

User's Guide



VersaTools™ MDA 5V, 5SV, 5A RCA

Mini Distribution Amplifiers

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Introduction

The Extron MDA 5 Series of Mini Distribution Amplifiers (MDAs) are a family of three video and audio distribution amplifiers. The MDA are members of the Extron VersaTools™ line of basic distribution amplifiers, switchers, and associated video accessories.

The MDA 5V distributes buffered composite video, the MDA 5SV distributes buffered S-video (luminance (Y) and chrominance (C)), and the MDA 5A RCA distributes amplified stereo audio, on RCA outputs.

The MDAs ship with external, desktop 12V power supplies, which accept 100-240VAC input.

Installation

The MDA 5V, 5SV, and 5A RCA can be mounted on a rack shelf, under a desk or tabletop, or on a projector bracket.

Rack mounting

For optional rack mounting, mount the MDA on a VersaTools 19" 1U Rack Shelf (Extron part #60-190-20) (figure 1) or a standard Universal 1U Rack Shelf (Extron part #60-190-01) (figure 2). On the standard rack shelf, the MDA mounts in one of four locations to the rear of the rack or in one of four locations to the front of the rack.

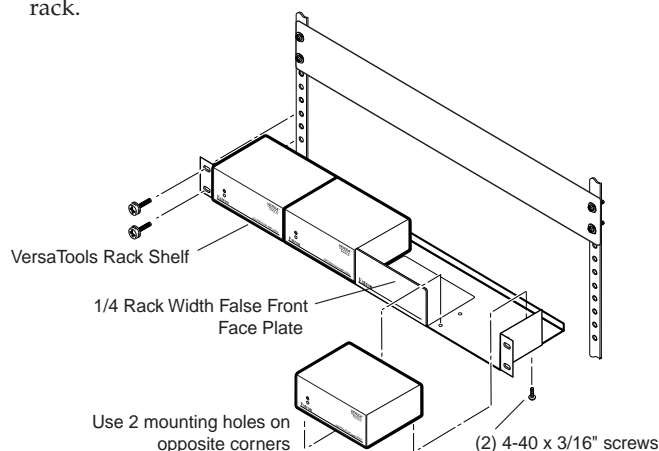


Figure 1 — Rack mounting the MDA 5V, 5SV, or 5A RCA on the VersaTools shelf

1. If feet were previously installed on the bottom of the MDA, remove them.
2. Mount the MDA on the rack shelf, using two 4-40 x 3/16 screws in opposite (diagonal) corners to secure the MDA to the shelf.

3. Install blank panel(s) or other unit(s) to the rack shelf.
4. Insert the shelf into the rack, aligning the holes in the shelf with those of the rack.
5. Secure the shelf to the rack using the supplied machine screws. This shelf can be mounted in the front or in the rear of the rack.

NOTE Only products in the VersaTools line can be mounted to a VersaTools shelf. Any 1U rack-mountable Extron product can be mounted on the standard shelf.

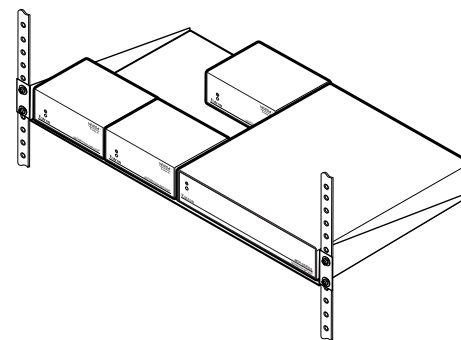


Figure 2 — Mounting the MDA on the standard shelf

Furniture or projector mounting

Furniture mount or projector mount the MDA using the optional mounting kit (Part #70-212-01, furniture, or 70-217-01, projector) as follows:

1. Attach the mounting brackets to the MDA with the machine screws provided (figure 3).

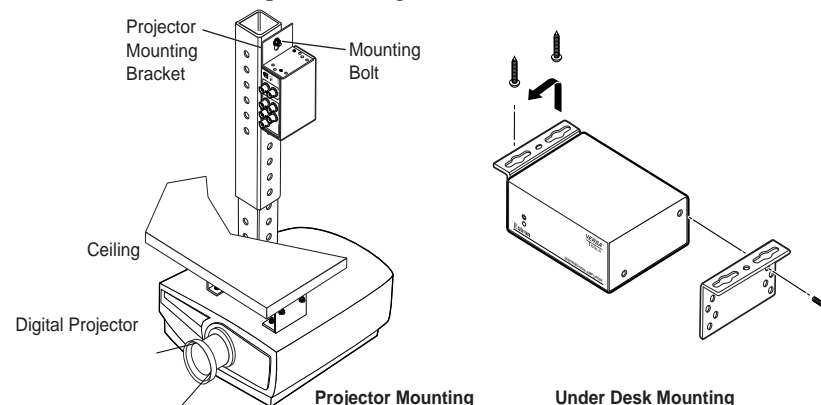


Figure 3 — Desk and projector mounting the MDA 5V, 5SV, or 5A RCA

Installation

2. If feet were previously installed on the bottom of the MDA, remove them.
3. **For furniture mounting**, hold the MDA with the attached brackets against the underside of the table or other furniture. Mark the location of the screw holes of the bracket on the mounting surface.
4. **For furniture mounting**, drill 3/32" (2 mm) diameter pilot holes, 1/4" (6.3 mm) deep in the mounting surface at the marked screw locations.
5. **For furniture mounting**, insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until just less than 1/4" of the screw head protrudes.
6. **For furniture mounting**, align the mounting screws with the slots in the brackets and place the MDA against the surface, with the screws through the bracket slots.
7. **For furniture mounting**, slide the receiver slightly forward or back, then tighten all four screws to secure the MDA in place.
8. **For projector mounting**, secure the MDA to a projector mount or other surface by inserting the mounting bolt through the bracket's slotted hole.

Connections and Indicator

Refer to figure 5.

- ① **Video Input connector** — (MDA 5V - composite video and MDA 5SV - S-video) Connect an input to this connector.
- ② **Video Outputs (1 through 5) connectors** — Connect up to five video devices to these connectors. (MDA 5V - composite video and MDA 5SV - S-video).
- ③ **Power connector**— Plug the external 12V power supply into this 2-pole captive screw connector. Figure 4 shows how to wire the connector.

CAUTION When connecting the power supply, voltage polarity is extremely important. Applying power with incorrect voltage polarity could damage the power supply and the MDA. Identify the power cord negative lead by the ridges on the side of the cord.

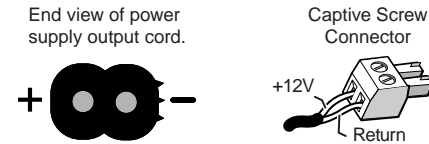


Figure 4 — Power connector wiring

NOTE Do not tin the stripped power supply leads before installing the captive screw connector. Tinned wires are not as secure in the captive screw connectors and could pull out.

WARNING The two power cord wires must be kept separate while the power supply is plugged in. Remove power before continuing.

To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.

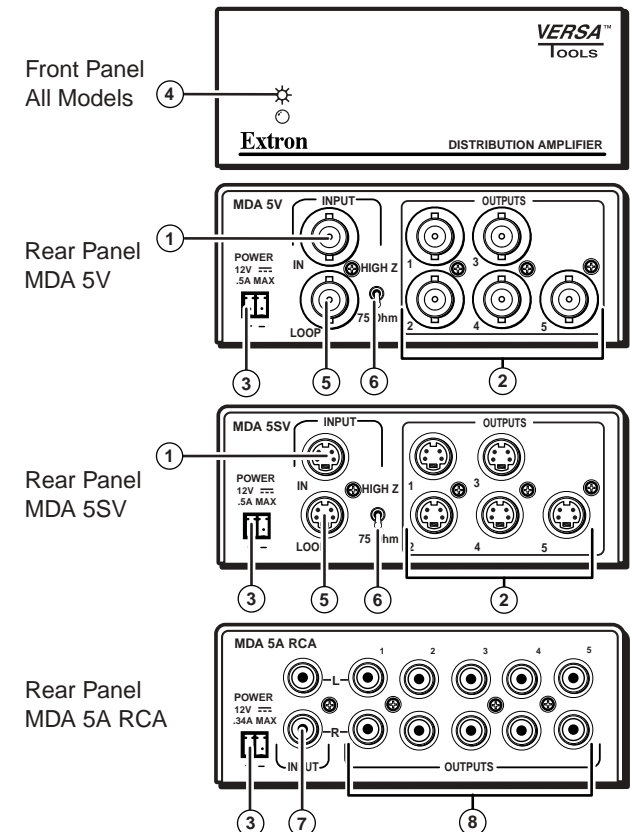


Figure 5 — MDA 5V front and rear panels

Specifications

- ④ **Power LED** — Indicates power is applied.
- ⑤ **Loop connector** — Provides passive loop-through for signal
- ⑥ **High Z / 75 Ohm switch** — Select 75-ohm termination on or off.

High Z — Select this position (up) if you are connecting a terminated device to the Loop connector.

75 Ohm — This position (down) terminates the Input connector with 75 ohms of impedance. Select this position if you are not using the Loop connector, or if you are connecting an unterminated device to the Loop connector.

- ⑦ **Audio input (left and right) connectors** — Connect unbalanced stereo to this RCA connector
- ⑧ **Audio output (1 through 5, left and right) connectors** — Connect up to five audio (stereo) devices to these RCA connectors.

Specifications

Video

Gain	Unity
Bandwidth	
MDA 5SV	270 MHz (-3dB)
MDA 5V	435 MHz (-3dB)
Differential phase error	0.05°, 0 to 50 MHz
Differential gain error	<0.05%, 0 to 50 MHz

Video input

Number/signal type	
MDA 5SV	1 NTSC/PAL/SECAM S-video
MDA 5V	1 NTSC/PAL/SECAM composite video
Connectors	
MDA 5SV	1 4-pin mini DIN female
MDA 5V	1 BNC female
Nominal levels	Composite video and Y of S-video: 1V p-p C of S-video: 0.3V p-p
Minimum/maximum level(s)	
MDA 5SV	Y: 0.4V to 2.0V p-p with no offset
MDA 5V	0.4V to 2.0V p-p with no offset
Impedance	75 ohms
Return loss	<-40dB @ 0 to 10 MHz for MDA 5V <-25dB @ 0 to 10 MHz for MDA 5SV
Maximum DC offset	1.0V

Video output

Number/signal type	
MDA 5SV	6 S-video: 5 buffered for distribution, 1 passive loop-through
MDA 5V	6 composite video: 5 buffered for distribution, 1 passive loop-through
Connectors	
MDA 5SV	6 4-pin mini-DIN
MDA 5V	6 BNC female
Nominal levels	Composite video and Y of S-video: 1V p-p C of S-video: 0.3V p-p
Minimum/maximum level(s)	0.4V to 2.0V p-p
Impedance	75 ohms
Return loss	-30dB @ 5 MHz
DC offset	±5mV maximum with input at 0 offset

Sync

Standards	NTSC 3.58, NTSC 4.43, PAL, SECAM
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Audio — MDA 5A RCA

Gain	Unity (0dB)
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @ 1 kHz at nominal level
S/N	>90 dB, at rated maximum output drive
Stereo channel separation	>80 dB @ 1 kHz; >60 dB @ 20 kHz
CMRR	>75 dB @ 20 Hz to 20 kHz

Audio input — MDA 5A RCA

Number/signal type	1 stereo unbalanced
Connectors	2 RCA connectors
Impedance	>10 kohms unbalanced, DC coupled
Nominal levels	Compatible with -10dBV (316mV), +4dBu (1.23V), 0dBu (0.775V), -20dBV (100mV)
Maximum level	+18 dBu unbalanced at 1%THD+N

Audio output — MDA 5A RCA

Number/signal type	5 stereo, unbalanced
Connectors	10 RCA connectors
Impedance	50 ohms unbalanced
Gain error	±0.1dB channel to channel
Nominal levels	Compatible with -10dBV (316mV), +4dBu (1.23V), 0dBu (0.775V), -20dBV (100mV)
Maximum level (Hi-Z)	>+18dBu, unbalanced at 1%THD+N

NOTE 0dBu = 0.775 volts (RMS).

General

Power	100VAC to 240VAC, 50/60 Hz, 5 watts, external, auto-switchable; to 12VDC, 1 A (max.) power supply. Product requires 0.4 A (max).
Temperature/humidity	Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, non-condensing Operating +32° to +122°F (0° to +50°C) / 10% to 90%, non-condensing
Rack mount	Yes, with optional 1U rack shelf, part #60-190-01, or the VersaTools rack shelf, part #60-190-20
Enclosure type	Metal
Enclosure dimensions	1.7" H x 4.3" W x 3.0" D (1U high, quarter rack width) 4.2 cm H x 11.0 cm W x 7.6 cm D (Depth excludes connectors and knobs.)
Product weight	0.7 lbs (0.3 kg)
Shipping weight	3 lbs (1.4 kg)
Vibration	ISTA/NSTA 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 *Specifications are subject to change without notice.*

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.



Extron Electronics, USA
1230 South Lewis Street
Anaheim, CA 92805
USA
714.491.1500
Fax 714.491.1517

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands
+31.33.453.4040
Fax +31.33.453.4050

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Building
Singapore 368363
+65.6383.4400
Fax +65.6383.4664

Extron Electronics, Japan
Daisan DMJ Building 6F
3-9-1 Kudan Minami
Chiyoda-ku, Tokyo 102-0074 Japan
+81.3.3511.7655
Fax +81.3.3511.7656

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