User Manual

HDMI
PATTERN GENERATOR PG-H2Z

- ● POWER
- ◑ LOW POWER

1,4●
HDCP
2.2●
- ● PASS
- ◑ TESTING

EASY PG

1
2

1.PATTERN
2.HDCP.

⌁⊙ +DC 12V

SELECTED

⏻ ON/OFF
(3SEC)

1   2
3   4
5   6
7

1.4K+@60/RGB
2.4K@60/RGB
3.4K@60/4:4:4
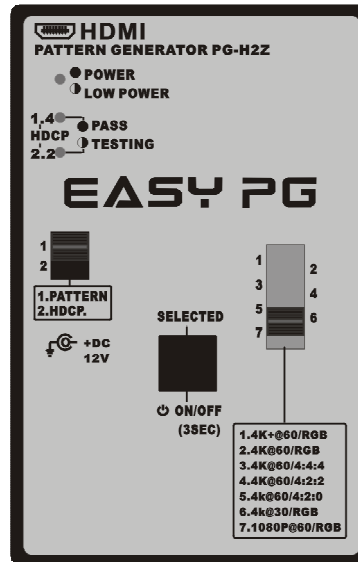4.4K@60/4:2:2
5.4k@60/4:2:0
6.4k@30/RGB
7.1080P@60/RGB

PATTERN GENERATOR

HDMI-PGH2Z

BEFORE YOU BEGIN

- Follow all instructions marked on the device during using.

- Do not attempt to maintain the device by yourself, any faults, please contact your vendor.

- Provide proper ventilation and air circulation and do not use near water.

- It is better to keep it in a dry environment.

- Only using the power adapter and connection cables that are supported with the device.

- Please use the original components and the working time for the battery is about 0.5 hours.

- It is better to replace a new battery when the battery power indicator becomes low.

- Do not use liquid or aerosol cleaners to clean the device.

- Always unplug the power to the device before cleaning.

☞ To avoid and minimize the risk of damage to the device, please pay attention to the safety instructions even though the device had been tested for conformance to safety requirements and certification for international using.

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION

HDMI-PGH2Z is a test pattern generator designed to be a useful tool for the new generation of digital monitor/video products. It is a simple version to support up to 16 different patterns with HDMI 2.0 interface for you to test and calibrate a digital monitor/video.

Further, it can also help you to improve the quality of video with side-by-side comparisons. The resolution can up to 4K @60 (2160p) , which is 4 times the clarity of 1080p/60 video resolution, for the ultimate video experience device. Through the friendly interface and smart design, not only you can easy and quick to use the device but also you can reduce your test expenditure.

1.1 Packing

	HDMI-PGH2Z Pattern Generator x1
	12V DC Power Adapter x1
	9V Pile Alkaline Battery x1
	User Manual x1

All packages have been checked carefully for their completeness and functionality before shipped. Please contact with your vendor if any items listed as above are missed or damaged.

1.2 Features

- HDMI 2.0 & HDCP 1.4/2.2 compliant
- Provide total 12 patterns, refer to
- **Appendix B: Pattern** Chart
- Support total 7 Timings. (Up to 4K+@60/RGB)
- Intelligent LED indicator for battery status
- Portable design, working time up to 0.5 hours by inside 9.0 Volts Alkaline battery
- Simple interface and easy to use

1.3 Specifications

Functions	Description
Output Connector	HDMI Type A
Power/Selected Button	1
Resolution Switcher	1
Pattern/HDCP Switcher	1
Power Indicator	1
HDCP Indicators	2 (1.4/2.2)
Max. Resolution	4096x2160@60Hz RGB
Highest Pixel Frequency	594MHz
Power Adapter (Min.)	DC 12V 1.25A
Housing	Plastic
Dimensions (LxWxH)	132x87x27.5mm
Weight	155g

1.4 Solutions

- Using to test and calibrate a monitor
- Using to test and calibrate an image input devices
- Using to test and maintain studio equipment as monitors, cabling and recording equipment
- Using to test the arrangement of the circuit layout during the process of construction

CHAPTER 2 CONTROL PANEL
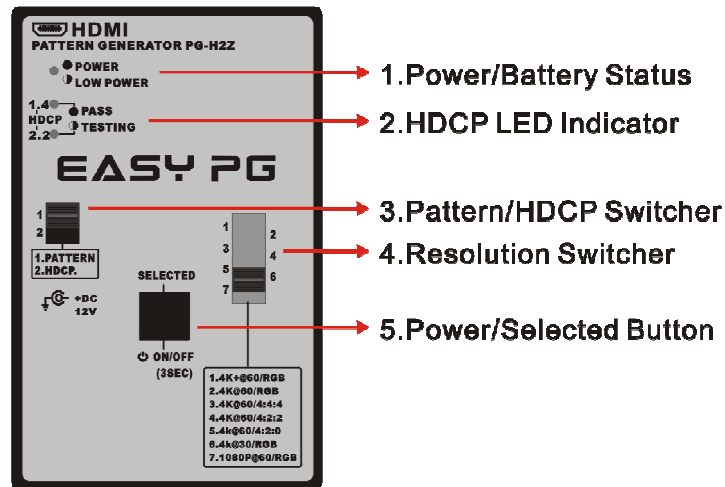
1. **Power/Battery Status:**

    - "●" **LED Green Light** → Power on.

    - "◑" **LED Flashes** → The battery is in low voltage status. In the case of a battery, the power indicator flashes when the voltage is less than 40%.

    ☞ Using the 9V battery singly without a 12V transformer, the status of power indicator will flash when the voltage of battery go down to about Low Voltage. (That is indicating the power of battery will be used up.)

2. **HDCP Indicator:** Located on the upper left of **HDMI-PGH2Z** device. The **HDCP Indicator** shows you that the HDCP verification is succeeded or not. After the HDMI cable is connected to both PG-H2Z and Digital Monitor/ TV, the **HDCP Indicator** shows on (green) indicating the HDCP verification is successfully. If the **HDCP Indicator** shows you flash indicating the HDCP verification is try to connect or connection fail.

3. **Pattern/HDCP Switcher:** Switch the **Pattern and HDCP** that you want to test.

☞ After you push the **Pattern/HDCP Switcher** to **Pattern** location, the sequence of the pattern mode is from upper left to upper right then from bottom left to bottom right. Please refer to "**Appendix B: Pattern Chart.**"

4. **Resolution Switcher:** Support you at least 7 kinds of resolution to choice. Please refer to "**Appendix A: Resolution.**"

5. **Power On/Off and Selected Button:** Press and hold the **Power/Selected Button** for 3 seconds to power on or off your device. You can press this button to switch the testing mode and Patterns.

   - **"Pattern"** → Support up to 16 patterns to test. Please refer to "**Appendix B: Pattern Chart.**"

   - **"HDCP"** → 1.4/2.2/Off.

☞ Please note the device will shut down after 3 minutes automatically without any action in the case of battery connection. Beside, when shut down the device, the built-in storage system will auto-save the last HDCP and Pattern setting values.

CHAPTER 3 CONNECTIONS
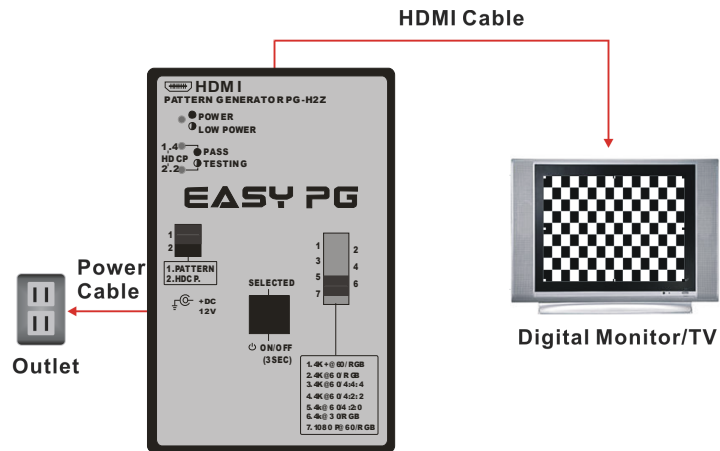
1. Connect the attached DC adapter cable from your device to the power source (outlet).

2. Connect the HDMI cable from your device to the Digital Monitor/TV.

3. Power on the Digital Monitor/TV.

4. Press and hold the **Selected Button** for 3 seconds to power on your device.

☞ Please use the Pile Alkaline battery to the device.

3.1 HDMI Connector

This connector is used to connect the HDMI cable to Digital Monitor/TV.
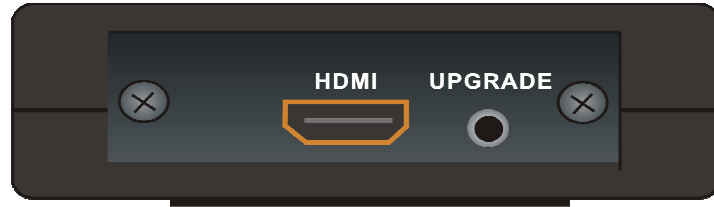
HDMI Type A Connector Pin Definition:

Pin #	Signal	Pin #	Signal
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TMDS Data2-	13	NC
4	TMDS Data1+	14	NC
5	TMDS Data1 Shield	15	DDC-SCL
6	TMDS Data1-	16	DDC-SDA
7	TMDS Data0+	17	DDC-Ground
8	TMDS Data0 Shield	18	+5V Power
9	TMDS Data0-	19	Hot Plug Detect
10	TMDS Clock+		

3.2 Upgrade Port

This port is used to upgrade the firmware of your device. For more information, please contact your agency.

3.3 Power Jack

The power jack is used to connect the DC 12V power adapter. The **Power Jack** is on the side of the device. The device supports 3 kinds of plugs for choice (USA, UK and Europe DC plugs.)

The device supports you up to 4 kinds of plugs (USA, UK AU and Europe DC plugs for choice). Please depend on where the location is to select the suitable plug.

AU Plug   **UK Plug**   **EU plug**   **US Plug**
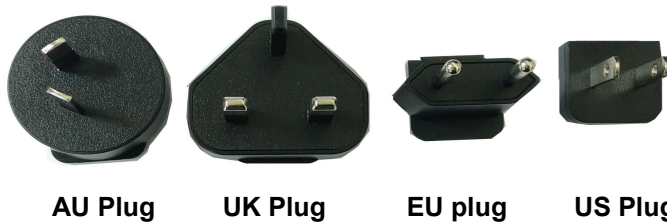
CHAPTER 4 TROUBLESHOOTING

1. If there is no reaction when using the device, please ensure the following matters:

Answer:

    a. If it is unable to power on→there is a possibility of fault battery or inferior battery. Connect it with the transformer.

    b. It is able to power on but there is no reaction→

       - Lower the resolution or change the resolution and vertical frequency.

       - Please ensure the compatibility the mode of the monitor.

2. What is the Pattern Generator's function?

Answer:

    a. Use to test and maintain studio equipment, such as monitor, cabling, and recording equipment.

    b. For a TV engineer or technician wants to test and calibrate a DTV monitor during repair.

    c. A home-theater user wants to get the best results out of the DTV equipment.

    d. A studio installer wants to test cables and equipment so that can get the best effect.

    e. For the DTV sets seller to show side-by-side comparisons of quality.

    f. For teacher to train their students about the latest DTV quality test technologies.

    g. To test a new DTV set whether compatibility with the ATSC standards.

3. When should I have to charge the battery?

Answer: We suggest you to charge the battery when the battery power indicator has become low; it is not appropriate to charge the battery when the battery is consumed thoroughly.
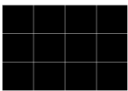
4. Should I to replace the old HDMI cable?

Answer: No, HDIM 2.0 features are working with existing HDMI cables. Higher bandwidth features, such as 4K@60(2160p) video format will require higher speed HDMI 2.0 cables.

APPENDIX A: RESOLUTION

No.	Resolution	Refresh Rate
1	4K+	60Hz/RGB
2	4K	60Hz/RGB
3	4K	60Hz/4:4:4
4	4K	60Hz/4:2:2
5	4K	60Hz/4:2:0
6	4K	30Hz/RGB
7	1080P	60Hz/RGB

APPENDIX B: PATTERN CHART