MODELS:

**PT-571HDCP**
DVI Line Transmitter

**PT-572HDCP**
DVI Line Receiver

P/N: 2900-000689 Rev 8
PT-571HDCP, PT-572HDCP+ Quick Start Guide

This guide helps you install and use your products for the first time. For more detailed information, go to [http://www.kramerelectronics.com/support/product_downloads.asp](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

- PT-571HDCP, PT-572HDCP+
- DVI Line Transmitter and Receiver
- 2 Power supplies 12V DC
- 8 Rubber feet
- 1 Quick Start guide
- Mounting brackets

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

Step 2: Install the PT-571HDCP, PT-572HDCP+

Attach the rubber feet and place on a table or mount the PT-571HDCP, PT-572HDCP+ in a rack (using an optional RK-4PT rack adapter).

Step 3: Connect the inputs and outputs

Always switch off the power on each device before connecting it to your PT-571HDCP, PT-572HDCP+.

Always use Kramer high-performance cables for connecting AV equipment to your Kramer products.

Step 4: Connect the power

Connect the 12V DC power adapters to the PT-571HDCP, PT-572HDCP+ and plug the adapter into the mains electricity.
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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 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 Products.

Congratulations on purchasing your Kramer PT-571HDCP and PT-572HDCP+ transmitter/receiver pair, which is ideal for the following typical applications:

- Boardrooms, conference rooms and training rooms
- Presentation systems
- Signal distribution and home theater
- Range extender for medical equipment

You must use Shielded Twisted Pair (STP) cabling with the PT-571HDCP and PT-572HDCP+.

Use only a straight pin-to-pin cable with RJ-45 connectors that meet the EIA /TIA 568B standard. Failure to do so may result in damage to the device(s).
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 PT-571HDCP and PT-572HDCP+ transmitter/receiver pair 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/.

2.4 Accessory to Medical Equipment (IEC 60601-1-2)

In the modern medical environment remote access is essential, for example, to transfer clinical data between doctors and to train to medical students. The PT-571HDCP/PT-572HDCP+ pair is certified according to the IEC 60601-1-2, Clause 2.1.3, Medical Electrical Equipment, Part 1: General Requirements for EMC standard which is required when accessory devices are used at locations where medical personnel and patients are present.

The PT-571HDCP/PT-572HDCP+ pair constitutes an optional component that can be considered necessary and suitable as part of medical equipment or for use as part of a medical system to provide real time simultaneous video feeds to those present at the local medical environment and at remote locations. In this environment, the PT-571HDCP/PT-572HDCP+ can be added to the system ONLY if the connecting equipment has been evaluated and meets the IEC 60601-1-2 EMC standards. Note, that when attaching accessory devices to a digital or analog interface, they must comply with the IEC standard for which they are used: EMC Standard (IEC 60601-1-2), Information Technology equipment (IEC 60950-1 (2ed)).
3 Overview

The **PT-571HDCP** is a DGKat™ twisted pair transmitter for DVI signals. The **PT-571HDCP** converts a DVI signal to a single twisted pair signal and the **PT-572HDCP+** converts the twisted pair signal back to a DVI signal.

The **DVI Line Transmitter/Receiver** system features:

- Maximum data rate/bandwidth up to 4.95Gbps (1.65Gbps per graphic channel), WUXGA, 1920x1080p
- HDTV compatibility and HDCP compliance
- Medical equipment compliance
- EDID PassThru that passes EDID signals between the source and display
- 3D pass-through
- Up to 90m (295ft) at SXGA, or up to 30m (98ft) at UXGA on shielded **BC−DGKat524** cable. Up to 90m (295ft) at SXGA, or up to 70m (230ft) at UXGA on shielded **BC−DGKat623** cable. Up to 100m (330ft) at SXGA, or up to 80m (265ft) at UXGA on shielded **BC−DGKat7a23** cable

  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

- DGKat™ Signal Integration – Kramer’s unique technology for converting TMDS as well as control and communication to signals that run over twisted pair cables
- Power Connect™ that feeds 12V DC over the CAT 5 cable from transmitter to receiver (see [Section 3.2](#))
- Ultra-Compact Pico TOOLS™ – 4 units can be rack mounted side-by-side in a 1U rack space with the optional **RK−4PT** rack adapter.

**Use only shielded cable where both ends of the shield are soldered to ground to eliminate ESD interface.**
3.1 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.

3.2 About the Power Connect™ Feature

The Power Connect™ feature here means that only one unit in a system, the transmitter or receiver, needs to be connected to a power source when the devices are within 90m (270ft) of each other. The Power Connect™ feature applies as long as the cable can carry power and the distance does not exceed 90m on standard CAT 5 cable. For longer distances, heavy gauge cable should be used (CAT 5 cable is still suitable for the video/audio transmission, but not for feeding the power at these distances).
4 Defining the PT-571HDCP DVI Line Transmitter

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

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

Figure 1: PT-571HDCP DVI Line Transmitter

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12V DC</td>
<td>+12V DC connector for powering the unit</td>
</tr>
<tr>
<td>2</td>
<td>DVI IN Connector</td>
<td>Connect to the DVI source</td>
</tr>
<tr>
<td>3</td>
<td>OUT RJ-45 Connector</td>
<td>Connect to the IN RJ-45 connector on the PT-572HDCP+</td>
</tr>
<tr>
<td>4</td>
<td>ON LED</td>
<td>Lights only when the machine is powered (whether directly from the power adapter or via the PT-572HDCP+) and an input is connected. If no input is connected the unit invokes the power save mode automatically turning off the power.</td>
</tr>
</tbody>
</table>
Defining the PT-572HDCP+ DVI Line Receiver

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

The PT-572HDCP+ has:

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

![Diagram of PT-572HDCP+ DVI Line Receiver](image)

Figure 2: PT-572HDCP+ DVI Line Receiver

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12V DC</td>
<td>+12V DC connector for powering the unit</td>
</tr>
<tr>
<td>2</td>
<td>DVI OUT Connector</td>
<td>Connect to the DVI acceptor</td>
</tr>
<tr>
<td>3</td>
<td>IN RJ-45 Connector</td>
<td>Connect to the OUT RJ-45 connector on the PT-571HDCP</td>
</tr>
<tr>
<td>4</td>
<td>ON LED</td>
<td>Lights red when receiving power only, orange when output and power are attached, and yellow when both an active input and output are attached</td>
</tr>
</tbody>
</table>

PT-571HDCP/PT-572HDCP+ - Defining the PT-572HDCP+ DVI Line Receiver
6 Connecting the Transmitter Receiver Pair

Always switch off the power to each device before connecting it to your Transmitter and Receiver pair. After connecting your Transmitter and Receiver pair, connect the power and then switch on the power to each device.

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

To connect the **PT-571HDCP** to the **PT-572HDCP+**, as illustrated in the example in **Figure 3**, do the following:

1. Connect the CAT 5 OUT RJ-45 connector on the **PT-571HDCP** to the CAT 5 IN RJ-45 connector on the **PT-572HDCP+** via a CAT 5 cable (see **Section 6.1**).

2. On the **PT-571HDCP**, connect a DVI source (for example, a computer graphics source) to the DVI IN connector.

3. On the **PT-572HDCP+**, connect the DVI OUT connector to a DVI acceptor (for example, a display).

4. Connect the 12V DC power adapter to the power socket on the **PT-571HDCP** and/or the **PT-572HDCP+** and connect the adapter to the mains electricity (not shown in **Figure 3**).
Figure 3: Connecting the PT-571HDCP/PT-572HDCP+ Transmitter/Receiver Pair
6.1 Wiring the CAT 5 LINE IN / LINE OUT RJ-45 Connectors

This section defines 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>PIN</th>
<th>Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Orange / White</td>
</tr>
<tr>
<td>2</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>Green / 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>Green</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 2: 1 and 2  
Pair 3: 3 and 6  
Pair 4: 7 and 8
# Technical Specifications

<table>
<thead>
<tr>
<th></th>
<th>PT-571HDCP</th>
<th>PT-572HDCP+</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INPUTS:</strong></td>
<td>1 DVI, 1.2Vpp on a DVI Molex 24pin female connector; DDC signal 5Vpp (TTL)</td>
<td>1 RJ-45 connector</td>
</tr>
<tr>
<td><strong>OUTPUTS:</strong></td>
<td>1 RJ-45 connector</td>
<td>1 DVI, 1.2Vpp on a DVI Molex 24-pin female connector; DDC signal 5Vpp (TTL)</td>
</tr>
<tr>
<td><strong>MAX. DATA RATE:</strong></td>
<td>4.95Gbps (1.65Gbps per graphic channel)</td>
<td></td>
</tr>
<tr>
<td><strong>OPERATING TEMPERATURE:</strong></td>
<td>0° to +40°C (32° to 104°F)</td>
<td></td>
</tr>
<tr>
<td><strong>STORAGE TEMPERATURE:</strong></td>
<td>-40° to +70°C (-49° to 158°F)</td>
<td></td>
</tr>
<tr>
<td><strong>HUMIDITY:</strong></td>
<td>10% to 90%, RHL non-condensing</td>
<td></td>
</tr>
<tr>
<td><strong>POWER SOURCE:</strong></td>
<td>12V DC, 310mA (transmitter and receiver together)</td>
<td></td>
</tr>
<tr>
<td><strong>DIMENSIONS:</strong></td>
<td>6.2cm x 5.2cm x 2.4cm (2.4” x 2.1” x 1”) W, D, H</td>
<td></td>
</tr>
<tr>
<td><strong>WEIGHT:</strong></td>
<td>0.14kg (0.3lbs)</td>
<td></td>
</tr>
<tr>
<td><strong>INCLUDED ACCESSORIES:</strong></td>
<td>Power supply, mounting brackets</td>
<td></td>
</tr>
<tr>
<td><strong>OPTIONAL ACCESSORIES:</strong></td>
<td>19” RK-4PT rack adapter, Kramer DVI cables and BC-DGKat524 (CAT 5 24 AWG), BC-DGKat623 (CAT 6 23 AWG) and BC-DGKat7a23 (CAT 7a 23 AWG) cables</td>
<td></td>
</tr>
</tbody>
</table>

Specifications are subject to change without notice
Go to our Web site at [http://www.kramerelectronics.com](http://www.kramerelectronics.com) to access the list of resolutions
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 excessive 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 repair 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 products, this product must be insured during shipment. Failure to provide proof of insurance, the insurance and shipping charges prepaid by you. If this product is returned unserviceable, you assume all risks of loss or damage during shipping. 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 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 the authorized Kramer Electronics reseller from whom you purchased this product or the local Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and authorized Kramer Electronics service providers, please visit our web site at www.kramer.com or contact the local Kramer Electronics office nearest you. 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 states do not allow the exclusion of implied warranties, so the above limitations or exclusions may not apply to you.

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 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. §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.kramer.com or contact our local Kramer Electronics office. 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