## Specifications

<table>
<thead>
<tr>
<th>Environment</th>
<th>HDMI 2.0 (RX) and HDMI 1.3a (TX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devices</td>
<td>Blu-Ray, Set Top Boxes, Media Players/Streamers, projectors, monitors, TVs, PCs, supporting HDMI.</td>
</tr>
<tr>
<td>Signal Protocol/Standard</td>
<td>HDMI 2.0 and HDCP 2.2 (RX) / HDMI 1.3a and HDCP 1.4 (TX)</td>
</tr>
<tr>
<td>Video Bandwidth</td>
<td>148 MHz (TX), and 594MHz (RX)</td>
</tr>
<tr>
<td>Network Bandwidth</td>
<td>32Mbps (max)</td>
</tr>
<tr>
<td>Latency</td>
<td>&lt;200ms (in low latency mode with H.265)</td>
</tr>
</tbody>
</table>

### Protocols
- TX: Supports Multicast, RTSP, RTMP (H.264), HLS, FLV (H.264) & TS
- RX: Supports Multicast, RTSP, RTMP, HLS, FLV & TS

### Accessories
- 500762 3 years
- 500917 5VDC/2.6A US/UK/EU Blade
- 500993 16-Port Rackmount Transceiver Chassis
- 500990 IR Emitter, and 500994 IR Sensor
- 500993 Univ. Locking Power Supply SVDC/2.6A US/UK/EU Blade

### Power Source
- One (1) Cat 5e/6 or better twisted pair cables required for Ethernet connection (on TX and RX).
- One (1) RJ45 cable for connecting to source (on TX) or sink (on RX). Devices.
- One (1) RJ45 connector for AV (input on TX & output on RX).
- One (1) RJ45 connector for Ethernet connection (on TX & RX).
- One (1) USB 3.0 connector for future capabilities (on RX).
- One (1) TosLink optical connector for digital audio extraction (on RX).
- One (1) 3.5mm connector for audio embedding/extraction (input on TX & output on RX).
- One (1) 3.5mm connector for direction IR (on TX & RX, direction controlled via software).
- One (1) 2.1mm locking power connector (on TX and RX).

### Cables
- Note: Cables not included.
- One (1) Cat 5e/6 or better twisted pair cables required for Ethernet (on TX and RX).
- One (1) HDMI cable for connecting to source (on TX) or sink (on RX) devices.
- Optional:
  - One (1) Cat 5e/6 or better twisted pair cables required for Ethernet (on TX and RX).
  - One (1) RJ45 cable for connecting to source (on TX) or sink (on RX). Devices.
  - One (1) RJ45 connector for AV (input on TX & output on RX).
  - One (1) RJ45 connector for Ethernet connection (on TX & RX).
  - One (1) optical cable for digital audio extraction (on RX).

### Maximum Distance
- Cat5e/6: 330ft (100m) from Ethernet Switch.
- The unit can extend over the Internet for unlimited distance.

### RJ45 Pin Configuration
- **Pin 1 (R)**
- **Pin 2 (T)**
- **Pin 3 (R)**
- **Pin 4 (T)**
- **Pin 5 (R)**
- **Pin 6 (T)**

### Power Consumption
- 4.5W

### Temperature
- Operating: 0° to 40°C
- Storage: -20° to 85°C

### Humidity
- Up to 95% non-condensing

### Dimensions
- 4.4” x 3.6” x 1.0” (111mm x 92mm x 25mm)

### Weight
- 0.98lbs (0.4kg)

### Compliance
- Regulatory: FCC, CE, RoHS
- Flammability: V40

### Warranty
- 3 years

### Order Information
- 500762-TX HDMI over IP H.264/H.265 PoE Transmitter
- 500763-RX HDMI over IP H.264/H.265 PoE Receiver, 4K/60

### Applications
- Applications include Audio/Video streaming over LAN/WiFi/Internet, commercial and residential AV systems, classroom projector systems, digital signage, boardroom systems, and medical information systems.

## Quick Installation Guide

### Overview
The HDMI over IP H.264/H.265 PoE Transmitter (500762-TX), and the HDMI over IP H.264/H.265 PoE Receiver, 4K/60 (500762-RX) combination allows HDMI source and display equipment to be extended locally up to 330ft. (100m) at up to 4K @ 60Hz resolution via one (1) Cat5e/6 unshielded twisted pair cable in a point-to-point configuration. Point-to-multipoint and multipoint-to-multipoint is possible by connecting several Transmitters and Receivers to the same local Ethernet network, and the device support Video Wall and Multiview capabilities. The exceptionally low bandwidth requirements of this device combination allows for streaming audio/video content over a local network, over WiFi, and over the Internet for distributed installations spread-out throughout the globe. The transmitter accepts a 1080p @ 60Hz video and streams the content to the Receiver, where the signal is up-scaled up to 4K @ 60Hz to be displayed on a 4K monitor. The Receiver also accepts H.264/H.265 video streams from other transmitting devices of up to 4K @ 60Hz (4:4:4).

### Installations
- The Transmitter (500762-TX) and Receiver (500762-RX) are sold separately, and support PoE (PD) if used with a PoE (PSE) Ethernet Switch. The 500762-TX comes with one (1) Transmitter, while the 500762-RX comes with one (1) Receiver. IR Emitter and IR Sensor, if required, may be purchased separately for IR based remote control applications.

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

The MuxLab ProDigital Network Controller (500811) and MuxLab Control Smartphone & Tablet App is available to simplify the configuration and utilization of the 500762 and other MuxLab Av over IP products.

### Installation
1. Identify the connectors on the Transmitter and Receiver as indicated on the product labels, see
Verify that the distance between the HDMI Transmitter and Receiver is within MuxLab specifications (see Specifications table for further details).

To install the Transmitter:

1. Connect the Transmitter to the HDMI video source with an HDMI compliant cable.
2. If the application is point-to-point, then connect one (1) length of Cat5e/6 (or higher) grade UTP cable to the RJ45 LINK connector on the Transmitter. If transmitting over the network, use an Ethernet Switch between the TX & RX unit.

To install the Receiver:

1. Connect the Receiver to the HDMI display equipment with an HDMI compliant cable.
2. If the application is point-to-point, then connect one (1) Cat5e/6 cable coming from the Transmitter, to the RJ45 LINK connector on the Receiver. If transmitting over the network, use an Ethernet Switch between the TX & RX unit.

If the configuration is a point-to-multipoint or multipoint-to-multipoint:

1. You will need to use an Ethernet Switch with Gigabit ports and DHCP Server support. In addition IGMP Protocol support is required for the multipoint-to-multipoint case. Verify that the Ethernet Switch is configured correctly, that the DHCP Server is enabled, and that the IGMP Protocol is enabled for multipoint-to-multipoint applications. See the operating manual for more information about configuring the Ethernet Switch.
2. Connect all Transmitters and Receivers to the Ethernet Switch.
3. 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 ProDigital Network Controller (500811) is used.

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 Transmitter and Receiver only after all connections have been made.

Power ‘ON’ the HDMI equipment and verify the image quality.

This product supports IR control. IR Emitter and Sensor are not included, and are sold separately. If infrared remote control is needed to control the Source equipment from the display, connect the IR Sensor (PN: 500994) to the 3.5mm Mono Jack of the Transmitter. The IR Emitter’s signal is transmitted from the source’s IR Sensor. The IR Emitter’s signal is transmitted from the side of the enclosure.

This product supports RS232 bidirectional communication. On the Transmitter, the RS232 port is configured as a DCE, and on the Receiver as a DTE. Please connect your RS232 cable accordingly. The default settings are 115.2K, N, 8, 1.

Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in regard to the installation of the HDMI over IP H.264/H.265 PoE Transmitter and Receiver.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Transmitter LEDs</th>
<th>Receiver LEDs</th>
<th>Probable Cause</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Image</td>
<td>OFF</td>
<td>OFF</td>
<td>No power</td>
<td>Check power connections</td>
</tr>
<tr>
<td></td>
<td>BLINK</td>
<td>OFF</td>
<td>Waiting until booting process is finished</td>
<td>Check PoE Ethernet Switch Setup</td>
</tr>
<tr>
<td>No Image</td>
<td>ON</td>
<td>OFF</td>
<td>No Ethernet Link</td>
<td>Check Ethernet Switch Status</td>
</tr>
<tr>
<td></td>
<td>BLINK</td>
<td>ON</td>
<td>Booting</td>
<td>Check UTP Cables</td>
</tr>
<tr>
<td>Info Screen</td>
<td>NO OFF</td>
<td>ON</td>
<td>UTP Cable</td>
<td>Check the Transmitter UTP cable</td>
</tr>
<tr>
<td>Info Screen</td>
<td>ON</td>
<td>ON</td>
<td>No Data Connection</td>
<td>Check if DIP Switch settings match</td>
</tr>
<tr>
<td>Info Screen</td>
<td>ON</td>
<td>ON</td>
<td>Wrong setting on Receiver</td>
<td>Check DIP Switch address of the Receiver</td>
</tr>
<tr>
<td>Choppy Video</td>
<td>ON</td>
<td>ON</td>
<td>Configuration</td>
<td>Check cable length</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>ON</td>
<td>Interference from nearby equipment</td>
<td>Check the HDMI Cable Quality</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>ON</td>
<td>Interference from sunlight, Fluorescent, Neon or Halogen lights</td>
<td>Check if IGMP is enabled on the Ethernet Switch</td>
</tr>
<tr>
<td>IR not functioning *</td>
<td>ON</td>
<td>ON</td>
<td>Interference from RF radiation from the TV</td>
<td>Place the IR equipment away for the interfering light</td>
</tr>
<tr>
<td>IR not functioning *</td>
<td>ON</td>
<td>ON</td>
<td>Interference from RF radiation from the TV</td>
<td>Place the IR equipment away for the interfering light</td>
</tr>
</tbody>
</table>

* IR Emitter and IR Sensor sold separately.

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).