kramer EXT3-21-XR-TR USB HDMI Switcher Extender User Guide

Contents

kramer EXT3-21-XR-TR USB HDMI Switcher Extender

Product Specifications

- Model: EXT3-21-XR-TR
- Resolution: 4K60
- Connectivity: USB, HDMI, HDBT, IR, RJ-45
- LED Indicators: HDMI and HDBT LEDs, Active Host LED, Active Rx LED, PoE LED, NET LED, STATUS LED

Product Usage Instructions

Step 1: Unboxing
Check the contents of the box:

- EXT3-21-XR-TR 4K60 USB/HDMI Switcher Extender
- 1 Power adapter and cord
- 1 Bracket set
- 4 Rubber feet
- 1 Quick start guide

Step 2: Device Configuration
Configure the device as a transmitter (Tx) or receiver (Rx) using the front panel button or embedded webpages settings.

Features

1. IR 3.5mm Mini Jack Connector – Connect to IR emitter or sensor for IR-controlled devices.
2. USB-A 3.1 – Connect to USB local peripheral devices.
3. HDMI IN Connector – Connect to an HDMI source.
4. USB-B 3.1 HOST Connector – Connect to a USB host for communication with USB peripheral devices.
5. HDMI and HDBT LEDs – Indicate source selection status.
6. Rx INPUT SELECT Button – Press to select an input; press and hold to switch between RxTx mode.
7. DISPLAY ON Button – Toggle display on/off.
8. ACTIVE HOST LED – Indicates active local USB host.
9. ACTIVE Rx LED – Indicates active receiver mode.
10. PoE LED – Indicates PoE provision to connected devices.
11. NET LED – Indicates networking status.

Step 3: **Connections**

Connectors

- IR 3.5mm Mini Jack Connector
- USB-A 3.1 Connectors (2 & 3)
- HDMI IN Connector
- USB-B 3.1 HOST Connector
- HDBT PoE RJ-45 Connector

- HDMI OUT Connector

Frequently Asked Questions (FAQ)

- **Q: How do I switch between transmitter and receiver modes?**
  A: Press and hold the Rx INPUT SELECT Button for at least 10 seconds to switch between modes, initiating a Factory Reset.
- **Q: What do the different LED colors indicate?**
  A: The LED colors signify various statuses such as source selection, device power, active host, networking status, and more. Refer to the manual for detailed explanations of each LED color.
- **Q: What is the purpose of the HDBT PoE RJ-45 Connector?**
  A: The HDBT PoE RJ-45 Connector is used to connect to a paired receiver/transmitter device for PoE transmission when the device is powered by a PSU.

EXT3-21-XR-TR Quick Start Guide
This guide helps you install and use your EXT3-21-XR-TR for the first time.
Go to www.kramerav.com/downloads/EXT3-21-XR-TR to download the latest user manual and check if firmware upgrades are available.

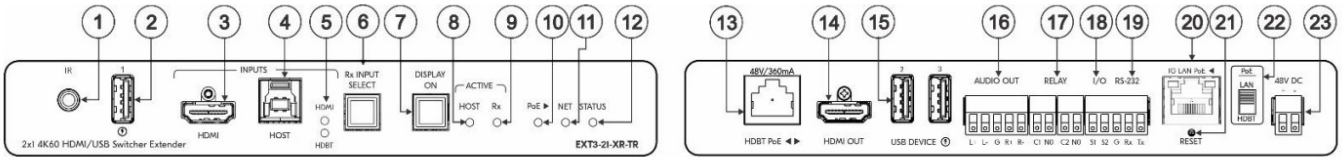
Scan for full manual

Step 1: Check what's in the box

- EXT3-21-XR-TR 4K60 USB/HDMI Switcher Extender
- 1 Power adapter and cord
- 1 Bracket set
- 4 Rubber feet
- 1 Quick start guide

Step 2: Get to know your EXT3-21-XR-TR

Configuring the device as transmitter (Tx) or receiver (Rx, default) is done via the front panel button (or the embedded webpages settings).



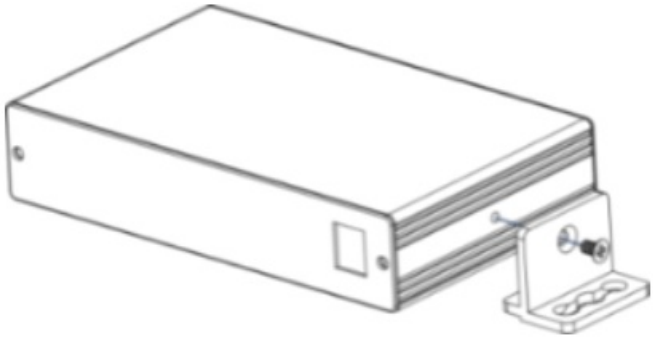
<table>
<tr><th>#</th><th>Feature</th><th colspan="2">Function</th></tr>
<tr><td>1</td><td>IR 3.5mm Mini Jack Connector</td><td colspan="2">Connect to an external IR emitter to control a local IR-controlled device from the remote extender (for example, EXT3-21-XR-TR).
Connect to an IR sensor to control a remote IR-controlled device connected to the remote extender side (for example, EXT3-21-XR-TR).</td></tr>
<tr><td>2</td><td>USB-A 3.1</td><td colspan="2">Connect to a USB local peripheral device (for example, a USB camera, a soundbar, microphone and so on).</td></tr>
<tr><td>3</td><td>HDMI IN Connector</td><td colspan="2">Connect to an HDMI source.</td></tr>
<tr><td>4</td><td>USB-B 3.1 HOST Connector</td><td colspan="2">Connect to a 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.</td></tr>
<tr><td>5</td><td>HDMI and HDBT LEDs</td><td colspan="2">Each input LED, lights green when a source is selected and active, blue when a source is selected but not active, and Off when a source is not selected.
Note: On transmitter mode, HDBT LED is always Off.</td></tr>
<tr><td>6</td><td>Rx INPUT SELECT Button</td><td colspan="2">Press to select an input.
Press and hold for a minimum of 10 seconds to switch between Rx↔Tx mode.
ⓘ Switching between modes initiates Factory Reset.</td></tr>
<tr><td>7</td><td>DISPLAY ON Button</td><td colspan="2">Press to toggle turning the display on and off.
Button LED lights ON after sending a DISPLAY ON message. Button LED lights OFF after sending a DISPLAY OFF message.</td></tr>
<tr><td>8</td><td>ACTIVE HOST LED</td><td colspan="2">Lights orange when local USB host is active.</td></tr>
<tr><td>9</td><td>ACTIVE Rx LED</td><td colspan="2">Lights blue on active receiver mode.</td></tr>
<tr><td>10</td><td>PoE ► LED</td><td colspan="2">Lights green when the device provides PoE to a connected device.</td></tr>
<tr><td rowspan="5">11</td><td rowspan="5">NET LED</td><td colspan="2">Indicates networking status:</td></tr>
<tr><td>LED Color</td><td>Indicates</td></tr>
<tr><td>Dark</td><td>No IP address acquired.</td></tr>
<tr><td>Lights green</td><td>A valid IP address has been acquired.</td></tr>
<tr><td>Flashes green for 60 s</td><td>A means to identify the device in a system, using command #IDV.</td></tr>
<tr><td>Flashes red/green</td><td>IP fallback address has been acquired.</td></tr>
</table>

<table>
<tr><th>#</th><th>Feature</th><th colspan="2">Function</th></tr>
<tr><td rowspan="5">12</td><td rowspan="5">STATUS</td><td colspan="2">Indicates device status:</td></tr>
<tr><td>LED Color</td><td>Indicates</td></tr>
<tr><td>Off (Dark)</td><td>Device is powered and no active source connected.</td></tr>
<tr><td>Blue</td><td>Device is powered, and an active source is connected.</td></tr>
<tr><td>Green</td><td>Device is powered, an active source and accept or are connected.</td></tr>
<tr><td>13</td><td>HDBT PoE RJ-45 Connector</td><td colspan="2">Connect to the HDBT RJ-45 connector on a paired receiver/transmitter device (for example, a second EXT3-21-XR-TR device) that receives or provides PoE.
HDBT provides PoE only when the device is PSU-powered.</td></tr>
<tr><td rowspan="2">14</td><td rowspan="2">HDMI OUT Connector</td><td colspan="2">Transmitter Mode: Connect to a local HDMI acceptor (for example, a preview monitor).</td></tr>
<tr><td colspan="2">Receiver Mode: Connect to an HDMI acceptor.</td></tr>
<tr><td>15</td><td>USB-A 3.1 (2 & 3) Connectors</td><td colspan="2">Connect to the USB local peripheral devices (for example, a USB camera, a soundbar, microphone and so on).</td></tr>
<tr><td>16</td><td>AUDIO OUT 5-pin Terminal Block Connector</td><td colspan="2">Connect to a balanced stereo analog audio acceptor.</td></tr>
<tr><td>17</td><td>RELAY (1& 2) on a 4-pin Terminal Block Connector</td><td colspan="2">Connect to relay-controlled devices (for example, a projector screen).</td></tr>
<tr><td>18</td><td>I/O (1 & 2) on a 3-pin Terminal Block Connector (GND is common for I/O and RS-232).</td><td colspan="2">Connect the general input and output ports to connect to I/O-controlled devices (for example, a sensor).</td></tr>
<tr><td>19</td><td>RS-232 3-pin Terminal Block Connector</td><td colspan="2">Connect to a serial-controlled device (for example, a projector).</td></tr>
<tr><td>20</td><td>1G LAN PoE RJ-45 Connector</td><td colspan="2">Connect to a PC via a LAN. Receives Power (when PoE powered).</td></tr>
<tr><td>21</td><td>RESET Recessed Button</td><td colspan="2">For restoring factory default settings, press the RESET button and connect power to device (keep pressing longer than 6sec after power connection)
Set to Receiver mode by default.</td></tr>
<tr><td>22</td><td>PoE LAN/HDBT Selection Switch</td><td colspan="2">Select the PoE providing source, either the LAN (default) or the HDBT port.</td></tr>
<tr><td>23</td><td>48V DC Power Connector</td><td colspan="2">Connect to the power supply (when not PoE powered).</td></tr>
</table>

Step 3: Mount EXT3-21-XR-TR

Install EXT3-21-XR-TR using one of the following methods:

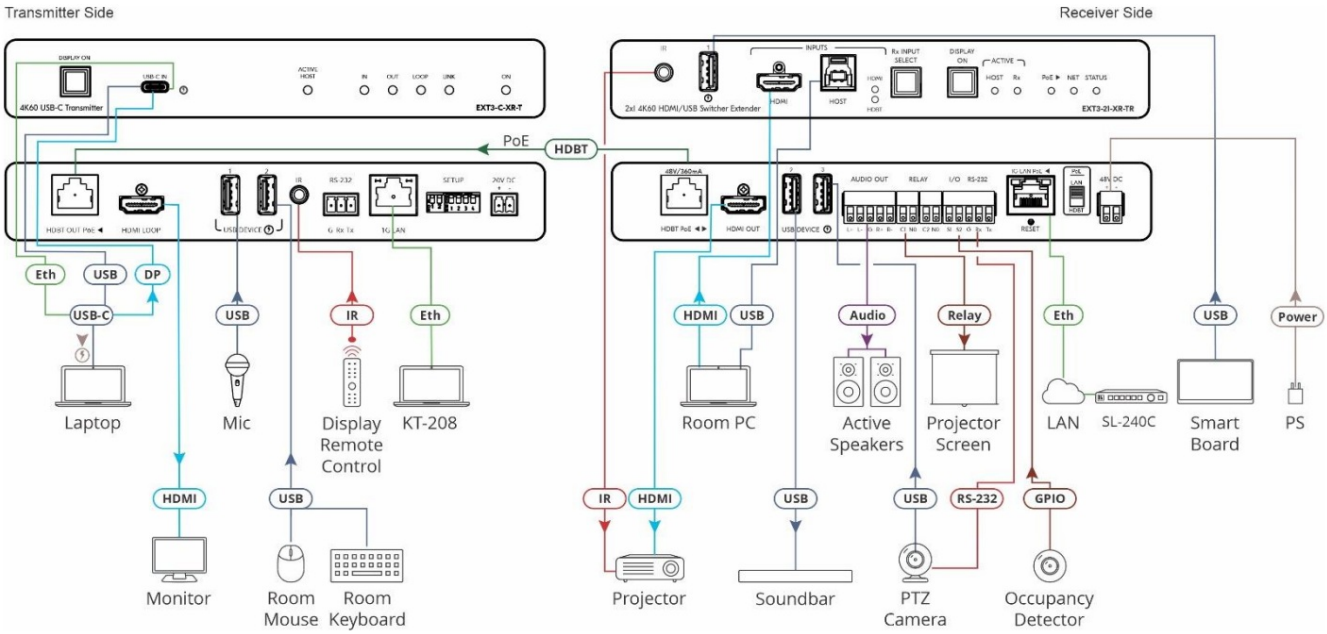
- Attach the rubber feet and place the unit on a flat surface.
- Fasten a bracket (included) on each side of the unit and attach it to a flat surface (see www.kramerav.com/downloads/EXT3-21-XR-TR).
- Mount the unit in a rack using the recommended rack adapter (see www.kramerav.com/product/EXT3-21-XR-TR).



- 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.

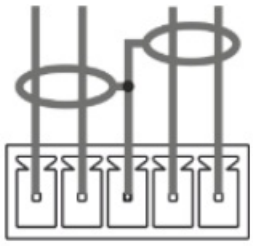
Step 4: Connect inputs and outputs

Always switch OFF the power on before connecting it to your EXT3-21-XR-TR.
The diagram displays the EXT3-21-XR-TR on the Receiver side. It is also relevant for the Transmitter side.

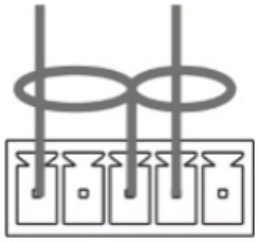


Connecting the audio output

- To a balanced stereo audio acceptor:
- To an unbalanced stereo audio acceptor:



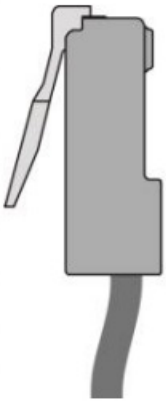
L+ L- G R+ R-

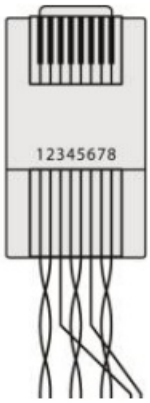


L+ L- G R+ R-

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

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





For HDBT cables, it is recommended that the cable ground shielding be connected/soldered to the connector shield.

To achieve specified extension distances, use the recommended Kramer cables available at www.kramerav.com/product/EXT3-21-XR-TR. Using third-party cables may cause damage!

Step 5: Connect power

Connect the power cord to EXT3-21-XR-TR and plug it into the mains electricity. Alternatively, receive power

either from the HDBT port or the LAN port.

Safety Instructions (See **www.kramerav.com** for updated safety information)

Caution:

- For products with relay terminals and GPI\O 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.
- Disconnect the power and unplug the unit from the wall before installing.

Step 6: Operate EXT3-21-XR-TR

Operate Product via:

- Front panel buttons
- RS-232 serial commands transmitted by a PC or a serial controller.
- Remotely, via LAN using device embedded web pages.

RS-232 Control / Protocol 3000			
Baud Rate:	115,200	Parity:	None
Data Bits:	8	Command Format:	ASCII
Stop Bits:	1		
Example: (flash LEDs on the front panel for 60 seconds): #IDV<CR>			
Default IP Parameters (by default, DHCP is ON)			
IP Address			
Fallback IP Address:	192.168.1.39	UDP Port #:	50000
Fallback Subnet Mask:	255.255.255.0	TCP Port #:	5000
Fallback Gateway:	0.0.0.0.		
Default User name:	admin	Default Password:	Admin

Documents / Resources

	kramer EXT3-21-XR-TR USB HDMI Switcher Extender [pdf] User Guide EXT3-21-XR-TR, EXT3-21-XR-TR USB HDMI Switcher Extender, USB HDMI Switcher Extender, HDMI Switcher Extender, Switcher Extender, Extender

References

- Kramer | Audio-Visual Solutions and Experiences
- Kramer | Audio-Visual Solutions and Experiences
- User Manual