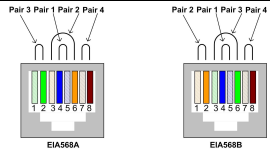


# Specifications

<b>Environment</b>	2CH Analog Audio
<b>Devices</b>	2CH audio equipment, amplifiers, powered speakers, PA systems, AV cameras and players.
<b>Transmission</b>	Transparent to the user.
<b>Bandwidth</b>	20Hz to 20KHz
<b>Signals</b>	2CH analog audio ( in or out ) SPDIF Out (2CH digital audio)
<b>Connectors</b>	One (1) RCA receptacle for SPDIF out. One (1) 3.5mm jack for analog audio (in or out). One (1) RJ45S for Cat 5e/6 unshielded or shielded twisted pair. One (1) 3.5mm jack for IR Emitter or IR Sensor. One (1) DB9 Serial Port for RS232. Four (4) DIP Switches for device ID addressing and Transmitter/Receiver setting.
<i>Note: Cables not included.</i>	
<b>Maximum Distance</b>	Cat5e/6: 330 ft (100 m) <i>Note: When installed in an electrically noisy environment, an STP cable must be used. Also, cross-connections in the signal path reduce the effective distance depending on the grade of twisted cable used.</i>
<b>Latency</b>	30ms
<b>Network Requirement</b>	100BaseT for Point to Point; 1000BaseT for other configuration.
<b>IR Frequency</b>	38KHz to 58KHz.
<b>RJ45 Pin Configuration</b>	<p><b>RJ45 Link</b></p> <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)</p> <p><i>Reverse Polarity Sensitive. Use EIA/TIA 568A or 586B straight-through wiring.</i></p> 
<b>Cable</b>	One (1) Cat 5e/6 or better twisted pair cables required.
<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 Standard</b>	IEEE 802.3af
<b>Power Consumption</b>	Transmitter: 2.9W Receiver: 1.8W
<b>Temperature</b>	Operating: 0° to 40°C Storage: -20° to 85°C Humidity: Up to 95% non-condensing
<b>Enclosure Type</b>	Metal enclosure.
<b>Dimensions</b>	3.70" x 3.68" x 0.97" (94 x 93.5 x 24.6 mm)
<b>Weight</b>	1.1lbs (0.5kg)
<b>Compliance</b>	Regulatory: FCC, CE, RoHS Flammability: 94V0
<b>Warranty</b>	3 years
<b>Order Information</b>	500755 AUDIO / RS232 over IP PoE Transceiver 500755-2PK AUDIO / RS232 over IP PoE Transceiver Kit (2PK kit includes two 500755 units)
<b>Accessories</b> (These items are sold separately)	500905 3-Port Rackmount Transceiver Chassis 500920 16-Port Rackmount Transceiver Chassis 500917 Wall Mount Transceiver Bracket Kit 500998 IR Emitter, and 500994 IR Sensor 500993 Univ. Locking Power Supply 5VDC/2.6A US/UK/EU Blade



2321 Cohen Saint-Laurent, QC, Canada H4R 2N7

Tel: (514) 905-0588 Fax: (514) 905-0589

Toll Free (North America): (877) 689-5228

E-mail: [info@muxlab.com](mailto:info@muxlab.com) URL: [www.muxlab.com](http://www.muxlab.com)



## 500755 AUDIO / RS232 over IP PoE Transceiver Quick Installation Guide

### Overview

The AUDIO / RS232 over IP PoE Transceiver allows 2CH audio signals to be extended up to 330ft (100m) 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 Transceivers to the same local Ethernet network, and the device supports PoE (PD) if used with a PoE (PSE) Ethernet Switch. These Transceivers may be purchased individually (part number 500755) or as a kit of two Transceivers (part number 500755-2PK). The Transceiver supports RS232 and IR transmission for remote control of end devices. The IR Emitter (500998) and IR Sensor (500994) are not included, but if required, may be purchased separately. The Transceiver can be configured as a Transmitter or Receiver.

For the point-to-multipoint and multipoint-to-multipoint configuration the Ethernet Switch must have Gigabit ports and 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) is available to simplify the configuration and utilization of the 500755 and other MuxLab IP based products via an Ethernet web interface.

### Applications

Applications include; commercial and residential AV systems, classroom projector systems, digital signage, boardroom systems, collaborative PC systems, and medical information systems, with respect to the audio portion of these applications.

### Installation

1. The Transceiver must first be set as either a Transmitter or Receiver. This may be accomplished via the dip switch position #4. Reference the Operating Manual for further instructions on how to set the dip switches. The remaining instructions are based on the Transceiver being set as either a Transmitter or Receiver.
2. Identify the connectors on the Transmitter and Receiver as indicated on the product labels, see the above front and rear product views for further details.
3. Verify that the distance between the Transmitter and Receiver is within MuxLab specifications (see Specifications table for further details).

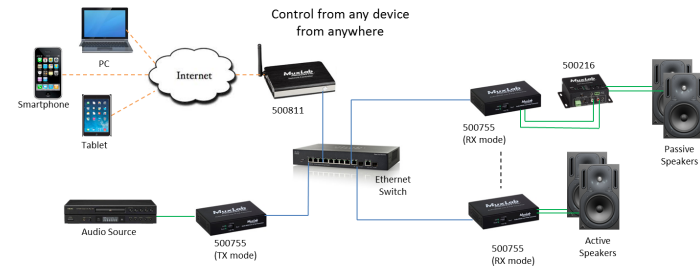
4. To install the Transmitter:
  - 4a. Connect the Transmitter to the audio source with a quality RCA or 3.5mm cable.
  - 4b. If the application is point-to-point, then connect one (1) length of Cat 5e/6 (or higher) grade UTP cable to the RJ45 LINK connector on the Transmitter.
5. To install the Receiver:
  - 5a. Connect the Receiver to the remote audio equipment with a quality RCA or 3.5mm cable.
  - 5b. 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.
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 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 and that the IGMP Protocol is enabled for multipoint-to-multipoint applications.** 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 (dip switch positions #1, #2 and #3) 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.
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 AUDIO / RS232 over IP PoE Transceiver only after all data connections have been made.**
8. Power ‘ON’ the audio equipment and verify the sound quality.
9. IR Emitter and Sensor are not included, and are sold separately. If purchased, IR control signals may initiate from control software on a PC, tablet, or smartphone connected to the network, so that only IR Emitters are required next to the audio equipment. However IR control may be initiated from a hand-held IR remote control and in this case the product supports IR pass-thru control. In this scenario connect an IR Sensor to the 3.5mm Jack of the Receiver and the IR Emitter to the 3.5mm Jack of the Transmitter.
 

**Note: You can differentiate the IR Sensor and the IR Emitter by looking at the 3.5 mm plug. The IR Sensor is using a Stereo Plug (3 Contacts) and the IR Emitter a mono plug (2 Contacts).**
10. Position the IR Sensor so that it is directed at the hand-held remote control. For a clear IR signal reception, aim the hand-held remote control at the top of the IR Sensor enclosure.
11. Position the IR Emitter as close as possible to the source’s IR Sensor. For a clear IR signal reception, the IR Emitter can be glued on the source’s IR Sensor. The IR Emitter’s signal is transmitted from the side of the enclosure.
12. 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 9600, N, 8, 1.
13. To send an RS232 packet to a specific device, you need to put the IP address in front of the packet. This communication is meant to be machine to machine; and hexadecimal codes must be used. For example, to send the message “Hello” to a device having an IP address of

192.168.168.55 IP, send the following hexadecimal string: 0xC0 0xA8 0xA8 0x37 0x48 0x65 0x6c 0x6c 0x6f. (or “192 168 168 55 H e l l o” in hexadecimal).

14. The following diagram illustrates a typical point-to-multipoint LAN configuration.



## Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in regard to the installation of the AUDIO / RS232 over IP PoE Transceiver:

Symptom	Transmitter LEDs		Receiver LEDs		Probable Cause	Possible Solutions
	Power	Link	Power	Link		
No sound	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 sound	ON	OFF	ON	ON	Internal error	<ul style="list-style-type: none"> <li>Reboot the Transmitter.</li> </ul>
No sound	ON	ON	ON	OFF	Internal error	<ul style="list-style-type: none"> <li>Reboot the Receiver.</li> </ul>
No sound	ON	ON	ON	ON	UTP cable	<ul style="list-style-type: none"> <li>Check the Transmitter UTP cable.</li> </ul>
No sound	ON	BLINK	ON	ON	UTP cable	<ul style="list-style-type: none"> <li>Check the Receiver UTP cable.</li> </ul>
No sound	ON	BLINK	ON	BLINK	Audio cable	<ul style="list-style-type: none"> <li>Check the Audio cable quality.</li> </ul>
Choppy sound	ON	BLINK	ON	BLINK	Ethernet Switch	<ul style="list-style-type: none"> <li>For multipoint-to-multipoint enable IGMP mode on the Gigabit Ethernet Switch.</li> </ul>
Choppy sound	ON	BLINK	ON	BLINK	Synchronization	<ul style="list-style-type: none"> <li>Check cable length</li> <li>Check audio cable quality.</li> </ul>
Noisy sound when powering up nearby equipment.	ON	BLINK	ON	BLINK	Interference	<ul style="list-style-type: none"> <li>Use STP cable.</li> </ul>
IR not functioning *	ON	BLINK	ON	BLINK	Remote control not directed at the IR Sensor or IR Emitter not directed at the source.	<ul style="list-style-type: none"> <li>Make sure the IR Sensor is directed towards the remote and the IR Emitter towards the audio equipment.</li> </ul>
IR not functioning *	ON	BLINK	ON	BLINK	Interference from sunlight, fluorescent, neon or halogen lights.	<ul style="list-style-type: none"> <li>Place the IR equipment away from the interfering light source.</li> </ul>
IR not functioning *	ON	BLINK	ON	BLINK	RF radiation interference.	<ul style="list-style-type: none"> <li>Place the IR equipment away for the interfering RF radiation source.</li> </ul>

\* 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).