Specifications

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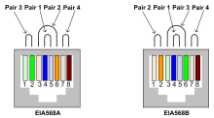
Environment	HDMI 2.0 and HDCP 2.2
Devices	Blu-Ray, projectors, monitors, TV, PC, laptops, and media servers supporting HDMI
Bandwidth	594MHz
Signals	HDMI 2.0 and DisplayPort 1.2a protocol
Connectors *Note: Cables not included.*	Connectors per TX and RX: One (1) HDMI receptacle One (1) DisplayPort connector (TX only) One (1) SFP+ Cage with dual LC multimode connectors (for 10GbE port) One (1) RJ45S for Cat 5e/6 unshielded or shielded twisted pair (for 1GbE port) Two (2) 3.5mm jacks for IR emitter and IR sensor One (1) 3.5mm jacks for audio insertion/extraction (insert on TX, and extract on RX) One (1) 4-pin terminal block connector for RS232 One (1) 2.1mm power jack (for DC power)
Maximum Distance	OM3 Multimode Fiber: Up to 985ft (300m) at up to 4K @ 60Hz *(Based on a maximum length of 6.6ft (2m) of HDMI cable per end)*
Latency	No Compression (Zero Latency) up to 4K/60 (4:2:0), and less than one Frame (16ms) @ 4K/60 (4:4:4)
Compression	Uncompressed up to 4K/60 (4:2:0), and light compression for 4K/60 (4:4:4) only
Network Bandwidth	< 10Gbps
Network Requirement	10Gig Network XFI, IEEE 802.3
IR Frequency	38 to 56KHz
RJ45 Pin Configuration *Reverse Polarity Sensitive. Use EIA/TIA 568A or 586B straight-through wiring.*	**RJ45 Link** Pin 1 (R) Pin 2 (T) Pin 3 (R) Pin 6 (T) Pin 4 (R) Pin 5 (T) Pin 7 (R) Pin 8 (T) 
Fiber Cable	One (1) dual LC multimode fiber cable, OM3 or better is required
Power Source	Input: 100-240V/1.5A (max) @ 50-60Hz Output: 12DC @ 3A Includes appropriate power cord for region (US, UK or Euro)
Power Consumption	Transmitter: 13.32Watt Receiver: 15.96Watt
Temperature	Operating: 0° to 40°C Storage: -20° to 85°C Humidity: Up to 95% non-condensing
Dimensions	8.25" x 16.14" x 1.37" (21cm x 14cm x 3.5cm)
Weight	4.06lbs (1.85kg)
Compliance	Regulatory: FCC, CE, RoHS Flammability: 94V0
Warranty	3 years
Order Information	500761-TX-US AV over IP 4K/60 Uncompressed Transmitter, Fiber, US (UPC: 627699907610) 500761-RX-US AV over IP 4K/60 Uncompressed Receiver, Fiber, US (UPC: 627699807613) 500761-TX-UK AV over IP 4K/60 Uncompressed Transmitter, Fiber, UK (UPC: 627699917619) 500761-RX-UK AV over IP 4K/60 Uncompressed Receiver, Fiber, UK (UPC: 627699817612) 500761-TX-EU AV over IP 4K/60 Uncompressed Transmitter, Fiber, EU (UPC: 627699927618) 500761-RX-EU AV over IP 4K/60 Uncompressed Receiver, Fiber, EU (UPC: 627699827611)

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AV over IP 4K/60 Uncompressed Extender, Fiber 500761
Quick Installation Guide

Overview

The AV over IP 4K/60 Uncompressed Extender, Fiber allows HDMI and DisplayPort source equipment supporting up to 4K resolution @ 60Hz to be connected and extended to create a 4K/60 HDMI based Video Wall, Virtual Matrix Switch, and Virtual Splitter arrangements of user configurable size (X by Y) supporting 100's of screens, depending on network bandwidth, utilizing one Receiver for each display in the array. Each Transmitter (500761-TX) and Receiver (500761-RX) can be connected via dual LC multimode OM3 fiber cable up to 985ft (300m) via OM3 fiber from a 10G Ethernet Switch. The Transmitter supports HDMI 2.0 and DisplayPort 1.2a input ports, and the Receiver supports an HDMI 2.0 output port.

The Transmitter supports 2CH audio insertion and the Receiver supports 2CH audio extraction. The Transmitter and the Receiver each come with a power supply, an IR Emitter and IR Sensor for IR based remote control applications, a wall mount bracket kit for securing the unit to a wall, and a 4-pin terminal block connector for RS232 connectivity.

For the point-to-multipoint and multipoint-to-multipoint configuration the Ethernet switch must have Gigabit ports, DHCP server capability, IGMP communications protocol and support Jumbo Frames.

The MuxLab Pro Digital Network Controller (500811) is available to simplify configuration and control and allows for third party smartphone and tablet management.

Applications

Applications include video wall, digital signage, commercial and residential AV systems, classroom projector systems, boardroom systems, collaborative PC systems, and medical information systems.

Installation

1. 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.
2. Verify that the distance between the HDMI Transmitter and Receiver is within MuxLab specifications (see Specifications table for more details).
3. To install the Transmitter:
   - 3a. Connect the Transmitter to the HDMI or DisplayPort video source with a compliant cable.
   - 3b. If the application is point-to-point, then connect one (1) length of Dual LC Multimode Fiber to the LAN SFP+ connector on the Transmitter. If transmitting over the network, use a 10G Ethernet Switch between Transmitter and Receiver
4. To install the Receiver:

4a. Connect the Receiver to the HDMI display equipment with an HDMI compliant cable. The Receiver does not support a DisplayPort connector.

4b. If the application is point-to-point, then connect one (1) Dual LC Multimode Fiber cable coming from the Transmitter, to the LAN SFP+ connector on the Receiver. If transmitting over the network, use a 10G Ethernet Switch between Transmitter and Receiver.

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

5a. You will need to use a 10G Ethernet Switch with 10 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 10G 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 Frames is enabled**. See the operating manual for more information about configuring the 10G Ethernet Switch.

5b. Connect all Transmitters and Receivers to the 10G Ethernet Switch.

6. Power the Transmitter and Receiver via the supplied external power supply. Connect the power supply to each 500761 Receiver and to an AC power outlet. Next connect each 500761 Transmitter in the same manner. If power is present, the power LED on each Transmitter and Receiver will illuminate.

Note: Power 'ON' the AV over IP 4K/60 Uncompressed Extender, Fiber only after all connections have been made.

7. Power 'ON' the HDMI equipment and verify the image quality.

8. This product supports a bi-directional IR pass-thru control. If infrared remote control is needed to control the Source and/or Sink (i.e. Display) equipment, connect the supplied IR Sensors to the 3.5mm Stereo Jack of the Transmitter and Receiver and the supplied IR Emitters to the 3.5mm Mono Jack of the Transmitter and Receiver.

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).

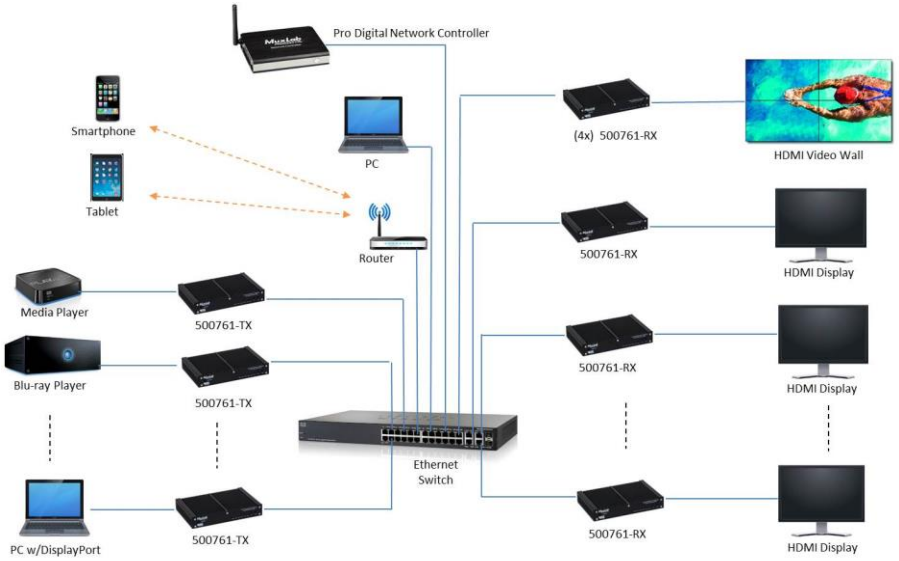
9. Position the IR Sensor so that it is directed at the hand-held remote control. For a clear IR signal reception, aim the hand-held remote control at the top of the IR Sensor enclosure.

10. Position the IR Emitter as close as possible to the source and sink equipment's IR Sensor (i.e. DVD player, TV, etc.). For a clear IR signal reception, the IR Emitter can be glued on the source and sink equipment's IR Sensor. The IR Emitter's signal is transmitted from the side of the enclosure.

11. This product supports RS232 bidirectional communication. Both the Transmitter and Receiver support a 4-pin terminal block connector for RS232 connectivity. Connect your RS232 cable with the supplied 4-pin terminal block connector. Configure the RS232 communications setting via the device web interface.

12. Commands or messages may be sent to the source and sink equipment via RS232 by connecting a PC to the RS232 port of the AV over IP 4K/60 Uncompressed Extender, Fiber, or over the network via IP. This communications is meant to be machine to machine.

13. The Transmitters and Receivers may be used to create a 4K/60 Video Wall, Virtual Matrix Switch, and Virtual Splitter arrangements of user configurable size (X by Y) supporting 100's of screens, depending on network bandwidth, as illustrated in the following diagram.



Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in regard to the installation of the AV over IP 4K/60 Uncompressed Extender, Fiber:

Symptom	Transmitter LEDs		Receiver LEDs		Probable Cause	Possible Solutions
	Power	Link TX/RX	Power	Link TX/RX		
No Image	OFF	OFF	OFF	OFF	No power	• Check power connections • Check power supply
No Image	BLINK	OFF	BLINK	ON	Booting	• Wait until booting process finish
No Image	ON	OFF	ON	OFF	No Ethernet Link	• Check Ethernet Switch Status • Check Fiber Cables
Choppy Video	ON	ON	ON	ON	Configuration	• Check cable length • Check the HDMI/DisplayPort Cable Quality • Check if Jumbo Frame & IGMP are enabled on the 10G Ethernet Switch
Image flickers when powering up nearby equipment	ON	ON	ON	ON	Interference	• Check cable length
IR not functioning	ON	ON	ON	ON	Interference from sunlight, Fluorescent, Neon or Halogen lights	• Place the IR equipment away from the interfering light
IR not functioning	ON	ON	ON	ON	Interference from RF radiation from the TV	• Place the IR equipment away from the RF radiation

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).