



## HDMI Extender over Single Fiber



P/N: AV-GM0473-S1



## Safety and Notice

The **AV-GM0473-S1 HDMI Extender over Single Fiber** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0473-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-GM0473-S1 HDMI Extender over Single Fiber** boosts up your HDMI transmission range up to 10km in HDTV 1080p format through single Optical Fiber cable. AV-GM0473-S1 is easy to install and works perfectly with Single mode Optical Fiber cables. Other Optical Fiber cables can also work with AV-GM0473-S1 and the transmission distance depends upon the quality and bandwidth of Optical Fiber cables.

The AV-GM0473-S1 includes two units: transmitting (AV-GM0473-S1-TX) and receiving (AV-GM0473-S1-RX) units. The transmitting unit is used to capture the HDMI and HDCP input signals and carry the signals through only Optical Fiber cable. The receiving unit is responsible for auto equalizing the transmitted HDMI multimedia data. The transmission range between the sending and receiving units can be up to 10Km under Full HD (1080p) with 7.1 channel audio.

## FEATURES

- HDCP compliant
- 7.1-channel audio supported
- Extends the transmission range up to 10Km from the HDMI sources under Full HD resolution (1080p60 24-bit color depth) via single mode optical fiber
- Video resolutions support 480i, 576i, 720p, 1080i, and 1080p



The claimed transmission distance here is subject to the grade of installed cable(s), source device and display.

For over Cat.X/COAX transmission, the cable(s) has to be solid, not stranded. Any keystone jack along the transmission path will kill the transmission performance significantly!

## PACKAGE CONTENTS

- 1x AV-GM0473-S1 [TX & RX]
- 2x DC 5V 4A in-line with C7 power cord
- 1x User Manual

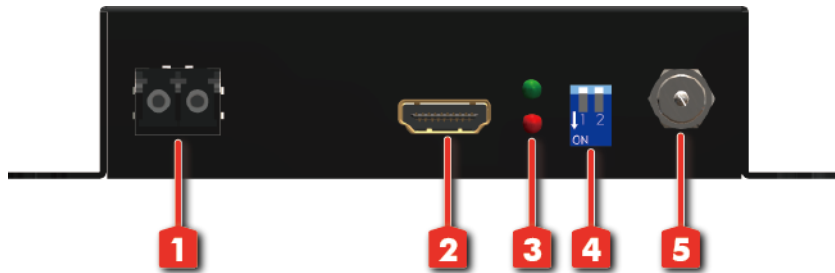
## SPECIFICATIONS

Model Name		AV-GM0473-S1	
Technical		AV-GM0473-S1[Tx]	AV-GM0473-S1[Rx]
Role of usage		Transmitter [TX]	Receiver [RX]
HDMI compliance		HDMI	
HDCP compliance		Yes	
Video bandwidth		Single-link [2.95Gbps]	
Video support		480i / 480p / 720p / 1080i / 1080p60	
Audio support		Surround sound (up to 7.1ch) or stereo digital audio	
Transmission range		Full HD [1080p 24-bit color] - 10Km [optical fiber]	
HDMI equalization		N/A	
Fiber optics		Wavelength: 1310 nm Jitter < 0.2 UI Optical power: -3 ~ -9 dBm	Type: Single-mode Overshoot < 10%
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 — 4kV	
PCB stack-up		6-layer board [impedance control — differential 100Ω ; single 50Ω]	
Input		1x HDMI	1x SFP
Output		1x BNC + 1x SFP	1x BNC + 1x HDMI
HDMI source control		No	
IR remote control		N/A	
HDMI connector		Type A [19-pin female]	
RJ-45 connector		75Ω interlocking socket	
Mechanical			
Housing		Metal enclosure	
Dimensions [L x W x H]	Model	TBA	
	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 11.8"]	
Weight	Model	TBA	
	Package	TBA	
Fixedness		Latch-locking power supply	
Power supply		5V 2A DC	

Power consumption	3 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

### Transmitting unit ▶ AV-GM0473-S1-TX



1. SFP: Optical output
2. HDMI: HDMI input
3. LED: Signal indicator
4. 2-pin DIP: Mode setting
5. Power: +5V DC latch-locking



Pin No.	1	2
OFF(□)	Default EDID	Audio group 1&2
ON(□)	Update EDID	Audio group 3&4

1. Factory default: **OFF-OFF**[□-□]
2. In order to keep the compatibility of HDMI to most monitors, AV-GM0473-S1 features EDID learning ability. Please refer to EDID Learning section for more information.

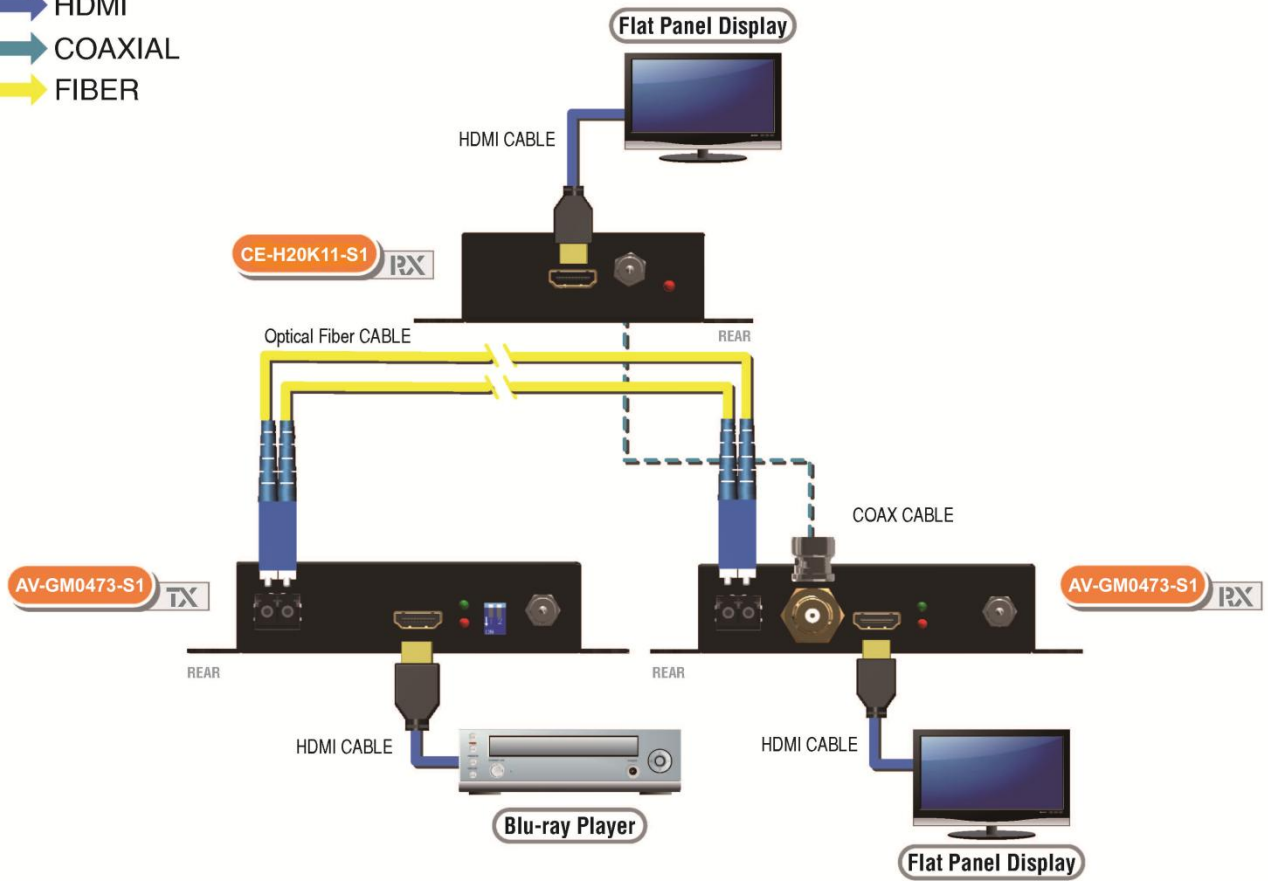
### Receiving unit ▶ AV-GM0473-S1-RX



6. SFP: Optical input
7. BNC: Coaxial local output
8. HDMI: HDMI output
9. LED: Signal indicator
10. Power: +5V DC latch-locking

# CONNECTION DIAGRAM

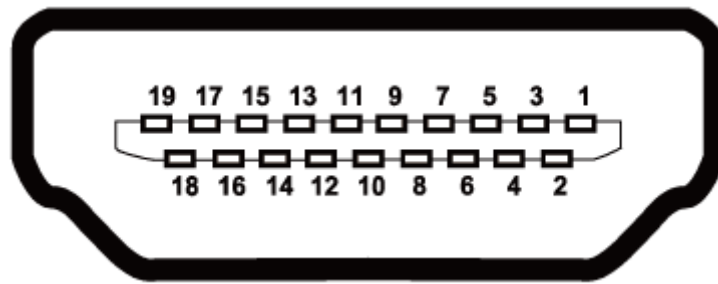
- ➔ HDMI
- ➔ COAXIAL
- ➔ FIBER



# EDID LEARNING

1. Turn off AV-GM0473-S1-TX and set the pin 1 of DIP switch at ON (□).
2. Connect the TV monitor thru HDMI port to AV-GM0473-S1-TX, and then turn on AV-GM0473-S1-TX.
3. The LED of AV-GM0473-S1-TX will show orange light to indicate the EDID learning process is underway. Then the LED dims when the process is done.
4. Connect AV-GM0473-S1-TX to the HDMI source and resume the normal installation and the LED will be in green light.

# HDMI PIN DEFINITION



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 15	SCL
Pin 3	TMDS Data2-	Pin 10	TMDS Clock+	Pin 16	SDA
Pin 4	TMDS Data1+	Pin 11	TMDS Clock Shield	Pin 17	DDC/CEC Ground
Pin 5	TMDS Data1 Shield	Pin 12	TMDS Clock-	Pin 18	+5V Power
Pin 6	TMDS Data1-	Pin 13	NC	Pin 19	Hot Plug Detect
Pin 7	TMDS Data0+				

## NOTICE

1. If the DVI or HDMI device requires the EDID information, please use CV-1001 or CV-5005H 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 & VG-870B.
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 [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.
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 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-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-GM0473-S1 HDMI Extender over Single Fiber** 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-GM0473-S1** features and specifications is subject to change without further notice.

## Support

For more info or tech support

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