

Kramer Electronics, Ltd.



USER MANUAL

Model:

123Vxl

Differential Video Line Amplifier

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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 groups¹ that are clearly defined by function.

Thank you for purchasing your Kramer TOOLS: **123Vxl Differential Video Line Amplifier**, which is ideal for:

- Professional display systems that require long distance delivery of high quality video
- CCTV, medical, and sports applications
- Retail stores, delivering an identical picture to up to three distant monitors

The package includes the following items:

- **123Vxl Differential Video Line Amplifier**
- 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
- Use Kramer high-performance high-resolution cables³

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>

3 Overview

The Kramer **123Vxl** *Differential Video Line Amplifier* is a high-performance line amplifier for composite or SDI video signals. It splits an input source to 3 identical outputs and includes controls and circuitry to compensate for signal losses and noise inherent in long cable runs.

In particular, the **123Vxl** features:

- Special differential amplifying circuitry that eliminates common mode noise and hum problems commonly found in long video lines, almost completely isolating the input from the outputs
- High bandwidth of 425MHz (-3dB)
- Gain and equalization trimmer controls to compensate for signal losses inherent in long cable runs
- A Kramer TOOLS enclosure and 12V DC supply voltage

To achieve the best performance:

- Use only good quality connection cables¹ 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 **123Vxl** 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 unit².

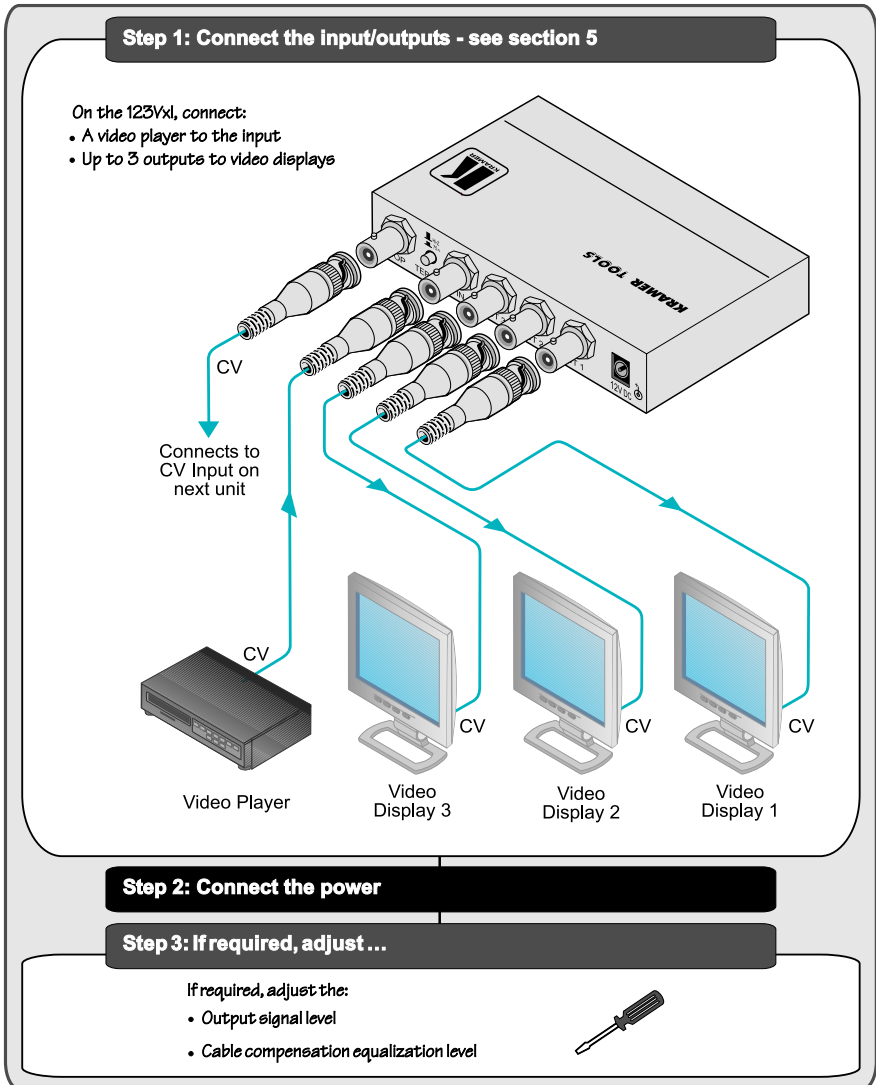
Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

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

² For example, part number 22535-000251

3.1 Quick Start

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



4 Your Differential Video Line Amplifier

Figure 1 and Table 1 define the 123Vxl:

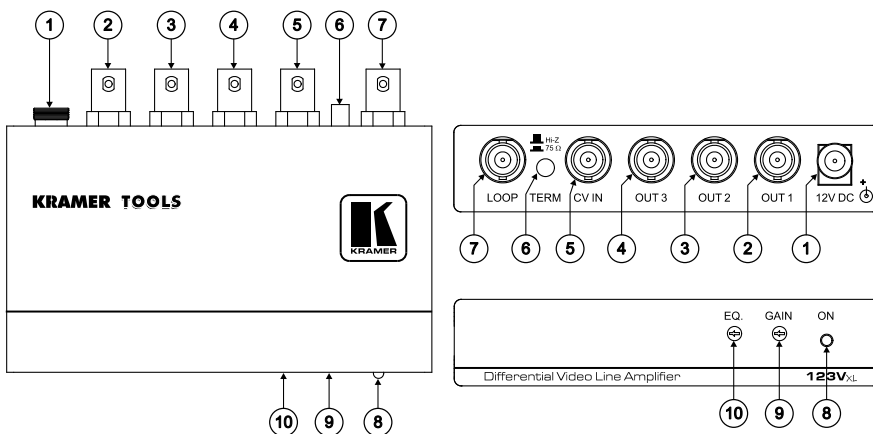


Figure 1: 123Vxl Differential Video Line Amplifier

Table 1: 123Vxl Differential Video Line Amplifier Features

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	OUT 1 BNC Connector	Connects to the video acceptor 1
3	OUT 2 BNC Connector	Connects to the video acceptor 2
4	OUT 3 BNC Connector	Connects to the video acceptor 3
5	CV IN BNC Connector	Connects to the video source
6	TERM Hi-Z / 75Ω Switch	Pushing in selects 75Ω, releasing selects Hi-Z ¹
7	LOOP BNC Connector	For looping to increase output availability ²
8	ON LED	Illuminates when receiving power
9	GAIN Trimmer	Adjusts ³ the output signal level for outputs 1, 2 and 3
10	EQ. Trimmer	Adjusts ³ the cable compensation equalization level

1 For looping select Hi-Z

2 Connects to the CV IN connector on the next unit

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

5 Connecting the 123Vxl Differential Video Line Amplifier

To connect the **123Vxl**, as the example in *Figure 2* illustrates, do the following:

1. Connect the video source (for example, a video player) to the CV IN BNC connector.
2. Connect the CV OUT BNC connectors¹—OUT 1, OUT 2 and OUT 3—to the appropriate video acceptors (for example, video display 1, video display 2, and video display 3).
3. If necessary, connect the LOOP BNC connector to the CV IN BNC connector on an additional **123Vxl** unit and release the TERM switch to Hi-Z.
4. If required, adjust² the output signal level and/or cable compensation equalization level.
5. Connect a 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in *Figure 2*).

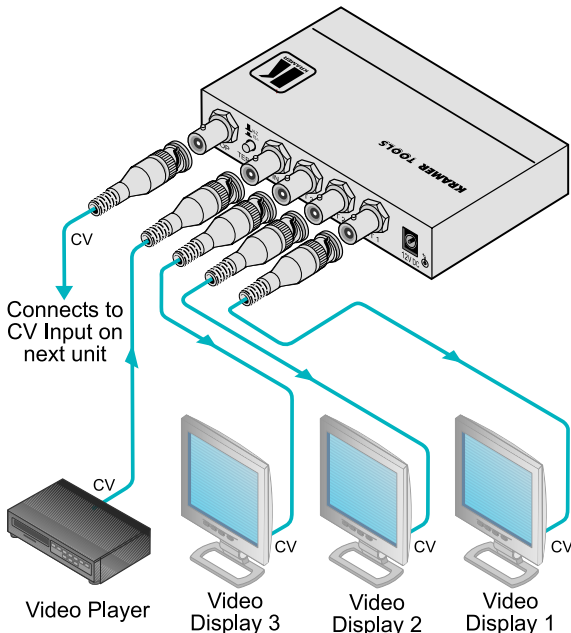


Figure 2: Connecting the 123Vxl Differential Video Line Amplifier

¹ Not all outputs need to be connected. Only connect those required, and leave the others unconnected

² Use a screwdriver to carefully rotate the trimmer, adjusting the appropriate level

6 Connecting Differential Video Line Amplifier Units

You can connect up to five **123Vxl Differential Video Line Amplifier** units, to provide up to 15 outputs, as *Figure 3* illustrates.

To connect up to five **123Vxl Differential Video Line Amplifier** units:

1. Connect the video source to the *CV IN* BNC connector on the first unit.
2. Connect the *LOOP* BNC connector on each unit to the *CV IN* BNC connector on the next unit in the line, respectively¹.
3. Connect the *OUT 1*, *OUT 2* and *OUT 3* BNC connectors on each unit to the appropriate video acceptors², as required.
4. Release the *TERM* switch (selecting Hi-Z) on all units, except on the last (fifth) unit. Push in the *TERM* switch on the last (fifth) unit (selecting 75Ω).
5. If required, adjust³ the output signal level and/or cable compensation equalization level on each unit.

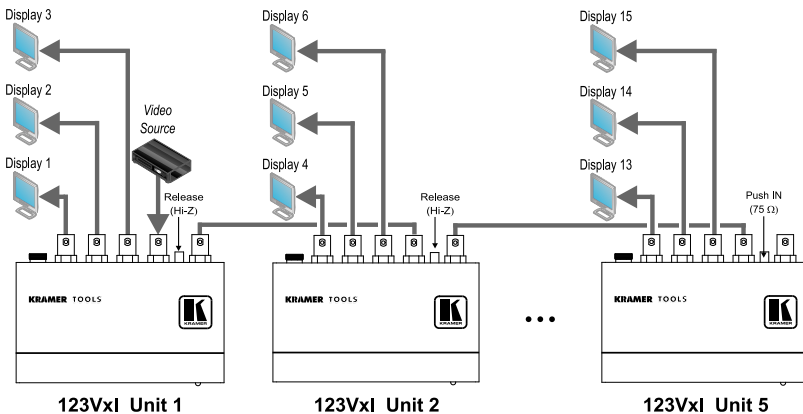


Figure 3: Connecting 123Vxl Differential Video Line Amplifier Units

1 Connect the *LOOP* BNC connector on the first unit to the *CV IN* BNC connector on the second unit. Connect the *LOOP* BNC connector on the second unit to the *CV IN* BNC connector on the third unit. Connect the *LOOP* BNC connector on the third unit to the *CV IN* BNC connector on the fourth unit. Connect the *LOOP* BNC connector on the fourth unit to the *CV IN* BNC connector on the fifth unit. Leave the *LOOP* BNC connector on the fifth (last) unit unconnected

2 Connect the *OUT 1*, *OUT 2* and *OUT 3* BNC connectors on the first unit to the video acceptors 1, 2 and 3, respectively. Connect the *OUT 1*, *OUT 2* and *OUT 3* BNC connectors on the second unit to the video acceptors 4, 5 and 6, respectively. Connect the *OUT 1*, *OUT 2* and *OUT 3* BNC connectors on the third unit to the video acceptors 7, 8 and 9, respectively. Connect the *OUT 1*, *OUT 2* and *OUT 3* BNC connectors on the fourth unit to the video acceptors 10, 11 and 12, respectively. Connect the *OUT 1*, *OUT 2* and *OUT 3* BNC connectors on the fifth unit to the video acceptors 13, 14 and 15, respectively

3 Use a screwdriver to carefully rotate the trimmer, adjusting the appropriate level

7 Technical Specifications

Table 2 includes the technical specifications:

Table 2: *Technical Specifications¹ of the 123Vxl Differential Video Line Amplifier*

INPUTS:	1 looping video, differential, 1Vpp/75Ω on a BNC connector
OUTPUTS:	3 video, 1Vpp/75Ω on BNC connectors
MAX. OUTPUT LEVEL:	1.7Vpp
BANDWIDTH (-3dB):	425MHz
DIFF. GAIN:	0.5%
DIFF. PHASE:	0.3 Deg
K-FACTOR:	<0.05%
S/N RATIO:	60.3dB
CONTROLS:	Level: -1.8dB to +5.6dB, EQ.: 0 to +15dB @5.8MHz, 75Ω termination switch
COUPLING:	AC
POWER SOURCE:	12V DC, 80mA
DIMENSIONS:	12cm x 7.5cm x 2.5 cm (4.7" x 2.95" x 0.98") W, D, H
WEIGHT:	0.3 kg. (0.67 lbs.) approx.
ACCESSORIES:	Power supply, mounting bracket
OPTIONS:	RK-3T 19" rack adapter

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 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.



Caution

Safety Warning:

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



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