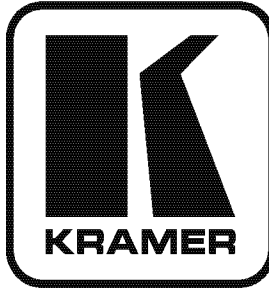


Kramer Electronics, Ltd.



USER MANUAL

Model:

VP-434

Component / UXGA HDMI Scaler

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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 groups¹ that are clearly defined by function.

Congratulations on purchasing your Kramer **VP-434 Component / UXGA HDMI Scaler**. This product, which incorporates HDMI™ technology, is ideal for:

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

The package includes the following items:

- **VP-434 Component / UXGA HDMI Scaler**
- Power adapter (12V DC input)
- Infrared remote control transmitter
- This user manual²

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 cables³

2.1 Quick Start

This Quick start chart summarizes the basic setup and operation steps.

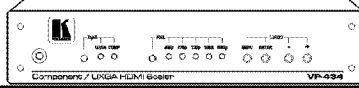
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com>

3 The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com>

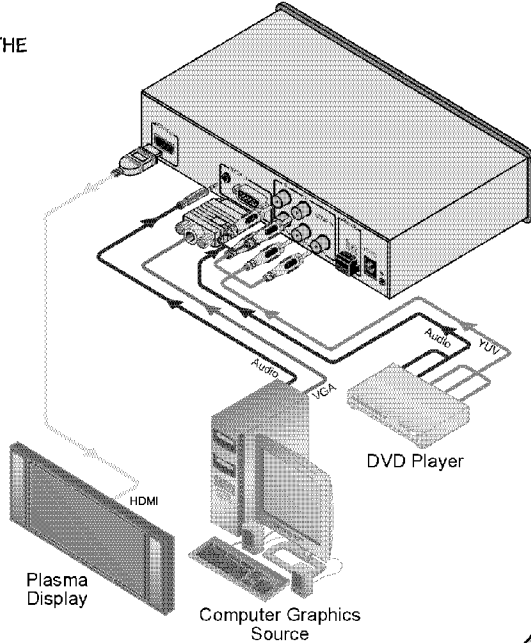
Step 1: Mount the machine

Mount the machine in a rack or stick the 4 rubber feet to the underside



Step 2: Connect the inputs and output - see section 5

CONNECT THE INPUTS AND THE OUTPUT

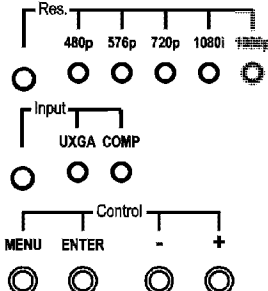


You do not have to connect all the inputs

Step 3: Turn the power ON

Step 4: Control the machine - see section 6

VIA THE FRONT PANEL BUTTONS

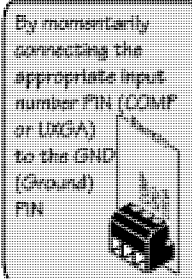


Select the output resolution

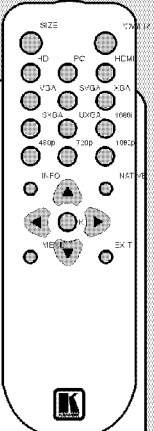
Select the INPUT

CONTROL via the OSD menu

VIA THE REMOTE PINS



VIA THE IR REMOTE CONTROL TRANSMITTER



3 Overview

The Kramer **VP-434** is a high quality component video/UXGA (computer video graphics) to HDMI scaler. It accepts one of two inputs: either component video¹ on RCA connectors or computer video graphics on a 15-pin HD computer graphics video connector (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-434** *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 button²
- Has analog audio inputs for the COMP and UXGA sources
- 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 12VDC fed

Control your **VP-434**:

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

3.1 About HDMI

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital³ audio/video interface, widely supported in the entertainment and home cinema industry. It delivers the maximum high-definition image and sound quality in use today. Note that Kramer Electronics Limited is an HDMI Adopter⁴ and an HDCP Licensee⁵.

In particular, HDMI⁶:

- Provides a simple¹ interface between any audio/video source, such as a

¹ Also known as Y, Pb, Pr, Y, Cb, Cr and YUV; compatible with both SD and HD component

² Other resolutions can be selected via the OSD menu. These include: 1080i, 1080p, 576i, 576p, 720p, 1080i, 1080p, WXGA, WSXGA, WUXGA, NATIVE, VGA, SVGA, XGA, SXGA, UXGA, 480i, 480p

³ Ensuring an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions

⁴ See http://www.hdmi.org/about/adopters_founders.asp

⁵ See <http://www.digital-cp.com/list/>

⁶ HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC

set-top box, DVD player, or A/V receiver and video monitor, such as a digital flat LCD / plasma television (DTV), over a single lengthy² cable

- Supports standard, enhanced, high-definition video, and multi-channel digital audio³ on a single cable
- 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 cable⁴, and user-friendly connector
- 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
- HDMI 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 Recommendations for Best Performance

To achieve the best performance:

- Connect only good quality connection cables, thus avoiding 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 and position your Kramer **VP-434** away from moisture, excessive sunlight and dust



Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit⁵.

Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

1 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

2 HDMI technology has been designed to use standard copper cable construction at up to 15m

3 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

4 HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner

5 For example: model number AD2512C, part number 2535-000251

4 Your VP-434 Component / UXGA HDMI Scaler

Figure 1, Table 1 and Table 2 define the **VP-434 Component / UXGA HDMI Scaler**:

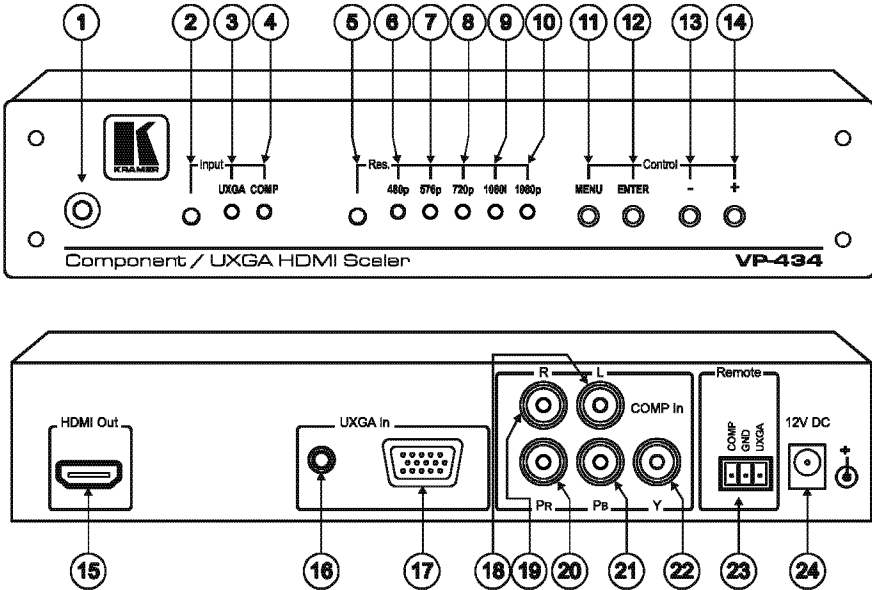


Figure 1: VP-434 Component / UXGA HDMI Scaler – Front and Rear View

Table 1: VP-434 Component / UXGA HDMI Scaler Front Panel Features

#	Feature	Function	
1	IR Receiver	Receives signals from the remote control transmitter	
2	Input	Selector Button	Press to select the UXGA input or the COMP input
3		UXGA Indicator LED	Lights when the UXGA input is selected
4		COMP Indicator LED	Lights when the COMP input is selected
5	Res.	Selector Button	Press to select the resolution: 480p, 576p, 720p, 1080i or 1080p
6		480p Indicator LED	Lights when the 480p resolution is selected
7		576p Indicator LED	Lights when the 576p resolution is selected
8		720p Indicator LED	Lights when the 720p resolution is selected
9		1080i Indicator LED	Lights when the 1080i resolution is selected
10		1080p Indicator LED	Lights when the 1080p resolution is selected
11	Control	MENU Button	Displays the OSD menu (see section 6.2)
12		ENTER Button	Press to accept changes and change the SETUP parameters ¹
13		- Button	Press to move down the menu list ¹
14		+ Button	Press to move up the menu list values ¹

¹ See section 6.2.2

Table 2: VP-434 Component / UXGA HDMI Scaler Rear Panel Features

#	Feature		Function
15	HDMI Out Connector		Connects to the HDMI acceptor
16	UXGA In	3.5mm Mini Jack Connector	Connects to the analog unbalanced stereo audio signal source
17		UXGA 15-pin HD Connector	
18	COMP In	L RCA Connector	Connect to the left and right analog unbalanced stereo audio source (of the COMP source)
19		R RCA Connector	
20		Pr RCA Connector	
21		Pb RCA Connector	Connects to the component video source ¹
22		Y RCA Connector	
23	Remote Contact Closure Pins		Connects to a contact closure switch (see section 5.1)
24	12 VDC		+12V DC connector for powering the unit

5 Connecting the VP-434 Component / UXGA HDMI Scaler

To connect² your **VP-434**, as illustrated in the example in Figure 2, do the following³:

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 computer graphics video connector, and to the UXGA In audio 3.5mm mini jack connector.
3. Connect the HDMI Out connector to an HDMI acceptor (for example, a plasma display).
4. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in Figure 2).

1 For component video, connect all three connectors: Y, Cb, Cr (also known as YUV)

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

3 Switch OFF the power on each device before connecting it to your VP-434. After connecting your VP-434, switch on its power and then switch on the power on each device

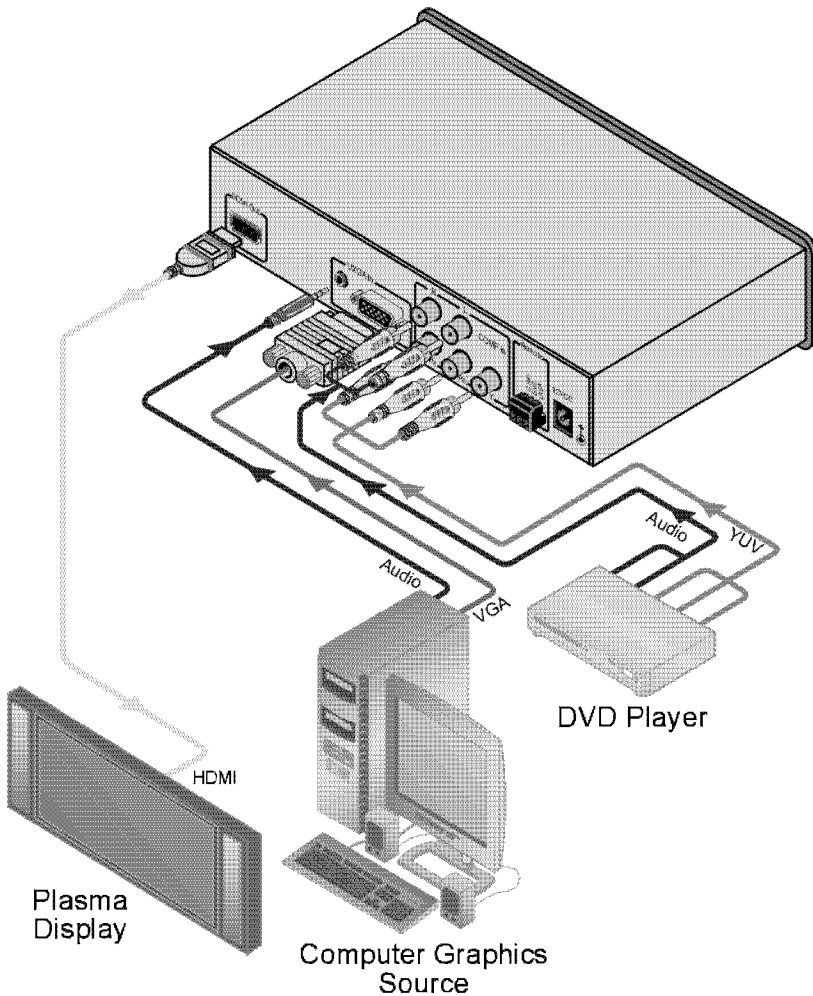


Figure 2: Connecting the VP-434 Component / UXGA HDMI Scaler

5.1 Connecting the Contact Closure Remote Control PINs

The contact closure pins operate in a similar way to the Input selector button. Using the contact closure remote control you can select the COMP or the UXGA input. To do so, temporarily connect the required input¹ pin on the REMOTE terminal block connector to the GND (Ground) pin, as Figure 3 illustrates.

¹ COMP or UXGA

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

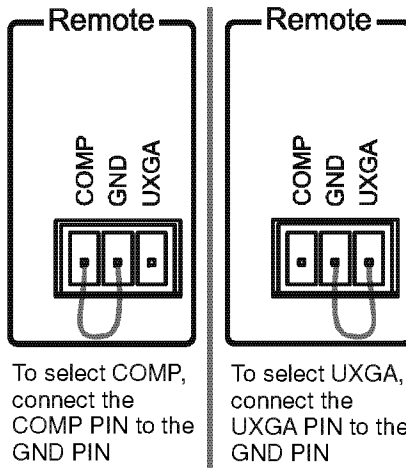


Figure 3: Connecting the Contact Closure Remote Control PINs

6 Controlling the VP-434

The **VP-434** can be controlled directly via the front panel buttons (see section 6.1), via the OSD menu (see section 6.2), and/or remotely from the infrared remote control transmitter (see section 6.3).

6.1 Controlling via the Front Panel Buttons

The **VP-434** includes the following front panel buttons:

- An Input selector button for selecting the required input (UXGA or COMP)
- A resolution (Res.) button for selecting the desired resolution
- Control buttons, including the MENU, ENTER, + and – buttons

6.2 Using the CONTROL Buttons

The CONTROL buttons let you control the **VP-434** via the OSD menu. Press the:

- MENU button to enter the menu¹
- ENTER button to accept changes and to change the menu settings
- + 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.

¹ The default timeout is set to 10 seconds

6.2.1 The MAIN MENU

Table 3 defines the MAIN MENU features and functions.

Table 3: The MAIN MENU Features

Mode	Function			
CONTRAST	Set the contrast (0 to 100)			
BRIGHTNESS	Set the brightness (0 to 100)			
FINETUNE	Set the hue, saturation and sharpness (0 to 100)			
COLOR	Set the red, green and blue shades (0 to 100)			
SIZE	Select the size of the display: full, overscan, underscan, letter box, panscan			
OUTPUT	Select the output resolution from the menu:			
	Appears as:	Output resolution:	Appears as:	Output resolution:
	1080I60	1080i @60Hz	NATIVE ¹	
	1080P60	1080p @60Hz	VGA	640x480
	576I	576i	SVGA	800x600
	576P	576p	XGA	1024x768
	720P50	720p @50Hz	SXGA	1280x1024
	1080I50	1080i @50Hz	UXGA	1600x1200
	1080P50	1080p @50Hz	480i	480i
	WXGA	1280x720	480P	480p
WSXGA	1680x1050	720P60	720p @50Hz	
WUXGA	1920x1200			
OSD	Set the OSD parameters: H POSITION, V POSITION, TIMER, BACKGROUND (see section 6.2.2)			
FACTORY RESET	Resets to the default parameters (resolution is set to VGA ²)			
INFORMATION	Displays the source, the input resolution, the output resolution and the software version			
EXIT	Select to exit the menu			

6.2.2 The OSD Menu

Table 4 defines the OSD menu.

Table 4: The SETUP Menu Features

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)

¹ Select "NATIVE" to select the output resolution from the EDID of the connected HDMI monitor

² If you cannot see the display after factory reset, use the front panel Res. button to set the correct resolution

6.3 Controlling via the Infrared Remote Control Transmitter

You can control the **VP-434** from the infrared remote control transmitter, as Figure 4 and Table 5 define:

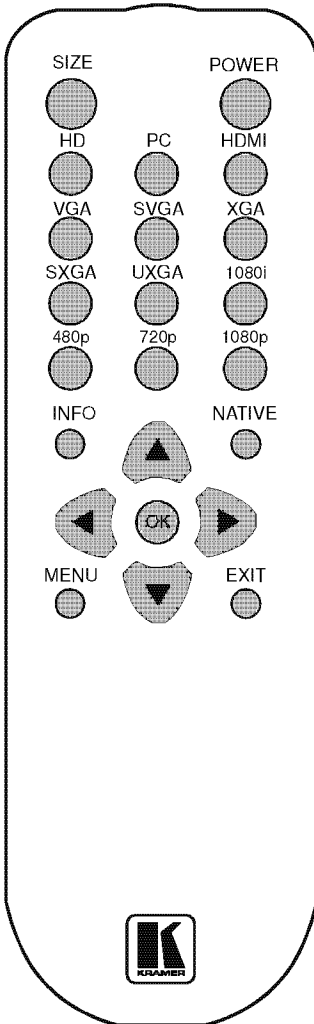


Table 5: Infrared Remote Control Transmitter Functions


Keys	Function
SIZE	Set the size of the image displayed
POWER	Turn the transmitter ON or OFF
HD	Select the component video input
PC	Select the UXGA input
HDMI	Not used
VGA	Set the output resolution to VGA
SVGA	Set the output resolution to SVGA
XGA	Set the output resolution to XGA
SXGA	Set the output resolution to SXGA
UXGA	Set the output resolution to UXGA
1080i	Set the output resolution to 1080i
480p	Set the output resolution to 480p
720p	Set the output resolution to 720p
1080p	Set the output resolution to 1080p
INFO	Displays the selected input, the input and output resolutions and the firmware versions on the OSD
NATIVE	Select the output resolution from the EDID of the connected HDMI monitor
	Four navigation keys
OK	Press to accept changes
MENU	Enter the OSD menu
EXIT	EXIT the menu

Figure 4: Infrared Remote Control Transmitter

7 Technical Specifications

Table 6: Technical Specifications¹ of the VP-434 Component / UXGA HDMI Scaler

INPUTS:	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 UXGA input) 2 analog unbalanced stereo audio (left and right) on RCA connectors, 4dBm nominal
OUTPUT:	1 HDMI connector (HDMI version 1.2, HDCP version 1.1)
OUTPUT RESOLUTIONS:	1080i, 1080p, 576i, 576p, 720p, 1080i, 1080p, WXGA, WSXGA, WUXGA, NATIVE, VGA, SVGA, XGA, SXGA, UXGA, 480i, 480p
OUTPUT REFRESH RATE:	60Hz for computer graphics resolutions, 50/60Hz for HDTV resolutions
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
POWER SOURCE:	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	Rack adapter

¹ Specifications are subject to change without notice

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
3. Damage, deterioration or malfunction resulting from:
 - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
 - ii) Product modification, or failure to follow instructions supplied with the product
 - iii) Repair or attempted repair by anyone not authorized by Kramer
 - iv) Any shipment of the product (claims must be presented to the carrier)
 - v) Removal or installation of the product
 - vi) Any other cause, which does not relate to a product defect
 - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on your product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

- EN-50081: "Electromagnetic compatibility (EMC);
generic emission standard.
Part 1: Residential, commercial and light industry"
- EN-50082: "Electromagnetic compatibility (EMC) generic immunity standard.
Part 1: Residential, commercial and light industry environment".
- CFR-47: FCC* Rules and Regulations:
Part 15: "Radio frequency devices
Subpart B Unintentional radiators"

CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

* FCC and CE approved using STP cable (for twisted pair products)





For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found. We welcome your questions, comments and feedback.

	Safety Warning:
Caution	Disconnect the unit from the power supply before opening/servicing.



Kramer Electronics, Ltd.

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E-mail: info@kramerelectronics.com

P/N: 2900-000346 REV 4