



# 1x4 DVI Splitter over Single Cat.X with HDCP Support



P/N: AV-GM0583-S1



## Safety and Notice

The **AV-GM0583-S1 1x4 DVI Splitter over Single Cat.X with HDCP Support** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0583-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-GM0583-S1 1x4 DVI Splitter over Single Cat.X with HDCP Support** 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 cascadable, allowing you to extend DVI compliant displays almost anywhere. The input DVI source can be duplicated and distributed to up to 4 DVI-enabled displays through cost effective Cat-5/5e/6 cables and Cat.X receiver (CV-711) and/or mini-receivers (CV-711S).

## FEATURES

- HDMI founder Silicon Image chipsets embedded for superior compatibility and reliability
- DVI 1.1 compliant
- Supports HDCP
- Supports default DVI EDID and has the ability to learn the EDID of displays
- Extends up to 30m (100ft) at UXGA 1600x1200@60Hz
- Extends up to 60m (200ft) at 1024x768@60Hz
- Allows cascading
- Perfectly integrated with other DVI over CAT5 series products
- Wall 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 RJ45 connectors is recommended.

## PACKAGE CONTENTS

- 1x AV-GM0583-S1
- 1x DC 5V 4A in-line with C7 power cord
- 1x User Manual

# SPECIFICATIONS

Model Name		AV-GM0583-S1		
Technical		AV-GM0583-S1[TX]	CV-17[RX]	CV-117[RX]
Role of usage		1x4 Distribution Amplifier Transmitter [TX]	Receiver [long range RX]	Receiver [short range RX]
DVI compliance		DVI 1.1		
HDCP compliance		Yes	Yes	Yes
Video bandwidth		Single-link 165MHz [4.95Gbps]		
Video support		Up to (Single) WUXGA 1920 × 1200 @ 60 Hz		
Video transmission over category cable		With CV-17-RX: 30m (100ft) at 1600x1200 With CV-117: 15m (50ft) at 1600x1200	60m (200ft) at 1024x768	30m (100ft) at 1024x768
Equalization		N/A	8-level digital	None
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 DVI	1x RJ45	1x RJ45
Output		4x RJ45	1x DVI	1x DVI
DVI connector		DVI-I [29-pin female]	DVI-I A [29-pin female]	DVI-D [25-pin male]
RJ45 connector		WE/SS 8P8C with 2 LED indicators		
Rotary switch		2-pin	EQ	None
Mechanical		AV-GM0583-S1[TX]	CV-17[RX]	CV-117[RX]
Housing		Metal enclosure	Metal enclosure	Plastic molding
Dimension s [L x W x H]	Model	215 x 85 x 40mm [8.5" x 3.3" x 1.6"]	82 x 62 x 24mm [3.2" x 2.4" x 1"]	40 x 50 x 20mm [1.6" x 2" x 0.8"]
	Package	330 x 200 x 95mm [1'1" x 7.9" x 3.7"]	270 x 175 x 80mm [10.6" x 6.8" x 3.1"]	170 x 115 x 40mm [6.7" x 4.5" x 1.6"]
	Carton	495 x 440 x 380mm [1'7" x 1'5" x 1'3"]	450 x 370 x 300mm [1'5.7" x 1'2.6" x 11.8"]	450 x 370 x 300mm [1'5.7" x 1'2.6" x 11.8"]
Weight	Model	525 [1.2 lbs]	182g [6.4oz]	50g [1.8oz]
	Package	985 [2.2 lbs]	378g [13.3oz]	140g [5oz]
Fixedness		Wall-mount with screws	Wall-mount with screws	Direct plug-in

Power supply	5V 4A DC	5V 2A DC	None
Power consumption	10 Watts [max]	1 Watt [max]	0.5 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]		

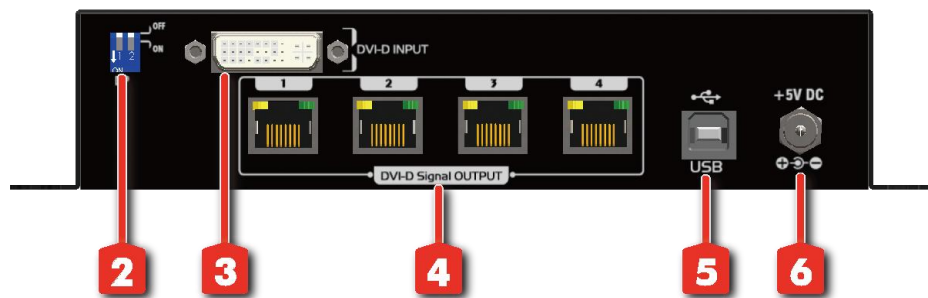
## PANEL DESCRIPTIONS

### Front Panel



1. Power indicator LED

### Rear Panel



2. **DIP SWITCH:** see more detail in the next page
3. **DVI-D INPUT:** connect to one DVI source here
4. **DVI-D Signal OUTPUT 1~4:** link to each DVI display via a Cat-5/5e/6 cable with a DVI over Cat.X receiver CV-711 or CV-711S.
5. **USB:** For firmware update use only
6. **+5V DC:** interlocking power jack for 5V DC power supply unit



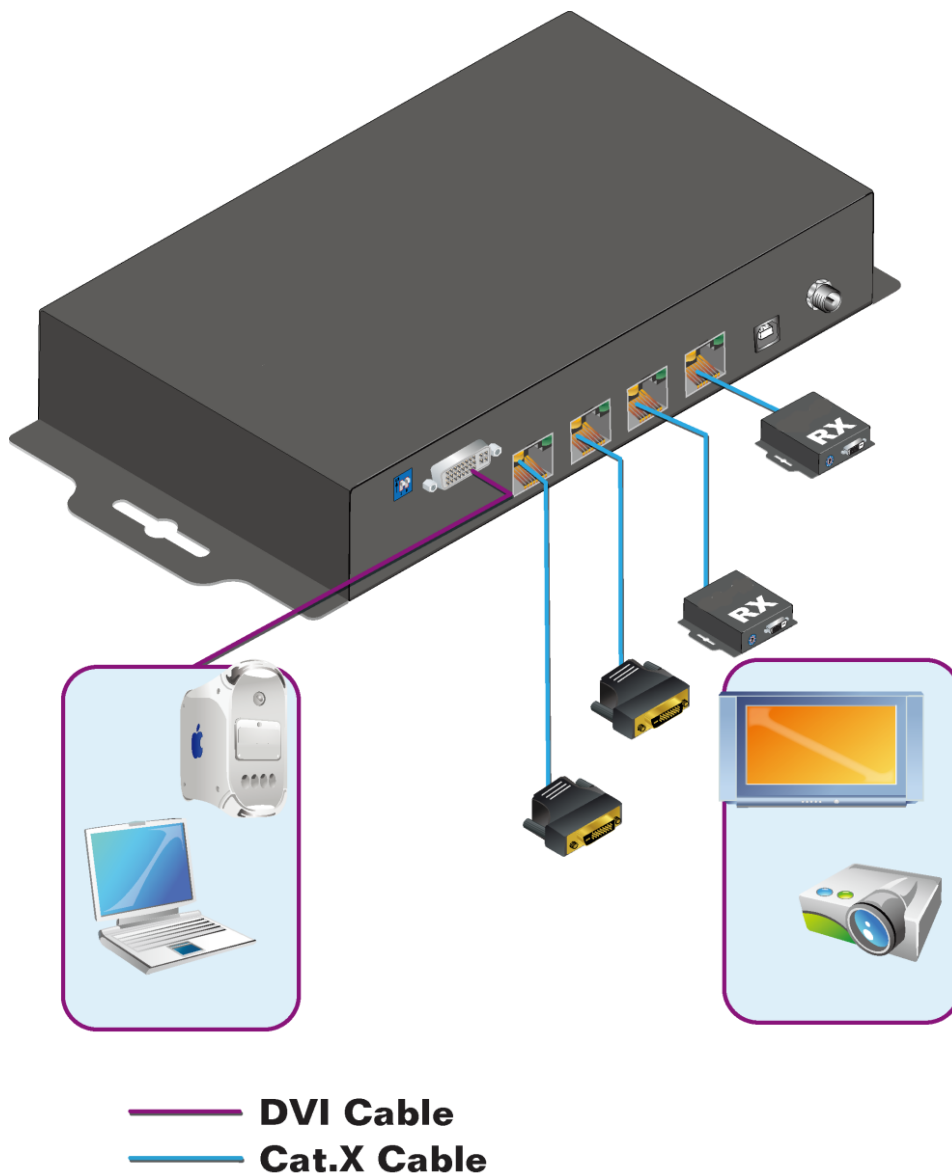
When the connected DVI / HDMI monitor is verified as DVI or HDMI and HDCP compliant, the corresponding green LED will blink.

# HARDWARE INSTALLATION

## Broadcasts DVI signals to 4 remote displays from one video source

1. Switch off all devices, including displays.
2. Connect the DVI source to the **DVI-D INPUT** port.
3. Connect the receivers (CV-711 or CV-711S) via solid Cat-5/5e/6 cables to each **DVI-D Signal OUTPUT** port.
4. Plug in the 5V 4A DC interlocking power supply unit.
5. Power on the DVI displays.
6. Power on the DVI source.

## CONNECTION DIAGRAM



# DIP SWITCH

DIP Switch Position		EDID Mode	Description
Pin#1	Pin#2		
OFF [ ]	OFF [ ]	Up to 1920x1080	<b>Default Mode 1</b> 1 – EDID preferred timing is 1920x1080
OFF [ ]	ON [ ]	Up to 1024x768	<b>Default Safe Mode 1</b> – EDID preferred timing is 1024x768
ON [ ]	OFF [ ]	Up to 1680x1050	<b>Default Mode 1</b> 2 – EDID preferred timing is 1680x1050
ON [ ]	ON [ ]	Learn Display	<b>EDID Learning 2</b> Mode – for learning EDID from the display

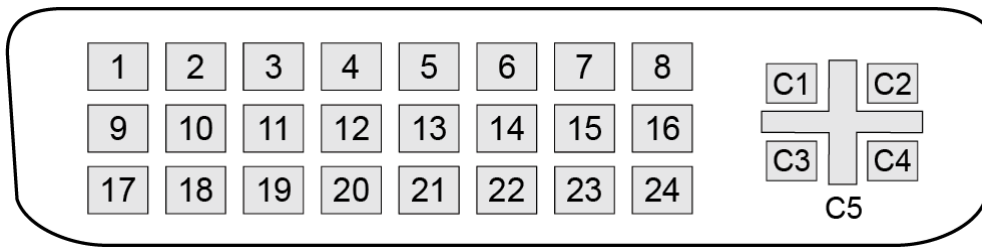
## Note

- 1** If you want to change default EDID Mode, please set DIP switch position which you want and power cycle the device.
- 2** If you want to learn the display EDID, please connect display DVI connector to machine DVI-IN connector and set DIP switch to ON-ON, then power cycle the device and wait for 5-10 seconds.
- 3** Unless you want to change the EDID, do not change the DIP setting.



# PIN DEFINITION

## DVI

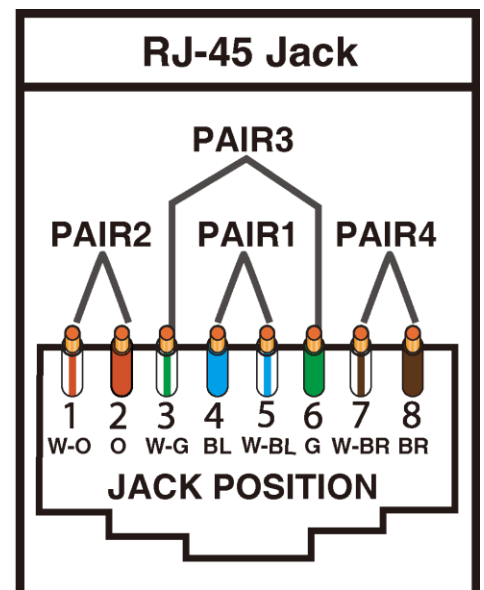


A female DVI-I socket from the front

Pin 1	TMDS Data 2-	Pin 10	TMDS Data 1+	Pin 18	TMDS data 0+
Pin 2	TMDS Data 2+	Pin 11	TMDS Data 1/3 shield	Pin 19	TMDS data 0/5 shield
Pin 3	TMDS Data 2/4 shield	Pin 12	TMDS Data 3-	Pin 20	TMDS data 5-
Pin 4	TMDS Data 4-	Pin 13	TMDS Data 3+	Pin 21	TMDS data 5+
Pin 5	TMDS Data 4+	Pin 14	+5V	Pin 22	TMDS data 5+
Pin 6	DDC clock	Pin 15	Ground	Pin 23	TMDS clock+
Pin 7	DDC data	Pin 16	Hot plug detect	Pin 24	TMDS clock-
Pin 8	Analog vertical sync	Pin 16	Hot plug detect		
Pin 9	TMDS Data 1-	Pin 17	TMDS data 0-		

## 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+



# NOTICE

1. If the DVI device requires the EDID information, please use EDID Reader/Writer to retrieve and provide DVI display EDID information.
2. All DVI over Cat.X 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 DVI sources, and the type of DVI display. The testing result shows solid UTP cables (usually in the form of 330m [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.
4. EIA/TIA-568-B termination (T568B) for Cat-5/5e/6 cables is recommended for better performance.
5. 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.
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.



## 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-GM0583-S1 1x4 DVI Splitter over Single Cat.X with HDCP Support** 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-GM0583-S1** features and specifications is subject to change without further notice.

## Support

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