



HDMI extender over single cat.X



P/N: AV-GM0313-S1



Safety and Notice

The AV-GM0313-S1 HDMI extender over single cat.X has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the AV-GM0313-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

The **AV-GM0313-S1 HDMI extender over single cat.X** boosts up your video/audio transmission distance up to 60m (200ft) in HDTV 1080i format, 40m (130ft) in HDTV 1080p format, and 20m (65ft) in HDTV 1080p with 36-bit color depth. AV-GM0313-S1 also supports the most advanced 3D video format compliant with HDMI 1.4 specification and therefore guarantees the highest 3D video compatibility on the market. With only one cost effective Cat.5/5e/6 cable, users can readily extend HDTV sources from DVD players, Blu-ray Disc player, PS3, PC, and any other kinds of sources compliant with TMDS to distant display monitors including HDMI or DVI enabled TV sets or LCD PC monitors. With the advanced design for the latest HDMI technology, deep color video, DTS-HD or Dolby TrueHD audio, and HDCP supports and compatibility are all further insured. This flexibility makes HDCP compliant DVD players or PS3 transmit utmost high quality video and audio with a greater distance at the minimal cost, when integrating several components apart.

The AV-GM0313-S1 includes two units: transmitting unit AV-GM0313-S1-TX and receiving unit AV-GM0313-S1-RX. The transmitting unit is used to capture the input HDMI / DVI signals and carry the signals via one cost effective Cat.5/5e/6 cable. The receiving unit is responsible for equalizing the transmitted HDMI signal. The transmission distance between the sending and receiving units can be up to 60m (200ft) at HD 720p or 1080i; or 40m (130ft) at Full HD 1080p. With an 8-level equalization rotary control on the receiving unit, users can adjust the equalization strength to the received HDMI signals accordingly, and therefore optimize the transmission distance between source and destination.

FEATURES

- Support HDMI Deep Color & full 3D
- Extend the transmission up to 50m (165ft) from the HDMI source at HD 1080i or 720p 24-bit
- Extend the transmission up to 40m (130ft) from the HDMI source at Full HD 1080p 24-bit
- Extend the transmission up to 20m (65ft) from the HDMI source at Full HD 1080p 36-bit
- HDCP 1.1 compliant
- Minimize the cable skew by adjustable 8-level equalization control
- Pure unaltered uncompressed 7.1ch digital HDMI over Cat.5/5e/6 cable transmission
- DTS-HD and Dolby True HD high bit rate audio support
- Allows cascading
- Wall mounting housing design for easy and robust installation
- Perfectly integrated with other HDMI over CAT5 series products



The length 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 RJ45 connectors is recommended.

PACKAGE CONTENTS

- 1x AV-GM0313-S1 [TX & RX]
- 2xmini USB to USB adapter
- 1x User Manual

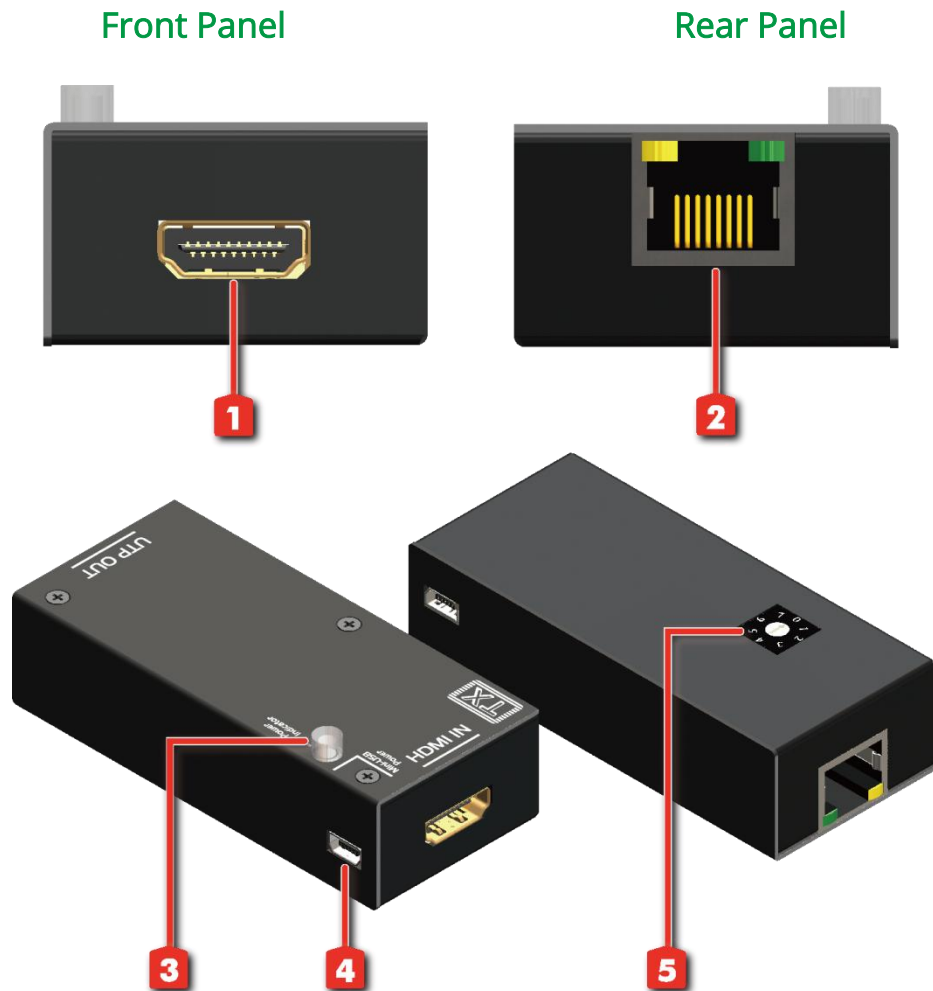


SPECIFICATIONS

Model Name	AV-GM0313-S1	
Technical		
Role of usage	Transmitter [TX]	Receiver [RX]
HDMI compliance	HDMI Deep Color & full 3D	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gbps]	
Video support	480i / 480p / 720p / 1080i / 1080p60	
HDMI over UTP transmission [24-bit]	Full HD (1080p)-40m (130ft) [CAT.X] HD (720p/1080i)-50m (165ft) [CAT.X]	
Audio support	Surround sound (up to 7.1ch) or stereo digital audio	
Signal Equalization	8-level digital control at RX	
Input TMDS signal	1.2 Volts [peak-to-peak]	
Input DDC signal	5 Volts [peak-to-peak, TTL]	
ESD protection	[1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±8kV	
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
IR pass-thru	N/A	
Input	1x HDMI	1x RJ45
Output	1x RJ45	1x HDMI
IR remote control	N/A	
HDMI connector	Type A [19-pin female]	
RJ-45 connector	WE/SS 8P8C with 2 LED indicators	
2.5mm connector	None	None
3.5mm connector	None	None
Rotary control switch	Mode	Signal level
Mechanical		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	[TX/RX] 85 x 38 x 21mm [3.3"x1.5"x0.8"]
	Package	270 x 175 x 80mm [10.6" x 6.9" x 3.1"]
	Carton	450 x 370 x 300mm [1'6" x 1'3" x 1']
Weight	Model	[TX/RX] 405g [14oz]
	Package	720g [1.6 lbs]
Fixedness	Wall-mounting case with screws	
Power supply	Via mini USB	
Power consumption	1 Watt [max]	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	
Relative humidity	20~90% RH [no condensation]	

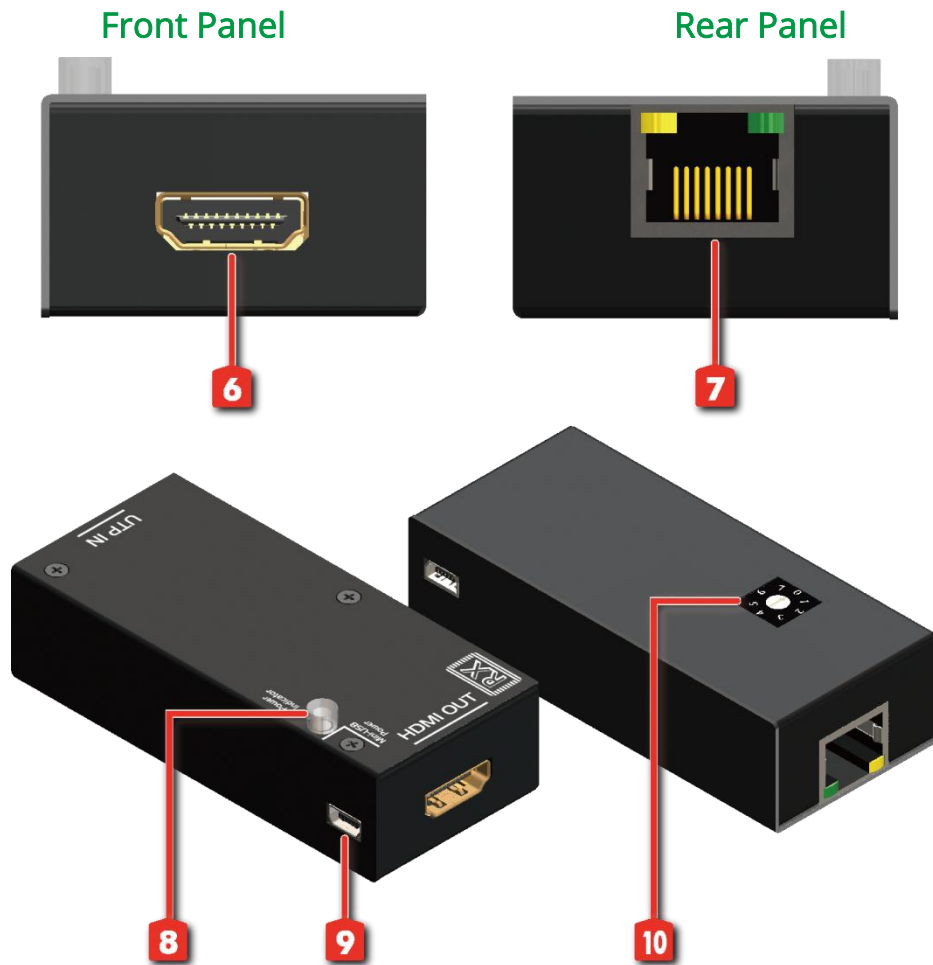
Panel Description

Transmitting unit ► TX



- 1. HDMI IN:** Connects to a HDMI source with a HDMI male-male cable
- 2. RJ45 OUT:** Plug in a Cat-5/5e/6 cable that needs to be linked to the receiving unit AV-GM0313-S1-RX
- 3. LED Indicator**
- 4. MINI USB POWER:** Connects to a USB port for 5V DC power supply
- 5. MODE:** 0 = [Video] – locks to Full HD 1080p 24-bit. [Audio] – up to 7.1ch surround sound
1 = [Video] – locks to Full HD 1080p 24-bit. [Audio] – locks to stereo audio
2 = [Video] – up to Full HD 1080p 36-bit. [Audio] – up to 7.1ch surround sound
3 = [Video] – up to Full HD 1080p 36-bit. [Audio] – locks to stereo audio
4 = [Video] – locks to HD 720p or 1080i 24-bit. [Audio] – up to 7.1ch surround sound
5 = [Video] – locks to HD 720p or 1080i 24-bit. [Audio] – locks to stereo audio
6 = [Video] – up to 3D Full HD 1080p 36-bit. [Audio] – locks to stereo audio
7 = Learn EDID from the display {see EDID Learning section for more info}

Receiving unit ► RX

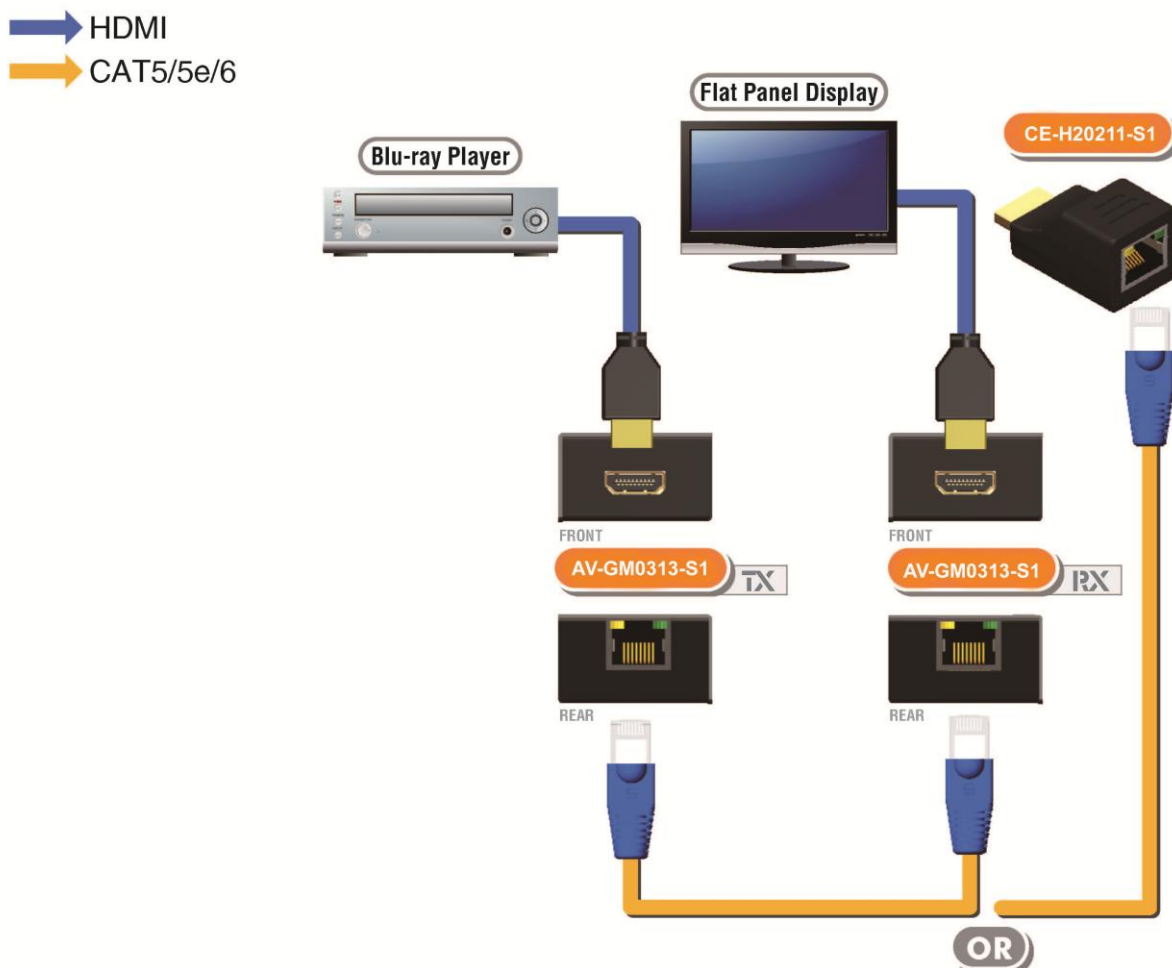


6. **HDMI OUT:** Connects to a HDMI display with a HDMI male-male cable
7. **RJ45 IN:** Plug in a Cat-5/5e/6 cable that needs to be linked to the transmitting unit AV-GM0313-S1-TX.
8. **LED Indicator**
9. **MINI USB POWER:** Connects to a USB port for 5V DC power supply
10. **Rotary control:** Adjust the 8-level equalization control to the received HDMI signals. The HDMI signal level varies from 0 (strongest) to 7 (weakest) for respective transmission length from longest possible range to short distance. Please adjust the signal level from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!

HARDWARE INSTALLATION

1. Connect a HDMI or DVI source (such as a Blu-ray Disc player) to the transmitting unit AV-GM0313-S1-TX.
2. Connect a HDMI or DVI display (such as a LCD TV) to the receiving unit AV-GM0313-S1-RX.
3. Connect a Cat-5/5e/6 cable between the transmitting and receiving units.
4. Make sure this Cat-5/5e/6 cable is tightly connected and not loose.
5. Plug in 5V DC power supply unit to the power jack of the receiving unit AV-GM0313-S1-RX.
6. Plug in 5V DC power supply unit to the power jack of the transmitting unit AV-GM0313-S1-TX.
7. If you see flickering or blinking image on the display, please adjust the rotary control switch to improve the cable skew. 0 stands for the strongest HDMI signal level for longest possible transmission length while 7 stands for the weakest HDMI signal level for short transmission length. Please adjust the signal level from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!

CONNECTION DIAGRAM

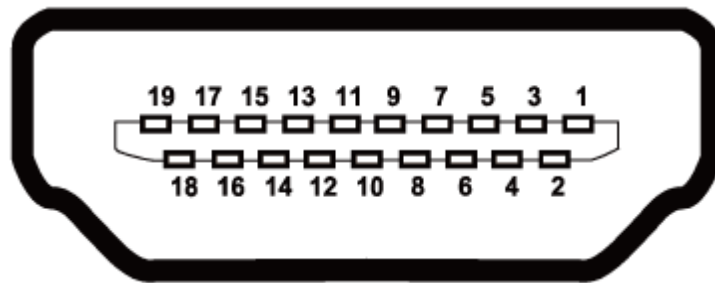


EDID LEARNING

1. Turn off AV-GM0313-S1-TX and disconnect the Cat.5/5e/6 between AV-GM0313-S1-TX and AV-GM0313-S1-RX.
2. Connect the HDMI display to **"HDMI IN"** on the AV-GM0313-S1-TX with a HDMI cable.
3. Set **"MODE"** on the transmitting unit AV-GM0313-S1-TX at 7.
4. Turn on the AV-GM0313-S1-TX.
5. The LED on the RJ45 of AV-GM0313-S1-TX will dim and light again, which indicates the EDID learning procedure is complete.
6. Unplug the HDMI cable from the display and follow the instruction in [Hardware Installation] to set up the AV-GM0313-S1 and enjoy the experience.

PIN DEFINITION

HDMI

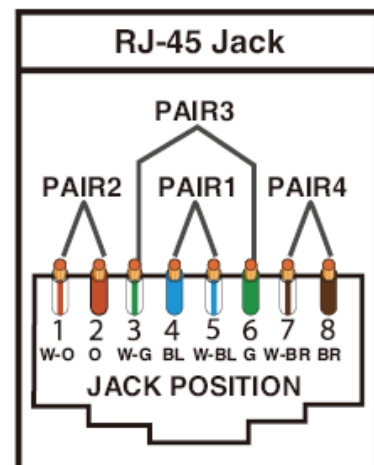


Type A (Receptacle) HDMI

Pin 1	TMDS Data2+	Pin 8	TMDS Data0 Shield	Pin 14	Reserved (N.C. on device)
Pin 2	TMDS Data2 Shield	Pin 9	TMDS Data0-		
Pin 3	TMDS Data2-	Pin 10	TMDS Clock+	Pin 15	SCL
Pin 4	TMDS Data1+	Pin 11	TMDS Clock Shield	Pin 16	SDA
Pin 5	TMDS Data1 Shield	Pin 12	TMDS Clock-	Pin 17	DDC/CEC Ground
Pin 6	TMDS Data1-	Pin 13	CEC	Pin 18	+5V Power
Pin 7	TMDS Data0+			Pin 19	Hot Plug Detect

CAT5 [RJ45]

Data Link TIA/EIA-568-B		
PIN	Color	Function
1	W-O	TX0-
2	O	TX0+
3	W-G	TX1-
4	BL	TX2-
5	W-BL	TX2+
6	G	TX1+
7	W-BR	TXC-
8	BR	TXC+



NOTICE

1. When adjusting the signal level on the receiver unit, please dial the rotary control switch from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!
2. If the DVI or HDMI device requires the EDID information, please use EDID Reader/Writer to retrieve and provide DVI or HDMI display EDID information.
3. All HDMI over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C.
4. The transmission length is largely affected by the type of Cat-5/5e/6 cables, the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 300m [1,000ft] bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP Cat-5e cable shows longer transmission range than stranded STP Cat-6 cable. For long extension applications, solid UTP/STP cables are the only viable choice.
5. EIA/TIA-568-B termination (T568B) for Cat-5/5e/6 cables is recommended for better performance.
6. To reduce the interference among the unshielded twisted pairs of wires in Cat-5/5e/6 cable, one can use shielded STP cables to improve EMI problems, which is worsen in long transmission.
7. Because the quality of the CAT5/6 cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of Cat-5/5e/6 cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 cable is recommended.
8. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input [HDMI input #1] generally can produce better transmission performance among all HDMI inputs.



WARRANTY

The SELLER warrants the **AV-GM0313-S1 HDMI extender over single cat.X** 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 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-GM0313-S1 features and specifications is subject to change without further notice.

Support

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