Kramer Electronics, Ltd.

USER MANUAL

Models:

WP-561 HDMI Line Transmitter
WP-562 HDMI Line Receiver
PT-561 HDMI Line Transmitter
PT-562 HDMI Line Receiver
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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.

Thank you for purchasing the Kramer Pico TOOLS™ PT-561 HDMI Line Transmitter, PT-562 HDMI Line Receiver, Kramer Wall Plates WP-561 HDMI Line Transmitter, and the WP-562 HDMI Line Receiver, which are ideal for:

- Board, conference, and training rooms
- Presentation systems
- Signal distribution and home theater

Each package includes the following items:

- PT-561 HDMI Line Transmitter or WP-561 HDMI Line Transmitter or PT-562 HDMI Line Receiver or WP-562 HDMI Line Receiver
- This user manual²
- Power adapter (5V DC input) for the PT-561/WP-561

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

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 our Web site at http://www.kramerelectronics.com

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

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

3 Overview

This section summarizes:

- The **WP-561/PT-561 HDMI Line Transmitter**, see section 3.1
- The **WP-562/PT-562 HDMI Line Receiver**, see section 3.2
- The power connect feature, see section 3.3
- Using twisted pair cabling, see section 3.4; about HDMI, see section 3.5
- Recommendations for achieving the best performance, see section 3.6

The **WP-561** (or **PT-561**) **HDMI Line Transmitter** together with the **WP-562** (or **PT-562**) **HDMI Line Receiver** constitutes an HDMI and IR signal twisted pair transmitter and receiver system using two STP cables.
The transmission range between the HDMI source and the HDMI acceptor can be extended up to:

- 90m (295ft) at 1080i, or up to 30m (98ft) at 1080p on shielded **BC-DGKat524** cable
- 90m (295ft) at 1080i, or up to 70m (230ft) at 1080p on shielded **BC-DGKat623** cable
- 100m (330ft) at 1080i or up to 90m (295ft) at 1080p on shielded **BC-DGKat7a23** cable

For optimum range¹ and performance, use Kramer's **BC-DGKat524**, **BC-DGKat623** and **BC-DGKat7a23** cables.

### 3.1 WP-561/PT-561 HDMI Line Transmitter

The Kramer **WP-561 HDMI Line Transmitter** is a wall plate module that receives an HDMI signal, encodes it, and transmits it over two CAT 5 cables to the **WP-562** or **PT-562**. The Kramer Pico TOOLS™ **PT-561 HDMI Line Transmitter** is a standalone device that performs the same functions as the **WP-561**. The **WP-561/PT-561** features:

- An HDMI input, and a pair of RJ-45 CAT 5 output connectors
- One power status LED
- Bandwidth up to 1.65Gbps
- EDID PassThru that passes EDID/HDCP signals from source to display
- A bidirectional IR input/output transmitting and receiving IR commands over the CAT 5 cable²
- Power Connect™ feeding 5V DC over the CAT 5 cable from the transmitter to the receiver

---

¹ Note that the transmission range depends on the signal resolution, graphics card and display used. The distance using non-Kramer CAT 5, CAT 6 and CAT 7a cables may not reach these ranges

² Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE
3.2 WP-562/PT-562 HDMI Line Receiver

The Kramer Wall Plate WP-562 HDMI Line Receiver is a wall plate module that receives an encoded signal over two CAT 5 cables transmitted from the PT-561 or WP-561, decodes it, and converts it to an HDMI output. The Kramer Pico TOOLS™ PT-562 HDMI Line Receiver is a standalone device that performs the same functions as the WP-562. The WP-562/PT-562 features:

- An HDMI output and a pair of RJ-45 CAT 5 input connectors
- One power status LED
- Bandwidth up to 1.65Gbps
- EDID PassThru that passes EDID signals from source to display
- A bidirectional IR input/output transmitting and receiving IR commands over the CAT 5 cable¹
- Power Connect™ feeding 5V DC over the CAT 5 cable from transmitter to the receiver²

3.3 About the Power Connect™ Feature

The PT-561/PT-562 and WP-561/WP-562 have the Power Connect™ feature where the transmitter delivers power and the HDMI signal to the receiver using the same CAT 5 cable.

3.4 Using Twisted Pair Cable

Kramer engineers have developed special twisted pair cables to best match our digital twisted pair products; the Kramer: BC-DGKat524 (CAT 5 24 AWG), the Kramer: BC-DGKat623 (CAT 6 23 AWG cable), and the Kramer: BC-DGKat7a23 (CAT 7a 23 AWG cable). These specially built cables significantly outperform regular CAT 5/CAT 6/CAT 7a cables.

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¹ Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE
² The WP-562/PT-562 receives power only by means of the Power Connect feature
3.5 About HDMI

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital\(^1\) audio/video interface, widely supported in the entertainment and home cinema industry. It delivers the highest high-definition image and sound quality. Note that Kramer Electronics Limited is an HDMI Adopter and an HDCP Licensee.

In particular, HDMI\(^2\):

- Provides a simple\(^3\) 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\(^4\) cable
- Supports standard, enhanced, high-definition video, and multi-channel digital audio\(^5\) 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 cable\(^6\), 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), as well as standard definition formats such as NTSC or PAL.

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1 Ensuring an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions
2 HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC
3 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
4 HDMI technology has been designed to use standard copper cable construction at up to 15m
5 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
6 HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner
3.6 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables\(^1\) 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 and position your Kramer devices away from moisture, excessive sunlight and dust.

4 Your WP-561, WP-562 HDMI Transmitter/Receiver Pair

This section describes:

- The **WP-561 HDMI Line Transmitter** (see section 4.1)
- The **WP-562 HDMI Line Receiver** (see section 4.2)

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\(^1\) Available from Kramer Electronics on our Web site at [http://www.kramerelectronics.com](http://www.kramerelectronics.com)
4.1 Your WP-561 HDMI Line Transmitter

Figure 1, Figure 2, Figure 3, and Table 1 define the transmitter module.

Figure 1: WP-561 HDMI Line Transmitter Belgian/German Model Functions

Figure 2: WP-561 HDMI Line Transmitter UK/European Model Functions
Your WP-561, WP-562 HDMI Transmitter/Receiver Pair

Figure 3: WP-561 HDMI Line Transmitter US Model Functions

Table 1: WP-561 HDMI Line Transmitter Model Functions

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ON LED</td>
<td>Illuminates red when powered on, green when transmitting data</td>
</tr>
<tr>
<td>2</td>
<td>HDMI IN Connector</td>
<td>Connects to an HDMI source</td>
</tr>
<tr>
<td>3</td>
<td>IR 3.5mm Mini Jack</td>
<td>Connects to an IR receiver or IR transmitter¹</td>
</tr>
<tr>
<td>4</td>
<td>5V DC</td>
<td>+5V DC connector for powering both units (WP-561 and WP-562)</td>
</tr>
<tr>
<td>5</td>
<td>OUT 1 Connector</td>
<td>Connects to the IN 1 RJ-45 connector on the WP-562</td>
</tr>
<tr>
<td></td>
<td>OUT 2 Connector</td>
<td>Connects to the IN 2 RJ-45 connector on the WP-562</td>
</tr>
</tbody>
</table>

¹ Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE
4.2 Your WP-562 HDMI Line Receiver

Figure 4, Figure 5, Figure 6, and Table 2 define the receiver module.

Figure 4: WP-562 HDMI Line Receiver Belgian/German Model Functions

Figure 5: WP-562 HDMI Line Receiver UK/European Model Functions
Figure 6: WP-562 HDMI Line Receiver US Model Functions

Table 2: WP-562 HDMI Line Receiver Functions

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ON LED</td>
<td>Illuminates red when powered on, green when transmitting data</td>
</tr>
<tr>
<td>2</td>
<td>HDMI OUT Connector</td>
<td>Connects to an HDMI acceptor</td>
</tr>
<tr>
<td>3</td>
<td>IR 3.5mm Mini Jack</td>
<td>Connects to an IR transmitter or IR receiver¹</td>
</tr>
<tr>
<td>4</td>
<td>IN 1 Connector</td>
<td>Connects to the OUT 1 RJ-45 connector on the WP-561</td>
</tr>
<tr>
<td></td>
<td>IN 2 Connector</td>
<td>Connects to the OUT 2 RJ-45 connector on the WP-561</td>
</tr>
</tbody>
</table>

¹ Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE
5 Connecting the WP-561/WP-562 Transmitter/Receiver Pair

To install the WP-561 HDMI Line Transmitter:
1. Connect the CAT 5 cable 1 RJ-45 connector to the OUT 1 RJ-45 socket\(^1\).
2. Connect the CAT 5 cable 2 RJ-45 connector to the OUT 2 RJ-45 socket\(^1\).
3. Connect the 5V DC power to the terminal block pins\(^2\), taking care that the polarity is correct.
4. Insert the WP-561 directly into the wall box opening, and then mount the front panel securely using the screws.
5. Connect the HDMI source to the HDMI IN connector.
6. If required, connect an IR receiver or emitter to the 3.5mm mini jack\(^3\).

To install the WP-562 HDMI Line Receiver:
1. Connect the CAT 5 cable 1 RJ-45 connector to the IN 1 RJ-45 socket\(^1\).
2. Connect the CAT 5 cable 2 RJ-45 connector to the IN 2 RJ-45 socket\(^1\).
3. Insert the WP-562 directly into the wall box opening, and then mount the front panel securely using the screws.
4. Connect the HDMI acceptor to the HDMI OUT connector.
5. If required, connect an IR emitter or receiver to the 3.5mm mini jack\(^3\).

---

\(^1\) See section 7.1
\(^2\) Connect the wire labeled “+” to the +5V pin, and the wire labeled “−” to the GND pin
\(^3\) See section 7.2
6 Your PT-561, PT-562 HDMI Transmitter/Receiver Pair

This section describes the:
- **PT-561 HDMI Line Transmitter**, see section 6.1
- **PT-562 HDMI Line Receiver**, see section 6.2

6.1 Your PT-561 HDMI Line Transmitter

*Figure 7 and Table 3 define the PT-561:*

![Figure 7: PT-561 HDMI Line Transmitter](image)

*Table 3: PT-561 HDMI Line Transmitter Features*  

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5V DC</td>
<td>+5V DC connector for powering both units (PT-561 and PT-562)</td>
</tr>
<tr>
<td>2</td>
<td>HDMI IN Connector</td>
<td>Connect to the HDMI source</td>
</tr>
<tr>
<td>3</td>
<td>IR 3.5mm jack</td>
<td>Connects to an infrared transmitter or receiver¹</td>
</tr>
<tr>
<td>4</td>
<td>ON LED</td>
<td>Illuminates red when powered on, green when transmitting data</td>
</tr>
<tr>
<td>5</td>
<td>OUT 1 RJ-45 Connector</td>
<td>Connect to the IN 1 RJ-45 connector on the PT-562</td>
</tr>
<tr>
<td>6</td>
<td>OUT 2 RJ-45 Connector</td>
<td>Connect to the IN 2 RJ-45 connector on the PT-562</td>
</tr>
</tbody>
</table>

¹ Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE
6.2 Your PT-562 HDMI Line Receiver

Figure 8 and Table 4 define the PT-562:

![Figure 8: PT-562 HDMI Line Receiver](image)

Table 4: PT-562 HDMI Line Receiver Features

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HDMI OUT Connector</td>
<td>Connect to the HDMI acceptor</td>
</tr>
<tr>
<td>2</td>
<td>IR 3.5mm jack</td>
<td>Connects to an infrared transmitter or receiver¹</td>
</tr>
<tr>
<td>3</td>
<td>ON LED</td>
<td>Illuminates red when powered on, green when transmitting data</td>
</tr>
<tr>
<td>4</td>
<td>IN 1 RJ-45 Connector</td>
<td>Connect to the OUT 1 RJ-45 connector on the PT-561</td>
</tr>
<tr>
<td>5</td>
<td>IN 2 RJ-45 Connector</td>
<td>Connect to the OUT 2 RJ-45 connector on the PT-561</td>
</tr>
</tbody>
</table>

¹ Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE
Connecting the PT-561 and PT-562

You can use the PT-561 HDMI Line Transmitter with the PT-562 HDMI Line Receiver to configure an HDMI transmitter/receiver system.

To connect the PT-561 to the PT-562, as illustrated in the example in Figure 9, do the following:

1. Connect the CAT 5 OUT 1 and OUT 2 RJ-45 connectors on the PT-561 to the CAT 5 IN 1 and IN 2 RJ-45 connectors on the PT-562, respectively via two CAT 5 cables (see section 7.1).

2. On the PT-562, connect the HDMI OUT connector to an HDMI acceptor (for example, a display).

3. Connect the 5V DC power adapter to the power socket and connect the adapter to the mains electricity to the PT-561 (not shown in Figure 9).

4. On the PT-561, connect an HDMI source (for example, a DVD player) to the HDMI IN connector.

5. If required, connect an IR receiver and IR emitter to the 3.5mm mini jacks on the PT-561 and the PT-562, respectively.

---

1 See section 7.1
2 See section 7.2
Figure 9: Connecting the PT-561/PT-562 HDMI Line Transmitter/Receiver
7.1 Wiring the CAT 5 LINE IN/LINE OUT RJ-45 Connectors

Table 5 and Figure 10 define the CAT 5 pinout, using a straight pin-to-pin cable with RJ-45 connectors (note, that the cable Ground shielding must be connected/soldered to the connector shield):

<table>
<thead>
<tr>
<th>EIA /TIA 568A</th>
<th>EIA /TIA 568B</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIN</td>
<td>Wire Color</td>
</tr>
<tr>
<td>1</td>
<td>Green/White</td>
</tr>
<tr>
<td>2</td>
<td>Green</td>
</tr>
<tr>
<td>3</td>
<td>Orange/White</td>
</tr>
<tr>
<td>4</td>
<td>Blue</td>
</tr>
<tr>
<td>5</td>
<td>Blue/White</td>
</tr>
<tr>
<td>6</td>
<td>Orange</td>
</tr>
<tr>
<td>7</td>
<td>Brown/White</td>
</tr>
<tr>
<td>8</td>
<td>Brown</td>
</tr>
</tbody>
</table>

| Pair 1 | 4 and 5 | Pair 1 | 4 and 5 |
| Pair 2 | 3 and 6 | Pair 2 | 1 and 2 |
| Pair 3 | 1 and 2 | Pair 3 | 3 and 6 |
| Pair 4 | 7 and 8 | Pair 4 | 7 and 8 |

7.2 Connecting an IR Receiver and Emitter

You can control the source or the acceptor by connecting an IR emitter cable and an IR receiver cable to the 3.5mm mini jacks on the transmitter and receiver.

In the example illustrated in Figure 9, the display can be controlled from a distance by transmitting the IR signal from the display remote control via the IR Receiver\(^1\), CAT 5 cables and the IR emitter\(^2\) which is attached to the IR sensor window of the display.

Alternatively, you can control the DVD player by sticking the IR LED of the IR emitter to the IR sensor window of the DVD player, and connecting it to the PT-561. The IR Receiver is connected to the PT-562, letting you control the DVD player from a distance via the CAT 5 cables.

---

1 For example, the Kramer C-A35M/IRR IR Receiver
2 For example, the Kramer C-A35M/IRE IR Emitter
8 Technical Specifications

The technical specifications for WP-561/WP-562 and PT-561/PT-562 are shown in Table 6.

Table 6: Technical Specifications

<table>
<thead>
<tr>
<th></th>
<th>WP-561/PT561</th>
<th>WP-562/PT562</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUTS:</td>
<td>1 HDMI connector</td>
<td>2 CAT 5 IN on RJ-45 connectors</td>
</tr>
<tr>
<td>OUTPUTS:</td>
<td>2 CAT 5 OUT on RJ-45 connectors</td>
<td>1 HDMI connector</td>
</tr>
<tr>
<td>IR PORT:</td>
<td>Bidirectional on a 3.5mm mini jack</td>
<td></td>
</tr>
<tr>
<td>BANDWIDTH:</td>
<td>Supports up to 1.65Gbps bandwidth per graphic channel</td>
<td></td>
</tr>
<tr>
<td>COMPLIANCE WITH HDMI STANDARD:</td>
<td>Supports HDMI and HDCP</td>
<td></td>
</tr>
<tr>
<td>POWER SOURCE:</td>
<td>5V DC, 440mA (transmitter and receiver together)</td>
<td></td>
</tr>
<tr>
<td>DIMENSIONS:</td>
<td>PT-561/PT-562: 6.2cm x 5.2cm x 2.4cm (2.4” x 2.1” x 1”) W, D, H</td>
<td>WP-561/WP-562: 6.9cm x 11.4cm x 2.9cm (2.7” x 4.5” x 1.1”) W, D, H</td>
</tr>
<tr>
<td>WEIGHT:</td>
<td>PT-561/PT-562: 0.14kg (0.3lbs)</td>
<td>WP-561/WP-562: 0.2kg (0.4lbs)</td>
</tr>
<tr>
<td>ACCESSORIES:</td>
<td>Power supply</td>
<td></td>
</tr>
<tr>
<td>OPTIONS:</td>
<td>19” rack mount adapter, Kramer external remote IR receiver and Kramer cables BC-DGKat524 (CAT 5 24 AWG), BC-DGKat623 (CAT 6 23 AWG) and BC DGKat7a23 (CAT 7a 23 AWG cable)</td>
<td></td>
</tr>
</tbody>
</table>

1 Specifications are subject to change without notice
2 C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE
3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com
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 three 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.

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 I: Residential, commercial and light industry"
EN-50082: "Electromagnetic compatibility (EMC) generic immunity standard.
   Part I: 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:
Disconnect the unit from the power supply before opening/servicing.