maxsquare

MSQ-820VW

4K 2x4 Video Wall Processor

MADE IN TAIWAN

Table of Contents

1. Introduction

The MSQ-820VW 4K 2x4 Video Wall Processor is a powerful solution for creating visually stunning displays. Its user-friendly software allows for seamless setup of multiple displays or projectors, showcasing your content effortlessly. With two HDMI inputs supporting up to 4K2K@60Hz 4:4:4, switching between different sources is a breeze.

The embedded scaler ensures optimal resolution on various display types, including flat panel displays, projectors, and monitors. Supporting output resolutions up to 4K2K@60Hz, the MSQ-820VW is ideal for digital signage, broadcasting, education, and surveillance systems.

Experience the MSQ-820VW's power as it effortlessly elevates your display capabilities with high-quality videos. This professional yet user-friendly video wall processor is designed for impactful visuals.

2. Features

- HDMI 2.0a compliant
- Input resolutions support from 1280x720 to 4096x2160@60Hz 4:4:4 8bit, interlaced or progressive
- Output resolutions support up to 4096x2160@60Hz 4:4:4 8bit
- HDCP 2.2 / 1.4 compliant
- Supports default HDMI EDID, learns the EDID of displays and user defined EDID
- Flexible control options: Push-in button, IR remote control, IP control, Software control and Web control
- Pure unaltered uncompressed 7.1ch digital HDMI
- Each HDMI output has an independent controllable display area
- User-selectable output settings, up to 4K2K@60Hz
- Image parameters and layouts are automatically saved in flash memory of the device and can be recalled for later use
- Adjustable size & position through software
- Resize, position, zoom and pan output video
- Supports 4K60 4:4:4 input to 4 outputs with pixel-to-pixel 4K2K@60 4:4:4 mapping
- Supports 90 degree rotation on output 1 and 2
- Supports 180 degree screen flip on each displays
- Firmware upgradable through USB drive for support of new features and technology enhancements

* ONLY output 1 and 2 support rotation function.

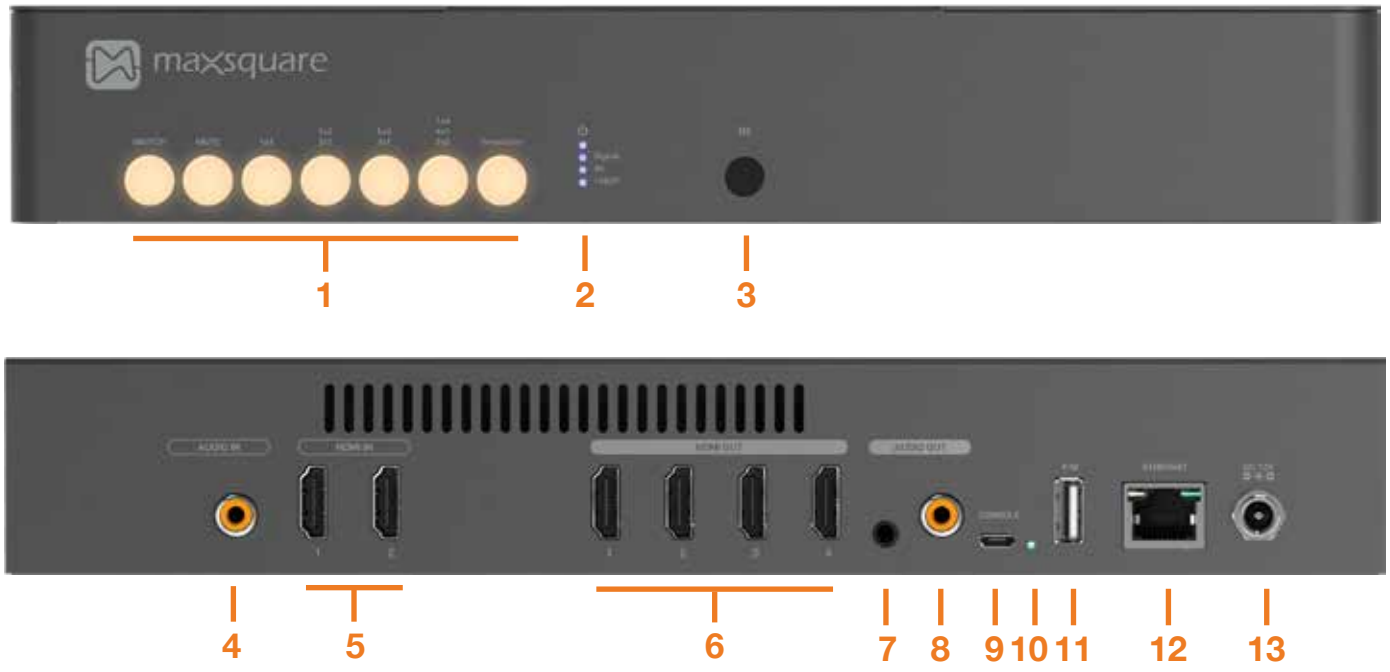
3. Package Contents

- 1x MSQ-820VW
- 1x Rack-Mounting ear set
- 1x DC 12V
- 1x IR Remote control
- 1x User Manual

4. Specifications

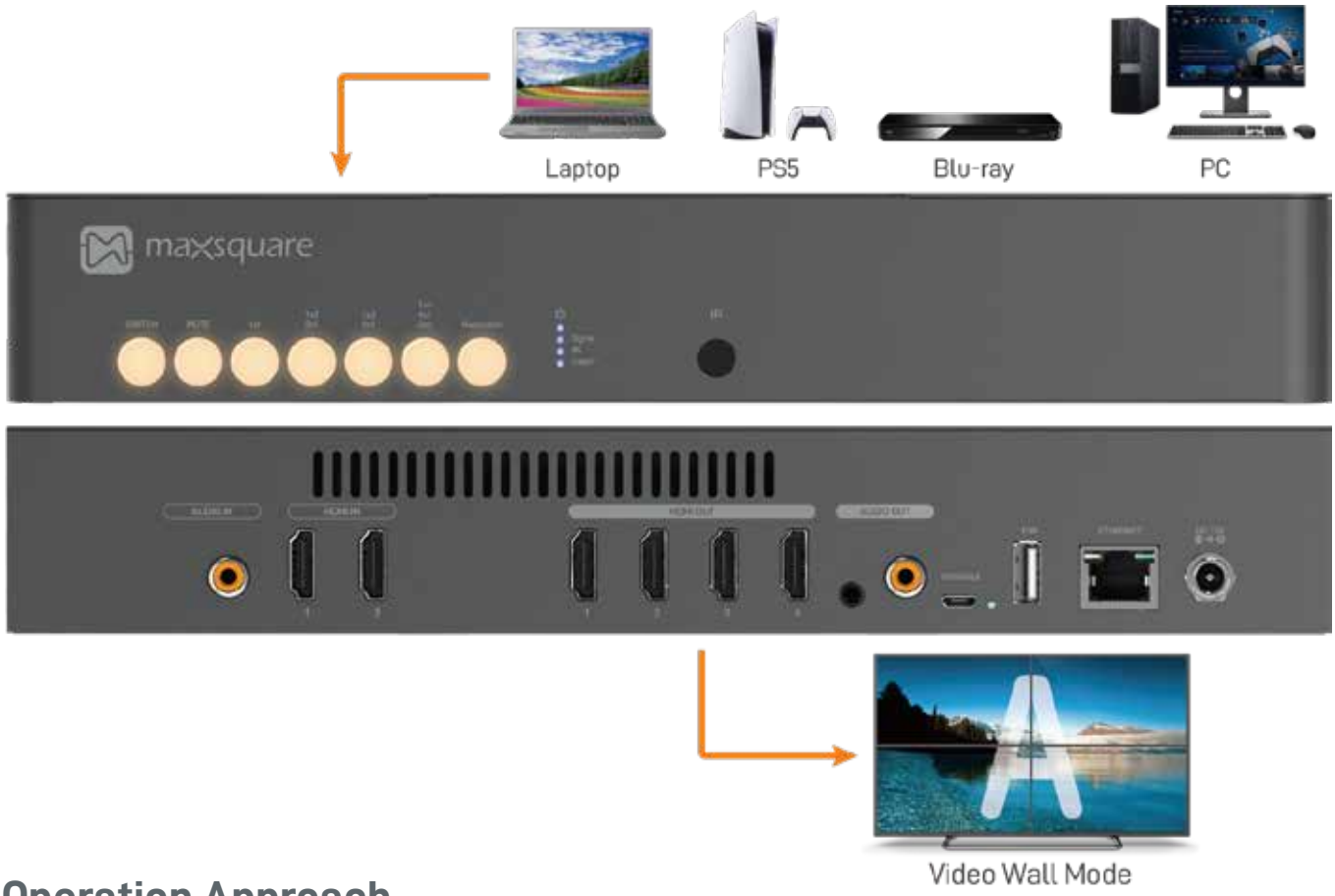
Technical	
Role of usage	Video Wall Processor
HDMI compliance	HDMI 2.0a
HDCP compliance	HDCP 2.2 / 1.4
Video bandwidth	Single-link 600MHz [18Gbps]
Video support	Up to 4K2K@60 (4:4:4 8bits)
Video Format Support	HDMI
Audio support	Bypass / Programed
Input TMDS signal	1.2 Volts [peak-to-peak]
ESD protection	Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]
Input	2x HDMI / 1x USB / 1x Ethernet / 1x SPDIF
Output	4x HDMI / 1x Analog audio / 1x SPDIF
Control	Front Panel / IR control/ Software control/ Web control
IR remote control	Electro-optical characteristics: π = 25° / Carrier frequency: 38kHz
HDMI connector	Type A [19-pin female]
RJ-45 connector	WE/SS 8P8C
USB connector	TYPE A
Mechanical	
Housing	Metal enclosure
Power supply	12V DC
Power consumption	18 Watts [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]

5. Panel Description



1. **Push Button:** Please refer to "OPERATION APPROACH: Method A: Push-in Button" section
2. **LED:** Power, input signal and input 4K/1080P resolution LED indicator
3. **IR SENSOR:** IR sensor for receiving the IR commands from IR remote
4. **S/PDIF IN**
5. **INPUT 1-2:** HDMI Inputs
6. **OUTPUT 1-4:** HDMI Outputs
7. **STEREO OUT**
8. **S/PDIF OUT**
9. **Micro USB:** Console port
10. **F/W Update Indicator LED:** light-up in F/W update process
11. **USB:** for F/W update
12. **Ethernet:** Ethernet control port
13. **+12V DC:** 12V DC power jack

6. Connection Diagram



7. Operation Approach

Method A: Push-in Button

(1) Push Button **A** : Switch Inputs

(2) Push Button **B** : Turn on/off audio

(3) Push Button **C** : Select default layout 1x1

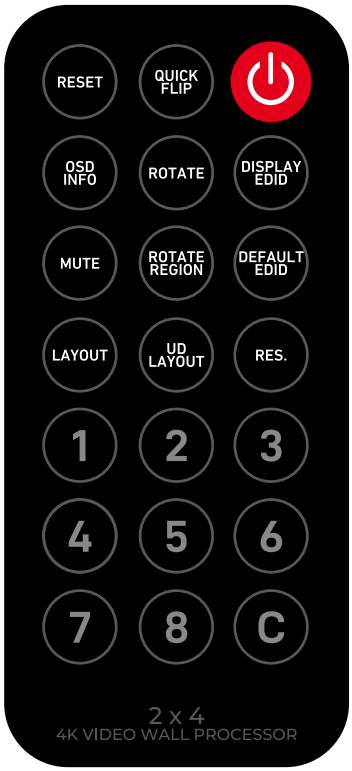
(4) Push Button **D** : Select default layout 1x2 or 2x1

(5) Push Button **E** : Select default layout 1x3 or 3x1

(6) Push Button **F** : Select default layout 1x4, 4x1 or 2x2

(7) Push Button **G** : Select video wall resolution (4K/1080P/720P/480P)

Method B: IR Remote Control



Button	Function
RESET	Factory default reset
QUICK FLIP	Turn ON/OFF quick flip 180° function (Quick Flip 180°: flip the two displays on the top row together 180 degrees)
POWER	Power ON/OFF
OSD INFO	Turn ON/OFF OSD information
ROTATE	Select rotation function (1x2 90°(R), 1x2 90°(L), 2x1 90°(R), 2x1 90°(L))
DISPLAY EDID	Begin EDID learning from one output
MUTE	Turn ON/OFF audio
ROTATE REGION	Select rotation region after using rotation function
DEFAULT EDID	Begin default EDID selection
LAYOUT	Begin default layout selection
UD LAYOUT	Begin user-defined layout selection
RES.	Select video wall resolution (4K/1080P/720P/480P)
Button 1	Select input 1
Button 2	Select input 2
Button C	Clear the previous IR operation procedure

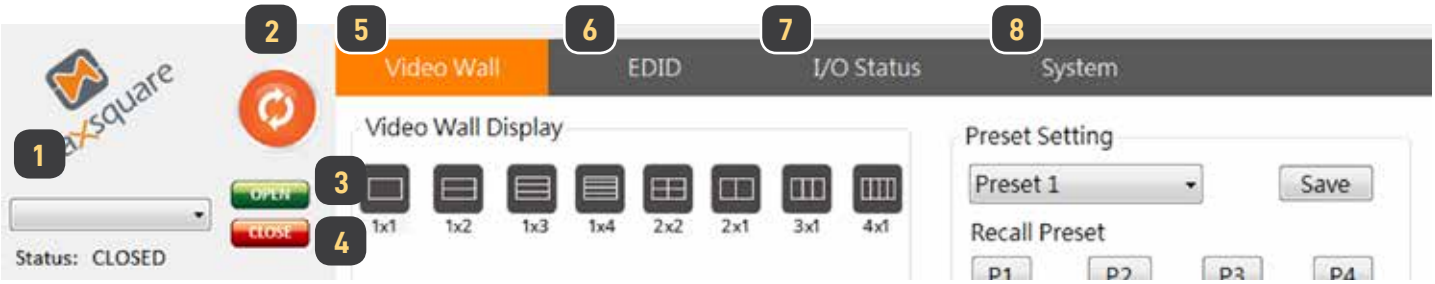
Example of function key

Operation	Procedure
Learn Default EDID	**Default EDID + 1~4 (1~4 default EDID)**
Ex: Default EDID 2	1. Press "DEFAULT EDID" button 2. Press number key "2" to select default EDID 2
Learn Display EDID	**Display EDID + 1~4 (output 1~4)**
Ex: Learn Output 4	1. Press "DISPLAY EDID" button 2. Press number key "4" to select Output 4
Select Default Layout	**Layout + 1~8 (1~8 default layout)**
Ex: Default Layout 3	1. Press "LAYOUT" button 2. Press number key "3" to select default layout 3
Select User-defined Layout	**UD Layout + 1~8 (1~8 User-defined layout)**
Ex: User-defined Layout 6	1. Press "UD LAYOUT" button 2. Press number key "6" to select User-defined layout 6

Method C: Software Control through Micro-USB port

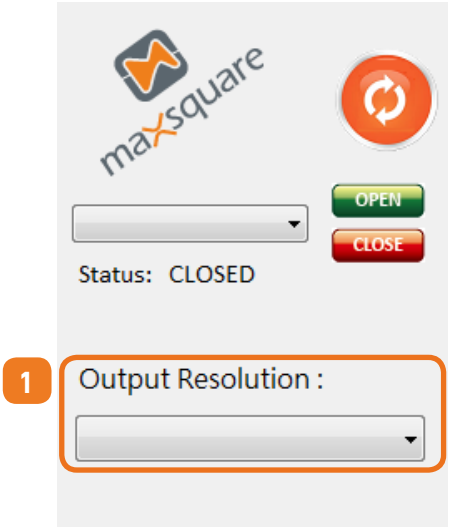
System Requirement

(1) OS Information: MS Win 10/11
(2) Baud rates: 115200
(3) Software size: 1 MB
(4) Minimum RAM requirement: 256 MB



1	COM Port Selection
2	Refresh Device Status
3	Connect to Device
4	Disconnect to Device
5	Video Wall Tab
6	EDID Tab
7	I/O Status Tab
8	System Tab

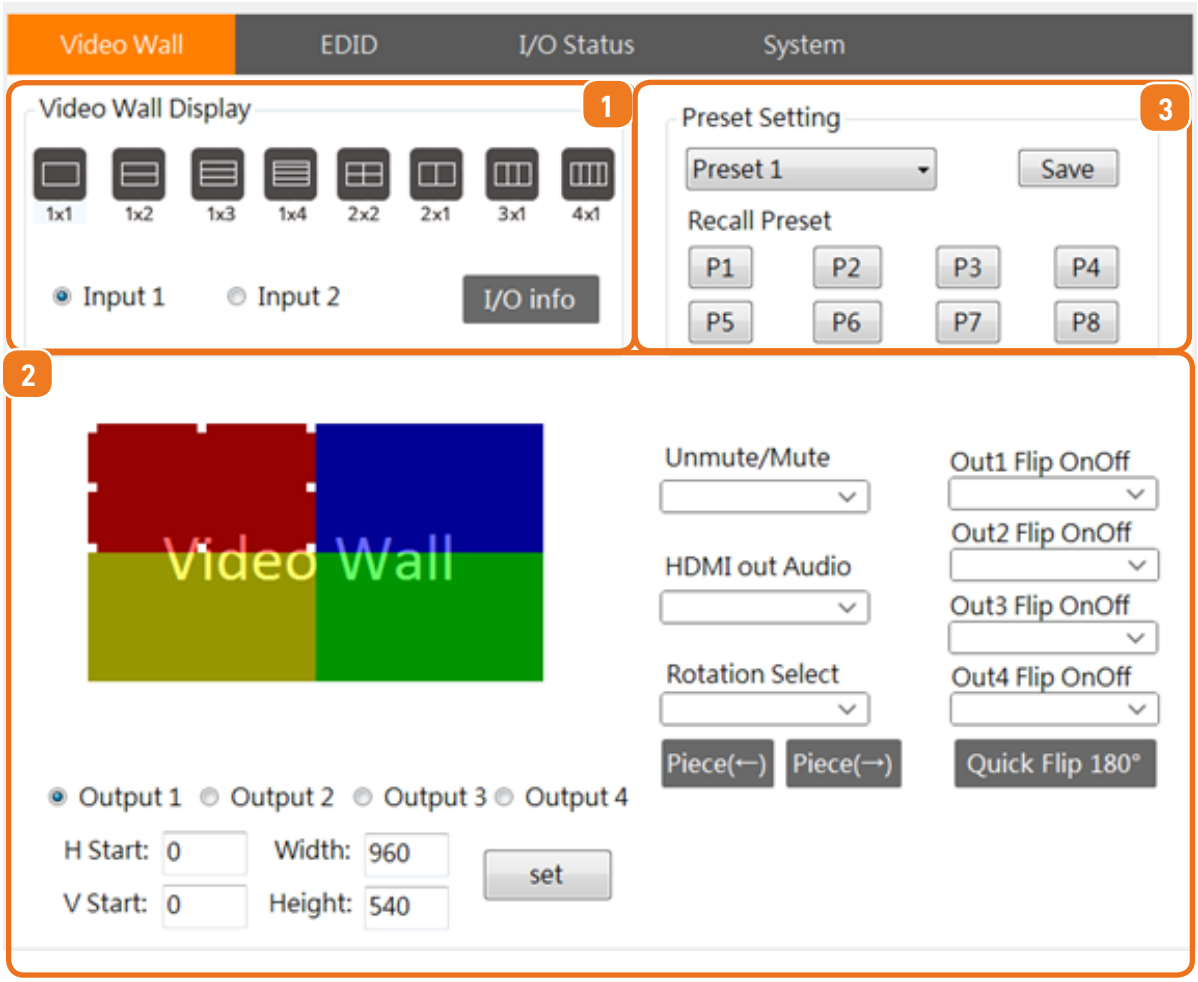
1. Main Panel



1 Output Resolution

- Select video wall resolution by using drop-down list

2. Video Wall Tab



1 Video Wall Display

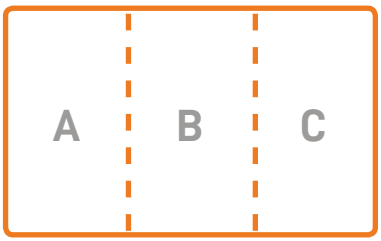
- There are 8 default layouts for user to select
- Select input 1 or input 2

2 Output Layout Windows

- *Layout Windows*
  User can click output 1-4 to choose which output window you want to adjust. Then user can view the screen status and control the position of output TV through the windows. User also can adjust the output position by setting coordinate. After adjusting each output setting, press the "set" button to apply the changes. Different colors of the windows represent different output TVs.
- *Unmute/Mute*
  Turn on/off audio
- *HDMI out Audio Select*
  Select audio from HDMI input or S/PDIF input

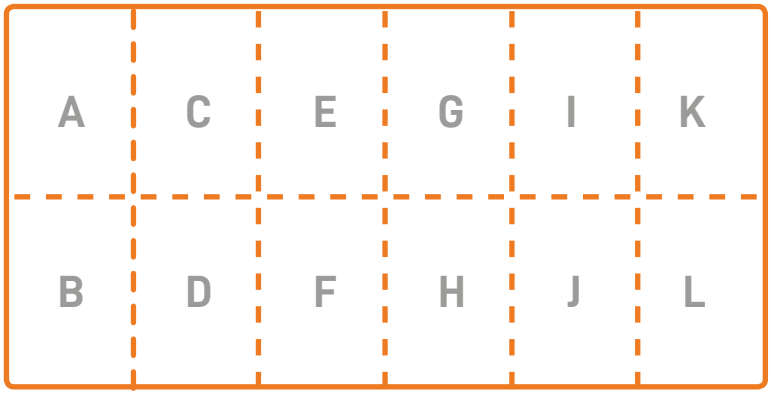
- *Rotation Select*

1x2 90°(R), 1x2 90°(L)



After selecting 1x2 90°(R) or 1x2 90°(L) rotation function, the input video will be split 3 parts vertically like below diagram. Because ONLY output 1 & output 2 support rotation function, user can use "→" or "←" button to show the first two(A & B) or the last two(B & C) video.

2x1 90°(R), 2x1 90°(L)



After selecting 2x1 90°(R), 2x1 90°(L) rotation function, the input video will be split 12 parts like below diagram. Because ONLY output 1 and output 2 support rotation function, user can use "→" or "←" button to show the (A & B), (C & D), (E & F), (G & H), (I & J), or (K & L) video.

- *Out1-4 Flip On/Off*
  Turn on or off to flip screen for HDMI output 1-4

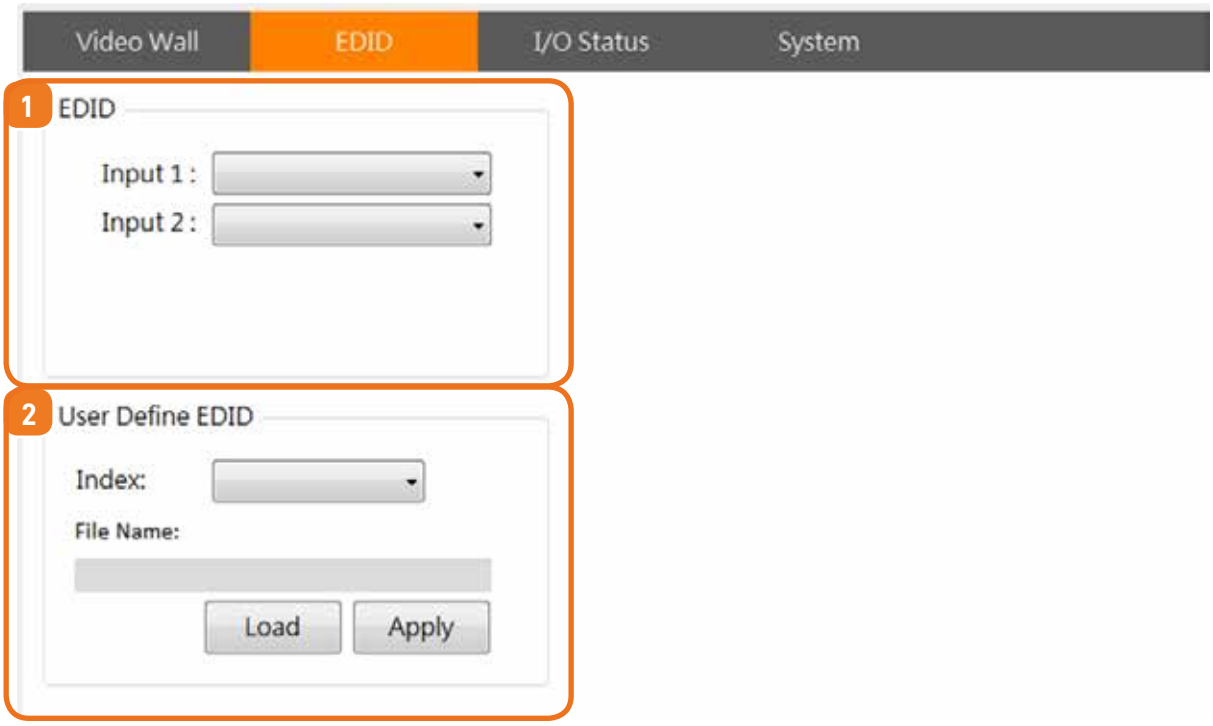
- *Quick Flip 180°*
  Flip the two displays on the top row together 180 degrees

3 Preset Setting:

- *Save Preset*
  Select a preset (1-8) from the drop-down list, then click the "Save" button to save the current layout

- *Recall Preset*
  - Select P1-P8 to recall the user-defined preset layout

3. EDID Tab



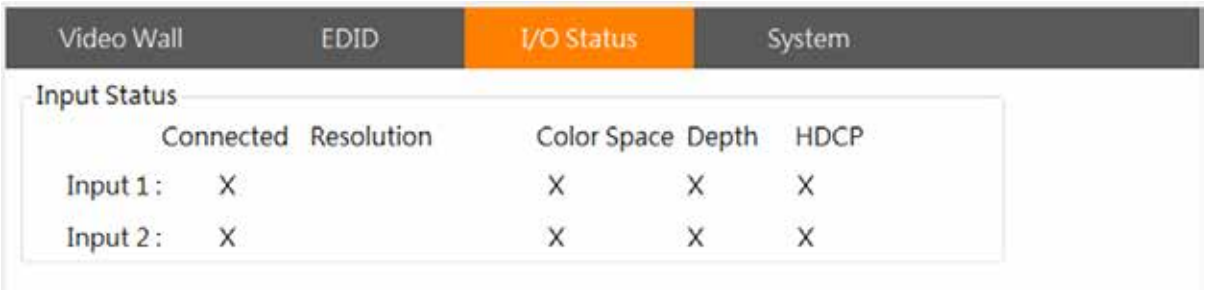
1 EDID

Select EDID from the drop-down list to HDMI input 1 or input 2.

2 User Defined EDID

- Use drop-down list to select user defined 1-4
- Click "Load" button to select the EDID file from computer
- Click "Apply" button to load EDID File to selected user defined 1-4

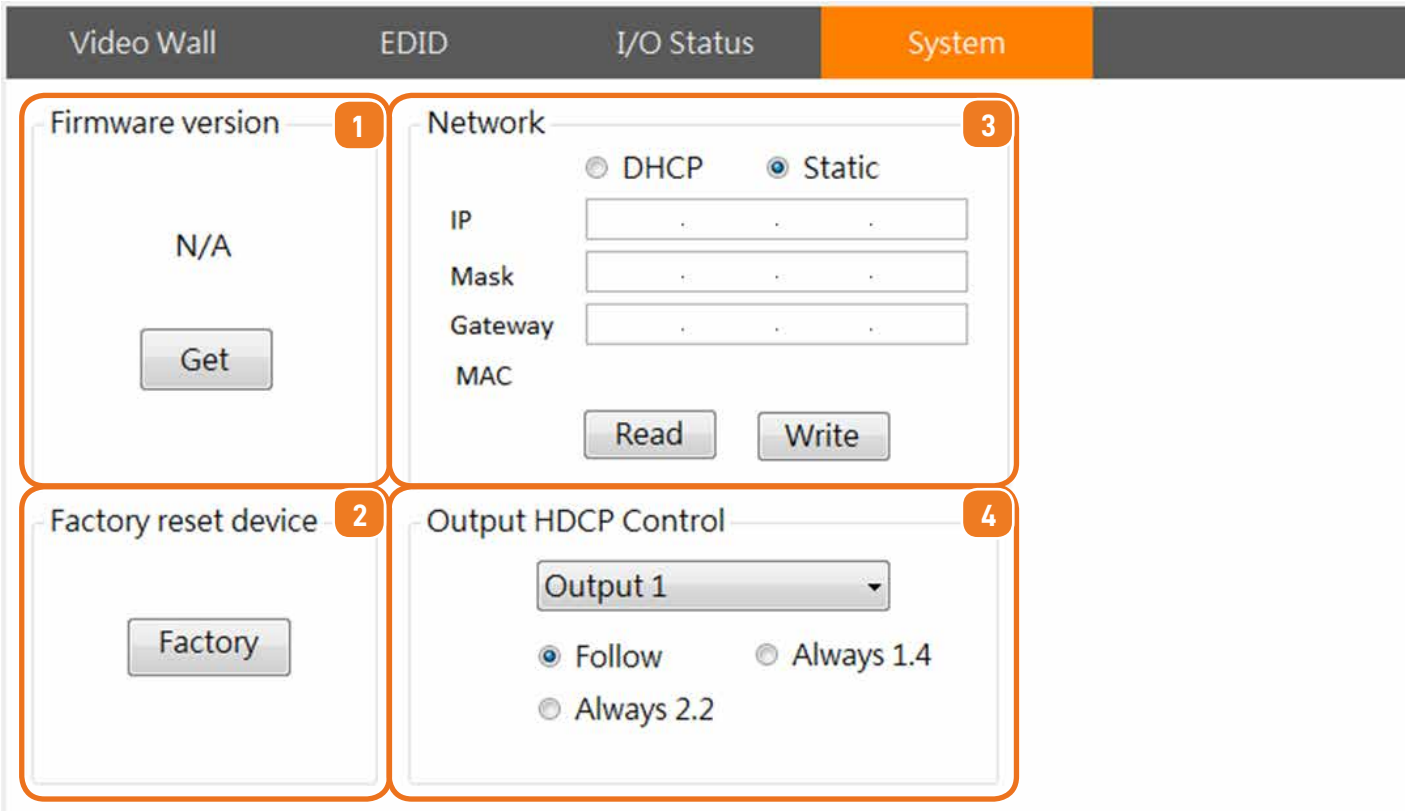
4. I/O Status



1 Input Status:

- Shows the resolution, color space, depth and HDCP information for both input 1 and input 2

5. System Tab



1 Firmware version

Click "Get" button to show firmware version information

2 Factory Reset

- Click "Factory" button to do factory default reset

3 Network *(*Reboot is required to apply the new settings.)*

- *Network-DHCP mode*

  Select DHCP and click "Read" button to automatically get the IP address

- *Network-Static mode*

  Select Static and then key in the "IP", "MASK", "GATEWAY" information. After setting IP address, please click "Write" button to save IP address Information

- *"Read" Button*

  Read the IP and MAC address from the device

- *"Write" Button*

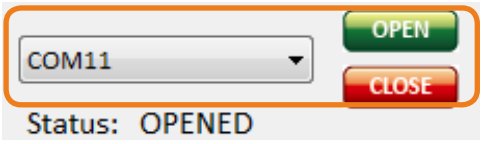
  Save the IP address which is manually entered

4 Output HDCP Control

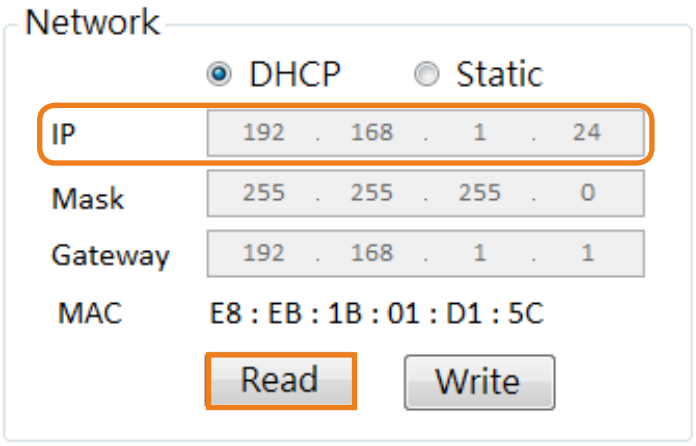
- Select output 1~4 HDCP setting
- “Follow”: HDCP follow the source
- “Always 1.4”: HDCP is always 1.4
- “Always 2.2”: HDCP is always 2.0

Method D: Web Control through Ethernet Port

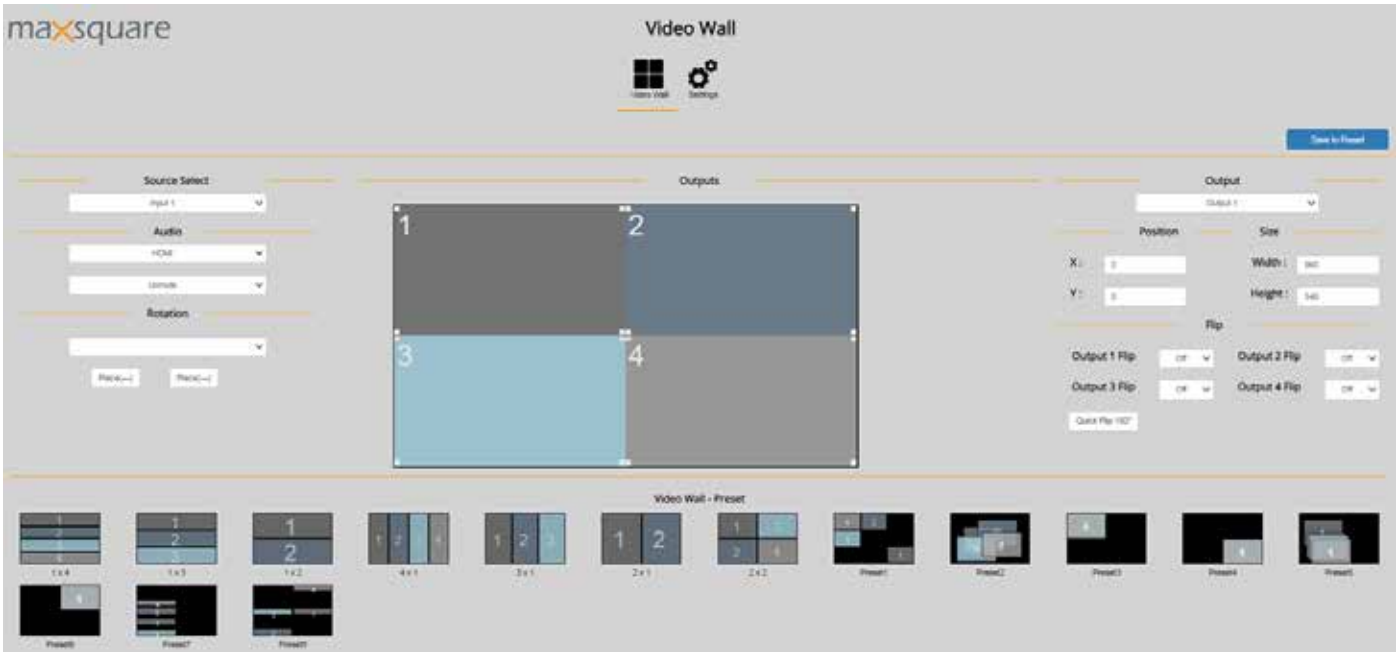
1. First, ensure that the device is connected to the Ethernet. Then, execute the software on the device and confirm that it's connected.



2. Click on "READ" to get the IP address, then browse it.



3. MAXSQUARE Web GUI



8. EDID Learning

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 source devices and displays may have various level of capability in playing audio and video, the general principle is that the source device will output the lowest standards in 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 video wall 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.

There are **THREE methods** to do EDID Learning as below,

1. IR Remote Control: Please refer to the **Operation Approach\Method B: IR Remote Control**
2. Software Control: Please refer to the **Operation Approach\Method C: Software Control through Micro-USB port**
3. Web Control: Please refer to the **Operation Approach\Method D: Web Control through Ethernet Port**

There are **four embedded default EDID** as below:

1. 4k2k@60 2ch
2. 4k2k@30 7.1ch
3. 1080p60 2ch
4. 1080p60 7.1ch

9. Warranty

Maxsquare warrants the MSQ-820VW 4K 2x4 Video Wall Processor for one year from the date of purchase from Maxsquare or an authorized dealer from defects in material and workmanship. If this product fails to function properly within the first year of its warranty, Maxsquare may repair or replace it at its discretion, provided that the device has not been subjected to accident, disaster, abuse, or other unauthorized modifications, including static discharge and power surge. Maxsquare provides this warranty to its BUYER solely in the case of a direct transaction. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. These repairs are warranted by a 90-day warranty from the date of reshipment to the buyer. Customers agree to ensure the unit or incur the risk of loss or damage in transit if the unit is delivered by mail. A unit will not be accepted if it does not have a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of purchase may be required to claim the warranty. Customers outside of Taiwan must pay for shipping to and from Maxsquare. Cables and power adapters have a 30-day warranty and must be free of any markings or scratches, as well as neatly coiled.

This manual's material has been carefully reviewed and is believed to be accurate. Maxsquare, on the other hand, takes no responsibility for any inaccuracies or omissions in this manual. Even if advised of the possibility of such losses, Maxsquare will not be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual. Furthermore, the technical information contained in documents on the MSQ-820VW's features and specifications is subject to change without further notice.