



1x4 VGA & Audio over CAT 6 SHIELDED Splitter



P/N: AV-GM06R3-S1



Safety and Notice

The AV-GM06R3-S1 1x4 VGA & Audio over CAT 6 SHIELDED Splitter has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the AV-GM06R3-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.



INTRODUCTION

The AV-GM06R3-S1 **1x4 VGA & Audio over CAT 6 SHIELDED Splitter** with only one cost effective Cat-6 Shielded cable lets you extend VGA or component video (WUXGA) and stereo/analog audio signals to cover the distance up to 330m to four VGA & Audio over CAT 6 SHIELDED receivers (BPVGARA or BPVGARAD). Built with two VGA and digital/analog audio loop-outs, local AV receivers can provide extra video and audio fan-outs through typical VGA, S/PDIF, and analog audio cables. The high bandwidth VGA can be transmitted up to 65 meters on the local ports.

Features

*****Apply CAT-6 shielded cable extender.*****

- Supports up to WUXGA (1920x1200@60) or UXGA (1600x1200@60) to 330m*
- Supports 720p component video signal to 330m*
- Supports analog and digital stereo audio
- Supports component video transmission with VGA-component breakout cables
- 1RU rack mounting case and latch-locking power jack for better fixedness and easy installation



**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.*

**Although the BPVGARA can transmit high resolution video signals to 330m, but for better visual experience especially if the signal is still picture, it is recommended to choose use the BPVGARA under 100m for resolution higher than 1280x1024. For longer transmission, please use BPVGARAD instead as the receiving unit.*

**For component video over CAT 6 SHIELDED transmission, you need to prepare VGA-to-component breakout cables which are not included in the package contents.*

PACKAGE CONTENTS

- 1x AV-GM06R3-S1
- 1x 1RU rack-mounting ear set
- 1x 5V power supply unit
- 1x C7 power cord
- 1x User Manual

SPECIFICATIONS

Model Name	AV-GM06R3-S1	
Technical		
Role of usage	1x2 Distribution Amplifier Transmitter [TX]	
HDMI compliance	HDMI Deep Color & 3D	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gbps]	
Video support	480i / 480p / 720p / 1080i / 1080p60 up to 36-bit color	
Transmission over UTP cable (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 output signal equalization	
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]	
Input	1x HDMI	
Output	1x HDMI + 1x RJ-45 + 1x 3.5mm audio socket	
HDMI connector	Type A [19-pin female]	
RJ-45 connector	WE/SS 8P8C with 2 LED indicators	
3.5mm connector	Earphone jack for stereo audio	
DIP switch	None	
Rotary control switch	HDMI Signal Level	
Mechanical		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	179 x 107 x 26mm [7" x 4.2" x 1"]
	Package	200 x 330 x 95mm [7.9" x 1'1" x 3.7"]
Weight	Model	527g [1.2 lbs]
	Package	985g [2.2 lbs]
Fixedness	Wall-mounting case	
Power supply	5V 4A DC	
Power consumption	7.5 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]	

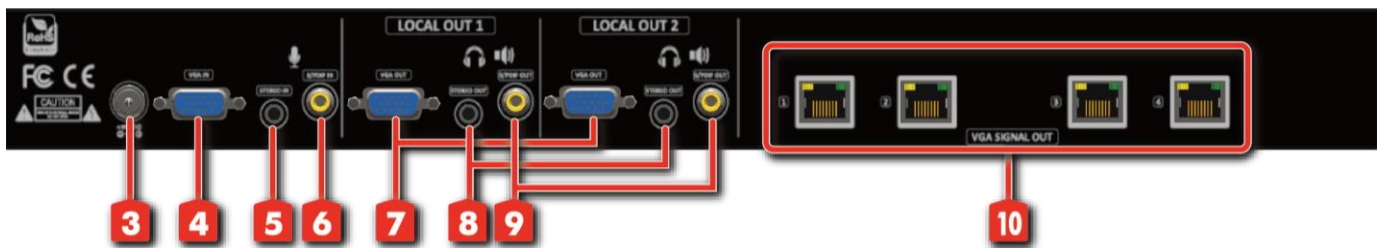
PANEL DESCRIPTIONS

Front Panel



1. **AUDIO SWITCH:** A push-in button for input audio selection (STEREO – analog stereo audio; S/PDIF – S/PDIF digital stereo audio)
2. **Power:** Power on/off indicator.

Rear Panel

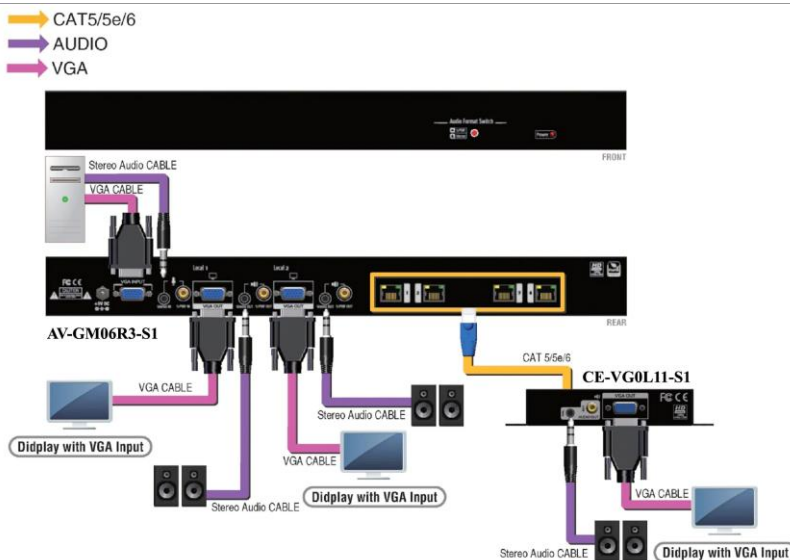


3. **+5V DC:** Latch-locking power jack to connect to a 5V DC power supply unit with a C7 power cord.
4. **VGA IN:** Connect to a VGA source or a component video source (via a VGA-component breakout cable)
5. **STEREO IN:** Connect to an analog stereo audio source.
6. **S/PDIF IN:** Connect to a digital stereo audio source.
7. **VGA OUT:** Local video output to a VGA display or component video display (via a VGA-component breakout cable).
8. **STEREO OUT:** Local audio output to analog stereo audio speakers.
9. **S/PDIF OUT:** Local audio output to digital stereo audio speakers.
10. **VGA SIGNAL OUT:** Connect a Cat-6 Shielded cable to each RJ45 port and link it to the receiving units either BPVGARA or BPVGARAD.

INSTALLTION

1. Switch off all devices, including monitors.
2. Connect the video and audio sources to the AV-GM06R3-S1. For component video source, please find a VGA-component breakout cable to plug into the **VGA IN** port.
3. Connect the video displays and audio speakers to the receiving units BPVGARA or BPVGARAD. For component video display, please find a VGA-component breakout cable and plug into the **VGA OUT** port on the receiving units BPVGARA or BPVGARAD.
4. Connect a Cat-6 Shielded cable to each **VGA SIGNAL OUT** RJ45 port on the AV-GM06R3-S1 and the **VGA SIGNAL IN** RJ45 port on each receiving unit BPVGARA or BPVGARAD. Make sure these Cat-6 Shielded cables are tightly connected and not loose.
5. Plug in 5V DC power supply units and power on all devices.
6. If you see the monitor is displaying blurred video or even worse, not displaying at all, please adjust the EQ and Gain rotary controls on the receiving units BPVGARA or BPVGARAD to improve the cable skew. GAIN rotary control is to adjust the gain to an appropriate level for a range of input signal levels (brightness), and EQ rotary control is to equalize the wave form of the receiving video signal (sharpness). It is suggested to begin with adjusting the rotary control of EQ to get the input video displayed first, and then the rotary control of GAIN according to the video you see on the screen.
7. Adjust RGB delay skew on the receiving unit BPVGARAD to get even better picture quality for long distance transmission.

Connection Diagram



NOTICE

1. All transmission distances are measured using Belden 1583A CAT6 Shielded 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. The transmission length is largely affected by the type of Category cables, the type of VGA sources, and the type of VGA displays. The testing result shows solid UTP cables (usually in the form of 300m 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-6 Shielded cable shows longer transmission range than stranded STP Cat-6 shielded cable. For long extension applications, solid UTP/STP cables are the only viable choice.
3. EIA/TIA-568-B termination (T568B) for category cables is recommended.
4. To reduce the interference among the unshielded twisted pairs of wires in UTP cable, you can use doubled shielded STP cables to improve EMI problems, which is worsen in long transmission.
5. Because the quality of the category 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-6 Shielded cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 shielded cable is recommended.
6. The analog audio is sampled by 48kHz with 24-bit precision before transmission. The S/PDIF audio input/output only supports sampling frequency at 48kHz.



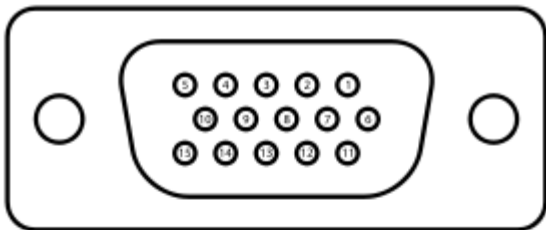
Performance Guide for HDMI over

PIN DEFINITION

Category Cable Transmission

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

VGA

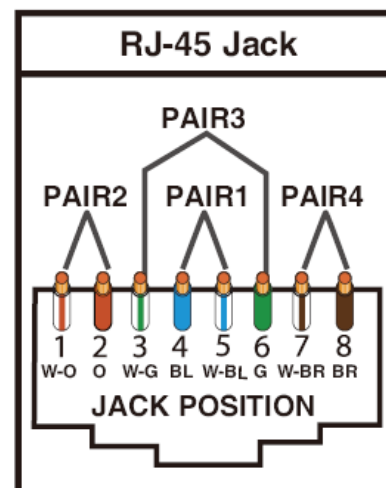


A female DE15 socket (videocard side).

Pin 1	RED	Red video
Pin 2	GREEN	Green video
Pin 3	BLUE	Blue video
Pin 4	N/C	Not connected
Pin 5	GND	Ground (HSync)
Pin 6	RED_RTN	Red return
Pin 7	GREEN_RTN	Green return
Pin 8	BLUE_RTN	Blue return
Pin 9	SENSE	+5 V DC from gfx adapter
Pin 10	GND	Ground (VSync, DDC)
Pin 11	N/C	Monitor ID
Pin 12	SDA	I ² C data
Pin 13	HSync	Horizontal sync
Pin 14	VSync	Vertical sync
Pin 15	SCL	I ² C clock

RJ45/Cat.X

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+



Support

For more info or tech support

<http://www.sieg.com/support>

April, 2018