

Kramer Electronics, Ltd.



USER MANUAL

Models:

PT-571 HDMI Line Transmitter

PT-572+ 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 PicoTOOLS™ **PT-571 HDMI Line Transmitter** and the **PT-572+ HDMI Line Receiver**, which are ideal for²:

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

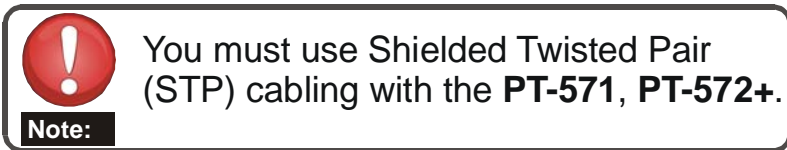
Each package includes the following items:

- **PT-571 HDMI Line Transmitter** or **PT-572+ HDMI Line Receiver**
- Power adapter (12V DC Input) and this user manual³

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 cables⁴



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

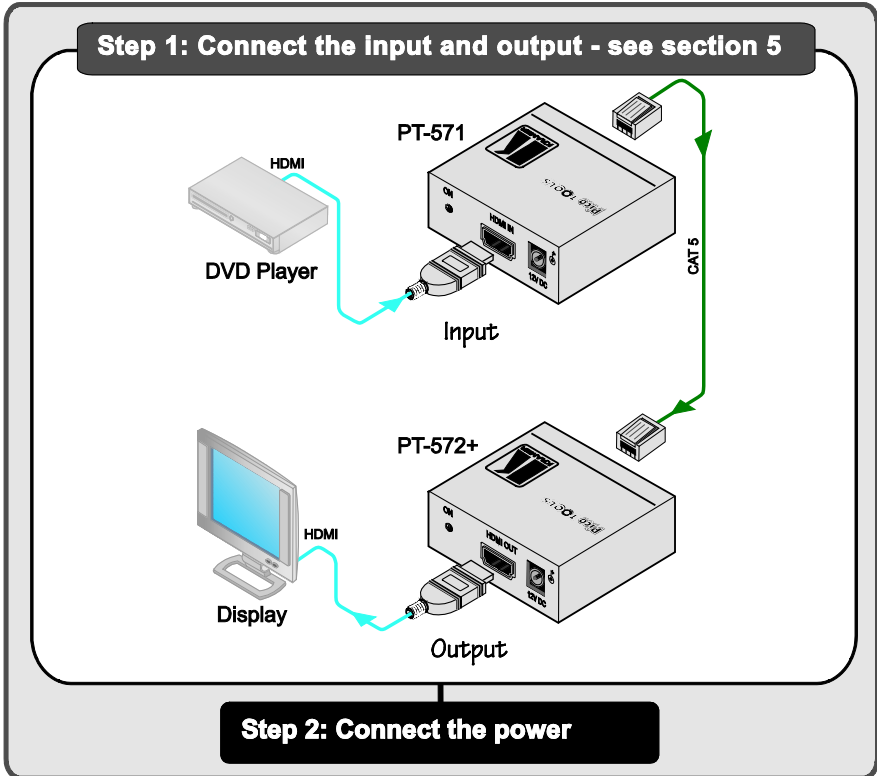
2 Ultra-Compact PicoTOOLS™ - 4 units can be rack mounted side-by-side in a 1U rack space with the optional RK-4PT rack adapter

3 Download up-to-date Kramer user manuals from our Web site at <http://www.kramerelectronics.com>

4 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 *HDMI Line Transmitter / Receiver*¹, see section [3.1](#)
- The power connect feature, see section [3.2](#)
- Using twisted pair cable, see section [3.3](#); about HDMI, see section [3.4](#)
- Recommendations for achieving the best performance, see section [3.5](#)

¹ For details of the PT-571 HDMI Line Transmitter and PT-572+ HDMI Line Receiver, see sections [4.1](#) and [4.2](#), respectively

3.1 Summarizing the HDMI Line Transmitter / Receiver System

Using the **PT-571** HDMI Line Transmitter with the **PT-572+** HDMI Line Receiver constitutes an HDMI-to-twisted pair transmitter and receiver system, when used with an STP (shielded twisted pair) cable. The *HDMI Line Transmitter / Receiver* system features:

- **System Range**¹ - 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
- Cables – For optimum range and performance, use Kramer's **BC-DGKat524**, **BC-DGKat623** and **BC-DGKat7a23**
- Max Data Rate/Bandwidth up to 1.65Gbps
- HDTV compatibility, and HDCP and HDMI 1.3a compliance
- The passing of EDID², HPD³ and CEC⁴ signals from the source to the display device using the CAT 5 cable
- Power Connect™ feeding 12V DC over the CAT 5 cable from transmitter to receiver or from receiver to transmitter (see section [3.2](#))

3.2 About the Power Connect™ Feature

The Power Connect™ feature here means that only one unit in a system, the transmitter or receiver, can be connected to a power source when the devices are within 270 feet (90 meters) of each other. The Power Connect™ feature applies as long as the cable can carry power. The distance does not exceed 90 meters on standard CAT 5 cable, for longer distances, heavy gauge cable should be used⁵.

3.3 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.

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 Extended Display Information Data

3 Hot Plug Detect

4 Consumer Electronics Control

5 CAT 5 cable is still suitable for the video/audio transmission, but not for feeding the power at these distances

3.4 About HDMI

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital¹ 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:

- Provides a simple² 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 lengthy³ cable
- Supports standard, enhanced, high-definition video, and multi-channel digital audio⁴ 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 cable³, 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.

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

2 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

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


4 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

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

3.5 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables¹ 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

	Caution: No operator serviceable parts inside unit
	Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit*
	Warning: Disconnect power and unplug unit from wall before installing or removing the device or servicing unit <small>* For example, P/N 2535-000251 (12V DC), P/N 2535-052002 (5V DC)</small>

¹ Available from Kramer Electronics on our Web site at <http://www.kramerelectronics.com>

4 Your PT-571 / PT-572+

This section describes the:

- **PT-571 HDMI Line Transmitter**, see section [4.1](#)
- **PT-572+ HDMI Line Receiver**, see section [4.2](#)

4.1 Your PT-571 HDMI Line Transmitter

The Kramer Pico TOOLS **PT-571 HDMI Line Transmitter** receives an HDMI signal, encodes it, and transmits it over a CAT 5 cable to the **PT-572+**. The **PT-571** has:

- An HDMI input connector
- An RJ-45 CAT 5 output connector
- One power status LED

[Figure 1](#) and [Table 1](#) define the **PT-571**:

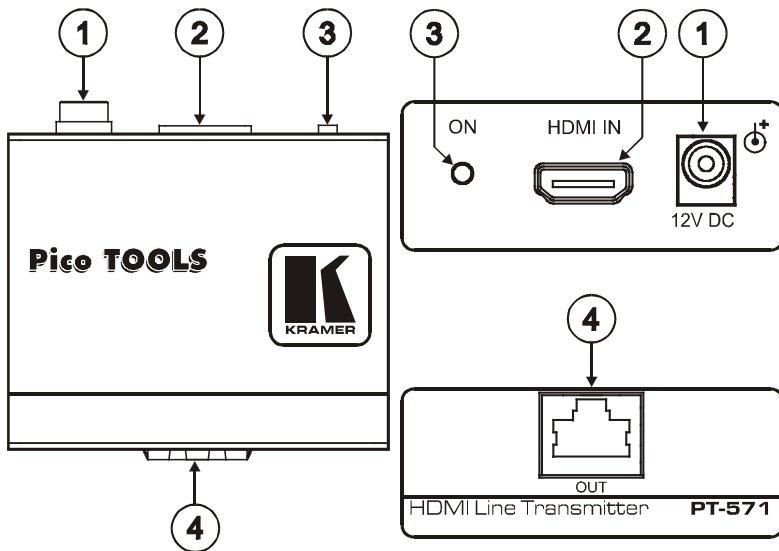


Figure 1: PT-571 HDMI Line Transmitter

Table 1: PT-571 HDMI Line Transmitter Features

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	HDMI IN Connector	Connect to the HDMI source
3	ON LED	Lights red when receiving power only, orange when input and power are attached, and yellow when both an active input and output are attached
4	OUT RJ-45 Connector	Connect to the IN RJ-45 connector on the PT-572+

4.2 Your PT-572+ HDMI Line Receiver

The Kramer Pico TOOLS **PT-572+ HDMI Line Receiver** receives an encoded signal over a CAT 5 cable transmitted from the **PT-571**, decodes it, and converts it to an HDMI output.

The **PT-572+** has:

- An HDMI output connector
- An RJ-45 CAT 5 input connector
- One power status LED

[Figure 2](#) and [Table 2](#) define the **PT-572+**:

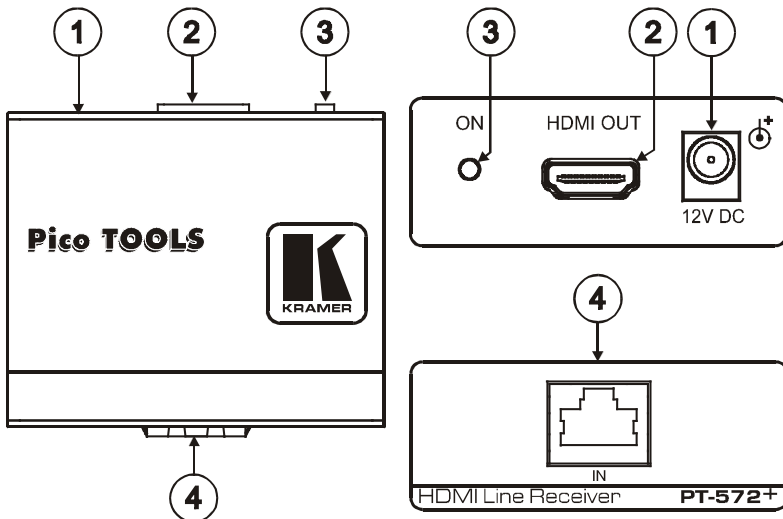


Figure 2: PT-572+ HDMI Line Receiver

Table 2: PT-572+ HDMI Line Receiver Features

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	HDMI OUT Connector	Connect to the HDMI acceptor
3	ON LED	Lights red when receiving power only, orange when output and power are attached, and yellow when both an active input and output are attached
4	IN RJ-45 Connector	Connect to the OUT RJ-45 connector on the PT-571

5 Connecting the PT-571 and PT-572+

You can use the **PT-571 HDMI Line Transmitter** with the **PT-572+ HDMI Line Receiver** to configure an HDMI transmitter/receiver system.

To connect the **PT-571** to the **PT-572+**, as illustrated in the example in [Figure 3](#), do the following:

1. Connect the CAT 5 OUT RJ-45 connector on the **PT-571** to the CAT 5 IN RJ-45 connector on the **PT-572+** via a CAT 5 cable (see section [5.1](#)).
2. On the **PT-571**, connect an HDMI source (for example, a DVD player) to the HDMI IN connector.
3. On the **PT-572+**, 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 on the **PT-571** or the **PT-572+** and connect the adapter to the mains electricity (not shown in [Figure 3](#)).

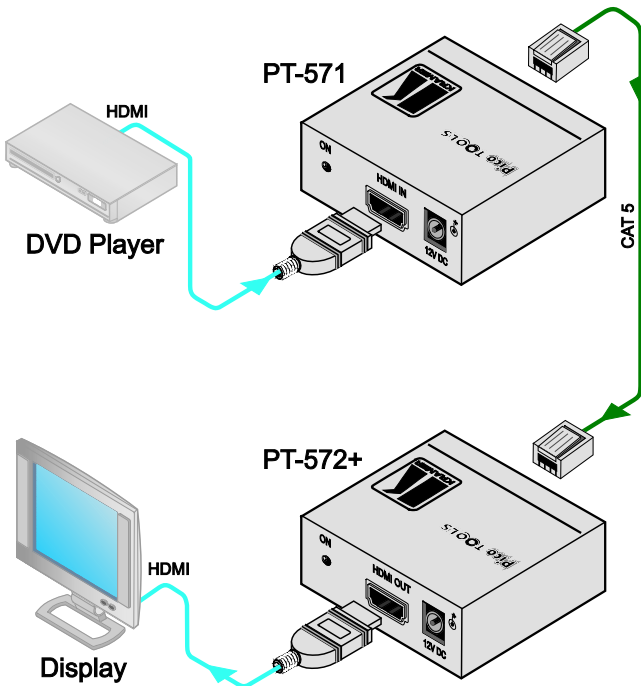


Figure 3: Connecting the PT-571 / PT-572+ HDMI Line Transmitter/Receiver

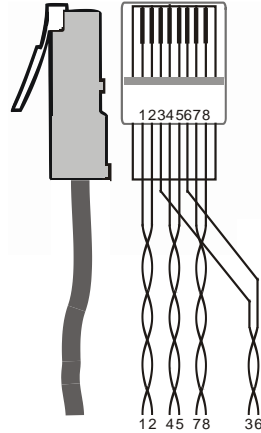
5.1 Wiring the CAT 5 LINE IN / LINE OUT RJ-45 Connectors

[Table 3](#) and [Figure 4](#) 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 3: CAT 5 PINOUT

EIA /TIA 568A		EIA /TIA 568B	
PIN	Wire Color	PIN	Wire Color
1	Green / White	1	Orange / White
2	Green	2	Orange
3	Orange / White	3	Green / White
4	Blue	4	Blue
5	Blue / White	5	Blue / White
6	Orange	6	Green
7	Brown / White	7	Brown / White
8	Brown	8	Brown
Pair 1		Pair 1	
Pair 1	4 and 5	Pair 1	4 and 5
Pair 2		Pair 2	
Pair 2	3 and 6	Pair 2	1 and 2
Pair 3		Pair 3	
Pair 3	1 and 2	Pair 3	3 and 6
Pair 4		Pair 4	
Pair 4	7 and 8	Pair 4	7 and 8

Figure 4: CAT 5 PINOUT



6 Technical Specifications

The **PT-571/PT-572+** technical specifications are shown in [Table 4](#).

Table 4: Technical Specifications¹

	PT-571	PT-572+
INPUTS:	1 HDMI connector	1 CAT 5 IN on an RJ-45 connector
OUTPUTS:	1 CAT 5 OUT on an RJ-45 connector	1 HDMI connector
BANDWIDTH:	Supports up to 1.65Gbps bandwidth per graphic channel	
COMPLIANCE WITH HDMI STANDARD:	Supports up to HDMI 1.3a and HDCP	
POWER SOURCE:	12V DC, 250mA	12V DC, 250mA
DIMENSIONS:	6.2cm x 5.2cm x 2.4cm (2.4" x 2.1" x 1") W, D, H	
WEIGHT:	0.14kg (0.3lbs)	
ACCESSORIES:	Power supply	
OPTIONS:	Kramer BC-DGKat524 (CAT 5 24 AWG), BC-DGKat623 (CAT 6 23 AWG) and BC DGKat7a23 (CAT 7a 23 AWG) cables ² , 19" RK-4PT rack adapter	

¹ Specifications are subject to change without notice

² 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 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 to 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.



Caution

Safety Warning:

Disconnect the unit from the power supply before opening/servicing.



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