8x2 HD/SD-SDI Matrix Switch

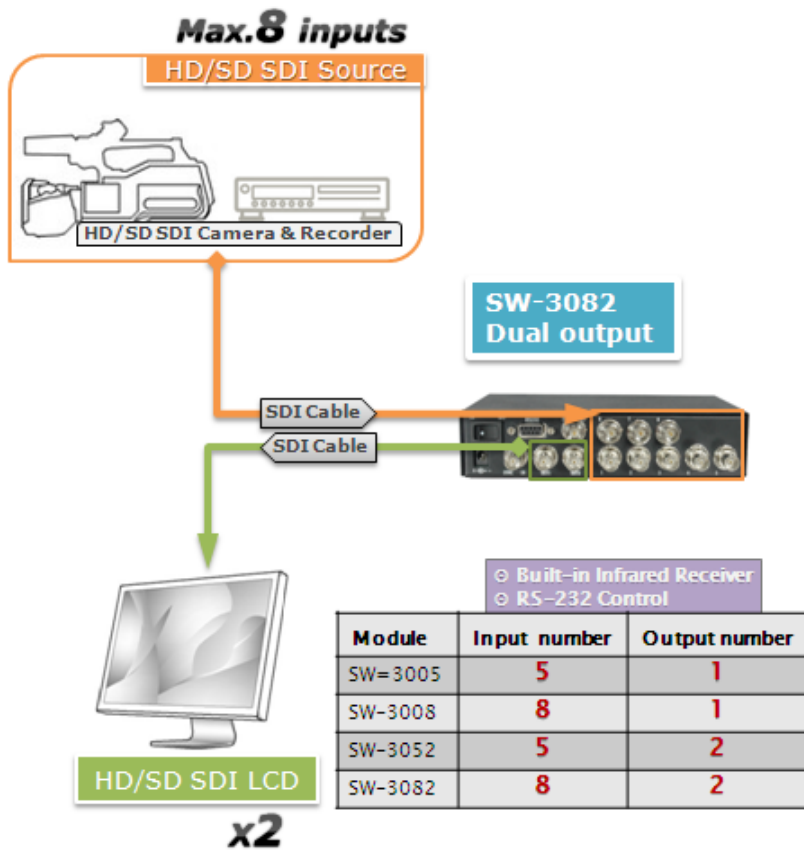# Safety and Notice

The **SP-3082 8x2 HD/SD-SDI Matrix 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-GM09K3-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 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-GM09K3-S1 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. By perfectly duplicating the chosen SDI input, this SDI switch provides two identical outputs, and acts like a SDI splitter. AV-GM09K3-S1 offers the most convenient and cost effective means for swift switch and duplication of high quality SDI in the market.

Max. 8 inputs
HD/SD SDI Source

HD/SD SDI Camera & Recorder

SW-3082
Dual output

SDI Cable
SDI Cable

⊙ Built-in Infrared Receiver
⊙ RS-232 Control

Module	Input number	Output number
SW-3005	5	1
SW-3008	8	1
SW-3052	5	2
SW-3082	8	2

HD/SD SDI LCD
x2

ℹ️ *Optional upon request*

Features

- HD/SD-SDI Switch
- Up to 8 equalized & re-timing SDI inputs*****
- Dual Color LED indication of HD/SD of the output SDI
- Automatic detection of the SDI Input
- Synchronizes input/output (switch after vertical sync)
- Low-cost 8x2 HD/SD (dual-rate) switch with dual outputs

- Provides the equalized and reclocked***** transmission path up to 300m (1000ft) at SD-SDI or 150m (500ft) at HD-SDI
- Multiple control by RS-232, IR remote, and push button

Specifications & Package Contents

Model Name		AV-GM09G3-S1	AV-GM09J3-S1	AV-GM09H3-S1	AV-GM09K3-S1
Technical					
Role of usage		5x1 switch	5x2 matrix switch	8x1 switch	8x2 matrix switch
SDI standards		SD-SDI & HD-SDI			
Auto HD/SD-SDI detection		Yes			
Supported protocols		SMPTE 259M / SMPTE 292M			
Video bandwidth		Single-link [1.485Gpbs & 1.485/1.001Gbps]			
Data rates		143 / 270 / 1483 / 1485 Mbps			
Video support		[HD] 720p50/59.94/60, 1035i50/59.94/60, 1080i50/59.94/60, 1080p24/30 [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-918 pathological patterns		Immune			
PCB stack-up		4-layer board [impedance control — differential 100Ω; single 50Ω]			
Input		5x BNC [SDI]	5x BNC [SDI]	8x BNC [SDI]	8x BNC [SDI]
Output		1x BNC [SDI]	2x BNC [SDI]	1x BNC [SDI]	2x BNC [SDI]
BNC connector		75Ω inter-locked socket			
Eye pattern characteristics (HD-SDI)		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)	
Mechanical					
Housing		Metal case			
Dimensions [L x W x H]	Model	187 x 125 x 43mm [7.4"x4.9"x1.7"]			
	Package	330 x 200 x 95mm [1'1"x7.9"x3.7"]			
	Carton	495 x 440x 380mm [1'7.5"x1'5.3"x1'3"]			

Weight	Model	890g [2.0 lbs]	890g [2.0 lbs]	890g [2.0 lbs]	890g [2.0 lbs]
	Package	g [lbs]	g [lbs]	g [lbs]	g [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-GM09G3-S1 / AV-GM09J3-S1 / AV-GM09H3-S1 / AV-GM09K3-S1 1x IR remote controller 1x 5V power adapter 1x User Manual			

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

Front Panel
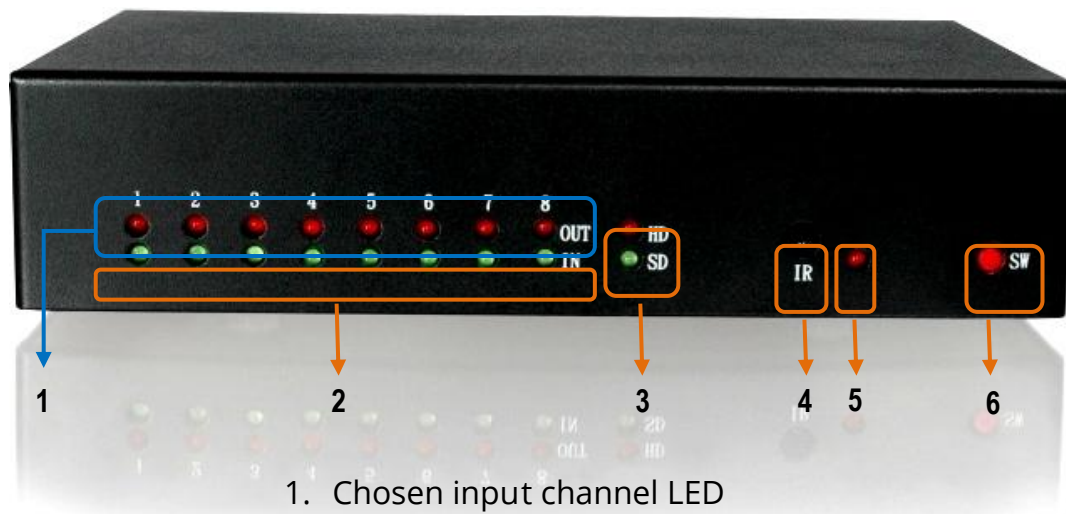
1. Chosen input channel LED
2. Input channel auto detection LED
3. Output HD/SD detection LED
4. IR remote receiver
5. Power indicator LED
6. Push button for input channel switch

Rear Panel

7. Power switch
8. 5V DC power jack
9. Synchronized SDI signal input
10. RS-232 control port for PC control
11. SDI output
12. Synchronized signal loop-out (add 75Ω terminator if not connect)
13. SDI input
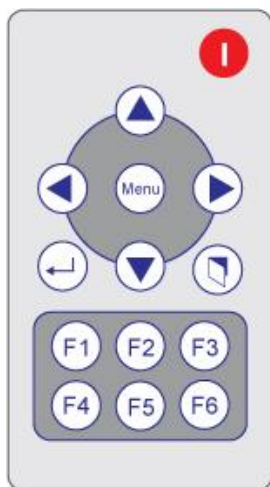
I	: Reserved	**▶**	: To the right	**F3**	: Channel 5
▲	: Reserved	**↵**	: Channel 1	**F4**	: Channel 6
Menu	: Reserved		: Channel 2	**F5**	: Channel 7
▼	: Reserved	**F1**	: Channel 3	**F6**	: Channel 8
◀	: To the left	**F2**	: Channel 4		

Hardware Installation

1. Connect SDI enable equipments to the output of AV-GM09K3-S1.
2. Connect the SDI input sources to the inputs of AV-GM09K3-S1.
3. Plug power adapter cable into 5V DC power jack.
4. Use IR remote, RS-232, or front panel push button to switch between input channels.

Graphic card

HD/SD SDI Recorder   HD/SD SDI Recorder

HD/SD SDI Display

HD/SD SDI Camera

HD/SD SDI Display   Graphic card   HD/SD SDI Recorder   HD/SD SDI Camera

HD/SD SDI Camera

<div style="background-color:red; color:white; text-align:right; font-weight:bold; font-size:2em">Limited Warranty</div>

The SELLER warrants the **AV-GM09K3-S1 8x2 HD/SD-SDI Matrix Switch** 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-GM09K3-S1 features and specifications is subject to change without further notice.

April, 2018