VGA & Audio over CAT5 Repeater with RGB Delay Control

P/N: AV-GM0213-S1

Safety and Notice

The AV-GM0213-S1 VGA & Audio over CAT5 Repeater 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-GM0213-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-5e cable, the **AV-GM0213-S1** VGA & Audio over CAT5 Repeater with RGB Delay Control lets you extend VGA (WUXGA) to cover the distance up to 330m (1,000ft). Equipped with RJ45 input, local VGA and stereo output, and playing as a repeater, AV-GM0213-S1 can extend A/V signals from VGA and audio CAT-5 extender up to another 300m (1,000ft), and monitor the A/V signals with local display and speaker. With built-in EQ and GAIN control, the transmission path can be adjusted to adapt the cable quality and video bandwidth. Furthermore, the VGA RGB delay control [de-skew] function provides the compensation among R, G, B signals due to long transmission or through normal LAN cable.

FEATURES

- Supports up to WUXGA [1920x1200@60] or UXGA [1600x1200@60] to 330m (1,000ft)
- Supports stereo audio
- Adjustable equalization and gain control on RX unit
- De-skew compensation available for RGB delay control
- Wall mounting case for better fixedness

PACKAGE CONTENTS

- 1x AV-GM0213-S1
- 1x 5V power supply unit
- 1x User Manual

VGA OVER SINGLE CAT5 SERIES LINEUP

	CV-907	CV-907D	CV-917	CV-917D	CV-927	CV-927D	AV-GM03 S3-S1	AV-GM03 S3-S1D	AV-GM02 13-S1
VGA video	●	●	●	●	●	●	●	●	●
Stereo analog audio			●	●			●	●	●
RS-232 signals					●	●	●	●	
IR signals							●	●	
Equalization	●	●	●	●	●	●	●	●	●
Gain control	●	●	●	●	●	●	●	●	●
RGB delay control		●		●		●		●	●
Transmission	330m [1,000ft] at WUXGA [1920x1200] or UXGA [1600x1200]								

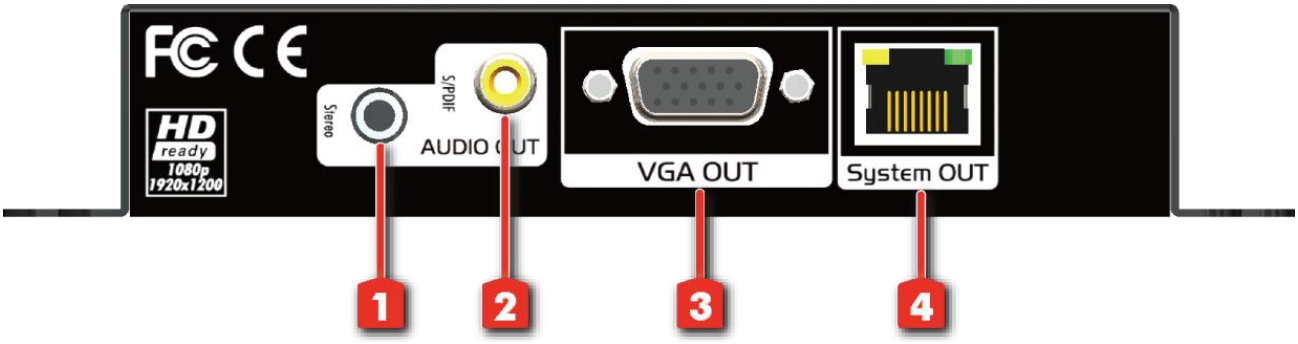
SPECIFICATIONS

Model Name		AV-GM0213-S1	CV-917D	
Technical		**Repeater**	**CV-917D-TX aka CV-917-TX**	**CV-917D-RX**
Video bandwidth		350MHz		
Video support		VESA		
Transmission		WUXGA [1920x1200] — 300m (1,000ft) [CAT5e]		
Audio support		Stereo audio		
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 — ±4kV		
Input		1x RJ45	1x VGA 1x 3.5mm	1x RJ45
Output		1x RJ45 1x VGA 1x 3.5mm	1x RJ45	1x VGA 1x 3.5mm 1x RCA
VGA connector		HD-15 [15-pin D-sub female]		
RJ45 connector		WE/SS 8P8C with 2 LED indicators		
3.5mm connector		Earphone jack for analog stereo audio		
RCA connector		S/PDIF digital audio		
Mechanical				
Housing		Metal case		
Dimensions [L x W x H]	Model	[RX] – 110 x 56 x 25mm [3.6” x 1.8” x 1”]	[TX] – 110 x 56 x 25mm [3.6” x 1.8” x 1”] [RX] – 123 x 95 x 25mm [4.8” x 3.7” x 1”]	
	Package		330 x 200 x 95mm [1’1” x 7.9” x 3.7”]	
	Carton		495 x 440 x 380mm [1’7.5” x 1’5.3” x 1’3”]	
Weight	Model		175g [6oz]	400g [14oz]
	Package		1050g [2.3 lbs]	
Fixedness		Wall-mounting case with screws		

Power supply	5V 2A DC
Power consumption	5 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]

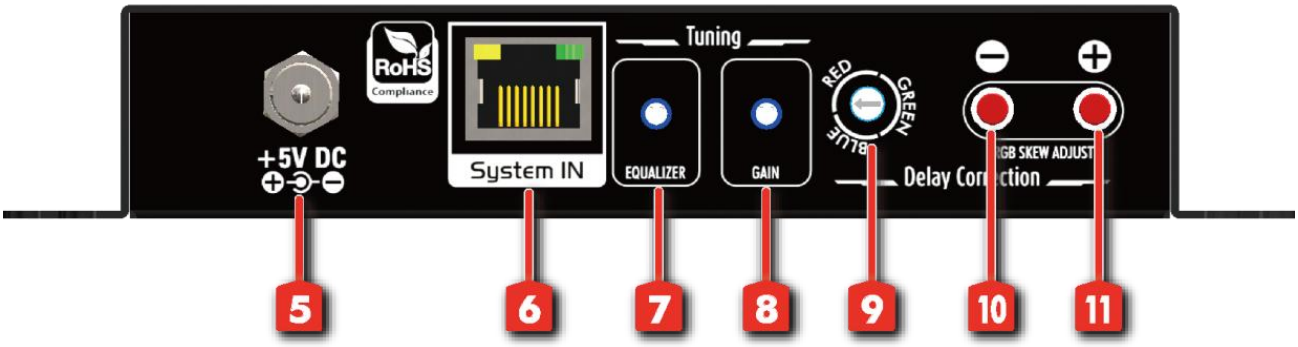
PANEL DESCRIPTIONS

Front Panel



1. **Stereo OUT:** Connect to an analog audio output
2. **S/PDIF OUT:** Connect to an S/PDIF digital audio output
3. **VGA OUT:** VGA output to a local video display
4. **System OUT:** Plug in a CAT-5/5e/6 cable that needs to be linked to the RJ45 connector of the transmitting unit, such as CV-917D-RX.

Rear Panel



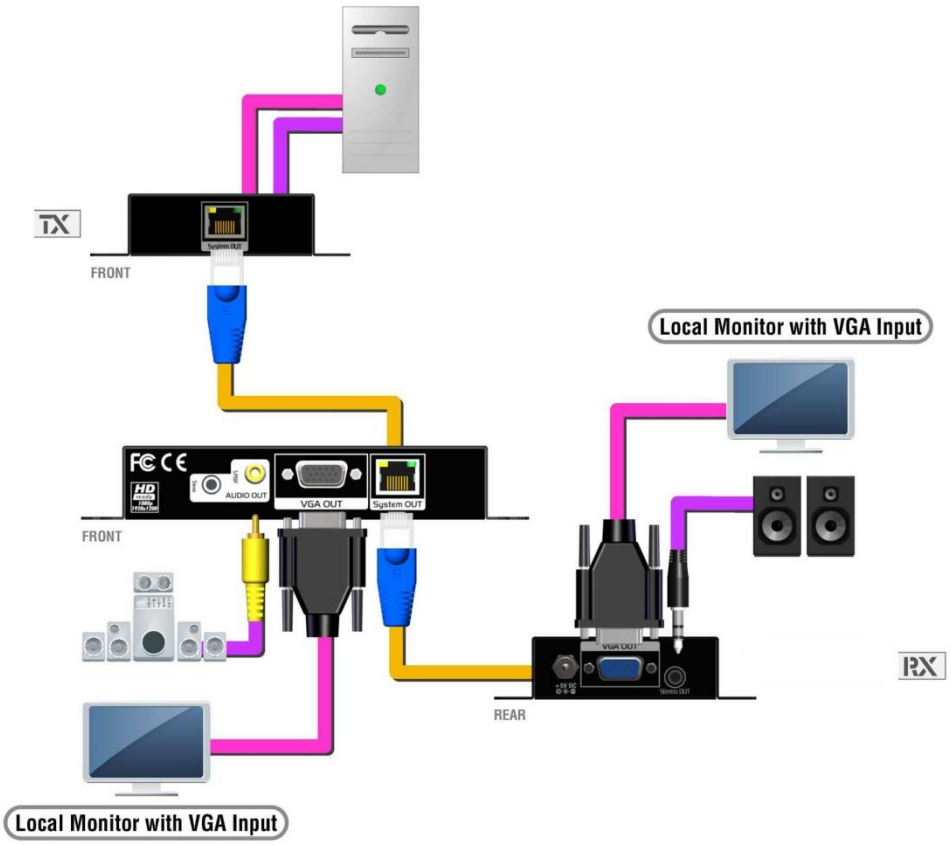
5. **+5V DC:** connect to 5V DC power supply
6. **System IN:** Plug in a CAT-5/5e/6 cable that needs to be linked to the RJ45 connector of the

transmitting unit, such as CV-917D-TX.

7. **EQUALIZER:** Rotary control for equalization of R, G, B, respectively
8. **GAIN:** Rotary control for gain control of R, G, B, respectively
9. **Rotary control:** R=0~2, G=3~5, B=6~7, for de-skew compensation on respective color channel (for RGB delay control)
10. **-:** Push button for decrease a level of de-skew compensation (for RGB delay control)
11. **+:** Push button for increase a level of de-skew compensation (for RGB delay control)

CONNECTION DIAGRAM

CAT5/5e/6
AUDIO
VGA



HARDWARE INSTALLATION

1. Connect your VGA and audio source to the transmitting unit such as CV-917-TX.
2. Connect your display and speakers to AV-GM0213-S1.
3. Connect your CAT-5/5e/6 cable between the transmitting unit and AV-GM0213-S1.
4. Connect your CAT-5/5e/6 cable between AV-GM0213-S1 and the receiving unit.
5. Make sure your CAT-5/5e/6 cable is tightly connected and not loose.
6. Plug in 5V DC power cord to the power jack of AV-GM0213-S1.
7. If a blurred video is seen or even worse on the local display, 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.
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 & VG-870B. 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.

Performance Guide for HDMI over Category Cable Transmission

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

WARRANTY

The SELLER warrants the **AV-GM0213-S1** VGA & Audio over CAT5 Repeater with RGB Delay Control 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 and power adapters are limited to a 30 day warranty and 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-GM0213-S1 features and specifications is subject to change without further notice.**

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

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