



KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

VP-424

HDMI to HDMI Scaler

P/N: 2900-000765 Rev 1

VP-424 Quick Start Guide

This guide takes you through a basic installation and first-time use of your **VP-424**. For more detailed information, see the **VP-424** user manual. You can download the latest manual at <http://www.kramerelectronics.com>.

Step 1: Check what's in the box

- The **VP-424** HDMI to HDMI Scaler
- 4 Rubber feet
- 1 Power Adapter
- 1 Quick start guide
- Mounting brackets
- 1 User Manual



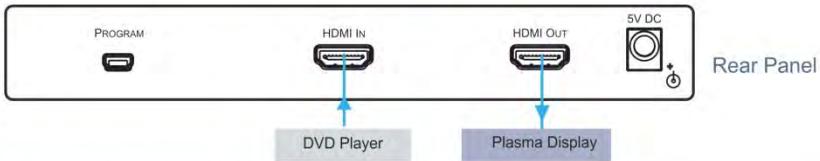
Save the original box and packaging materials in case your Kramer product needs to be returned to the factory for service.

Step 2: Install the VP-424

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

Step 3: Connect input and output

Always switch OFF the power on each device before connecting it to your **VP-424**.



For best results, we recommend that you always use Kramer high-performance cables to connect AV equipment to the **VP-424**.

Step 4: Configure the VP-424 via the OSD menu

Press the MENU button to open the OSD menu:



If you cannot see the display after factory reset, use the front panel buttons to set the correct resolution (as indicated on the panel):

To reset to XGA, press the FREEZE (+) and ENTER buttons simultaneously for about 2 seconds.

To reset to 720p, press the – and MENU buttons simultaneously for about 2 seconds.

- CONTRAST
- BRIGHTNESS
- SATURATION
- HUE
- ASPECT RATIO
- OVER SCANNING
- NOISE REDUCTION
- OUTPUT
- HD OUTPUT COLOR
- REFRESH RATE
- OSD SETTINGS
- ADVANCED
- FACTORY DEFAULT
- INFORMATION
- 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 the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Products.

Congratulations on purchasing your Kramer **VP-424** HDMI to HDMI Scaler. This product, which incorporates HDMI™ technology, is ideal for:

- 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
- Use Kramer high performance high resolution cables



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 to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **VP-424** away from moisture, excessive sunlight and dust



Caution: 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

3 Overview

The Kramer **VP-424 HDMI to HDMI Scaler** is a high-performance digital scaler for HDMI signals. It up- or down-scales HDMI signals to an HDMI output signal.

The **VP-424 HDMI to HDMI Scaler** features:

- A maximum resolution of up to WUXGA and 1080p
- A built-in ProcAmp for convenient signal adjustment
- An On-Screen Display (OSD) for easy setup and adjustment, accessible via the front-panel buttons
- HDTV compatibility
- HDCP compliance
- A built-in ProcAmp for convenient adjustment of color, sharpness, brightness, contrast, and so on
- Digital noise reduction
- A non-volatile memory that retains the last settings used
- Multiple aspect ratio selections
- A USB port for firmware upgrade
- A freeze button
- An external 5V DC power source, making it suitable for field operation
- Housing in a compact MegaTOOLS™ enclosure, that enables two units to be rack mounted side-by-side in a 1U rack space with the optional **RK-T2B** rack adapter

3.1 About HDMI—General Description

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital audio/video interface, widely supported in the entertainment and home cinema industry. HDMI ensures an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions. It delivers the maximum high-definition image and sound quality in use today. Note that Kramer Electronics Limited is an HDMI Adopter and an HDCP Licensee.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

In particular, HDMI:

- Provides a simple interface between any audio/video source, such as a set-top box, DVD player, or A/V receiver and video monitor, such as a digital flat LCD / plasma television (DTV), over a single lengthy cable
SIMPLICITY - With video and multi-channel audio combined into a single cable, the cost, complexity, and confusion of multiple cables currently used in A/V systems is reduced
LENGTHY CABLE - HDMI technology has been designed to use standard copper cable construction at up to 15m
- Supports standard, enhanced, high-definition video, and multi-channel digital audio on a single cable
MULTI-CHANNEL DIGITAL AUDIO - HDMI supports multiple audio formats, from standard stereo to multi-channel surround-sound. HDMI has the capacity to support Dolby 5.1 audio and high-resolution audio formats
- Transmits all ATSC HDTV standards and supports 8-channel digital audio, with bandwidth to spare to accommodate future enhancements and requirements
- Benefits consumers by providing superior, uncompressed digital video quality via a single cable, and user-friendly connector
HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner
- Is backward-compatible with DVI (Digital Visual Interface)
- Supports two-way communication between the video source (such as a DVD player) and the digital television, enabling new functionality such as automatic configuration and one-button play
- Has the capacity to support existing high-definition video formats (720p, 1080i, and 1080p/60), standard definition formats such as NTSC or PAL, as well as 480p and 576p

3.2 About HDCP

The High-Bandwidth Digital Content Protection (HDCP) standard developed by Intel, protects digital video and audio signals transmitted over DVI or HDMI connections between two HDCP-enabled devices to eliminate the reproduction of copyrighted material. To protect copyright holders (such as movie studios) from having their programs copied and shared, the HDCP standard provides for the secure and encrypted transmission of digital signals.

3.3 Defining the VP-424 HDMI to HDMI Scaler

This section defines the **VP-424**.

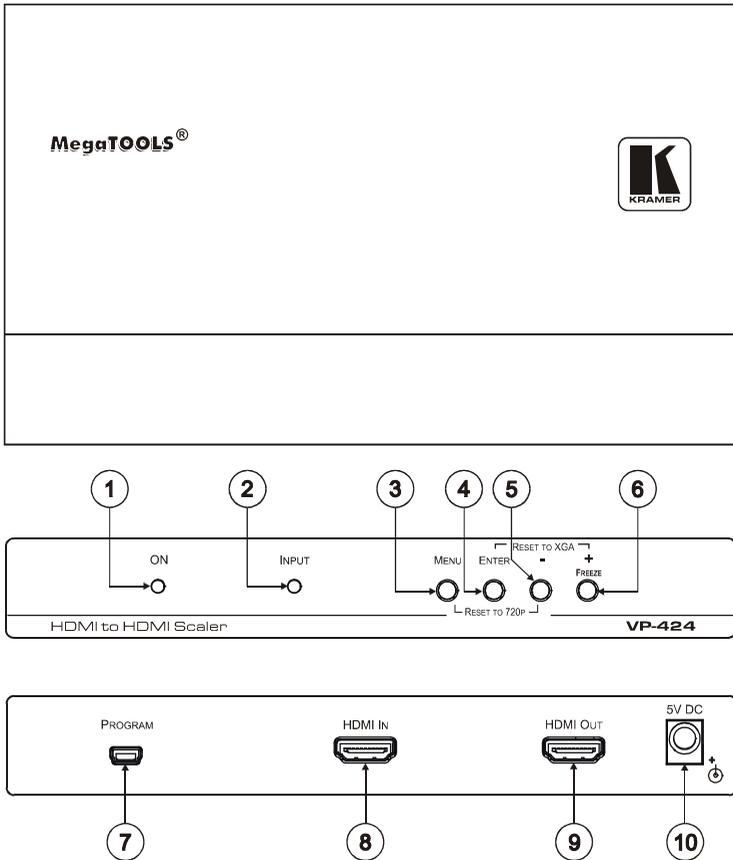


Figure 1: VP-424 HDMI to HDMI Scaler Front Panel

#	Feature	Function
1	<i>ON</i> LED	Lights green when the unit is powered on
2	<i>INPUT</i> LED	Lights blue when an HDMI signal is detected on the input
3	<i>MENU</i> Button	Press to enter/exit the on-screen display (OSD) menu. Press together with the – button to reset to 720p
4	<i>ENTER</i> Button	In the OSD, press to choose the highlighted menu item. Press together with the + button to reset to XGA
5	– Button	In the OSD, press to move backward through the list or to decrement the parameter value
6	+/ <i>FREEZE</i> 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
7	<i>PROGRAM</i> USB Connector	For programming the unit
8	<i>HDMI IN</i> Connector	Connects to an HDMI source
9	<i>HDMI OUT</i> Connector	Connects to an HDMI acceptor
10	<i>5V DC</i>	+5V DC connector for powering the unit

4 Connecting the VP-424



Always switch off the power to each device before connecting it to your **VP-424**. After connecting your **VP-424**, connect its power and then switch on the power to each device.

To connect the **VP-424**, as illustrated in the example in [Figure 2](#), do the following:

1. Connect an HDMI source (for example, a DVD player) to the HDMI IN connector.
2. Connect the HDMI OUT connector to an HDMI acceptor (for example, a plasma display).
3. Connect the 5V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in [Figure 2](#)).

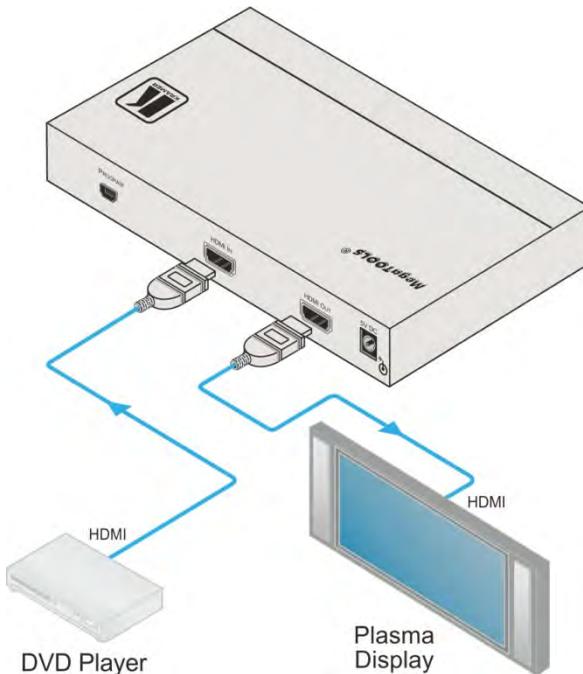


Figure 2: Connecting the VP-424

5 Controlling the VP-424

The **VP-424** can be controlled via the OSD menu (see [Section 5.1](#)) using the front panel MENU, ENTER, -, and + buttons (reset to XGA/720p buttons). Toggle the Freeze button to freeze the image on the display.

5.1 Using the OSD Menu

Press the menu button to enter or exit from the OSD menu. While the OSD menu is open, you can use the front panel buttons to perform the following functions. Press the:

- + and – buttons to move up and down through the menu items and increment or decrement the parameter values
- ENTER button to select and activate a menu item or accept the parameter value set
- MENU button to close the OSD menu

Here is an example of how to set the 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.

5.1.1 The MAIN MENU

Mode	Function																																								
CONTRAST	Set the contrast																																								
BRIGHTNESS	Set the brightness																																								
SATURATION	Set the color saturation																																								
HUE	Set the color hue																																								
ASPECT RATIO	FULL, BEST FIT, 4:3 or 16:9																																								
OVER SCANNING	OFF, 5%, 10%, 15% or 20%																																								
NOISE REDUCTION	OFF, Min, Typ or Max																																								
OUTPUT	Select an output resolution from the menu (default 720p):																																								
	<table border="1"> <thead> <tr> <th>Output resolution:</th> <th>Appears as:</th> <th>Output resolution:</th> <th>Appears as:</th> </tr> </thead> <tbody> <tr> <td>1080p</td> <td>1080P</td> <td>1680x1050</td> <td>1680x1050</td> </tr> <tr> <td>1080i</td> <td>1080I</td> <td>1400x1050</td> <td>1400x1050</td> </tr> <tr> <td>720P</td> <td>720P</td> <td>1280x1024</td> <td>SXGA</td> </tr> <tr> <td>576p</td> <td>576P</td> <td>1440x900</td> <td>WSXGA</td> </tr> <tr> <td>480p</td> <td>480P</td> <td>1360x768</td> <td>WXGA</td> </tr> <tr> <td></td> <td>Native</td> <td>1280x800</td> <td>1280x800</td> </tr> <tr> <td>1920x1080(RB)</td> <td>1920X1080</td> <td>1024x768</td> <td>XGA</td> </tr> <tr> <td>1920x1200(RB)</td> <td>WUXGA</td> <td>800x600</td> <td>SVGA</td> </tr> <tr> <td>1600x1200</td> <td>UXGA</td> <td>640x480</td> <td>VGA</td> </tr> </tbody> </table>	Output resolution:	Appears as:	Output resolution:	Appears as:	1080p	1080P	1680x1050	1680x1050	1080i	1080I	1400x1050	1400x1050	720P	720P	1280x1024	SXGA	576p	576P	1440x900	WSXGA	480p	480P	1360x768	WXGA		Native	1280x800	1280x800	1920x1080(RB)	1920X1080	1024x768	XGA	1920x1200(RB)	WUXGA	800x600	SVGA	1600x1200	UXGA	640x480	VGA
Output resolution:	Appears as:	Output resolution:	Appears as:																																						
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720P	720P	1280x1024	SXGA																																						
576p	576P	1440x900	WSXGA																																						
480p	480P	1360x768	WXGA																																						
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1920x1200(RB)	WUXGA	800x600	SVGA																																						
1600x1200	UXGA	640x480	VGA																																						
	NATIVE – Set to Native to select the output resolution from the EDID of the connected HDMI monitor																																								
HD OUTPUT COLOR	Select the HD output colorspace: RGBHV or YpBPr																																								
REFRESH RATE	Select the output refresh rate: 60Hz, 50Hz or FOLLOW																																								
OSD SETTINGS	Set the OSD parameters: H Position, V Position, Timeout Transparency and Display (see Section 5.1.2)																																								
ADVANCED	AUTO SYNC OFF: Turn ON/OFF HDCP ON INPUT: ON/OFF FREEZE: Set the front panel FREEZE button behavior to FREEZE ONLY, FREEZE&MUTE or MUTE ONLY																																								
FACTORY DEFAULT	Resets to the default parameters (resolution is set to XGA or 720p) If you cannot see the display after factory reset, use the front panel buttons to set the correct resolution (as indicated on the panel): To reset to XGA, press the FREEZE (+) and ENTER buttons simultaneously for about 2 seconds To reset to 720p, press the – and MENU buttons simultaneously for about 2 seconds																																								
INFORMATION	Displays the input resolution, output resolution and the software version																																								

5.1.2 The OSD Menu

Parameter	Function
H Position	Set the horizontal position of the OSD
V Position	Set the vertical position of the OSD
Timeout	Set the timeout period in seconds (from 0 to 30 or OFF)
Transparency	Set the OSD background between 0 (transparent) and 15 (gray background)
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

6 Technical Specifications

INPUT:	1 HDMI connector
OUTPUT:	1 HDMI connector
OUTPUT RESOLUTIONS:	1080p, 1080i, 720P, 576p, 480p, 1920x1080(RB), 1920x1200(RB), 1600x1200, 1680x1050, 1400x1050, 1280x1024, 1440x900, 1360x768, 1280x800, 1024x768, 800x600, 640x480 and Native
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 SOURCE:	5.2V DC, 630mA
OPERATING TEMPERATURE:	0° to +55°C (32° to 131°F)
STORAGE TEMPERATURE:	-45° to +72°C (-49° to 162°F)
HUMIDITY:	10% to 90%, RHL non-condensing
DIMENSIONS:	19cm x 13.5cm x 2.5cm (7.5" x 5.3" 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 Go to our Web site at http://www.kramerelectronics.com to access the list of resolutions	

6.1 Input Resolutions Support

Resolution/Refresh Rate	Resolution/Refresh Rate
480I/576I(NTSC/PAL)	SXGA @ (60)
480P/576P	UXGA @60
720P @ (60/50)	WXGA @60(1280x800)
1080I @ (60/50)	WXGA @60(1366x768)
1080P @ (60/50)	WSXGA @60(1680x1050)
1080P @ (24/25/30)	WUXGA @60(1920x1200 RB)
VGA @ (60/72/75)	WXGA+ @60(1440x900)
SVGA @ (56/60/72/75)	SXGA+ @60(1400x1050)
XGA @ (60/70/75)	

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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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: 2900-000765



Rev 1