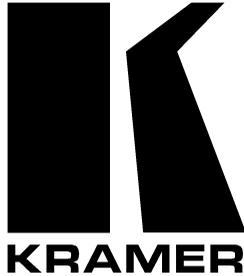


Kramer Electronics, Ltd.



USER MANUAL

Models:

VM-30AV, *1:3 Audio/Video DA*

VM-30AVB, *1:3 Audio/Video DA*

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 500-plus different models now appear in eight groups¹ that are clearly defined by function.

Congratulations on purchasing your Kramer **VM-30AV** and/or **VM-30AVB** *1:3 Audio/Video DA*.

The **VM-30AV** and/or **VM-30AVB** are ideal for the following applications:

- Video/Audio duplication studios
- Retail outlets and home theater systems

The package includes the following items:

- **VM-30AV** and/or **VM-30AVB** *1:3 Audio/Video DA*
- Power adapter (12V DC input)
- This user manual²

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual

2.1 Quick Start

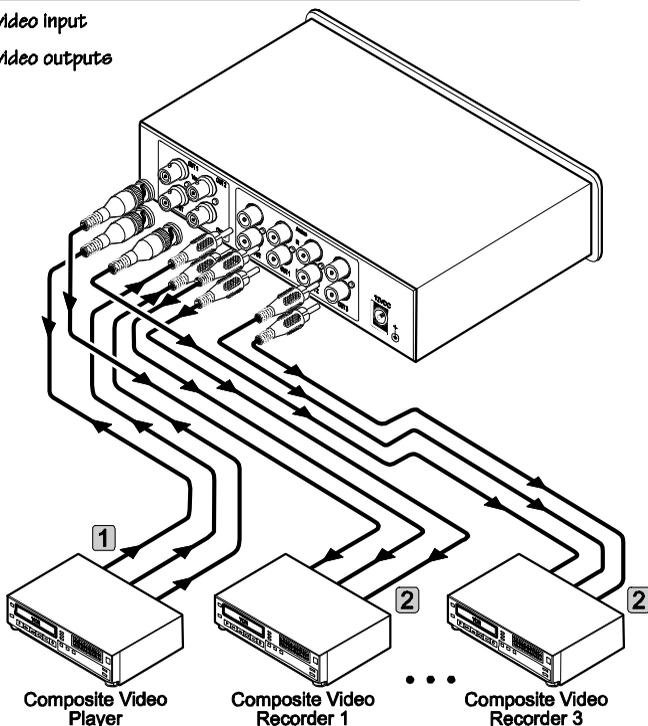
This quick start chart summarizes the basic setup and operation steps.

¹ GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

² Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com>

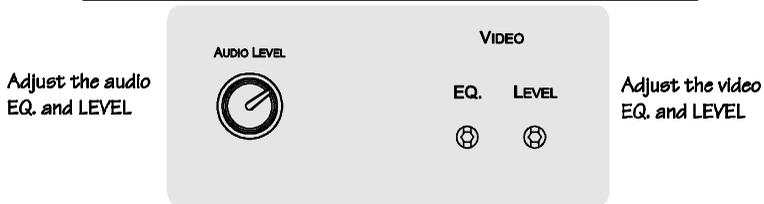
Step 1: Connect the Input and the outputs - see section 5

- 1 Connect the video input
- 2 Connect the video outputs



Step 2: Connect the power

Step 3: Set the underside controls - see section 4



3 Overview

The **VM-30AV** and/or **VM-30AVB** *1:3 Audio/Video DA* are high performance 1:3 distribution amplifiers for video and stereo audio signals. The **VM-30AV** and/or **VM-30AVB** accept one input¹ and distribute the signal to 3 identical outputs. Video signals transmit via:

- RCA connectors on the **VM-30AV**
- BNC connectors on the **VM-30AVB**

Both the **VM-30AV** and/or **VM-30AVB** include:

- RCA connectors for stereo audio signals
- Extra wide video bandwidth of 430MHz that allows for high-resolution data/video signals, SDI (serial digital) video and other specialized signals
- An audio level control knob
- Front panel cable EQ (equalization) and video level trimmer controls

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances that may adversely influence signal quality and positioning your Kramer **VM-30AV** or **VM-30AVB** in a location free from moisture and away from excessive sunlight and dust



Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit².

Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

¹ Typically, a composite video source (such as VCR or camera)

² For example: model number AD2512C, part number 2535-000251

4 Your Audio/Video DA

Figure 1 illustrates the front and rear panels of the **VM-30AV**:

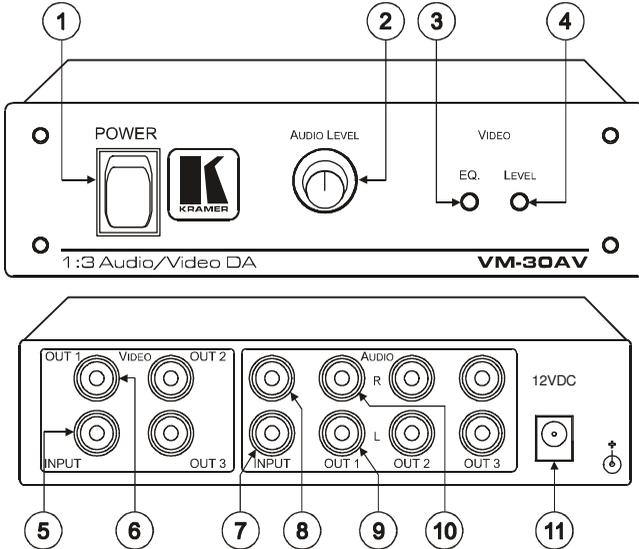


Figure 1: VM-30AV 1:3 Audio/Video DA

Figure 2 illustrates the front and rear panels of the **VM-30AVB**:

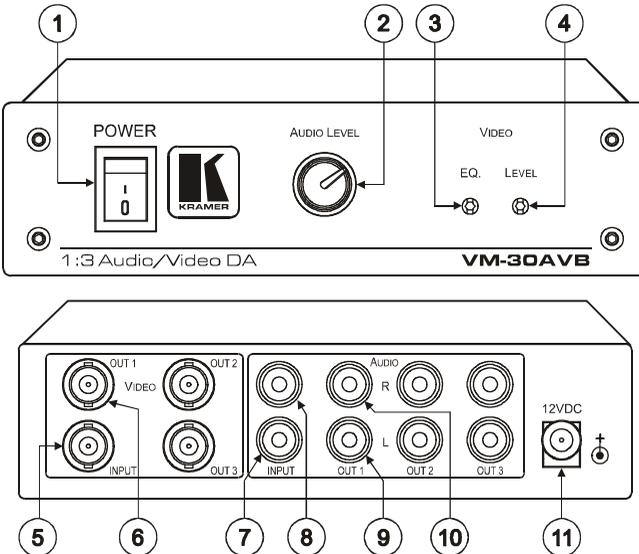


Figure 2: VM-30AVB 1:3 Audio/Video DA

Table 1 and Table 2 define the front and rear panels of the **VM-30AV** and the **VM-30AVB**, respectively.

Table 1: Front Panel VM-30AV and VM-30AVB 1:3 Audio/Video DA Features

#	Feature	Function
1	POWER Switch	Illuminated switch supplying power to the unit
2	AUDIO LEVEL Knob	Adjusts the audio output signal level
3	VIDEO EQ. Trimmer	Adjusts ¹ the video EQ. (equalization) compensation
4	LEVEL Trimmer	Adjusts ¹ the video signal level

Table 2: Rear Panel VM-30AV and VM-30AVB 1:3 Audio/Video DA Features

#	Feature	Function
5	VIDEO INPUT	VM-30AV : RCA Connectors Connects to the video source
6	VIDEO OUT	VM-30AVB : BNC Connectors Connects to the video acceptor (from 1 to 3)
7	AUDIO RCA Connectors	INPUT (L) Connects to the left audio source
8		INPUT (R) Connects to the right audio source
9		OUT (L) Connects to the left audio acceptor (from 1 to 3)
10		OUT (R) Connects to the right audio acceptor (from 1 to 3)
11	12 VDC	+12V DC connector for powering the unit

5 Using Your Audio/Video DA

Section 5.1 describes how to connect a **VM-30AV/B**². Section 5.2 describes how to configure a 1:3 Audio/Video DA for component video (YUV) or RGB. You can also use the **VM-30AV/B**, with its very high frequency, to process SDI (serial digital interface) video.

5.1 Connecting your VM-30AV/B

To connect³ the **VM-30AV/B 1:3 Audio/Video DA**, as the example in Figure 3 illustrates, do the following:

1. Connect a composite video source (for example, a composite video player) to the VIDEO INPUT connector⁴ and to the left and right AUDIO INPUT RCA connectors.
2. Connect⁵ the 3 VIDEO OUT connectors⁴ and the left and right AUDIO OUT RCA connectors to the audio video acceptors (for example, composite video recorders).

1 Insert a screwdriver into the small hole and carefully rotate it, to trim the appropriate level

2 From this section on, both machines are referred to as VM-30AV/B

3 Switch OFF the power on each device before connecting it to your VM-30AV/B. After connecting your VM-30AV/B, switch on its power and then switch on the power on each device

4 RCA connectors for VM-30AV and BNC connectors for VM-30AVB

5 As required. Not all the outputs need to be connected

3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in Figure 3).
4. Adjust the audio level and the video EQ. and video level, as required.

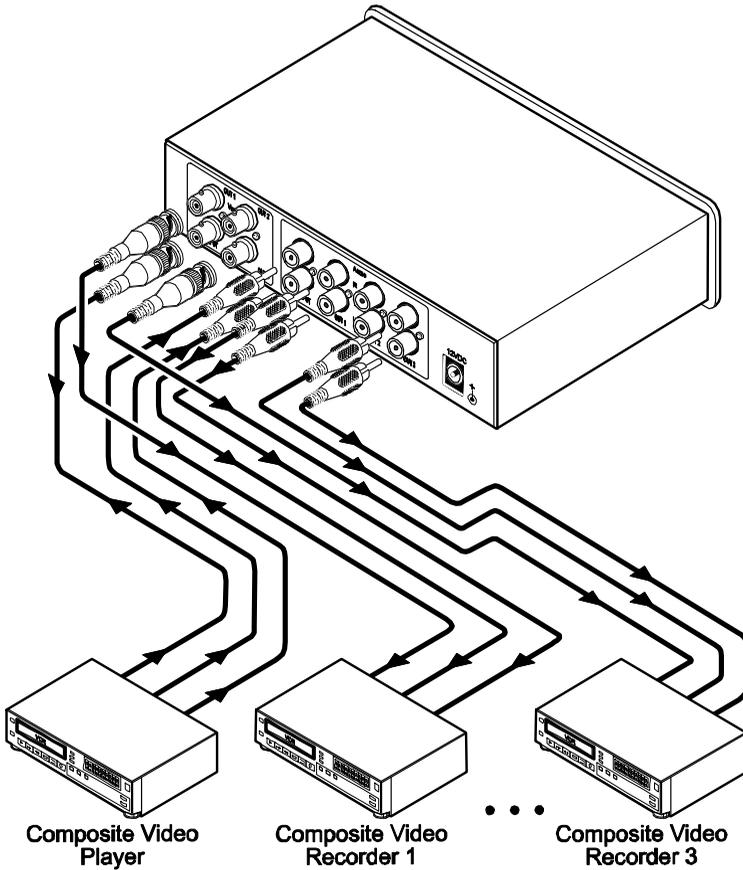


Figure 3: VM-30AV 1:3 Audio/Video DA Connection

5.2 Configuring a 1:3 Audio/Video DA for Component (YUV) or RGB

To configure a 1:3 Audio/Video DA for component (YUV) or RGB by combining three **VM-30AV/B** units, as illustrated in the example in Figure 4, do the following.

Connect¹ the 1:3 Audio/Video DA for component (YUV) or RGB, as follows:

1. Connect the RGB source, by connecting:
 - The R cable to the first unit's INPUT connector
 - The G cable to the second unit's INPUT connector
 - The B cable to the third unit's INPUT connector
2. Connect the first RGB acceptor, by connecting the OUT 1 connector from the:
 - First unit to the R cable
 - Second unit to the G cable
 - Third unit to the B cable
3. Connect the second RGB acceptor, by connecting the OUT 2 connector² from the:
 - First unit to the R cable
 - Second unit to the G cable
 - Third unit to the B cable
4. Connect the third RGB acceptor, by connecting the OUT 3 connector from the:
 - First unit to the R cable
 - Second unit to the G cable
 - Third unit to the B cable
5. Connect the audio source and acceptors, as required.
6. On each **VM-30AV/B** unit, connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.
7. Adjust the audio level and the video EQ. and video level, as required, on the front panel on the first **VM-30AV/B** unit.
This adjusts the levels on the combined 3 **VM-30AV/B** units.

¹ Switch OFF the power on each device before connecting it to your VM-30AV/B units. After connecting your VM-30AV/B units, switch on the power on each of the VM-30AV/B units and then switch on the power on each device

² Not illustrated in Figure 4

Using Your Audio/Video DA

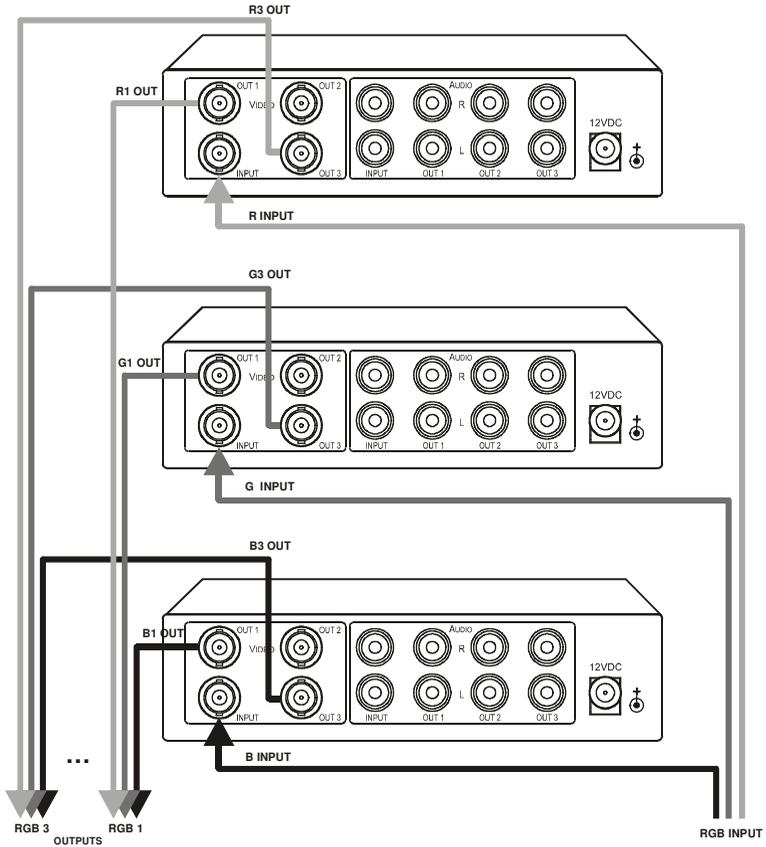


Figure 4: Configuring a 1:3 Audio/Video DA for Component (YUV) or RGB

6 Technical Specifications

Table 3 includes the technical specifications.

Table 3: VM-30AV and VM-30AVB Technical Specifications

INPUTS:	1 composite video 1 Vpp/75Ω: RCA connector (VM-30AV); BNC connector (VM-30AVB) 1 stereo audio, 4.8 Vpp / 73kΩ on RCA connectors	
OUTPUTS:	3 composite video 1 Vpp/75Ω: RCA connectors (VM-30AV); BNC connectors (VM-30AVB) 3 stereo audio, 1 Vpp / 150Ω on RCA connectors	
MAX. OUTPUT LEVEL:	VIDEO: 2.0Vpp	AUDIO: 5.4Vpp
BANDWIDTH (-3dB):	VIDEO: 430MHz (-3dB), 370MHz (-0.1dB), Fully Loaded	AUDIO: >100kHz (-3dB), 20kHz (-0.1dB)
DIFF. GAIN:	0.04%	
DIFF. PHASE:	0.07 Deg.	
K-FACTOR:	<0.05%	
VIDEO NON-LINEARITY:	0.1%	
S/N RATIO:	VIDEO: 73.1dB	AUDIO: 83dB
CROSSTALK (all hostile):	VIDEO:	AUDIO:
CONTROLS:	Gain: video: -1.1dB to +1.8dB; audio: -66dB to +16dB; EQ.: 0 to +14.6dB	
COUPLING:	AC	
AUDIO THD + NOISE:	0.38% @ 1kHz	
AUDIO 2nd HARMONIC:	0.02% @ 1kHz	
POWER SOURCE:	12 VDC, 30mA	
DIMENSIONS:	16.5cm x 12cm x 4.5cm (6.5" x 4.7" x 1.7", W, D, H)	
WEIGHT:	0.6kg (1.3lbs.) approx.	
ACCESSORIES:	12 VDC power supply	
OPTIONS:	19" rack adapter	

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
 - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
 - ii) Product modification, or failure to follow instructions supplied with the product
 - iii) Repair or attempted repair by anyone not authorized by Kramer
 - iv) Any shipment of the product (claims must be presented to the carrier)
 - v) Removal or installation of the product
 - vi) Any other cause, which does not relate to a product defect
 - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC Rules and Regulations: Part 15: "Radio frequency devices Subpart B Unintentional radiators"

CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.



For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found. We welcome your questions, comments and feedback.



Caution

Safety Warning:

Disconnect the unit from the power supply before opening/servicing.



Kramer Electronics, Ltd.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com

P/N: 2900-001035 REV 3