



KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

VP-422

HDMI to PC Scaler

P/N: 2900-000580 Rev 5



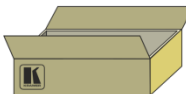
VP-422 Quick Start Guide

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

- ✓ The **VP-422** HDMI to PC Scaler
- ✓ 1 Power Adapter
- ✓ Mounting brackets

- ✓ 4 Rubber feet
- ✓ 1 Quick start guide



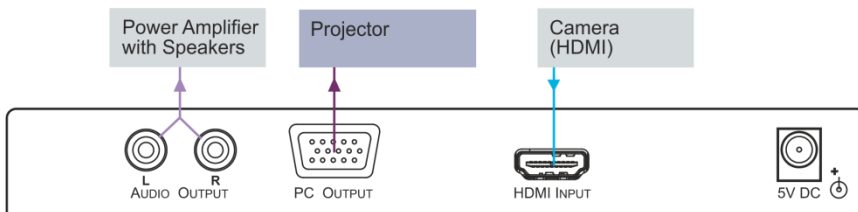
Save the original box and packaging materials in case you need to return your product for service.

Step 2: Install the VP-422

Mount the machine in a rack or place on a table.

Step 3: Connect inputs and output

Always switch OFF the power on each device before connecting it to your **VP-422**.



For best results, we recommend that you always use Kramer high-performance cables to connect AV equipment to the **VP-422**.

Step 4: Configure the VP-422 via the OSD menu

Press the MENU button to open the OSD menu:



CONTRAST
BRIGHTNESS
FINETUNE
COLOR
SIZE
OUTPUT
OSD
FACTORY RESET
INFORMATION
AUTO SYNC OFF
FREEZE
EXIT

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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.

Congratulations on purchasing your Kramer **VP-422** HDMI to PC Scaler. This product, which incorporates HDMI™ technology, is ideal for:

- Projection systems in conference rooms, boardrooms, auditoriums, 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-422** 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-422** is a high-performance digital scaler for computer graphics and HDTV signals. It up- or down-scales HDMI signals to resolutions up to WUXGA and 1080p and de-embeds the stereo audio to output as unbalanced analog stereo signals. The following output resolutions are supported: **PC**: VGA, SVGA, XGA, 1280x800, SXGA, UXGA, WXGA, SXGA+, WXGA+, WSXGA, WUXGA, 1600x900, 1080pRGB;

HDTV: 480p, 576p, 720p @50/60Hz, 1080p @50/60Hz, 1080i @50/60Hz.

The **VP-422** also features:

- An On-Screen Display (OSD) for easy setup and adjustment, accessible via the front-panel buttons
- A built-in ProcAmp for convenient signal adjustment
- A non-volatile memory that retains the last settings used
- Quick auto-adjust
- Freeze button
- RGBHV or component video output
- An external 5V DC power source, making it suitable for field operation

Operate your **VP-422** directly via the front panel push buttons and the on-screen display (OSD).

3.1 Defining the VP-422 HDMI to PC Scaler

This section defines the **VP-422**.

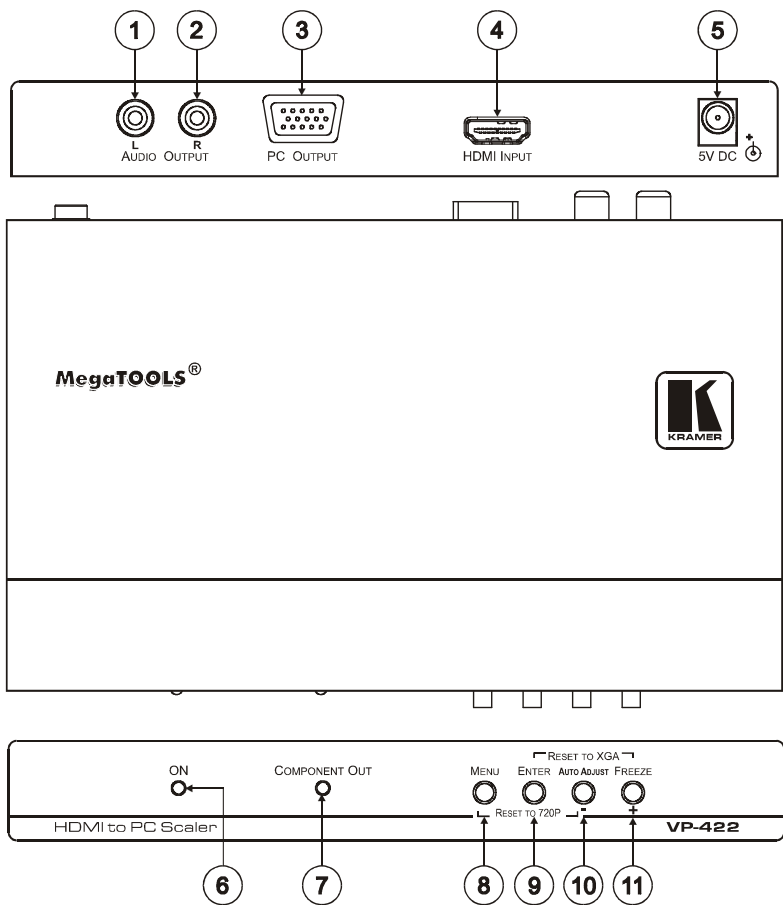


Figure 1: VP-422 HDMI to PC Scaler

#	Feature		Function
1	AUDIO OUTPUT RCA Connectors	L	Connect to an unbalanced analog stereo acceptor
2		R	
	IR LED		Lights red when the unit accepts IR remote commands
3	PC OUTPUT 15-pin HD connector		Connect to computer graphics or HDTV acceptor
4	HDMI INPUT Connector		Connect to an HDMI source The HDMI source must not have HDCP encryption – if copy protection is detected, the unit's output will be switched off
5	5V DC		+5V DC connector for powering the unit
6	ON LED		Lights green when the unit is powered on
7	COMPONENT OUT LED		Lights blue when component video is output and also during factory reset
8	MENU button		Press to enter/escape the on-screen display (OSD) menu. Press together with the – button to reset to 720p
9	ENTER button		In the OSD, press to choose the highlighted menu item. Press together with the + button to reset to XGA
10	– /AUTO ADJUST button		In the OSD, press to move down through the list or to decrement the parameter value. When not in the OSD, press to automatically adjust the picture to fit the display
11	+ /FREEZE button		In the OSD, press to move forward through the list or to increment the parameter value. When not in the OSD, press to freeze the display

4 Connecting the VP-422



Always switch off the power to each device before connecting it to your **VP-422**. After connecting your **VP-422**, connect its power and then switch on the power to each device.

To connect the **VP-422**, as illustrated in the example in [Figure 2](#), do the following:

1. Connect an HDMI source (for example, a camera) to the HDMI INPUT connector.

Make sure that the HDMI source is not HDCP encrypted – if copy protection is detected, the unit's output will be switched off

2. Connect the PC OUTPUT 15-pin HD connector to a computer graphics or HDTV acceptor as follows:
 - When connecting to an XGA acceptor (RGBHV), then connect to the acceptor's XGA connector
 - When connecting to a component acceptor (Y,Pb,Pr), then connect as follows:

PIN #	Signal
1	Pr
2	Y
3	Pb
6, 7, 8	Ground

3. Connect the L and R audio OUTPUT RCA connectors to an analog stereo audio acceptor (for example, a power amplifier with speakers).
4. Connect the 5V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in [Figure 2](#)).

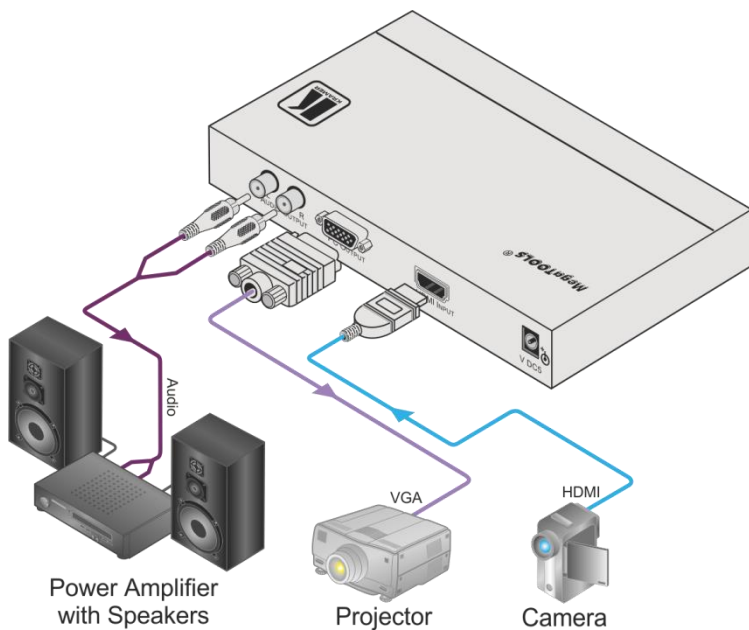


Figure 2: Connecting the VP-422 HDMI to PC Scaler

5 Operating the VP-422

The **VP-422** is operated directly via the front panel buttons and via the OSD menu (see [Section 5.2](#)).

5.1 Using the Front Panel Buttons during Normal Operation

During normal operation (without the OSD), using the front panel buttons performs the following functions. Pressing:

- MENU opens the on-screen display (OSD) main menu (see [Section 5.2](#)), the next press closes the OSD
- + /FREEZE freezes the display, the next press unfreezes the display
- – /AUTO ADJUST automatically centers the display
- MENU and – /AUTO ADJUST together resets the display to 720p and the COMPONENT OUT LED lights
- + /FREEZE and ENTER together resets the display to XGA and the COMPONENT OUT LED turns off

5.2 Using the OSD

You can use the OSD to set a wide variety of parameters. When the MENU button is pressed, the main menu opens allowing access to all the device settings (see [Section 5.2.2](#)).

When selecting FINETUNE, COLOR, SIZE, OUTPUT and OSD, a submenu opens with the applicable parameters.

5.2.1 Using the Front Panel Buttons While the OSD is Open

While the OSD is open, using the front panel buttons performs the following functions. Pressing:

- + and – moves up and down through the menu items and increments or decrements the parameter values
- ENTER selects and activates a menu item or accepts the parameter value set
- MENU closes the OSD menu

The menu times out by default after 10 seconds. To change the OSD display time, adjust the OSD/TIMER parameter

As an example of setting parameters, to increase the contrast on the display:

1. From normal operation, press MENU.
The OSD main menu appears on the screen.
2. Press the + or – button to highlight CONTRAST.
CONTRAST changes to green when highlighted.
3. Press ENTER.
The contrast value parameter changes to red.
4. Press the + button to increase the value (increase the contrast) or the – button to decrease the value (decrease the contrast).
The value ranges from 0 to 100.
5. Press ENTER to set the value.
The contrast value parameter changes back to white.
6. To return to normal operation, highlight EXIT and press ENTER; press MENU; or wait until the menu times out.

5.2.2 The MAIN Menu

This section defines the MAIN MENU parameters and functions.

Parameter	Function
CONTRAST	Adjusts the contrast
BRIGHTNESS	Adjusts the brightness
FINETUNE	Adjusts the other ProcAmp parameters: PHASE, HUE, SATURATION and SHARPNESS (see Section 5.2.3)
COLOR	Adjusts the color of the display – RED, GREEN, BLUE
SIZE	Select the size of the display: FULL, OVERSCAN, UNDER 1, UNDER 2, LETTER BOX, PANSKAN and BEST FIT
OUTPUT	Sets the output resolution (see Section 5.2.4)
OSD	Adjusts the parameters of the on-screen display (see Section 5.2.5)
FACTORY RESET	Resets the device to its factory default parameters and automatically senses the input and output devices The COMPONENT OUT LED lights blue
INFORMATION	Displays the input and output resolutions and the software version Note that upon any change in the resolution, the input/output resolutions also appear on the display for a few seconds
AUTO SYNC OFF	ON/OFF (default is off) Turn the auto sync ON/OFF. When ON, a short period (about 2 minutes) after not detecting a valid video signal on the selected input, the unit will disable the H and V syncs on the analog outputs until a valid input is again detected or any keypad is pressed
FREEZE	FREEZE ONLY / FREEZE + MUTE / MUTE ONLY
EXIT	Select to exit the OSD

5.2.3 FINETUNE Menu

This section defines the “FINETUNE” Submenu

Input Signal	Parameter	Function
HDMI	COLOR FILTER	Set to ON to enable color filtering
	DROP LINES	Set it to ON to eliminate the green line (default is OFF) With some sources (mostly Apple devices) a green line sometimes appears at the bottom of the display. By factory default this option is set to OFF.
	EXIT	Select to exit to the Main Menu

5.2.4 The OUTPUT Menu

The “OUTPUT” submenu allows you to choose the output resolution sent to the display. Press the + and/or – button to cycle through the list of resolutions. This section defines the resolutions available on the “OUTPUT” submenu and how they appear on the display.

Output Resolution	Appears as	Output Resolution	Appears as
480p	480P	640x480	VGA
720p@60Hz	720P60	800x600	SVGA
1080i@60Hz	1080I60	1024x768	XGA
1080p@60Hz	1080P60	1280x1024	SXGA
1080PRGB	1080PRGB	1600x1200	UXGA
576p	576P	1366x768	WXGA
720p@50Hz	720P50	1680x1050	WSXGA
1080i@50Hz	1080I50	1920x1200	WUXGA
1080p@50Hz	1080P50	1280x800	1280x800
		1440x900	WXGA+
		1400x1050	SXGA+
		1600x900	1600x900

5.2.5 The OSD Menu

The “OSD” submenu allows you to adjust the location of the OSD, the length of time it is displayed, and the transparency of its background:

Parameter	Function
H-POSITION	Adjusts the horizontal position of the OSD on the screen
V-POSITION	Adjusts the vertical position of the OSD on the screen
TIMER	Adjusts the length of time in seconds the OSD appears on the screen
BACKGROUND	Adjusts the shade of the OSD background from black to transparent
DISPLAY	Select the information shown on the screen during operation: ON - the information is shown permanently INFO - the information is shown for a few seconds OFF - the information is not shown
EXIT	Select to exit to the Main Menu

6 Technical Specifications

INPUT:	1 HDMI
OUTPUTS:	1 computer graphics (RGBHV) / HDTV (YPbPr) on a 15-pin HD connector (selectable); 1 analog stereo audio on RCA connectors
OUTPUT RESOLUTIONS:	PC: VGA, SVGA, XGA, SXGA, UXGA, WXGA, WSXGA, WUXGA, 1280x800, WXGA+, SXGA+, 1600x900, 1080PRGB HDTV: 480p, 576p, 720p @50/60Hz, 1080p @50/60Hz, 1080i @50/60Hz All the resolutions are outputted @60Hz, except where noted
OUTPUT REFRESH RATE:	60Hz for computer graphics resolutions, 50/60Hz for HDTV resolutions
PROCESSING DELAY:	20ms
CONTROLS:	Front panel buttons, ON and COMPONENT OUTPUT LEDs
POWER CONSUMPTION:	5V DC, 1.1A
DIMENSIONS:	18.8cm x 11.4cm x 2.45cm (7.4" x 4.5" x 0.98") W, D, H
WEIGHT:	0.66kg (1.45lbs) approx.
ACCESSORIES:	Power supply
OPTIONS	19" rack adapter
Specifications are subject to change without notice For the most updated resolution list, go to our Web site at http://www.kramerelectronics.com	

6.1 HDMI Input Resolutions

HDMI Input Resolutions					
Resolution	Vertical Frequency [Hz]	Notes	Resolution	Vertical Frequency [Hz]	Notes
720p	50	RGB	XGA	70	
720p	60	RGB	XGA	75	
1080p	50		XGA	85	
1080p	60		SXGA	60	
VGA	60		SXGA	75	
VGA	72		SXGA	85	
VGA	75		UXGA	60	
VGA	85		1280x800	60	
SVGA	56		1440x900	60	
SVGA	60		1366x768	60	
SVGA	72		1400x1050	60	
SVGA	75		1680x1050	60	
SVGA	85		1920x1200	60	
XGA	60				

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.

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 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: 2900-000580



Rev: 5