

Specifications

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|---|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Environment | 3G-SDI | | | | | | | | |
| Devices | Cameras, players, monitors, servers supporting SDI signaling. | | | | | | | | |
| Transmission | Transparent to the user. | | | | | | | | |
| Bandwidth | 2.97Gbps | | | | | | | | |
| Signals | SD-SDI, HD-SDI, 3G-SDI protocol. Note: 3G-SDI level B not fully supported. | | | | | | | | |
| Connectors | One (1) BND receptacle. One (1) RJ45S for Cat 5e/6 unshielded or shielded twisted pair. One (1) 3.5mm jacks for IR emitter/sensor. One (1) DB9 Serial Port Connector. Four (4) DIP Switches for device ID addressing. <i>Note: SDI coax, RS232 and Cat 5e/6 cables not included.</i> | | | | | | | | |
| Maximum Distance <i>Excluding coax cable length.</i> | Cat5e/6: 330ft (100m) distance from LAN Switch @ 1080P resolution. Cat5e/6: 400ft (120m) distance (PT-to-PT) if no LAN Switch is used. <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 pair cable used.</i> | | | | | | | | |
| Latency | One (1) Frame. | | | | | | | | |
| Compression | Motion JPEG | | | | | | | | |
| Bandwidth | 60Mbps | | | | | | | | |
| Network Requirement | 100BaseT for Point to Point; 1000BaseT for other configuration. | | | | | | | | |
| IR Frequency | 30 – 60 KHz | | | | | | | | |
| RJ45 Pin Configuration <i>Reverse Polarity Sensitive. Use EIA/TIA 568A or 568B straight-through wiring.</i> | <p>RJ45 Link</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> | 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) | | | | | | | | |
| Cable | One (1) Cat 5e/6 or better twisted pair cables required. | | | | | | | | |
| Power Supply | Two (2) 110-240V/5VDC power supplies with interchangeable blades. | | | | | | | | |
| PoE | IEEE 802.3af | | | | | | | | |
| Power Consumption | Transmitter: 2.9 Watt Receiver: 1.8 Watt | | | | | | | | |
| Temperature | Operating: 0° to 40°C Storage: -20° to 85°C Humidity: Up to 95% non-condensing | | | | | | | | |
| Enclosure | Metal | | | | | | | | |
| Dimensions | 3.70" x 3.68" x 0.97" (94 x 93.5 x 24.6 mm) | | | | | | | | |
| Weight | 1.1 lb (0.5 kg) | | | | | | | | |
| Compliance | Regulatory: FCC, CE, RoHS Flammability: 94V0 | | | | | | | | |
| Warranty | 2 years | | | | | | | | |
| Order Information | 500756 3G-SDI / RS232 Over IP Extender Kit with PoE 500756-TX 3G-SDI / RS232 Over IP Transmitter with PoE 500756-RX 3G-SDI / RS232 Over IP Receiver with PoE | | | | | | | | |
| Accessories | 500905 Rackmount Transceiver Chassis 3-Port 500906 Rackmount Transceiver Chassis 16-Port | | | | | | | | |



500756 3G-SDI / RS232 over IP Extender Kit with PoE Quick Installation Guide

Overview

The 3G-SDI / RS232 over IP Extender Kit with PoE (500756) allows SDI equipment to be connected up to 330ft (100m) @ 1080p via one (1) Cat5e/6 unshielded twisted pair cable in a point-to-point configuration through an Ethernet LAN Switch. Point-to-multipoint and multipoint-to-multipoint is possible by connecting several Transmitters and Receivers to the same local Ethernet network. The Transmitter (500756-TX) and Receiver (500756-RX) also support PoE (PD) if used with a PoE Ethernet Switch. The kit comes with one (1) Transmitter and one (1) Receiver as well as an IR Emitter and IR Sensor for remote control applications.

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 500756 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.

Installation

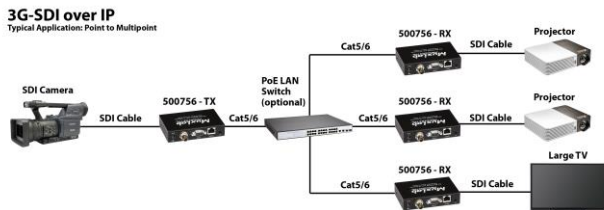
- Identify the connectors on the Transmitter and Receiver as indicated on the product labels, see the above front and rear product views for further details.
- Verify that the distance between the 3G-SDI Transmitter and Receiver is within MuxLab specifications (see Specifications table for further details).
- To install the Transmitter:
 - Connect the Transmitter to the SDI video source with a COAX cable (Belden 1694A recommended).
 - 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 the TX & RX unit.
- To install the Receiver:
 - Connect the Receiver to the SDI display equipment with a COAX cable (Belden 1694A recommended).
 - 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



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Receiver. If transmitting over the network, use an Ethernet Switch between the TX & RX unit.

5. If the configuration is a point-to-multipoint or multipoint-to-multipoint:
 - 5a. 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.
 - 5b. Connect all Transmitters and Receivers to the Ethernet Switch.
 - 5c. 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.
6. Powering the Transmitter or Receiver via an external power supply is only necessary where PoE (PSE) is unavailable. If PoE is unavailable, connect the 5 VDC power supply 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 3G-SDI / RS232 over IP Extender only after all data connections have been made.**
7. Power 'ON' the 3G-SDI equipment and verify the image quality.
8. This product supports IR pass-thru control. If infrared remote control is needed to control the Source equipment from the Display, connect the IR Sensor to the 3.5mm Stereo Jack of the Receiver and the IR Emitter to the 3.5mm Mono 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).**
9. 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.
10. Position the IR Emitter as close as possible to the source's IR Sensor (i.e. DVD player). 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.
11. 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.
12. 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).
13. 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 3G-SDI / RS232 over IP Extender Kit with PoE:

| Symptom | Transmitter LEDs | | Receiver LEDs | | Probable Cause | Possible Solutions |
|---|------------------|-------|---------------|-------|--|---|
| | Power | Link | Power | Link | | |
| No image | OFF | OFF | OFF | OFF | No power | <ul style="list-style-type: none"> Check power connections. Check PoE Ethernet Switch setup. |
| No image | ON | OFF | ON | ON | Internal error | <ul style="list-style-type: none"> Reboot the Transmitter. |
| No image | ON | ON | ON | OFF | Internal error | <ul style="list-style-type: none"> Reboot the Receiver. |
| No image | ON | ON | ON | ON | UTP cable | <ul style="list-style-type: none"> Check the Transmitter UTP cable. |
| No image | ON | BLINK | ON | ON | UTP cable | <ul style="list-style-type: none"> Check the Receiver UTP cable. |
| No image | ON | BLINK | ON | BLINK | 3G-SDI cable | <ul style="list-style-type: none"> Check the 3G-SDI cable quality. |
| Choppy image | ON | BLINK | ON | BLINK | Ethernet Switch | <ul style="list-style-type: none"> For multipoint-to-multipoint enable the IGMP mode of the Gigabit Ethernet Switch. |
| Choppy sound | ON | BLINK | ON | BLINK | Synchronization | <ul style="list-style-type: none"> Check cable length Check the 3G-SDI cable quality. |
| Image flickers when powering up nearby equipment. | ON | BLINK | ON | BLINK | Interference | <ul style="list-style-type: none"> Use STP cables. |
| IR not functioning | ON | BLINK | ON | BLINK | Remote control not directed to the IR Sensor or IR Emitter not directed to the source. | <ul style="list-style-type: none"> Make sure the IR Sensor is directed towards the remote and the IR Emitter to the equipment. |
| IR not functioning | ON | BLINK | ON | BLINK | Interference from sunlight, fluorescent, neon or halogen lights. | <ul style="list-style-type: none"> Place the IR equipment away for the interfering light source. |
| IR not functioning | ON | BLINK | ON | BLINK | RF radiation interference from the TV. | <ul style="list-style-type: none"> Place the IR equipment away for the interfering RF radiation source. |

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).