



## 8x4 3G/HD/SD-SDI Switch



P/N: AV-GM09L3-S1



## Safety and Notice

The **AV-GM09L3-S1 8x4 3G/HD/SD-SDI Switch** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM09L3-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-GM09L3-S1 8x4 3G/HD/SD-SDI Switch receives, equalizes, and reclocks\* up to 8 SDI inputs, perfectly switches the desired input to SDI equipped monitors or receivers. The switch supports both HD/SD-SDI bit rates, and the re-transmitted quality is guaranteed. Through RS-232, IR remote, or front panel push button, the control of the SDI switch becomes versatile and easier. AV-GM09L3-S1 offers the most convenient and cost effective means for swift switch and duplication of high quality SDI in the market.

## FEATURES

- 3G / HD / SD-SDI switch
- Up to 8 input & 4 re-timing SDI outputs
- Dual color indication LED of 3G / HD / SD of the output SDI
- Automatic detection of the SDI Input
- Synchronizes input/output (switch after vertical sync)
- Provides the equalized and reclocked\* transmission path up to 300m (1000ft) at SD-SDI , 150m (500ft) at HD-SDI or 100m (500ft) at 3G HD-SDI
- Multiple control by RS-232, IR remote, and push button



\* A Reclocking feature first equalizes, then extracts a clock from the signal and cleans up the eye pattern. It is useful to avoid signal loss due to cable length

## PACKAGE CONTENTS

- 1 x AV-GM09L3-S1
- 1 x Rack-mounting ear set
- 1 x DC 5V 4A in-line with C7 power cord
- 1 x User Manual
- 1 x Installation software CD

# SPECIFICATIONS

Model Name	AV-GM09L3-S1	
<b>Technical</b>		
Role of usage	8x4 switch	
SDI standards	SD-SDI, HD-SDI & 3G-SDI	
Auto 3G/HD/SD detection	Yes	
Supported protocols	SMPTE 259M (270Mbps / 360Mbps) SMPTE 292M / HDTV (1.485 & 1.485/1.001Gbps) SMPTE 424/425M (2.97 & 2.97/1.001Gbps)	
Video bandwidth	2.97Gpbs	
Data rates	143 / 270 / 1483 / 1485 / 2967 / 2970 Mbps	
Video support	[3G] 1080p@50/59.94/60 (4:2:2) [HD] 720p50/59.94/60, 1080p24/30, 1035i50/59.94/60, 1080i50/59.94/60 [SD] NTSC@59.94Hz, PAL@50Hz	
Output impedance	75Ω	
Reclocking function	Optional upon request	
Cable equalization	[HD-SDI] up to 150m (500ft) [SD-SDI] up to 300m (1000ft)	
Loop-out	Synchronized BNC loop-out at input and output	
Audio support	Yes	
RP-198 pathological patterns	Immune	
PCB stack-up	4-layer board [impedance control X differential 100Ω; single 50Ω]	
Input	8x BNC [SDI]	
Output	4x BNC [SDI]	
BNC connector	75Ω inter-locked socket	
Eye pattern characteristics (HD-SDI)	Amplitude: Within 800mV 3% (<10%)      Long time jitter: 0.195 UI (<1.0 UI) Rise overshoot: Less than 2% (<10%)      Timing jitter: 0.195 UI (<1.0 UI) Fall overshoot: Less than 2% (<10%)      Alignment jitter: 0.127 UI (<0.2 UI)	
<b>Mechanical</b>		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	440 x 125 x 43mm [1'5.3" x 4.9" x 1.7"]
	Package	510 x 230 x 70mm [1'8" x 9.1" x 2.8"]
	Carton	510 x 410 x 252mm [1'8" x 1'4" x 10"]
Weight	Model	2673g [5.9 lbs]
	Package	3343g [7.4 lbs]
Fixedness	Latch-locking power supply	
Power supply	5V 4A DC	

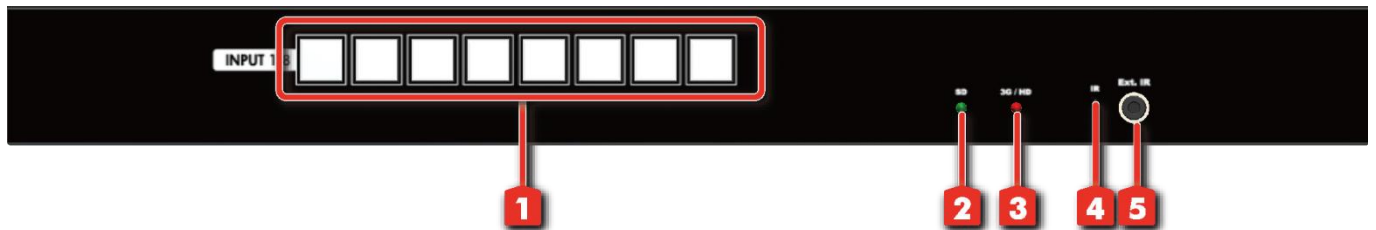
Power consumption	10 Watt [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]



The measurement results are from Tektronix VFM-700 with SDI through 1m (3.3ft) long Belden 1694A.

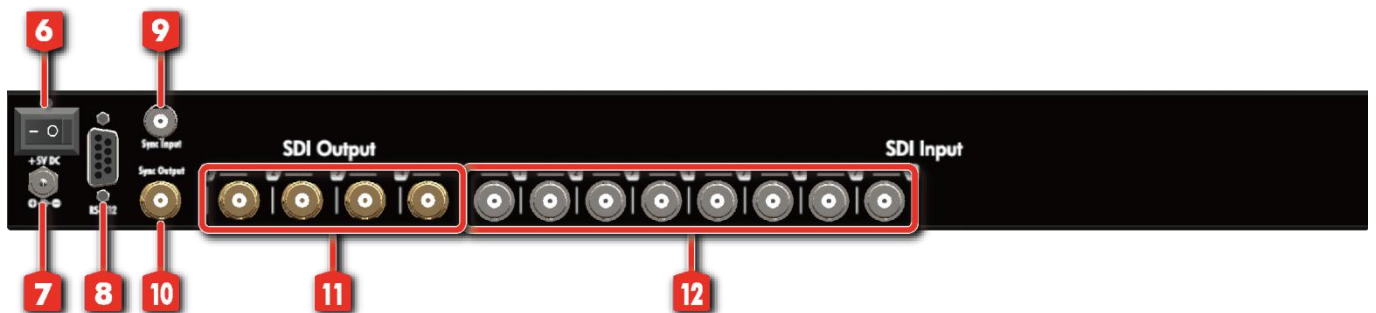
## PANEL DESCRIPTIONS

### Front Panel



1. **Button:** Input source selection
2. **Green LED:** SD signal indicator
3. **Red LED:** 3G / HD signal indicator
4. **IR:** IR sensor
5. **3.5mm:** IR receiver

### Rear Panel



6. **Power:** On/off switch
7. **Power:** +5V DC latch-locking

**8.RS-232:** Serial channel control

**9.BNC:** Synchronized signal input

**10.BNC:** Synchronized serial output (add 75 $\Omega$  terminator if not connect)

**11.BNC:** SDI output

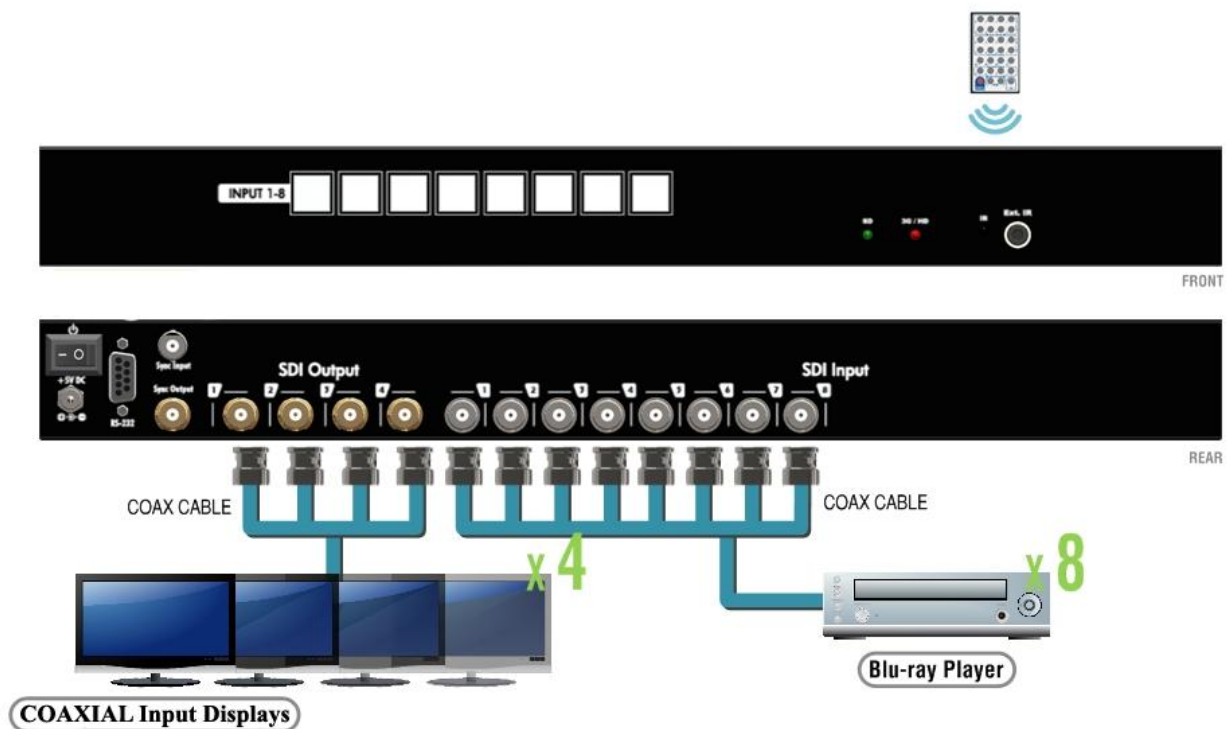
**12.BNC:** SDI input

# HARDWARE INSTALLATION

1. Connect one SDI device to the output of AV-GM09L3-S1.
2. Connect the SDI input sources to the inputs of AV-GM09L3-S1.
3. Screw on the 5V power supply unit to the locking power jack.
4. Use IR remote, RS-232, or front panel push button to switch between input channels.

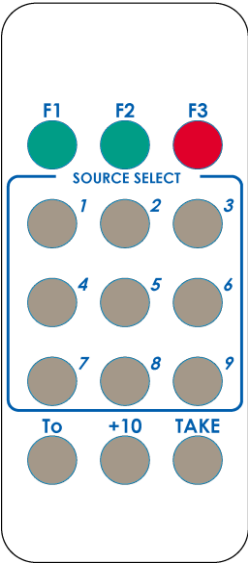
## CONNECTION DIAGRAM


→ COAXIAL




# OPERATION APPROACH

## Method A: IR Remote Control



Button	Function
F3	Power On/Off the device
Select Input to Output	Choose input source Input source 1-8 → press input source (1-8) + 
F1, F2, To, +10	Reserved

## Method B: Software Operation

When clicking on the executable file, the following dialog will pop-up. User can click the  button to choose input source.

 : Get all information of the device and update this software state.





# WARRANTY

The SELLER warrants the **AV-GM09L3-S1 8x4 3G/HD/SD-SDI Switch** 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-GM09L3-S1** features and specifications is subject to change without further notice.

## Support

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