BG-AVTPG-8K

8K UHD HDMI 2.1 48Gbps Advanced Signal Test Generator and Analyzer (1080P/4K/8K Support)

User Manual

TABLE OF CONTENTS

Statement

Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

Safety Precaution

- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.

- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.

- Do not expose the product to rain or moisture.

- To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.

- Do not use the product beyond the specified temperature, humidity, or power supply specifications.

- This product does not contain parts that can be maintained or repaired by users. Damage caused by dismantling the product without authorization from BZBGEAR is not covered under the warranty policy.

- Installation and use of this product must strictly comply with local electrical safety standards.

Introduction

The BG-AVTPG-8K is an HDMI 2.1 signal generator and analyzer that is an essential and versatile tool designed for integrators. It supports the full bandwidth of HDMI 2.1 and HDCP 2.2 ensuring the installation and troubleshooting process is easier than ever before.

This handy and portable gadget is equipped with a long-lasting rechargeable battery, various video test patterns, intuitive touch panel controls, and cloud-based firmware upgrade access. Additionally, the BG-AVTPG-8K can support up to 8-channels of LPCM audio with selectable sample rates.

The BG-AVTPG-8K loop through function allows the connected HDMI input to pass to an external display or to its own built-in 7.0" touch screen, enabling users to quickly verify HDMI sources, displays, and cables. Other features including the HDCP analyzer and loop tester ensure installers have all the right tools they need with the touch of a finger.

Features

- 8K60 4:2:0 8bits, 8K30 4:4:4, 4K2K 120Hz & 4K2K@60 1 0bits/12bits HDR pattern generator

- Supports true color

- 7.0 " touch panel

- Mouse control and control via Ethernet

- Firmware updateable through USB Flash Drive

- User defined pattern storage up to 4 GB

- Embedded LINUX KERNEL system with limitless extension

- Scrambler for videos over 340 MHz

- HDMI loop through functionality

- HDCP analyzer and generator that is able to transmit HDCP encrypted video

- Rechargeable battery powered and portable for up to 9 hours on a full charge

- Voltage measurement on +5V and hotplug

- DDC from HDMI source and display

Packing List

- 1x BG-AVTPG-8K
- 1x 12V DC Adapter
- User Manual

Specifications

| Technical Specifications	
HDMI Compliance	HDMI 2.1 and below
HDCP Compliance	HDCP 2.3 and below
Video Formats	Up to 8K60 4:2:0 8 bits, 8K30 4:4:4, 4K2K@120Hz & 4K2K@60Hz 10/12bit (HDR)
Audio Formats	LPCM 8-Channel (up to 192 Kbps)
Control	USB mouse, touch panel, ethernet
ESD Protection	Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]
Inputs	1x HDMI, 1x USB, 1x RJ-45 (Ethernet)
Outputs	1x HDMI, 1x 3.5mm (Stereo)
USB	USB 2.0 Type-A
HDMI	Type A [19-pin female]
RJ-45	WE/SS 8P8C with 2 LED indicators
Mechanical Specifications	
Housing	Metal
Color	Black
Power Supply	12V DC / Rechargeable Battery
Operating Temperature	0~40°C [32~104°F]
Storage Temperature	-20~60°C [-4~140°F]
Relative Humidity	20~90% RH [no condensation]

Operation Controls and Functions

Front and Rear Panel
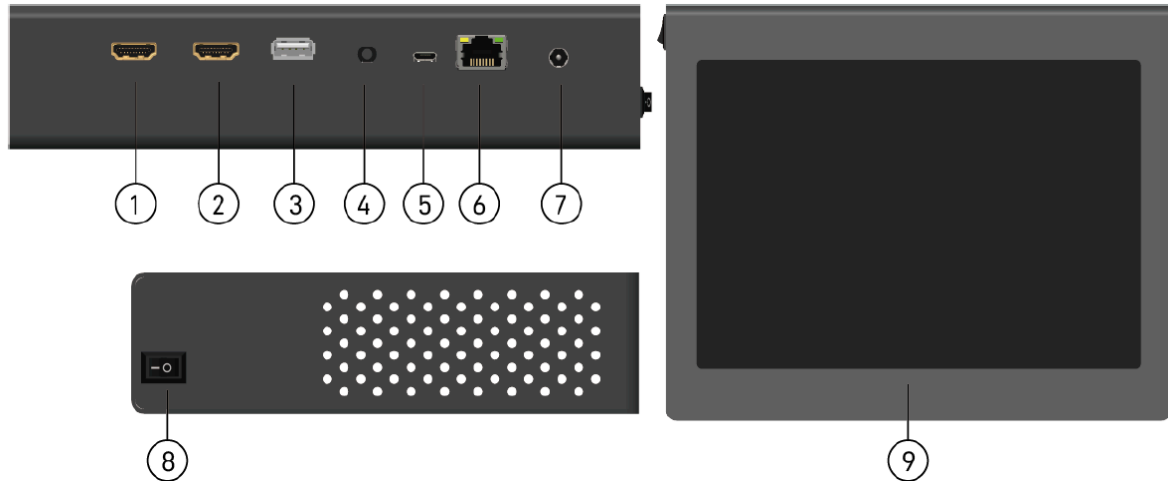
1. **OUTPUT:** HDMI output to Display or Sink device
2. **INPUT:** HDMI input from source device
3. **USB:** Connect to USB device for mouse control, uploading user created test patterns, EDID information, and firmware updates.
4. **Stereo Out**: 3.5mm stereo analog audio output
5. **Micro USB**: Console port (Reserved)
6. **Ethernet**: Connect to a network for remote control
7. **+12V DC**: 12V 5A DC power jack
8. **Power Switch**: Power ON/OFF switch
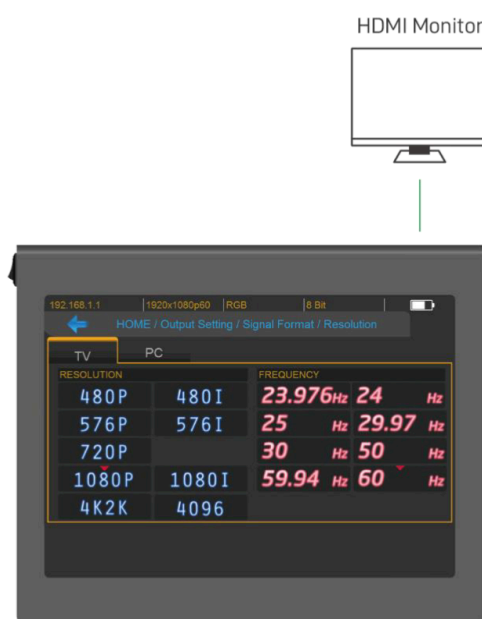9. **Touch Pane**l: Touch screen for control

Connection Diagram
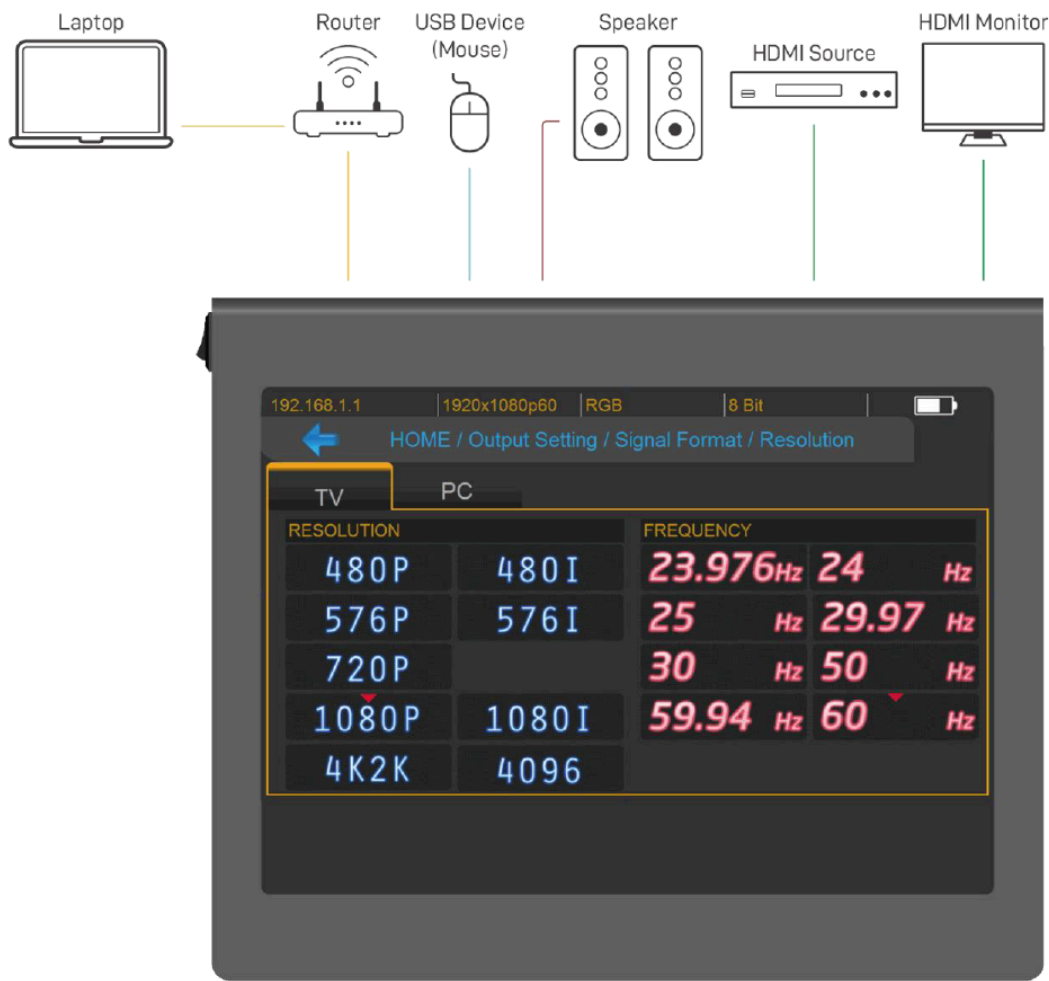
Signal Generator Mode

• As HDMI Generator

After making the physical connections between BG-AVTPG-8K and the display device. Users can select different generator functions to display on the sink device for testing purposes.

1. The "Signal Format" menu provides different signal resolutions, frequency, and signal types (TV / PC) for the user to select.

2. Users can select the desired test pattern from the "Video Pattern" menu. Users can add their own patterns and custom test images if desired (see the upgrade section for more details).

3. The "PCM Audio Tone" menu allows users to test audio on HDTVs or other types of A/V receivers. The "PCM SINE WAVE" menu is used to set up the bits per sample, sample rate, level, and audio channels.

To test HDCP on an HDMI equipped display please see the HDCP test section.

Signal Analyzer Mode
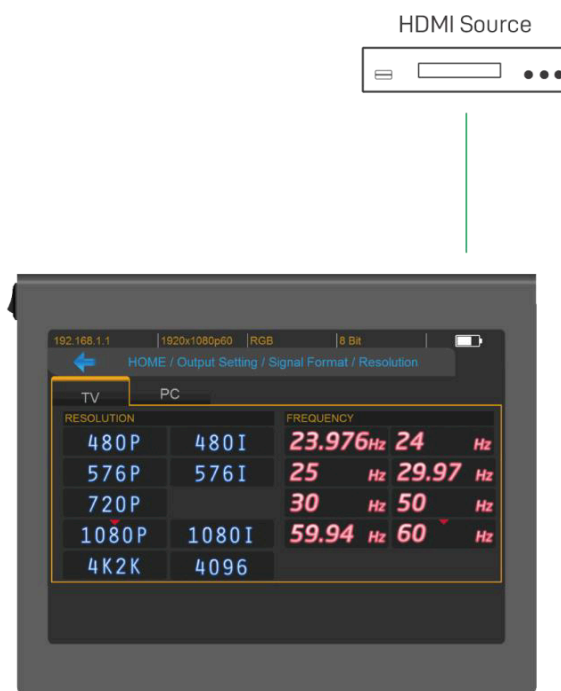
• As HDMI Receiver/Analyzer

1. In the "Test/Source" menu, users can touch the read/refresh button to analyze the HDMI source video format, audio, packet information, as well as the signal's HDCP encryption status.

HDCP Test Modes

Signal Analyzer

1. When the BG-AVTPG-8K is set as a signal analyzer it can verify HDCP of a video source or other devices under test.

2. There are 3 options: HDCP 1.4, HDCP 2.2, and No HDCP.

Signal Generator

1. When the BG-AVTPG-8K is set as a signal generator it can transmit HDCP encrypted video.

2. There are 4 options: HDCP 1.4, HDCP 2.2 Type-0, HDCP 2.2 Type-1, and No HDCP)

3. Users can set the unit to auto retry transmit attempts and can be set to 1, 2, 4, or 8 second intervals. **NOTE:** Auto retry will automatically enable when the HDCP handshake fails.

EDID Analysis Mode
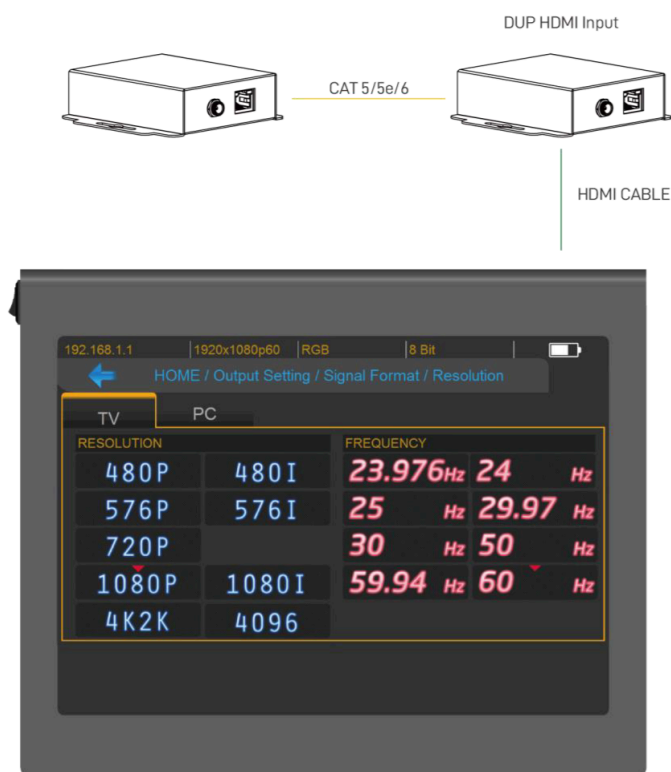
EDID Analysis mode can be used to verify, view, and learn the EDID of a connected HDMI display or other compatible device.

Read EDID

1. Ensure the connections between the BG-AVTPG-8K output and display/sink device are properly connected.

2. Select EDID from the "Sink Test" menu.

3. Touch the "Read" button to view the EDID information.

Saving EDID Information

1. Ensure the connections between the BG-AVTPG-8K output and display/sink device are properly connected.

2. Connect a USB storage device to the USB port of the BG-AVTPG-8K

3. Select EDID from the "Sink Test" menu.

4. Touch the "Save" button to get the EDID information of the display device and save it to the connected USB drive.

5. Two files will be save to the root directory of the USB drive:

    a. tx_edid_1.dat (binary format)

b. tx_edid_1.txt (EDID parsed content)

c. If there are more than two EDID files on the drive the file names will be saved as tx_edid_2.dat, tx_edid_3.dat, etc…

Learning EDID from RX/Display

1. Ensure the connections between the BG-AVTPG-8K output and display/sink device are properly connected.

2. Select EDID from the "Sink Test" menu.

3. Touch the "Learn from RX" button to learn the EDID. The EDID will be saved in the BG-AVTPG-8K's input port.

Learning EDID from a USB

1. Save the EDID file to the root directory of a USB drive and name it as "edid_raw.bin (binary format)"

2. Connect the USB storage device to the USB port of the BG-AVTPG-8K

3. Select EDID from the "Sink Test" menu.

4. Touch the "Learn from USB" button to learn the EDID. The EDID will be saved in the BG-AVTPG-8K's input port.

Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGEAR's support page (bzbgear.com/support) for helpful information and tips regarding our products. Here you will find our Knowledge Base (bzbgear.com/knowledge-base) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (youtube.com/c/BZBTVchannel), for help setting up, configuring, and other helpful how-to videos about our gear.

Need more in-depth support? Connect with one of our technical specialists directly:

Phone	**Email**	**Live Chat**
1.888.499.9906	support@bzbgear.com	bzbgear.com

Limited Product Warranty Terms

Pro Line: 5-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Essential Line: 3-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Cables: Lifetime Limited Product Warranty.

For complete warranty information, please visit bzbgear.com/warranty.

For questions, please call 1.888.499.9906 or email support@bzbgear.com.

Mission Statement

BZBGEAR is a breakthrough manufacturer of high-quality, innovative audiovisual equipment ranging from AVoIP, professional broadcasting, conferencing, home theater, to live streaming solutions. We pride ourselves on unparalleled customer support and services. Our team offers system design consultation, and highly reviewed technical support for all the products in our catalog. BZBGEAR delivers quality products designed with users in mind.

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