



## HDMI 2.0a Installation Gear



P/N: AV-GM0923-S1BP



## Safety and Notice

The **AV-GM0923-S1BP HDMI 2.0a Installation Gear** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0923-S1BP** 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-GM0923-S1BP HDMI 2.0a Installation Gear** is a hand-held, pocket size and chargeable battery supported device which can generate popular HDMI signals, detect important HDMI features, and examine cable quality. With the help of AV-GM0923-S1BP, installer can easily and quickly setup up and setup HDMI equipment in seconds.

In "Source" mode, AV-GM0923-S1BP provides reliable video patterns up to HDMI 2.0a 4K@60Hz 444 or 4K HDR, including HDMI 1.4 resolutions such as 1080P and 720P. With adjustable color depth, installer can instantly test the connected display's capability and decide if the display under test is a right choice.

In "Sink" mode, AV-GM0923-S1BP can be treated as a reliable HDMI signal detector to have fundamental information such as resolution, frame rate, HDCP version. Those important pieces of information can help installers to deal with tedious HDMI compatibility issues with ease.

In the "Cable" mode, this handy gadget can not only verify the wire condition of HDMI cable, but also provide a cable quality indicator to help installers understand the cable status before doing any installation. Especially for HDMI 2.0, the cable quality matters.

## FEATURES

- Supports video resolution\* outputs up to 4K2K@60 4:4:4 8bit, HDR 10bits\*\*, 12bits, 16bits
- Built-in 3 video patterns\*\*\*
- Both HDMI input and output support up to HDMI 2.0
- Fundamental HDMI feature analysis up to 4K2K@60 4:4:4 8bit HDMI 2.0 input
- HDCP 1.4 & 2.2 compliant
- Tests cable quality
- Provides statistics analysis for cable quality or connection stability
- Hand-held pocket size
- Battery powered for portability, it can extend operation time with full load up to 3 hours
- Rechargeable battery design with short charging time about 3 hours



\* Not supporting 4K2K60 DVI mode

\*\*4K2K60 (YUV 4:2:0) 10bits is common resolution

\*\*\*Pattern will be different under different resolution

**Before using the AV-GM0923-S1BP, please plugging the power adapter to switch off the shipping mode**

## PACKAGE CONTENTS

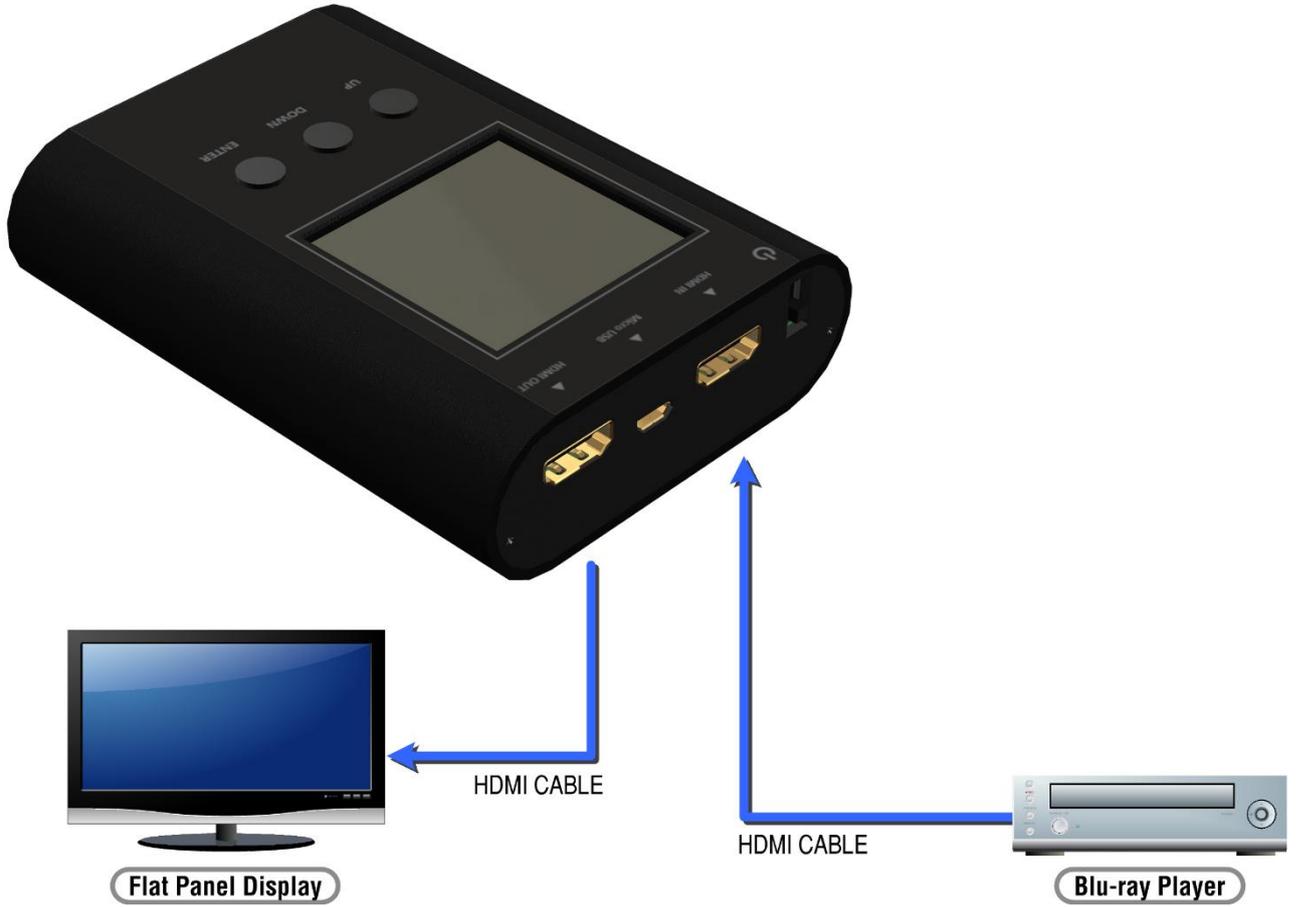
- 1x AV-GM0923-S1BP
- 1x User Manual

# SPECIFICATIONS

Model Name		AV-GM0923-S1BP
<b>Technical</b>		
Role of usage	HDMI 2.0a Installation Gear	
Video bandwidth	Single link 600MHz [18Gbps]	
HDMI compliance	HDMI 2.0 and below	
HDCP compliance	HDCP 2.2 and below	
Video Support	up to 4K60 4:4:4 8bit, 4K2K60 4:2:0 16bit (HDR)	
ESD protection	Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]	
Video Format Support	HDMI	
Input	1x HDMI	
Output	1x HDMI	
Control	Push Button	
HDMI connector	Type A [19-pin female]	
USB Support	Firmware update / Recharge	
USB connector	Micro-USB (Type B)	
<b>Mechanical</b>		
Enclosure		Metal case
Dimensions (L x W x H)	Model	130 x 89 x 14mm [5.1" x 3.5" x 0.6"]
	Package	198 x 137 x 74mm [7.8" x 5.4" x 2.9"]
	Carton	420 x 400 x 300mm [1'4"x 1'3" x 11.8"]
Weight	Model	220g [7.8oz]
	Package	320g [11.3oz]
Power supply		Micro-USB / Battery
Power Consumption		5W [MAX]
Operation temperature		0~40°C [32~104°F]
Storage temperature		-20~60°C [-4~140°F]
Relative humidity		20~90% RH [no condensation]

# CONNECTION DIAGRAM

→ HDMI



# PANEL DESCRIPTIONS



1. Button (ENTER)
2. Button (DOWN)
3. Button (UP)
4. LCD Display: the measured data is shown here
5. OUTPUT: HDMI output
6. Micro-USB: Firmware update / Recharge
7. INPUT: HDMI input
8. Power Switch: Power ON/OFF Switch

➔ *AV-GM0923-S1BP will automatically enter battery saving mode after 1 minute idle. During battery saving mode, if user would like to get AV-GM0923-S1BP back to work, please push any button. Notice that when plugging in an active HDMI input, AV-GM0923-S1BP will NOT enter battery saving mode.*

# MENU OPERATION

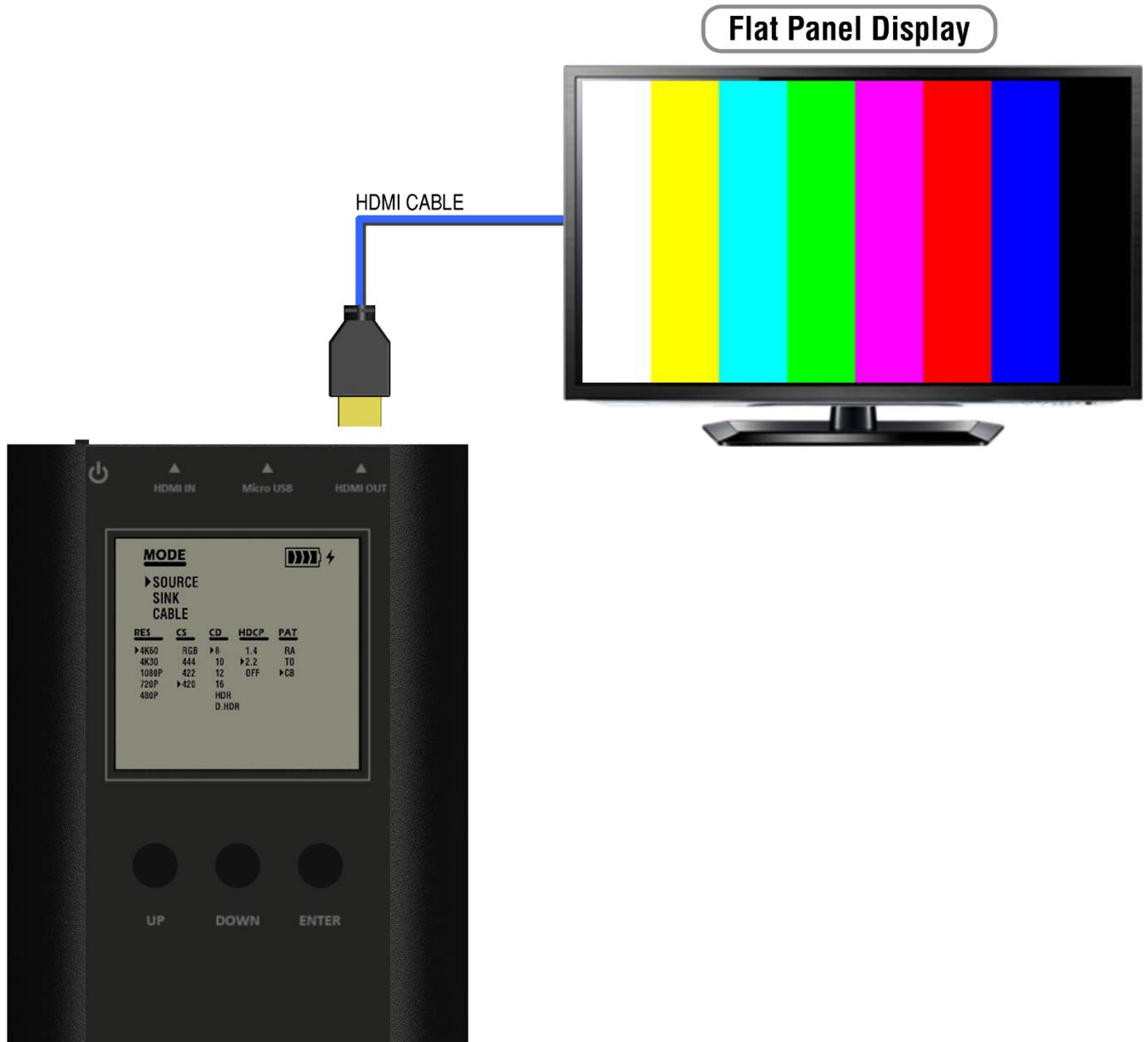
Menu	Items	Remark
SOURCE MODE	Resolution	
	Color space	
	Color depth	
	HDCP	
	Pattern	provide three test patterns for user to use (Ramp, Toggle, Color Bar)
SINK MODE	Resolution	read the HDMI information from input source
	Color space	
	Color depth	
	HDCP	
	AUDIO	
	EDID	
CABLE MODE	CEC	link quality estimator *please refer to cable mode section
	CEC	
	HEAC	
	+5V	
	HPD	
	DDC	

➔ *Menu items subject to change without notification.*

# OPERATION APPROACH

## Source Mode

When AV-GM0923-S1BP is treated as a source, it can generate different test patterns to the display under test.



How to run Source Mode:

- Make sure the connection between the AV-GM0923-S1BP HDMI output port and the display.
- Use buttons to select MODE category and enter SOURCE mode.
- Use buttons to set up the output signal format and video testing pattern.

## Sink Mode

When AV-GM0923-S1BP is in sink mode, it can read the HDMI source's information and in addition, the input HDMI can be passed through to HDMI capable display if needed (as shown below).

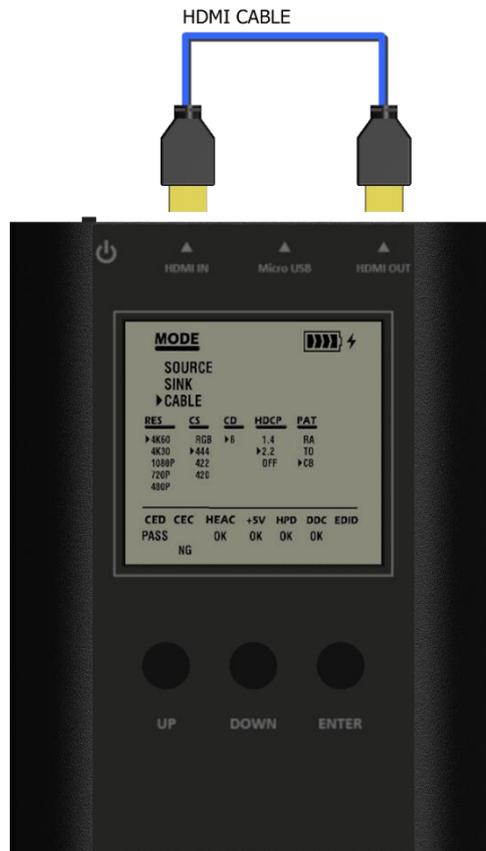


How to run Sink Mode:

- Connect the AV-GM0923-S1BP between HDMI source and HDMI display.
- Use buttons to select MODE category and enter SINK mode.
- The source information will be present on the LCD. The process of acquiring HDMI information will take about 3~5 seconds.

## Cable Mode

In this mode, AV-GM0923-S1BP offers a link quality estimator following the Character Error Detection mechanism from HDMI 2.0 specification. The estimator can provide a basic link quality evaluation regarding the cable or any other HDMI link connected to AV-GM0923-S1BP. Please notice that the evaluation result can provide an insight into the link quality under testing, **but not always reflects the real robustness of HDMI 2.0 full bandwidth connection**. The stability of the full bandwidth HDMI 2.0 connection is affected not only by the cable or link quality but also many other factors, such as, the signal integrity of the source, the ambient temperature, the reception of the display, and so on. Therefore the testing result is just for a reference.



How to run Cable Mode:

- Make sure the tight connection between the AV-GM0923-S1BP and the cable.
- Use buttons to select MODE category and enter CABLE mode.
- Keep pressing **ENTER** button for about 5 seconds to start the link test. The AV-GM0923-S1BP will evaluate the HDMI signal quality based on HDMI 2.0 specification and provide a result, PASS or NG. Please notice that during testing, AV-GM0923-S1BP will NOT take any commands from buttons except **ENTER**. Pressing **ENTER** continuously for 5 seconds will terminate the evaluation process.
- Performance Criteria:

According to HDMI 2.0 specification, the performance criteria is shown as the following table.

Test Result	Requirement
PASS	The error counts of signal are less than signal clock x 10 <sup>-6</sup>
NG	The error counts of signal are more than signal clock x 10 <sup>-6</sup>

Please be advised that the test result is based on the cable connection and the signal integrity of both input and output from AV-GM0923-S1BP. The indicator is usually a good reference for cable quality, but any other source or display in consideration plays an important role in the final stability of the HDMI 2.0 connection.

# WARRANTY

The SELLER warrants the **AV-GM0923-S1BP HDMI 2.0a Installation Gear** 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-GM0923-S1BP features and specifications is subject to change without further notice.**

## Support

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