 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) Tri-level on Y, R-Y, B-Y channels (component video 720p, 1080i, 1080p) Bi-level on Y channel (for all other component video rates) |
| Input level | 0.5 V to 5.0 Vp-p, 4.0 Vp-p normal |
| Output level | AGC to TTL: 4.0 V to 5.0 Vp-p, unterminated |
| Input impedance | 510 ohms |
| Output impedance | 75 ohms |
| Max input voltage | 5.0 Vp-p |
| Max. propagation delay | 30 ns |
| Max. rise/fall time | 4 ns |
| Polarity | Positive or negative (follows input) |

## AUDIO

| | |
|---|---|
| Routing | 12 x 8 stereo matrix |
| Gain | Unbalanced output: -6 dB; balanced output 0 dB |
| Frequency response | 20 Hz to 20 kHz, ±0.05 dB |
| THD + Noise | 0.03% @ 1 kHz at nominal level |
| S/N | >90 dB, balanced, at maximum output (21 dBu), 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

| | |
|---|---|
| Number/signal type | 12 stereo, balanced/unbalanced |
| Connectors | (12) 3.5 mm captive screw connectors, 5 pole |
| Impedance | >10k ohm, balanced/unbalanced, DC coupled |
| Nominal level | 0 dBV (316 mV)0 dBu (775 mV) |
| Maximum level | +19.5 dBu, (balanced or unbalanced) at 0.01% THD+N |
| Input gain adjustment | -18 dB to +24 dB, adjustable per input by RS-232/422, Ethernet, or front panel |

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

## AUDIO OUTPUT

| | |
|---|---|
| Number/signal type | 8 stereo, balanced/unbalanced |
| Connectors | (8) 3.5 mm captive screw connectors, 5 pole |
| Impedance | 50 ohms unbalanced, 100 ohms balanced |
| Gain error | ±0.1 dB channel to channel |
| Maximum level (Hi-Z) | >+21 dBu, balanced or unbalanced at 0.10%THD+N |
| Maximum level (600 ohm) | >+15 dBm, balanced or unbalanced at 0.10%THD+N |
| Output volume range | 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 |

## CONTROL/REMOTE — SWITCHER

| | |
|---|---|
| Serial control port | 1 RS-232 or RS-422, 9-pin female D connector |
| Baud rate and protocol | 9600 (default), 19200, 38400, 115200 baud (adjustable); 8 data bits, 1 stop bit, no parity |
| Serial control pin configurations | RS 232: 2 = TX, 3 = RX, 5 = GND RS 422: 2 = TX-, 3 = RX-, 5 = GND, 7 = RX+, 8 = Tx+ |
| Ethernet control port | 1 RJ-45 female connector Ethernet data 10/100Base-T, half/full duplex with autodetect |
| Ethernet protocol | ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP |
| Program control | Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer, Telnet |

## 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 | 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 (Depth excludes connectors. Width includes rack ears.) |
| Product weight | 14.4 lbs (6.5 kg) |
| Shipping weight | 21 lbs (10 kg) |
| DIM weight, international | 25 lbs (12 kg) |
| 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%.

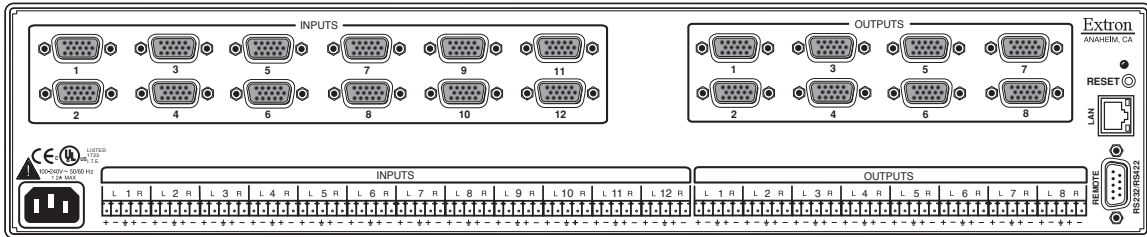| Model | Version Description | Part Number |
|---|---|---|
| MVX Plus 128 VGA A | 12x8 VGA & Stereo Audio | 60-788-01 |

# APPLICATION DIAGRAMS
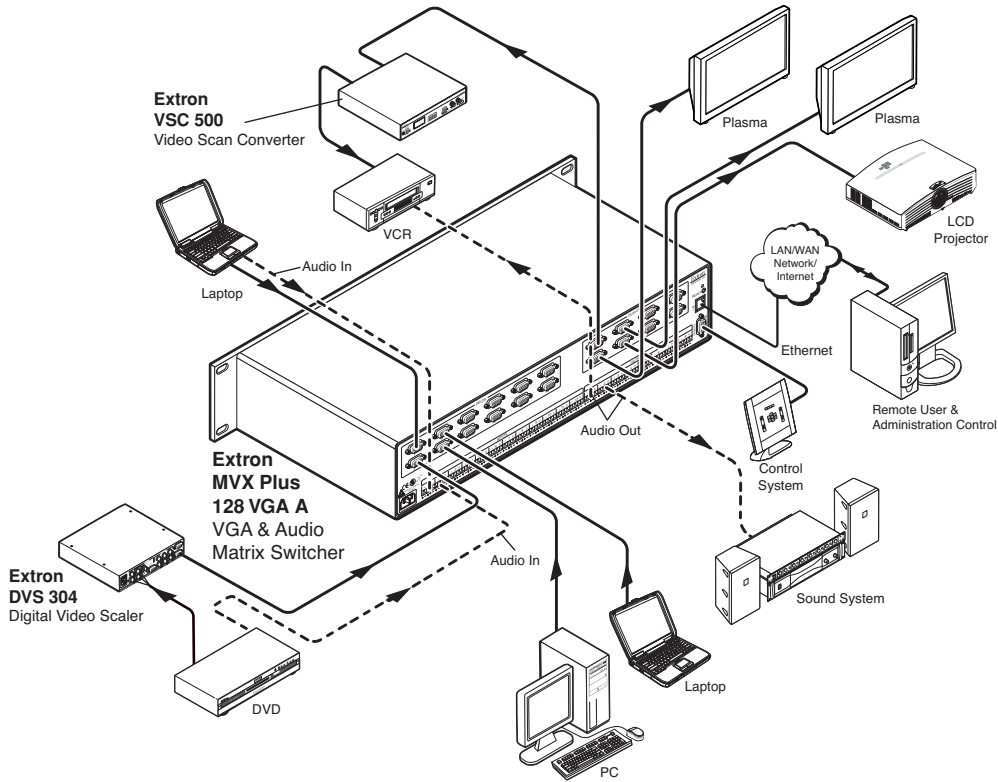


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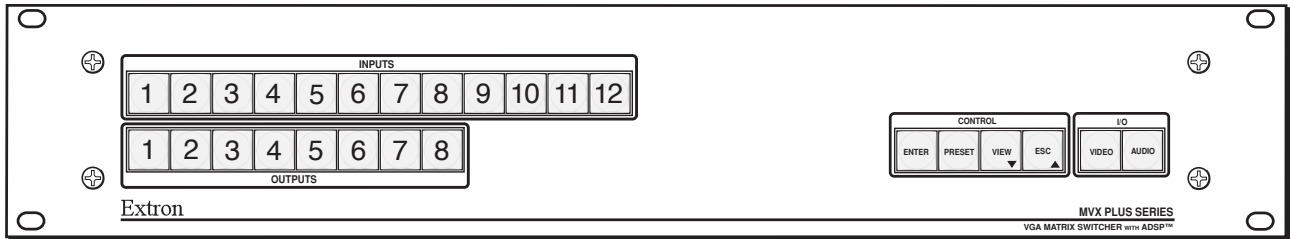


**MVX Plus 128 VGA A – Front**



**MVX Plus 128 VGA A – Back**

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