



# BG-UHD-VWP19

**4K 1x9 HDMI Video Wall Processor with Seamless  
Switching/Scaling/EDID Management**

## User Manual







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## Statement

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

## Safety Precaution

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- 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

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The BG-UHD-VWP19 1x9 Multi-Format Video Wall Processor with Loop-out is a powerful and flexible solution designed for real-time management of large display environments. Supporting a wide range of input formats—including HDMI, DisplayPort 1.4, USB-C, VGA, YPbPr, and CVBS—the processor accepts signals up to 4K2K@60Hz (YUV 4:4:4) and integrates an advanced scaler to optimize content for any connected display or projector. With nine HDMI outputs for video walls and an additional HDMI loop-through for direct source pass-through, it provides extensive configuration options for both simple and complex display layouts.

Engineered for professional applications, the BG-UHD-VWP19 allows users to resize, rotate, zoom, and position video across multiple screens, with support for up to 3x3 video walls at full 4K60 resolution. Layouts and image parameters can be stored and recalled directly from onboard flash memory, while multiple control options—including front-panel buttons, IR remote, and intuitive software—ensure seamless operation. Additional features include HDCP compliance, firmware upgradeability, and advanced features such as frame-tear elimination and per-display propagation delay adjustment.

## Features

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- **Multi-Format Input Support:** Accepts HDMI, DisplayPort, USB-C, VGA, YPbPr, and CVBS video signals.
- **Flexible HDMI Outputs:** Provides nine HDMI outputs for video wall applications and one HDMI bypass output from the selected input.
- **Wide Input Resolution Support:** Handles HDMI inputs from 720x480 up to 3840x2160/4096x2160 @60Hz (YUV 4:4:4, progressive).
- **VGA Input Compatibility:** Supports VGA signals up to 1920x1080p60 (TV) and UXGA 1600x1200 (PC).
- **Analog Input Support:** Accepts YPbPr inputs up to 1920x1080p and CVBS inputs up to SECAM.
- **Output Resolution Options:** User-selectable HDMI output resolutions from 720x480 up to 3840x2160.
- **4K Video Wall Capability:** Divides a 4K60 (YUV 4:4:4) signal across nine 4K displays in a 3x3 layout.
- **Image Control Functions:** Resize, position, and zoom are available for each HDMI output.
- **Input Rotation:** Supports rotation of input signals up to 1080p60 resolution.
- **Saved Layouts & Parameters:** Multiple image configurations can be stored in onboard flash memory and recalled as needed.
- **Compliance Standards:** Fully compliant with HDCP, DisplayPort 1.4, and HDMI 2.0a specifications.



- **Control Options:** Operable via front-panel push buttons, IR remote control, or software interface.
- **Firmware Upgradeable:** Supports firmware updates for future features and enhancements.
- **Advanced Synchronization:** Offers individual propagation delay adjustments per display for optimal visual alignment.
- **Frame Tearing Prevention:** Eliminates tearing on a panel-by-panel basis for smoother video playback.

## Packing List

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- 1x BG-UHD-VWP19
- 1x IR Remote Control (21 keys)
- 1x 1U Rack-Mounting Ear Set
- 1x 12V Power Supply
- 1x User Manual



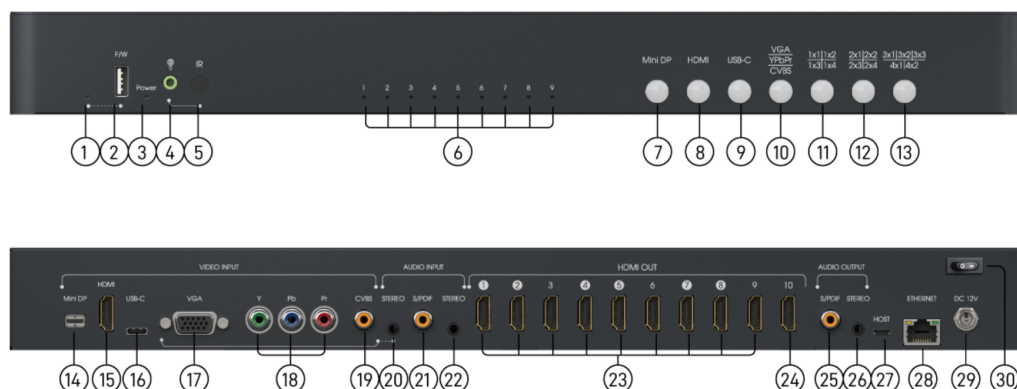
## Specifications

| Technical Specifications  |                                                                                                                                                                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Role of Usage             | Video Wall Processor                                                                                                                                                                                                                 |
| HDCP Compliance           | Yes                                                                                                                                                                                                                                  |
| Video Bandwidth           | Input: Single-link 600 MHz (18 Gbps)<br>Output: Single-link 600 MHz (18 Gbps)                                                                                                                                                        |
| Video Support             | Input: 4K2K @60 (4:2:2 8-bit) / 4K2K @60 (4:4:4 8-bit)<br>Output: 4K2K @60 (4:4:4 8-bit)                                                                                                                                             |
| Video Format Support      | HDMI / DisplayPort / VGA / YPbPr / CVBS / Type-C                                                                                                                                                                                     |
| Audio Support             | Yes                                                                                                                                                                                                                                  |
| ESD Protection            | Human body model: $\pm 15\text{kV}$ (air-gap discharge), $\pm 8\text{kV}$ (contact discharge)                                                                                                                                        |
| Connections               |                                                                                                                                                                                                                                      |
| Input                     | 1 $\times$ HDMI 1 $\times$ DisplayPort 1 $\times$ USB3.0 Type-C 1 $\times$ VGA 1 $\times$ YPbPr 1 $\times$ CVBS 2 $\times$ Stereo 1 $\times$ SPDIF 1 $\times$ USB2.0 Type-A 1 $\times$ RJ45 1 $\times$ 3.5mm IR 1 $\times$ Micro USB |
| Output                    | 10 $\times$ HDMI 1 $\times$ Stereo 1 $\times$ SPDIF                                                                                                                                                                                  |
| Control                   | Front Panel / IR Remote / Software Control                                                                                                                                                                                           |
| Input TMDS Signal         | 1.2 V (peak-to-peak)                                                                                                                                                                                                                 |
| HDMI Connector            | Type A (19-pin female)                                                                                                                                                                                                               |
| USB Connector             | Type C / Micro B                                                                                                                                                                                                                     |
| RJ45 Connector            | WE/SS 8P8C                                                                                                                                                                                                                           |
| Mechanical Specifications |                                                                                                                                                                                                                                      |
| Enclosure                 | Metal                                                                                                                                                                                                                                |
| Power Supply              | 12V DC                                                                                                                                                                                                                               |
| Power Consumption         | 50 W (max)                                                                                                                                                                                                                           |
| Operating Temperature     | 32 $\sim$ 104°F / 0 $\sim$ 40°C                                                                                                                                                                                                      |
| Storage Temperature       | -4 $\sim$ 140°F / -20 $\sim$ 60°C                                                                                                                                                                                                    |



## Operation Controls and Functions

### Front and Rear Panel



1. **LED Indicator:** Firmware update indicator LED
2. **USB:** for firmware update
3. **LED Indicator:** Power indicator LED
4. **IR Receiver:** 3.5mm socket for plugging in the extension cable of IR receiver
5. **IR SENSOR:** IR sensor for receiving the IR commands from IR remote
6. **LED Indicator:** Reserved
7. **Input Source Selection (DisplayPort) Push Button:** Select DisplayPort to be input source
8. **Input Source Selection (HDMI) Push Button:** Select HDMI to be input source
9. **Input Source Selection (USB-C) Push Button:** Select USB-C to be input source
10. **Input Source Selection (VGA/YPbPr/CVBS) Push Button:** Select VGA/YPbPr/CVBS to be input source
11. **Switch 1x1/1x2/1x3/1x4 Button:** Fast switch to 1x1, 1x2, 1x3 or 1x4
12. **Switch 2x1/2x2/2x3/2x4 Button:** Fast switch to 2x1, 2x2, 2x3 or 2x4
13. **Switch 3x1/3x2/3x3/4x1/4x2 Button:** Fast switch to 3x1, 3x2, 3x3, 4x1 or 4x2
14. **Mini DP IN:** DisplayPort input port
15. **HDMI IN:** HDMI input port
16. **USB-C IN:** USB-C input port
17. **VGA IN:** VGA input port
18. **YPbPr IN:** YPbPr input port
19. **CVBS IN:** CVBS input port
20. **Stereo IN:** Stereo audio input for VGA, YPbPr or CVBS



- 21. S/PDIF IN:** S/PDIF audio input
- 22. Stereo IN:** Stereo audio input
- 23. HDMI OUT 1-9\*:** HDMI output port 1-9 (\*Output port 1, 2, 4, 5, 7, 8 support rotation function)
- 24. HDMI loopout 10:** HDMI loopout port
- 25. S/PDIF OUT:** S/PDIF audio output
- 26. Stereo OUT:** Stereo audio output
- 27. Micro-USB:** USB virtual COM port
- 28. Ethernet:** Ethernet control port
- 29. +12V DC:** 12V DC power jack
- 30. Power Switch:** Power ON/OFF switch



## Software Operation

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### System Requirements

- **Operating System:** Windows 10 / 11
  - **Baud Rate:** 115200
  - **Software Size:** 1 MB
  - **Minimum RAM:** 256 MB
- 

### Main Interface Overview

#### Panel Functions

1. **COM Port Selection:** Choose the COM port to connect to your device.
  2. **Connect to Device:** Establish a connection with the video wall device.
  3. **Disconnect from Device:** Disconnect the current device connection.
  4. **Information:** View input source resolution and firmware/software version.
  5. **Video Wall Tab:** Configure video wall layouts.
  6. **Rotation (Fixed Angle) Tab:** Apply predefined rotation layouts.
  7. **Rotation (Any Angle) Tab:** Adjust rotation at any angle.
  8. **EDID Tab:** Manage EDID settings for HDMI, DP, and USB-C inputs.
- 

### Main Panel Settings

#### Input & Audio Source

- **Input Source:** Select the desired input source from the drop-down list.
- **Audio Source:** Select the desired audio input from the drop-down list.

#### Output Port Configuration

- **Select Output:** Choose output 1–9 or all outputs to configure.
- **Output Settings:** Configure the following for the selected output using drop-down lists:
  - Color Range
  - B/W Extension
  - YC Gamma LUT
  - Color Tone
  - Output Resolution
  - Output Color Space
  - Flip Display



- **Brightness / Saturation / Contrast / Hue:** Enter values from 0–255 to adjust the output display.
- 

## Video Wall Tab

### Video Wall Display

- 14 default layouts are available for quick selection.

### Output Layout Windows

1. Click on output 1–9 on the main panel to select the output window you want to adjust.
2. View screen status and control the TV position through the layout window.
3. Adjust output coordinates as needed and press **Set** to apply changes.
4. Different colors represent different output TVs.

### User-Defined Layouts

- Save and load up to 8 custom layouts.
  - Click **Save** to store the current configuration to a user-defined layout (1–8) for future use.
- 

### Rotation (Fixed Angle) Tab

- 11 default rotation layouts are available for selection.
  - Apply rotation to selected outputs using predefined angles.
- 

### Rotation (Any Angle) Tab

#### Output Layout Windows

1. Click on output 1–6 on the main panel to select the output window.
2. View screen status and control the output TV position.
3. Adjust coordinates and press **Set** to apply changes.
4. Different colors represent different output TVs.

**Note:** Only outputs 1–6 support the rotation function. The table below shows the correspondence between the main panel outputs and video wall device outputs:



| Main Panel Output | Video Wall Device Output |
|-------------------|--------------------------|
| Output 1          | HDMI OUT 1               |
| Output 2          | HDMI OUT 2               |
| Output 3          | HDMI OUT 4               |
| Output 4          | HDMI OUT 5               |
| Output 5          | HDMI OUT 7               |
| Output 6          | HDMI OUT 8               |

## User-Defined Layouts

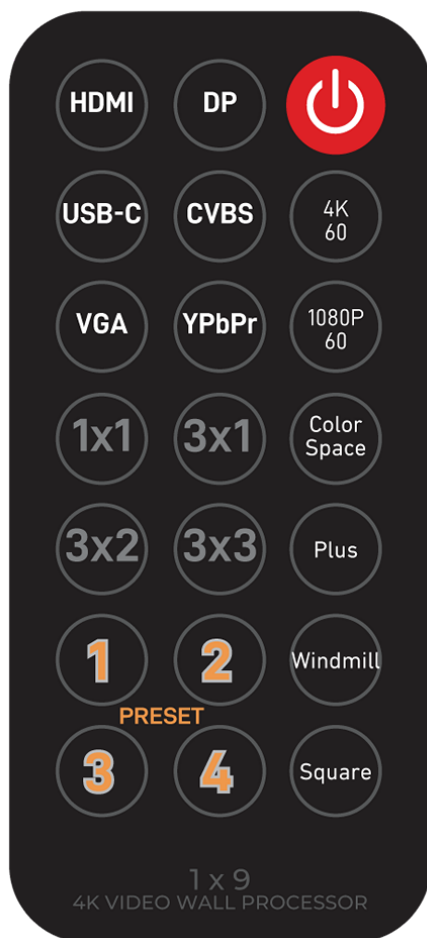
- Save and load up to 8 custom rotation layouts.
  - Click **Save** to store the current configuration to a user-defined layout (1–8).
- 

## EDID Tab

- Select EDID for HDMI, DisplayPort, or USB-C input using the drop-down list.



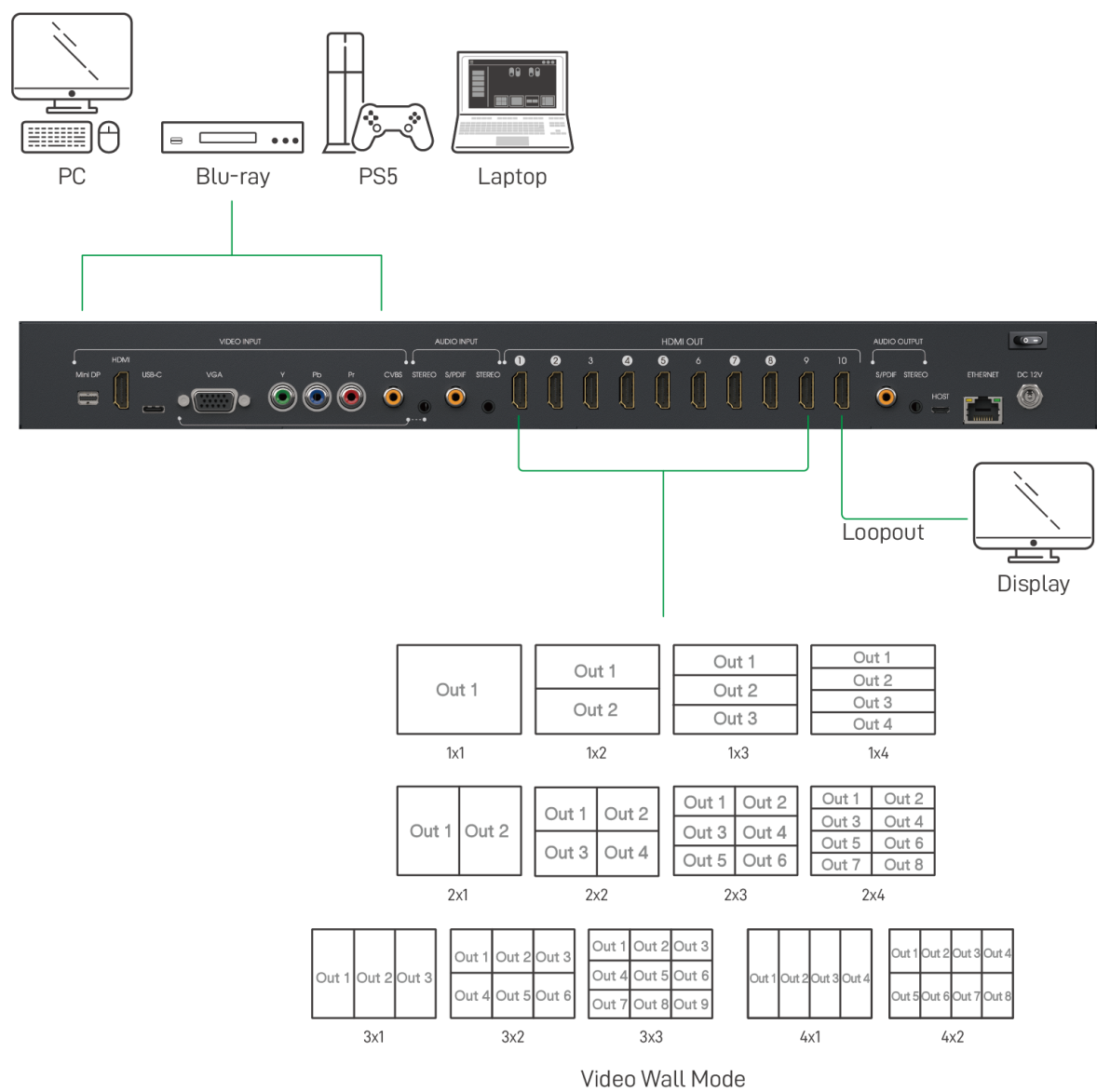
## IR Remote Guide



| Button      | Function                                      |
|-------------|-----------------------------------------------|
| HDMI        | Select HDMI as input source                   |
| Mini DP     | Select DisplayPort as input source            |
| POWER       | Power ON/OFF the video wall processor         |
| USB-C       | Select USB-C as the input source              |
| CVBS        | Select CVBS as the input source               |
| 4K60        | Set output resolution to 4K60                 |
| VGA         | Select VGA as the input source                |
| YPbPr       | Select YPbPr as the input source              |
| 1080p60     | Set output resolution to 1080p60              |
| 1x1         | Switch to VW1x1 layout                        |
| 3x1         | Switch to VW3x1 layout                        |
| Color Space | Select output color space (RGB, 4:2:2, 4:4:4) |
| 3x2         | Switch to VW3x2                               |
| 3x3         | Switch to VW3x3                               |
| Plus        | Switch to rotation mode (plus)                |
| Preset 1    | Switch to preset 1 layout                     |
| Preset 2    | Switch to preset 2 layout                     |
| Windmill    | Switch to rotation mode (windmill)            |
| Preset 3    | Switch to preset 3 layout                     |
| Preset 4    | Switch to preset 4 layout                     |
| Square      | Switch to rotation mode (square)              |



# Connection Diagram





## Troubleshooting

| Problems                       | Causes                                                                                                                                         | Solutions                                                                                                                                                                                                                                                             |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No Power / All LED off         | Power supply not connected, connected fully, or wrong power supply.                                                                            | Check if the power supply is connected correctly and the output voltage value is within recommended specifications.                                                                                                                                                   |
| No sound or sound issues       | The HDMI connection is faulty, the audio format is not supported by the displays, or the source player is set to another port for audio output | Check if the HDMI cables are connected correctly. Check if the audio format is supported by the display and that a user has not changed the supported audio format on the player's audio output. Ensure output settings from the HDMI source device as set correctly. |
| No picture or picture flickers | The HDMI cable may be faulty or the category cable quality is faulty.                                                                          | Check if the HDMI and category cable connections are correct and undamaged. Change to another good working HDMI cable or category cable (CAT6 or better cable is recommended).                                                                                        |



## Tech Support

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Have technical questions? We may have answered them already!

Please visit BZBGear's support page ([bzbgear.com/support](https://bzbgear.com/support)) for helpful information and tips regarding our products. Here you will find our Knowledge Base ([bzbgear.com/knowledge-base](https://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](https://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:

| <b>Phone</b>   | <b>Email</b>                                                 | <b>Live Chat</b>                              |
|----------------|--------------------------------------------------------------|-----------------------------------------------|
| 1.888.499.9906 | <a href="mailto:support@bzbgear.com">support@bzbgear.com</a> | <a href="https://bzbgear.com">bzbgear.com</a> |

## Limited Product Warranty Terms

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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](https://bzbgear.com/warranty).

For questions, please call 1.888.499.9906 or email [support@bzbgear.com](mailto:support@bzbgear.com).

## Mission Statement

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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.

## Copyright

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