

Kramer Electronics, Ltd.



USER MANUAL

Models:

TP-100, *XGA Line Transmitter*

TP-200, *XGA Line Receiver*

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This addendum describes the Power Connect feature used with Kramer machines, and the choice between STP and UTP CAT5 cables.

Power Connect Feature¹

The Power Connect feature lets you power a transmitter / receiver system by connecting just one power adapter to either the transmitter or the receiver. The other unit is fed over the same CAT5 cable.

The Power Connect feature applies as long as the CAT5 cable is heavy gauge cable (that is, it can carry power). The distance does not exceed 50 meters on standard cable.

For a distance of 100 meters, separate power supplies must be connected to the transmitter and to the receiver simultaneously, unless using heavy gauge CAT5 cable.

Shielded Twisted Pair (STP) / Unshielded Twisted Pair (UTP)

The decision whether to use shielded twisted pair (STP) cable or unshielded twisted pair (UTP) cable depends on the nature of the application.

It is recommended that in applications with high interference, shielded twisted pair (STP) cable will give better results. However, the shield itself does create a capacitance that degrades the frequency response of the machines. For shorter distances, of 50m or so, shielded twisted pair (STP) cable is preferred because it provides protection from interference (degradation is non-apparent).

For a long range application, unshielded twisted pair (UTP) cable is preferred. However, the unshielded twisted pair (UTP) cable should be installed far away from electric cables, motors etc., which are prone to create electrical interference.

¹ This section of the addendum is only relevant to machines that support this feature (for example, the TP-104; not the TP-100)

1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 350-plus different models now appear in 8 Groups¹, which are clearly defined by function.

In addition to our high quality twisted-pair interfaces, like the **TP-100 XGA Line Transmitter** and the **TP-200 XGA Line Receiver**, we also offer excellent switchers and matrices, distribution amplifiers, presentation processors, remote controllers and computer-related products. Congratulations on purchasing your Kramer **TP-100 XGA Line Transmitter** and the **TP-200 XGA Line Receiver**. These products are ideal for utilizing existing UTP cabling that results in an efficient, fast and uncluttered environment for:

- Studios, airports, offices and hospitals
- Security and military applications

The package includes the following items:

- **TP-100 XGA Line Transmitter** and/or **TP-200 XGA Line Receiver**
- Power cord(s)
- This user manual² and the Kramer concise product catalog/CD

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: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Sealers; and GROUP 8: Cables and Connectors

2 Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com/manuals.html>

3 The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com> (click "Cables and Connectors" in the Products section)

3 Overview

The **TP-100 XGA Line Transmitter** and **TP-200 XGA Line Receiver** constitute an extendable branching set of VGA/XGA-to-Twisted Pair Transmitter and Receiver. The input looping capability of the **TP-100** and the transceiving ability of the **TP-200** create a multimode XGA/CAT5 distribution system.

The **TP-100 XGA Line Transmitter** includes:

- A looping XGA input (with termination switch)
- ID Bit control
- 2 CAT5 outputs for simultaneous signal transmission to 2 locations
- Individual cable EQ. control for each CAT5 output

The **TP-200 XGA Line Receiver**:

- Receives the CAT5 signal, decodes it and simultaneously distributes it to 3 XGA outputs and relays the input to the next receiver (transceiver operation)
- Includes an EQ. control for the decoded XGA signal and an EQ. control for the signal re-transmitted to the next receiver

Achieving the best performance means:

- 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)
- Avoiding interference from neighboring electrical appliances that may adversely influence signal quality and positioning your **TP-100** and/or **TP-200** in a location free from moisture and away from excessive sunlight and dust

4 Your XGA Line Transmitter and the XGA Line Receiver

Figure 1, Table 1 and Table 2 define the **TP-100**:

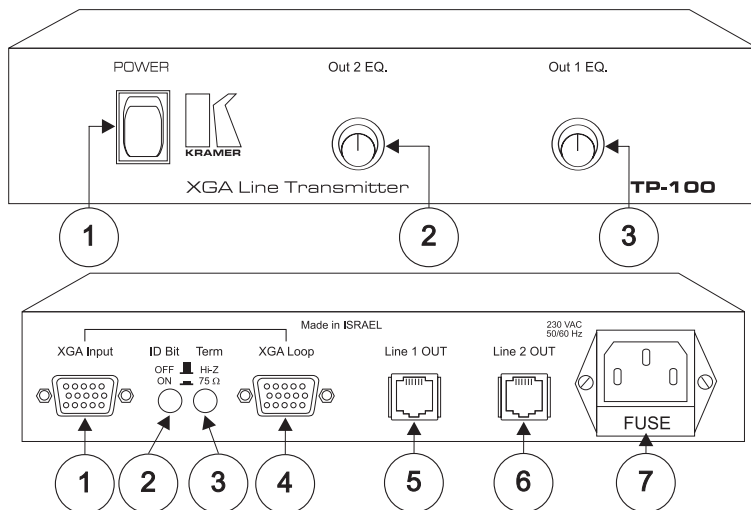


Figure 1: TP-100 XGA Line Transmitter

Table 1: Front Panel TP-100 XGA Line Transmitter Features

#	Feature	Function
1	POWER Switch	Illuminated switch supplying power to the unit
2	Out 2 EQ. Knob	Adjusts the equalization control level (EQ.) for the CAT5 Line 2 output
3	Out 1 EQ. Knob	Adjusts the equalization control level (EQ.) for the CAT5 Line 1 output

Table 2: Rear Panel TP-100 XGA Line Transmitter Features

#	Feature	Function
1	XGA Input HD15 Connector	Connects to the video source
2	ID Bit (OFF/ ON) Button	Pushing in selects the ID BIT (when outputting a VGA signal from a laptop to an external VGA monitor ¹); releasing deactivates the ID BIT
3	Term (Hi-Z/ 75Ω) Button	Pushing in selects 75Ω; releasing selects Hi-Z ²
4	XGA Loop HD15 Connector	For looping to a VGA acceptor
5	Line 1 OUT CAT5 Connector	Connects to the Line IN connector on the TP-200 XGA Line Receiver ³
6	Line 2 OUT CAT5 Connector	Connects to the Line IN connector on the TP-200 XGA Line Receiver ³
7	Power Connector with FUSE	AC connector enabling power supply to the unit

1 Sometimes laptop computers refuse to output a VGA signal to an external VGA monitor. By setting the ID Bit to ON (and using pin # 4 on the VGA connector that is normally unused), the laptop computer will output to an external VGA monitor

2 For looping select Hi-Z

3 Using a UTP cable with CAT5 connectors at both ends

Figure 2, Table 3 and Table 4 define the **TP-100**:

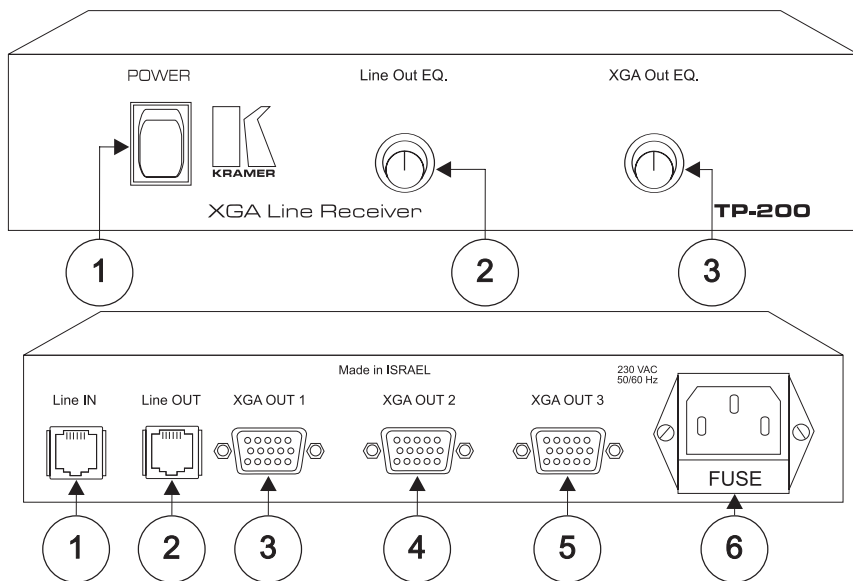


Figure 2: TP-200 XGA Line Receiver

Table 3: Front Panel TP-200 XGA Line Receiver Features

#	Feature	Function
1	POWER Switch	Illuminated switch supplying power to the unit
2	Line Out EQ. Knob	Adjusts the equalization control level (EQ.) for the signal transmitted via the CAT5 Line output to the next XGA Line Receiver
3	XGA Out EQ. Knob	Adjusts the equalization control level (EQ.) for the decoded XGA signal

Table 4: Rear Panel TP-200 XGA Line Receiver Features

#	Feature	Function
1	Line IN CAT5 Connector	Connects to the Line OUT connector on the XGA Line Transmitter
2	Line OUT CAT5 Connector	Connects to the Line IN connector on the next XGA Line Receiver
3	XGA OUT 1 HD15 Connector	Connects to the video acceptor 1
4	XGA OUT 2 HD15 Connector	Connects to the video acceptor 2
5	XGA OUT 3 HD15 Connector	Connects to the video acceptor 3
6	Power Connector with FUSE	AC connector enabling power supply to the unit

5 Connecting a XGA/CAT5 Distribution System

To configure a XGA/CAT5 distribution system consisting of two **TP-100 XGA Line Transmitter** units and two (transceiver) **TP-200 XGA Line Receiver** units, as Figure 3 illustrates, do the following:

1. Connect a XGA source (for example, a laptop¹) to the *XGA Input* connector on the first **TP-100 XGA Line Transmitter** unit.
2. Connect the first **TP-100 XGA Line Transmitter** unit's *XGA Loop* connector to the *XGA Input* connector on the second **TP-100 XGA Line Transmitter** unit².
3. Connect the first **TP-100 XGA Line Transmitter** unit's *Line 1 OUT* connector to the *Line IN* connector on the first **TP-200 XGA Line Receiver** unit.
4. Connect the first **TP-100 XGA Line Transmitter** unit's *Line 2 OUT* connector to the *Line IN* connector on an additional **TP-200 XGA Line Receiver** unit.
5. Connect the first **TP-200 XGA Line Receiver** unit's *Line OUT* connector to the *Line IN* connector on the second **TP-200 XGA Line Receiver** unit.
6. Connect the XGA outputs on both **TP-200 Line Receiver** units to their respective XGA acceptors.
7. Connect the power cord on each unit to the electricity supply.

¹ Push in the ID Bit button to ON

² Release the Term button to HI-Z on the first unit and push in the Term button to 75 Ω on the second unit

Connecting a XGA/CAT5 Distribution System

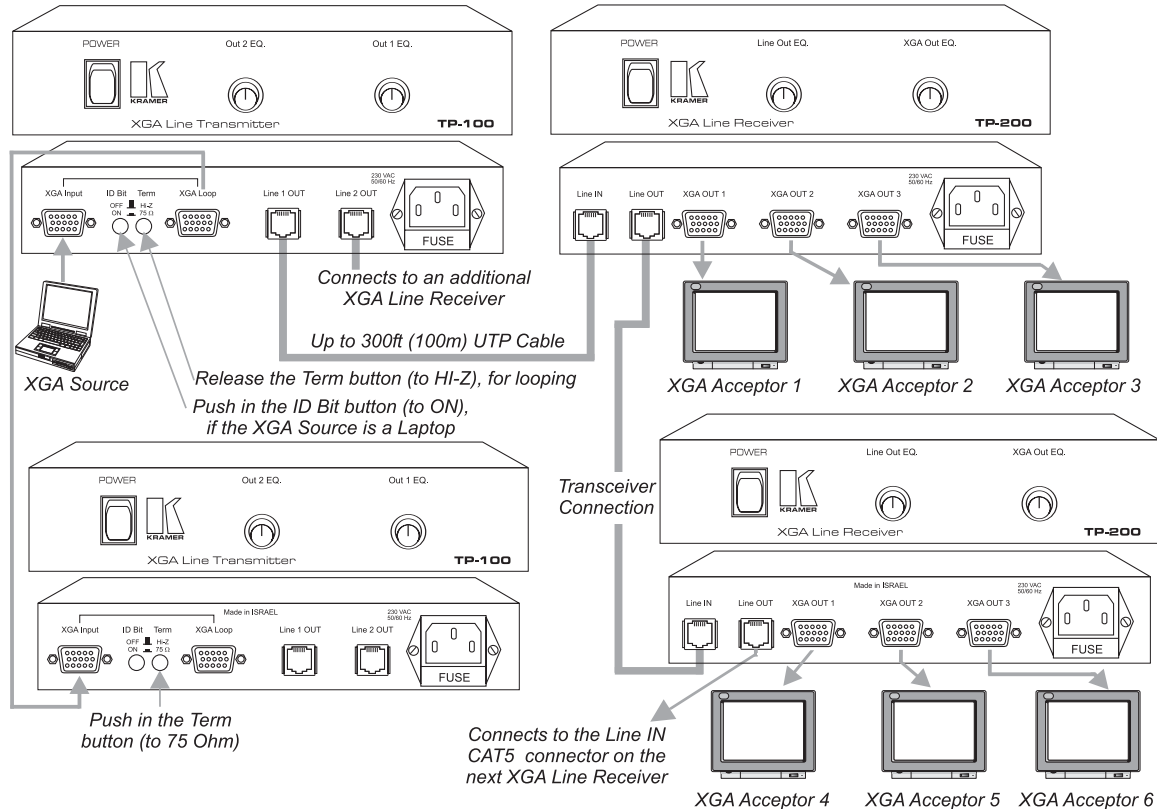


Figure 3: Multimode XGA/CAT5 Distribution System

6 Technical Specifications

Table 5 defines the technical specifications¹:

Table 5: Technical Specifications² of the TP-100 / TP-200

INPUTS:	TP-100: 1 XGA input on an HD15F connector; 1 XGA Loop on an HD15F connector TP-200: 1 UTP CAT5 connector (Line IN)
OUTPUTS:	TP-100: 2 UTP CAT5 connectors (Line 1 OUT; Line 2 OUT) TP-200: 1 UTP CAT5 connector (Line OUT); 3 XGA outputs on HD15F connectors
MAX. OUTPUT LEVEL:	1.5 V _{pp} / 75Ω
DIFF. GAIN (Pair):	0.23% (optimum)
DIFF. PHASE (Pair):	0.19 Deg (optimum)
K-FACTOR (Pair):	<0.05% (optimum)
S/N RATIO (Pair):	70dB (optimum)
RESOLUTION:	Up to UXGA
RANGE:	Up to 150m with CAT5 UTP
CONTROLS:	(30m): TP-100: Line Out E.Q.: 0 to 7.8dB @ 20MHz TP-200: XGA Out E.Q.: 0 to 3.2dB @ 20MHz
COUPLING:	DC
POWER SOURCE:	TP-100 / TP-200: 230 VAC, 50/60 Hz. (115VAC, U.S.A.) 13 VA
DIMENSIONS:	22cm x 18cm x 4.5cm (8.6" x 7" x 1.8"), W, D, H.
WEIGHT:	1.2 kg. (2.65 lbs.) approx.
ACCESSORIES:	Power cords
OPTIONS:	19" rack adapters RK-80 (holds two units)

¹ Specifications for 30m of CAT5 UTP cable, unless otherwise specified

² Specifications are subject to change without notice

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.
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.



For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com.

**Updates to this user manual may be found at
<http://www.kramerelectronics.com/manuals.html>.**

We welcome your questions, comments and feedback.



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