

**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**PT-101HDCP**

*DVI Repeater*

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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<sup>1</sup> that are clearly defined by function.

Congratulations on purchasing your **PT-101HDCP DVI Repeater**, which is ideal for:

- Multimedia installations
- Home cinema installations

The package includes the following items:

- **PT-101HDCP DVI Repeater**
- Power adapter (5V DC Input)
- This user manual<sup>2</sup>

## 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<sup>3</sup>

### 2.1 Quick Start

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

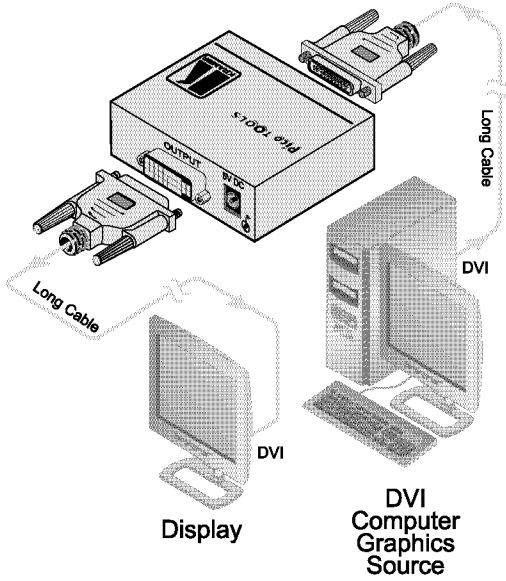
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1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; 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: <http://www.kramerelectronics.com>

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

**Step 1: Connect the input and the output - see section 5**



**Step 2: Connect the power**

### 3 Overview

The Kramer Pico TOOLS **PT-101HDCP** *DVI Repeater*:

- Is a high quality line driver for DVI-D signals that extends the standard transmission range of standard DVI distances from 5m to up to 10m (16.4ft to up to 32.8ft)<sup>1</sup>
- Can be powered by an external power supply, or directly—from DVI connectors on Kramer Scalers, as well as from some desktop DVI cards—without requiring an external power supply<sup>2</sup>
- Supports the DDWG DVI 1.0 standard
- Has two DVI-I connectors, that are compatible with all types of DVI cables

**Note that only the digital signal (DVI-D) is available on the DVI connector.**

#### 3.1 About HDCP

The High-Bandwidth Digital Content Protection (HDCP) standard<sup>3</sup>, 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.

#### 3.2 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 that may adversely influence signal quality and position your Kramer **PT-101HDCP** 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 unit<sup>4</sup>.

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

1 The distance can be longer, depending on the cable type and the resolution

2 If the unit does not seem to work properly, you can connect an external power supply

3 Developed by Intel

4 For example, part number 2535-052002

## 4 Your PT-101HDCP DVI Repeater

Figure 1 and Table 1 define the **PT-101HDCP DVI Repeater**:

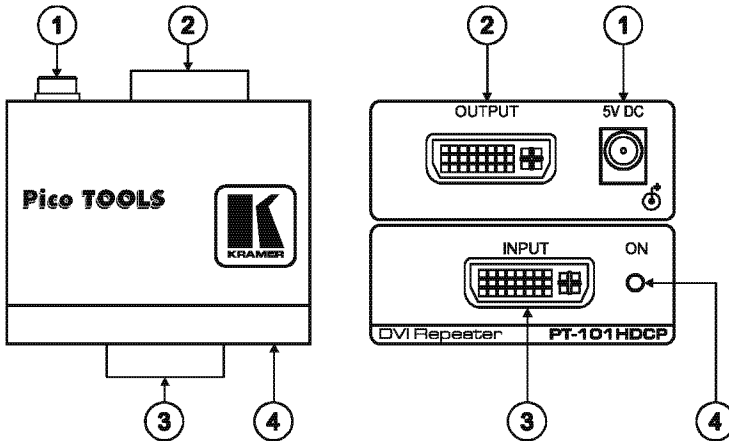


Figure 1: PT-101HDCP DVI Repeater

Table 1: PT-101HDCP DVI Repeater Features

#	Feature	Function
1	5V DC	+5V DC connector for powering the unit
2	OUTPUT DVI Connector	Connect to the DVI acceptor
3	INPUT DVI Connector	Connect to the DVI source
4	ON LED	Illuminates when receiving power. The POWER LED is colored: Yellowish-green, when the 5V DC power source is connected but no input signal is received Red, when an input signal is received and the 5V DC power source is disconnected Orange when both the 5V DC power source is connected and an input signal is received

## 5 Connecting a PT-101HDCP DVI Repeater

To connect the **PT-101HDCP**, as illustrated in the example in Figure 2, do the following:

1. Connect the DVI source (for example, a DVI graphics source) to the INPUT connector.
2. Connect the OUTPUT connector to a DVI acceptor (for example, a display).
3. Connect the 5V DC power adapter to the power socket on the **PT-101HDCP** and connect the adapter to the mains electricity.

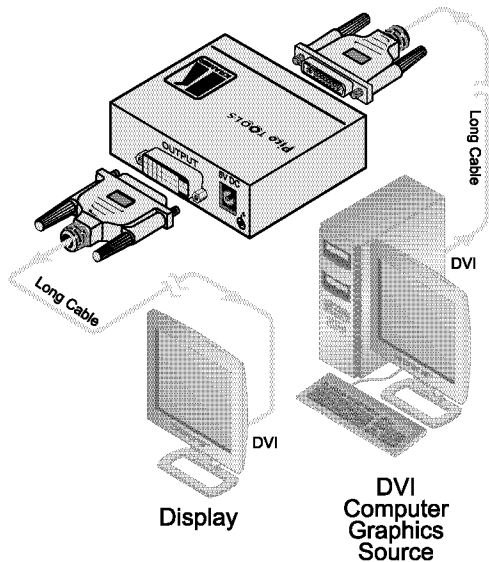


Figure 2: Connecting the PT-101HDCP DVI Repeater

## 6 Technical Specifications

Table 2 includes the technical specifications:

*Table 2: Technical Specifications<sup>1</sup> of the PT-101HDCP DVI Repeater*

INPUT:	1 DVI, 1.2Vpp on a DVI Molex 24pin female connector; DDC signal 5Vpp (TTL)
OUTPUT:	1 DVI, 1.2Vpp on DVI Molex 24pin female connectors; DDC signal 5Vpp (TTL)
BANDWIDTH:	Supports up to 2.25Gbps bandwidth
POWER SOURCE:	5V DC 180mA
DIMENSIONS:	6.22cm x 5.23cm x 3.20cm (2.5" x 2.1" x 1.3"), W, D, H
WEIGHT:	0.07kg (0.16lbs) approx.
ACCESSORIES:	Power supply, mounting bracket
OPTIONS:	Kramer DVI cables <sup>2</sup>

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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>



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## 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](http://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 you 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)





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**For the latest information on our products and a list of Kramer distributors, visit our Web site: [www.kramerelectronics.com](http://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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Web site: [www.kramerelectronics.com](http://www.kramerelectronics.com)

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P/N: 2900-000511 REV 1