



## HD/SD-SDI LEVEL METER



P/N: AV-GM0913-S1



## Safety and Notice

The **AV-GM0913-S1 HD/SD-SDI Level Meter** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0913-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-GM0913-S1 HD/SD-SDI Level Meter** is a low cost pocket size, digital, hand-held, battery operated device which can measure HD/SD-SDI video signals. User can use AV-GM0913-S1 to set up quickly and accurately and verify the levels and slope-loss on the SDI signal device. AV-GM0913-S1 is a cost effective device which can work with HD CCTV cameras or any SDI video signal device. Users can use the AV-GM0913-S1 to measure the HD/SD-SDI video signal at any point in the system.

## FEATURES

- **Supported input resolution**  
1080p/24, 1080p23.98, 1080PsF/24, 1080PsF/23.98, 720p/60, 720p/59.94, 720p/50, 720p/30, 720p/29.97, 720p/25, 720p/24, 720p/23.98
- **Measures power level calibrated in dBm, 0 dBm = 800 mVpp**
- **Displays relative level in mVpp (Millivolts peak to peak)**
- **Use one button testing with auto termination**
- **LCD back lighting**
- **Power on timer**  
Allows enough time to make the measurements and then turn off the device
- **Battery status**  
"LOW BATTERY" means that battery is low.  
"REPLACE BATTERY" means that the battery is no power.
- **Low cost pocket size**

## PACKAGE CONTENTS

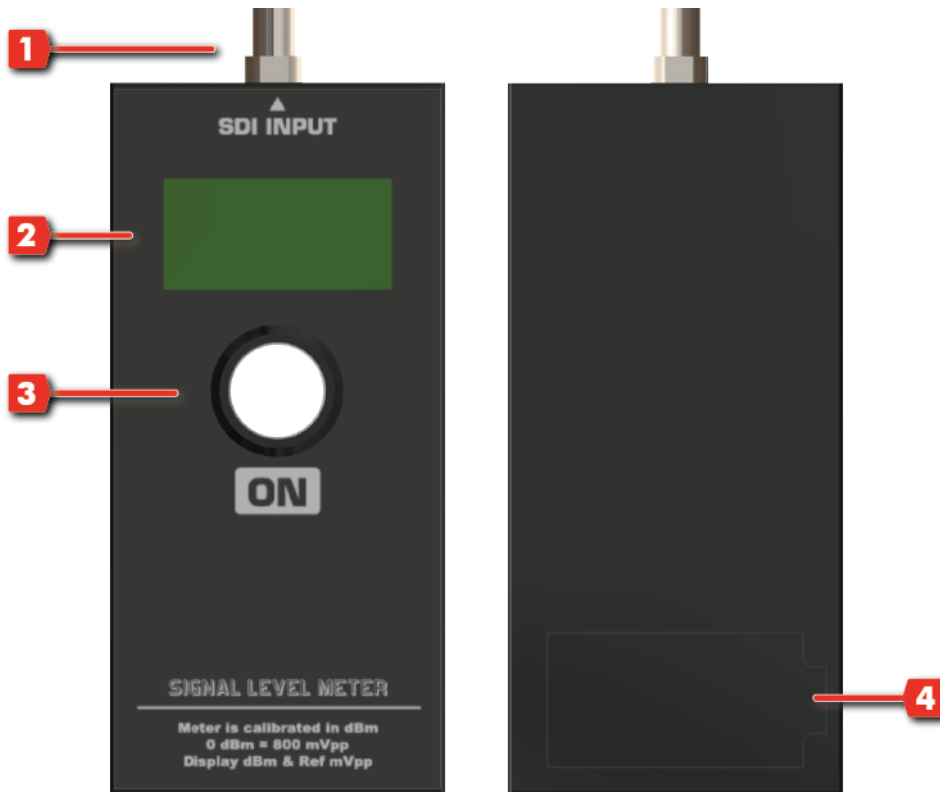
- 1x AV-GM0913-S1
- 1x User Manual

# SPECIFICATIONS

Model Name	AV-GM0913-S1	
<b>Technical</b>		
Role of usage	meter that measures HD(High Definition) video signals	
SDI standards	HD/SD-SDI	
Video bandwidth	1.485Gpbs	
Video support	1080p/24, 1080p23.98, 1080PsF/24, 1080PsF/23.98, 720p/60, 720p/59.94, 720p/50, 720p/30, 720p/29.97, 720p/25, 720p/24, 720p/23.98	
Input signal	[HD-SDI] SMPTE 292M, 296M	
Input	1x BNC [SDI]	
BNC connector	75Ω interlocking socket	
<b>Mechanical</b>		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	74.7 x 160 x 11.5mm [2.9" x 6.3" x 0.5"]
	Package	264 x 170 x 77mm [10.4" x 6.7" x 3."]
	Carton	430 x 358 x 291mm [16.9" x 14.1" x 11.5"]
Weight	Model	160g [5.6 oz]
	Package	360g [0.8 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]	

# PANEL DESCRIPTIONS

## Front / Rear Panel



1. **SDI Input:** Plug in a SDI cable to be linked to a SDI source
2. **LCD Display:** the measured data is shown here
3. **Push Button:** Turn on the device and view the device data
4. **Battery Holder:** Place an alkaline 9 volt “transistor” battery here

## HARDWARE INSTALLATION

1. Disconnect the coaxial cable from the receiving terminal.
2. Connect the coaxial cable to the “SDI Input” BNC connector on the AV-GM0913-S1.
3. Push the “ON” button of the AV-GM0913-S1 to turn on the device and see the device data.

# INSTRUCTION

1. AV-GM0913-S1 has a power on timer to allow enough time to do the measurements and then turn off the device to save the battery. The AV-GM0913-S1 will show "Power Down" on the LCD display before the device turns off. The AV-GM0913-S1 will keep operating for another period if the user pushes on the button during this time. The LCD display will flash one time when the AV-GM0913-S1 do another battery check.
2. The AV-GM0913-S1 also has a LCD back lighting feature. This feature can light the device in the dark environment. The LCD display will keep lighting if user hold on the button. The light will stop when user release the button. If not needed, user should avoid to this function because this function will use much battery power.
3. The data is in dBm on the left side screen. The standard dBm data(full level signal) is 0. If the signal is larger than 0, the dBm data will be a positive number. On the other hand, if the signal is loss or lower level than 0, the dBm data will be a negative number.
4. The data is in millivolts peak-to-peak on the right side screen. The millivolt data is showed as a reference and moves in one db steps. The millivolt peak to peak data uses a floating decimal point to improve the readout. Besides, the data of 0.800 volts peak-to-peak means that the direct nominal output of a digital video source is measured.
5. Because the HD signal is transmitted over the coaxial cable, the voltage will be decreased with increasing distance.
6. The Belden 1694A Precision Video Cable is commonly used by the Television Broadcast Industry. Using this cable, the signal strength of the highest frequency of interest in HD is expected to drop 84.9% for each 100 meters of cable. However, the actual signal strength is expected at various lengths of cable is shown in the below table.

HDTV Signal Strength			
Cable(in feet)	Cable(in meters)	dBm	Millivolts
3.28	1	0	800
50	15.24	-2	635
100	30.48	-4	504
150	45.72	-5	449
200	60.96	-7	357
250	76.2	-9	283
300	91.44	-10	252
350	106.68	-11	225
400	121.92	-12	200

7. The data generator's strength is supposed to be 800 millivolts at the output, but it may vary as much as +/- 10% from this value. So user can expect that the AV-GM0913-S1 reading may vary as least that much when estimating the cable length using the signal strength that is measured. Therefore, for greater accuracy you can measure the source level, record that number and subtract that number from the end of line measurement to get an exact measure of the loss of the cable.

# CONNECTION DIAGRAM



## NOTICE

1. If user wants to use an SDI camera as a source signal, it is recommended that user uses a high pass filter in line ahead of the device.
2. The AV-GM0913-S1 is an exactness measuring device. Although it can endure normal everyday indoor use, it could not be left outside in the rain or mistreated. It does not have waterproof function.

3. In order to prevent leakage of corrosive fluids from battery, the battery should be removed when AV-GM0913-S1 is placed into storage.
4. Please replaced non-rechargeable batteries at least once a year to prevent the old battery causing the leak and corrosion damage.



# WARRANTY

The SELLER warrants the **AV-GM0913-S1 HD/SD-SDI Level Meter** 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-GM0913-S1 features and specifications is subject to change without further notice.**

## Support

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