



USER MANUAL

MODEL:

DS Vision® 3000
CAT 5 Range Extender System

P/N: 2900-300282 Rev 2

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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 video, audio, presentation, and broadcasting professionals 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 that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; 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 and GROUP 11: Sierra Products.

Congratulations on purchasing your Kramer **DS Vision® 3000**, which is ideal for the following typical applications:

- Digital signage
- Media distribution

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



Go to <http://www.kramerelectronics.com> to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer DS Vision® 3000 away from moisture, excessive sunlight and dust
- For best performance the spec of the cable should be:
 - Gauge: 24AWG (should be written on the cable)
 - Wire: solid wire (should be written on the cable)
- For cable runs over 100m (330ft) the SKEW delay of the cable should be no more than 20ns per 100m (330ft) (should be written in the spec of the cable)



This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

2.2 Safety Instructions



Caution: There are no operator serviceable parts inside the unit

Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit

Warning: Disconnect the power and unplug the unit from the wall before installing

2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at <http://www.kramerelectronics.com/support/recycling/>.

3 Overview

The **DS Vision® 3000** family is a range extender system for computer graphics video signals up to 1080p, stereo audio and bidirectional RS-232. The system can distribute the input signals over CAT 5 cable to hundreds of displays.

Specifically the **DS Vision® 3000** features:

- A maximum resolution of 1080p
- HDTV compatibility
- Single CAT 5 cable connections
- A system range of 600m (3000ft) @720p
- Bidirectional RS-232 control with open protocol for CMS integration
- Remote screen query
- Palm-held video tuning unit
- Group screen on/off command
- Out-of-band operation
- VESA screen mounts
- 3 year warranty

3.1 System Overview

[Figure 1](#) gives an overview of the system, showing a broadcaster, line splitter long and different receiver types.

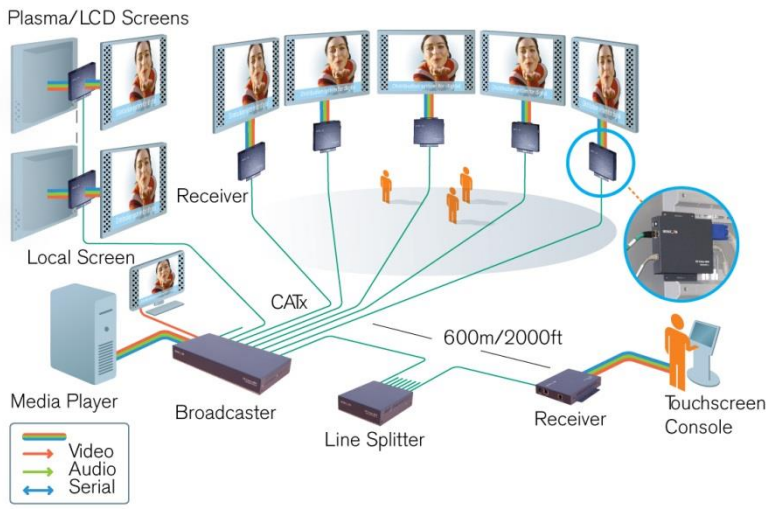


Figure 1: DS Vision 3000 System Overview



Figure 2: DS Vision 3000 Standard Range

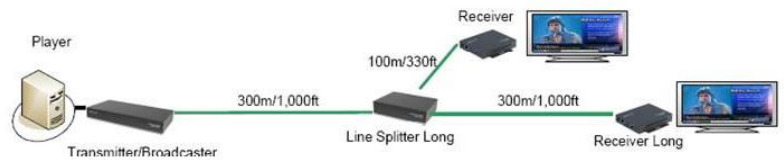


Figure 3: DS Vision 3000 Extended Range with Splitter

3.2 Transmitter and Broadcaster

This table defines the models:

Kramer Model	Kramer Part Number	Full Description
DSV3K-T (0VS50005)	50-0000509011	Minicom DS Vision 3000 Transmitter 1-port
DSV3K-B8 (0VS50003)	50-0000489011	Minicom DS Vision 3000 Broadcaster 8-ports
DSV3K-B16 (0VS50004)	50-0000499011	Minicom DS Vision 3000 Broadcaster 16-ports
DSV3K-TU (0VS50008)	50-0000529011	Minicom DS Vision 3000 Video Tuning unit
DSV3K-LS (0VS50002)	50-0000479011	Minicom DS Vision 3000 Line splitter long 8-ports
DSV3K-RL (0VS50001)	50-0000469011	Minicom DS Vision 3000 Receiver Long
DSV3K-RS (0VS50010)	50-0000539011	Minicom DS Vision 3000 Receiver
DSV3K-RDC (0VS50006)	50-0000519011	Minicom DS Vision 3000 Receiver Dual cascade

Figure 4 illustrates the 8-port broadcaster. The input ports are the same for the transmitter and 16-port broadcaster, except for the number of system ports. The transmitter has 1 system port and the 16-port broadcaster has 16 system ports.

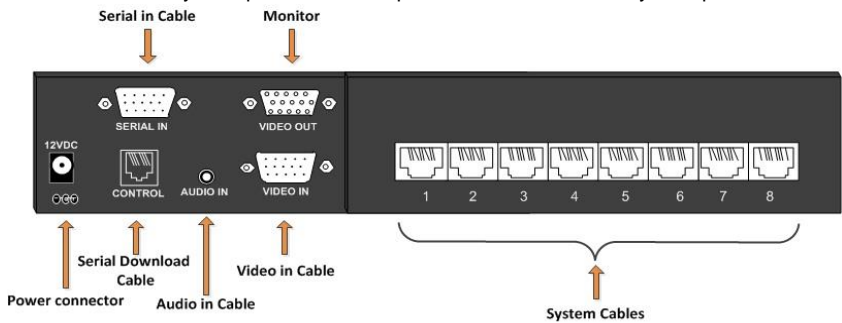


Figure 4: Broadcaster Unit - 8 Ports

3.3 Receivers

The receivers come in the following models:

- Receiver - P/N 0VS50010. Reaches up to 110m (330ft) from transmitter/broadcaster
- Receiver L (long) - P/N 0VS50001. Reaches up to 300m (1,000ft) from transmitter/broadcaster. With a line splitter L can reach up to 600m (2,000ft) from transmitter/broadcaster.

Note: the maximum cable run from the transmitter/ broadcaster to the line splitter L must not be longer than 300m (1,000ft).

[Figure 5](#) illustrates the receiver and receiver L ports

Note: Both products in Version 3 have the same ports; refer to the part number in order to make sure the product is a receiver or receiver long.

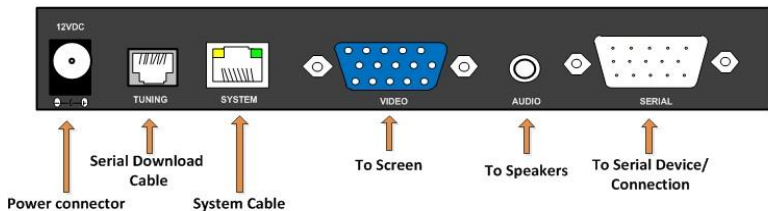


Figure 5: Receiver Ports

3.4 Receiver DCL

The receiver DCL (Dual Cascade Long) P/N 0VS50006 has the following features:

- Connects to 2 monitors with each having separate video, audio and serial control
- Receiver DCL is cascadable – it has a pass-through port for connecting more receivers/ receivers L/ receivers DCL/ line splitter L
- Can be up to 300m (1,000ft) from a transmitter/broadcaster
- With a line splitter L, can be up to 600m (2000ft) from a transmitter/broadcaster

Notes:

- Dual cascade unit tuning feature influences the VIDEO 1 and VIDEO 2 outputs only, not the SYS OUT port.

[Figure 6](#) illustrates the receiver DCL ports.

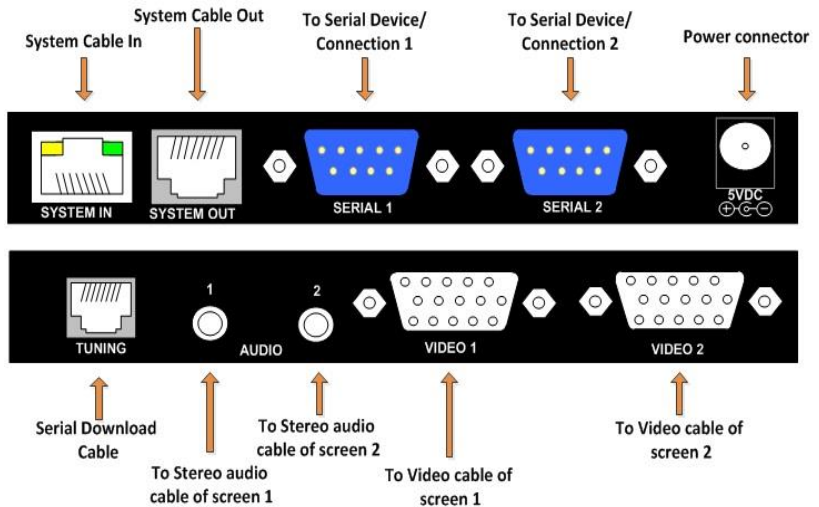


Figure 6: Receiver DCL Front and Back Connections

3.5 Line Splitter Long

Add line splitters L(ong) to use for clusters or to increase the number of receivers in the system. There is an option to cascade line splitters to line splitters. [Figure 7](#) illustrates the line splitter L ports.

Notes: The last cascaded line splitter long must not be more than 300m (1000ft) from the transmitter or broadcaster.

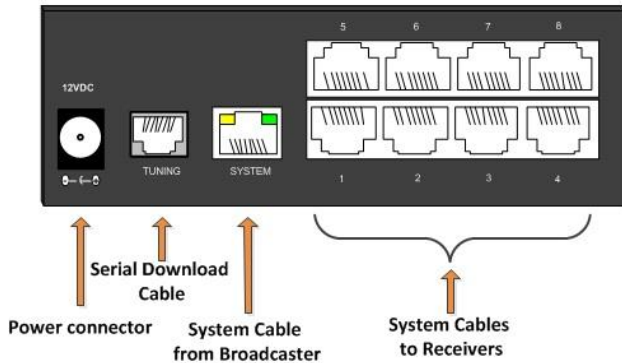


Figure 7: Line Splitter Long

3.6 LEDs

This table explains the functions of all the LEDs of the units in the system.

Unit	LED	Function
Transmitter / Broadcaster	Front panel - green	Green - power indicator Yellow – link indication
Receiver / Receiver L	RJ-45 system port - green /yellow	Green - power indicator Yellow – link indication, unit is connected to the system this LED flashes from time to time Yellow flashing constantly – Bi-directional RS-232 communication (only possible with one receiver /receiver L at a time)
Receiver DCL	RJ-45 system port - green /yellow	Green - power indicator Yellow flashing – link indication
Line Splitter L	Rear panel – RJ-45 system port - green /yellow	Green - power indicator Yellow flashing – link indication

4 Connecting the DS Vision® 3000

Figure 8 illustrates a sample configuration and its connections.

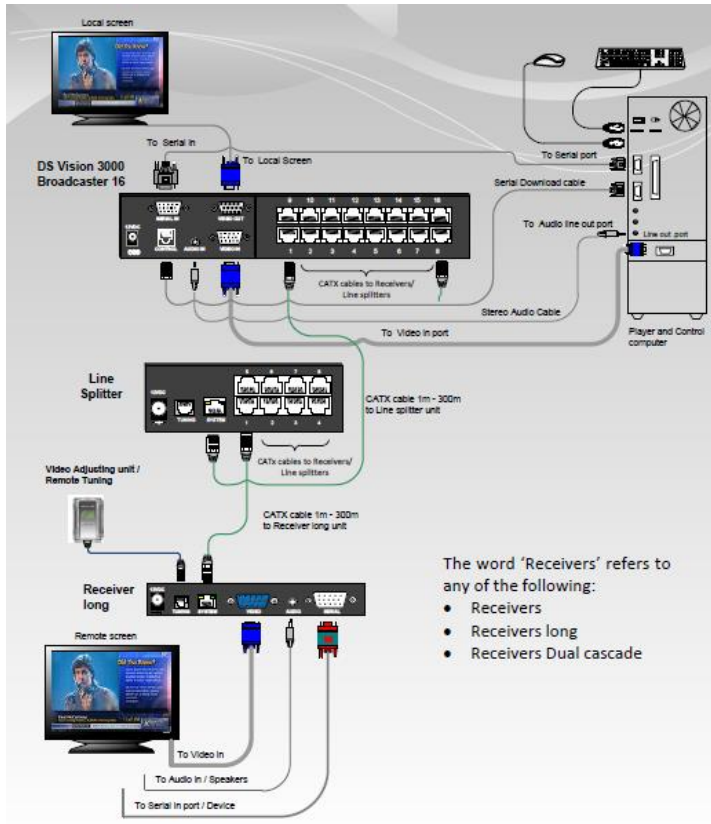


Figure 8: Connection Diagram

4.1 Broadcaster/Transmitter Connections

1. Connect the broadcaster/transmitter Video In port to the computer's video card with a video cable.
2. Connect the broadcaster/transmitter Serial In port to the computer's serial port with a serial extender cable.
3. Connect the broadcaster/transmitter Audio In port to the computer's line out port with a stereo audio cable.
4. To use the Video Service Utility, connect the broadcaster/transmitter control port and the computer's serial port with a serial download cable.
5. (Optional) Connect a monitor to the broadcaster/transmitter Video Out port.

4.2 Receiver/Receiver L Connections

1. Connect the screen to the video port.
2. Connect the audio/speakers to the audio port.
Note: if you are connecting the audio out of the receivers to speakers they must have an internal amplifier. The audio out is a line out extension of the player.
3. Where relevant connect the serial connection to the serial port.

4.3 Receiver DCL Connections

1. Connect one screen to video port 1 and another screen to video port 2.
2. Connect the audio/speakers of the first screen to stereo audio port 1 and connect the audio/speakers of the second screen to stereo audio port 2. Ensure that the video and audio ports are connected to the same numbers, i.e. one screen to video and audio ports 1 and the other screen to video and audio ports 2.
3. Where relevant connect the serial connection to the serial ports 1 and/or 2.

4.4 Connecting CATx Cables

Connect the CATx cables as follows.

4.4.1 Connecting the Broadcaster/Transmitter

- Connect CATx cables to the system ports of the broadcaster/transmitter and the system in ports of receivers/L/DCL or line splitter L.

4.4.2 Connecting/Cascading a Line Splitter Long

- Connect CATx cables to the system out ports of the line splitter long and the system in ports of receivers/L/DCL or further line splitters Long.

4.4.3 Cascading a Receiver DCL

- Connect a CATx cable to the system out port of the receiver DCL and the system in port of a receiver/L/DCL or line splitter long.

4.5 Connecting to the Power Supply

- Connect the transmitter/broadcaster and all receiver and line splitter long units to the power supply using the AC/DC adapters provided with the products.

Once the system is connected the **DS Vision® 3000** system broadcasts to all remote monitors/speakers.

4.6 Adjusting the Picture Quality

When the broadcasted picture needs adjusting:

- The receiver (version 3)/ receiver L/ receiver DCL/ line splitter long can be tuned either via the service utility, or by using the optional tuning unit

Note: Where there are cascaded receivers/ receiver DCL/line splitters long you must tune them from the unit nearest the broadcaster/transmitter onwards.

4.7 Note on Serial Extension:

The serial connection requires two cables: from player to a transmitter or broadcaster, use a straight serial cable; from receiver to screen, use a cross cable.

5 Technical Specifications

RESOLUTION:	Up to 1920x1440 @60Hz (depending on cable length)
I/O VIDEO SIGNALS:	Analog red, green, blue, 75Ω 0.7Vpp
SYNC:	TTL compatible
HORIZONTAL/VERTICAL SYNC:	Positive/negative
SYSTEM CABLE:	CAT 5/5e/6/7 UTP/FTP cable, 2x4x24AWG solid wire
MAX. RANGE:	Receiver short: 110m (360ft), Receiver long: 300m (1000ft), Receiver long with line splitter long: 600m (2000ft) (2 x 300m (1000ft))
SKEW COMPENSATION:	Up to 63nsec
DDC:	Complies with VESA DDC-2 specification
RS-232 CONNECTION:	Full serial: RXD, TXD, DTR, DSR, RTS, CTS
SERIAL BAUD RATE:	Up to 57600
AUDIO:	Stereo Frequency response: 20 Hz to 20 kHz, +/-1 dB. Signal-to-Noise Ratio (SNR): 80 dBA. Total Harmonic Distortion and Noise (THD+N): 0.017%. Stereo crosstalk: -70 dB. Input impedance: 10kΩ. Line level output; supports multimedia speakers. Maximum I/O levels: 3.1Vpp (line level).
SERIAL:	Broadcaster / Transmitter – DCE Receivers - DTE
OPERATING TEMPERATURE:	5°C to 40°C (41°F to 104°F)
STORAGE TEMPERATURE:	-40°C to 70°C (-104°F to 158°F)
WARRANTY:	3 years
Specifications are subject to change without notice at http://www.kramerelectronics.com	

LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Three years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

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IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at www.kramerelectronics.com or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.



For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com



SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing



P/N: 2900-300282



Rev: 2

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