Composite & Audio over CAT.X Extender with RGB Delay Control

Safety and Notice

The **AV-GM03W3-S1** Composite & Audio over CAT.X Extender with RGB Delay Control has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM03W3-S1** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.

- Do not attempt to service this unit yourself, except where explained in this manual.

- Provide proper ventilation and air circulation and do not use near water.

- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.

- Use only the power adapter and power cords and connection cables designed for this unit.

- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

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INTRODUCTION

With only one cost effective CAT.X cable, the **AV-GM03W3-S1** lets you extend Composite signals up to 330m (1,000ft). The devices are composed of a transmitter and a receiver. The transmitter is installed near the signal source, and the receiver AV-GM03W3-S1-RX is placed near the desired display. With built-in EQ and GAIN control, the transmission path can be adjusted to adapt the cable quality and video bandwidth. Furthermore, the Composite RGB delay control [de-skew] function provides the compensation among R, G, B signals due to long transmission or through normal LAN cable. Analog stereo audio signals can be sent along with high quality Composite signal over long distance LAN cable.

FEATURES

- Supports up to 720P@60Hz, 1080i@60Hz, 1080P@30Hz to 330m (1,000ft)
- Supports analog stereo audio and S/PDIF digital audio
- Adjustable equalization and gain control on RX unit
- De-skew compensation available for RGB delay control
- Wall mounting case for secure installation

PACKAGE   CONTENTS

- 1x AV-GM03W3-S1 [TX&RX]
- 2x 5V power supply unit
- 1x User Manual
- 1~3x VGA-component breakout cable [optional accessory]

SPECIFICATIONS

| Model Name	AV-GM03W3-S1	
Technical	**AV-GM03W3-S1**	
Role of usage	Transmitter [TX]	Receiver [RX]
Video bandwidth	350MHz	
Video support	720P@60Hz, 1080i@60Hz, 1080P@30Hz	
Video Transmission	330m (1,000ft) [CAT5e]	
Audio support	Stereo/ S/PDIF	
Input video signal	1.2 Volts [peak-to-peak]	
Equalization	Continuous analog control	
RGB delay control	Yes	
ESD protection	[1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±8kV	
Input	4x RCA 1x 3.5mm	1xRJ-45
Output	1x RJ-45 1x 3.5mm 1x RCA	4x RCA 1x 3.5mm
RJ-45 connector	WE/SS 8P8C with 2 LED indicators	
RCA connector	YPbPr/ S/PDIF digital audio	
3.5mm connector	Earphone jack for analog stereo audio	
Mechanical	**AV-GM03W3-S1**	
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	[TX/RX] – 123 x 95 x 25mm [4.8"x3.7"x1"]
	Package	330 x 200 x 95mm [1'1"x7.9"x3.7"]
	Carton	495 x 440 x 380mm [1'7.5"x1'5.3"x1'3"]
Weight	Model	[TX]– 390g [14oz] / [RX]– 380g [13oz]
	Package	1250g [2.8 lbs]
Fixedness	Wall-mounting case with screws	
Power supply	Inter-locked 5V 2A DC	
Power consumption	6 Watts [max]	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	

Relative humidity	20~90% RH [no condensation]

PANEL DESCRIPTION

Transmitting unit ► AV-GM03W3-S1-TX

Front Panel
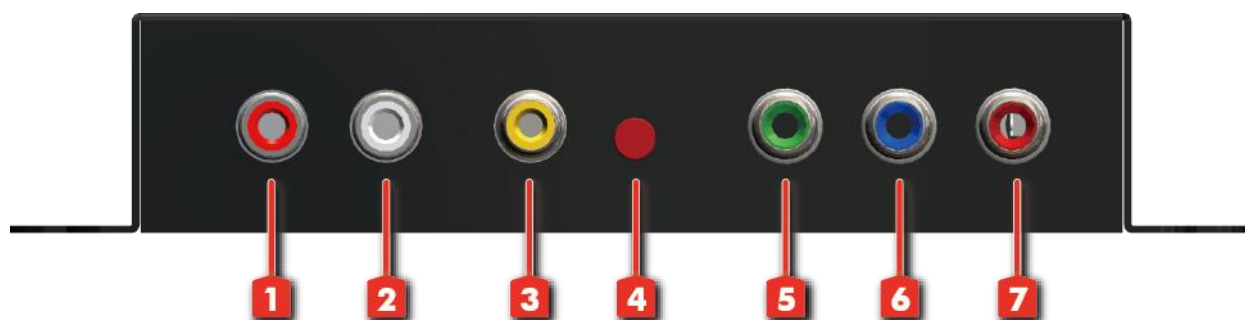
1. **Stereo audio input –** L
2. **Stereo audio input –** R
3. **S/PDIF audio input**
4. **Push-in button:** select between S/PDIF and analog stereo audio [button down-S/PDIF, button up-Stereo]
5. **Composite –** Y input
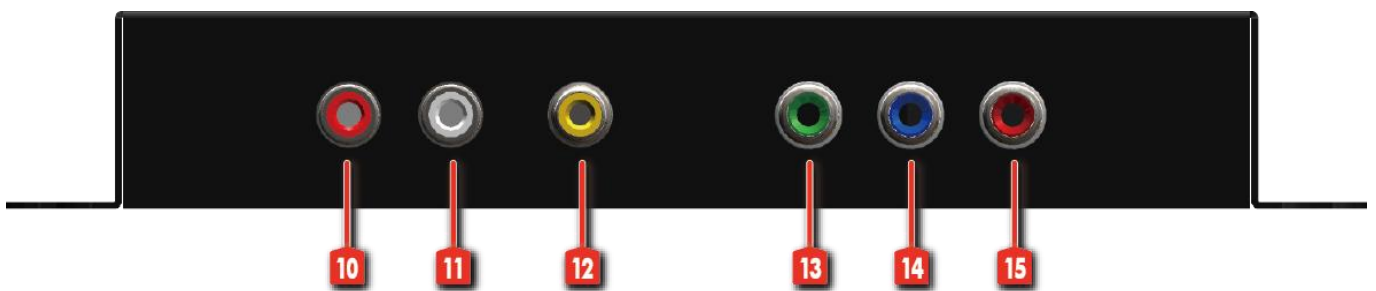6. **Composite –** Pb input
7. **Composite –** Pr input

Rear Panel
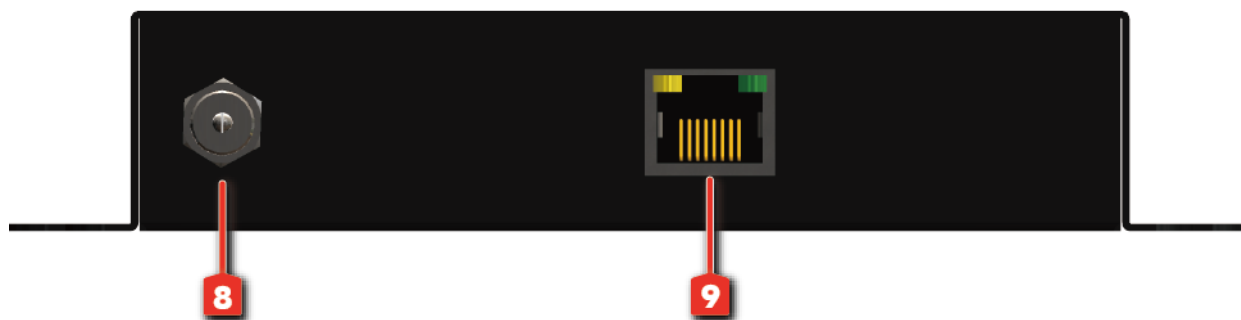
8. **+5V DC:** inter-locked power jack to connect to 5V DC power supply unit
9. **RJ-45 OUT:** plug in a Cat-5/5e/6 cable that needs to be linked to the RJ-45 connector of the receiving unit AV-GM03W3-S1[Rx]

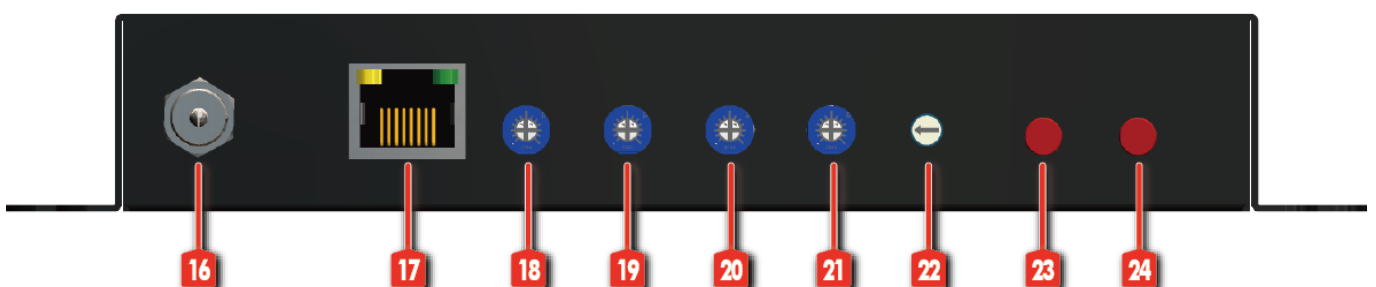# Receiving unit ▶ AV-GM03W3-S1-RX

Front Panel

10. **Stereo audio output –** L
11. **Stereo audio output –** R
12. **S/PDIF audio output**
13. **Composite –** Y output
14. **Composite –** Pb output
15. **Composite –** Pr output

Rear Panel

16. **+5V DC** power jack: connect to 5V DC power supply
17. **RJ-45 IN:** Plug in a CAT-5/5e/6 cable that needs to be linked to the RJ-45 connector of the transmitting unit AV-GM03W3-S1-TX.
18. **EQ:** Rotary control for equalization of R, G, B, respectively
19. **GAIN:** Rotary control for gain control of Y respectively
20. **GAIN:** Rotary control for gain control of Pb respectively
21. **GAIN:** Rotary control for gain control of Pr respectively
22. **Rotary control:** R=0~2, G=3~5, B=6~7, for de-skew compensation on respective color channel (for RGB delay control)
23. **–:** Push button for decrease a level of de-skew compensation (for RGB delay control)
24. **+:** Push button for decrease a level of de-skew compensation (for RGB delay control)

CONNECTION DIAGRAM
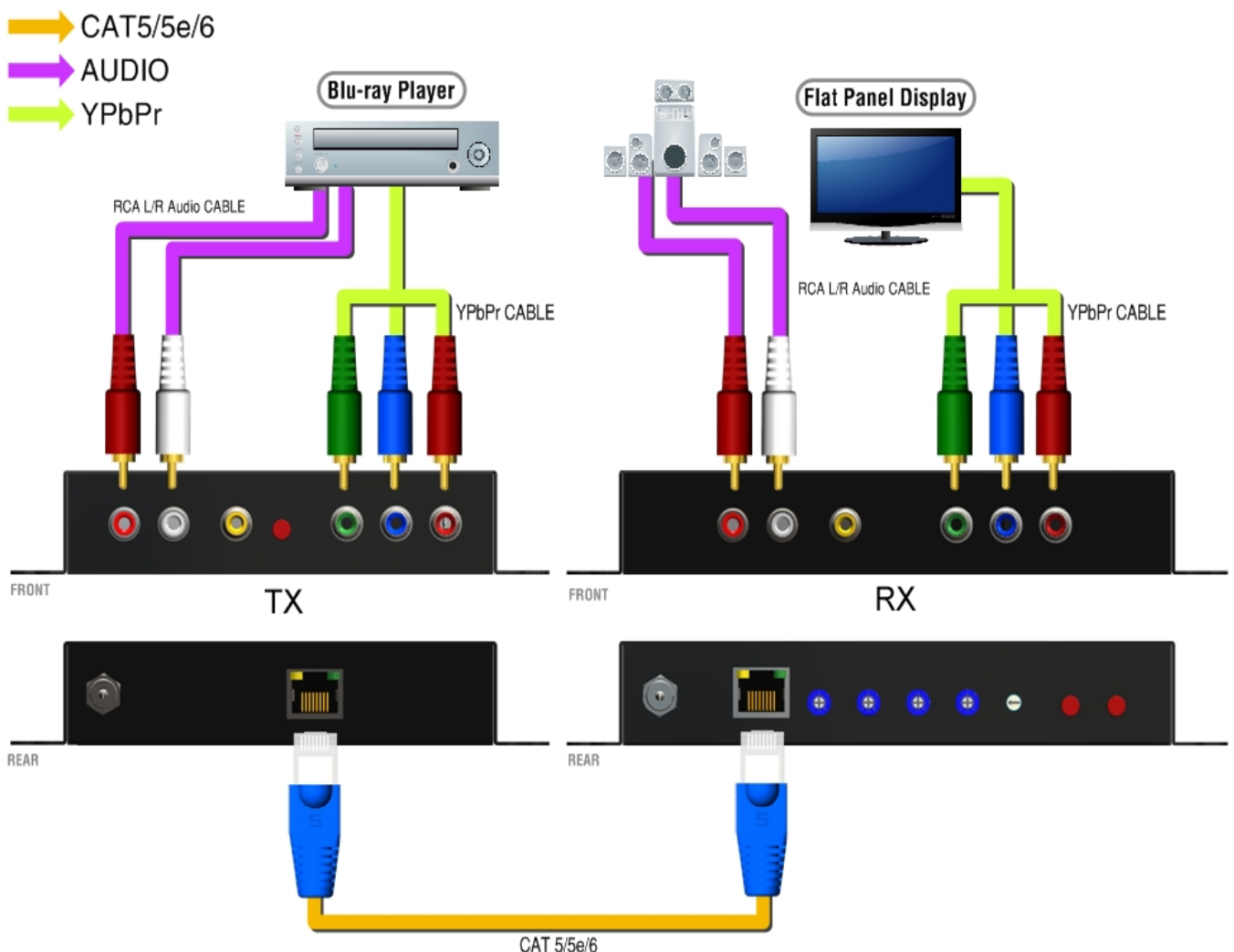
HARDWARE INSTALLATION

1. Connect your YPbPr and audio source to the transmitting unit.

2. Connect your display and speakers to the receiving unit.

3. Connect your CAT-5/5e/6 cable between the transmitting and receiving units.

4. Make sure your CAT-5/5e/6 cable is tightly connected and not loose.

5. Plug in 5V DC power cord to the power jack of the receiving unit.

6. Plug in 5V DC power cord to the power jack of the transmitting unit.

7. If a blurred video is seen or even worse, not displayed at all, try to adjust the EQ and Gain rotary controls to improve the cable skew. GAIN rotary controls are designed for gain control, and EQ rotary controls are designed for equalizing the wave form of the receiving video signal. It is suggested to begin with adjusting the rotary control of EQ to get the input video displayed first, and then the GAIN according to the video you see on the screen.

   Please follow the steps as below to adjust EQ and Gain.

   a. Set the rotary control of Y、Pb(Cb)、Pr(Cr) to max

   b. Set the rotary control of equalization to the middle position, and then adjust the EQ to left or right direction until the image is clear

   c. After the image is clear, please adjust the rotary control of Y、Pb(Cb)、Pr(Cr)

   P.S. Please check the RJ-45 connector and Cat.X cable and make sure they are not loose if the image can not be adjusted correctly

8. RGB delay control [De-skew] offers the flexible functionality to allow skew compensation among VGA R, G, B signals due to long transmission or thru low quality cable. By adjusting the rotary switch to choose R, G or B color channel at first, then use the push buttons to increase or decrease the delay in the corresponding color channel. There are totally 31 steps, each step with 2ns difference, for adjusting the delay between each color individually. Then the graphics quality can be further assured.

NOTICE

1. All transmission distances are measured using Belden 1583A CAT-5e 125MHz LAN 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. The transmission length is largely affected by the type of LAN cables, the type of video sources, and the type of display. The testing result shows solid LAN cables (usually in bulk cable 300m or 1000ft form) can transmit a lot longer signals than stranded LAN cables (usually in patch cord form). Shielded STP cables are better suit than unshielded UTP cables. A solid UTP CAT5e cable shows longer transmission length than stranded STP CAT6 cable. For long extension users, solid cables are your only choice.

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

4. Because the quality of the LAN cables has the major effects in how long transmission distance will be made and how good is the received display, the actual transmission length is subject to your LAN cables. For resolution greater than 1080i or 1280x1024, a CAT-6 cable is recommended.

5. The analog audio is sampled by 48kHz before transmission; on the remote RX unit with S/PDIF audio input, the only supported sampling frequency is 48kHz.

Performance Guide for HDMI over Category Cable Transmission

Performance rating		Type of category cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	★★★	★★★★	★★★★★
Solid	Shielded (STP)	★★★	★★★	★★★★
Stranded	Unshielded (UTP)	★	★★	★★
Stranded	Shielded (STP)	★	★	★★
Termination		Please use **EIA/TIA-568-B** termination (**T568B**) at any time		

LIMITED WARRANTY

The SELLER warrants the **AV-GM03W3-S1** Composite & Audio over CAT.X Extender with RGB Delay Control to be free from defects in the material and workmanship for 3 years from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 3 years warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables are limited to a 30 day warranty and cable must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. Also, the technical information contained herein regarding the **AV-GM03W3-S1** features and specifications is subject to change without further notice.

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For more info or tech support
http://www.siig.com/support

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