



1x6 3G/HD/SD-SDI Distribution Amplifier with Reclocking



P/N: AV-GM05E3-S1



Safety and Notice

The **AV-GM05E3-S1 1x6 3G/HD/SD-SDI Distribution Amplifier with Reclocking** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM05E3-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-GM05E3-S1** receives one SDI input, perfectly duplicates it, and re-transmits six SDI outputs for real time multi-viewing. It is a reliable video device splitting a SDI, HD-SDI, or 3G-SDI video source to six SDI compliant displays at the same time.

FEATURES

- 3G/HD/SD triple-rate distribution
- Six separately buffered and reclocked outputs
- Cable equalization (Beldon 1694A) and signal retiming
- Dual color LED indication of input lock and rate
- Pass all ancillary data
- Provides automatic input cable equalization up to 300m (1000ft)@SD, 150m (500ft)@HD/3G
- Reclocking SDI signals for cascading and thus longer transmission
- Inter-locked power supply for better fixedness

PACKAGE CONTENTS

- 1x AV-GM05E3-S1
- 1x 5V power adapter
- 1x User Manual

SPECIFICATIONS

Model Name	AV-GM05E3-S1	
Technical		
SDI standards	3G/HD/ SD -SDI	
Auto 3G/HD/SD detection	Yes	
Supported protocols	DVB-ASI at 270Mbps, SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE425M	
Video bandwidth	[2.97Gpbs & 2.97/1.001Gbps]	
Data rates	270 / 1483 / 1485 / 2970 Mbps	
Output impedance	75Ω	
Reclocking function	Yes	
Cable equalization	[3G] up to 90m (300ft) / [HD] up to 150m (500ft) / [SD] up to 300m (1000ft)	
Audio support	Yes	
RP-198 pathological patterns	Immune	
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	1x BNC [SDI]	
Output	6x BNC [SDI]	
BNC connector	75Ω inter-locked socket	
Eye pattern characteristics [HD]	Amplitude: Within 800mV (<10%) Long time jitter: 0.195 UI (<1.0 UI) Rise overshoot: Less than 2% (<10%) Timing jitter: 0.8 UI (<1.0 UI) Fall overshoot: Less than 2% (<10%) Alignment jitter: 0.13 UI (<0.2 UI)	
Mechanical		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	105 x 78 x 27mm [4.1" x 3" x 1"]
	Package	270 x 175 x 80mm [10.6" x 6.9" x 3.2"]
	Carton	450 x 370x 300mm [1'5.7" x 1'2.6" x 11.8"]
Weight	Model	310g [10.9oz]
	Package	785g [1.7lbs]
Fixedness	Inter-locked power supply	
Power supply	5V 4A DC	
Power consumption	5 Watts [max]	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	

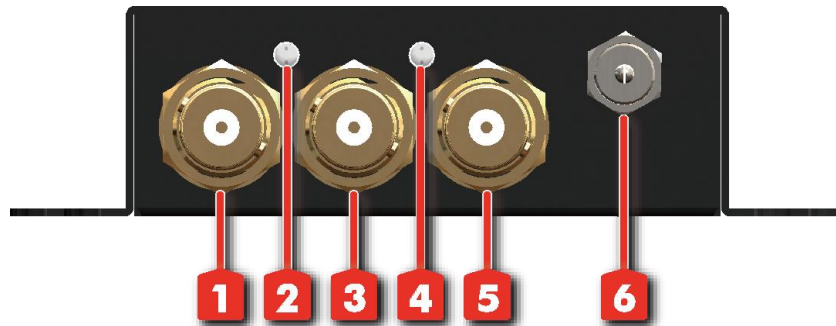
Relative humidity	20~90% RH [no condensation]
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The measurement results are from Tektronix WFM-7120 with SDI through 1m (3.3ft) long Belden 1694A.

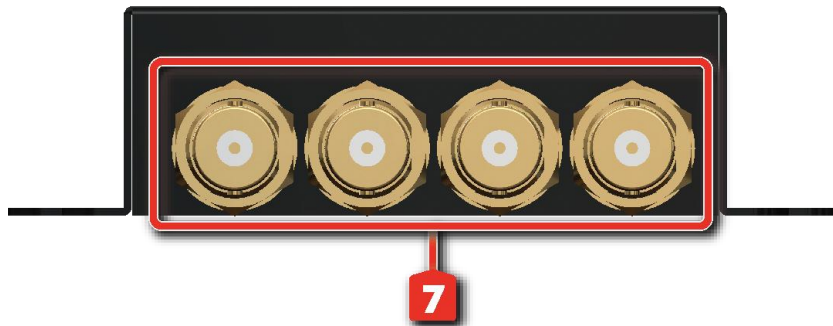
PANEL DESCRIPTIONS

Front Panel



1. 3G/HD/SD-SDI input
2. LED —Orange: SD
Green: 3G/HD
3. 3G/HD/SD-SDI output
4. LED —Orange: Power indicator
Green: Signal Exist
5. 3G/HD/SD-SDI output
6. 5V DC power jack

Rear Panel

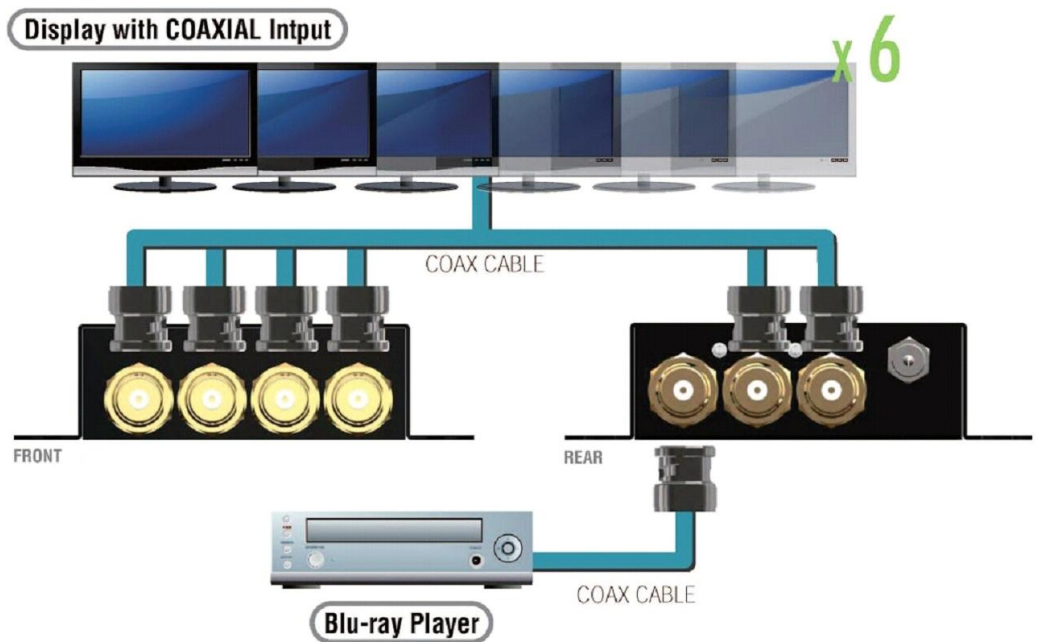


7. 3G/HD/SD-SDI output

HARDWARE INSTALLATION

1. Connect a camera or other devices equipped with 3G/HD/SD-SDI outputs to AV-GM05E3-S1 3G/HD/SD-SDI input.
2. Connect devices equipped with 3G/HD/SD-SDI inputs (e.g. monitors or video processors) to AV-GM05E3-S1 3G/HD/SD-SDI outputs.
3. Plug power adapter cable into 5V DC power jack.

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WARRANTY

The SELLER warrants the **AV-GM05E3-S1 1x6 3G/HD/SD-SDI Distribution Amplifier with Reclocking** 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 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 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-GM05E3-S1 features and specifications is subject to change without further notice.**

<p style="text-align: center;">Support For more info or tech support http://www.siig.com/support</p>

SIGNAL MEASUREMENT



Jitter Waveform

4P-P: 0.04ns 0.12UI



Jitter1 HPF 10 Hz - Timing 3 µs/Div

Video Session

Input: SDI A - 3Ga Signal: **Locked**
 Effective: Auto 1080p 60 - YCbCr 422 10b - 425M-A 2.970 Gbps
 Selected: Auto Format - Auto Structure - Auto Transport
 352M Payload: 89h CBh 00h 01h

SAV Place Err: **OK** Y Stuck Bits: -----
 Field Length Err: **OK** C Stuck Bits: -----
 Line Length Err: **OK**
 Line Number Err: **OK**
 Ancillary Data: Y Present

Statistics	Status	Err Secs	Err Fields	% Err Fields
RGB Gamut Error	OK	26	319	0.7779 %
Cmpst Gamut Error	OK	18	277	0.6755 %
Luma Gamut Error	OK	18	231	0.5633 %
Y Chan CRC Error	OK	0	0	0.0000 %
C Chan CRC Error	OK	0	0	0.0000 %
Y Anc Checksum Error	OK	0	0	0.0000 %
C Anc Checksum Error	OK	0	0	0.0000 %

Changed since reset: N/A Run Time: 0 d, 00:12:04 Running

Press "SEL" to reset. Any "arrow key" stops/starts.

Jitter Waveform

4P-P: 0.04ns 0.11UI



Jitter2 HPF 100 kHz - Alignment 3 µs/Div


↔ All ⬇ L 1

1080p 60
SDI Input A-3Ga
Ref: Internal

May 26 23:18:52



ID: WFM7120_1BFE02
Embd: -----
TC: Disabled



Jitter Waveform

4P-P: 0.07ns 0.22UI



Jitter1 HPF 10 Hz - Timing 3 µs/Div

Video Session

Input: SDI A - 3Ga Signal: **Locked**
 Effective: Auto 1080p 60 - YCbCr 422 10b - 425M-A 2.970 Gbps
 Selected: Auto Format - Auto Structure - Auto Transport
 352M Payload: 89h CBh 00h 01h

SAV Place Err: **OK** Y Stuck Bits: **LH-L LH-L LL**
 Field Length Err: **OK** C Stuck Bits: **H-LL LLLL LL**
 Line Length Err: **OK**
 Line Number Err: **OK**
 Ancillary Data: Y Present

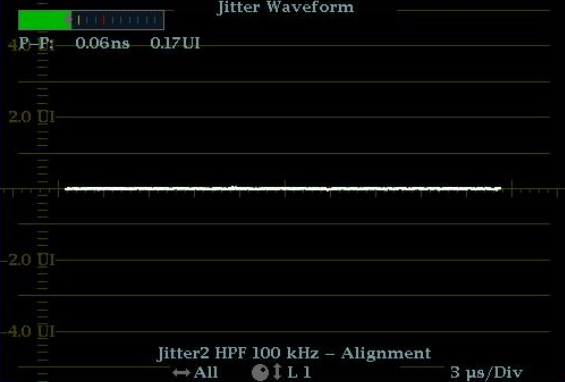
Statistics	Status	Err Secs	Err Fields	% Err Fields
RGB Gamut Error	OK	26	319	0.6965 %
Cmpst Gamut Error	OK	18	277	0.6048 %
Luma Gamut Error	OK	18	231	0.5044 %
Y Chan CRC Error	OK	0	0	0.0000 %
C Chan CRC Error	OK	0	0	0.0000 %
Y Anc Checksum Error	OK	0	0	0.0000 %
C Anc Checksum Error	OK	0	0	0.0000 %

Changed since reset: N/A Run Time: 0 d, 00:13:24 Running

Press "SEL" to reset. Any "arrow key" stops/starts.

Jitter Waveform

4P-P: 0.06ns 0.17UI




Jitter2 HPF 100 kHz - Alignment 3 µs/Div

↔ All ⬇ L 1

1080p 60
SDI Input A-3Ga
Ref: Internal

May 26 23:20:12



ID: WFM7120_1BFE02
Embd: -----
TC: Disabled