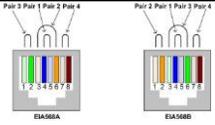


Specifications

Specification Chart	
Environment	HDMI 2.0
Devices	DVDs, Blu-ray players, projectors, monitors, TVs, PCs, laptops, servers supporting HDMI.
Transmission	Transparent to the user
Signals	HDMI 2.0 protocol
Connectors	One (1) HDMI receptacle. One (1) RJ45S for Cat5e/6 unshielded or shielded twisted pair. One (1) 3-Position Terminal Block for RS232. Two (2) 3.5mm sockets for IR Sensor & Emitter (carrier-wave). One (1) 2.1mm locking power connector.
Cables not included	
Max. Distance*	4K/60 (4:4:4): Cat 5e/6: 131ft (40m) 1080p: Cat 5e/6: 230ft (70m)
*Based on a maximum length of 6.6 ft (2m) of HDMI cable per end	When installed in an electrically noisy environment, STP cable must be used. Also, cross-connection reduces the effective distance depending on the grade of twisted cable used.
RJ45 Pin Configuration	RJ45  Pin 1 (R) Pin 2 (T) Pin 3 (R) Pin 6 (T) Pin 4 (R) Pin 5 (T) Pin 7 (R) Pin 8 (T)
Use EIA/TIA 568 A or B, straight-through wiring.	
Cable	One (1) Category 5e or better twisted pair cables required.
Power Supply	One (1) 110-240V/12VDC @ 2A power supply with interchangeable blades.
Power Consumption	Transmitter: 10.44 Watts Receiver: 10.44 Watts
Temperature	Operating: 0° to 40° C. Storage: -20° to 85° C. Humidity: up to 95% non-condensing.
Enclosure	Metal
Unit Dimensions	4.72" x 2.87" x 1.00" (12.0 x 7.3 x 2.5 cm)
Shipping Weight	1.75 lbs (0.79 kg)
Compliance	Regulatory: FCC, CE, RoHS
Warranty	2 years
Order Information	500459 HDMI/RS232 Extender Kit, HDBT, 4K/60 (UPC: 627699004593)



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HDMI/RS232 Extender Kit, HDBT, 4K/60

500459

Quick Installation Guide

Overview

The HDMI/RS232 Extender Kit, HDBT, 4K/60 (500459) allows HDMI equipment to be connected up to 131ft (40m) at 4K/60 (4:4:4) resolutions, or 230ft (70m) at resolutions up to 1080p via one (1) Cat 5e/6 unshielded twisted pair cable in a point-to-point configuration. The unit supports RS232 and bidirectional IR pass through transmission for end device remote control. This product supports PoC, allowing the transmitter to power the receiver, or the receiver to power the transmitter. The kit includes one (1) transmitter, one (1) receiver, one (1) IR Emitter, one (1) IR sensor and one (1) power supply.

Applications

Applications include 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 end panels above.
2. Verify that the distance between the HDMI Transmitter and Receiver is within MuxLab specifications (see specifications table).
3. To install the Transmitter:
 - 3a. Connect the Transmitter to the HDMI video source with an HDMI compliant cable.
 - 3b. Connect one (1) length of Cat 5e/6 (or higher) grade UTP cable to the RJ45 LINK connector on the Transmitter.
4. To install the Receiver:
 - 4a. Connect the Receiver to the HDMI display equipment with an HDMI compliant cable.
 - 4b. Connect one (1) Cat 5e/6 cable, coming from the Transmitter, to the RJ45

LINK connector on the Receiver.

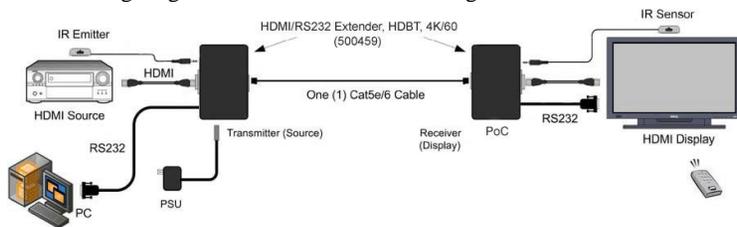
- Place the rear switch in the “Normal” position on the Transmitter and Receiver.
- This kit supports PoC, allowing the Transmitter to power the Receiver, or the Receiver to power the Transmitter. Connect the 12VDC power supply to either the Receiver or Transmitter first, and then plug the power supply into an AC power outlet. If power is present, the blue power LED of the Transmitter and the Receiver will be ON.

Note: Power-up the HDMI/RS232 Extender Kit, HDBT, 4K/60 only after all connections are made.

- Power-up the HDMI equipment and verify the image quality.
- This product supports bi-directional IR 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: The IR Sensor can be distinguished from the IR Emitter by looking at the 3.5-mm plug. The IR Sensor has a 3.5mm stereo plug (3 Contacts) and the IR Emitter has a 3.5mm mono plug (2 Contacts).

- Position the IR Sensor so that it is aimed toward the hand-held remote control. For clear IR signal reception, aim the hand-held remote control toward the top of the IR Sensor enclosure.
- Position the IR Emitter as close as possible to the source’s IR Sensor (i.e. DVD, Blu-ray, or media player). For a clear IR signal reception, the IR Emitter may be affixed to the source’s IR Sensor. The IR Emitter’s signal is transmitted from the side of the enclosure.
- If infrared remote control is needed to control the Display equipment from the Source, connect the IR Emitter to the Receiver’s 3.5mm stereo jack and connect the IR Sensor to the Transmitter’s 3.5mm mono jack.
- The 500459 also supports RS232 pass-thru in order to allow a device such as commercial monitors to be controlled as in digital signage application. Please refer to the following diagram for the cabling connection.
- Note that the unit firmware may be updated via the RS232 port, if a new version is available. To do so, download both the new firmware and special loader software from the MuxLab website (if available). Place the rear switch in the “Service” position, and run the loader software to complete the upgrade by following the on screen instructions. Once done, return the rear switch to the “Normal” position.
- The following diagram shows the final unit configuration.



Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in regard to the installation of the HDMI/RS232 Extender Kit, HDBT, 4K/60:

Symptom	Tx LEDs			Rx LEDs			Probable Cause	Possible Solutions
	Power	HDMI	RJ45	Power	HDMI	RJ45		
No Image	OFF	OFF	OFF	OFF	OFF	OFF	No power	• Check power connections.
No Image	ON	OFF	OFF	ON	OFF	OFF	UTP Cable or HDMI Cable	• Check the UTP & HDMI cables.
No Image	ON	OFF	ON	ON	OFF	ON	HDMI Cable	• Check the HDMI Cable.
No Image	ON	ON	ON	ON	ON	ON	Synchronisation	• Check cable length.
Flickering Image	ON	ON	ON	ON	ON	ON	Synchronisation	• Check cable length. • Check the HDMI Cable Quality.
Choppy sound	ON	ON	ON	ON	ON	ON	Synchronisation	• Check cable length. • Check the HDMI Cable Quality.
Green or pink hue	ON	ON	ON	ON	ON	ON	DDC communication	• Cycle power of the HDMI Extender. • Check UTP cables and replace.
Image flickers when powering up nearby equipment	ON	ON	ON	ON	ON	ON	Interference	• Use STP cables.
IR not functioning	ON	ON	ON	ON	ON	ON	Remote control not directed to the IR Sensor or IR Emitter not directed to the source.	• Make sure the IR Sensor is directed towards the remote and the IR Emitter to the equipment.
IR not functioning	ON	ON	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	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).