

**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**PT-1Hs**

*Hs Delay Corrector*

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Getting Started</b>	<b>1</b>
2.1	Quick Start	1
<b>3</b>	<b>Overview</b>	<b>3</b>
<b>4</b>	<b>Your PT-1Hs Hs Delay Corrector</b>	<b>4</b>
<b>5</b>	<b>Using the PT-1Hs Hs Delay Corrector</b>	<b>5</b>
<b>6</b>	<b>Technical Specifications</b>	<b>7</b>

## Figures

Figure 1:	PT-1Hs Hs Delay Corrector	4
Figure 2:	PT-1Hs Hs Delay Corrector (Underside Panel)	4
Figure 3:	Connecting the PT-1Hs Hs Delay Corrector	6

## Tables

Table 1:	PT-1Hs Hs Delay Corrector Features	4
Table 2:	PT-1Hs Hs Delay Corrector (Underside Panel) Features	4
Table 3:	Technical Specifications of the PT-1Hs Hs Delay Corrector	7

## 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 Kramer **PT-1Hs Hs Delay Corrector**, which is ideal for:

- Any system using a twisted pair or coax application
- Presentation and multimedia applications

The package includes the following items:

- **PT-1Hs Hs Delay Corrector**
- Power adapter (12V 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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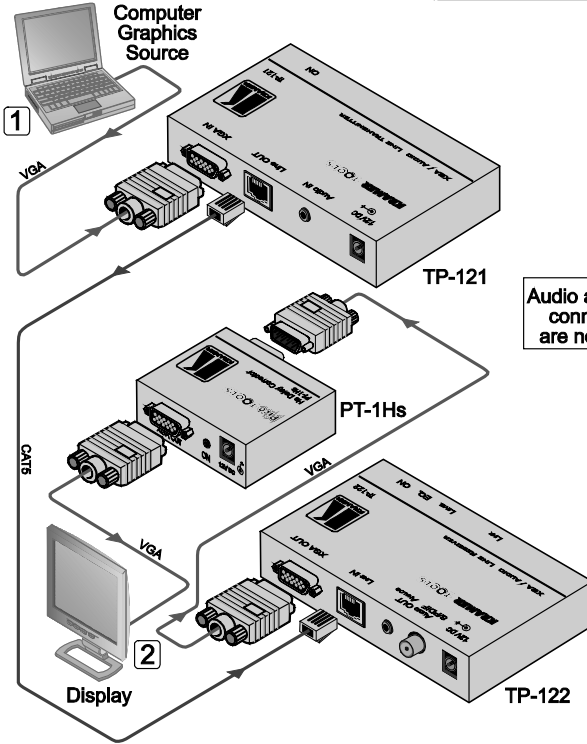
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 Download up-to-date Kramer user manuals from 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: Connect the Machines

Connect the PT-1Hs between the source **1** and the acceptor **2**.



Audio and power connections are not shown

In this example, the PT-1Hs is part of a twisted pair transmitter and receiver system.

### Step 2: Connect the power

**If required:**

- Adjust the DELAY level

### 3 Overview

The Kramer Pico TOOLS **PT-1Hs** *Hs Delay Corrector* is a high performance sync delay for computer graphics video signals on twisted pair or coax cables. It corrects for horizontal picture shift in long cable runs when the horizontal sync signal is delayed.

When sending a VGA signal from a PC to a monitor via twisted pair (or coax) cabling, the picture information and syncs are delayed, but by different amounts. This causes the display on the monitor to shift horizontally. The **PT-1Hs** compensates by shifting the syncs accordingly, so that they line up with the picture once again.

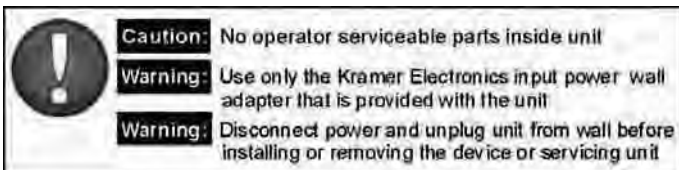
The **PT-1Hs** features:

- Resolution - up to UXGA
- HDTV compatibility
- Sync Polarity Settings - H & V switches for improved display compatibility
- Sync Delay Control -  $\pm 10\%$  line time for the current resolution
- 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

Note that the unit is transparent for the RGB signals, and corrects only the H and V signals

Achieving the best performance means:

- Positioning your **PT-1Hs** away from moisture and excessive sunlight and dust, and avoiding interference from neighboring electrical appliances
- Connecting 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)



## 4 Your PT-1Hs Hs Delay Corrector

Figure 1 and Table 1 define the **PT-1Hs**:

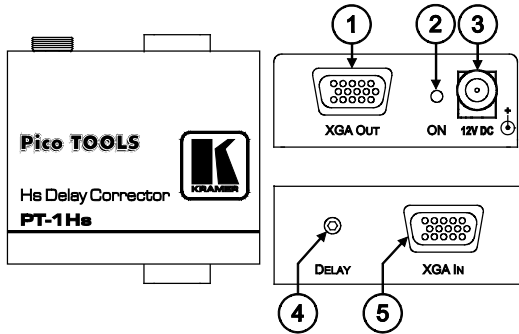


Figure 1: PT-1Hs Hs Delay Corrector

Table 1: PT-1Hs Hs Delay Corrector Features

#	Feature	Function
1	XGA OUT HD15F Connector	Connect to the XGA acceptor
2	ON LED	Lights when receiving power
3	12V DC	+12V DC connector for powering the unit
4	DELAY Trimmer	Adjusts <sup>1</sup> the delay of the Hs at the XGA output
5	XGA IN HD15F Connector	Connect to the XGA source

Figure 2 and Table 2 define the **PT-1Hs** underside panel:

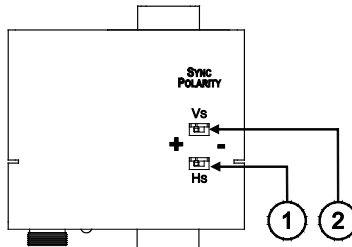


Figure 2: PT-1Hs Hs Delay Corrector (Underside Panel)

Table 2: PT-1Hs Hs Delay Corrector (Underside Panel) Features

#	Feature	Function
1	HS Switch	Slide the switch to the right <sup>2</sup> to change the HS polarity to NEGATIVE polarity <sup>1</sup> ; slide the switch to the left (to +) to retain the polarity
2	VS Switch	Slide the switch to the right <sup>2</sup> to change the VS polarity to NEGATIVE polarity <sup>1</sup> ; slide the switch to the left (to +) to retain the polarity

<sup>1</sup> Insert a screwdriver into the hole and carefully rotate it, to trim the delay level

<sup>2</sup> By default, both switches are set to the right

## 5 Using the PT-1Hs Hs Delay Corrector

A delayed sync can be corrected by the **PT-1Hs** when using, for example, the **TP-121** and **TP-122** to configure an *XGA/Audio Line*-to-Twisted Pair Transmitter and Receiver system.

To connect the **PT-1Hs** via twisted pair cabling, as the example in [Figure 3](#) illustrates, do the following:

1. On the **TP-121**, connect the XGA source (for example, a laptop) to the XGA INPUT HD15F connector<sup>2</sup>.
2. On the **TP-122**, connect<sup>2</sup> the XGA OUT HD15F connector to the XGA IN HD15F connector on the **PT-1Hs**.
3. On the **PT-1Hs**, connect the XGA OUT HD15F connector to an acceptor (for example, a display).
4. Connect the LINE OUTPUT RJ-45 connector on the **TP-121** to the LINE IN RJ-45 connector on the **TP-122**, via UTP cabling<sup>2</sup> (with a range of more than 300ft (>100m)).
5. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity on the **PT-1Hs** and on both<sup>3</sup> the **TP-121** and the **TP-122**.
6. On the **PT-1Hs**, adjust<sup>4</sup> the DELAY level, if required.

The signal from the XGA source is transmitted via CAT 5 cable, decoded and converted at the XGA OUT HD15F connector on the **TP-122**. The sync delay is corrected by the **PT-1Hs**, enabling a “lined-up” image to reach the XGA acceptor.

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1 Downgoing syncs

2 Refer to the Kramer TP-120 and TP-121 user manual for installation information

3 If you cannot connect the power to both the TP-121 and TP-122, you can just connect the power to the TP-122

4 Use a screwdriver to carefully rotate the trimmer, adjusting the DELAY level

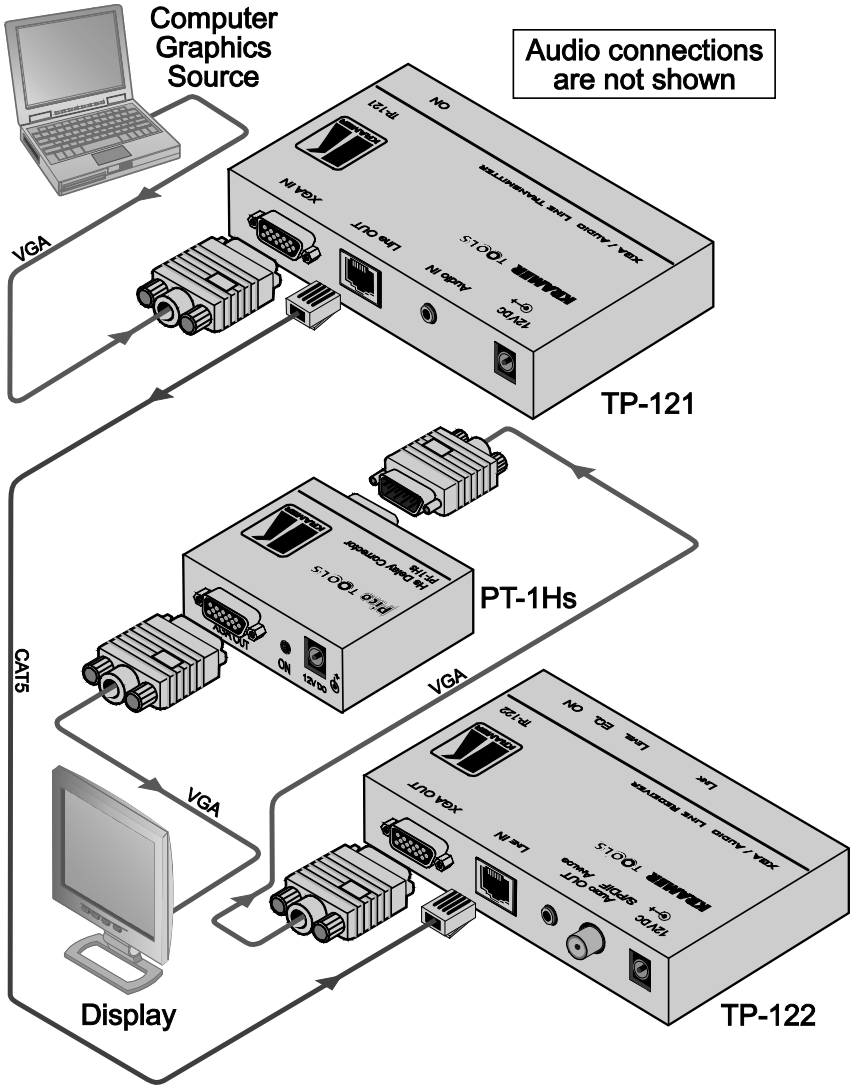


Figure 3: Connecting the PT-1Hs Hs Delay Corrector



## 6 Technical Specifications

Table 3 defines the technical specifications:

*Table 3: Technical Specifications<sup>1</sup> of the PT-1Hs Hs Delay Corrector*

INPUT:	1 XGA on a 15-pin HD (F) connector
OUTPUT:	1 XGA on a 15-pin HD (F) connector
DELAY:	More than $\pm 10\%$ line time for the current resolution
RESOLUTION:	Up to UXGA
POWER SOURCE:	12 V DC, 40mA
DIMENSIONS:	6.22cm x 5.24cm x 2.41 cm (2.45" x 2.06" x 0.95") W, D, H.
WEIGHT:	0.040kg (0.09lbs.) approx.
ACCESSORIES:	Power supply
OPTIONS:	RK-4PT 19" rack adapter

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<sup>1</sup> Specifications are subject to change without notice

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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 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)



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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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