Kramer Electronics, Ltd.

USER MANUAL

Models:

VM-37, *3 Channel Video Clamper*

VM-67, *6 Channel Video Clamper*

VM-127, *12 Channel Video Clamper*

Contents

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This addendum adds section **3.2.1 "Accessing the Trimmers"** to page 3 of the user manual.

3.2.1 Accessing the Trimmers

Figure A1 and Table A1 define the 6 pairs of Trimmers (one pair for each channel), located on the underside of the **VM-67** unit.

Similarly, the underside of the **VM-127** unit has 12 pairs of Trimmers.

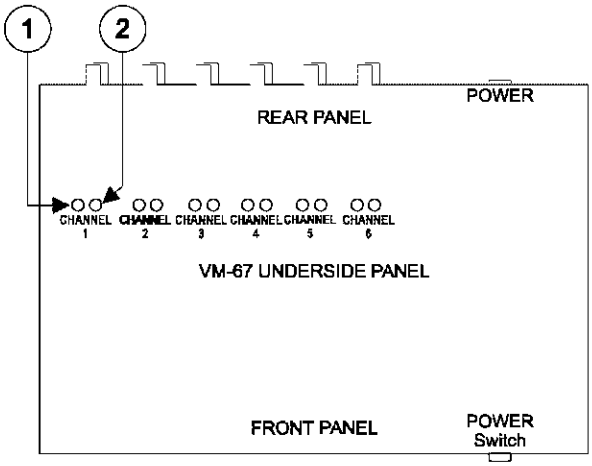

Figure A1: VM-67 Underside

Table A1: VM-67 Underside Features

#	Feature	Function
1	Level Trimmer	Adjusts[1] the video signal level that is factory preset at 1:1 transparency, for each channel (from 1 to 6)[2]
2	DC Clamp Level Trimmer	Adjusts[1] the DC clamp level that is factory preset for composite sync tip clamping, for each channel (from 1 to 6)[2]

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

2 (from 1 to 12) on the VM-127 12 Channel Video Clamper

This addendum adds the following information to the user manual:

Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit[1].

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

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

1 Introduction

Dedication by Kramer Electronics since 1981, to the development and manufacture of high quality video/audio equipment, makes the Kramer line an integral part of the finest production and presentation facilities in the world. In recent years, Kramer has redesigned and upgraded most of the line, making the best even better! The Kramer line of professional video/audio electronics is one of the most versatile and complete available, and is a true leader in terms of quality, workmanship, price/performance ratio and innovation. In addition to our high quality Kramer TOOLS **VM-37** "*3 Channel Video Clamper*", Kramer **VM-67** "*6 Channel Video Clamper*" and Kramer **VM-127** "*12 Channel Video Clamper*", we also offer excellent switchers and matrices, distribution amplifiers, presentation processors, remote controllers and computer-related products. Congratulations on purchasing your **VM-37**, **VM-67** or **VM-127** video clamper! Each is ideal for restoring the DC level to the standard when outputting the signal from a:

- Video capture card[1] to a composite VCR
- Satellite decoder and receiver[2] to an RGB monitor
- YUV Betacam VCR to a component data projector

The package includes the following items:

- **VM-37** or **VM-67** or **VM-127**
- Power adapter[3] (12V DC Input) for the **VM-37** and **VM-67**
- This user manual[4] and the Kramer concise product catalog/CD

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[5]

1 Many graphics cards and video cards do not work according to standard

2 Many satellite receivers have large DC offsets at their outputs

3 The VM-127 comes with a power cord

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

5 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com (click "Cables and Connectors" in the Products section)

3 Overview

Your Kramer video clamper restores the DC offset[1] of the video by clamping it to a specified DC level[2]. The video clamper—**VM-37**, **VM-67** and/or **VM-127**—clamps the signal, bringing it to standard levels[3]. In particular:

- Reducing the DC level changes when switching between different sources
- Eliminating picture jumps on the screen and the accumulation of low frequency noise and instability

To achieve the best performance:

- Connect 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)
- Avoid interference from neighboring electrical appliances and position your video clamper in a location free from moisture and excessive sunlight and dust

3.1 Your VM-37 Video Clamper

You can connect the **VM-37** "3 Channel Video Clamper" to up to 3 separate channels, as section 4.1 describes. You can also connect it as an RGB video clamper, or as a component video clamper, as sections 4.2 and 4.3 describe, respectively. Figure 1 and Table 1 define the **VM-37**:

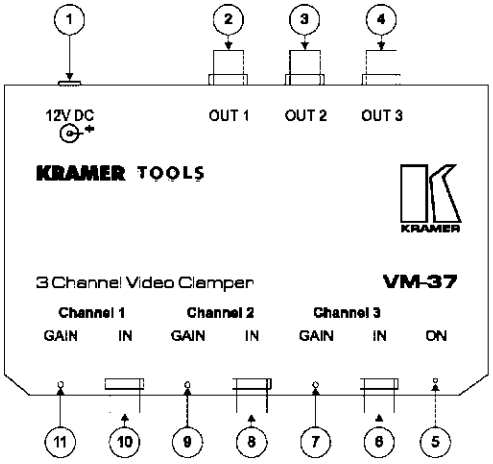

Figure 1: VM 37 "3 Channel Video Clamper"

1 The DC voltage of the blanking level of the video signal

2 An electronic process, which corrects the video blanking level or sync tips by clamping them to a predefined DC level

3 Without clamping, damage or saturation to internal circuitry can occur and 75Ω input resistors can burn out

Table 1: Features and Functions of the VM 37 "3 Channel Video Clamper"

#	Feature		Function
1	*12V DC*		+12V DC connector for powering the unit
2	*OUT 1* BNC Connector		Connects to video acceptor 1
3	*OUT 2* BNC Connector		Connects to video acceptor 2
4	*OUT 3* BNC Connector		Connects to video acceptor 3
5	*ON* LED		Illuminates when receiving power
6	Channel 3	*IN* BNC Connector	Connects to the channel 3 video source
7		*GAIN* Trimmer	Adjusts[1] the video signal level for channel 3
8	Channel 2	*IN* BNC Connector	Connects to the channel 2 video source
9		*GAIN* Trimmer	Adjusts[1] the video signal level for channel 2
10	Channel 1	*IN* BNC Connector	Connects to the channel 1 video source
11		*GAIN* Trimmer	Adjusts[1] the video signal level for channel 1

3.2 Your VM-67 and VM-127 Video Clampers

You can connect:

- The **VM-67** to up to 6 separate channels, or as 2 RGB video clampers, or as 2 component video clampers (or a combination[2] of them)
- The **VM-127** to up to 12 separate channels, or as 4 RGB video clampers, or as 4 component video clampers (or a combination[3] of them)

4 Connecting a VM-37 Video Clamper

You can connect your **VM-37** "*3 Channel Video Clamper*" as:

- A video clamper with up to 3 separate channels (see section 4.1)
- An RGB video clamper (see section 4.2)
- A component video clamper (see section 4.3)

4.1 Connecting the VM-37 "3 Channel Video Clamper"

To connect the **VM-37** to 3 separate channels[4], as the example in Figure 2 illustrates, do the following:

1. Connect the IN BNC connectors, as follows:
   - Connect source 1 (for example, a PC video capture card) to the Channel 1 IN BNC connector

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

2 For example, an RGB video clamper and a component video clamper, or an RGB video clamper and 3 separate channels

3 For example, 3 RGB video clampers and 3 separate channels

4 Any or all of the channels may be connected. No terminations are needed for unused channels

- Connect source 2 (for example, a composite satellite decoder and receiver) to the Channel 2 IN BNC connector
- Connect source 3 (for example, a composite VCR) to the Channel 3 IN BNC connector

2. Connect the OUT BNC connectors, as follows:
   - Connect the OUT 1 BNC connector to acceptor 1 (for example, a composite VCR)
   - Connect the OUT 2 BNC connector to acceptor 2 (for example, a projector)
   - Connect the OUT 3 BNC connector to the acceptor 3 (for example, a monitor)
3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.
4. Adjust[1] the GAIN video signal level, for each channel, if required.

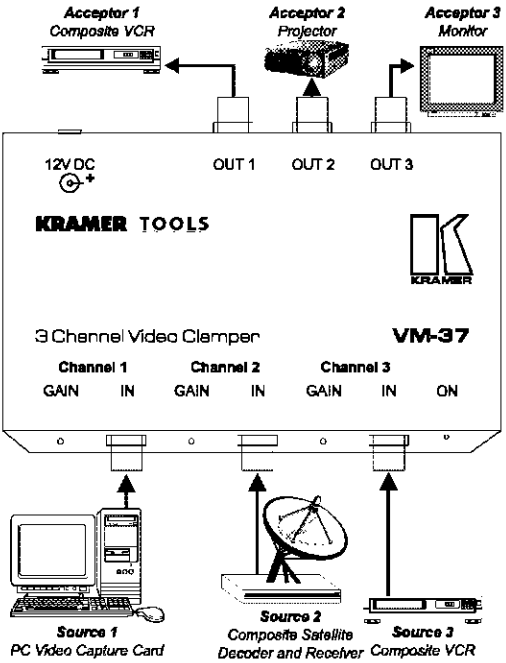

Figure 2: Connecting the VM 37 "3 Channel Video Clamper"

1 For example, to adjust the level for channel 2, insert a screwdriver into the appropriate hole (item 9 in Figure 1) and carefully rotate it

4.2 Connecting the VM-37 RGB Video Clamper

You can use the **VM-37** as an RGB video clamper, by connecting the IN 1 and OUT 1 BNC connectors to the red (R) signal, the IN 2 and OUT 2 BNC connectors to the green (G) signal, and the IN 3 and OUT 3 BNC connectors to the blue (B) signal.

To connect the **VM-37** as an RGB video clamper, as the example in Figure 4 illustrates[1], do the following:

1. Connect the RGB video source (for example, a satellite decoder) to the IN BNC connectors, as follows:
   - Connect the R signal output connector on the satellite decoder to the Channel 1 "R signal" IN BNC connector
   - Connect G signal output connector on the satellite decoder to the Channel 2 "G signal" IN BNC connector
   - Connect B signal output connector on the satellite decoder to the Channel 3 "B signal" IN BNC connector
2. Connect the OUT BNC connectors to the RGB video acceptor (for example, an RGB monitor) as follows:
   - Connect the OUT 1 BNC connector to the R signal input connector on the RGB monitor
   - Connect the OUT 2 BNC connector to the G signal input connector on the RGB monitor
   - Connect the OUT 3 BNC connector to the B signal input connector on the RGB monitor
3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.
4. Adjust the GAIN video signal levels, if required.

1 The RGB markings illustrated in Figure 3 serve only as an example. For example, instead of connecting the R signal via Channel 1 (that is, via the IN BNC connector for Channel 1 and the OUT 1 BNC connector), you could connect the R signal via Channel 2 or Channel 3

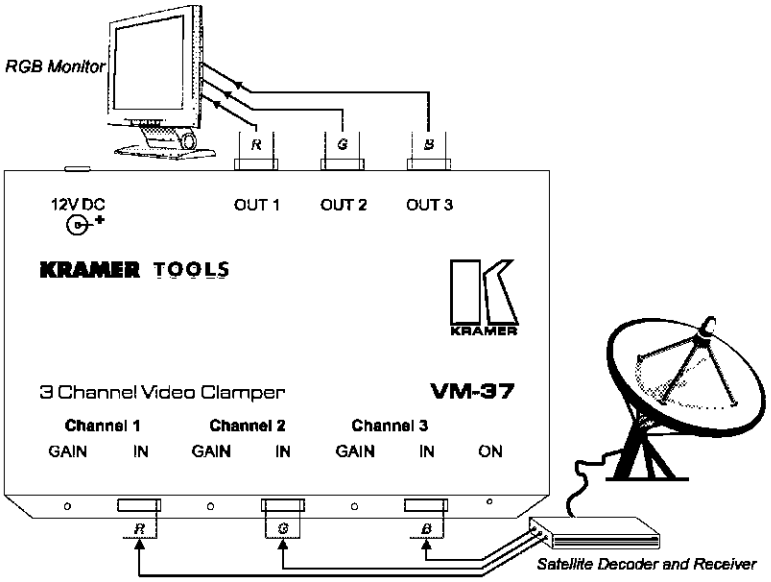

Figure 3: Connecting the VM 37 as an RGB Video Clamper

4.3 Connecting the VM-37 Component Video Clamper

You can use the **VM-37** as a component video (YUV, sometimes called Y, B-Y, R-Y, or Y, Pb, Pr) clamper, by connecting the IN 1 and OUT 1 BNC connectors to the V signal[1], the IN 2 and OUT 2 BNC connectors to the green Y signal[2], and the IN 3 and OUT 3 BNC connectors to the U signal[3].

To connect the **VM-37** as a component video clamper, as the example in Figure 4 illustrates[4], do the following:

1. Connect the component video source (for example, a Betacam VCR) to the IN BNC connectors, as follows:

- Connect the V signal output connector on the Betacam VCR to the Channel 1 "V signal" IN BNC connector
- Connect the Y signal output connector on the Betacam VCR to the

1 The R-Y signal in Y, B-Y, R-Y

2 The Y signal in Y, B-Y, R-Y

3 The B-Y signal in Y, B-Y, R-Y

4 The YUV markings illustrated in Figure 4 serve only as an example. For example, instead of connecting the V signal via Channel 1 (that is, via the IN BNC connector for Channel 1 and the OUT 1 BNC connector), you could connect the V signal via Channel 2 or Channel 3

Channel 2 "Y signal" IN BNC connector

- Connect the U signal output connector on the Betacam VCR to the Channel 3 "U signal" IN BNC connector

2. Connect the OUT BNC connectors to the component video acceptor (for example, a component data projector), as follows:

- Connect the OUT 1 BNC connector to the V signal input connector on the component data projector
- Connect the OUT 2 BNC connector to the Y signal input connector on the component data projector
- Connect the OUT 3 BNC connector to the U signal input connector on the component data projector

3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.

4. Adjust the GAIN video signal levels, if required.

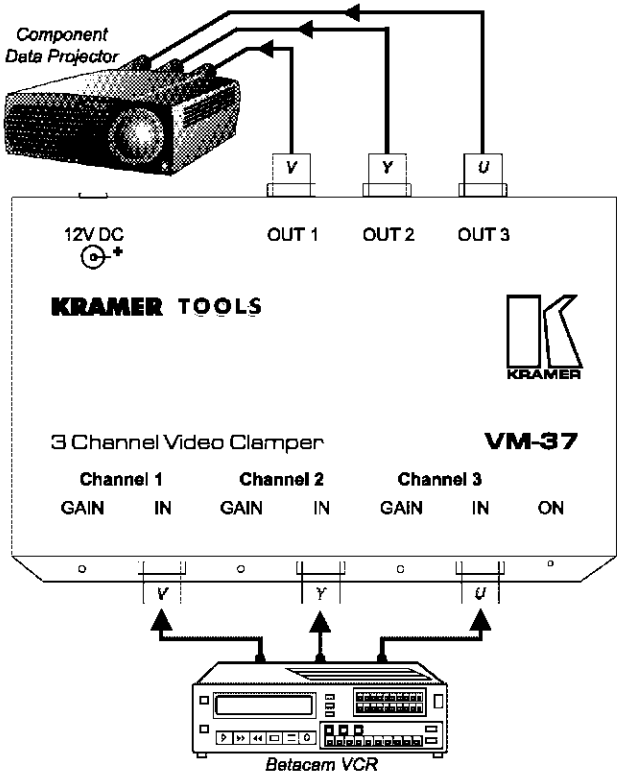

Figure 4: Connecting the VM-37 as a Component Video Clamper

5 Technical Specifications

Table 2 includes the technical specifications:

Table 2: Technical Specifications[1] of the VM 37, VM 67 and VM 127

INPUTS:	**VM-37**: 3 BNC connectors, 1Vpp / 75Ω; 1 RGB/Component video (Y, B-Y, and R-Y), 0.7Vpp / 75Ω on BNC connectors **VM-67**: 6 BNC connectors, 1Vpp / 75Ω; 2 RGB/Component video (Y, B-Y, and R-Y), 0.7Vpp / 75Ω on BNC connectors **VM-127**: 12 BNC connectors, 1Vpp / 75Ω; 4 RGB/Component video (Y, B-Y, and R-Y), 0.7Vpp / 75Ω on BNC connectors
OUTPUTS:	**VM-37**: 3 BNC connectors, 1Vpp / 75Ω; 1 RGB/Component video (Y, B-Y, and R-Y), 0.7Vpp / 75Ω on BNC connectors **VM-67**: 6 BNC connectors, 1Vpp / 75Ω; 2 RGB/Component video (Y, B-Y, and R-Y), 0.7Vpp / 75Ω on BNC connectors **VM-127**: 12 BNC connectors, 1Vpp / 75Ω; 4 RGB/Component video (Y, B-Y, and R-Y), 0.7Vpp / 75Ω on BNC connectors
MAX. OUTPUT LEVEL:	2.3V
BANDWIDTH (-3dB):	475 MHz
DIFF. GAIN:	0.04%
DIFF. PHASE:	0.04
K-FACTOR:	<0.05%
S/N RATIO:	-74.4dB
CROSSTALK (all hostile):	-49dB
CONTROLS (GAIN):	-2.9dB to 5.6dB
COUPLING:	AC input; DC (clamped) output
POWER SOURCE:	**VM-37**: 12V DC 90mA **VM-67**: 12V DC <200mA **VM-127**: 230 VAC, 50/60 Hz, (115VAC, U.S.A.) <10VA
DIMENSIONS:	**VM-37**: 12cm x 7.5cm x 2.5cm (4.7-inch x 2.95-inch x 0.98-inch, W, D, H) **VM-67**: 22cm x 18cm x 4.5cm (8.6-inch x 7-inch x 1.8-inch, W, D, H) **VM-127**: 19-inch (W), 7-inch (D), 1U (H) rack mountable
WEIGHT:	**VM-37**: 0.3 kg (0.67 lbs.) approx. **VM-67**: 1.2 kg. (2.65 lbs.) approx. **VM-127**: 2.6 kg. (5.7 lbs.) approx.
ACCESSORIES:	**VM-37**: Power Adapter **VM-67**: Power Adapter **VM-127**: Power Cord

1 Specifications are subject to change without notice

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 three 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.

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

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P/N: 2900-002070 REV 1