

BG-UHD-VWP-1X4

**4K UHD HDMI/DisplayPort Video Wall Processor with
Scaler/Audio for up to 4 TVs**

User Manual







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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-UHD-VWP-1X4 4K 1x4 Video Wall Processor is a powerful, cost effective, video processor for multiple flat panel displays or projectors. The unit allows users to input HDMI/ DisplayPort signals up to 4K2K@60Hz 4:4:4. The embedded scaler converts video signals to match the native resolution of monitors, flat panel displays, projectors as well as user-selectable output settings up to WUXGA (1920x1200).

The BG-UHD-VWP-1X4 layouts can be modified to fit various applications in digital signage, broadcasting, education, and surveillance systems.

Features

- 4x HDMI outputs
- HDMI and DisplayPort input from 640x480 to 4K2K@60 (YUV 4:4:4), interlaced or progressive
- HDCP compliant
- DisplayPort 1.2a & HDMI 2.0a compliant
- Image parameters and layouts are automatically saved in flash memory of the device and can be recalled for later use
- Firmware upgradable
- The video wall processor can control via USB, push buttons, Ethernet, and IR remote control.
- Resize, position, and zoom for each HDMI output video
- Remote control to switch 1x1, 2x2, 1x3 rotate, and 1x4 modes
- 4K2K60 (YUV 4:4:4) can be divided and displayed onto four 1080p60 TVs (2x2 layout only)

Packing List

- 1x BG-UHD-VWP-1X4
- 1x 12V power supply
- 1x User Manual
- 1x Installation software CD
- 1x 1U rack-mounting ear set
- 1x IR Remote control (15 keys)



Specifications

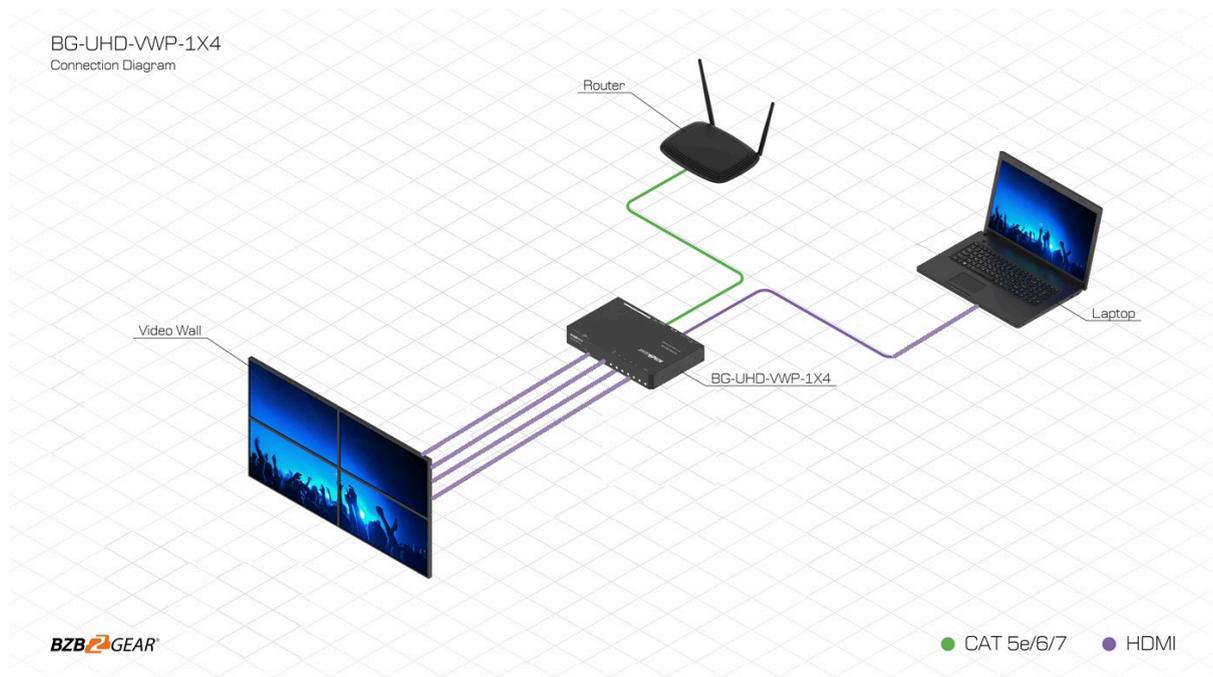
Model Name	BG-UHD-VWP-1X4	
Technical Specifications		
HDCP compliance	Yes	
Video bandwidth	Input – Single link 600MHz [18Gbps] Output –Single-link 225MHz [6.75Gbps]	
Video support	Input - 4K2K@60 (4:2:2 8 bits) / 4K2K@60 (4:4:4 8 bits) Output – 1920x1080@60 / 1920x1200@60	
Video Format Support	HDMI / DisplayPort	
Audio support	Yes	
ESD protection	Human body model – ±15kV [air-gap discharge] & ±8kV [contact discharge]	
Input	1x HDMI + 1x DisplayPort + 1x USB + 1xRJ45	
Output	4x HDMI + 1x Stereo	
Control	IR remote control / Ethernet / USB (virtual) / Front Panel / Cloud Control	
Input TMDS signal	1.2 Volts [peak-to-peak]	
HDMI connector	Type A [19-pin female]	
Mini-USB connector	Type A	
RJ-45 connector	WE/SS 8P8C	
Mechanical		
Enclosure	Metal case	
Dimensions (L x W x H)	Model	290 x 180 x 44mm [11.4" x 7" x 1.7"]
	Package	376 x 240 x 112mm [1'2" x 9.4" x 4.4"]
	Carton	590 x 510 x 405 mm [1'9" x 1'7" x 1'3"]
Weight	Model	1427g [3.2lbs]
	Package	2077g [4.6lbs]
Fixedness	1U rack-mount with ears and Wall hanging holes	
Power supply	12V DC	
Power Consumption	12W	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	
Relative humidity	20~90% RH [no condensation]	



Hardware Installation

1. Connect the sources to the HDMI / DisplayPort Inputs of the BG-UHD-VWP-1X4.
2. Connect all displays to HDMI Outputs of the BG-UHD-VWP-1X4.
3. Connect the +12V DC power supply to the BG-UHD-VWP-1X4

Application Diagram





Operation Controls and Functions

Front Panel



1. LED indicator:

- PWR - Power indicator LED
- LOCK - When the device panel is locked the LED will illuminate.
- 4K - If source resolution is 4K, the LED indicator will illuminate.
- Source - When the source is from HDMI the LED indicator will illuminate solid but if the source is from DisplayPort the LED indicator will blink.

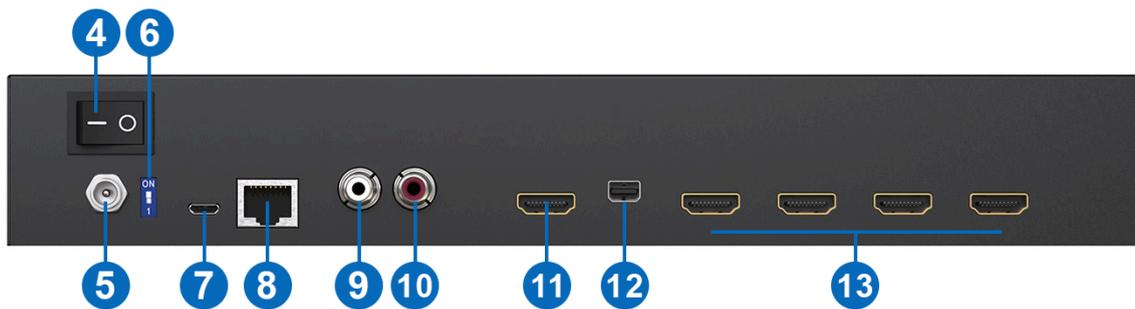
2. IR SENSOR: IR sensor for receiving the IR commands from IR remote

3. Control buttons:

- Button 1 (Source) - Source setting (HDMI or DisplayPort)
- Button 2 (LOCK) - Press button for 3 seconds will enable/disable device locked
- Button 3 (2x2) - Fast switch to 1x1 and 2x2
- Button 4 (+90°) - Fast switch to 3x1 90° and 4x1 90°
- Button 5 (-90°) - Fast switch to 3x1 -90° and 4x1 -90°
- Button 6 (Preset 1)
- Button 7 (Preset 2)



Rear Panel



- 4. **Power Switch:** Power ON/OFF switch
- 5. **+12V DC:** 12V DC power jack
- 6. **Dip Switch:** For firmware update (Default mode: on)
- 7. **USB virtual COM**
- 8. **Ethernet:** Ethernet control port
- 9. **Stereo audio output – L**
- 10. **Stereo audio output – R**
- 11. **HDMI INPUT**
- 12. **DisplayPort INPUT**
- 13. **Output 1-4:** HDMI outputs

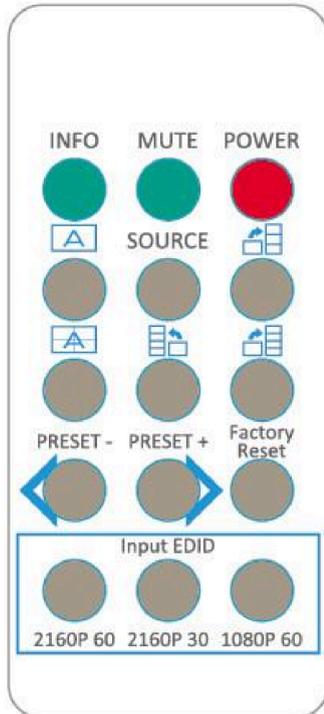
Supported Resolution

Input resolution	Output resolution
720x480@60Hz	640x480@60Hz
720x576@50Hz	720x480@60Hz
1280x720@60Hz	720x576@60Hz
1920x1080@30Hz	800x600@60Hz
1920x1080@60Hz	1024x768@60Hz
4K2K@30Hz	1280x720@60Hz
4K2K@60Hz (4:2:2 8 bits)	1280x768@60Hz
4K2K@60Hz (4:4:4 8 bits)	1280x960@60Hz
	1280x1024@60Hz
	1366x768@60Hz
	1440x900@60Hz
	1680x1050@60Hz
	1920x1080@60Hz
	1920x1200@60Hz
	1600x1200@60Hz



Operation

IR Remote Control



Button	Function
INFO	Display device status (IN/OUT Resolution, EDID, Layout)
MUTE	Turn off the stereo audio output
POWER	Power ON/OFF the video wall processor
	Fast switch to VW1x1 (Full Screen)
SOURCE	Source setting (HDMI or DisplayPort)
	Fast switch to VW3x1 (+90°)
	Fast switch to VW2x2
	Fast switch to VW4x1 (-90°)
	Fast switch to VW4x1 (+90°)
PRESET-	Previous custom layout
PRESET+	Next custom layout
Factory Reset	Factory default reset
2160p 60	Default EDID 2160p 60
2160p 30	Default EDID 2160p 30
1080p 60	Default EDID 1080p 60

Software Operation

System Requirement and Precautions

1. Whenever you power off the BG-UHD-VWP-1X4 keep the device unpowered for at least 5 to 10 seconds to allow power capacitors to discharge.
2. The BG-UHD-VWP-1X4 control program is compatible with WindowOS machines connected through USB.
3. Before you click on the icon of the software, ensure you have connected your computer and the BG-UHD-VWP-1X4 via USB otherwise the software will not be able to establish a connection.

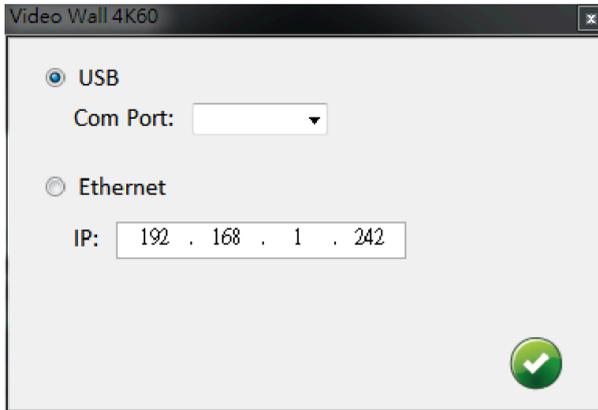
Start the software control program

When starting the control software the following window will pop up. There are two ways to control the BG-UHD-VWP-1X4.

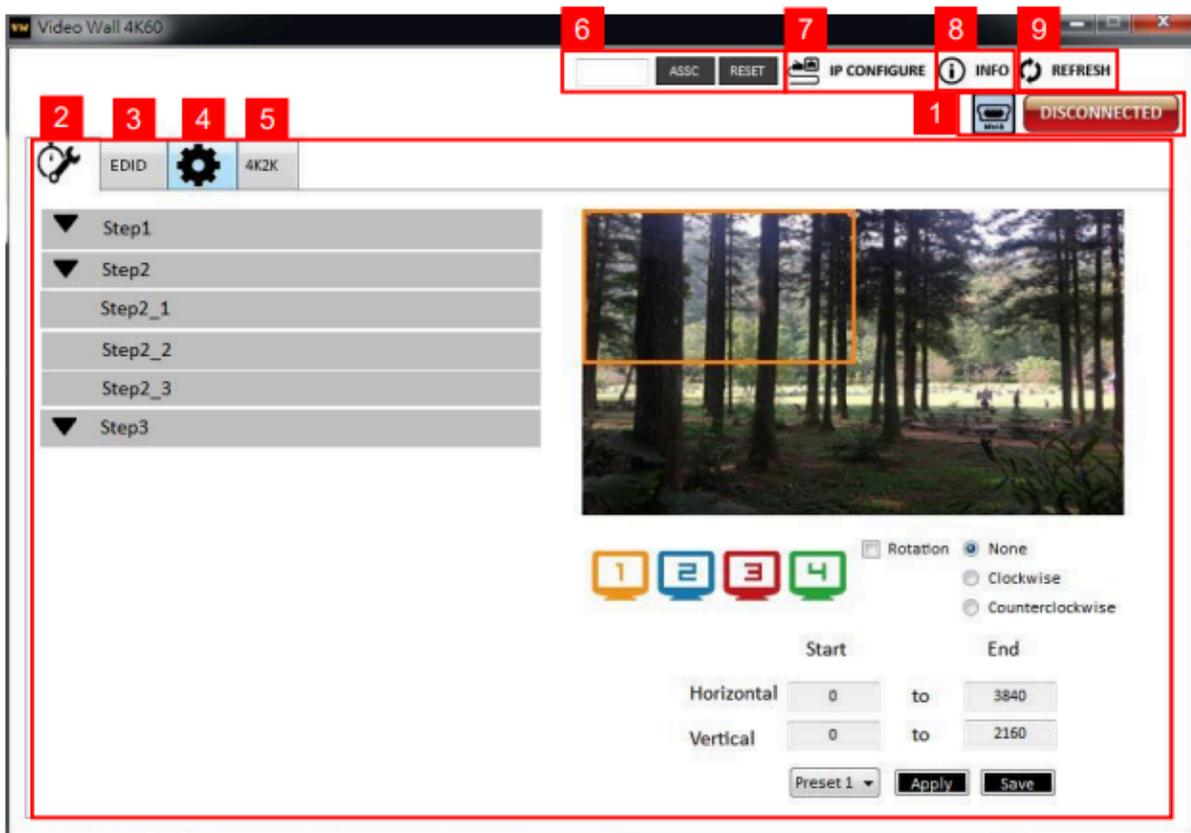
1. USB Connection: Use a USB cable to connect to the port on the device and a computer. Select the correct virtual COM port and click the OK button.



- Ethernet Connection: Connect either directly to the ethernet port of the device or over a network. Enter the device's IP address and click the green Check button.



After the software control successfully connects it will enter the control interface.



Control Interface

1. Connection Status:

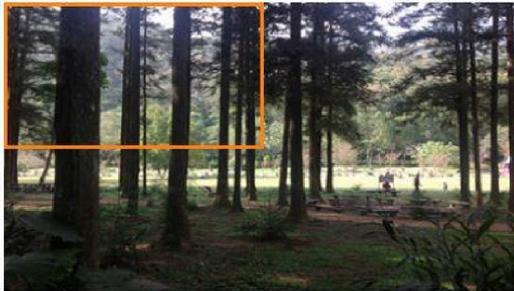
Shows the connection information and status. If you use USB to connect to the device the icon will be  . If you use Ethernet/IP to connect to the device the icon will shown as  .



2. Quick Selection:

Note: This function is not available when the input resolution is set to 4K2K@60Hz

Here you can set the screen resolution, screen coordinates, and split screen. Select the TV picture to modify its settings. The different color frames represent different output ports of the device. The coordinate section allows modification of the TV position in the video wall. The unit also provides 8 preset spaces to save frequently used display configurations.



Rotation
 None
 Clockwise
 Counterclockwise

Start End

Horizontal 0 to 3840

Vertical 0 to 2160

Preset 1 ▾

Rotation:

Note: This function is only available when the input resolution is set to 1080p.

The software is capable of independently rotating each input. Users can select clockwise or counterclockwise to rotate the screen.



Rotation
 None
 Clockwise
 Counterclockwise

H Start: Width:

V Start: Height:

Preset 1 ▾



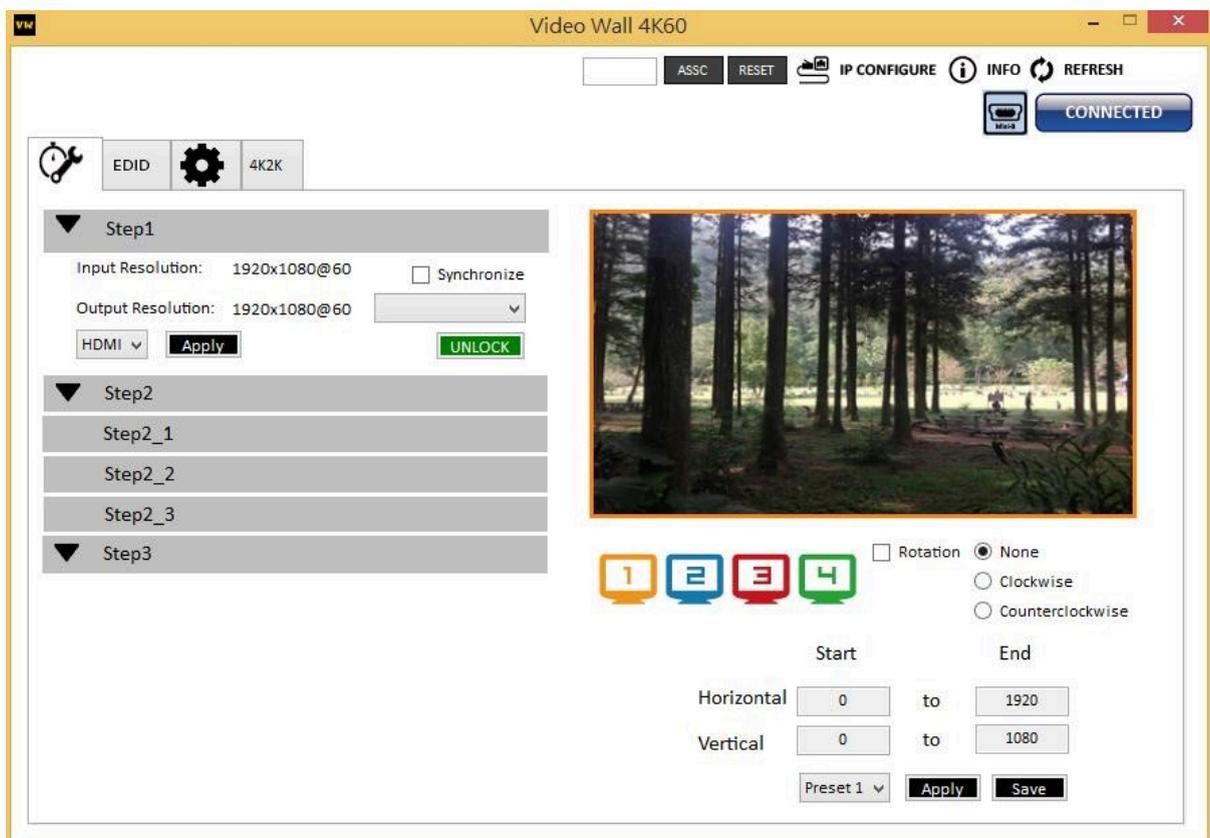
Output Selection and Resolution:

1. Step 1: Check the input resolution and choose an output resolution.

Set the output resolution. Choose the display icon to select the output port and set the resolution. When setting a resolution the coordinates of the output will also be changed. An input source (HDMI or DisplayPort) can also be selected or lock/unlock the device.

*Note that when you select the Synchronize function, all windows need to be set to the same resolution, otherwise the output will be abnormal.

*If you lock the device, only the factory reset function will work.



2. Step 2: Output Setting

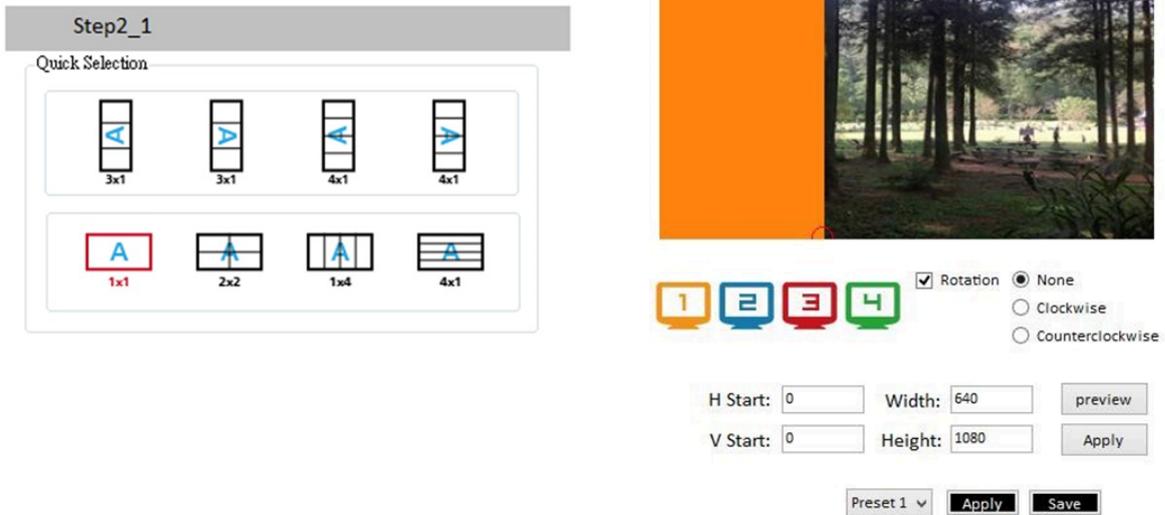
There are three output modes that can be set: resolution, position, size and split screen. The different modes are described in step 2-1, 2-2, and 2-3.

***Note:** When you want to change to another mode you need to go back to step 2.

- Quick Selection
- From file
- Custom define



3. Step 2-1: Quick Selection



If you choose the Quick Selection mode you can select a default screen split and rotate the screen (rotation only available when set to 1080p).

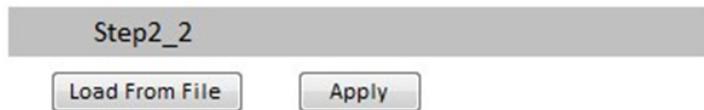
- 3x1: This mode will divide the screen into 3 parts and rotate the figure. The remaining part shows the full screen.
- 4x1: This mode will divide the screen into 4 parts and rotate the figure.

When selecting the 3x1 or 4x1 modes the picture in the right part of the control interface will show a red circle. You can slide this white circle to resize the output screen. In addition, you also can input the number to adjust the coordinates.

Note: 4K2K60 (YUV 4:4:4) can only be displayed in an 2x2 layout (1080p60 for each output)

4. Step 2-2: Configuration From File

You can load and read a configuration from the existing file on your PC/laptop.





5. Step 2-3: Custom Define

Step2_3

Horizontal cut: Grid None

Vertical cut:

Number:

Coordinate

	start	end	
Horizontal:	<input type="text" value="0"/>	<input type="text" value="1920"/>	<input checked="" type="checkbox"/>
Vertical:	<input type="text" value="0"/>	<input type="text" value="1080"/>	

In the Custom Define mode you can define how to cut in both directions and which part you want to display on an output. If you want to estimate which part is selected click the Grid button to display a grid on the screen. After modifying the settings click the button. Click the button to save the configuration for future usage. Modifying the setting coordinates will determine the screen location on the display.

6. Step 3: Adjust Image

▼ Step3

Up Down Right Left

Zoom In/Out: Pixel

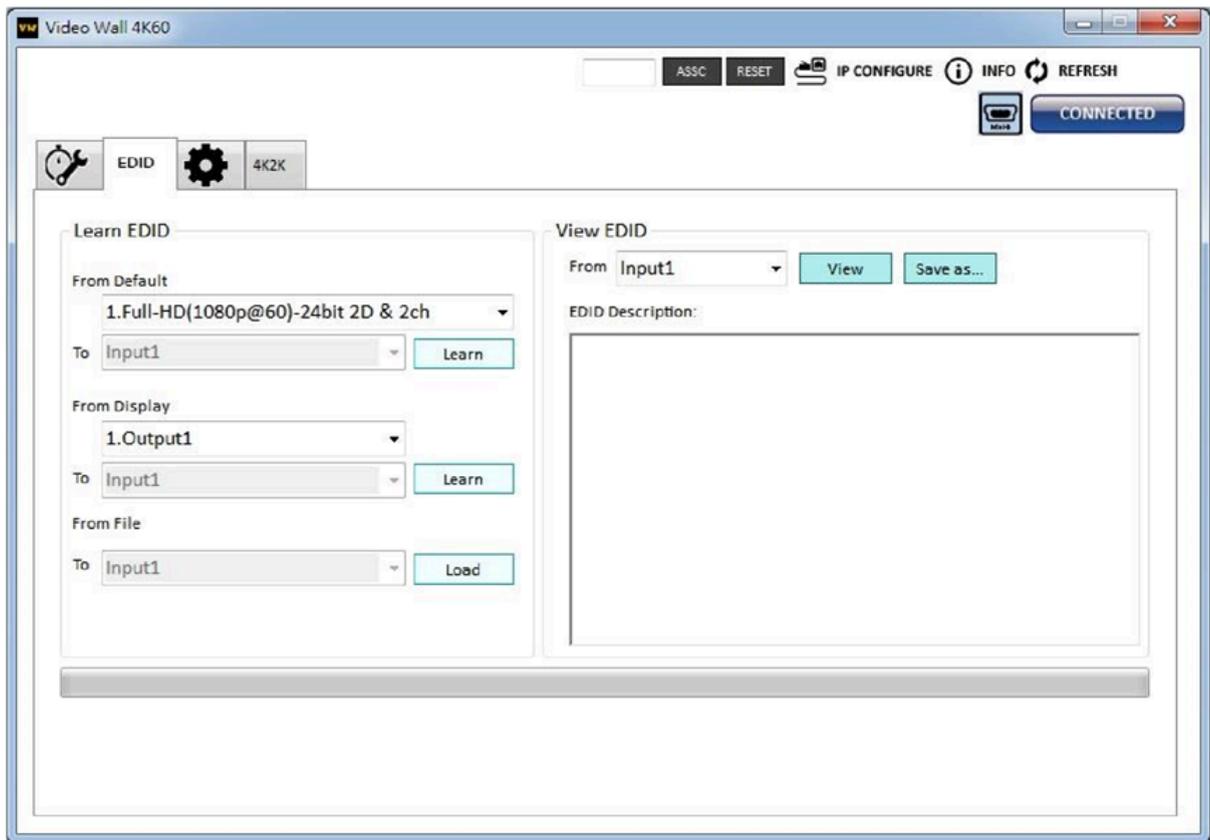
Horizontal shift: Pixel

Vertical shift: Pixel

- Zoom In/Out: You can change pixel size from the edge of image by clicking and button (the edge of image has four directions). After adjusting the image, the rest of this image will be auto-scaled to fulfill the screen.
- Horizontal shift/Vertical shift: You can move the image on each screen in horizontal or vertical directions and move one pixel at a time.

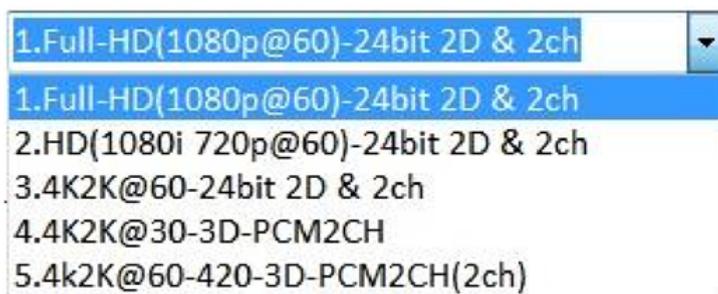


3. EDID (Extended Display Identification Data)



The EDID learning function is only necessary whenever you encounter any display on the HDMI output port that cannot play audio and video properly. Because the HDMI sources and displays may have various level of capability in playing audio and video, the general principle is that the source will output the lowest standards in terms of audio format and video resolutions to be commonly acceptable among all HDMI displays. In this case, a 720p stereo HDMI signal output would be probably the safest choice. Nevertheless, the user can force the matrix to learn the EDID of the lowest capable HDMI display among others to make sure all displays are capable to play the HDMI signals normally.

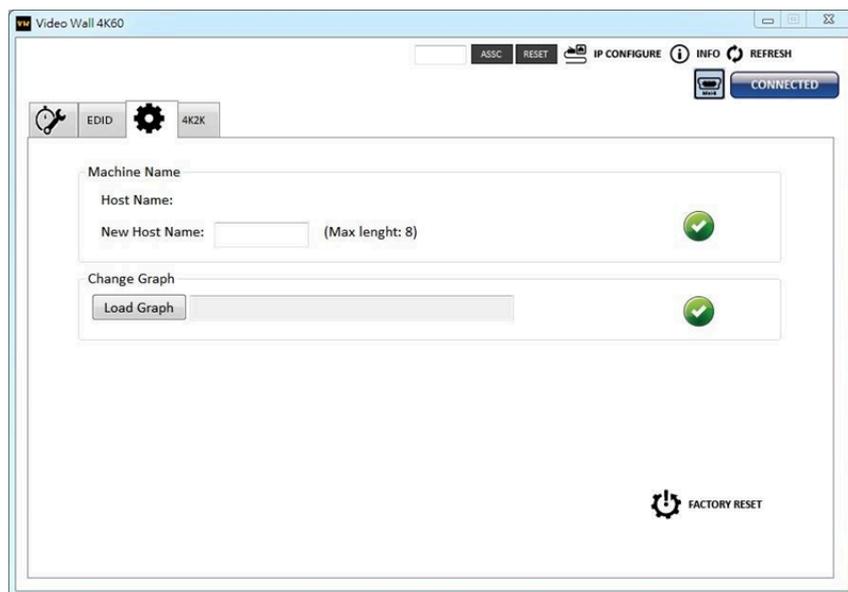
- Select Default EDID (1-5 default EDID).





- Click **Learn** button to learn default EDID.
1. Learn EDID from Display
 - Select the Output.
 - Click **Learn** button to learn display EDID.
 2. Learn EDID from File
 - Click **Load** button to select the EDID file and write it into input.
 3. (4) View EDID content
 - Select the EDID input source (Input, Output or From File).
 - Click **View** button to read the EDID description and analysis.
 - Click **Save as...** button to save the EDID as a file in the connected computer.

4. Advanced Settings



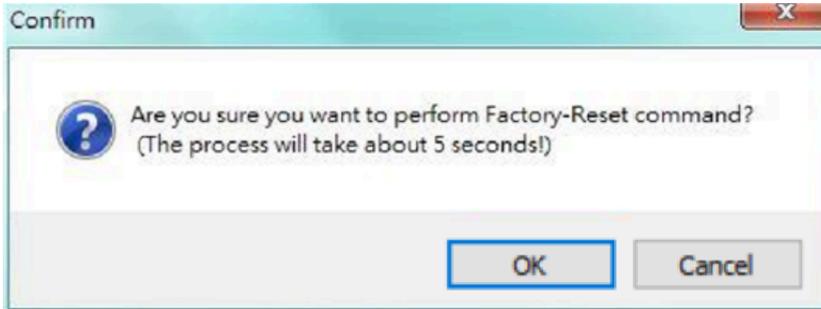
1. Machine Name
You can set the machine name here up to a max length of 8 characters.
2. Change Graph
You can change the splash screen of the device.

- Click the **Load Graph** button to select a splash screen.
- After selection click the  button to write it to the device.

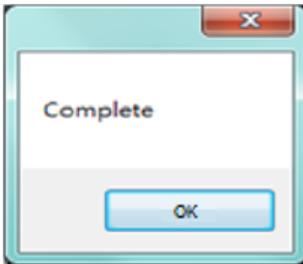


3. Factory Reset

- Click the  **FACTORY RESET** button to do factory reset to default settings.
- This reset process takes about 5 seconds.

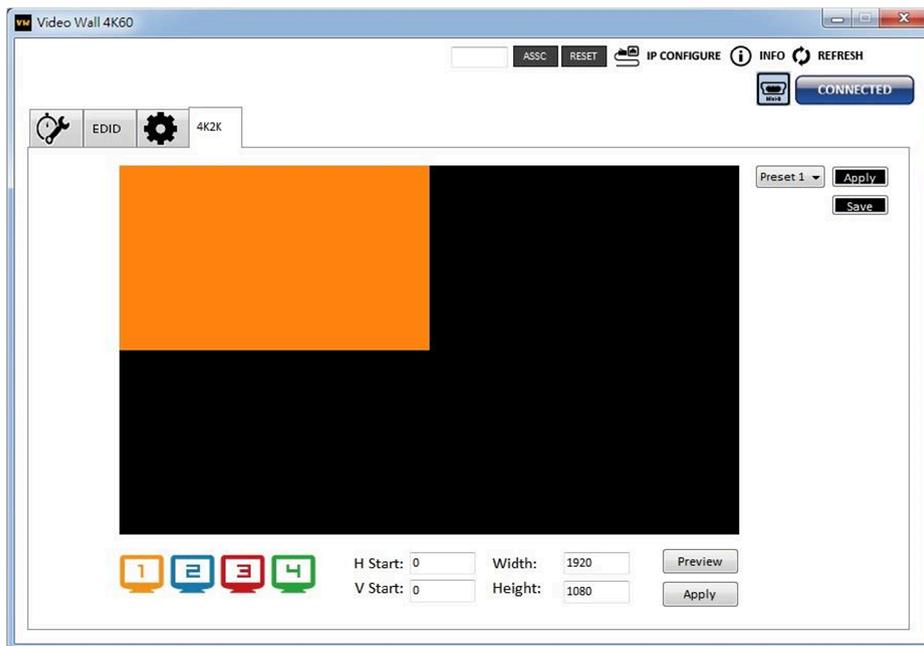


- A pop-up dialog will appear which indicates the operation is complete. Restart the unit after clicking OK.



5. 4K2K Settings

When the input has a resolution of 4K2K@60Hz the output display will be forced into a 2x2 layout and a user can only set the output position. There are 8 preset spaces to save frequently used scenarios to the device.





6. Cloud setting-Association Code

Click the  button to get an “association code”. The device can use this code to pair with a cloud server. After a successful pairing you can reset the cloud.

**The unit needs to be paired to cloud within 2 minutes after getting an association code.*

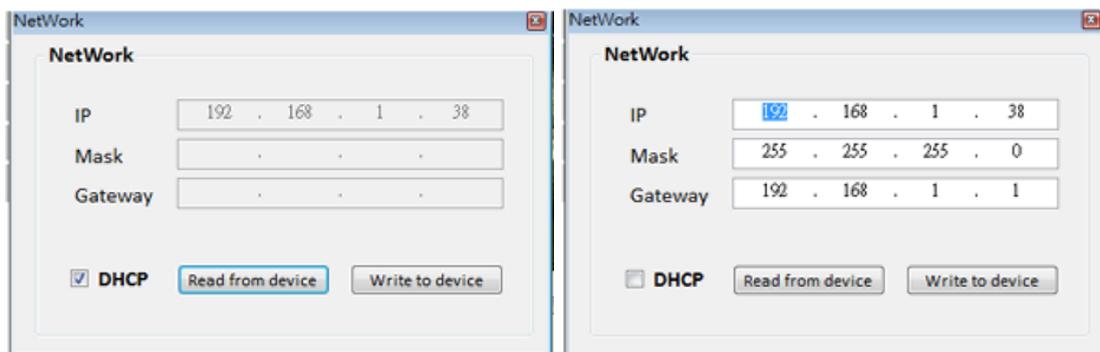
7. IP Configure

Using ethernet to control the software program.

Click the  IP CONFIGURE button to set up a network. Click the “Read from device” button to display the current network settings.

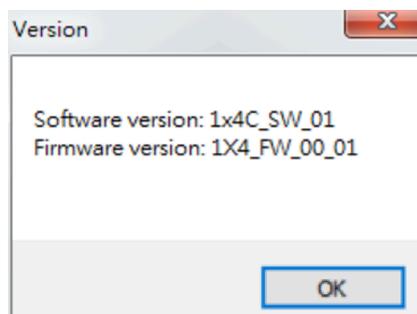
DHCP: To have the network automatically assign an IP address to the device check the DHCP box and click “Write to Device.”

Static: To manually configure the network settings, uncheck the DHCP box and fill in the IP, Mask, and Gateway fields and then click “Write to Device.”



8. Info

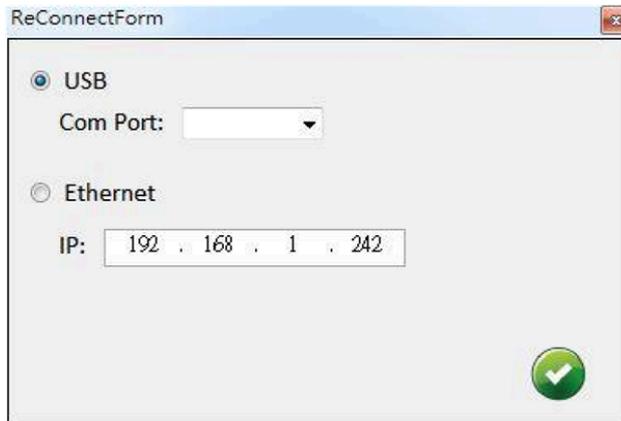
Read the software and firmware version.





9. Refresh

The refresh function can refresh information for displayed settings and can also reconnect the device. You can click  **REFRESH** button to update the control connection. A “ReConnectForm” window will pop up and allow a user to select how they would like to connect to the device..



Firmware Update through Mini-USB

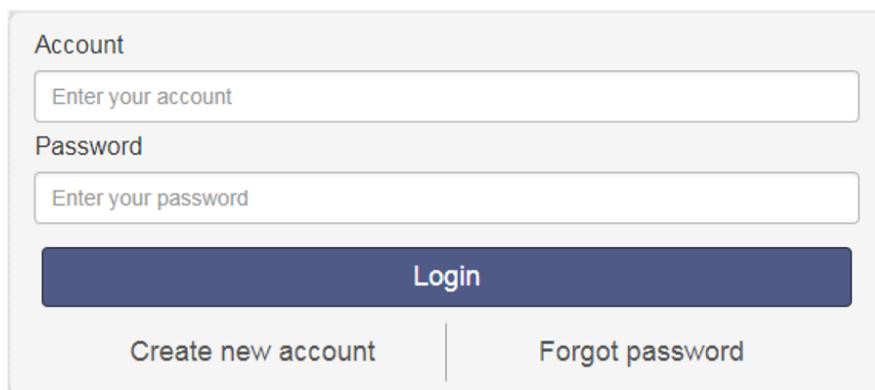
1. Please ensure the file of the new firmware is in the root directory of USB Flash Drive. The file name should be **firmware.bin**.
2. Use a mini-USB to female USB type A cable to connect the USB interface of the device and the USB Flash Drive.
3. Change the dip switches to F/W mode.
4. Power cycle the device and it will automatically start the FW update process (The process will take about 10 seconds).

Cloud Control (IntriCloud) through Ethernet Port

Create Account

The first time using the IntriCloud service, please create a new account.

1. Access IntriCloud (<http://www.intri.cloud>) and click “Create new account”.





- The Registration page will pop up. Fill in your email and password information to create your private account.

Creat new account ✕

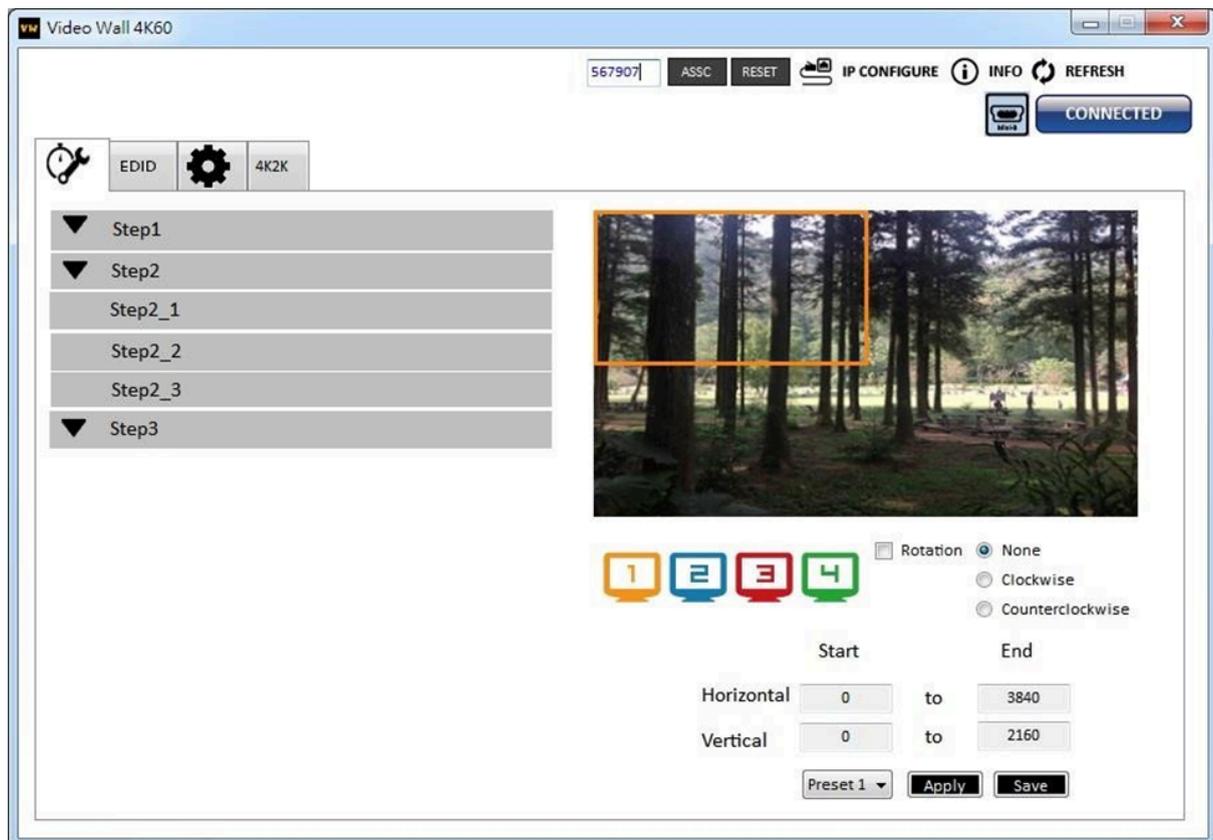
Enter an available email as account

Please enter your password

Please enter your password again

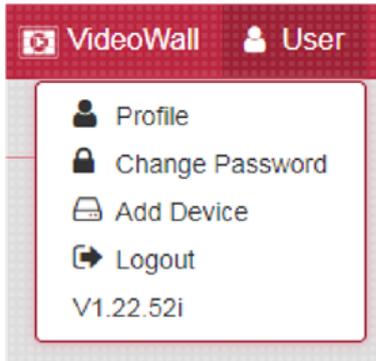
Add Device to IntriCloud

- Ensure the device is connected to the Ethernet. Next start the software for the device to get the association code (device must be connected).

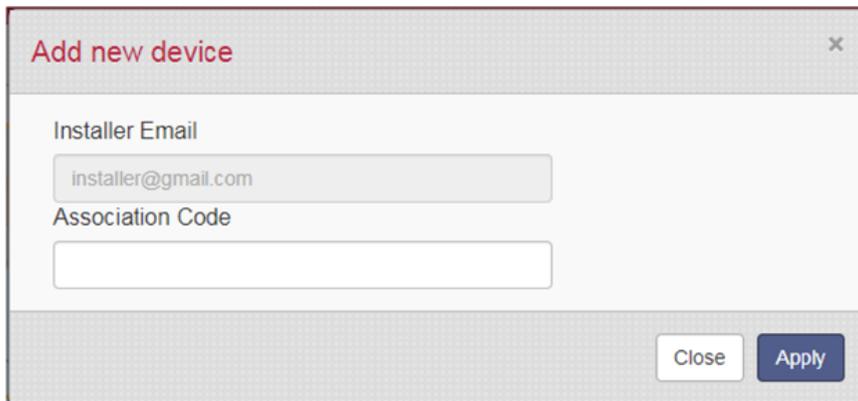




2. Access IntriCloud (<http://www.intri.cloud>), and then log in your account in the top right corner. Click “**Add device**” to select the devices you generated the code for.



3. Enter the Installer Email for online support in the future and the Association Code to pairing with your device.



4. After adding the unit a the list of devices related to your account will show on the right top corner. You can click the button to switch the device control.





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:

<u>Phone</u>	<u>Email</u>	<u>Live Chat</u>
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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