



4K60 HDMI/USB Extender

EXT3-XR-TR

USER MANUAL

MODELS:

EXT3-XR-TR

EXT3-TR

4K60 HDMI/USB Extender



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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!

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 www.kramerav.com/downloads/EXT3-XR-TR or www.kramerav.com/downloads/TP-600TR to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

Achieving 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 **EXT3-XR-TR** / **EXT3-TR** away from moisture, excessive sunlight and dust.

Safety Instructions



Caution:

- This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.
- For products with relay terminals and GPIO ports, please refer to the permitted rating for an external connection, located next to the terminal or in the User Manual.
- There are no operator serviceable parts inside the unit.



Warning:

- Use only the power cord that is supplied with the unit.
- To ensure continuous risk protection, replace fuses only according to the rating specified on the product label which is located on the bottom of the unit.

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 www.kramerav.com/il/quality/environment.

Overview

Congratulations on purchasing your Kramer **EXT3-XR-TR/EXT3-TR 4K60 HDMI/USB Extender**.



EXT3-TR is identical to **EXT3-XR-TR** except for ETH extension and reach performance. **EXT3-XR-TR**, in this User Manual, refers to both devices, unless specified otherwise.

EXT3-XR-TR is a high-performance, extended-reach HDBaseT 3.0 extender for 4K60Hz (4:4:4) HDMI, USB, Ethernet (**EXT3-XR-TR** only), RS-232, and IR signals over twisted pair, flexibly set as transmitter-side or receiver-side device. **EXT3-XR-TR** transmitter-side converts all input signals into the transmitted HDBaseT 3.0 signal. **EXT3-XR-TR** receiver-side receives the HDBaseT 3.0 signal and converts it back into the original input signals.

EXT3-XR-TR extends video signals up to 100m (330ft) over CAT copper cables at 4K@60Hz (4:4:4) video resolution.

EXT3-TR extends video signals up to 40m (130ft) over CAT copper cables at 4K@60Hz (4:4:4) video resolution and up to 70m (230ft) at 4K@30Hz (4:4:4).

EXT3-XR-TR provides exceptional quality, advanced and user-friendly operation, and flexible control.

Exceptional Quality

- High Performance Standard Extender – Professional HDBaseT extender for providing extended-reach signals over twisted-pair copper infrastructures. **EXT3-XR-TR** is a standard extender that can be connected to any market-available HDBaseT-compliant extension product. For optimum extension reach and performance, use recommended Kramer cables.
- HDMI Signal Extension – HDCP 2.3, EDID and CEC signals are passed through from the source to the display. Supports HDR10, deep color, x.v.Color™, lip sync, HDMI uncompressed audio channels, Dolby TrueHD, DTS-HD, 2K, 4K, and 3D as specified in HDMI 2.0.
- HDMI extension – Uncompressed 4K@60Hz (4:4:4).

Advanced and User-friendly Operation

- HDMI Mirroring – Transmitter-side extender mirrors input HDMI signal to loop output port for connecting a local monitor or an additional unit in a daisy chain.
- Flexible USB 2.0 Extension – An active USB host is connected to the extender at either the transmitter or receiver sides. USB 2.0 signals are extended between the extender transmitter and receiver sides, enabling connection of the active USB host to both local and remote USB devices, such as camera and audio devices, or HID (Human Interface Devices) mouse or keyboard devices.
- Cost-effective Maintenance – Status LED indicators for HDMI, Loop, HDBT, and USB active host ports, facilitate easy local maintenance and troubleshooting.
- Easy and Elegant Installation – MegaTOOLS™ fan-less enclosure for dropped-ceiling mounting, or side-by-side mounting of 2 units in a 1U rack space with the recommended rack adapter.

Flexible Connectivity

- Multi-channel Audio Transmission – Up to 32 channels of digital stereo uncompressed signals for supporting studio-grade surround sound.
- Flexible USB 2.0 host and devices extension.
- Ethernet Extension (**EXT3-XR-TR** only) – Ethernet interface data flows in both directions, allowing extension of up to 1 Gbps Ethernet connectivity for LAN communication and device control.
- Bidirectional RS-232 Extension – Serial interface data flows in both directions, allowing data transmission and device control.
- Bidirectional Infrared Extension – IR interface data flows in both directions, allowing remote control of peripheral devices located at either end of the extended line.

Typical Applications

EXT3-XR-TR is ideal for the following typical applications:

- Corporate – Hybrid and online meetings.
- Education – Hybrid and online learning and training.
- Any AV, Ethernet (**EXT3-XR-TR** only) and USB room extension applications such as conference rooms, boardrooms, and training facilities.

Defining EXT3-XR-TR and EXT3-TR

This section defines **EXT3-XR-TR** and **EXT3-TR**.

 The extender device functions as a transmitter or receiver as defined by the SETUP DIP-switch 1 setting on the rear panel (see [Setting the DIP-Switches](#) on page 10).

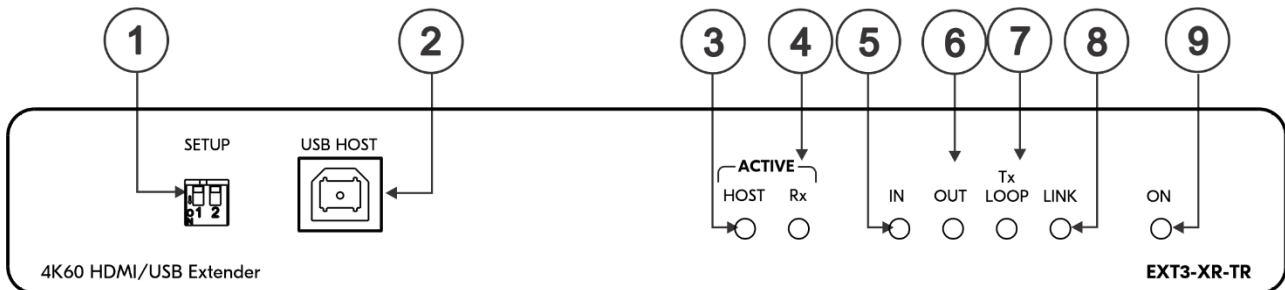


Figure 1: EXT3-XR-TR 4K60 HDMI/USB Extender Front Panel

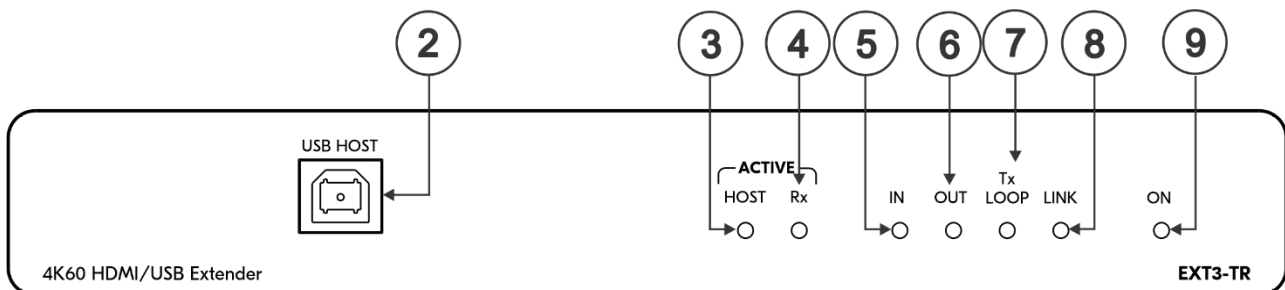


Figure 2: EXT3-TR 4K60 HDMI/USB Extender Front Panel

#	Feature	Function		
①	SETUP 2-way DIP-switch	Set the HDBT Range Mode.		
		DIP 1	DIP 2	State Description
		Off (up)	Off (up)	Standard range mode (default).
		Off (up)	On (down)	Ultra-long range mode.
		On (down)	Off (up)	For future use.
		On (down)	On (down)	For future use.
②	HOST USB B 2.0 Connector	Connect to the USB host (for example, a laptop) to communicate with the USB peripheral devices (for example, a smart board) connected to USB device ports on either the transmitter or the receiver sides of the extender (see Connecting the 4K60 HDMI/USB Extender on page 7).		
③	ACTIVE HOST LED	Lights orange when the USB host side is active		
④	ACTIVE Rx LED	Lights green when the extender receiver function is active		
⑤	IN LED	Lights blue when an active HDMI input signal is detected on HDMI IN.		
⑥	OUT LED	Lights blue when an output acceptor device is connected.		
⑦	TX LOOP	Transmitter mode	Lights blue an active signal is transmitted on the Tx LOOP port.	
		Receiver mode	N/A	
⑧	LINK LED	Lights green when the HDBT active link connection is established.		
⑨	ON LED	Lights green when the device receives power.		

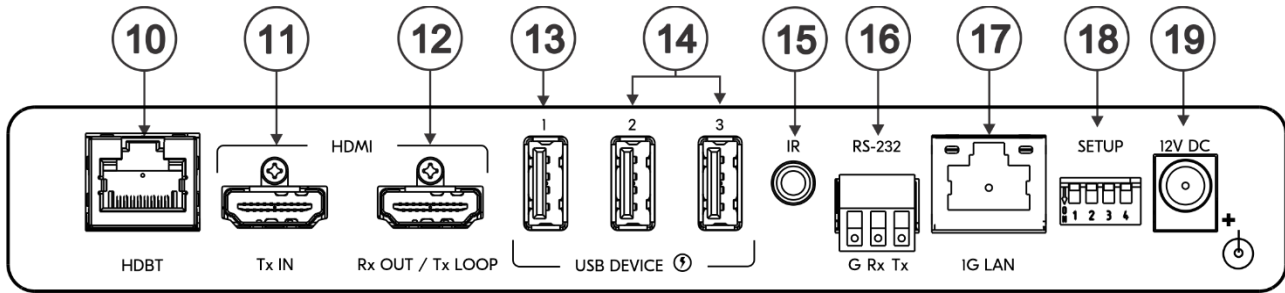


Figure 3: EXT3-XR-TR 4K60 HDMI/USB Extender Rear Panel

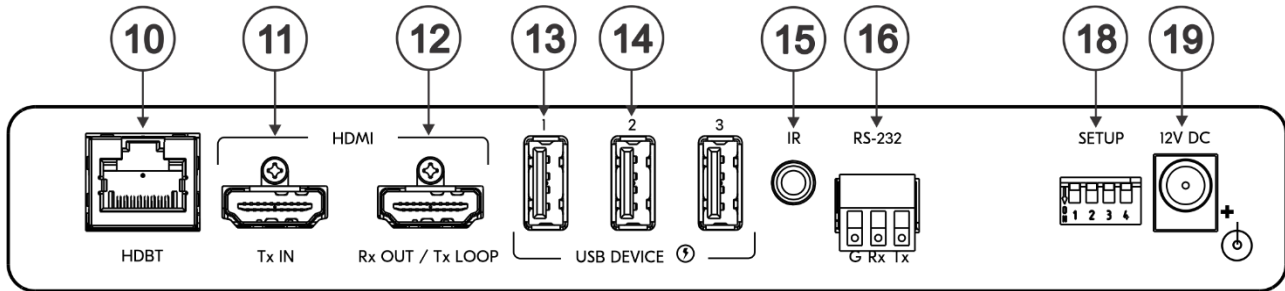


Figure 4: EXT3-TR 4K60 HDMI/USB Extender Rear Panel

#	Feature	Function
⑩	HDBT RJ-45 Port	Connect to the HDBT RJ-45 connector on a paired receiver/transmitter device (for example, a second EXT3-XR-TR device).
⑪	HDMI TX IN Connector	Transmitter mode
		Receiver mode
⑫	HDMI Rx OUT/Tx LOOP Connector	Transmitter mode
		Receiver mode
⑬	USB A 2.0 Connector 1	Connect to the USB local peripheral devices (for example, a USB PTZ camera). When USB Host PC is disconnected, the USB signal and charging power for this port are inactive.
⑭	USB A 2.0 Connectors 2-3	Connect to the USB local peripheral devices (for example, a USB camera, a soundbar, microphone and so on). When USB Host PC is disconnected, the USB charging power for this port continues to be active.
⑮	IR 3.5mm Mini Jack Connector	Connect to an external IR emitter to control a local IR-controlled device from the remote extender (for example, EXT3-XR-TR). Connect to an IR sensor to control a remote IR-controlled device connected to the remote extender side (for example, EXT3-XR-TR).
⑯	RS-232 3-pin Terminal Block	Connect to a controller device (for example, SL240C) to control a remote device via serial connection (for example, the remotely connected PTZ USB camera).
⑰	ETHERNET RJ-45 Connector	Connect to LAN.
⑱	SETUP 4-way DIP-switch	Sets the device behavior (see Setting the DIP-Switches on page 10).
⑲	12V DC Power Connector	Connect to the power supply.

Mounting EXT3-XR-TR

This section provides instructions for mounting **EXT3-XR-TR**. Before installing, verify that the environment is within the recommended range:



- Operation temperature – 0° to 40°C (32 to 104°F).
- Storage temperature – -40° to +70°C (-40 to +158°F).
- Humidity – 10% to 90%, RHL non-condensing.

**Caution:**

- Mount **EXT3-XR-TR** before connecting any cables or power.

**Warning:**

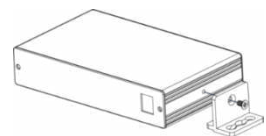
- Ensure that the environment (e.g., maximum ambient temperature & air flow) is compatible for the device.
- Avoid uneven mechanical loading.
- Appropriate consideration of equipment nameplate ratings should be used for avoiding overloading of the circuits.
- Reliable earthing of rack-mounted equipment should be maintained.
- Maximum mounting height for the device is 2 meters.

Mount EXT3-XR-TR in a rack:

- Use the recommended rack adapter
(see www.kramerav.com/product/TP-600TRxr).

Mount EXT3-XR-TR on a surface using one of the following methods:

- Attach the rubber feet and place the unit on a flat surface.
- Fasten a bracket (included) on each side of the unit and attach it to a flat surface. For more information go to www.kramerav.com/downloads/TP-600TRxr.



Connecting the 4K60 HDMI/USB Extender

You can use two **EXT3-XR-TR** units, define them as transmitter and receiver and then connect the transmitter to the receiver (as described in this section). You can also connect the device to a different unit. For example:

- Connecting **EXT3-XR-TR** that is set as a transmitter to the Kramer **TP-590R** receiver.
- Connecting a transmitter (for example, the Kramer **TP-590T** transmitter) to a **EXT3-XR-TR** that is set as a receiver.



Note that although the **TP-590T** is compatible with **EXT3-XR-TR**, the performance of this pair will be limited by the **TP-590T** capabilities.

- Connecting the **EXT3-XR-TR** (defined as a transmitter or receiver to a switcher or other system, for example, the **VS-84UT**).

This section describes the following actions:

- [Connecting EXT3-XR-TR](#) on page [8](#).
- **Error! Reference source not found.** on page **Error! Bookmark not defined..**
- [Connecting to EXT3-XR-TR via RS-232](#) on page [10](#).
- [Setting the DIP-Switches](#) on page [10](#).



Always switch off the power to each device before connecting it to your **EXT3-XR-TR**. After connecting your **EXT3-XR-TR**, connect its power and then switch on the power to each device.

Connecting EXT3-XR-TR and EXT3-TR

This section describes the connection procedure for **EXT3-XR-TR** and **EXT3-TR**. This procedure is described for **EXT3-XR-TR** and is the same for **EXT3-TR** except for the IG LAN connections.

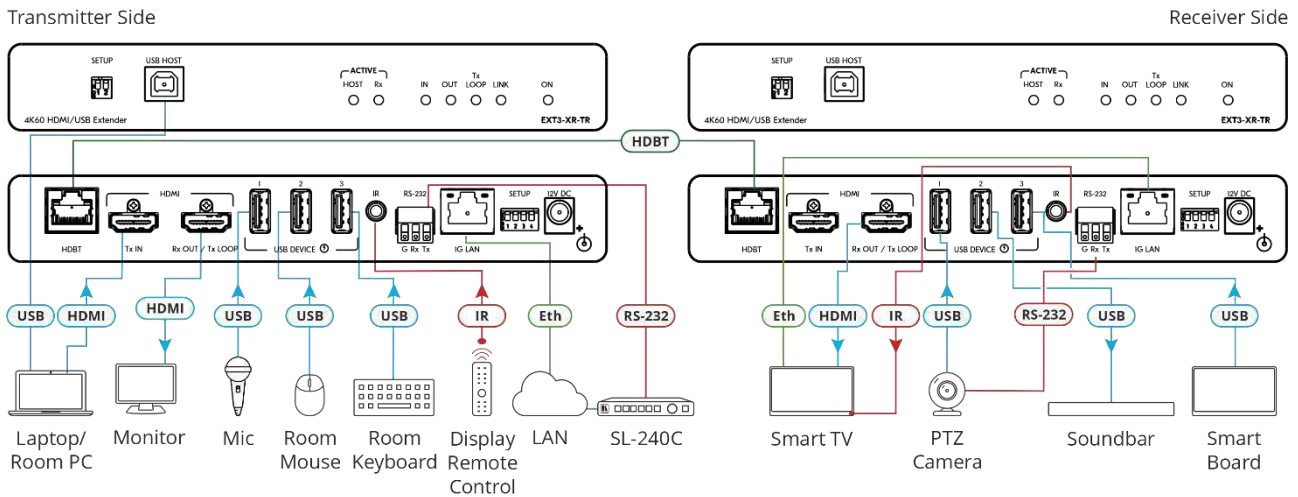


Figure 5: Connecting to EXT3-XR-TR

To connect **EXT3-XR-TR** as illustrated in the example in [Figure 5](#):

1. Use the DIP-switches (18) to define one device as a transmitter and the other as a receiver (see [Setting the DIP-Switches](#) on page 10).
2. Connect the HDBT port (10) on the **EXT3-XR-TR** transmitter side to the HDBT port (10) on the **EXT3-XR-TR** receiver side.
3. On the **EXT3-XR-TR** transmitter side, connect an HDMI source (for example, a laptop) to the HDMI Tx IN connector (11).
4. On the **EXT3-XR-TR** transmitter side, connect the HDMI Rx OUT/Tx LOOP connector (12) to an HDMI acceptor.
5. On the **EXT3-XR-TR** receiver side, connect the HDMI Rx OUT/Tx LOOP connector (12) to an HDMI acceptor (for example, a smart TV).
6. Connect the USB ports:

- Connect the HOST USB port to a laptop or room PC.



The HOST USB port can be connected to either the transmitter or the receiver side, as necessary & set Active host DIP-switch 2 accordingly.

- Connect the USB DEVICE ports on the transmitter side to USB devices (for example, the room microphone, mouse, and keyboard).
- Connect the USB DEVICE ports on the receiver side to USB devices (for example, a camera to USB 1, a soundbar to USB 2 and a smart board to USB 3). note that some USB devices, for example, the camera, require the USB 1 disconnection function.



USB devices can be connected to both the transmitter and receiver sides, as necessary.



For optimal operation follow USB best practice:

The recommended connected USB hubs capacity is ≤ 6 with a maximum of ≤ 9 .

USB endpoints capacity is ≤ 15 .

Use USB host PC tools, such as USB TreeView tool, to verify connected USB hubs (internal and external) and endpoints capacity.

7. To control the smart TV via IR, connect the following:

- On the **EXT3-XR-TR** transmitter side, connect an IR sensor cable to the IR 3.5mm mini jack (15).
- On the **EXT3-XR-TR** receiver side, connect the IR 3.5mm mini jack (15) to an emitter cable and attach the emitter side to the IR sensor of the smart TV.

Point the smart TV IR remote controller to the IR sensor to pass an IR command via HDBT to the smart TV.

8. To Control the smart TV via Ethernet, connect the following (**EXT3-XR-TR** only):

- On the **EXT3-XR-TR** transmitter side, connect a room controller (for example, the Kramer **SL-240C** with Kramer Control) to the IG LAN RJ-45 port (17).
- On the **EXT3-XR-TR** receiver side, connect the IG LAN RJ-45 port (17) to the smart TV.

Send IP commands via the room controller to the smart TV via LAN.

9. To control the PTZ camera, connect the following:

- On **EXT3-XR-TR** transmitter side connect a controller (for example, **SL-240C** room controller) to the RS-232 port (16) (and also to the IG LAN RJ-45 port (17)).
- On **EXT3-XR-TR** receiver side connect the RS-232 port (16) to a PTZ camera.

Send serial commands from **SL-240C** to the camera via RS-232.

10. Connect the power adapter to **EXT3-XR-TR** and to the mains electricity (not shown in [Figure 5](#)).

EXT3-XR-TR is connected.

Connecting to EXT3-XR-TR via RS-232

You can connect to **EXT3-XR-TR** via an RS-232 connection ⁽¹³⁾ using, for example, a PC.

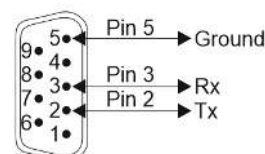
EXT3-XR-TR features an RS-232 3-pin terminal block connector to extend RS-232 signals via **EXT3-XR-TR** transmitter and receiver.

Connect the RS-232 terminal block on the rear panel of **EXT3-XR-TR** to a device, as follows:

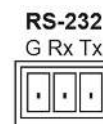
From the RS-232 9-pin D-sub serial port connect:

- Pin 2 to the TX pin on the **EXT3-XR-TR** RS-232 terminal block
- Pin 3 to the RX pin on the **EXT3-XR-TR** RS-232 terminal block
- Pin 5 to the G pin on the **EXT3-XR-TR** RS-232 terminal block

RS-232 Device



EXT3-XR-TR



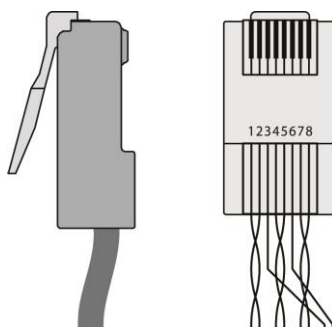
Wiring RJ-45 Connectors

This section defines the HDBT pinout, using a straight pin-to-pin cable with RJ-45 connectors.



It is recommended that the cable ground shielding be connected/soldered to the connector shield.

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



Setting the DIP-Switches

All changes in the SETUP rear panel DIP-Switches ⁽¹⁸⁾ apply immediately, on-the-fly (no need to power cycle the device), except for DIP-switches 1 and 2.



All DIP-switches are set to OFF (up) by default.

#	Feature	DIP-switch Settings	SETUP
1	Device Operation Mode	OFF (up) – Receiver mode is active. ON (down) – Transmitter mode is active.	
2	Active USB Host port	OFF (up) – Host is active. ON (down) – Host is inactive (active on remote paired device).	
3	Define IR Pass-through	OFF (up) – Pass-through the IR signal to or from the IR cable. ON (down) – Add IR modulation (38kHz) to the IR output signal (applies only when the IR port is connected to an IR emitter cable).	
4	Programing RS-232	Off (up) – Normal operation mode is enabled (FW programming RS-232 is inactive). On (down) – FW programming RS-232 is active.	

EXT3-XR-TR includes two front panel SETUP switches to set the device range mode. By default, the range is set to Off.

DIP 1	DIP 2	State Description
Off (up)	Off (up)	Standard range mode.
Off (up)	On (down)	Ultra-long range mode.
On (down)	Off (up)	For future use.
On (down)	On (down)	For future use.

Technical Specifications

EXT3-XR-TR Specifications

Inputs	Transmitter Side	
	1 HDMI	On a female HDMI connector
	Receiver Side	
	1 HDBT	On a female RJ-45 connector
Outputs	Transmitter Side	
	1 HDBT	On a female RJ-45 connector
	1 LOOP	On a female HDMI connector
	Receiver Side	
	1 HDMI	On a female HDMI connector
Ports	1 USB 2.0 Host	On a USB-B female connector
	3 USB 2.0 Device	On USB type-A female connectors
	1 1000BaseT Ethernet	On an RJ-45 female connector for LAN extension
	1 IR	On a 3.5mm mini jack for IR link extension
	1 RS-232	On a 3-pin terminal block for serial link extension
Extension Line	Reach	Up to 100m (330ft), when using Kramer HDBaseT cables
	Standards Compliance	HDBaseT 3.0
Video	Max Data Rate	18Gbps bandwidth (6Gbps per graphic channel)
	Max Resolution	4K@60Hz (4:4:4) 24bpp resolution
	Content Protection	HDCP 2.3
	HDMI Support	4K as specified in HDMI 2.0b
Extended USB	Data Rate	Up to 480Mbps
	Transmitted Data Bandwidth	Up to 300Mbps
	Standards Compliance	1.1 and 2.0 USB
Extended Ethernet	Max Data Rate	1Gbps
Extended RS-232	Baud Rate	300 to 115200
Power	Consumption	12V DC, 1950mA
	Source	12V DC, 5A
Environmental Conditions	Operating Temperature	0° to +40°C (32° to 104°F)
	Storage Temperature	-40° to +70°C (-40° to 158°F)
	Humidity	10% to 90%, RHL non-condensing
Regulatory Compliance	Safety	CE
	Environmental	RoHs, WEEE
Enclosure	Size	Mega Tool
	Material	Aluminum
	Cooling	Convection Ventilation
General	Net Dimensions (W, D, H)	19cm x 11.6cm x 2.7cm (7.5" x 4.6" x 1.1")
	Shipping Dimensions (W, D, H)	34.5cm x 16.5cm x 5.2cm (13.6" x 6.5" x 2")
	Net Weight	0.56kg (1.2lbs)
	Shipping Weight	1.15kg (2.5lbs) approx.
Accessories	Included	Power adapter and cord
Specifications are subject to change without notice at www.kramerav.com		

EXT3-TR Specifications

Inputs	Transmitter Side	
	1 HDMI	On a female HDMI connector
	Receiver Side	
	1 HDBT	On a female RJ-45 connector
Outputs	Transmitter Side	
	1 HDBT	On a female RJ-45 connector
	1 LOOP	On a female HDMI connector
	Receiver Side	
	1 HDMI	On a female HDMI connector
Ports	1 USB 2.0 Host	On a USB-B female connector
	3 USB 2.0 Device	On USB type-A female connectors
	1 IR	On a 3.5mm mini jack for IR link extension
	1 RS-232	On a 3-pin terminal block for serial link extension
Extension Line	Reach	Up to 40m (130ft) at 4K@60Hz (4:4:4), when using Kramer HDBaseT cables
		Up to 70m (230ft) at up to 4K@30Hz (4:4:4), when using Kramer HDBaseT cables
	Standards Compliance	HDBaseT 3.0
Video	Max Data Rate	18Gbps bandwidth (6Gbps per graphic channel)
	Max Resolution	4K@60Hz (4:4:4) 24bpp resolution
	Content Protection	HDCP 2.3
	HDMI Support	4K as specified in HDMI 2.0b
Extended USB	Data Rate	Up to 480Mbps
	Transmitted Data Bandwidth	Up to 300Mbps
	Standards Compliance	1.1 and 2.0 USB
Extended RS-232	Baud Rate	300 to 115200
Power	Consumption	12V DC, 600mA
	Source	12V DC, 2A
Environmental Conditions	Operating Temperature	0° to +40°C (32° to 104°F)
	Storage Temperature	-40° to +70°C (-40° to 158°F)
	Humidity	10% to 90%, RHL non-condensing
Regulatory Compliance	Safety	CE
	Environmental	RoHs, WEEE
Enclosure	Size	Mega Tool
	Material	Aluminum
	Cooling	Convection Ventilation
General	Net Dimensions (W, D, H)	19cm x 11.6cm x 2.7cm (7.5" x 4.6" x 1.1")
	Shipping Dimensions (W, D, H)	34.5cm x 16.5cm x 5.2cm (13.6" x 6.5" x 2")
	Net Weight	0.55kg (1.2lbs)
	Shipping Weight	1.12kg (2.5lbs) approx.
Accessories	Included	Power adapter and cord
Specifications are subject to change without notice at www.kramerav.com		

The warranty obligations of Kramer Electronics Inc. ("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 excess 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 unauthorized tampering with this product, any repairs 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 this Coverage Lasts

The standard limited warranty for Kramer products is seven (7) years from the date of original purchase, with the following exceptions:

1. All Kramer VIA hardware products are covered by a standard three (3) year warranty for the VIA hardware and a standard three (3) year warranty for firmware and software updates; all Kramer VIA accessories, adapters, tags, and dongles are covered by a standard one (1) year warranty.
2. Kramer fiber optic cables, adapter-size fiber optic extenders, pluggable optical modules, active cables, cable retractors, ring mounted adapters, portable power chargers, Kramer speakers, and Kramer touch panels are covered by a standard one (1) year warranty. Kramer 7-inch touch panels purchased on or after April 1st, 2020 are covered by a standard two (2) year warranty.
3. All Kramer Calibre products, all Kramer Minicom digital signage products, all HighSecLabs products, all streaming, and all wireless products are covered by a standard three (3) year warranty.
4. All Sierra Video MultiViewers are covered by a standard five (5) year warranty.
5. Sierra switchers & control panels are covered by a standard seven (7) year warranty (excluding power supplies and fans that are covered for three (3) years).
6. K-Touch software is covered by a standard one (1) year warranty for software updates.
7. All Kramer passive cables are covered by a lifetime warranty.

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. If a direct or similar replacement product is supplied, the original product's end warranty date remains unchanged and is transferred to the replacement 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 Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. 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 any 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 either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, visit our web site at www.kramerav.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required (RMA number).

You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

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Other Conditions

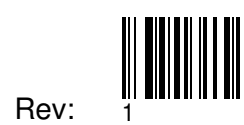
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HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE



SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing

For the latest information on our products and a list of Kramer distributors, visit our website where updates to this user manual may be found.

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