



HD/SD-SDI Pattern Generator



P/N: AV-GM0963-S1



Safety and Notice

The **AV-GM0963-S1 HD/SD-SDI Pattern Generator** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0963-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.



The **AV-GM0963-S1 HD/SD-SDI Pattern Generator** is an advanced SDI pattern generator with multi-format (HD/SD) and multi-pattern support. Besides still and moving video test patterns, other features such as audio (SMPTE-291M) are also provided. AV-GM0963-S1 can support up to 8 channel AES compliant audio with 48KHz sample rate. Another attractive feature of AV-GM0963-S1 comes from bypassing HDMI input and allows users with more testing patterns for connected display or treats AV-GM0963-S1 as an advanced HDMI to SDI converter. With portable size, AV-GM0963-S1 is equipped four buttons and LCM screen to ease the control. This device provides a cost effective way to calibrate and test SDI enable video devices and displays.

Features

- **Supported output resolution**

NTSC 525@60, PAL 625@50, 720p@23.98, 720p@24, 720p@25, 720@29.94, 720p@30, 720p@50, 720p@59.94, 720p@60, 1080i@50, 1080i@59.94, 1080i@60, 1080p@23.97, 1080p@24, 1080p@25, 1080p@29.97, 1080p@30

Bit Rate: 1.485 Gbps, 1.4835 Gbps, 270 Mbps

Resolution: 10bit

- **Video Patterns**

100% Color Bars, Borderline, Random Noise, Check Field, Black, Vertical Lines, Black / White alternate fields, Full Grey / Full White, Black to White Gradient, Random Generator for all still patterns, moving squares White noise, Inverse effect with still pattern, Scrolling Title (see Appendix for illustrations)

- **Save Settings to Memory Option**

- **ANC Data**

EDH (RP-165), SMPTE 352M, SMPTE291M

- **Control**

LCM & Panel Buttons

- **Video Output**

Dual SDI Output

Specifications & Package Contents

Model Name	AV-GM0963-S1	AV-GM0973-S1
Technical		
Role of usage	Pattern generator	
SDI standards	HD/SD-SDI	3G/HD/SD-SDI
Auto SDI rate detection	Yes	
Supported protocols	SMPTE 259M (270Mbps / 360Mbps) SMPTE 292M / HDTV (1.485 & 1.485/1.001Gbps)	SMPTE 259M (270Mbps / 360Mbps) SMPTE 292M / HDTV (1.485 & 1.485/1.001Gbps) SMPTE 424/425M (2.97 & 2.97/1.001Gbps)
Video bandwidth	1.485Gpbs	2.97Gpbs
Data rates	143 / 270 / 1483 / 1485 Mbps	143 / 270 / 1483 / 1485 / 2967 / 2970 Mbps
Video support	[HD] 720p50/59.94/60, 1080p24/30, 1035i50/59.94/60, 1080i50/59.94/60 [SD] NTSC@59.94Hz, PAL@50Hz	[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
SDI signal type	SMPTE-292M / 259M	SMPTE-292M / 259M / 424M
HDMI bypass	Yes	
Output impedance	75Ω	
Cable (Belden 1694A) equalization / transmission	[3G-SDI] up to 60m (190ft) / [HD-SDI] up to 150m (500ft) / [SD-SDI] up to 300m (1000ft)	
Audio support	Yes	
PCB Stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	None	
Output	2x BNC [SDI]	
BNC connector	75Ω interlocking socket	
HDMI connector	Type A [19-pin female]	
[HD] Eye pattern characteristics	Amplitude: Within 800mV <10% Rise overshoot: Less than 2% Fall overshoot: Less than 2%	Long time jitter <1.0 UI Timing jitter <1.0 UI Alignment jitter <0.2 UI
Mechanical		
		AV-GM0963-S1
		AV-GM0973-S1
Housing		
Metal enclosure		
Dimensions [L x W x H]	Model	150 x 190 x 32mm [5.9" x 7.5" x 1.3"]
	Package	175 x 270 x 100mm [6.9" x 10.6" x 3.9"]
	Carton	450 x 370 x 300mm [1'6" x 1'3" x 1']
Weight	Model	660g [1.5 lbs]
	Package	1260g [2.8 lbs]
Fixedness	Interlocking 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-GM0963-S1 1x 5V power supply unit 1x User manual	1x AV-GM0973-S1 1x 5V power supply unit 1x User manual



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

Menu Operation

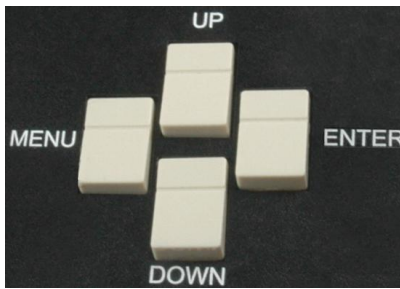
Menu	Items	
01 Format	Resolution	NTSC
		PAL
		720p
		1080p
		1080i
	Frequency	60
		59.94
		50
		30
		29.97
Output	25	
	24	
	23.98	
	YCbCr 422	
	02 Video	Patterns
100% Bar		
Check Field 1		
Check Field 2		
Check Field 3		
Gradient R1		
Gradient G1		
Gradient B1		
Gradient R2		
Gradient G2		
Gradient B2		
Gradient R3		
Gradient G3		
Gradient B3		
Gradient R4		
Gradient G4		
Gradient B4		
Red Level 1		
Red Level 2		
Green Level 1		
Green Level 2		
Blue Level 1		
Blue Level 2		
100% Red		
100% Green		
100% Blue		
100% White		
70% Gray		
40% Gray		
Black		
Noise		
Circle 1		

		Circle 2	
		Moire	
		H Stripe R	
		H Stripe G	
		H Stripe B	
		V Stripe R	
		V Stripe G	
		V Stripe B	
		Chess 1	
		Chess 2	
		Sequence	
		Text	Off
			On-White
			On-Black
Timer	Off		
	On-W/B		
	On-B/W		
03 Audio	Mode	Off	
		On	
	Group	1+2	
		3+4	
	Level	-6dB	
		-12dB	
		-18dB	
		-24dB	
		-30dB	
		-36dB	
		-42dB	
		Silence	
		Random	
	Mask	Off	
CH 1234			
CH 1			
CH 2			
CH 3			
CH 4			
CH 1+2			
CH 3+4			
04 Motion	Motion	No Motion	
		Square 1	
		Square 2	
		2 Squares	
		Square Inv	
	Data Speed	1	
		2	
		3	
		4	
		5	
6			
7			

		8
05 ANC Data	SMPTE-352M	Off
		On
	EDH	On
		Off
06 System	Status	No Change
		Factory
		Now Save
	Version	V1.00

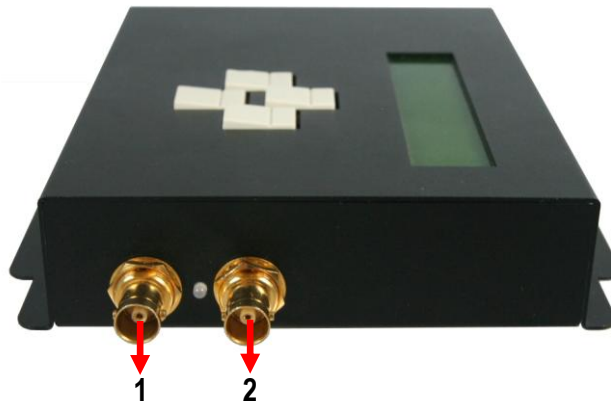
Panel Description

Top Panel



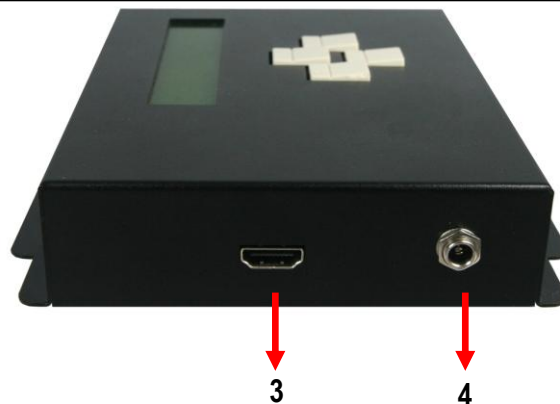
Button	Function
Menu	Trigger the menu operation
Enter	Enter the menu item
Up	Choose the last menu item
Down	Choose the next menu item

Front Panel



Connector	Function
OUT1, OUT2	HD/SD SDI output

Front Panel



Connector	Function
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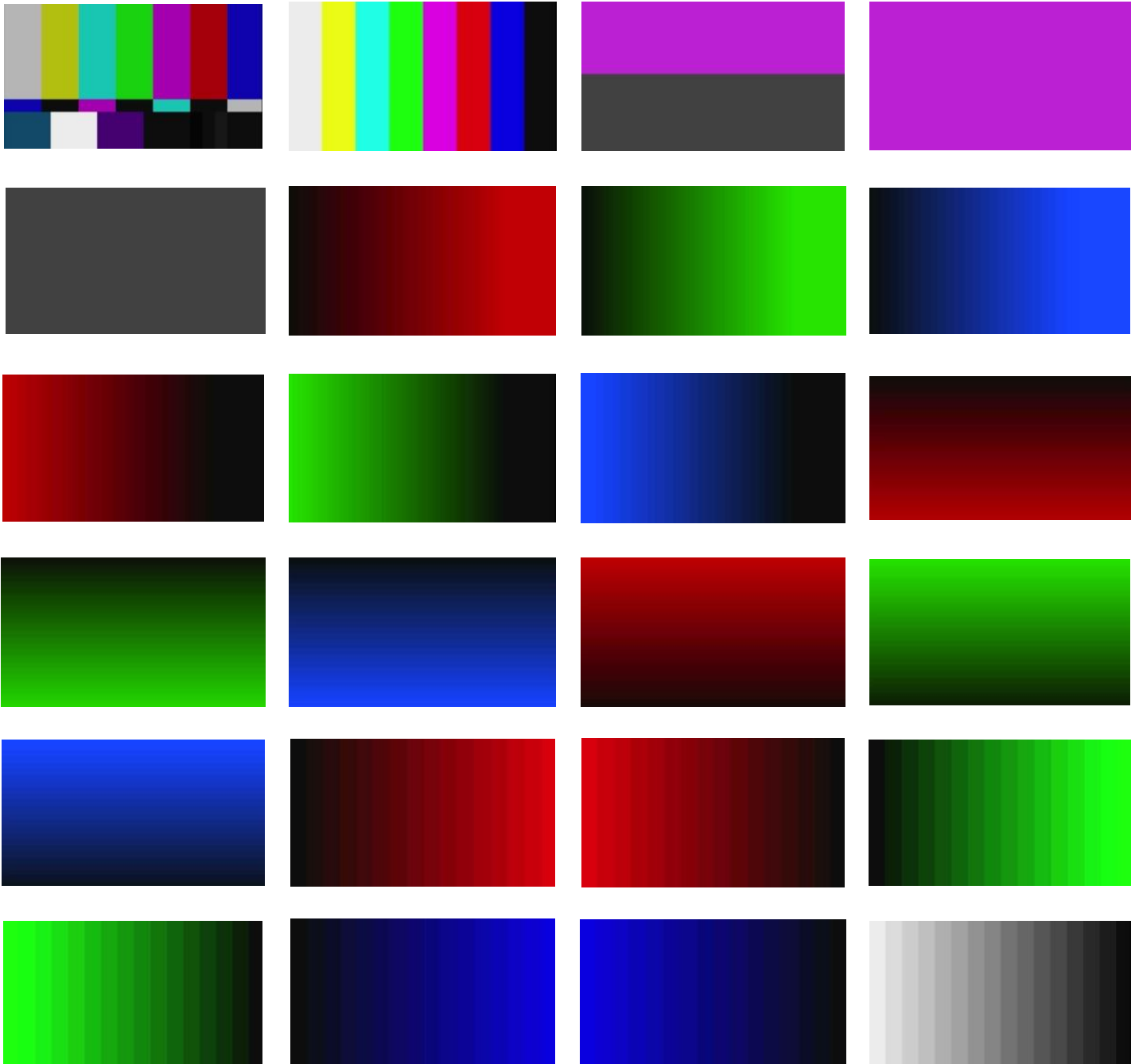
INPUT	HDMI input
Power	5V DC

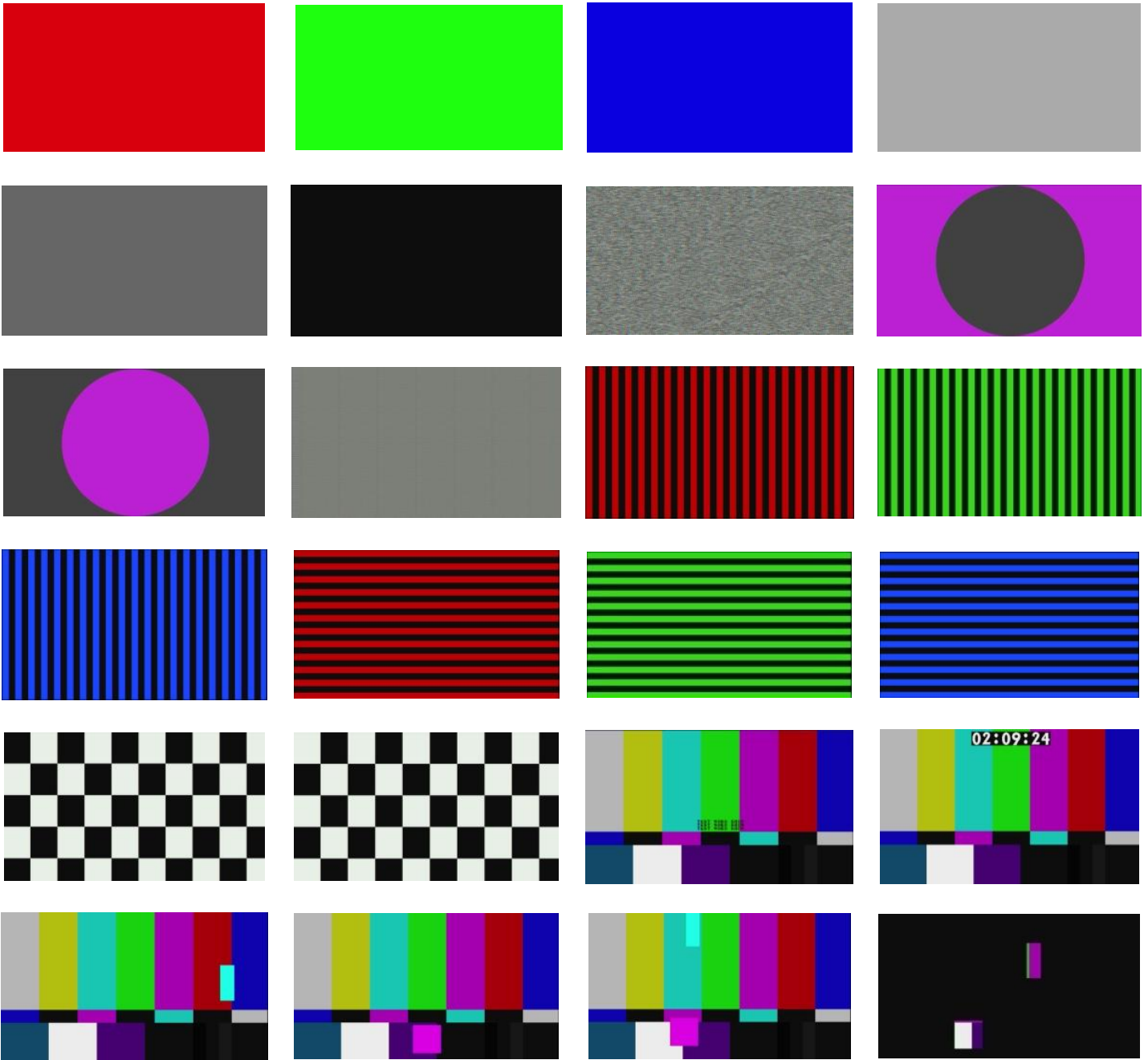
- Data Identification Word of Ancillary Data Packet

ANC Data	DID	SDID/DBN
352M	0x41	0x01
RP-165-EDH*	0xF4	0x00

* Data Type 1(SMPTE-291M)

- Built-in Video Patterns





1. In HDMI bypass mode, users must be aware of that the jitters coming from HDMI sources, such as DVD players, may be much higher than typical requirement according to SMPTE request on HD-SDI signals. This will result in SDI output with high jitters or even no SDI outputs!
2. Due to the high frequency bandwidth and low jitter requirement of 3G-SDI signals, one 75 ohm terminator is strongly recommended while only one 3G-SDI is output!

Limited Warranty

The SELLER warrants the **AV-GM0963-S1 HD/SD-SDI Pattern Generator** 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 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-GM0963-S1** features and specifications is subject to change without further notice.



Support

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

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