



# 1x4 3G/HD/SD-SDI Distribution Amplifier with Reclocking



P/N: AV-GM05D3-S1

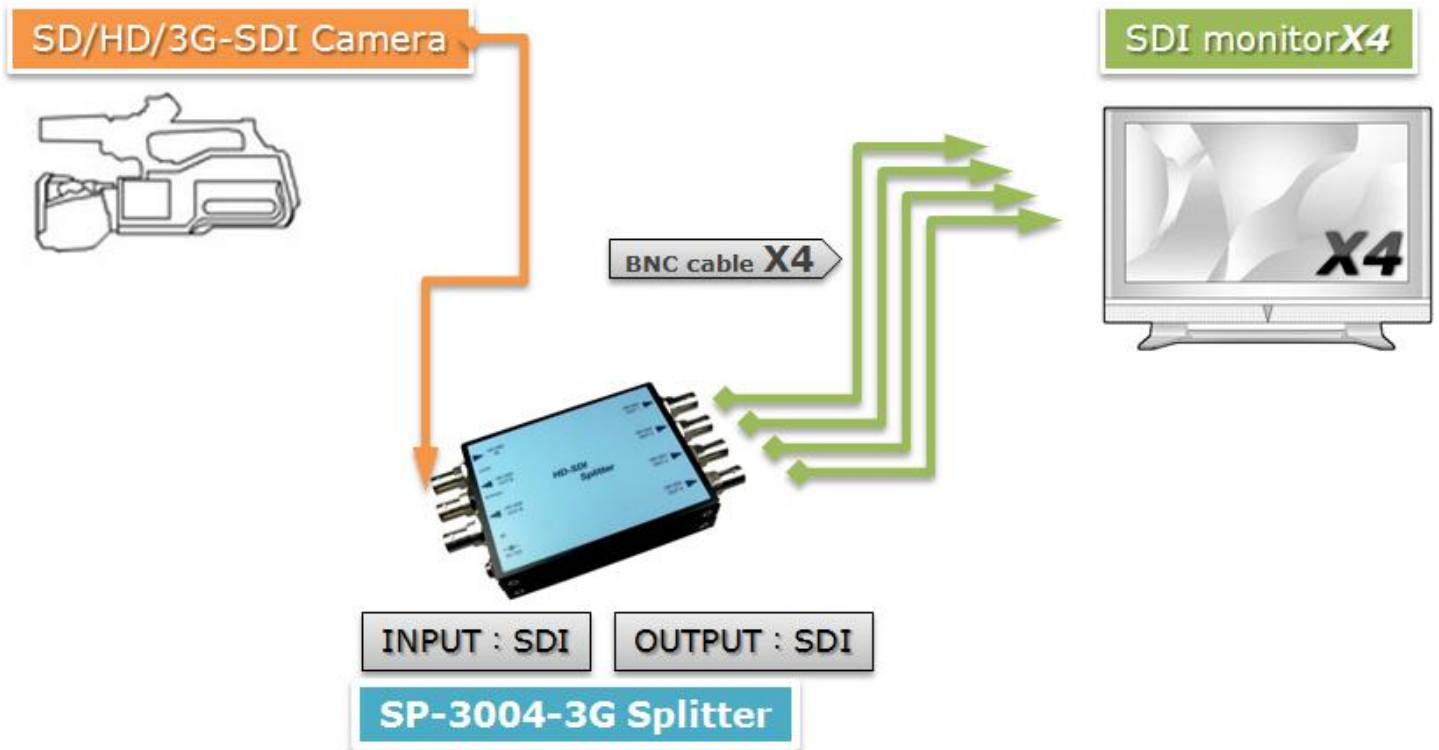


## Safety and Notice

The **AV-GM0593-S1-3G 1x4 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-GM0593-S1-3G** 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 away the objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter, 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.

This AV-GM0593-S1-3G receives one SDI input, perfectly duplicates it, and re-transmits four SDI outputs for real time multi-viewing. It is a reliable video device splitting a SDI, HD-SDI, or 3G-SDI video source to four SDI compliant displays at the same time.



## Features

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- 3G/HD/SD triple-rate distribution
- Four 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 and 60m(190ft)
- Reclocking SDI signals for cascading and thus longer transmission
- Inter-locked power supply for better fixedness

# Specifications & Package Contents

Model Name	AV-GM0593-S1	AV-GM05A3-S1	AV-GM05D3-S1
<b>Technical</b>			
SDI standards	SD/HD-SDI		SD/HD/3G-SDI
Auto 3G/HD/SD detection	Yes		
Supported protocols	SMPTE 259M, SMPTE 292M		SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE425M
Video bandwidth	[1.485Gpbs & 1.485/1.001Gpbs]		[2.97Gpbs & 2.97/1.001Gpbs]
Data rates	270 / 1483 / 1485 Mbps		270 / 1483 / 1485 / 2970 Mbps
Output impedance	75Ω		
Reclocking function	No	Yes	Yes
Cable equalization	[3G] up to 60m (190ft) / [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	4x BNC [SDI]	4x BNC [SDI]	4x BNC [SDI]
BNC connector	75Ω inter-locked socket		
Eye pattern characteristics [HD]	Amplitude: Within 800mV ±3% (<10%) Rise overshoot: Less than 2% (<10%) Fall overshoot: Less than 2% (<10%)	Long time jitter: 0.195 UI (<1.0 UI) Timing jitter: 0.195 UI (<1.0 UI) Alignment jitter: 0.127 UI (<0.2 UI)	
<b>Mechanical</b>			
Housing	Metal case		
Dimensions [L x W x H]	Model	145 x 80 x 25mm [5.7"x3.2"x1"]	
	Package	270 x 175 x 80mm [10.6"x6.9"x3.2"]	
	Carton	450 x 370x 300mm [1'5.7"x1'2.6"x11.8"]	
Weight	Model	300g [10.6oz]	305g [10.8 oz]
	Package	775g [1.7 lbs]	780g [1.7 lbs]
Fixedness	Inter-locked power supply		
Power supply	5V 4A DC		
Power consumption	10 Watts [max]		
Operation temperature	0~40°C [32~104°F]		
Storage temperature	-20~60°C [-4~140°F]		

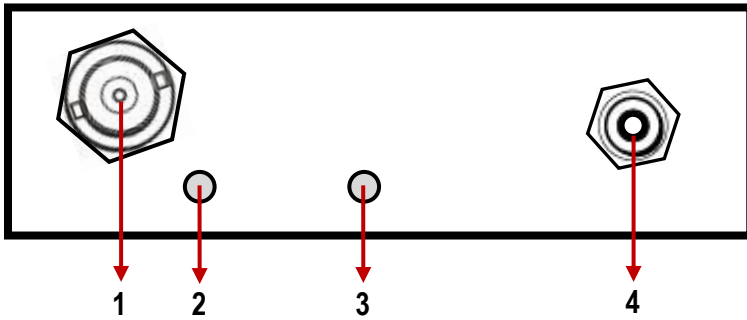
Relative humidity	20~90% RH [no condensation]
Package Contents	1x AV-GM0593-S1 / AV-GM05A3-S1 / AV-GM05D3-S1-3G 1x 5V power adapter 1x User Manual



*The measurement results are from Tektronix WFM-7120 with SDI through 1m (3.3ft) long Belden 1694A.*

## Front Panel

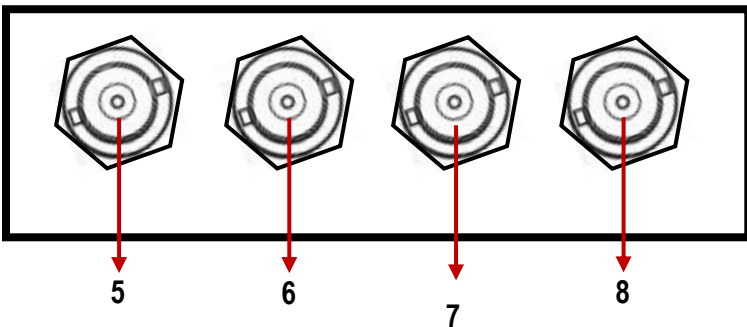
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1. 3G/HD/SD-SDI input
2. LED — reserved, no use.
3. LED — power indicator
4. 5V DC power jack

## Rear Panel

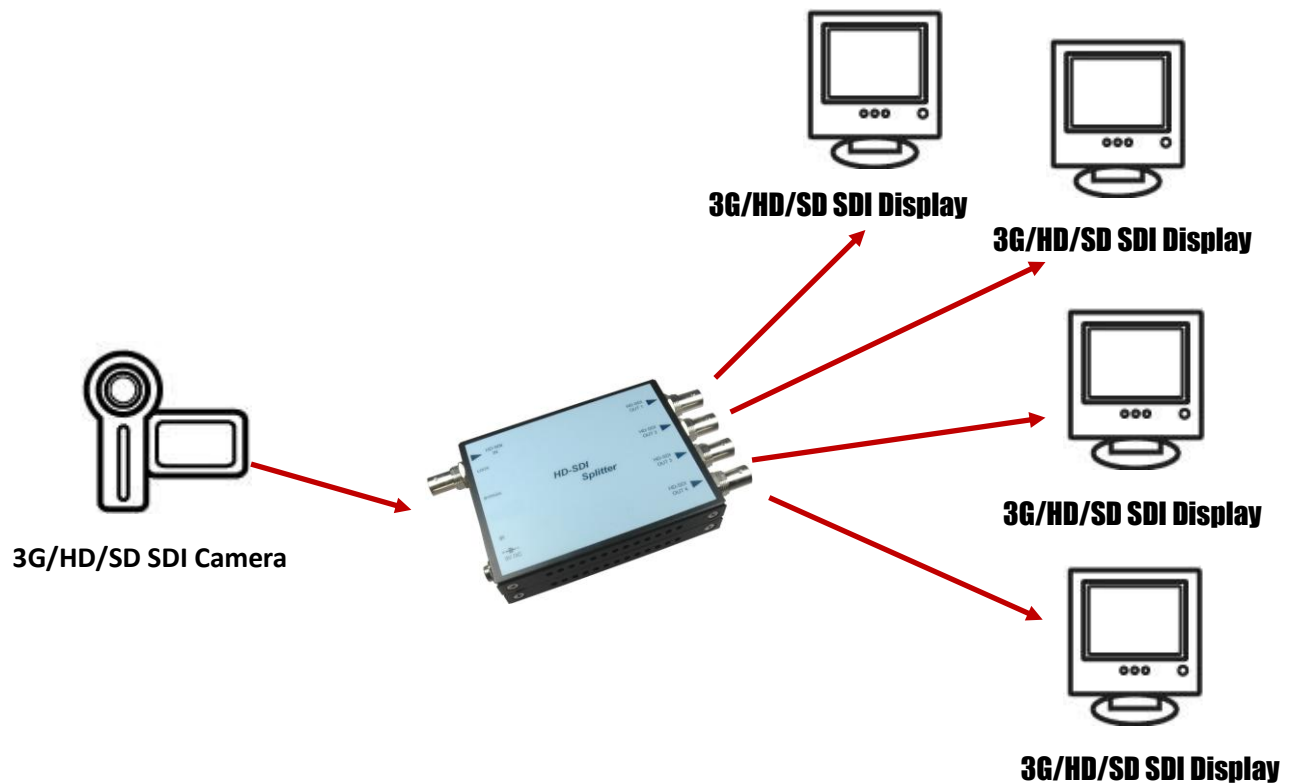
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5. 3G/HD/SD-SDI output 1
6. 3G/HD/SD-SDI output 2
7. 3G/HD/SD-SDI output 3
8. 3G/HD/SD-SDI output 4

# Hardware Installation

1. Connect a camera or other devices equipped with 3G/HD/SD-SDI outputs to AV-GM0593-S1-3G 3G/HD/SD-SDI input.
2. Connect devices equipped with 3G/HD/SD-SDI inputs (e.g. monitors or video processors) to AV-GM0593-S1-3G 3G/HD/SD-SDI outputs.
3. Plug power adapter cable into 5V DC power jack.



## Limited Warranty

The SELLER warrants the **AV-GM0593-S1-3G 1x4 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 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-GM0593-S1-3G features and specifications is subject to change without further notice.

### Support

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



# Signal Measurement



**Jitter Waveform**

4P-F: 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	<b>OK</b>	26	319	0.7779 %
Cmpst Gamut Error	<b>OK</b>	18	277	0.6755 %
Luma Gamut Error	<b>OK</b>	18	231	0.5633 %
Y Chan CRC Error	<b>OK</b>	0	0	0.0000 %
C Chan CRC Error	<b>OK</b>	0	0	0.0000 %
Y Anc Checksum Error	<b>OK</b>	0	0	0.0000 %
C Anc Checksum Error	<b>OK</b>	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.

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

May 26 23:18:52

**Tektronix**

ID: WFM7120\_1BFE02  
 Embd: -----  
 TC: Disabled



**Jitter Waveform**

4P-F: 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	<b>OK</b>	26	319	0.6965 %
Cmpst Gamut Error	<b>OK</b>	18	277	0.6048 %
Luma Gamut Error	<b>OK</b>	18	231	0.5044 %
Y Chan CRC Error	<b>OK</b>	0	0	0.0000 %
C Chan CRC Error	<b>OK</b>	0	0	0.0000 %
Y Anc Checksum Error	<b>OK</b>	0	0	0.0000 %
C Anc Checksum Error	<b>OK</b>	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.

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

May 26 23:20:12

**Tektronix**

ID: WFM7120\_1BFE02  
 Embd: -----  
 TC: Disabled