Ultra HD Video Wall Processor

iWall 204

User Manual

Version 1.2

www.infobitav.com

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.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Table of Contents

1. Introduction

This product 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-pin phoenix jacket provides balanced L/R audio output. With PC Tool or RS232 commands to control the product for different wall display.

2. Features

☆ HDMI 2.0 and HDCP 2.2 compliant
☆ Support multi-resolution up to 3840x2160@60Hz video output for video wall
☆ Support 2 channels HDMI loop out
☆ Support Bezel Compensation with two modes
☆ Support 180º rotation
☆ Support PIP on video wall
☆ Support RS-232 and TCP/IP control
☆ Support CEC control with displayer by PC Tool or commands

3. Package Contents

① 1 x Ultra HD Video Wall Processor
② 1 x 12V/3A Power Adapter
③ 1 x 5-pin Phoenix Connector
④ 2 x 3-pin Phoenix Connector
⑤ 1× RS232 to Phoenix Cable
⑥ 1× CAT6 cable
⑦ 1× USB to RS232 Cable
⑧ 1× User Manual

4. Specifications

| Technical		
HDMI Compliance	HDMI 2.0	
HDCP Compliance	HDCP 2.2/1.4	
RS-232	Baud rate: 57600, data bit: 8, Stop bit: 1, no parity	
Input Video Formats	4096x2160p 24/25/30/50/60Hz 3840x2160p 24/25/30/50/60Hz 1080p 24/25/30/50/60Hz 1080i 50/60Hz 1920x1200 60Hz 1680x1050 60Hz 1600x1200 60Hz 1440x900 60Hz	1400x1050 60Hz 1366x768 60Hz 1360x768 60Hz 1280x1024 60Hz 1280x960 60Hz 1280x800 60Hz 1024x768 60Hz 1280x720p50/60Hz
Audio Format	2.0 channel, 5.1 channel, LPCM, Dolby, AC3, DTS	
ESD Protection	Human-body Model: ±8kV (Air-gap discharge) , ±4kV (Contact discharge)	
Mechanical		
Housing	Metal Enclosure	
Color	Black	
Dimensions	218mm (W)×146mm (D)×43mm (H)	
Weight	2Kg	
Supply Voltage	+12V/3A	
Power Consumption	25W (Max)	
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F	
Storage Temperature	-20°C ~ 70°C / -4°F ~ 158°F	
Relative Humidity	10%~50% RH (non-condensing)	

5. Operation Controls and Functions

Front Panel
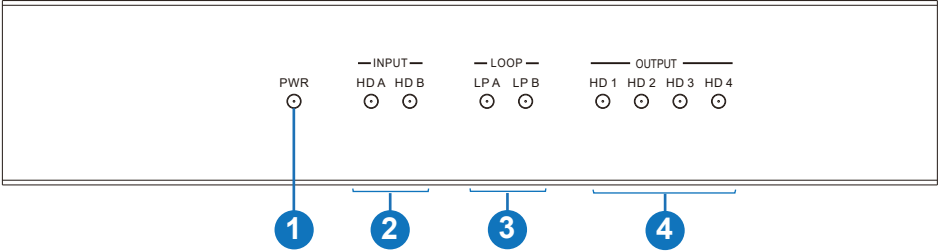
| No.	Name	Function Description
1	Power LED	Power LED will be on when the unit is powered on.
2	INPUT LED	The LED will be on when the corresponding HDMI input port is connected to active HDMI source device.
3	LOOP LED	The LED will be on when the corresponding LOOP OUT port is connected to HDMI display device.
4	OUTPUT LED	The LED will be on when the corresponding HDMI output port is connected to HDMI display device.

Rear Panel
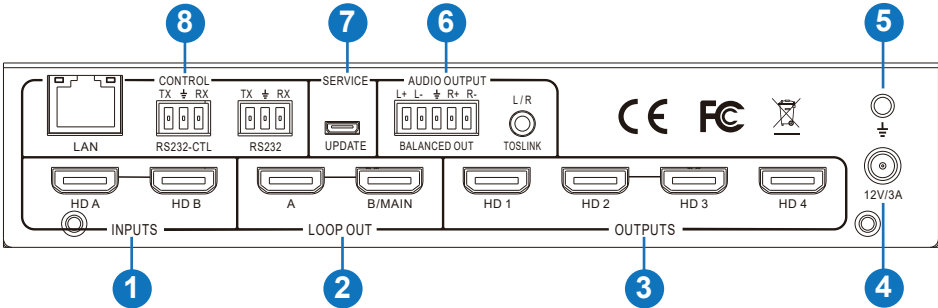
No.	Name	Function Description
1	INPUTS	HDMI signal input ports, connect to HDMI source device such as DVD or PS4 with HDMI cable.
2	LOOP OUT	HDMI signal loop out ports. Loop out HDMI A/B signal to downstream.
3	OUTPUTS	HDMI signal scaling output for video wall.
4	12V/3A	DC 12V/3A power supply port.
5	GND	Ground the product housing.

| 6 | AUDIO OUTPUT | TOSLINK:
• Anolog L/R audio output
 3.5mm Stereo Jack. 20Hz ~ 20kHz, 1.5Vrms max
• Digital SPDIF audio output |
		BALANCED OUT: Balanced audio output port. 5-pin phoenix connector, 20Hz ~ 20kHz, 1.5Vrms max.
7	SERVICE	Firmware update port.
8	CONTROL	RS232: Loop out RS232-CTL control command.
		RS232-CTL: External RS232 control, Baud Rate: 57600 Data Bits:8, Parity: None Stop Bits:1
		LAN: Network port for TCP/IP control. Connect to an active Ethernet link with an RJ45 cable.

6. RS232/LAN Control Connection

6.1 RS232 Control Connection

The product supports RS232 control. Connect the RS232-CTL port of the product to a PC via a serial cable, as shown in the following figure:
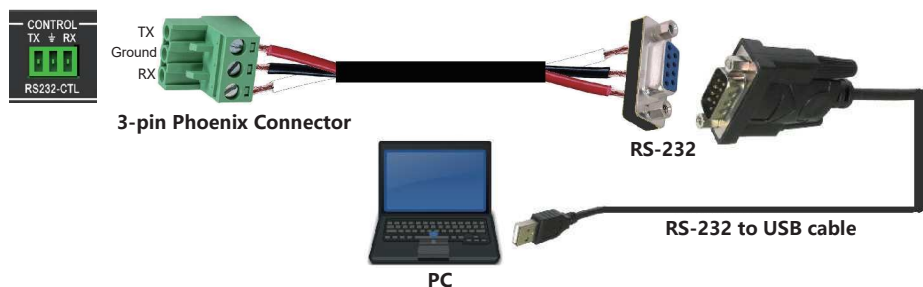

6.2 Network Control Connection

The product also supports Network control. Connect the LAN port of the product to a PC via an UTP cable, as shown in the following figure. The default IP is **192.168.0.247**
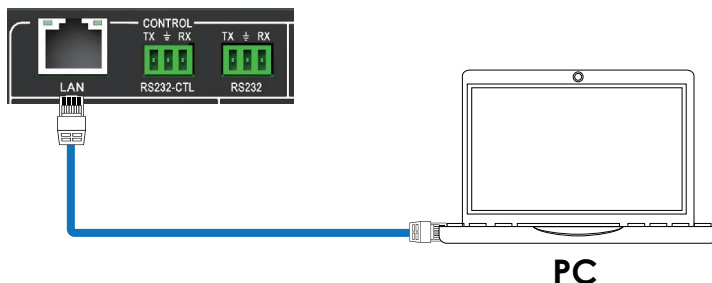
7. PC Tool User Guide

The PC tool is an installation-free control software that supports both UART and network control. It consists of five parts: Matrix Switch, Signal Setting, FineTune:PQ, Video Wall and CEC Control. Download the software from: *https://www.infobitav.com/iwall-204/*
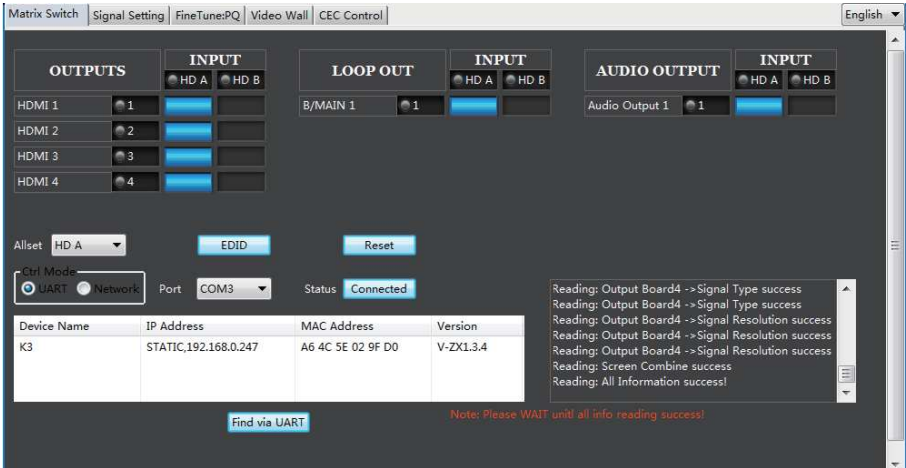
■ Matrix Switch Page

1. You can select **UART** (with RS232 cable) or **Network** to connect device, baud rate is 57600 bps.

2. Select input source for each scaling output port.

3. "AllSet" function: Select HD A or B input source 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. Reset: The PC tool supports reset system to recover to factory configuration.

7. EDID Control: Click the "EDID" button on the Matrix Switch page, there will be a pop-up EDID control window.
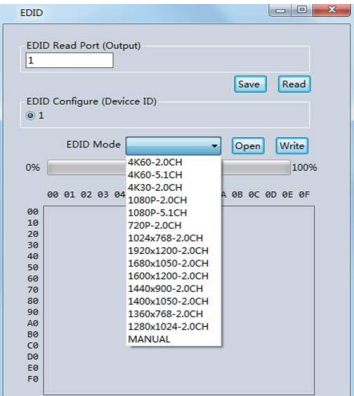
a) Read each scaling output port downstream EDID and save as a BIN file.

b) Open an existing EDID file and write to the HDMI A and B input port as Manual EDID.

c) 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 Page

User can read the resolution of each input port and set the resolution of each scaling output.

Available output resolutions:

No.	Output Resolution Setting	No.	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

Note: 3840x2160 25/30Hz can only be used for standalone display, not for video wall.

■ FineTune:PQ Page

You can read and set the Brightness/Contrast/Saturation/Sharpness of each output.

Note: Suggest always use the default setting 50/50/50/50. Do not change the default settings without special conditions; If there is a problem after changing, click "Reset" to return to the factory settings.

■ CEC Control Page

If **Auto Power On** is enabled, every time when the product is turned on, it will turn on all displayers which are connected to it.

The product supports CEC function, including Power on/off, Volume+/-, Mute/Unmute.

■ Video Wall Page

This page is used to configure a group of outputs to function as a video wall.
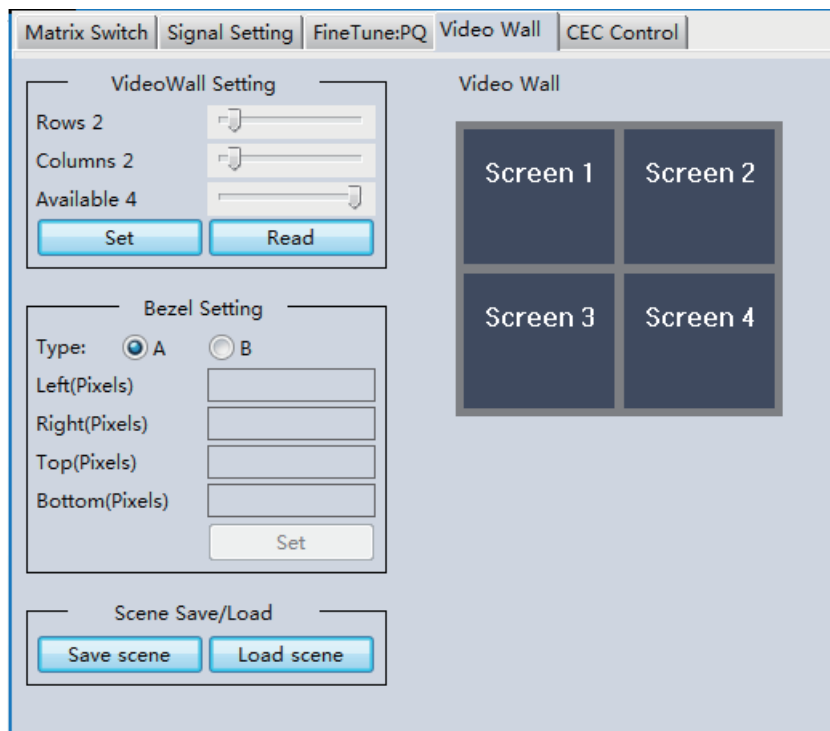
1. Use the Video Wall Setting controls to change how the displays are arranged on the Video Wall page:
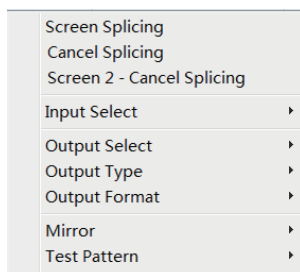   a. Adjust the Rows and Columns sliders to change the displayed screen arrangement to permit proper Drag-and-Select of the desired screens for the video wall.
   b. Change the Available slider to set how many outputs will be used for the Video Wall.
   c. Click the "Set" button to change the Screen configuration.
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: right-click to open the pop-up menu and select the desired input from the "Input Select" menu option.

6. Repeating steps 2 ~ 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:
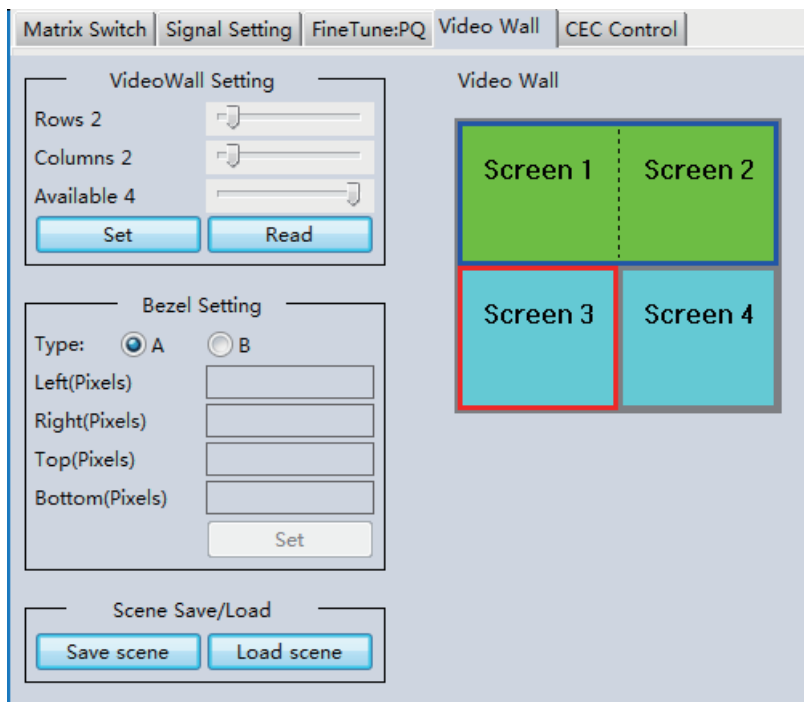
Video Wall Context Menu
Right clicking on any of the screen icons will display the following context menu:

Screen Stitching	This option connects the selected screens into a video wall configuration.
Cancel Stitching	Return the Video Wall configuration to normal outputs.
Screen x – Cancel Stitching	Remove 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: Video Wall display with bezel compensation and different full frame image on display 3
Input Select	Use the sub-menu to select the input to display on the video wall or the secondary input image shown in the above example.
Output Select	This option is only available for any screen that is not assigned to a video wall mode.
Output Type	This option is only available for any screen that is not assigned to a video wall mode.
Output Format	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.
Mirror	Two sub options : OFF (default), ON (H+V Mirror) When select "ON", you can make 180º rotation with the selected screen.
Test Pattern	When Test Pattern is enabled, 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 to 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 to 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 settings should produce:
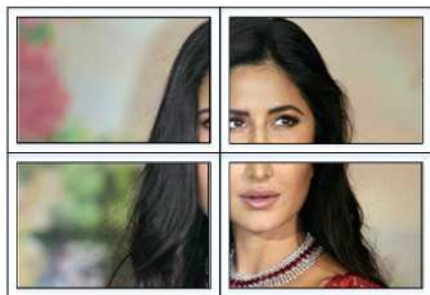
No Bezel Compensation
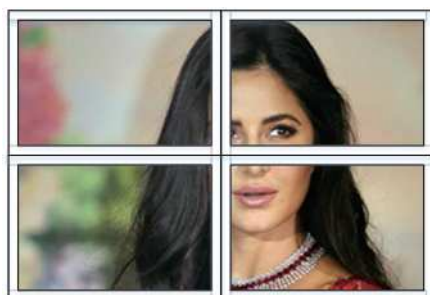
Correct Bezel Compensation

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.

8. 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.

9. Connection Diagram

Control System

Speakers

CONTROL
TX ± RX   TX ± RX

SERVICE

AUDIO OUTPUT
L+ L- ⏚ R+ R-

LAN   RS232-CTL   RS232   UPDATE   BALANCED OUT   TOSLINK   L/R   CE   FC   🗑   12V/3A

HD A   HD B   A   B/MAIN   HD 1   HD 2   HD 3   HD 4

INPUTS   LOOP OUT   OUTPUTS

DVD Player

Lap Top

TV   TV

TV ×4

🔴 HDMI
🔵 AUDIO
⚪ CAT