



KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

VP-435

Component / UXGA HDMI
Scaler

P/N: 2900-000262 Rev 1.3

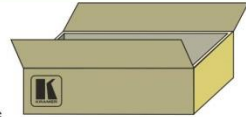


VP-435 Quick Start Guide

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 to download the latest manual or scan the QR code on the left.

Step 1: Check what's in the box

- ✓ **VP-435** Component / UXGA HDMI Scaler
- ✓ 1 Quick Start sheet
- ✓ 1 Power supply (12V DC)
- ✓ Kramer RC-IR3 Infrared Remote Control Transmitter with batteries and user manual



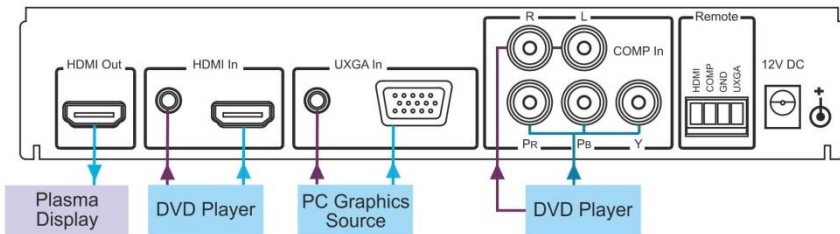
Save the original box and packaging materials in case you need to return your **VP-435** for service.

Step 2: Install the VP-435

Attach the rubber feet and place on a table or mount the **VP-435** in a rack (using an optional RK-1 rack mount).

Step 3: Connect the inputs and outputs

Always switch off the power on each device before connecting it to your **VP-435**.



Always use Kramer high-performance cables for connecting AV equipment to the **VP-435**.

Step 4: Connect the power

Connect the 12V DC power adapter to the **VP-435** and plug the adapter into the mains electricity.



Step 5: Operate the VP-435

Control the **VP-435** using the front panel buttons, the remote contact closure switches or the IR remote control unit.

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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 **VP-435** *Component / UXGA HDMI Scaler*, which is ideal for the following typical applications:

- Projection systems in conference rooms, boardrooms, hotels and churches
- Home theater up-scaling

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/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 **VP-435** 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 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 Kramer **VP-435** is a high-quality component video/UXGA to HDMI scaler. It accepts one of three inputs: either component video (Y, Pb, Pr; Y, Cb, Cr and YUV; compatible with both SD and HD component) on RCA connectors, computer graphics on a 15-pin HD connector, or an HDMI signal, selected via a front panel selector button or via the remote contact closure switch. It scales the video, embeds the audio, and outputs the signal to the HDMI output.

The **VP-435** *Component / UXGA HDMI Scaler*:

- Is HDTV compatible and the resolution can be scaled up to 480p, 576p, 720p, 1080i or 1080p via a front panel selector button
Other resolutions can be selected via the OSD menu.
- Has analog audio inputs for the COMP, UXGA and HDMI inputs
- Automatically detects and selects the audio source for the HDMI input. Default selection is HDMI – if this is not present, then the machine uses the audio from the analog input
- Comes with an On-Screen Display (OSD) for easy setup and adjustment, accessible via the IR remote control and via the front-panel buttons
- Has a non-volatile memory that retains the last settings used
- Is housed in a desktop sized enclosure and is 12V DC fed

Control your **VP-435**:

- Directly, via the front panel push buttons
- Remotely, from the infrared remote control transmitter
- Remotely, from the REMOTE contact closure switch

3.1 Defining the VP-435 Component / UXGA HDMI Scaler

This section defines the **VP-435**.

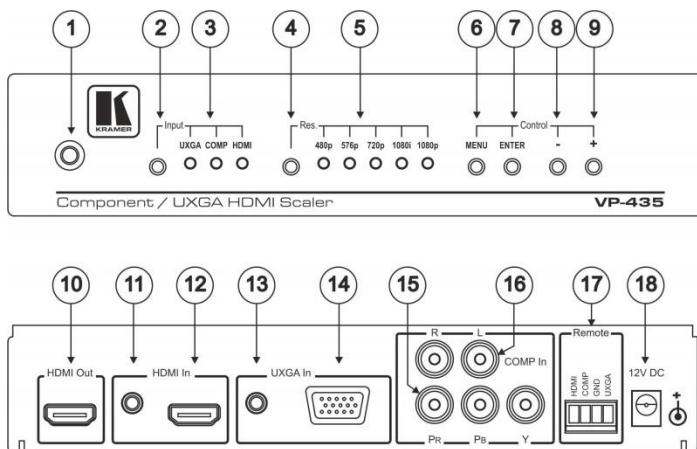


Figure 1: VP-435 Component / UXGA HDMI Scaler

| # | Feature | Function |
|----|---|--|
| 1 | IR Receiver | Receives signals from the remote control transmitter |
| 2 | INPUT Selector Button | Press to select the UXGA input, the COMP input, or the HDMI input |
| 3 | UXGA, COMP, HDMI INPUT LEDs | Each LED lights when its input is selected |
| 4 | Selector Button | Press to select the resolution: 480p, 576p, 720p, 1080i or 1080p |
| 5 | 480p, 576p, 720p, 1080i or 1080p RES LEDs | Each LED lights when its resolution is selected |
| 6 | MENU Button | Displays the OSD menu (see Section 5.2) |
| 7 | ENTER Button | Press to accept changes and change the SETUP parameters (see Section 5.2) |
| 8 | - Button | Press to move down the menu list |
| 9 | + Button | Press to move up the menu list values |
| 10 | HDMI OUT Connector | Connects to the HDMI acceptor |
| 11 | HDMI IN 3.5mm Mini Jack Connector | Connects to the analog unbalanced stereo audio signal The audio source is automatically detected and selected. The default selection is the audio signal embedded in the HDMI signal. If this is not present, then the machine uses the audio from the analog input |
| 12 | HDMI IN Connector | Connects to the HDMI source |
| 13 | UXGA IN 3.5mm Mini Jack Connector | Connects to the analog unbalanced stereo audio signal source |
| 14 | UXGA IN 15-pin HD Connector | Connects to the UXGA source |
| 15 | COMP IN R, Pb, Y RCA Connectors | Connects to the component video source For component video, connect all three connectors: Y, Cb, Cr (also known as YUV) |
| 16 | COMP IN R, L RCA Connectors | Connect to the left and right analog unbalanced stereo audio source (of the COMP source) |
| 17 | REMOTE Terminal Block | Connects to a contact closure switch (see Section 4.1) |
| 18 | 12V DC Connector | +12V DC connector for powering the unit |

4 Connecting the VP-435



Always switch off the power to each device before connecting it to your **VP-435**. After connecting your **VP-435**, connect its power and then switch on the power to each device.

To connect your **VP-435**, as illustrated in the example in [Figure 2](#), do the following:

You do not have to connect all the inputs, connect only those that are required.

1. Connect a component video source (for example, a DVD player) to the COMP In Y, Pb, Pr, RCA connectors, and to the COMP In L and R audio RCA connectors.
2. Connect a computer graphics source to the UXGA In 15-pin HD connector, and to the UXGA In audio 3.5mm mini jack connector.
3. Connect an HDMI source (for example, a DVD player) to the HDMI In connector, and to the HDMI In analog audio 3.5mm mini jack connector.
Alternatively, you can connect the DVI connector on the DVD player to the HDMI connector on the VP-435 via a DVI-HDMI adapter.
4. Connect the HDMI Out connector to an HDMI acceptor (for example, a plasma display).
5. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in [Figure 2](#)).

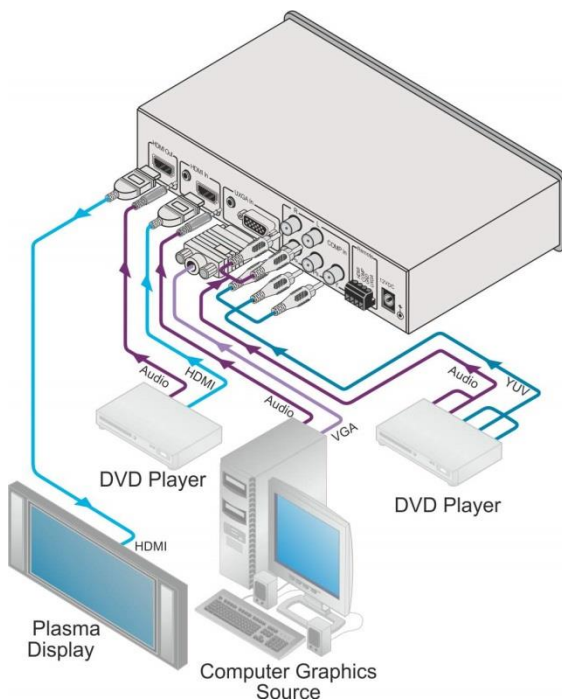


Figure 2: Connecting the VP-435 Component / UXGA HDMI Scaler

4.1 Connecting the Remote Terminal Block

The contact closure remote control pins operate in a similar way to the Input selector button. Using the contact closure remote control (also known as push-to-make momentary contact) you can select the HDMI, the COMP or the UXGA input. To do so, momentarily connect the required input (HDMI, COMP or UXGA) pin on the REMOTE terminal block connector to the GND (Ground) pin, as [Figure 3](#) illustrates.



DO NOT Connect more than one PIN to the GND PIN at the same time.

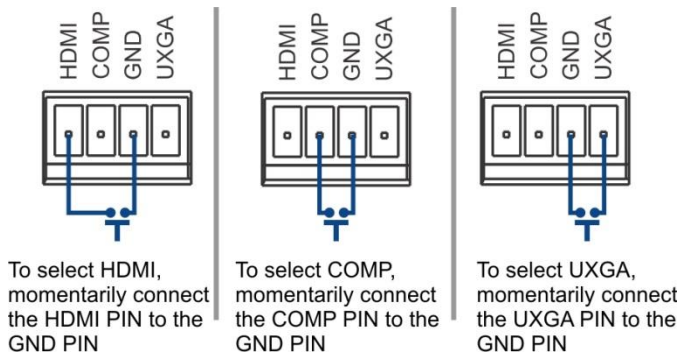


Figure 3: Connecting the Contact Closure Remote Control PINs

5 Operating the VP-435

You can operate the **VP-435** directly via the front panel buttons (see [Section 5.1](#)), via the OSD menu (see [Section 5.2](#)), and/or remotely from the infrared remote control transmitter (see [Section 5.3](#)).

5.1 Using the Front Panel Buttons

Press the **VP-435** front panel buttons to select:

- The required INPUT (UXGA, COMP. or HDMI)
- A desired RESOLUTION (Res.)
- A control operation, using the MENU, ENTER, + and – buttons

5.2 Using the CONTROL Buttons

The CONTROL buttons let you control the **VP-435** via the OSD menu. Press the:

- MENU button to enter the menu
The default timeout is set to 10 seconds.
- ENTER button to accept changes and to change the menu settings (a selected value parameter appears red and when set, changes back to white)
- + and – buttons to move through the OSD menu, which is displayed on the video output

On the OSD menu, select EXIT to exit the menu.

5.2.1 The MAIN MENU

This table defines the MAIN MENU features and functions.

| Mode | Function | | | |
|---------------|--|--------------------|-------------|--------------------|
| CONTRAST | Sets the contrast | | | |
| BRIGHTNESS | Sets the brightness | | | |
| FINETUNE | (See Section 5.2.2) | | | |
| COLOR | Sets the red, green and blue shades | | | |
| SIZE | Selects the size of the display: FULL, OVERSCAN, UNDERSCAN, LETTERBOX, PANSKAN, BEST FIT (default, FULL) | | | |
| SOURCE | Selects the source: PC (VGA), component video (YPBPR) or HDMI | | | |
| OUTPUT | Selects the output resolution from the menu: | | | |
| | Appears as: | Output resolution: | Appears as: | Output resolution: |
| | NATIVE | | 576P | 576p |
| | Select "NATIVE" to select the output resolution from the EDID of the connected HDMI monitor | | | |
| | VGA | 640x480 | 720P50 | 720p @50Hz |
| | SVGA | 800x600 | 1080I50 | 1080i @50Hz |
| | XGA | 1024x768 | 1080P50 | 1080p @50Hz |
| | SXGA | 1280x1024 | WXGA | 1366x768 |
| | UXGA | 1600x1200 | WSXGA | 1680x1050 |
| | 480I | 480i | WUXGA | 1920x1200 |
| | 480P | 480p | 1280x800 | 1280x800 |
| | 720P60 | 720p @60Hz | WXGA+ | 1440x900 |
| | 1080I60 | 1080i @60Hz | SXGA+ | 1400x1050 |
| | 1080P60 | 1080p @60Hz | 1600x900 | 1600x900 |
| | 576I | 576i | | |
| AUDIO | HDMI AUDIO IN - Enabled only when the HDMI input is selected. Select: AUTOMATIC: In this case, the embedded audio on the HDMI input is selected for an HDMI signal, or the analog audio input is selected if the HDMI input does include embedded audio (for example, for a DVI input signal) EMBEDDED: In this case, the embedded audio in the HDMI signal is selected ANALOG: In this case, the analog audio input is selected | | | |
| OSD | Sets the OSD parameters: H POSITION, V POSITION, TIMER, BACKGROUND DISPLAY (see Section 5.2.3) | | | |
| HDCP ON INPUT | Selects the HDCP option for the HDMI input: either ON (the default) or OFF. Setting HDCP support to enabled (ON) on the HDMI input allows the source to transmit a non-HDCP signal if required (for example, when working with a Mac computer) | | | |
| FACTORY RESET | Resets to the default parameters (resolution is set to VGA) If you cannot see the display after factory reset, use the front panel Res. button to set the correct resolution | | | |
| INFORMATION | Displays the source, the input resolution, the output resolution and the software version | | | |
| AUTO SYNC OFF | Turn the auto sync ON/OFF. When ON, this deactivates the output after a few minutes if no input is present, until a valid input is again detected or any button is pressed. This is useful, for example, when the output is connected to a projector, and the projector will automatically shut down when it has no input | | | |

| Mode | Function |
|-----------------|--|
| AUTO INPUT SCAN | Selects automatic input scan (default OFF) When ON, after power up, the VP-435 switches to the last selected input. If there is no signal present at this input, the VP-435 scans through the inputs (cycling through HDMI>UXGA>COMP) the LED of the detected input flashes. When selecting an input via the front panel or Remote IR transmitter, the VP-435 switches to that input. If a signal is not detected within 30 seconds, the VP-435 starts scanning through the inputs until it finds a valid input |
| EXIT | Select to exit the menu |

5.2.2 The FINETUNE Menu

The following defines the Finetune menu.

| Input Signal | Parameter | Function |
|--------------|-----------------|--|
| COMPONENT | HUE | Sets the color hue |
| | SATURATION | Sets the color saturation |
| | SHARPNESS | Sets the sharpness of the picture |
| | NOISE REDUCTION | Selects the noise reduction level: OFF, HI, LOW and MID (middle) |
| | COLOR FILTER | Set to ON to enable color filtering |
| | DROP LINES | Set to ON to crop lines at the bottom of the picture (to remove visible data generated by DVD players, for example) |
| VGA | PHASE | Sets the clock phase |
| | CLOCK | Sets the clock frequency |
| | H-POSITION | Sets the horizontal position of the picture |
| | V-POSITION | Sets the vertical position of the picture |
| | AUTO TUNE | When set to ON, auto adjusts the image (centers it correctly on the screen) every time the input is switched to VGA or when the input resolution changes |
| | COLOR FILTER | Set to ON to enable color filtering |
| HDMI | DROP LINES | Set to ON to crop lines at the bottom of the picture (to remove visible data generated by DVD players, for example) |
| | COLOR FILTER | Set to ON to enable color filtering |

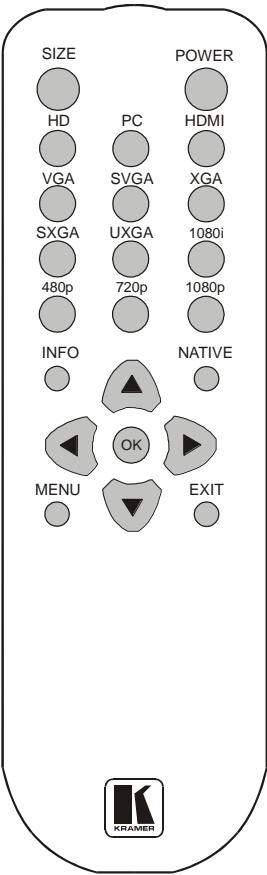
5.2.3 The OSD Menu

The following defines the OSD menu.

| Parameter | Function |
|------------|---|
| H POSITION | Sets the horizontal position of the OSD (from 0 to 100) |
| V POSITION | Sets the vertical position of the OSD (from 0 to 100) |
| TIMER | Sets the timeout period in seconds (from 5 to 100). The default timeout is 10 seconds |
| BACKGROUND | Sets the OSD background between 0 (solid black) and 8 (transparent) |
| DISPLAY | Select the information shown on the screen during operation: ON - the information is shown permanently OFF - the information is not shown INFO - the information is shown for a few seconds |

5.3 Using the IR Remote Control Transmitter

You can control the **VP-435** from the infrared remote control transmitter, as [Figure 4](#) defines:




| Keys | Function |
|--|--|
| SIZE | Sets the size of the image displayed |
| POWER | Toggle the power save mode ON or OFF |
| HD | Selects the component video input |
| PC | Selects the UXGA input |
| HDMI | Selects the HDMI input |
| VGA | Sets the output resolution to VGA |
| SVGA | Sets the output resolution to SVGA |
| XGA | Sets the output resolution to XGA |
| SXGA | Sets the output resolution to SXGA |
| UXGA | Sets the output resolution to UXGA |
| 1080i | Sets the output resolution to 1080i |
| 480p | Sets the output resolution to 480p |
| 720p | Sets the output resolution to 720p |
| 1080p | Sets the output resolution to 1080p |
| INFO | Displays the selected input, the input and output resolutions and the firmware versions on the OSD |
| NATIVE | Selects the output resolution from the EDID of the connected HDMI monitor |
|  | Four navigation keys |
| OK | Press to accept changes |
| MENU | Enters the OSD menu |
| EXIT | Exits the menu |

Figure 4: Infrared Remote Control Transmitter

6 Technical Specifications

| | |
|--|---|
| INPUTS: | 1 HDMI connector 1 UXGA on a 15-pin HD connector 1 component video on 3 RCA connectors 1 analog unbalanced stereo audio on a 3.5mini jack connector (for the HDMI input) 1 analog unbalanced stereo audio on a 3.5mini jack connector (for the UXGA input) 2 analog unbalanced stereo audio (left and right) on RCA connectors, 4dBm nominal |
| OUTPUT: | 1 HDMI connector |
| OUTPUT COLORSPACE: | RGB |
| OUTPUT RESOLUTIONS: | 1080i, 1080p, 576i, 576p, 720p, 1080i, 1080p, WXGA, WSXGA, WUXGA, 1280x800, WXGA+, SXGA+, NATIVE, VGA, SVGA, XGA, SXGA, UXGA, 480i, 480p, 1600x900 |
| OUTPUT REFRESH RATE: | 60Hz for computer graphics resolutions, 50/60Hz for HDTV resolutions |
| PROCESSING DELAY: | 30ms approx. |
| CONTROLS: | Front panel buttons, contact closure and infrared remote for menu driven OSD control |
| ADDITIONAL CONTROLS: | Contrast, brightness, hue, saturation and sharpness; red, green and blue; Resolution, image size |
| 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 |
| POWER CONSUMPTION: | 12V DC, 800mA |
| DIMENSIONS: | 21.5cm x 16.1cm x 4.36cm (8.46" x 6.34" x 1.7") W, D, H |
| WEIGHT: | 1.1kg (2.43lb) approx. |
| ACCESSORIES: | Power supply, IR remote control |
| OPTIONS: | RK-1 19" rack adapter |
| 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

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 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

CE



SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing



P/N: 2900-000262



Rev: 13