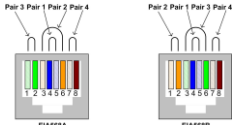


# Specifications

Specifications									
<b>Environment</b>	HDMI, VGA and USB connectivity.								
<b>Devices</b>	Blu-Ray, projectors, monitors, TV, PC, laptops, servers, and Smart White Boards.								
<b>Bandwidth</b>	300MHz								
<b>Signals</b>	HDMI 2.0b (4K/30 4:4:4 & 4K/60 4:2:0), VGA (1920x1200), USB 2.0 and HDCP 2.2.								
<b>Connectors</b>	One (1) HDMI receptacle. One (1) Female DB15 connector for VGA. One (1) USB Type B connector. One (1) RJ45S for Ethernet connectivity. One (1) 3.5mm jack for Audio-In. One (1) 2.1mm jack for power.  <i>Note: Cables not included.</i>								
<b>Maximum Distance</b>	Cat5e/6: 330ft (100m)  <i>Note: When installed in an electrically noisy environment, an STP cable must be used. Also, cross-connection reduces the effective distance depending on the grade of twisted cable used.</i>								
<b>Latency</b>	Typical one (1) frame (16ms)								
<b>Compression</b>	JPG2000								
<b>Bandwidth</b>	Up to 500Mbps								
<b>Network Requirement</b>	1 Gig Ethernet with IGMP, Jumbo Frames and PoE								
<b>RJ45 Pin Configuration</b>	<p><b>RJ45 Link</b></p> <table border="0"> <tr> <td>Pin 1 (R)</td> <td>Pin 2 (T)</td> </tr> <tr> <td>Pin 3 (R)</td> <td>Pin 6 (T)</td> </tr> <tr> <td>Pin 4 (R)</td> <td>Pin 5 (T)</td> </tr> <tr> <td>Pin 7 (R)</td> <td>Pin 8 (T)</td> </tr> </table> <p><i>Reverse Polarity Sensitive. Use EIA/TIA 568A or 586B straight-through wiring.</i></p> 	Pin 1 (R)	Pin 2 (T)	Pin 3 (R)	Pin 6 (T)	Pin 4 (R)	Pin 5 (T)	Pin 7 (R)	Pin 8 (T)
Pin 1 (R)	Pin 2 (T)								
Pin 3 (R)	Pin 6 (T)								
Pin 4 (R)	Pin 5 (T)								
Pin 7 (R)	Pin 8 (T)								
<b>Power Source</b>	This device supports PoE (PD), an external power supply is not included. It is intended to be powered via a PoE (PSE) Ethernet Switch. If required, an optional power supply (500993) may be purchased separately.								
<b>PoE</b>	IEEE 802.3af								
<b>Power Consumption</b>	3W								
<b>Temperature</b>	Operating: 0° to 40°C                      Storage: -20° to 85°C Humidity: Up to 95% non-condensing								
<b>Dimensions</b>	5.03" x 4.53" x 1.66 (128mm x 115mm x 42mm)								
<b>Weight</b>	1.35 lb (0.61 kg)								
<b>Compliance</b>	Regulatory: FCC, CE, RoHS                      Flammability: 94V0								
<b>Warranty</b>	3 years								
<b>Order Information</b>	500777-TX                      HDMI/VGA/USB over IP PoE Wall Plate Transmitter, UHD-4K 500777-TX-WH                HDMI/VGA/USB over IP PoE Wall Plate Transmitter, UHD-4K (White)								
<b>Compatible Receivers</b>	500758-RX, and 500759-RX								
<b>Accessories</b> (This item is sold separately)	500993 Universal Locking Power Supply 5VDC/2.6A US/UK/EU Blade								



## HDMI/VGA/USB over IP PoE Wall Plate Transmitter 500777-TX Quick Installation Guide

### Overview

The HDMI/VGA over IP PoE Wall Plate Transmitter allows HDMI, VGA and USB equipment to be connected up to 330ft (100m), with video supported at up to 4K (3840x2160) resolution @ 30Hz via one (1) Cat5e/6 unshielded twisted pair cable in a point-to-point configuration. The USB port may be used for extending various USB devices including Smart Boards. Point-to-multipoint and multipoint-to-multipoint configurations are also possible by connecting several Transmitters and Receivers to the same local Ethernet IP network via an Ethernet Switch. The HDMI/VGA/USB over IP PoE Wall Plate Transmitter also supports PoE (PD) if used with a PoE (PSE) Ethernet Switch. Additional Transmitters may be purchased separately depending on the intended application and number of units required.

For the point-to-multipoint and multipoint-to-multipoint configuration the Ethernet Switch must have Gigabit ports, Jumbo Frame capability, DHCP Server capability, PoE, and additionally support the IGMP communication protocol for the multipoint-to-multipoint case. MuxLab recommends using the Cisco SG300 or SG500 Series Managed Switches.

The MuxLab ProDigital Network Controller (500811) is available to simplify the configuration and utilization of the 500777-TX and other MuxLab IP based products via an Ethernet web interface. The MuxLab Control Android and iOS Application may also be used for connectivity management, in combination with the 500811 Network Controller.

### Applications

Applications include commercial and residential AV systems, classroom systems, digital signage, boardroom systems, conference rooms, and collaborative PC systems.

### Installation

1. Identify the connectors on the Transmitter as indicated on the product labels, see the above product view for further details. Note that the Ethernet network connector is on the rear.

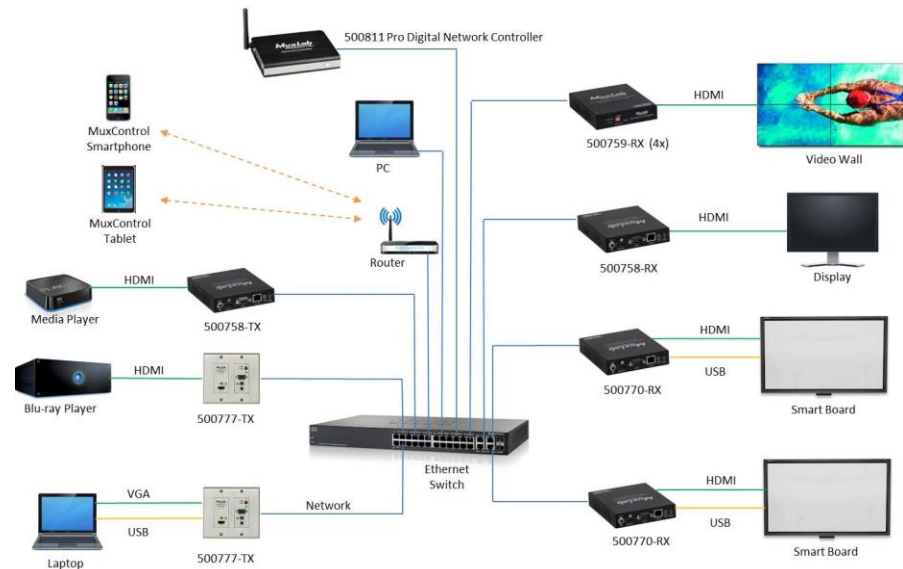


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2. Verify that the distance between the HDMI/VGA/USB over IP PoE Wall Plate Transmitter and other MuxLab Receivers is within the specifications (see Specifications table for more details).
3. To install the Transmitter:
  - 3a. For an HDMI source, connect the Transmitter to the HDMI video source with an HDMI compliant cable. For a VGA source, connect the Transmitter to the VGA video source and connect the audio to the Audio-In port with compliant video and audio cables.
  - 3b. If the application is point-to-point, then connect one (1) length of Cat 5e/6 (or higher) grade UTP cable to the RJ45 LINK connector on the Transmitter. If transmitting over the network, use an Ethernet Switch between Transmitter and Receiver.
4. To install a Muxlab Receiver (such as the Muxlab 500758/759/770/771 Receiver):
  - 4a. Connect the Receiver to the HDMI display equipment with an HDMI compliant cable.
  - 4b. If the application is point-to-point, then connect one (1) Cat 5e/6 cable (or higher) coming from the Transmitter, to the RJ45 LINK connector on the Receiver. If transmitting over the network, use an Ethernet Switch between Transmitter and Receiver.
5. Following similar instructions as above, connect the USB port of the Host device to the Transmitter, the USB port of the end device to the Receiver (such as the 500770-RX).
6. If the configuration is a point-to-multipoint or multipoint-to-multipoint:
  - 6a. You will need to use an Ethernet Switch with Gigabit ports and DHCP Server support. In addition Jumbo Frame support is required and IGMP Protocol support is required for the multipoint-to-multipoint case. **Verify that the Ethernet Switch is configured correctly and that the DHCP Server is enabled, that the IGMP Protocol is enabled for multipoint-to-multipoint applications, and that Jumbo Frame is enabled.** See the operating manual for more information about configuring the Ethernet Switch.
  - 6b. Connect all Transmitters and Receivers to the Ethernet Switch.
  - 6c. Use the DIP Switches to select a unique Device ID for each Transmitter present on the network and configure each Receiver Device ID to the corresponding selected Transmitter.
 

**Note:** This step is not necessary if the MuxLab Network Controller (500811) is used.
7. Powering the Transmitter or Receiver via an external power supply is only necessary where PoE (PSE) is unavailable. If PoE is unavailable, connect a 5 VDC power supply (500993 - sold separately) to each Receiver and to an AC power outlet. Next connect each Transmitter in the same manner. If power is present, the green power LED on each Transmitter and Receiver will illuminate.
 

**Note: Power 'ON' the HDMI/VGA/USB over IP PoE Wall Plate Transmitter and any other Transmitters and Receivers only after all connections have been made.**
8. Power 'ON' the HDMI, VGA and USB equipment and verify the image quality and data transfer.
9. Press and hold the push button for 5 seconds to toggle between Normal and Auto Source Detect mode. In Normal mode, press and release the push button on the front panel to switch between the HDMI and VGA inputs. In Auto Source Detect mode, the HDMI/VGA/USB over IP PoE Wall Plate Transmitter will detect and select the first input signal inserted, and will remain selected until the connector is removed.
10. The following diagram illustrates a typical LAN configuration with other compatible MuxLab AV over IP devices. The 500777-TX is compatible with the MuxLab 500758/759/770/771 Receivers.



## Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in regard to the installation of the HDMI/VGA/USB over IP PoE Wall Plate Transmitter:

Symptom	Transmitter LEDs		Receiver LEDs		Probable Cause	Possible Solutions
	Power	Link	Power	Link		
No Image or USB signal	OFF	OFF	OFF	OFF	No power	<ul style="list-style-type: none"> <li>• Check power connections</li> <li>• Check PoE Ethernet Switch Setup</li> </ul>
No Image or USB signal	BLINK	OFF	BLINK	ON	Booting	<ul style="list-style-type: none"> <li>• Wait until booting process is finished</li> </ul>
No Image or USB signal	ON	OFF	ON	OFF	No Ethernet Link	<ul style="list-style-type: none"> <li>• Check Ethernet Switch Status</li> <li>• Check UTP Cables</li> </ul>
Info Screen	ON	OFF	ON	BLINK	UTP Cable	<ul style="list-style-type: none"> <li>• Check the Transmitter UTP cable</li> </ul>
Info Screen	ON	ON	ON	OFF	UTP Cable	<ul style="list-style-type: none"> <li>• Check the Receiver UTP cable.</li> </ul>
Info Screen	ON	BLINK	ON	BLINK	No Data Connection	<ul style="list-style-type: none"> <li>• Check if DIP Switch settings match</li> </ul>
Info Screen	ON	ON	ON	BLINK	Wrong setting on Receiver	<ul style="list-style-type: none"> <li>• Check DIP Switch address of the Receiver</li> </ul>
Choppy Video	ON	ON	ON	ON	Configuration	<ul style="list-style-type: none"> <li>• Check cable length</li> <li>• Check the HDMI or VGA Cable Quality</li> <li>• Check if Jumbo Frame and IGMP are enabled on the Ethernet Switch</li> </ul>
Image flickers when powering up nearby equipment	ON	ON	ON	ON	Interference	<ul style="list-style-type: none"> <li>• Use STP cables</li> </ul>

If you still cannot diagnose the problem, please call MuxLab Customer Technical Support at 877-689-5228 (toll-free in North America) or (+1) 514-905-0588 (International).