Kramer Electronics, Ltd.

USER MANUAL

Models:

VM-3AN, ***1:3 Audio DA***

VM-3SN, ***1:3 s-Video DA***

VM-3VN, ***1:3 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 1,000-plus different models now appear in 11 groups[1] that are clearly defined by function.

Thank you for purchasing your Kramer TOOLS™ **VM-3AN** *Audio DA,* **VM-3SN** *s-Video DA,* and/or **VM-3VN** *Video DA*.

These products are ideal for the following typical applications:

- Audio duplication studios, delivering high-quality audio and video duplicates
- Broadcast and production studios for signal distribution
- Presentation and multimedia distribution
- Field distribution

The package includes the following items:

- **VM-3AN** *Audio DA,* or **VM-3SN** *s-Video DA,* or **VM-3VN** *Video DA*
- Power adapter, this user manual[2]

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
- Use Kramer high-performance high-resolution cables[3]

2.1 Quick Start

This quick start chart summarizes the basic setup and operation:

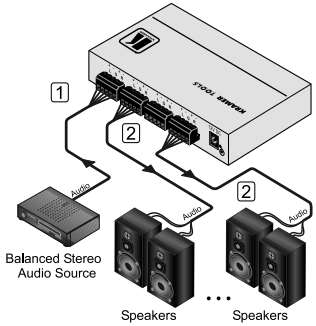
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

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

3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com

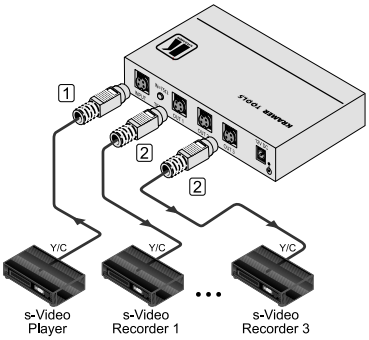
Step 1: Connect the machine - see section 5

VM-3AN



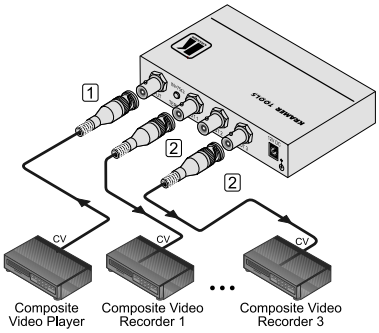
1 Connect the input.
2 Connect the outputs.

VM-3SN



1 Connect the input.
2 Connect the outputs.

VM-3VN



1 Connect the input.
2 Connect the outputs.

Step 2: Connect the power

If required, adjust the following:

- VM-3AN - LEFT and RIGHT audio signal levels
- VM-3SN - Y and C signal levels
- VM-3VN - EQ and LEVEL

3 Overview

This section gives a summary of:

- The **VM-3AN** *Audio DA*, see section 3.1
- The **VM-3SN** *s-Video DA*, see section 3.2
- The **VM-3VN** *Video DA*, see section 3.3
- Recommendations for achieving the best performance, see section 3.4

3.1 VM-3AN Audio DA

The **VM-3AN** is a high-quality 1:3 balanced stereo audio distribution amplifier. It accepts one balanced stereo input on a removable terminal block and distributes the signal to three identical outputs on removable terminal blocks.

Specifically, the **VM-3AN** features:

- Left and right signal level trimmers on the front panel
- 12V DC power

3.2 VM-3SN s-Video DA

The **VM-3SN** is a high-quality 1:3 distribution amplifier for s-Video signals. It accepts one s-Video input on a 4-pin connector and distributes the signal to three identical outputs on 4-pin connectors.

Specifically, the **VM-3SN** features:

- C and Y level trimmers on the front panel
- 12V DC power

3.3 VM-3VN Video DA

The **VM-3VN** is a high-quality 1:3 distribution amplifier for composite video signals. It accepts one composite video input on a BNC connector and distributes the signal to three identical composite video outputs on BNC connectors.

Specifically, the **VM-3VN** features:

- EQ and LEVEL trimmers on the front panel
- 12V DC power

3.4 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables[1] to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables).
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality and position your Kramer products away from moisture, 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 unit[2].

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

4 Your Distribution Amplifier

This section defines your:

- **VM-3AN** *Audio DA*, see section 4.1
- **VM-3SN** *s-Video DA*, see section 4.2
- **VM-3VN** *Video DA*, see section 4.3

1 Available from Kramer Electronics on our Web site at http://www.kramerelectronics.com

2 For example, part number 2535-000251

4.1 Your VM-3AN Audio DA

Figure 1 and *Table 1* define the **VM-3AN**:

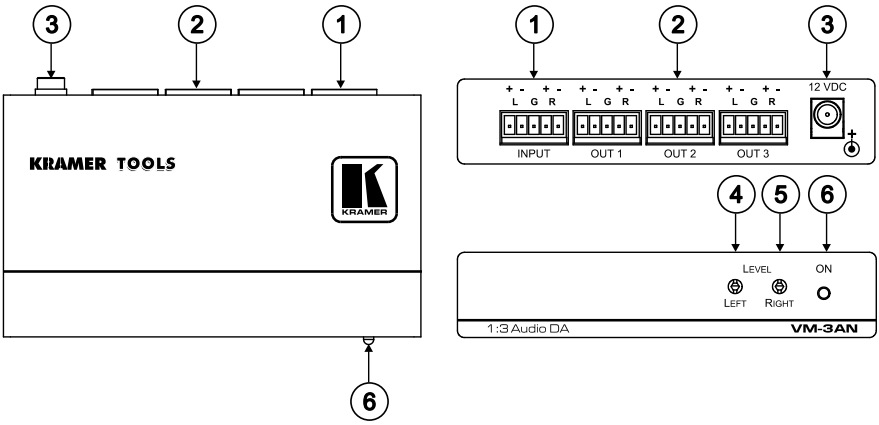


Figure 1: VM-3AN Audio DA

Table 1: VM-3AN Audio DA Features

#	Feature	Function
1	*INPUT* Detachable Terminal Block Connector	Connects to the balanced audio source
2	*OUT* Detachable Terminal Block Connector	Connects to the balanced audio acceptor (from 1 to 3)
3	*12V DC*	+12V DC connector for powering the unit
4	*LEFT LEVEL* Trimmer	Adjusts[1] the left output signal level
5	*RIGHT LEVEL* Trimmer	Adjusts[1] the right output signal level
6	*ON* LED	Illuminates when receiving power

1 Insert a screwdriver into the small hole and carefully rotate it, trimming the appropriate output level

4.2 Your VM-3SN s-Video DA

Figure 2 and *Table 2* define the **VM-3SN**:

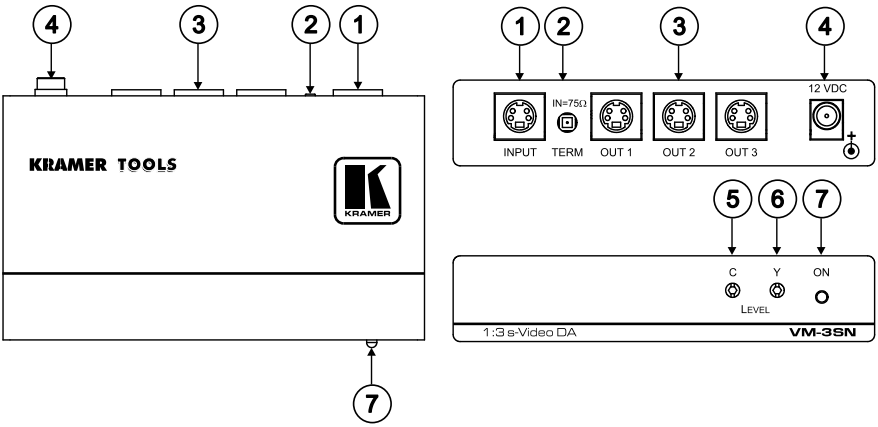


Figure 2: VM-3SN s-Video DA

Table 2: VM-3SN s-Video DA Features

#	Feature	Function
1	*INPUT* 4-pin Connector	Connects to the s-Video source
2	*IN=75Ω TERM* Pushbutton	Terminates the input with 75Ω
3	*OUT* 4-pin Connector	Connects to the audio acceptor (from 1 to 3)
4	*12V DC*	+12V DC connector for powering the unit
5	*C LEVEL* Trimmer	Adjusts[1] the chrominance output signal level for the s-Video output
6	*Y LEVEL* Trimmer	Adjusts[1] the luminance output signal level for the s-Video output
7	*ON* LED	Illuminates when receiving power

1 Insert a screwdriver into the small hole and carefully rotate it, trimming the appropriate output level

4.3 Your VM-3VN Video DA

Figure 3 and *Table 3* define the **VM-3VN**:

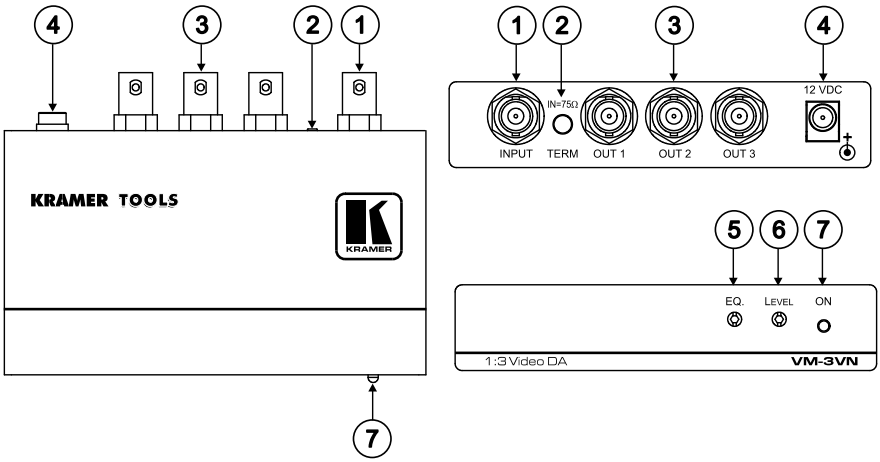


Figure 3: VM-3VN Video DA

Table 3: VM-3VN Video DA Features

#	Feature	Function
1	*INPUT* BNC Connector	Connects to the composite video source
2	*IN=75Ω TERM* Pushbutton	Terminates the input with 75Ω
3	*OUT* BNC Connector	Connects to the composite video acceptor (from 1 to 3)
4	*12V DC*	+12V DC connector for powering the unit
5	*EQ* Trimmer	Adjusts[1] the EQ. (equalization) compensation level for the composite video outputs
6	*LEVEL* Trimmer	Adjusts[1] signal level for the composite video outputs
7	*ON* LED	Illuminates when receiving power

5 Connecting Your Distribution Amplifier

This section explains how to connect your:

- **VM-3AN** *Audio DA*, see section 5.1
- **VM-3SN** *s-Video DA*, see section 5.2
- **VM-3VN** *Video DA*, see section 5.3

1 Insert a screwdriver into the small hole and carefully rotate it, trimming the appropriate output level

5.1 Connecting Your VM-3AN Audio DA

To connect[1] the **VM-3AN**, as illustrated in the example in *Figure 4*, do the following:

1. Connect the balanced stereo audio source to the INPUT terminal block connector.
2. Connect the OUT terminal block connectors (from 1 to 3) to up to three balanced stereo audio acceptors[2] (for example, power amplifiers).
3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not illustrated in *Figure 4*).
4. If required, adjust the audio signal levels by turning the LEFT and RIGHT level trimmers with a small screwdriver.

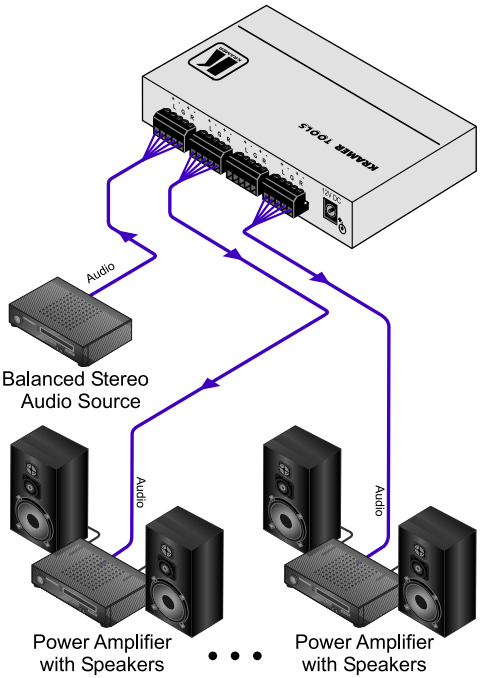


Figure 4: Connecting the VM-3AN Audio Distributor

1 Switch OFF the power on each device before connecting it to your VM-3AN. After connecting your VM-3AN, switch on its power and then switch on the power on each device

2 You do not have to connect all the outputs

5.2 Connecting Your VM-3SN s-Video DA

To connect[1] the **VM-3SN**, as illustrated in the example in *Figure 5*, do the following:

1. Connect the s-Video source (for example, an s-Video player) to the INPUT 4-pin connector.
2. Terminate the input by ensuring that the TERM switch is pressed to the IN position.
3. Connect the OUT 4-pin connectors (from 1 to 3) to up to three s-Video acceptors[2] (for example, s-Video recorders).
4. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not illustrated in *Figure 5*).
5. If required, adjust output chrominance (C) and luminance (Y) signal levels by turning the appropriate trimmer with a small screwdriver.

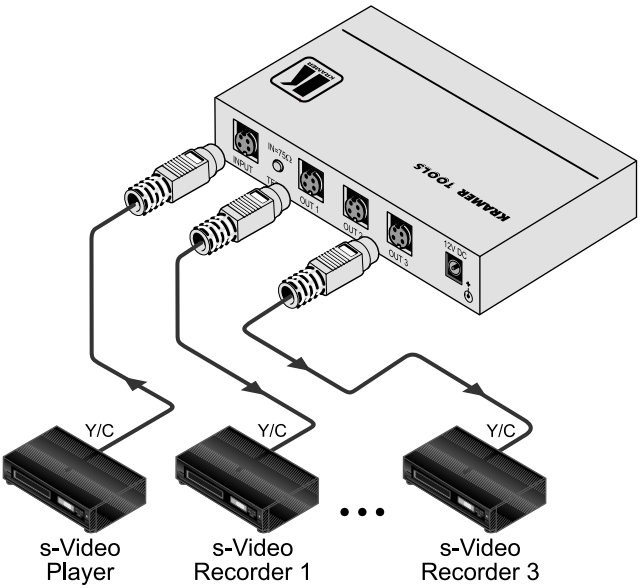


Figure 5: Connecting the VM-3SN s-Video Distributor

1 Switch OFF the power on each device before connecting it to your VM-3SN. After connecting your VM-3SN, switch on its power and then switch on the power on each device

2 You do not have to connect all the outputs

5.3 Connecting Your VM-3VN Video DA

To connect[1] the **VM-3VN**, as illustrated in the example in *Figure 6*, do the following:

1. Connect the composite video source to the INPUT BNC connector.
2. Terminate the input by ensuring that the TERM switch is pressed to the IN position.
3. Connect the OUT BNC connectors (from 1 to 3) to up to three composite video acceptors[2].
4. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not illustrated in *Figure 6*).
5. If required, adjust output equalization (EQ) and signal level (LEVEL) by turning the appropriate trimmer with a small screwdriver.

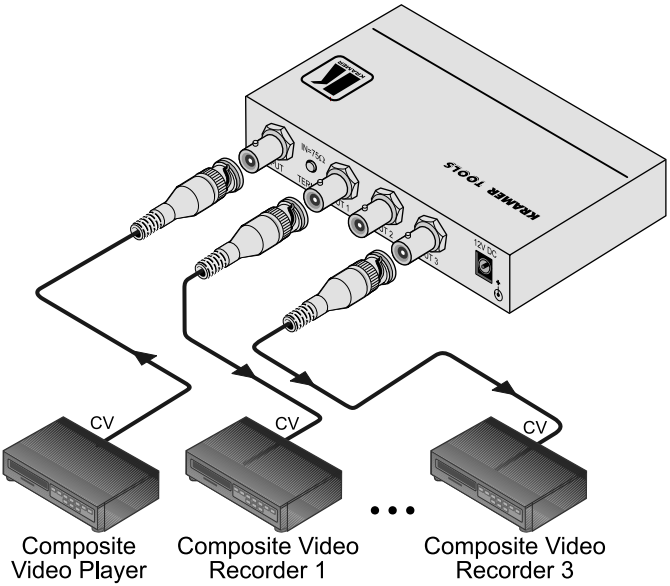


Figure 6: Connecting the VM-3VN Video Distributor

1 Switch OFF the power on each device before connecting it to your VM-3VN. After connecting your VM-3VN, switch on its power and then switch on the power on each device

2 You do not have to connect all the outputs

6 Technical Specifications

Table 4 includes the technical specifications.

Table 4: VM-3AN Audio Distributor Technical Specifications

	VM-3AN	VM-3SN	VM-3VN
INPUT:	1 balanced audio stereo on 5-pin terminal blocks	1 YC on a 4-pin connector	1 composite video on a BNC connector
OUTPUTS:	3 balanced audio stereo on 5-pin terminal blocks	3 YC on 4-pin connectors	3 composite video on BNC connectors
MAX. OUTPUT LEVEL:	Audio: 18.5Vpp R+/-, L+/- outputs	2Vpp, Y	1.8Vpp
BANDWIDTH (-3dB):	>100 kHz	135MHz	430MHz
DIFF GAIN:	–	0.03%	0.12%
DIFF PHASE:	–	0.03Deg	0.03Deg
K-FACTOR:	–	<0.05%	<0.05%
S/N RATIO:	90dB @1kHz	78dB @5MHz	74.3dB
CONTROL:	Output level control: -77 to +6dB, R+/-, L+/- channels	Y-level: -1.6 to +6.3dB; C-level: -0.4 to +7.6dB	Level: -1.6 to +6dB; Equalization: 0 to +6dB
COUPLING:	–	AC	AC
AUDIO THD + NOISE:	0.008%	–	–
AUDIO 2d HARMONIC:	0.001%	–	–
POWER SOURCE:	12V DC, 89mA	12V DC, 29mA	12V DC, 27mA
DIMENSIONS:	11.7cm x 6cm x 3.2cm (4.6” x 2.4” x 1.3”) W, D, H		
WEIGHT:	0.28 kg (0.62 lbs.) approx.		
ACCESSORIES:	Power supply		
OPTIONS:	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, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
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.

* FCC and CE approved using STP cable (for twisted pair products)

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.

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.

Kramer Electronics, Ltd.
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