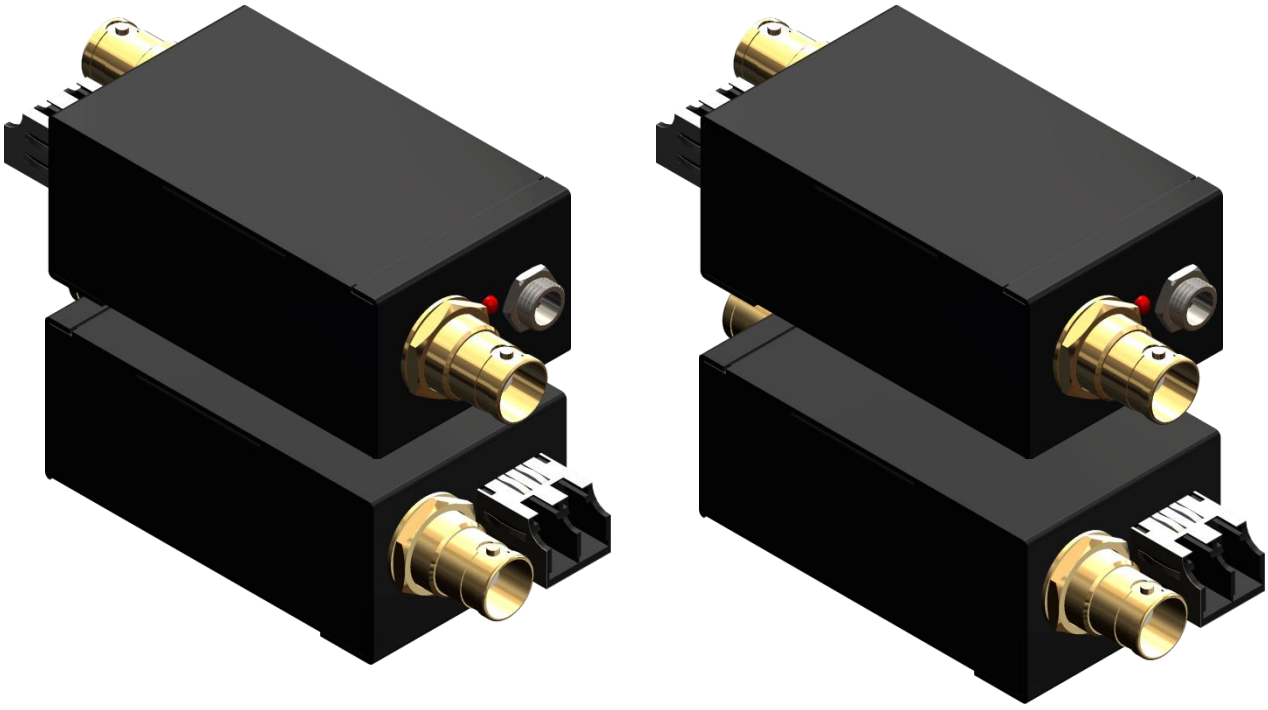
3G/HD/SD-SDI over Single mode SFP-type Fiber Optic Extender Immune to Pathological

User Manual



P/N: AV-GM02H3-S1

Safety and Notice

The AV-GM02H3-S1 3G/HD/SD-SDI over Single mode SFP-type Fiber Optic Extender Immune to Pathological has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the AV-GM02H3-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-GM02H3-S1** is an ideal and economic solution designed for transmission of multi-rate SDI video, with embedded audio and metadata over a single-mode fiber optic cable. The transmitter module receives one 3G/HD/SDI electrical input, perfectly converts SMPTE 292M, SMPTE 259M , SMPTE 424M or DVB-ASI electrical SDI signal to single-mode optic SDI signals. The receiver module receives optical signal from input SFP connector, and then perfectly converts it to electrical SDI signal. AV-GM02H3-S1 is immune to pathological pattern (SMPTE RP-198) without introducing any flickers, and this feature further guarantees the transmission quality over optical fibers.

Both transmitter and receiver provide equalizing and reclocking at input unit in order to re-construct the signal for consistent quality. The AV-GM02H3-S1 is perfect for today's broadcast applications, including video production, video editing, studio to studio and studio to CATV head end. In addition, since transmission of content is inherently secure and immune to outside interference, fiber applications are favored in government, military, and medical environments.

FEATURES

- Enable transmission of digital video signal over optical fiber*
  - up to 10 km (6.25 miles) [**AV-GM02H3-S110**]
  - up to 20 km (12.5 miles) [**AV-GM02H3-S120**)
  - up to 80 km (50 miles) [**AV-GM02H3-S180**]

- Automatic cable EQ up to 300m (1000ft) at SD-SDI ,150m (500ft) at HD-SDI, or 90m (295ft) at 3G-SDI
- Standard SFP-type fiber optic connector
- Supports following protocols:
  - SMPTE 259M (270Mbps)
  - SMPTE 259M (360Mbps)
  - SMPTE 292M / HDTV (1.485Gbps and 1.485/1.001Gbps)
  - SMPTE 424M / HDTV (2.97Gbps and 2.97/1.001Gbps)
  - DVB ASI (270Mbps)
- Immune to RP-198 pathological patterns
- Automatic reclocked
- One SDI loop out(optional)
- 3G/HD/SDI Input signal detection LED

PACKAGE CONTENTS

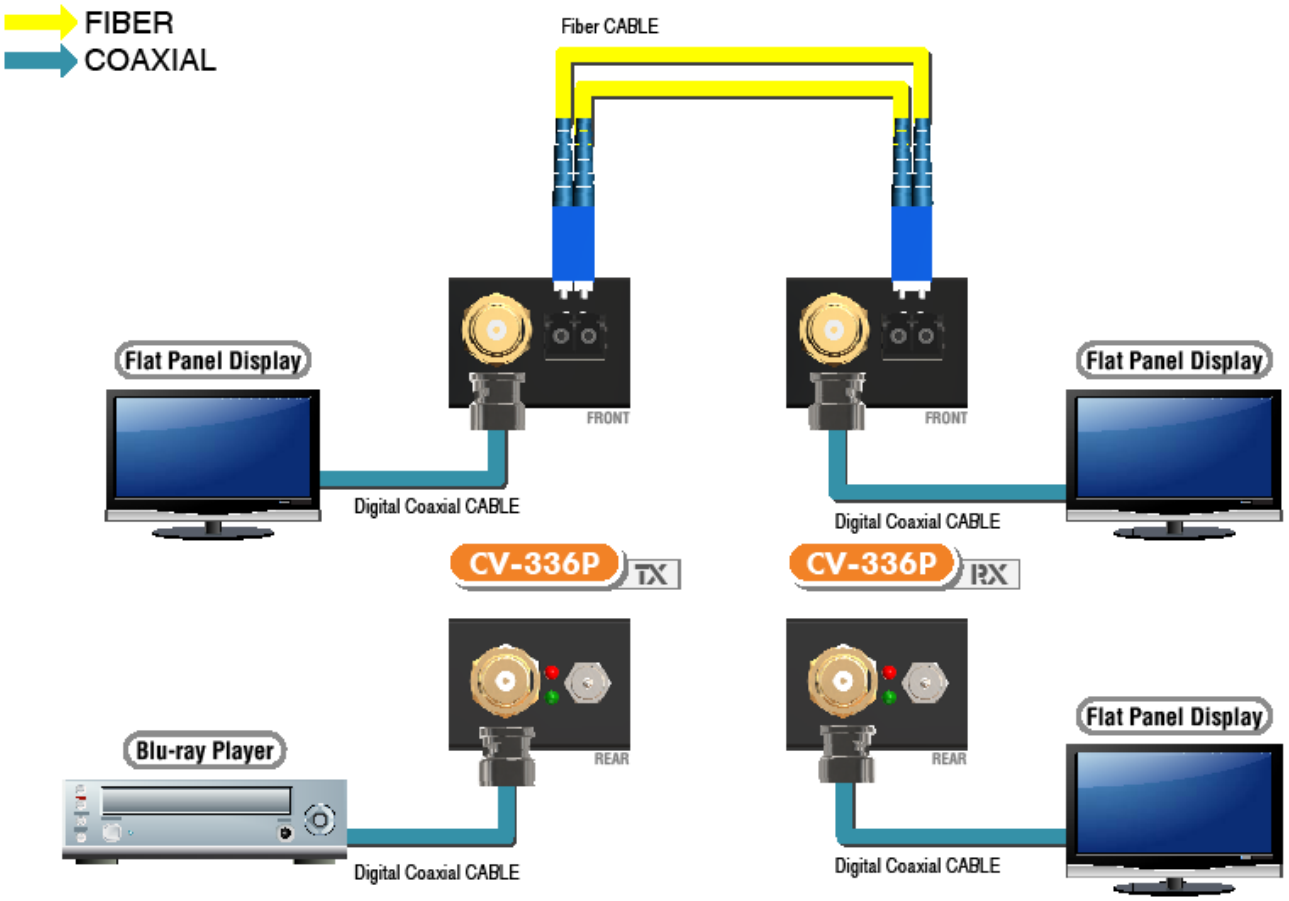
- 1x AV-GM02H3-S1[TX & RX]
- 2x 5V power adapter
- 1x User Manual

SPECIFICATIONS

Model Name	AV-GM02H3-S1	
Technical	AV-GM02H3-S1-TX	AV-GM02H3-S1-RX
Role of usage	Transmitter [TX]	Receiver [RX]
SDI standards	SD-SDI & HD-SDI & 3G-SDI	
Auto HD/SD-SDI detection	Yes	
Supported protocols	SMPTE 259M (270Mbps / 360Mpbs), DVB ASI (270Mbps) SMPTE 292M / HDTV (1.485Gbps and 1.485/1.001Gbps) SMPTE 424M / HDTV (2.97Gbps and 2.97/1.001Gbps)	
Video bandwidth	[2.97Gpbs & 2.97/1.001Gbps]	
Data rates	270 / 1483 / 1485 / 2967 / 2970Mbps	
Video support	[HD] 720p50/59.94/60, 1035i50/59.94/60, 1080i50/59.94/60, 1080p24/30,1080p60,1080p59.94 [SD] NTSC@59.94Hz, PAL@50Hz	
SDI signal type	SMPTE-424M,SMPTE-292M, SMPTE-259M, DVB-ASI	
Output impedance	75Ω	
Auto reclocker mode	Automatic detection: 270Mbps / 1.483Gbps / 1.485Gbps/2.97Gbps/2.967Gbps Automatic bypass: 177Mbps / 360Mbps / 540Mbps	
Fiber Transmission	10km (6.25mi) [**AV-GM02H3-S110**] / 20km (12.5mi) [**AV-GM02H3-S120**] / 80km (50mi) [**AV-GM02H3-S180**]	
Cable (Belden 1694A) equalization / transmission	[3G HD-SDI] up to 90m (297ft) [HD-SDI] up to 150m (500ft) [SD-SDI] up to 300m (1000ft)	[3G HD-SDI] greater than 60m (196ft) [HD-SDI] greater than 125m (410ft) [SD-SDI] up to 300m (1000ft)
Loop-out	1 reclocking SDI loop-out	optional upon request
Audio support	Yes	
RP-198 pathological patterns	Immune	
PCB Stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	1x BNC [SDI]	1x Optical SFP [SDI]
Output	1x Optical SFP [SDI] 1x BNC [SDI] (optional loop-out)	1x BNC [SDI] 1x BNC [SDI] (optional upon request)
BNC connector	75Ω inter-locked socket	
Optical fiber connector	SFP-type	
Fiber optics	Wavelength: 1310 nm [**AV-GM02H3-S110**] 1550nm [**AV-GM02H3-S120 / AV-GM02H3-S180**] Type: Single-mode Jitter < 0.2 UI Overshoot < 10% Optical power:	Type: Single-mode Jitter < 0.2 UI Overshoot < 10%

	[AV-GM02H3-S110]-3~-9 dBm [AV-GM02H3-S120] -2~-7 dBm [AV-GM02H3-S180] -1~4 dBm	
Mechanical		
Housing		Metal case
Dimensions [L x W x H]	Model	74 x 74 x 26mm [2.9" x 2.9" x 1.0"]
	Package	140 x 200 x 75mm [5.5" x 7.9" x 3"]
	Carton	420 x 400 x 300mm [1'5" x 1'4" x 11.8"]
Weight	Model	211g [7.4 oz]
	Package	440g [15.4 oz]
Fixedness		Inter-locked power supply
Power supply		5V 2A DC
Power consumption		3 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]

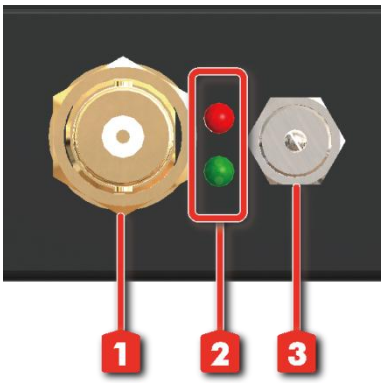
PACKAGE CONTENTS



PANEL DESCRIPTION

Transmitting unit ► AV-GM02H3-S1-TX

Front Panel



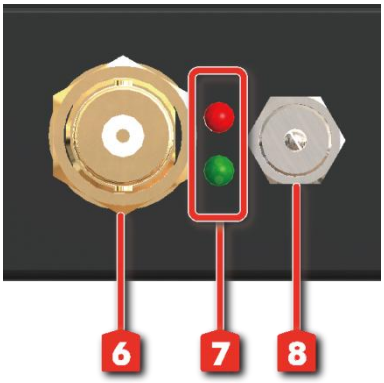
Rear Panel

1. HD/SD-SDI input
2. Power/Signal indicator
3. +5V DC

4. HD/SD-SDI output
5. Optical output

Receiving unit ► AV-GM02H3-S1-RX

Front Panel



Rear Panel

6. HD/SD-SDI output
7. Power/Signal indicator
8. +5V DC

9. HD/SD-SDI output
10. Optical input

LIMITED WARRANTY

The SELLER warrants the AV-GM02H3-S1 3G/HD/SD-SDI over Single mode SFP-type Fiber Optic Extender Immune to Pathological 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 surges.

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 are limited to a 30 day warranty and cable 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-GM02H3-S1 features and specifications is subject to change without further notice.**

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

April, 2018