

VP-5004MZ2-R

4x2 4K Multi-View Seamless Presentation Matrix
Switcher with Recorder

User Manual

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rev: 201120
Made in Taiwan

INTRODUCTION

The **VP-5004MZ2-R 4x2 4K Multi-View Seamless Presentation Matrix Switcher with Recorder** provides the most flexible and cost effective solution in the market to route ultra-high definition video source from any of the four UHD HDMI sources to the remote display at the same time. With mirror and extend mode function, the master & slave output can show the same video on mirror mode and the different video on extend mode. Besides, user can record video of the device connected to the VP-5004MZ2-R and the voice from the built-in/external microphone to the USB flash drive. This solution is also well suited for use in digital signage, conference room presentation systems or other similar settings or applications.

With up to 4K2K60 4:4:4 output resolution, users can display the mixed video with improved presentation quality. In the meantime, the unit can be controlled thru the popular serial port and Ethernet port to provide the most flexible control way to fit into any applications.



The Audio of HDMI outputs support:

- (1) Master HDMI output: mix line in and HDMI in audio
- (2) Slave HDMI Output: bypass

FEATURES

- 4x HDMI inputs and 2x HDMI outputs
- Input resolutions support from 640x480 to 4096x2160@60Hz (4:4:4 8bits), interlaced or progressive
- Output resolutions support up to 4K2K@60Hz (4:4:4 8bits)
- Adjustable size & position through software
- Supports PIP, PBP, POP, full screen & quad-view display
- HDCP 1.4/2.2 compliant
- Supports to record video & voice to the USB flash drive
- Supports built-in & external microphone
- Firmware upgradable to support of new features and technology enhancements
- Supports borders and labels
- Resize, position, zoom & pan and blend output video
- Supports seamless, fade-in-&-out, wipe and dissolve switching on full screen mode
- Perfect as a video converter and a live video switcher
- Pure unaltered uncompressed 7.1ch digital HDMI
- Software control through RS-232 and Ethernet
- Supports IR remote control

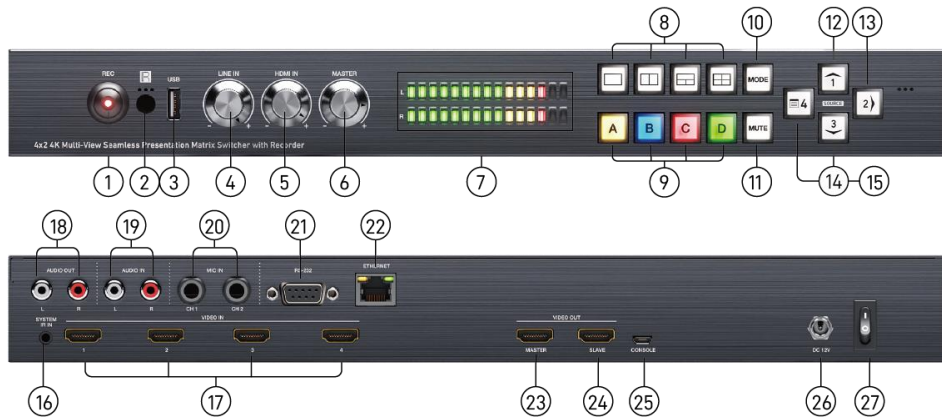
PACKAGE CONTENTS

- 1x VP-5004MZ2-R
- 1x DC 12V
- 1x Installation software CD
- 1x IR Remote control (28 keys)
- 1x IR Receiving cable
- 1x User Manual

SPECIFICATIONS

Model Name		VP-5004MZ2-R
Technical		
Role of usage	Multi-View Seamless Presentation Matrix Switcher	
Background picture update	Yes	
HDMI compliance	HDMI 2.0a	
HDCP compliance	HDCP 2.2 / 1.4	
Video bandwidth	Single-link 600MHz [18Gbps]	
Output Video Support	Up to 4K2K@60 (4:4:4 8bits)	
Input Video Support	Up to 4K2K@60 (4:4:4 8bits)	
Video Format Support	HDMI 2.0	
Audio support	Master HDMI: Mix line in and HDMI in audio Slave HDMI: Bypass	
Control	RS-232/ Ethernet/ IR	
Embedded video mixer	Yes	
Input TMDS signal	1.2 Volts [peak to peak]	
ESD protection	Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]	
Input	4x HDMI + 2x Stereo RCA + 2x Mono Microphone + 1x RS-232 + 1x RJ-45(Ethernet) + 1x 3.5mm (IR)	
Output	2x HDMI + 2x Stereo RCA + 1x USB	
HDMI connector	Type A [19-pin female]	
RS-232 connector	DE-9 [9-pin D-sub female]	
RJ-45 connector	WE/SS 8P8C	
Mechanical		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	390 x 214 x 44mm[15.3" x 8.4" x 1.7"]
	Package	519 x 263 x 75 mm [17" x 10.4" x 3"]
	Carton	542 x 411 x 300 mm [18" x 13" x 11.8"]
Weight	Model	1748g[3.8 lbs]
	Package	2691g[5.9 lbs]
Power supply	12V DC	
Power consumption	32 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]	

PANEL DESCRIPTIONS

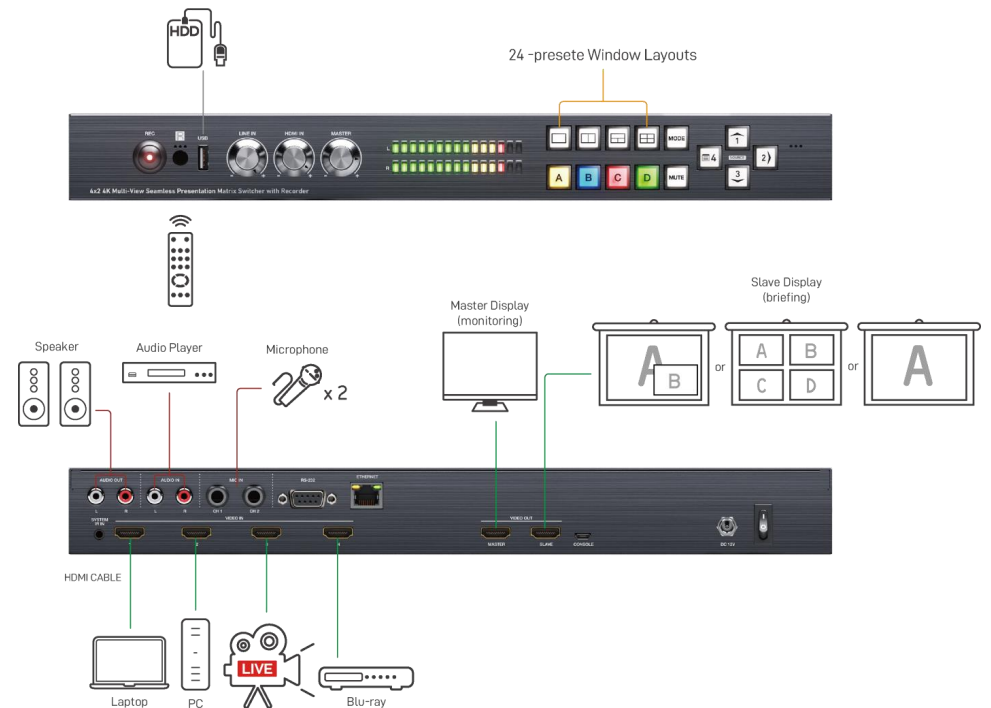


1. **Recording Button:** Start/Stop recording function
2. **IR SENSOR:** IR sensor for receiving the IR commands from IR remote
3. **USB Port for Recording:** Connect a USB flash drive
4. **LINE IN Volume Knob:** to adjust the line in sound level
5. **HDMI IN Volume Knob:** to adjust the HDMI in sound level
6. **MASTER Volume Knob:** to adjust the line in and HDMI in sound level together
7. **LED VU Meter Display:** Shows audio output activity
8. **Video Layout Selected Button:** Select full screen, dual-view, triple-view and quad-view mode
9. **Windows Selected Button:** Selected windows A-D
10. **Video Mode Switched Button:** Switch to extend mode or mirror mode
11. **Mute Button:** Turn off the audio or audio/video
12. **Arrow(up)/ Input 1 Button**
13. **Arrow(right)/ Input 2/ Enter/ Audio Source Button**
14. **Arrow(down)/ Input 3 Button**
15. **Arrow(left)/ Input 4/ OSD menu/ Lock Button**
16. **IR Receiver:** 3.5mm socket for plugging in the extension cable of IR receiver
17. **SOURCE 1-4:** HDMI inputs
18. **Stereo RCA(L/R) Out:** Analogue audio output
19. **Stereo RCA(L/R) In:** Analogue audio input
20. **Microphone Input:** CH1/CH2
21. **RS-232:** RS-232 control port
22. **Ethernet:** Ethernet control port
23. **Master HDMI OUT:** HDMI output
24. **Slave HDMI OUT:** HDMI output
25. **Micro-USB:** for F/W update
26. **+12V DC:** 12V DC power jack
27. **Power switch:** Power On/Off

Noted:

1. After recording, the device will create files which suffix is .mp4. Each .mp4 file name is saved as record_(serial number), serial number starts from 0, 1, 2, The file name serial number will re-start from 0, 1, 2, after product power cycle.
2. The date and time of all recording files will be saved as 2013/1/1 13:00.
3. The recording function supports storage device(USB flash drive) in the FAT32 and NTFS format.
4. The storage space will need about 6GB for recording one hour
5. The device can NOT record the HDCP content video. If any HDMI input with HDCP protection, it will show a message to indicate HDCP existence on the left-top side of windows about 3-5 seconds when device is recording.

CONNECTION DIAGRAM



OPERATION APPROACH

Method A: Front Panel Control



1. Recording Button

To start/stop record

- (1) LED Solid Red: The USB flash drive is connecting to the product
- (2) LED Slow Blink: The device is recording
- (3) LED Fast Blink: The device is in the process of saving file

2. Line In Volume Knob

To adjust the line in sound level

3. HDMI In Volume Knob

To adjust the HDMI in sound level

4. Master Volume Knob

To adjust the line in and HDMI in sound level together

5. LED VU Meter Display

To show audio output activity

6. Video Layout Selected Button

Select full screen, dual-view, triple-view and quad-view mode. User can switch default layout mode by repressing video layout button.

Button	Layout Mode	Default layout mode
	Full screen mode	
	Dual-view mode	
	Triple-view mode	
	Quad-view mode	

7. Windows Selected Button

User can assign arbitrary video source to every display windows. Firstly, press one of the windows A-D buttons. Next, press one of input 1-4 buttons to select the source of selected windows.

- (1) Windows A (Yellow):
- (2) Windows B (Blue):
- (3) Windows C (Red):
- (4) Windows D (Green):

8. Video Mode Switched Button

To switch extend mode or mirror mode

- (1) Extend mode: the windows on master and slave output are different. The extend mode function must be on dual-view, triple-view and quad-view layout mode.
 - On dual-view mode: press "MODE" button to enter extend mode. Select one of windows A-B to show on slave output and then press "MODE" button to confirm. The other will show on master output.
 - On triple-view mode: press "MODE" button to enter extend mode. Select one or two of windows A-C to show on slave output and then press "MODE" button to confirm. The others will show on master output.
 - On quad-view mode: press "MODE" button to enter extend mode. Select two of windows A-D to show on slave output and then press "MODE" button to confirm. The others will show on master output.
 - Under extend mode, the button LED of "MODE" and "selected layout" button will be solid red.
 - Press "MODE" button for 3 seconds to exit extend mode and enter mirror mode
- (2) Mirror mode: the windows on master and slave output are the same. User can press video layout selected button to change video layout.

9. Mute Button

Turn off the audio or audio/video

- (1) Press button to turn off audio and button LED will blink yellow light
- (2) Press button for 3 seconds to turn off audio/video and button LED will blink red light
- (3) On (1) or (2) state, user can press button to unmute audio or audio/video.

10. Arrow(up)/ Input 1 Button

- (1) Arrow(up) function is for OSD menu
- (2) Input 1 function is for selected source

11. Arrow(right)/ Input 2/ Enter/ Audio Source Button

- (1) Arrow(right) function is for OSD menu
- (2) Input 2 function is for selected source
- (3) Enter function is for OSD menu
- (4) Audio source function

To select the audio source of the master & slave output. Firstly, press audio source button and the arrow(up), arrow(down) and arrow(right) buttons will show respectively red(master output), blue(slave output), and purple(master & slave output) light. Select one of them and the selected button will blink. Next, press one of the windows A-D buttons and the source's audio of selected window will be on selected output.

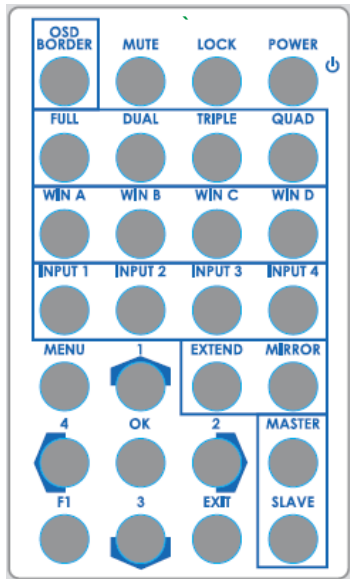
12. Arrow(down)/ Input 3 Button

- (1) Arrow(down) function is for OSD menu
- (2) Input 3 function is for selected source

13. Arrow(left)/ Input 4/ OSD menu/ Lock Button

- (1) Arrow(left) function is for OSD menu
- (2) Input 4 function is for selected source
- (3) OSD menu: press this button to enter OSD menu.
- (4) Lock/unlock function: press this button for 3 seconds to lock/unlock front panel. Under lock status, the button LED will blink red light.

Method B: IR Remote Control



Button	Function
POWER	Power on/off the device
LOCK	Lock/unlock the device
MUTE	Turn off the audio
OSD Border	Turn on/off border/label
QUAD	Fast switch to quad-view mode
TRIPLE	Fast switch to triple-view mode
DUAL	Fast switch to dual-view mode
FULL	Fast switch to full screen mode
WIN D	Select windows D
WIN C	Select windows C
WIN B	Select windows B
WIN A	Select windows A
Input 4	Select input 4 to be the input source
Input 3	Select input 3 to be the input source
Input 2	Select input 2 to be the input source
Input 1	Select input 1 to be the input source
MIRROR	Switch to mirror mode
EXTEND	Switch to extend mode
▲	Arrow button (up)
MENU	OSD menu
MASTER	Select audio source of master output
▶	Arrow button (right)
OK	Trigger the setting
◀	Arrow button (left)
Slave	Select audio source of slave output
EXIT	Exit from the menus
▼	Arrow button (down)
F1	Start/Stop recording function

Method C: Software Control through RS-232 / Ethernet port

1. System Requirement

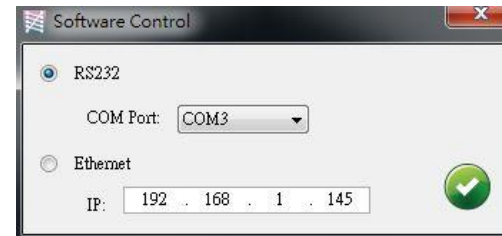
- (1) OS information: MS Win XP/7/8/10
- (2) Baud rates: 115200
- (3) Software size: 10 MB
- (4) Minimum RAM requirement: 256MB

2. Control interface

When clicking on the executable file, the following dialog will pop-up (under Microsoft Windows 7, please run as administrator)

RS-232 serial Mode: Use RS-232 to connect the port on device and computer. Select correct COM port and click the OK button.

Ethernet Mode: Enter the IP address of the device and click the OK button.



After the software control setting is accomplished, it will enter directly to control interface.

Control Interface



1. Connection Status:

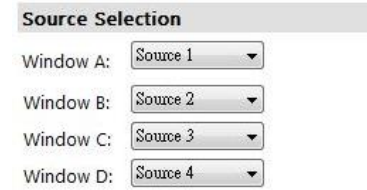
Show the connect information and status. If users use RS-232 serial Mode to connect device, the graph is . In contrast, the graph of Ethernet is . In addition, if users would link to change the control method, users can click on the button to change.

2. Output Settings

In this section, users can set up the coordinate for inputs, the source of window A-D, output resolution, layout setting (PAP or full screen) and switch mode.

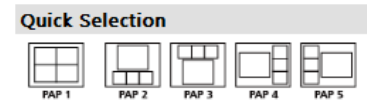
(1) Source Selection

For each display window, you can assign arbitrary video source here.

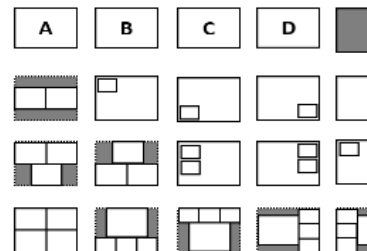


(2) Quick Selection

We provide 19 default modes and 4 switching effects (Seamless, Fade in/out, Dissolve, Wipe) for user to select.



Layout Selection



Switch Mode



(3) Output Resolution

Set the output resolution & color space.

Output Setting

Output Resolution: 3840 x 2160 @60Hz

Output ColorSpace: YCbCr 4:4:4

(4) Display Panel

In the left part of control interface, user can customize the display mode thru control. The different colors of frame represent the different input windows. The information of coordinate shows the position of input source screen. In addition, we provide display ratio for users to set the display panel sizes. If you want to change window layer, please drag window icon in Layer Control section.

Display Ratio: 14%

Coordination in input

Horizontal: 0 to 1920

Vertical: 0 to 1080

Layer Control

Top: A, B, C, D

Bottom: D

3. Advanced Setting

UaLock

IP CONFIGURE INFO REFRESH

CONNECTED

EDID Extend

Label Text

Windows: Window A, Window B, Window C, Window D

Input Source: 1 Input 1, 2 Input 2, 3 Input 3, 4 Input 4

Sound

Master: Source 1

Slave: Source 1

Meter Range: Narrow (0dB to -20dB)

Window Label

Selected Window: Window A

Window label Border

Source label Border Tally

Background

Background: Disable

Burn OSD Splash

Background 1

Width: 0

Height: 0

Status:

(1) Label Text

In here, users can input the texts to be shown with the video.

Label Text

Windows: Window A, Window B, Window C, Window D

Input Source: 1 Input 1, 2 Input 2, 3 Input 3, 4 Input 4

(2) Sound

To set up the audio source of the master & slave output and the meter range of front panel.

Sound

Master: Source 1

Slave: Source 1

Meter Range: Narrow (0dB to -20dB)

(3) Window Label

In this function, users can determine if the window's label/border is turned on or off.



Window Label

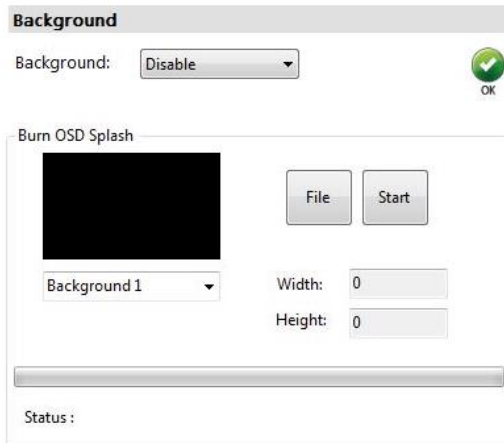
Selected Window: Window A

Window label Border

Source label Border Tally

(4) Background (This model do NOT support this function)

To set up the background of window. We provide 4 empty space for user to upload background pictures. User can click **File** button to load the picture which you want to use and click **Start** button to write this picture into the device.



Background

Background: Disable

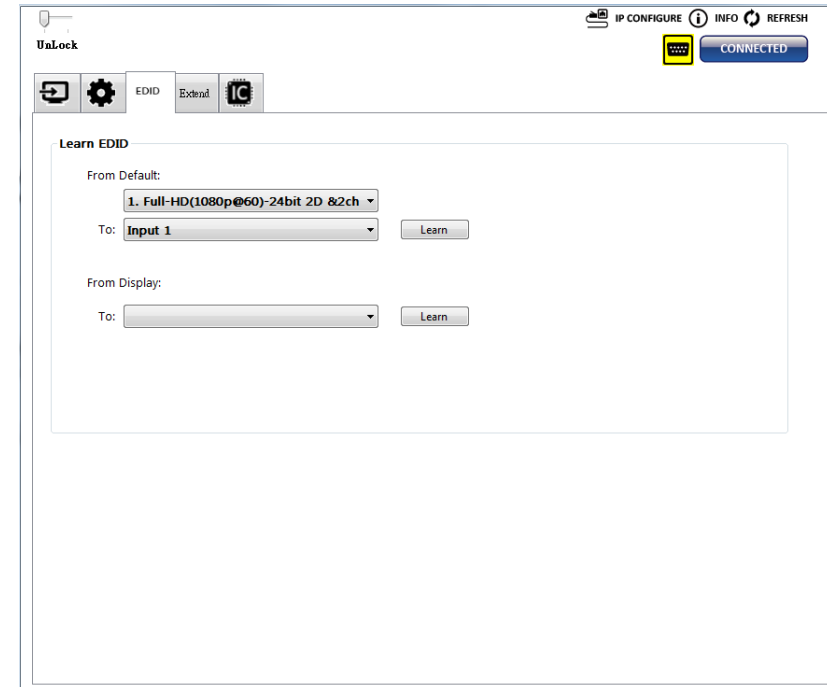
Burn OSD Splash

File Start

Background 1 Width: 0 Height: 0

Status :

4. EDID (Extended display identification data)



UaLock IP CONFIGURE INFO REFRESH

EDID Extend

Learn EDID

From Default:

1. Full-HD(1080p@60)-24bit 2D &2ch

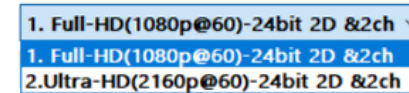
To: Input 1 Learn

From Display:

To: Learn

(1) Learn EDID from Default

- Select Default EDID

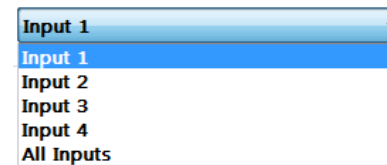


1. Full-HD(1080p@60)-24bit 2D &2ch

1. Full-HD(1080p@60)-24bit 2D &2ch

2.Ultra-HD(2160p@60)-24bit 2D &2ch

- Select Input



Input 1

Input 1

Input 2

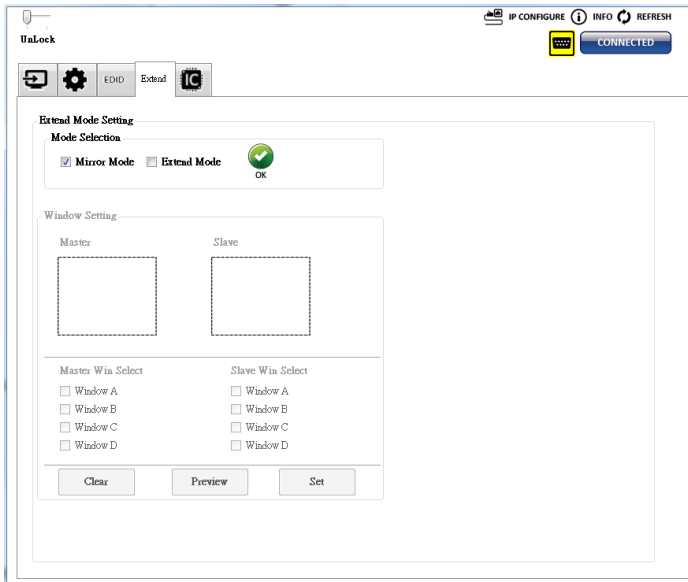
Input 3

Input 4

All Inputs

- Click **Learn** button to learn default EDID.

5. Extend Mode Setting



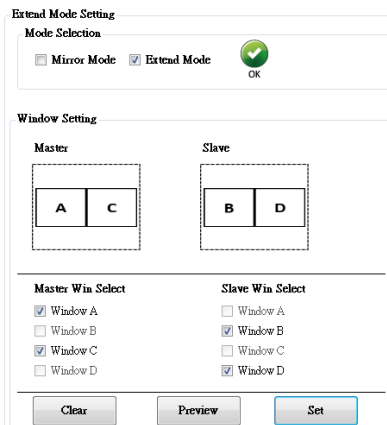
(1) Mode Selection

To select mirror mode or extend mode

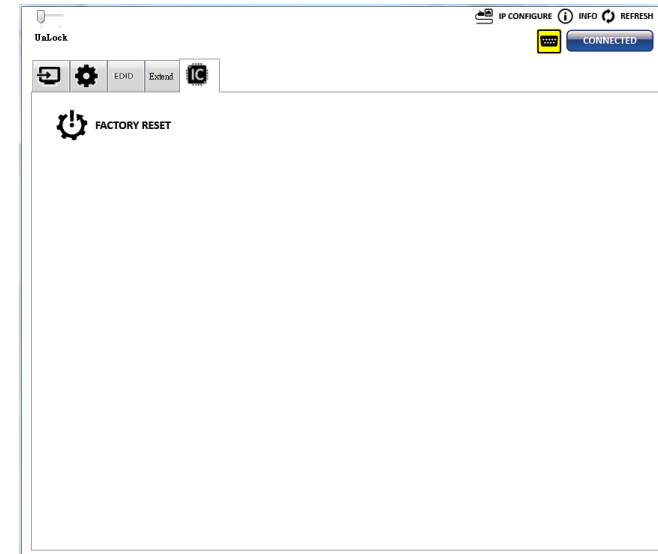


(2) Window setting


On extend mode, users can select windows A-D to show on master & slave output. (The extend mode function must be on dual-view, triple-view and quad-view layout mode.)

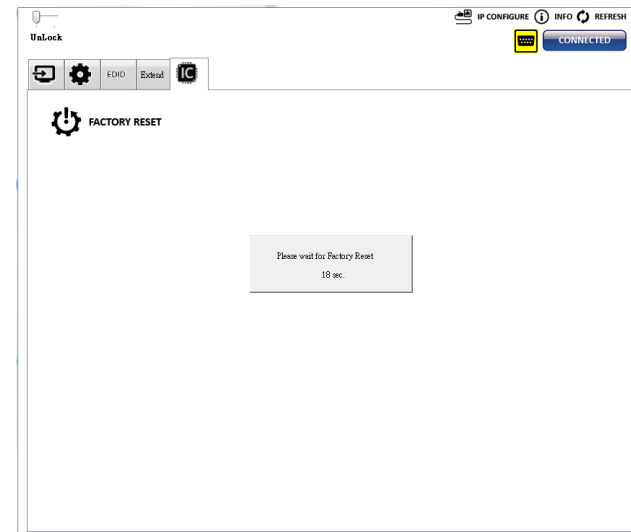


6. System Setting





(1) Factory Reset



- Click  **FACTORY RESET** button to do factory default reset.
- The process of default reset will take about 20 seconds.



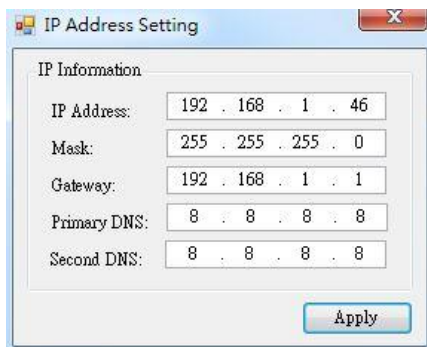
7. Lock/unlock function

To lock  or unlock  front panel & software
UnLock **Lock**

8. IP Configure

User also can use the WEB to control the device. Firstly, user should click on the  **IP CONFIGURE** set. Next, users can setup the Ethernet for the unit as below example shows. After the step of IP configuration, please click the  button.

The default IP: **192.168.1.46**



IP Information:	
IP Address:	192 . 168 . 1 . 46
Mask:	255 . 255 . 255 . 0
Gateway:	192 . 168 . 1 . 1
Primary DNS:	8 . 8 . 8 . 8
Second DNS:	8 . 8 . 8 . 8

Apply

9. Info

Read the Software and firmware version.



Version	
Software Version:	Ver 1.0
Firmware Correct Version - 1:	Ver 1.06

Status	
Firmware Device Version - 1:	Ver 1.06

***Software/firmware information subject to change without notification.**

10. Refresh

This function can get all information of the device and update this software state.

WARRANTY

The SELLER warrants the **VP-5004M22-R 4x2 4K Multi-View Seamless Presentation Matrix Switcher with Recorder** free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. 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. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without 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 sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables and power adapters are limited to a 30 day warranty and must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. **Also, the technical information contained herein regarding the VP-5004M22-R features and specifications is subject to change without further notice.**