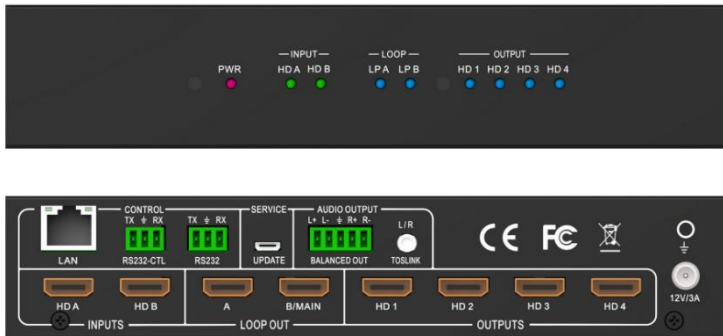




# User Manual

## SKU: BL-VW22-4K60-GUI

Brightlink 4K@60hz 2x2 HDMI 2.0 video wall controller with Web GUI / 3rd Party Control, PIP



### Dear Customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

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## 1. Introduction

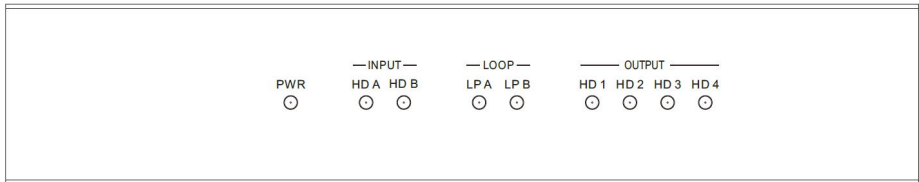
Controller is a HDMI 2.0 Video Wall controller with 2 HDMI input, 2 HDMI loop out and 4 HDMI scaling out for video wall processing. The Toslink jack terminal provides analogue L/R audio and digital SPDIF audio output. 5-way phoenix jacket provide balanced LR audio output.

## 2. Features

- Support Bezel Compensation with two modes
- Support 180° rotation
- Support PIP on video wall
- Support HDMI 2.0,HDCP2.2
- Support 2x HDMI loop out
- Support multi-resolution up to 3840x2160@60Hz video output for video wall
- RS232 control
- Support CEC control with displayer by PC Tool or commands

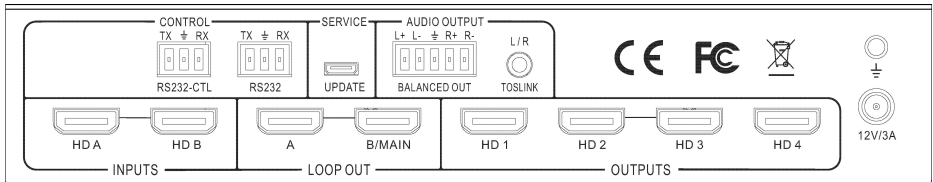
## 3. Connectors and Controls

### Front



Name	Description
<b>PWR-LED</b>	Lit when the unit is powered
<b>HD A-LED</b>	Lit when HDMI A input is connected
<b>HD B-LED</b>	Lit when HDMI B input is connected
<b>LP A-LED</b>	Lit when Loop out A is connected
<b>LP B-LED</b>	Lit when Loop out B connected
<b>HD 1...4-LED</b>	Lit when the corresponding HDMI out is connected

### Rear



## Brightlink 2x2 4k@60Hz Video Wall Controller with Web GUI

Name	Description
12V/3A	Controller DC jacket.
RS232-CTL	External RS232 control, Baud Rate: 57600 Data Bits:8, Parity: None Stop Bits:1
RS232	Loop out RS232-CTL
UPDATE	Firmware upgrade
Balanced Audio out	5-way phoenix Jacket, 20Hz ~ 20kHz, 1.5Vrms max
Mini Toslink	<ul style="list-style-type: none"><li>L+R Audio Output 3.5mm Stereo Jack. 20Hz ~ 20kHz, 1.5Vrms max</li><li>Optical SPDIF Audio Output</li></ul>
HD A	HDMI A input
HD B	HDMI B input
LOOP OUT A	Loop out HDMI A signal to downstream
LOOP OUT B/MAIN	Loop out HDMI B signal to downstream
HD 1...HD 4	HDMI scaling output for video wall

### 4. Using the Controller

Connect the desired video source to Controller input HD A or HD B connector and the desired output video wall display devices to HD 1...HD4 HDMI output connector. With PC Tool or RS232 commands to control the unit for different wall display

### 5. PC tool

#### Switch tab on the PC tool

1. PC tool connection with UART or Network
2. Select input source for each scaling output port
3. All Set function, select HD A or B to all the scaling output
4. Select input source for B/MAIN output port
5. Select audio source for balanced audio output and Mini Toslink output
6. EDID configure
7. Reset

# Brightlink 2x2 4k@60Hz Video Wall Controller with Web GUI

The screenshot displays the main configuration interface of the Brightlink 2x2 4k@60Hz Video Wall Controller. It features several sections:

- OUTPUTS:** Four HDMI ports (1-4) are listed, each with a selection knob and a blue indicator bar.
- INPUT:** Two input options (HD A, HD B) are available for each output port.
- LOOP OUT:** A section for B/MAIN 1 with a selection knob and a blue indicator bar.
- AUDIO OUTPUT:** A section for Audio Output 1 with a selection knob and a blue indicator bar.
- Control Panel:** Includes an 'Allset' dropdown menu, 'EDID' and 'Reset' buttons, and a 'Ctrl Mode' section with radio buttons for 'UART' (selected) and 'Network'.
- Network Settings:** A 'Port' dropdown menu set to 'COM3' and a 'Status' indicator showing 'Connected'.
- Table:** A table with columns for 'Device Name', 'IP Address', 'MAC Address', and 'Version'.
- Log:** A list of status messages indicating successful operations for Output Board4 and Screen Combine.
- Buttons:** 'Find via UART' and a note: 'Note: Please wait until all data reading completed!'.

## EDID management

The EDID management window provides the following controls:

- EDID Read Port (Output):** A dropdown menu set to '1' with 'Save' and 'Read' buttons.
- EDID Configure (Device ID):** A dropdown menu set to '1' with 'Open' and 'Write' buttons.
- EDID Mode:** A dropdown menu with a list of predefined EDID modes.
- Progress Bar:** A progress indicator from 0% to 100%.
- Hexadecimal View:** A grid for viewing EDID data in hexadecimal format (00-0F).

User can read each scaling output port downstream EDID and save as a BIN file.

User can open an existing EDID file and write to the HDMI A and B input port as **Manual EDID**.

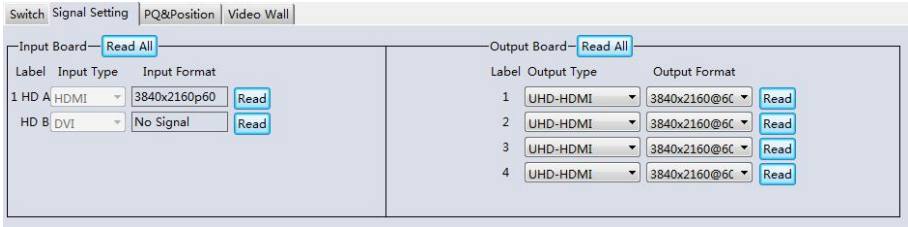
User can select predefined EDID and write to HDMI A and B input ports

Predefined EDID option like below:

4K60-2.0CH	1920x1200-2.0CH
4K60-5.1CH	1680x1050-2.0CH
4K30-2.0CH	1600x1200-2.0CH
4K30-5.1CH	1440x900-2.0CH
1080P-2.0CH	1400x1050-2.0CH
1080P-5.1CH	1360x768-2.0CH
720P-2.0CH	1280x1024-2.0CH
1024x768-2.0CH	Manual

## Signal Setting tab on the PC tool

User can read each input port resolution and set each scaling output resolution here



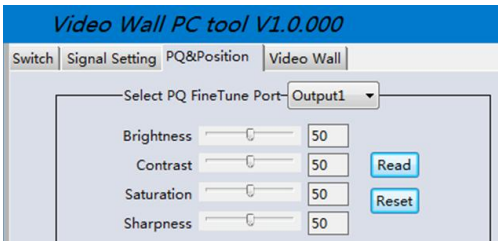
Available output resolutions:

Number	Output Resolution Setting	Number	Output Resolution Setting
1	3840x2160p 60Hz	9	1440x1050 60Hz
2	3840x2160p 50Hz	10	1366x768 60Hz
3	3840x2160p 30Hz	11	1360x768 60Hz
4	3840x2160p 25Hz	12	1280x1024 60Hz
5	1920x1200 60Hz	13	1280x768 60Hz
6	1920x1080p 60Hz	14	1280x720p 60Hz
7	1920x1080p 50Hz	15	1280x720p 50Hz
8	1600x1200 60Hz	16	1024x768 60Hz

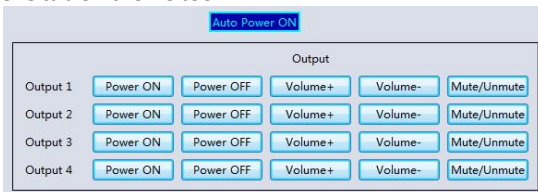
Please note, 3840x2160 25/30Hz can only be used for standalone display, not for video wall

## PQ tab on the PC tool

Suggest always use the default setting 50/50/50/50

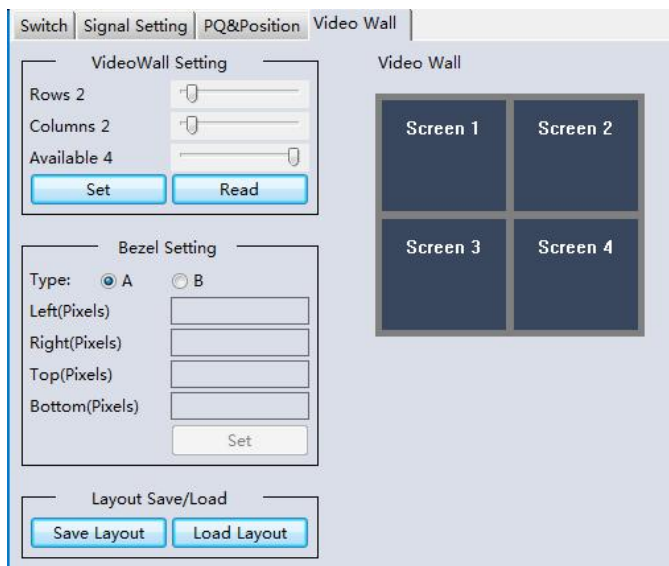


## CEC tab on the PC tool



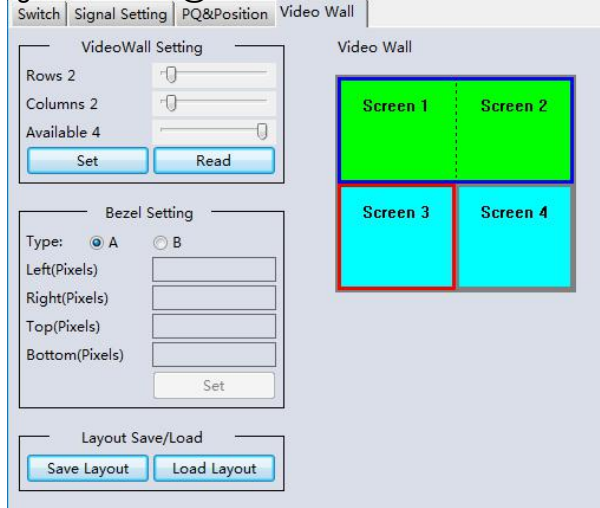
## Video Wall tab on the PC tool

The Video Wall tab is used to configure a group of outputs to function as a video wall.



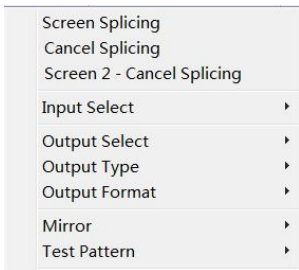
1. Use the Video Wall Setting controls to change how the displays are arranged on the Video Wall tab:
  - a. Adjust the Rows and Columns sliders to change the displayed screen arrangement to permit proper Drag-and-Select of the desired screens for the video wall.
  - b. Change the Available slider to set how many outputs will be used for the Video Wall.
  - c. Click the **Set** button to change the Screen configuration on the Video Wall tab.
2. Use the left mouse button to drag-select the screens that will be set for video wall mode. The selected screens will be shown as bright blue.
3. Use the right mouse button to open a menu.
4. Select **Screen Stitching** from the menu to program the video wall mode. The selected screens will now be shown as bright green.
5. To change the displayed image: either use the methods detailed in the section **Controlling the Matrix Switcher** , or right-click to open the pop-up menu and select the desired input from the **Input Select** menu option.
6. Repeating steps 2 to 5 above with a different set of outputs allows the creation of a second video wall. However, changing the Rows, Columns and Available sliders will automatically delete the current video wall set up when the Set button is clicked. The following example shows a more unusual video wall set-up of two video walls with two 2x1 configurations:

# Brightlink 2x2 4k@60Hz Video Wall Controller with Web GUI

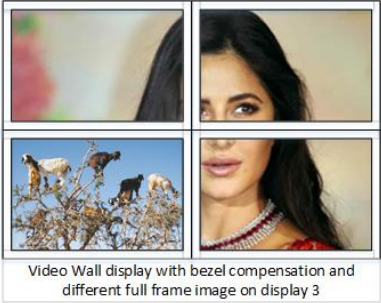


## Video Wall Context Menu

Right clicking on any of the screen icons will display the following context menu:





<b>Screen Stitching</b>	This option connects the selected screens into a video wall configuration.
<b>Cancel Stitching</b>	Return the Video Wall configuration to normal outputs.
<b>Screen x – Cancel Stitching</b>	Removes the single screen x from the video wall to allow the displaying another full frame image within the video wall configuration, as shown in this example: 
<b>Input Select</b>	Use the sub-menu to select the input to display on the video wall or the secondary input image shown in the above example.
<b>Output Select</b>	This option is only available for any screen that is not assigned to a video wall mode.
<b>Output Type</b>	This option is only available for any screen that is not assigned to a video wall mode. It allows setting of the selected screen output mode as described in the Output Board section.
<b>Output Format</b>	This option is only available for any screen that is not assigned to a video wall mode. It allows setting of the output resolution for the selected screen output.
<b>Mirror</b>	Two sub options : OFF ( default ), ON ( H+V Mirror) When select <b>ON</b> , you can make 180° rotation with the selected screen
<b>Test Pattern</b>	When enable Test Pattern, the output will display Color Bar pattern

## Bezel Setting

The Bezel Setting section allows the entry of values to compensate for the display bezel thickness. These values may be entered either as pixels (Type A) or as milli metre (Type B).

### Type A Bezel Settings

The image size will be adjusted to allow for the number of pixels entered in each of the entry boxes. Click the **Set** button view the effect of the new values.

### Type B Bezel Settings

The image size will be adjusted to allow for the Inner and Outer display dimensions as entered in each of the entry boxes. Click the **Set** button view the effect of the new values.

## Bezel Compensation

The following images demonstrate the effect of not having bezel compensation and what a correctly configured bezel compensation setting should produce:

## Brightlink 2x2 4k@60Hz Video Wall Controller with Web GUI



*No Bezel Compensation*



*Correct Bezel Compensation*

### Layout Save/Load

The Save Scene/Layout and Load Scene/Layout buttons allow a video wall configuration to be saved or recalled at any time. Up to 10 configurations, each with their own name can be saved or recalled. When saving, each Scene can optionally be given a name to identify that video wall scene setup.

## 6. Specifications

### General

<b>HDCP Compliance</b>	HDCP 2.2 and HDCP 1.4
<b>RS232</b>	57600 baud rate, 8 data bits, 1 stop bit, no parity

### Video and Audio

<b>Input Video Formats Supported</b>	4096x2160p 24/25/30/50/60Hz	1400x1050 60Hz
	3840x2160p 24/25/30/50/60Hz	1366x768 60Hz
	1080p 24/25/30/50/60Hz	1360x768 60Hz
	1080i 50/60Hz	1280x1024 60Hz
	1920x1200 60Hz	1280x960 60Hz
	1680x1050 60Hz	1280x800 60Hz
	1600x1200 60Hz	1024x768 60Hz
	1440x900 60Hz	1280x720p50/60Hz
<b>Audio Format</b>	2.0 channel ,5.1 channel, LPCM,Dolby,AC3,DTS	

### Power Supply

<b>Power Consumption</b>	Controller: 25W max.
<b>Supply Voltage</b>	+12V/3A

### Environmental and Physical

<b>Operating Temperature Range</b>	0 to +40°C (+32 to +104 °F)
<b>Operating Humidity Range</b>	10 to 50 % RH (non-condensing)

## Brightlink 2x2 4k@60Hz Video Wall Controller with Web GUI

Dimensions	L218 x W146 x H43 mm
Mass (Main Unit)	Controller: 2kg

### Package Contents

Item	Quantity
Controller unit	1
12V/3A power adapter	1
5-way phoenix	1
3-way phoenix	2

## 7. Safety Instructions

To ensure reliable operation of this product as well as protecting the safety of any person using or handling this device while powered, please observe the following instructions.

1. Do not operate either of this product outside the specified temperature and humidity range given in the above specifications.
2. Ensure there is adequate ventilation to allow this product to operate efficiently.
3. Repair of the equipment should only be carried out by qualified professionals as these products contain sensitive devices that may be damaged by any mistreatment.
4. Only use this product in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with these products.