



KRAMER ELECTRONICS LTD.

# USER MANUAL

MODELS:

**TP-125xi**

UXGA/Audio/Data Line  
Transmitter

**TP-126xi**

UXGA/Audio/Data Line  
Receiver

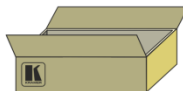


## TP-125xl, TP-126xl Quick Start Guide

This guide helps you install and use your product for the first time. For more detailed information, go to [http://www.kramerelectronics.com/support/product\\_downloads.asp](http://www.kramerelectronics.com/support/product_downloads.asp) to download the latest manual or scan the QR code on the left.

### Step 1: Check what's in the box

- TP-125xl** or **TP-126xl** UXGA/Audio/Data Line Transmitter or Receiver
- 1 Power adapters (12V DC output)
- 4 Rubber feet
- 1 Quick Start Guide
- 1 Bracket Set



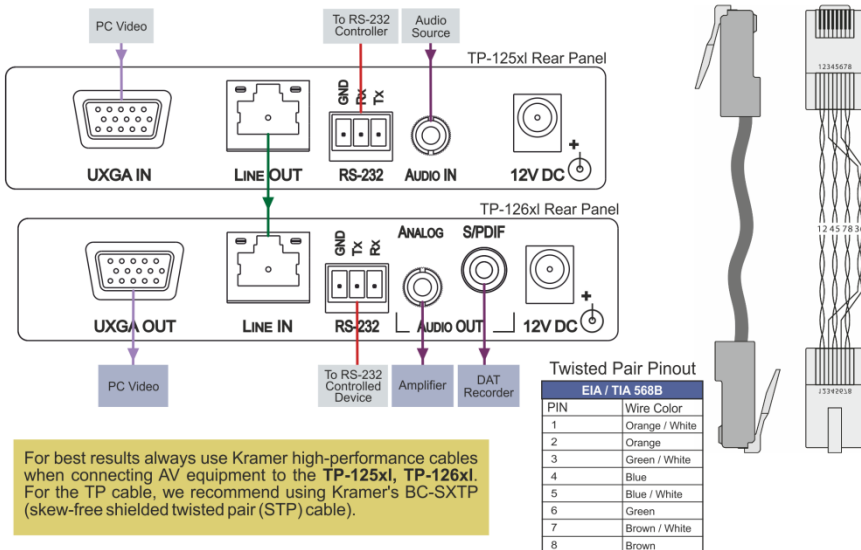
Save the original box and packaging materials in case your Kramer product needs to be returned to the factory for service.

### Step 2: Install the TP-125xl or TP-126xl

Mount the devices in racks (using the optional **RK-3T** rack adapter available for purchase) or attach the rubber feet and place them on shelves or attach them to a surface with the bracket set (included).

### Step 3: Connect the inputs and outputs

Always switch off the power to all devices before connecting them to your **TP-125xl** or **TP-126xl**.



### Step 4: Connect the power

Connect the power adapters to the **TP-125xl** and **TP-126xl** and plug the adapters into the mains electricity.



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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 Video Products.

Thank you for purchasing the Kramer TOOLS® **TP-125xl UXGA/Audio/Data Line Transmitter** and/or **TP-126xl UXGA/Audio/Data Line Receiver** which are ideal for:

- Presentation and multimedia applications
- Long range graphics distribution for schools, hospitals, stores and security applications

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## 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 [www.kramerav.com/support/product\\_downloads.asp](http://www.kramerav.com/support/product_downloads.asp) 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 **TP-125xl** and **TP-126xl** away from moisture, excessive sunlight and dust



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 Shielded Twisted Pair/Unshielded Twisted Pair

We recommend that you use Shielded Twisted Pair (STP) cable, and stress that the compliance to electromagnetic interference was tested using STP cable.

There are different levels of STP cable available, and we advise you to use the best quality STP cable that you can afford. Our non-skew-free cable, Kramer **BC-STP** is intended for analog signals where skewing is not an issue.

In cases where there is skewing, our Unshielded Twisted Pair (UTP) skew-free cable, Kramer **BC-XTP**, may be advantageous, and UTP cable might also be preferable for long range applications. In any event when using UTP cable, it is advisable to ensure that the cable is installed far away from electric cables, motors and so on, which are prone to create electrical interference.

## 2.4 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 [www.kramerav.com/support/recycling/](http://www.kramerav.com/support/recycling/).

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## 3 Overview

The **TP-125xl** and **TP-126xl** are a high-performance, TP (Twisted Pair) transmitter and receiver pair for transmitting computer graphics video, unbalanced stereo audio, and bidirectional RS-232 data signals over extended distances using CAT 5/6 cable.

The **TP-125xl** encodes computer graphics video, unbalanced stereo audio and RS-232 data into a TP signal. The **TP-126xl** decodes the TP signal into computer graphics video, digital unbalanced stereo audio, and RS-232 data signals. The **TP-125xl** and **TP-126xl** together form an extended computer graphics/audio/data line transmission and reception system.

More specifically, the **TP-125xl** and **TP-126xl** support:

- Video resolutions up to UXGA (1920 x 1200)
- EDID (**TP-125xl**)
- HDTV
- Level (gain) and equalization (peaking) adjustment (**TP-126xl**)
- Full duplex, bidirectional RS-232 transmission
- Increased level of protection against noise, spikes and interference in adverse environments
- Transmission range of up to 250m (820ft)

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## 4 Defining the TP-125xl/TP-126xl Line Transmitter and Receiver

This section defines the:

- **TP-125xl** *UXGA/Audio/Data Line Transmitter* (see [Section 4.1](#))
- **TP-126xl** *UXGA/Audio/Data Line Receiver* (see [Section 4.2](#))

The **TP-125xl** has inputs for:

- Computer graphics video
- Unbalanced stereo audio
- RS-232 data

The **TP-125xl** encodes the video, audio and data signals and transmits them over STP cable to a **TP-126xl** receiver. RS-232 data and commands flow bidirectionally, allowing status requests and control of a destination unit. The RS-232 interface makes it possible to control almost any device over a transmission range of up to 250m over STP cabling.

The **TP-126xl** accepts the encoded signal over STP from the **TP-125xl** and outputs computer graphics video, unbalanced stereo audio, digital audio and RS-232 data.



## 4.1 Defining the TP-125xl UXGA/Audio/Data Line Transmitter

Figure 1 defines the front panel of the TP-125xl.

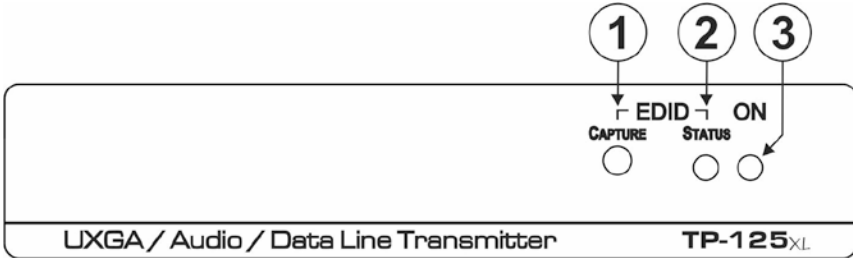


Figure 1: TP-125xl UXGA/Audio/Data Line Transmitter Front Panel

#	Feature	Function
1	<i>CAPTURE</i> Button	Press to capture the EDID from the video display
2	<i>EDID</i> <i>STATUS</i> LED	Indicates the following EDID status: <ul style="list-style-type: none"> <li>Flashes slowly then lights solid—new EDID stored</li> <li>Flashes quickly then lights solid—default EDID stored</li> </ul>
3	<i>ON</i> LED	Lights green when the device is powered on

Figure 2 defines the rear panel of the TP-125xl.

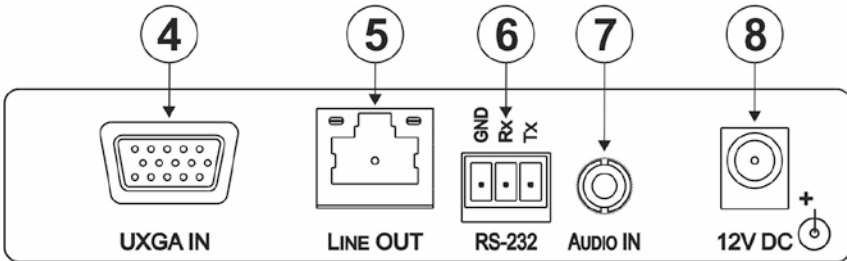


Figure 2: TP-125xl UXGA/Audio/Data Line Transmitter Rear Panel

#	Feature	Function
4	<i>UXGA IN</i> 15-pin HD Connector (F)	Connect to a computer graphics source (see <a href="#">Section 5</a> )
5	<i>LINE OUT</i> RJ-45 Connector	Connect to the Line In RJ-45 connector on the TP-126xl (see <a href="#">Section 2.3</a> )
6	<i>RS-232</i> Serial Port 3-pin Terminal Block	Connect to an RS-232 device (PC or controller). <b>Note:</b> The RS-232 link is bidirectional
7	<i>AUDIO IN</i> 3.5mm Mini Jack	Connect to an unbalanced, stereo audio source (see <a href="#">Section 5</a> )
8	<i>12V DC</i> Power Connector	Connect to one of the supplied +12V DC power adapters. Center pin positive

## 4.2 Defining the TP-126xl UXGA/Audio/Data Line Receiver

Figure 3 defines the front panel of the TP-126xl.

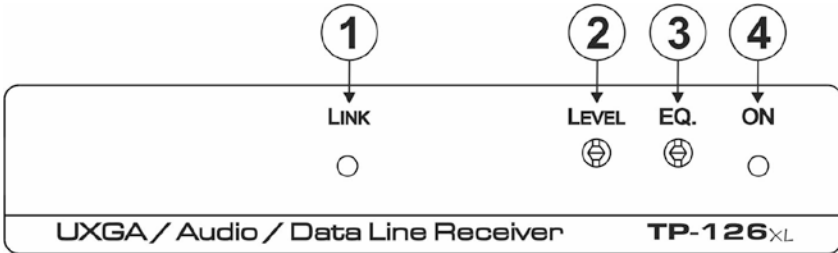


Figure 3: TP-126xl UXGA/Audio/Data Line Receiver Front Panel

#	Feature	Function
1	LINK LED	Lights green when the TP link is established
2	LEVEL Trimmer	Use to adjust the output signal level (see <a href="#">Section 6.2</a> )
3	EQ. Trimmer	Use to adjust the cable compensation equalization level
4	ON LED	Lights green when the device is powered on

Figure 4 defines the rear panel of the TP-126xl.

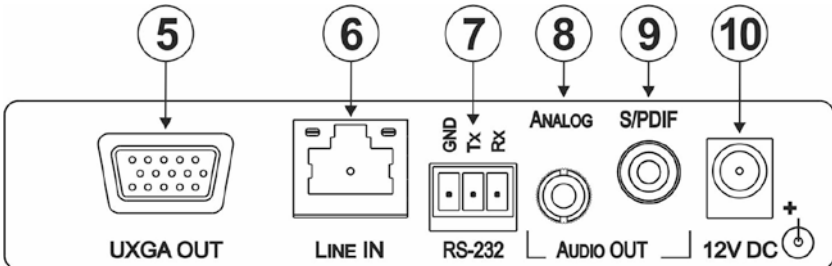


Figure 4: TP-126xl UXGA/Audio/Data Line Receiver Rear Panel

#	Feature	Function	
5	UXGA OUT 15-pin HD Connector (F)	Connect to a computer graphics video acceptor (see <a href="#">Section 5</a> )	
6	LINE IN RJ-45 Connector	Connect to the Line Out RJ-45 connector on the TP-125xl (See <a href="#">Section 2.3</a> )	
7	RS-232 Serial Port 3-pin Terminal Block	Connect to the RS-232 device to be controlled. <b>Note:</b> The RS-232 link is bidirectional	
8	AUDIO OUT	ANALOG 3.5mm Mini Jack	Connect to an unbalanced, stereo audio acceptor (see <a href="#">Section 5</a> )
9		S/PDIF RCA Connector	Connect to a digital audio acceptor
10	12V DC Power Connector	Connect to one of the supplied +12V DC power adapters. Center pin positive	

## 5 Connecting the TP-125xl and TP-126xl



Switch off the power to all devices before connecting them to your **TP-125xl/TP-126xl**. After connecting your **TP-125xl/TP-126xl**, connect the power to the transmitter and receiver and then switch on the power to the other devices.

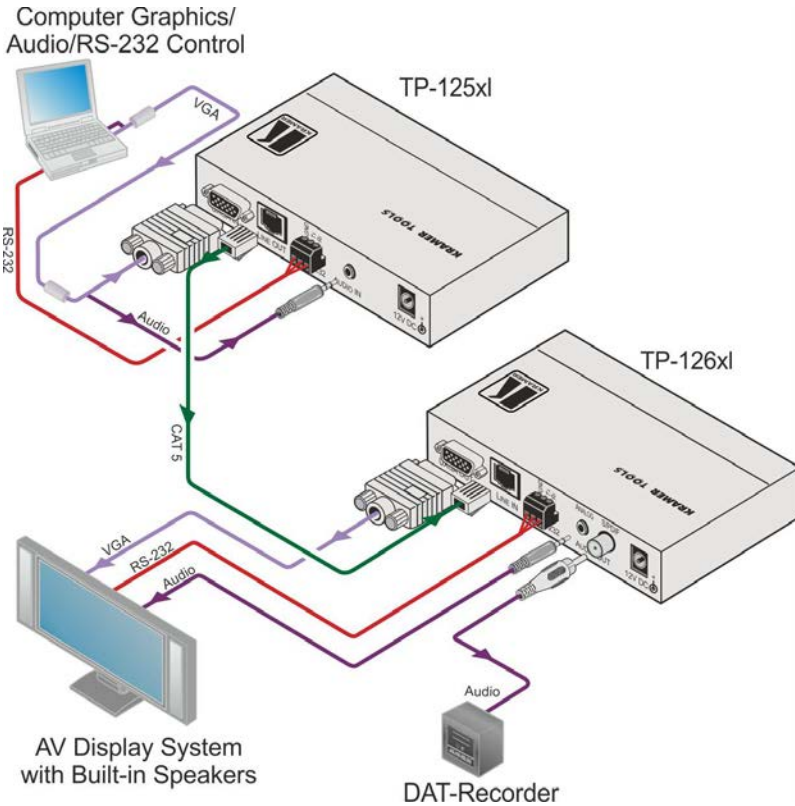


Figure 5: Connecting the TP-125xl Transmitter and TP-126xl Receiver

To connect the TP-125xl and the TP-126xl as illustrated in [Figure 5](#):

1. On the **TP-125xl**, connect:
  - The computer graphics video source, (for example, the graphics output from a laptop) to the UXGA In 15-pin HD connector (F)

- The RS-232 controller, (for example, a laptop controller with an RS-232 interface) to the RS-232 3-pin terminal block
  - An unbalanced, stereo audio source, (for example, the audio output from a laptop) to the Audio In 3.5mm mini jack
2. On the **TP-126xI**, connect:
    - The UXGA Out 15-pin HD (F) connector to the video acceptor, (for example, an AV display system)
    - The RS-232 3-pin terminal block to the controlled device, (for example, an AV display system)
    - The Audio Out Analog 3.5mm mini jack to the unbalanced, stereo audio acceptor, (for example, an AV display system with speakers)
    - The Audio Out S/PDIF RCA connector to the digital audio acceptor, (for example, a DAT recorder)
  3. Using STP cabling, connect the **TP-125xI** Line Out RJ-45 connector to the **TP-126xI** Line In RJ-45 connector (see [Section 2.3](#)).
  4. Connect the power adapters to the power sockets on the **TP-125xI** and **TP-126xI**, and connect the adapters to the mains electricity (not shown in [Figure 5](#)).
  5. If necessary, adjust the level and equalization for an optimum picture (see [Section 6.2](#)).

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## 6 Operating the TP-125xl and TP-126xl

### 6.1 Capturing the EDID

The **TP-125xl** is programmed with a default EDID. To replace the default EDID you can replace it with the EDID from a display device.

**To capture a new EDID:**

- With the display device connected to the **TP-125xl**, press the EDID Capture button on the front panel of the **TP-125xl**.  
If the EDID is successfully captured the Status LED flashes slowly for a few seconds and then lights solid. If the EDID is not successfully captured the Status LED flashes quickly for a few seconds then lights solid when the default EDID is loaded.

### 6.2 Adjusting the Level and Equalization on the TP-126xl

You can manually adjust the signal level and equalization using the trimmers on the front of the **TP-126xl** to achieve an optimum picture.

**To adjust the level and equalization on the TP-126xl:**

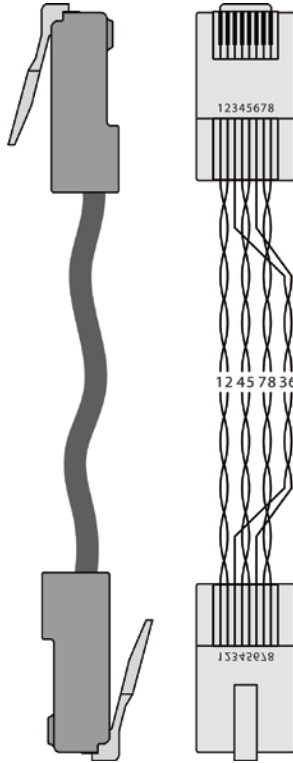
1. Use a small screwdriver to slowly turn the Level trimmer clockwise to increase or anticlockwise to reduce the signal level of the **TP-126xl**.
2. Use a small screwdriver to slowly turn the EQ trimmer clockwise or anticlockwise until you achieve an optimum picture.

# 7 Wiring the Twisted Pair RJ-45 Connectors

When using STP cable, connect/solder the cable shield to the RJ-45 connector shield. [Figure 6](#) defines the TP pinout using a straight pin-to-pin cable with RJ-45 connectors.

EIA /TIA 568B	
PIN	Wire Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown
Pair 1	4 and 5
Pair 2	1 and 2
Pair 3	3 and 6

Figure 6: TP Pinout Wiring



**Warning:** Using a TP cable that is incorrectly wired will cause permanent damage to the device

## 8 Technical Specifications

		TP-125xl	TP-126xl
INPUTS:		1 UXGA on a 15-pin HD connector (F) 1 Unbalanced stereo audio on a 3.5mm mini jack 1 Bidirectional RS-232 serial port on a 3-pin terminal block	1 TP on an RJ-45 connector
OUTPUTS:		1 TP on an RJ-45 connector	1 UXGA on a 15-pin HD connector (F) 1 Digital audio on an RCA connector 1 Unbalanced stereo audio on a 3.5mm mini jack 1 Bidirectional RS-232 serial port on a 3-pin terminal block
VIDEO RESOLUTION:		Up to WUXGA, 1080p	
MAX. OUTPUT LEVEL:			Video: 1.1V Audio: 2.2V
AUDIO:	BANDWIDTH:	Audio: 20Hz-20kHz @-3dB	
	S/N RATIO:	Audio: 84dB unweighted	
	COUPLING:	AC	
	TND+N:	Audio: 0.02% unweighted	
	TOTAL GAIN:	Analog/analog: 0dB Analog/SPDIF: -12dBFS	
RS-232:	BAUD RATE:	9600, 19200bps	
	MODE:	Full-duplex	
POWER CONSUMPTION:		12V DC 206mA	12V DC 235mA
TRANSMISSION DISTANCE:		Up to 250m (820ft)	
OPERATING TEMPERATURE:		0° to +40°C (32° to 104°F)	
STORAGE TEMPERATURE:		-40° to +70°C (-40° to 158°F)	
HUMIDITY:		10% to 90%, RHL non-condensing	
DIMENSIONS:		12.1cm x 7.18cm x 2.48cm (4.76" x 2.83" x 0.98"), W, D, H	
WEIGHT:		0.2kg (0.44lbs.) approx. each	
ACCESSORIES:		Power supply	
OPTIONS:		RK-3T 19" rack adapter	

## 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

Seven 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](http://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.

### Exclusive Remedy

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF KRAMER ELECTRONICS CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN ALL IMPLIED WARRANTIES COVERING THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THIS PRODUCT AS PROVIDED UNDER APPLICABLE LAW.

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](http://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.kramerav.com](http://www.kramerav.com)

E-mail: [info@kramerel.com](mailto:info@kramerel.com)



**SAFETY WARNING**

Disconnect the unit from the power supply before opening and servicing



P/N: 2900-300206



Rev: 4