HDMI Extender over Single Cat5e with RS-232 and IR Quick Installation Guide

Introduction

The *HDMI Extender over Single CAT5e with RS-232 & IR* provides an easy way to extend HDMI signals over one CAT5/5e/6 cable while also featuring bi-directional RS-232 and IR controls.

Features and Benefits

- Supports HDMI Deep Color, full 3D, Full HD 1080p & 4Kx2K (HDBaseT-Lite technology)
- Extends data transmission up to 230ft (70m) at Full HD 1080p and 130ft (40m) at 4Kx2K
- HDCP & EDID Bypass
- CEC support
- Auto equalization
- Full Duplex RS-232 control up to 115Kbps data rate
- Pure unaltered uncompressed 7.1ch digital HDMI audio over CAT5/5e/6 cable transmission
- Supports Bi-Directional IR pass-through
- Supports full frequency IR signal from 20KHz to 60KHz
- Metal housing with wall mount mechanism

Package Contents

- *HDMI Extender over Single CAT5e with RS-232 & IR* (Transmitter x1, Receiver x1)
- 5V/2A Power adapters (2)
- IR blaster cable & IR receiver cable
- Quick installation guide

Application

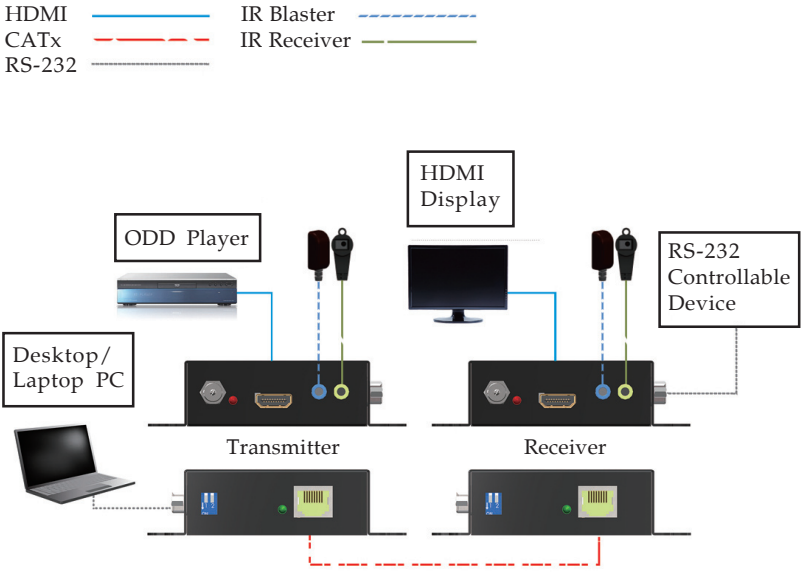


Figure 1: Application

Layout

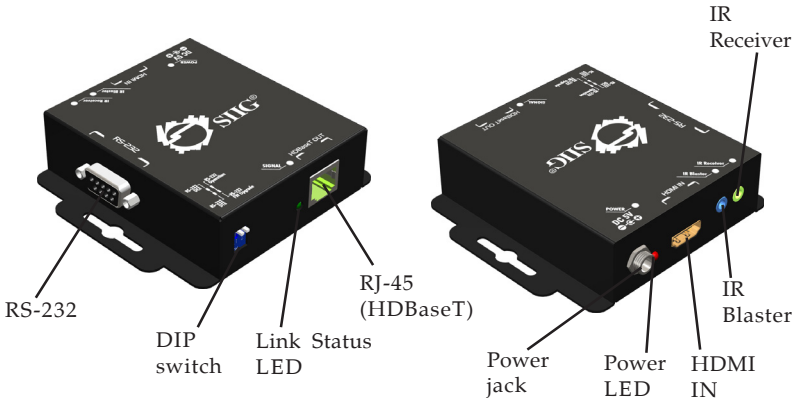


Figure 2: Transmitter Layout

- RS-232: Connect to your computer's serial port for communication with RS-232 controllable device.
- DIP switch: Configure RS-232 communication mode. See **DIP Switch** section for further information
- Link status LED: On when RJ-45 (HDBaseT) connection is established
- RJ-45 (HDBaseT): Connect to the Receiver's RJ-45 port by using a CAT5/5e/6 cable (cable not included)
- Power jack: Plug in the included power adapter
- Power LED: On when power adapter is connected
- HDMI IN: Connect your HDMI source device (DVD player, etc) by using an HDMI cable (cable not included)
- IR Blaster: Plug in the included IR Blaster cable. See **IR Extension Cables** section on page 5
- IR Receiver: Plug in the included IR Receiver Cable. See **IR Extension Cables** section on page 5

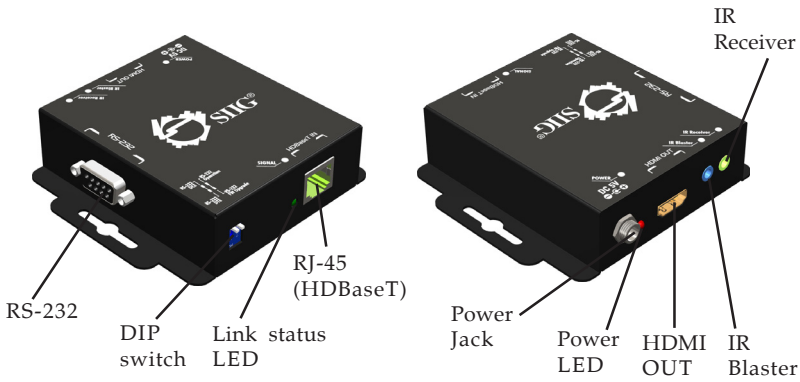


Figure 3: Receiver Layout

- RS-232: Connect to RS-232 device. See **DIP Switch** section for further information
- DIP switch: Configure RS-232 communication mode. See **DIP Switch** section for further information
- Link status LED: On when RJ-45 (HDBaseT) connection is established
- RJ-45 (HDBaseT): Connect to the Transmitter's RJ-45 port by using a CAT5/5e/6 cable (cable not included)
- Power Jack: Plug in the included power adapter
- Power LED: On when power adapter is connected
- HDMI OUT: Connect to your HDMI display by using an HDMI cable (cable not included)
- IR Blaster: Plug in the included IR Blaster Cable. See **IR Extension Cables** section on page 5
- IR Receiver: Plug in the included IR Receiver Cable. See **IR Extension Cables** section on page 5

IR Extension Cables (Optional)

IR Blaster cable:

Connect the IR blaster cable to your HDMI Extender's IR Blaster connector to send out IR command signals.

1. IR Signal
2. Grounding

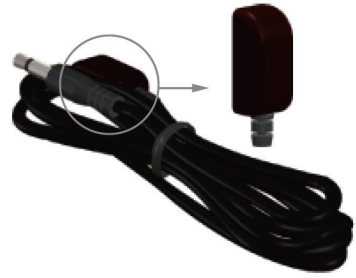


Figure 4

IR Receiver cable:

Connect the IR receiver cable to your *HDMI Extender*'s IR Receiver connector to receive IR command signals.

1. IR Signal
2. Grounding
3. Power

Figure 5

NOTE:

* Plugging IR Blaster/Receiver cables need to be plugged into dedicated receptacles. Reversing them can cause damage to IR cables.

* IR cables can be found in the market. However, cables longer than 6ft may not work.

DIP Switch

Refer to Table 1 on page 6 for the instructions for changing RS-232 communication mode by using the DIP switch.

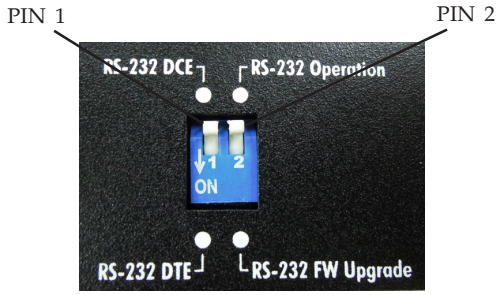


Figure 6

- **Firmware update mode**: Push down **DIP PIN 2** to enable the firmware update mode. Connect the RS-232 connector on *HDMI Extender* to your computer for further firmware update

  Note: Download firmware updates, as they become available, at www.siig.com

- **RS-232 operation mode**: Push up **DIP PIN 2** for RS-232 operation mode. Adjust the position of **DIP PIN 1** to change between DCE (Data communication equipment) mode and DTE (Data terminal equipment) mode. See **Table 1**

	ON (↓)	OFF (↑)
PIN 1	RS-232 operation mode (DTE)	RS-232 operation mode (DCE)
PIN 2	RS-232 operation mode (DTE)	Normal

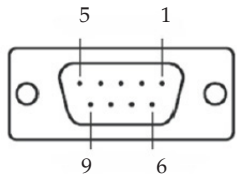
Table 1

NOTE:

* When the Transmitter is in DTE mode, **Pin-2** of the RS-232 is in charge of sending data; when in DCE mode, **Pin-3** is in charge of sending data.

* When Receiver is in DTE mode, the **Pin-3** of the RS-232 is in charge of receiving data; when in DCE mode, the **Pin-2** is in charge of receiving data.

RS-232 PIN Assignment

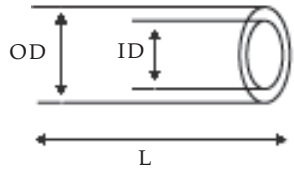


Pin	Name
1	CD
2	RX
3	TX
4	DTR
5	Ground
6	DSR
7	RST
8	CTS
9	RI

Figure 7

DC Power Jack

Refer to the Table below for the required specifications of the power adapter.



Outside diameter (OD)	Inside diameter (ID)	Plug length (L)	Negative / Positive
5.5(mm)	5.5(mm)	10(mm)	 *Center pin for positive voltage and the outer shield for negative voltage

Table 2: Power Adapter Specifications

Hardware Installation

1. Power off all devices, including the source HDMI device and display.
2. Connect your HDMI source (such as a Blu-ray player) to the transmitter's **HDMI IN** connector.
3. Connect your HDMI display (such as a LCD TV) to the receiver's **HDMI OUT** connector.
4. Connect your RS-232 ports on the Transmitter and Receiver to the serial port devices separately if you want to extend serial signal transmission. Please adjust the DIP switch to the right position.

   Skip this step if RS-232 device connection is not needed.

5. Connect the IR extension cables to the IR blaster and IR receiver connector on the Transmitter and Receiver separately.

   Skip this step if IR transmission is not needed.

6. Connect your CAT5/5e/6 cable between the transmitter and receiver. Make sure your CAT5/5e/6 cable is securely connected and not loose.
7. Plug one of the included power adapters into the **+5V DC** power jack of the transmitter, plug the second power adapter into the **+5V DC** power jack of the receiver, then plug both power adapters into reliable power sources.
8. Power on all devices. The HDMI extender is ready for use.

Notice

- T568B CAT cable is recommended for the best performance
- Use shielded STP cables to avoid EMI problems
- A CAT6 cable is recommended for resolutions greater than 1080i or 1280x1024

Performance Rating		Type of category cable		
W iring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	***	****	*****
	Shielded (STP)	***	***	****
Stranded	Unshielded (UTP)	*	**	**
	Shielded (STP)	*	*	**
Termination		Please use T568B cable at anytime		

Table 3

Technical Support and Warranty

QUESTIONS? SIIG' s **Online Support** has answers! Simply visit our web site at ***www.siig.com*** and click **Support**. Our online support database is updated daily with new drivers and solutions. Answers to your questions could be just a few clicks away. You can also submit questions online and a technical support analyst will promptly respond.

SIIG offers a 3-year manufacturer warranty with this product. This warranty covers the original purchaser and guarantees the product to be free of any defects in materials or workmanship for three (3) years from the date of purchase of the product.

SIIG will, at our discretion, repair or replace (with an identical product or product having similar features and functionality) the product if defective in materials or workmanship. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Please see our web site for more warranty details.

If you encounter any problems with this product, please follow the procedures below.

A) If it is within the store's return policy period, please return the product to the store where you purchased it.

B) If your purchase has passed the store's return policy period, please follow these steps to have the product repaired or replaced.

Step 1: Submit your RMA request. Go to **www.siig.com**, click **Support**, then **Request A Product Replacement** to submit a request to SIIG RMA or fax a request to 510-657-5962. Your RMA request will be processed, if the product is determined to be defective, an RMA number will be issued.

Step 2: After obtaining an RMA number, ship the product.

- Properly pack the product for shipping. All software, cable(s) and any other accessories that came with the original package must be included.
- Clearly write your RMA number on the top of the returned package. SIIG will refuse to accept any shipping package, and will not be responsible for a product returned without an RMA number posted on the outside of the shipping carton.
- You are responsible for the cost of shipping to SIIG. Ship the product to the following address:

  SIIG, Inc.
  6078 Stewart Avenue
  Fremont, CA 94538-3152, USA
  RMA #: _____

- SIIG will ship the repaired or replaced product via Ground in the U.S. and International Economy outside of the U.S. at no cost to the customer.

About SIIG, Inc.

Founded in 1985, SIIG, Inc. is a leading manufacturer of IT connectivity solutions (including Serial ATA and Ultra ATA Controllers, FireWire, USB, and legacy I/O adapters) that bridge the connection between Desktop/ Notebook systems and external peripherals. SIIG continues to grow by adding A/V and Digital Signage connectivity solutions to our extensive portfolio. All centered around the distribution and switching of A/V signals over CAT5/6, these products include matrix switches, distribution amplifiers, extenders, converters, splitters, cabling, and more.

SIIG is the premier one-stop source of upgrades and is committed to providing high quality products while keeping economical and competitive prices. High-quality control standards are evident by one of the lowest defective return rates in the industry. Our products offer comprehensive user manuals, user-friendly features, and most products are backed by a lifetime warranty.

SIIG products can be found in many computer retail stores, mail order catalogs, and e-commerce sites in the Americas, as well as through major distributors, system integrators, and VARs.

PRODUCT NAME

HDMI Extender over Single CAT5e with RS-232 & IR

FCC RULES: TESTED TO COMPLY WITH FCC PART 15, CLASS B OPERATING ENVIRONMENT: FOR HOME OR OFFICE USE

FCC COMPLIANCE STATEMENT:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

THE PARTY RESPONSIBLE FOR PRODUCT COMPLIANCE

SIIG, Inc.
6078 Stewart Avenue
Fremont, CA 94538-3152, USA
Phone: 510-657-8688

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