VGA & RS-232 & Audio CAT5 Extender with RGB Delay Control Quick Installation Guide

Introducing the *VGA & RS-232 & Audio CAT5 Extender with RGB Delay Control*

The *VGA & RS-232 & Audio CAT5e Extender with RGB Delay Control* extends VGA & RS-232 & Audio signals over 1 economical CAT5e/6 cable.

Features and Benefits

- VGA RGB delay control (de-skew) feature provides compensation among R, G, B signals over long transmission distances
- Supports RS-232 half-duplex & bi-directional IR control path
- Supports analog stereo and S/PDIF audio
- Adjustable equalization and gain control
- Housing: metal (for better RF shielding)

Package Contents

- *VGA & RS-232 & Audio CAT5 Extender with RGB Delay Control* (one Tx & one Rx unit)
- 2x Power adapters (5V DC)
- 2x IR cable modules (IR emitter & IR receiver)
- Installation kit
- Quick installation guide

Layout

Transmitting Unit (Tx) Front View

RS-232

IR Blaster   Stereo In   S/PDIF In   Audio Select   VGA In   IR Receiver

Figure 1: Front view of Transmitting (Tx) unit

- **RS-232**: Connects to a RS-232 serial command device
- **IR Blaster**: Connects to an IR Emitter to emit IR signals received from the receiving unit
- **Stereo In**: Connects to analog stereo audio source
- **S/PDIF In**: Connects to a digital S/PDIF (stereo) audio source
- **Audio Select**: Push button to select between digital S/PDIF and analog stereo audio inputs
- **VGA In**: Connects to a VGA input source
- **IR Receiver**: Connects to IR Receiver to receive IR signals from the IR remote of the associated device
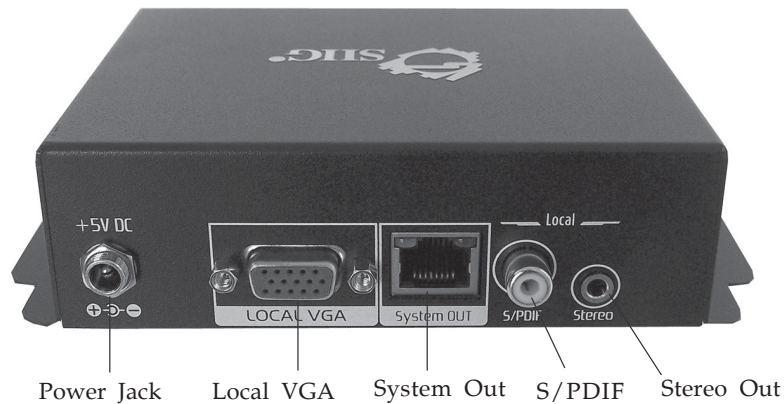
Transmitting Unit (Tx) Rear View

Figure 2: Rear view of Transmitting (Tx) unit

- **Power Jack**: Connects to 5V DC power adapter
- **Local VGA**: Connects to a local VGA display
- **System Out**: Plug in a CAT5e/6 cable, links to the **System In** of the receiving (Rx) unit
- **S/PDIF**: Connects to local S/PDIF compatible speakers
- **Stereo Out**: Connects to local analog stereo speakers

Receiving Unit (Rx) Front View

Figure 3: Front view of Receiving (Rx) unit

- **IR Blaster**: Connects to an IR Emitter to emit IR signals received from the transmitting unit
- **RS-232**: Connects to a RS-232 serial command device
- **Stereo**: Connects to remote analog stereo speakers
- **S/PDIF**: Connects to remote digital S/PDIF stereo audio speakers
- **VGA Out**: Connects to a remote VGA display
- **IR Receiver**: Connects to an IR Receiver to receive IR commands from the IR remote of the source device

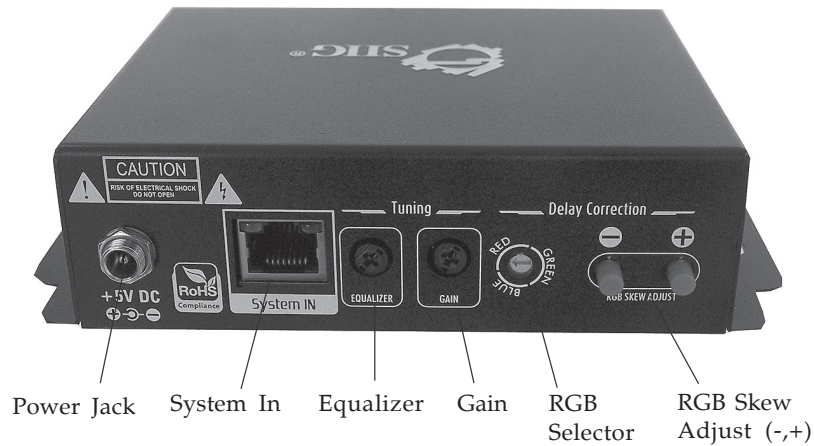## Receiving Unit (Rx) Rear View

Figure 4: Rear view of Receiving (Rx) unit

- **Power Jack**: Connects to 5V DC power adapter
- **System In**: Links to the CAT5e/6 cable from the **System Out** of the transmitting (Tx) unit
- **Equalizer**: Rotary dial for adjusting equalization (waveform) of the VGA signal
- **Gain**: Rotary dial for adjusting gain (amplitude) of the VGA signal
- **RGB Selector**: Rotary dial for selecting the respective R/G/B color for skew adjustment
- **RGB Skew Adjust**: Push button to decrease (**-**) or increase (**+**) skew of the color channel (R/G/B) chosen by the **RGB Selector** rotary dial

Dip Switch (Serial Mode)

The DIP switch is located on the bottom panel of the receiving unit. See table below for description.

Dip Switch Position				Description
Pin#1	Pin#2	Pin#3	Pin#4	
ON	OFF	ON	OFF	**Master to Slave mode -** TxD of transmitter to RxD of receiver RxD or transmitter to TxD of receiver
OFF	ON	OFF	ON	**Tx to Rx Extender Mode -** TxD[1] of transmitter to TxD of receiver RxD[2] of transmitter to TxD or receiver

Notes: [1]TxD: The 3rd pin of RS-232, which is in charge of sending data; [2]RxD: The 2nd pin of RS-232, which is in charge of receiving data.

IR Extender Cable

Figure 5: IR Emitter

Figure 6: IR Receiver

Hardware Installation

1. Power off all devices.
2. Connect your VGA, audio, and RS-232 source to the transmitting unit.
3. Connect your your VGA display, speakers, RS-232 receiving device, and IR equipped devices to the receiving unit.
4. Connect your CAT-5/5e/6 LAN cable between the transmitting (Tx) and receiving (Rx) units, make sure the cable connection is tight and not loose.
5. Plug in the 5V DC power cord to the power jack of transmitting and receiving units.
6. Power on all devices.
7. If your image is flickering or blinking, adjust the **Gain** and **Equalizer (EQ)** knobs to improve the cable skew. It is suggested to begin by adjusting the **EQ** then the **Gain** according to the video displayed on the screen.
8. **RGB skew adjust** feature allows skew compensation among red (R), green (G), and blue (B) signals due to long transmission distance or low quality cabling. Start by adjusting the **RGB selector** rotary dial to choose R/G/B color channel, then use the **-** or **+** **RGB skew adjust** push buttons to decrease or increase, respectively, the delay of the corresponding R/G/B color channel. There are 31 steps in total. Each step represents 2-nanosecond time difference for adjusting the delay.

Notes

1. All transmission distances are measured using Belden 1583A CAT5e 125MHz Solid UTP cable and ASTRODESIGN Video Signal Generator VG-859C. The transmission distance is defined as the distance between the video source and the VGA display.

2. Transmisson length is affected by the type of CAT5/6 cables, the type of VGA sources, and the type of VGA display. Testing results show that solid UTP cables (normally found in 300m [1000ft] bulk form) can transmit longer distances than stranded UTP cables. Shielded STP cables are better suited than unshielded UTP cables. Solid UTP CAT5e cabling returns longer tranmission distances than stranded STP CAT6 cables. For longer transmission distance, solid UTP/STP cables are your best choice.

3. To reduce the interference among the unshielded twisted pairs of wires in the LAN cable, you can use shielded LAN cables to reduce EMI problems.

4. For resolution greater than 1080i or 1280x1024, a CAT6 cable is recommended.

5. Transmission distance depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance. Unshielded CAT6 with metal RJ-45 connectors is recommended.

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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 analysts will promptly respond.

SIIG offers a 3-year manufacturer warranty with this product. 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 **RMA** to submit a request to SIIG RMA. 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. 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

VGA & RS-232 & Audio CAT5 Extender with RGB Delay Control

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

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