



1x9 HDMI over Single CAT5 Splitter with Local Output



To avoid EMI issue, complete STP Cat6 cable is strongly recommended!

P/N: AV-GM0683-S1



Safety and Notice

The **AV-GM0683-S1 1x9 HDMI over Single CAT5 Splitter with Local Output** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0683-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-GM0683-S1 1x9 HDMI over Single CAT5 Splitter with Local Output** provides the most flexible solution by which the high definition video and high quality audio can be transmitted to different locations over a long distance. The devices are cascable, allowing you to extend HDMI compliant displays almost anywhere. The input HDMI source can be duplicated and distributed to up to 9 HDMI-enabled displays through cost effective Cat-5/5e/6 cables with CAT5 receivers (CE-H20111-S1) and/or mini-receivers (CE-H20111-S1). The AV-GM0683-S1 has a local HDMI output for easy monitoring or cascading to another HDMI splitter. With the built in equalization, the input HDMI cable can be extended up to 20 meters long under Full HD 1080p, and make the overall transmission distance superior than regular HDMI splitters in the market.

FEATURES

- Support HDMI Deep Color & full 3D
- HDCP compliant
- Regenerates the HDMI signal
- Supports default HDMI EDID and has the ability to learn the EDID of displays
- Extends up to 20m of input HDMI cable
- Extends up to 40m of output Cat-5/5e/6 cable under Full HD (1080p)
- Pure unaltered uncompressed 7.1ch digital HDMI over CAT5/6 cable transmission
- Allows cascading
- Perfectly integrated with other HDMI over CAT5 series products
- 1RU rack mountable



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 RJ-45 connectors is recommended.

PACKAGE CONTENTS

- 1x AV-GM0683-S1
- 1x DC 5V 4A in-line with C7 power cord
- 1x Rack-mounting ear set
- 1x User Manual

SPECIFICATIONS

Model Name	AV-GM0683-S1	
Technical		
Role of usage	1x9 splitter / transmitter [TX]	
HDMI compliance	HDMI Deep Color & full 3D	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gbps]	
Video support	480i / 480p / 720p / 1080i / 1080p60 12-bit	
HDMI over UTP transmission (8-bit)	Full HD (1080p)-40m (130ft) [CAT.X] HD (720p/1080i)-50m (165ft) [CAT.X]	
Audio support	Surround sound (up to 7.1 ch) or stereo digital audio	
Input TMDS signal	1.2 Volts [peak-to-peak]	
Input DDC signal	5 Volts [peak-to-peak, TTL]	
ESD protection	[1] Human body – ±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 + 8x RJ-45	
HDMI connector	Type A [19-pin female]	
RJ-45 connector	WE/SS 8P8C with 2 LED indicators	
Rotary control switch	8-dial modes for audio/video mode selection and EDID learning	
Mechanical		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	158 x 438 x 44mm [6.2" x 1'5.2" x 1.7"]
	Package	230 x 545 x 110mm [9.1" x 1'10" x 4.3"]
	Carton	580 x 570 x 260mm [1'11" x 1'11" x 10.2"]
Weight	Model	1.7kg [3.7 lbs]
	Package	2.7kg [5.9lbs]
Fixedness	1RU rack-mount with ears	
Power supply	5V 4A DC	

Power consumption	13 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]

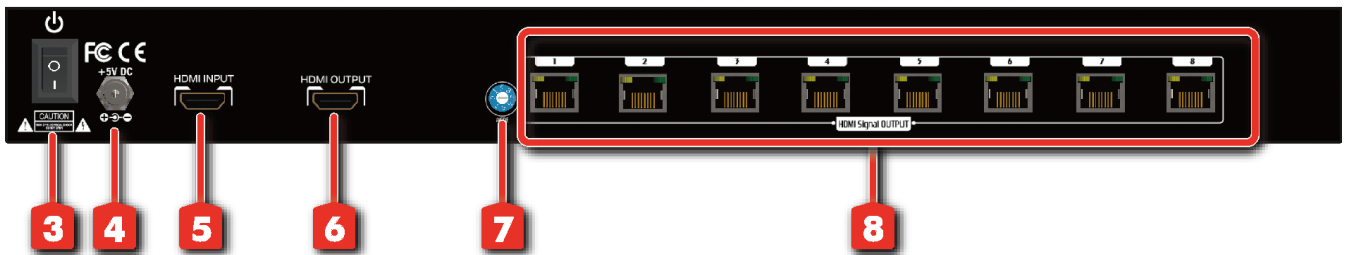
PANEL DESCRIPTIONS

Front Panel



1. **SIGNAL:** bright – HDMI source signal is detected; dark – no HDMI signal.
2. **POWER:** bright – power on; dark – power off.

Rear Panel



3. **Power:** Power on/off switch
4. **+5V DC:** Interlocking power jack for 5V DC power supply unit
5. **HDMI INPUT:** Connect to one HDMI source device
6. **HDMI OUTPUT:** Connect to a HDMI display for local monitoring or cascade to another HDMI splitter such as AV-GM0643-S1, AV-GM0683-S1 or AV-GM06B3-S1
7. **MODE:**
 - 0 = [Video] –2D / Full-HD 24bit 1080p@60 [Audio] – up to 7.1ch surround soundt
 - 1 = [Video] –2D / Full-HD 24bit 1080p@60 [Audio] – up to 2.0ch surround sound
 - 2 = [Video] –2D / Full-HD 36bit 1080p@60 [Audio] – up to 7.1ch surround sound
 - 3 = [Video] –2D / Full-HD 36bit 1080p@60 [Audio] – up to 2.0ch surround sound

4 = [Video] -2D / HD 24bit (1080p@30)(1080i@60)(720p@60) [Audio] - up to 7.1ch surround sound

5 = [Video] -2D / HD 24bit (1080p@30)(1080i@60)(720p@60) [Audio] - up to 2.0ch surround sound

6 = [Video] -3D / Full-HD 36bit (1080p@60) [Audio] - up to 2.0ch surround sound

7 = [EDID Learning Mode] - learns EDID from the display

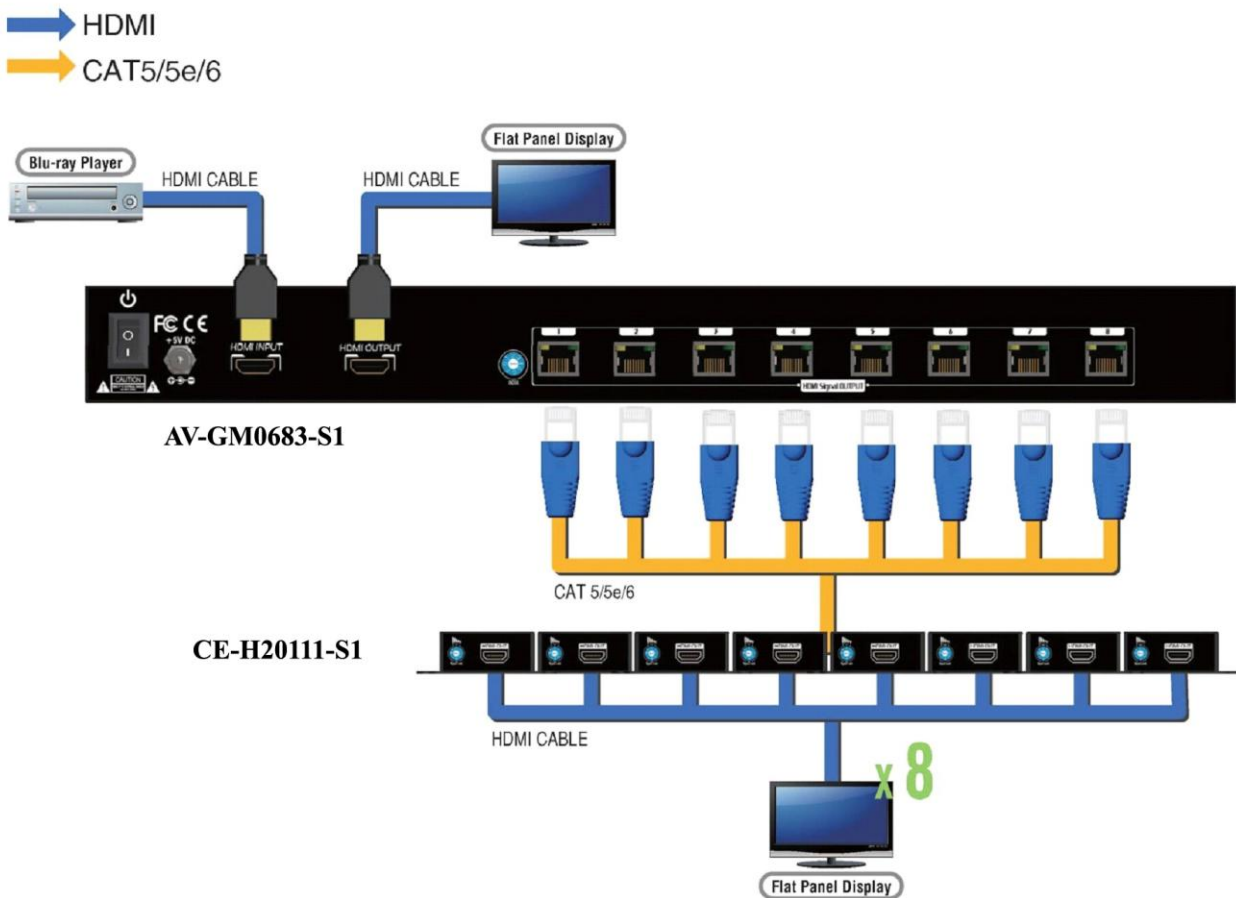
8. **Cat.X Output 1~8:** Link to each HDMI display via a Cat-5e/6/7 cable with a HDMI over CAT5e receiver (CE-H20211-S1 or CE-H20111-S1)

HARDWARE INSTALLATION

Broadcasts HDMI signals to 1 local and 8 remote displays from one video source

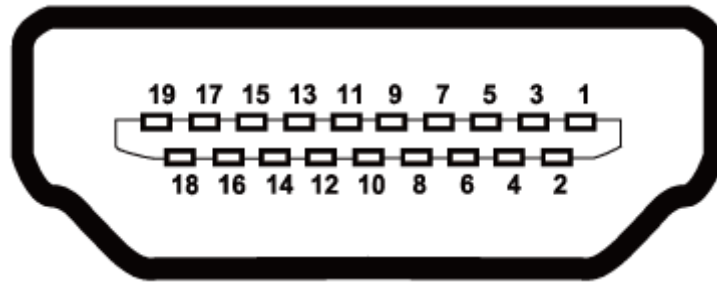
1. Switch off all devices, including displays.
2. Connect a HDMI display or another cascaded HDMI splitter to the **HDMI OUTPUT** port.
3. Connect a HDMI source (such as a Blu-ray Disc player) to the **HDMI INPUT** port.
4. Connect the HDMI over CAT5 receivers (CE-H20111-S1 or CE-H20211-S1) via solid Cat-5/5e/6 cables to each **Cat.X Output** port.
5. Plug in the 5V 4A DC interlocking power supply unit.
6. Power on the HDMI displays.
7. Power on the HDMI source.

CONNECTION DIAGRAM



PIN DEFINITION

HDMI

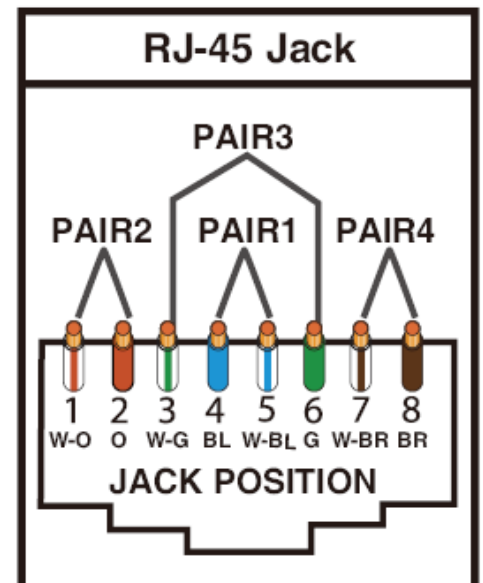


Type A (Receptacle) HDMI

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

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. 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.
2. All HDMI over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C.
3. 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 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.
4. EIA/TIA-568-B termination (T568B) for category cables is recommended.
5. To reduce the interference among the unshielded twisted pairs of wires in Cat-5/5e/6 cable, one can use double shielded STP cables to improve EMI problems, which is worsen in long transmission.
6. 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.
7. 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-GM0683-S1 1x9 HDMI over Single CAT5 Splitter with Local Output** 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-GM0683-S1 features and specifications is subject to change without further notice.**

Support

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