MAV Series

A/V Matrix Switchers for Composite Video, S-Video, and Stereo Audio

COMMON FEATURES

- **150 MHz (-3 dB) video bandwidth, fully loaded** — Ensures switching and distribution of video signals without degradation. MAV Series matrix switchers provide a minimum 150 MHz (-3 dB) of video bandwidth at full performance capability when one input drives all outputs.

- **Compatible with NTSC 3.58, NTSC 4.43, PAL, and SECAM video** — Provides for worldwide compatibility.

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

- **View I/O mode** — Easily view which inputs and outputs are actively connected.

- **Global presets** — Frequently used I/O configurations may be saved and recalled either from the QuickSwitch Front Panel Controller or RS-232 serial control. This time-saving feature allows you to set up I/O configurations and store them in memory for future use.

- **Vertical interval switching provides glitch-free switching between multiple genlocked sources**

- **Switches both balanced and unbalanced stereo audio** — Unbalanced only on RCA models

- **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.

- **Audio breakaway** — Provides the capability to break away an audio signal from its corresponding video signal, allowing the audio channels to be operated as a separate matrix swticher.

- **RS-232 serial control port** — Using serial commands, the MAV 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.

- **Control software** — For RS-232 remote control from a PC, Extron ships our Windows®-based with every matrix switcher. This icon-driven software uses a graphical, drag-and-drop interface to make I/O configuration and other customization functions simple and convenient. This software also offers an emulation mode for configuration of an offsite matrix switcher; the I/O configuration may then be saved for future downloading to the matrix switcher.

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

- **Optional IR 501 handheld IR remote control**

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

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

- **Internal international power supply** — The 100-240VAC, 50/60 Hz, universal power supply provides worldwide power compatibility.

DESCRIPTION

The Extron **MAV Series** of compact, space-efficient matrix switchers provide versatile switching solutions for video system applications that route composite video and S-video signals with stereo audio. There are 17 models in the MAV Series, ranging in I/O sizes from 4x4 to 8x8. They are ideal for corporate boardrooms and meeting facilities, museums, university classrooms, sports bars and restaurants, video conference and distance learning facilities, video production suites, and many residential entertainment installations.

Video Features

All MAV Series switchers feature 150 MHz (-3 dB) video bandwidth, fully loaded, ensuring signal quality in even the most complex system designs. In addition, all models are capable of switching NTSC 3.58, NTSC 4.43, PAL, and SECAM video sources for worldwide capability. MAV Series switchers also feature video genlock and vertical interval switching for smooth, seamless transitions when switching between synchronous video sources, making them ideal for many small video production applications.

Audio Features

The MAV Series includes matrix switchers capable of switching balanced or unbalanced stereo audio signals, in both audio follow and audio breakaway modes. Audio input gain and attenuation can be adjusted at the front panel or through serial control, eliminating noticeable differences in audio level when switching between inputs. Many models are also available with convenient RCA connectors for switching unbalanced stereo audio.
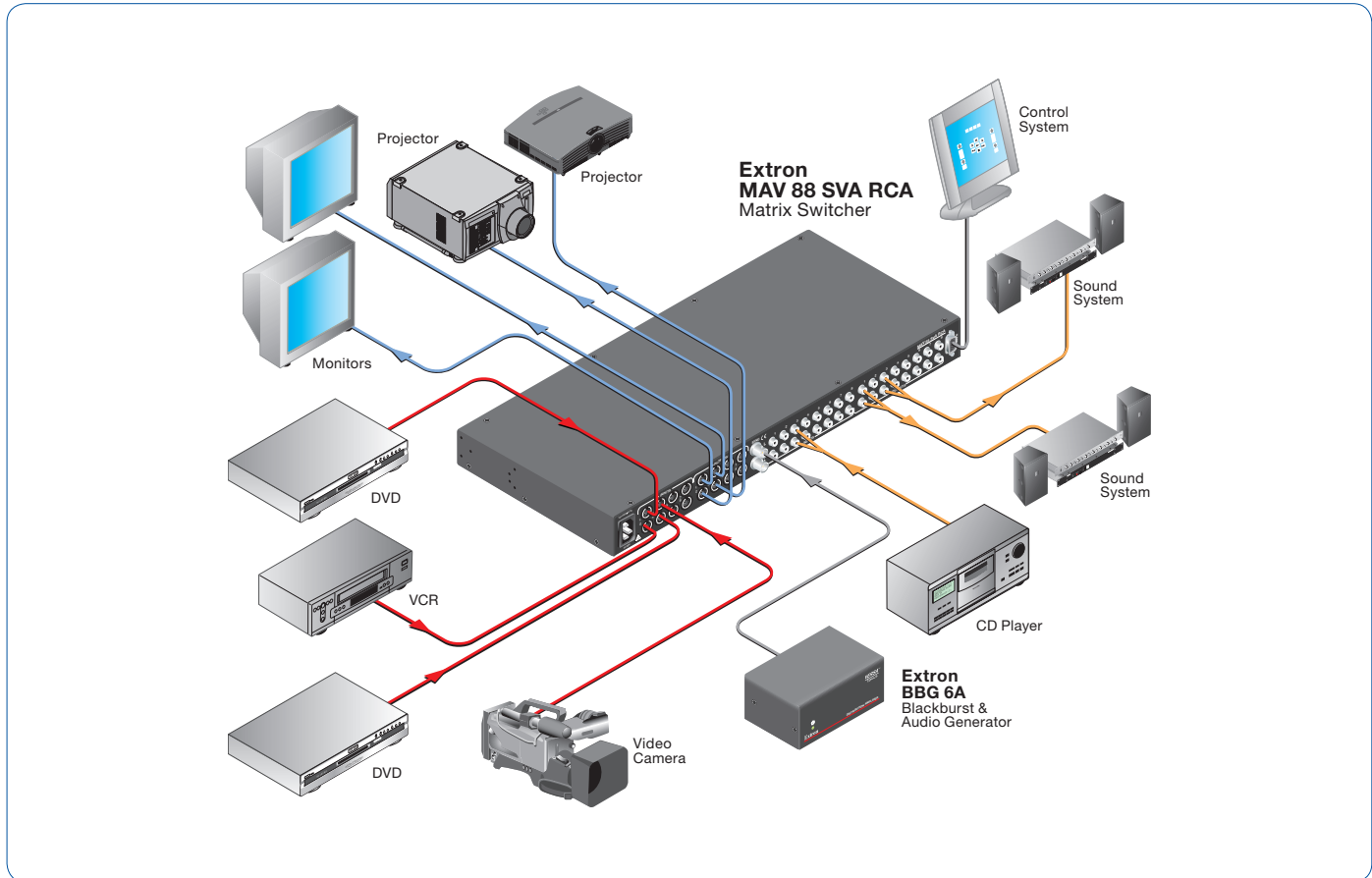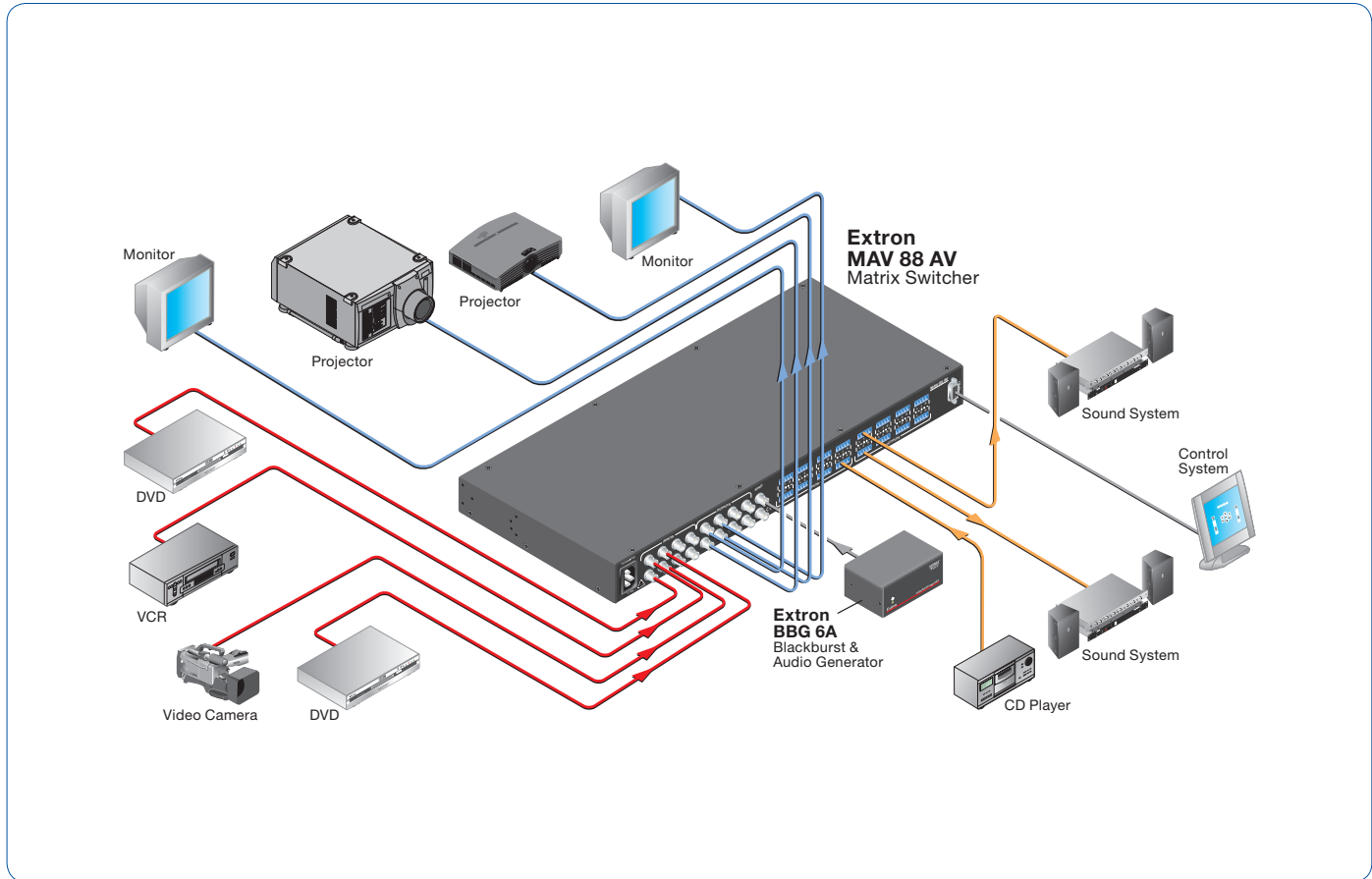
Control Features

Each of the 17 available MAV Series models comes standard with RS-232 control capability, as well as Extron's exclusive QS-FPC™ - QuickSwitch Front Panel Controller, which allows for simple, touch-of-a-button input and output selection directly from the front panel. A special Front Panel Security Lockout mode is available for use when a MAV Series matrix switcher must be installed in an unsecured environment. For control from a remote location, the MAV Series can also be controlled via the optional remote control panels. MAV models are also capable of IR control with the optional IR 501 handheld IR remote control.

Software Features

All MAV Series matrix switchers are shipped with Extron's Windows®-based control software, which provides a simple, graphical drag-and-drop interface for I/O configuration and other customization functions. The control software also includes an emulation mode for configuring an off-site matrix switcher. Once saved, the I/O configuration may be downloaded to the MAV Series switcher through the serial port. Most MAV Series models also support the download of the latest firmware revisions through the serial port, directly from Extron's Web site at www.extron.com.

Extron ®

MAV Series

Monitor

Projector

Projector

Monitor

**Extron
MAV 88 AV**
Matrix Switcher

Sound System

Control System

DVD

Sound System

VCR

Video Camera

DVD

**Extron
BBG 6A**
Blackburst &
Audio Generator

CD Player

Projector

Projector

**Extron
MAV 88 SVA RCA**
Matrix Switcher

Control System

Sound System

Monitors

Sound System

DVD

Sound System

VCR

CD Player

DVD

Video Camera

**Extron
BBG 6A**
Blackburst &
Audio Generator

Extron®

MAV Series

MAV 88 V

8x8 Composite Video Matrix Switcher

UNIQUE FEATURES

- Inputs: Eight video on female BNC connectors
- Outputs: Eight video on female BNC connectors

MODEL	VERSION DESCRIPTION	PART #
MAV 88 V	8x8 Composite Video	60-555-01

MAV AV

Composite Video & Stereo Audio Matrix Switchers

UNIQUE FEATURES

- Inputs: Video on female BNC connectors; audio on captive screw connectors
- Outputs: Video on female BNC connectors; audio on captive screw connectors

MAV 88 AV

MODEL	VERSION DESCRIPTION	PART #
MAV 44 AV	4x4 Composite Video & Stereo Audio	60-553-21
MAV 48 AV	4x8 Composite Video & Stereo Audio	60-605-21
MAV 84 AV	8x4 Composite Video & Stereo Audio	60-554-21
MAV 88 AV	8x8 Composite Video & Stereo Audio	60-555-21

MAV AV RCA

Composite Video & Stereo Audio
Matrix Switchers - RCA

UNIQUE FEATURES

- Inputs: Video on female BNC connectors; audio on RCA jacks
- Outputs: Video on female BNC connectors; audio on RCA jacks

MAV 88 AV RCA

MODEL	VERSION DESCRIPTION	PART #
MAV 44 AV RCA	4x4 Composite Video & Stereo Audio - RCA	60-553-31
MAV 48 AV RCA	4x8 Composite Video & Stereo Audio - RCA	60-605-31
MAV 84 AV RCA	8x4 Composite Video & Stereo Audio - RCA	60-554-31
MAV 88 AV RCA	8x8 Composite Video & Stereo Audio - RCA	60-555-31

Extron ®

MAV SVA

S-Video & Stereo Audio Matrix Switchers

UNIQUE FEATURES

• Inputs: Video on female 4-pin mini DIN connectors; audio on captive screw connectors

• Outputs: Video on female 4-pin mini DIN connectors; audio on captive screw connectors

MAV 88 SVA

MODEL	VERSION DESCRIPTION	PART #
MAV 44 SVA	4x4 S-Video & Stereo Audio	60-553-22
MAV 48 SVA	4x8 S-Video & Stereo Audio	60-605-22
MAV 84 SVA	8x4 S-Video & Stereo Audio	60-554-22
MAV 88 SVA	8x8 S-Video & Stereo Audio	60-555-22

MAV SVA RCA

S-Video & Stereo Audio
Matrix Switchers - RCA

UNIQUE FEATURES

• Inputs: Video on female 4-pin mini DIN connectors; audio on RCA jacks

• Outputs: Video on female 4-pin mini DIN connectors; audio on RCA jacks

MAV 88 SVA RCA

MODEL	VERSION DESCRIPTION	PART #
MAV 44 SVA RCA	4x4 S-Video & Stereo Audio - RCA	60-553-32
MAV 48 SVA RCA	4x8 S-Video & Stereo Audio - RCA	60-605-32
MAV 84 SVA RCA	8x4 S-Video & Stereo Audio - RCA	60-554-32
MAV 88 SVA RCA	8x8 S-Video & Stereo Audio - RCA	60-555-32

Extron ®

MAV Series

SPECIFICATIONS

VIDEO

Routing
MAV 44 Series .... 4 x 4 matrix
MAV 48 Series .... 4 x 8 matrix
MAV 84 Series .... 8 x 4 matrix
MAV 88 Series .... 8 x 8 matrix
Gain .... Unity
Bandwidth .... 150 MHz (-3 dB), fully loaded
Differential phase error .... <0.1º at 3.58 MHz and 4.43 MHz
Differential gain error .... <0.1% at 3.58 MHz and 4.43 MHz
Crosstalk .... <-50 dB @ 5 MHz
Switching speed .... 20 ms (max.)

VIDEO INPUT

Number / Signal type
MAV 44/48 composite
video models .... 4 composite video
MAV 44/48 S-video models ..... 4 S-video
MAV 84/88 composite
video models .... 8 composite video
MAV 84/88 S-video models ..... 8 S-video
Connectors
MAV 44/48 composite
video models .... 4 female BNC
MAV 44/48 S-video models ..... 4 female 4-pin mini DIN
MAV 84/88 composite
video models .... 8 female BNC
MAV 84/88 S-video models ..... 8 female 4-pin mini DIN
Nominal level .... 1 Vp-p for Y of S-video, and for composite video
                                      0.3 Vp-p for C of S-video
Minimum / Maximum levels... Analog: 0.4 V to 2.0 Vp-p with no offset at unity gain
Impedance .... 75 ohms
Return loss .... Composite video: <-38 dB @ 0 to 10 MHz
                                      S-video: <-25 dB @ 0 to 10 MHz
DC offset (max. allowable)....... 5 V
External sync (genlock) .... 0.2 V to 0.4 Vp-p
Input coupling .... AC coupling only

VIDEO OUTPUT

Number / Signal type
MAV 44/84 composite
video models .... 4 composite video
MAV 44/84 S-video models ..... 4 S-video
MAV 48/88 composite
video models .... 8 composite video
MAV 48/88 S-video models ..... 8 S-video
Connectors
MAV 44/84 composite
video models .... 4 female BNC
MAV 44/84 S-video models ..... 4 female 4-pin mini DIN
MAV 48/88 composite
video models .... 8 female BNC
MAV 48/88 S-video models ..... 8 female 4-pin mini DIN
Nominal level .... 1 Vp-p for Y of S-video, and for composite video
                                      0.3 Vp-p for C of S-video
Minimum / Maximum levels... 0.4 V to 2.0 Vp-p (follows input)
Impedance .... 75 ohms
Return loss .... S-video: <-25 dB @ 5 MHz
                                      Composite video: <-40 dB @ 5 MHz
DC offset .... 15 mV typical with input at 0 offset
Switching type .... Vertical interval

SYNC

Genlock connectors .... 2 BNC female
Standards .... NTSC 3.58, NTSC 4.43, PAL, SECAM

AUDIO (ALL MODELS EXCEPT MAV 88 V)

Routing
MAV 44 Series .... 4 x 4 stereo matrix
MAV 48 Series .... 4 x 8 stereo matrix
MAV 84 Series .... 8 x 4 stereo matrix
MAV 88 Series .... 8 x 8 stereo matrix
Gain .... Adjustable; the default is unity
Frequency response .... 20 Hz to 20 kHz, ±0.5 dB
THD + Noise .... 1% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N .... 90 dB at maximum output (unweighted)
Crosstalk .... <-65 dB @ 20 kHz, <-80 dB @ 1 kHz or below 60 Hz, fully loaded
Stereo channel separation .... >80 dB @ 20 Hz to 20 kHz
CMRR .... >75 dB @ 20 Hz to 20 kHz

AUDIO INPUT (ALL MODELS EXCEPT MAV 88 V)

Number / Signal type
MAV 44/48 AV,
MAV 44/48 SVA .... 4 stereo, balanced/unbalanced
MAV 44/48 AV RCA,
MAV 44/48 SVA RCA .... 4 stereo, unbalanced
MAV 84/88 AV,
MAV 84/88 SVA .... 8 stereo, balanced/unbalanced
MAV 84/88 AV RCA,
MAV 84/88 SVA RCA .... 8 stereo, unbalanced
Connectors
MAV 44/48 AV,
MAV 44/48 SVA .... (4) 3.5 mm captive screw connectors, 5 pole
MAV 44/48 AV RCA,
MAV 44/48 SVA RCA .... 4 pairs of RCA female connectors
MAV 84/88 AV,
MAV 84/88 SVA .... (8) 3.5 mm captive screw connectors, 5 pole
MAV 84/88 AV RCA,
MAV 84/88 SVA RCA .... 8 pairs of RCA female connectors
Impedance .... >18k ohms unbalanced, 24k ohms balanced, DC coupled
Nominal level .... Configurable: +4 dBu (1.23 V, professional level) or
                                      -10 dBV (316 mV, consumer level)
Maximum level .... >+20 dBu (captive screw models) at 1% THD+N
                                      >+14 dBu (RCA models) at 1% THD+N
Input gain adjustment.......... −18 dB to +10 dB, adjustable per input; default = 0 dB

AUDIO OUTPUT (ALL MODELS EXCEPT MAV 88 V)

Number / Signal type
MAV 44/84 AV,
MAV 44/84 SVA .... 4 stereo, balanced/unbalanced
MAV 44/84 AV RCA,
MAV 44/84 SVA RCA .... 4 stereo, unbalanced
MAV 48/88 AV,
MAV 48/88 SVA .... 8 stereo, balanced/unbalanced
MAV 48/88 AV RCA,
MAV 48/88 SVA RCA .... 8 stereo, unbalanced
Connectors
MAV 44/84 AV,
MAV 44/84 SVA .... (2) 3.5 mm captive screw connectors, 10 pole
MAV 44/84 AV RCA,
MAV 44/84 SVA RCA .... 4 pairs of RCA female
MAV 48/88 AV,
MAV 48/88 SVA .... (4) 3.5 mm captive screw connectors, 10 pole
MAV 48/88 AV RCA,
MAV 48/88 SVA RCA .... 8 pairs of RCA female
Impedance .... 50 ohms unbalanced, 100 ohms balanced
Gain error .... <±0.1 dB channel to channel
Nominal level .... Configurable: +4 dBu (1.23 V, professional level) or
                                      -10 dBV (316 mV, consumer level)
Maximum level (Hi-Z) .... >+20 dBu, balanced; >+18 dBu, unbalanced at 1%THD+N at default settings
Maximum level (600 ohm) ..... >+19 dBm, balanced; >+13 dBm, unbalanced at 1%THD+N at default settings

CONTROL / REMOTE — SWITCHER

Serial control port .... RS-232, 9-pin female D connector
Baud rate and protocol .... 9600, 8 data bits, 1 stop bit, no parity
IR controller module .... IR 501 remote control (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, 15 watts, internal, universal
Rack mount .... Yes, with included brackets, part #70-077-03
                                      Also furniture mountable with an optional under-desk mounting kit,
                                      part #70-222-01
Enclosure type .... Metal
Enclosure dimensions .... 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. Width excludes rack ears.)
Product / Shipping weight ..... 7.0 lbs (3.2 kg) / 10 lbs (5 kg)

Extron®

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