VW-1404ZH-G

4K 1x4 Video Wall Processor

User Manual

rev: 180919
Made in Taiwan

⚠️
Safety and Notice

The **VW-1404ZH-G** 4K 1x4 Video Wall Processor has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment, the **VW-1404ZH-G** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

● Follow all instructions and warnings marked on this unit.

● Do not attempt to service this unit yourself, except where explained in this manual.

● Provide proper ventilation and air circulation and do not use near water.

● Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.

● Use only the power adapter and power cords and connection cables designed for this unit.

● Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

ESD CAUTION

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INTRODUCTION

The **VW-1404ZH-G** **4K 1x4 Video Wall Processor** is a powerful, cost effective, and fully real time data/video processor for multiple flat panel displays or projectors. Virtually any setups for the display layout can be possible by the control software. The **VW-1404ZH-G** allows user to input HDMI/ DisplayPort up to 4K2K@60Hz 4:4:4. And the embedded scaler converts signals from HDMI/ DisplayPort source to match the native resolution of monitors, flat panel displays, projectors as well as user-selectable output settings up to WUXGA (1920x1200). The **VW-1404ZH-G** sends the resulting processed video thru HDMI interface to the connected monitors/projectors based on the setup display layout. The layout can be readily modified to fit your applications in digital signage, broadcasting, education and surveillance systems and optimize visual effects.

FEATURES

- Four HDMI outputs from 640x480 to 1920x1200
- Supports 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
- Several image parameters and layouts can be saved in computers and can be loaded for later use
- Firmware upgradable for new features and technology enhancements
- The video wall processor can control by USB, push button, Ethernet, IR remote control and cloud control*
- Resize, position, zoom for each HDMI output video
- User-selectable output settings, up to 1920x1200
- Supports remote control to switch 1x1, 2x2, 1x3 rotate, and 1x4 rotate mode
- Supports independent input rotation at the resolution up to 1080p
- 4K2K60 (YUV 4:4:4) can be divided and displayed onto four 1080p60 TV (2x2 layout only)
- Supports individual propagation delay on each display to have the best visual perception

> ℹ️ *Cloud support is thru an encrypted communication to provide the best private protection when using VW-1404ZH

PACKAGE CONTENTS

- 1x VW-1404ZH-G
- 1x User Manual
- 1x 1U rack-mounting ear set
- 1x 12V power supply
- 1x Installation software CD
- 1x IR Remote control (15 keys)

SPECIFICATIONS

| Model Name		VW-1404ZH-G
Technical		
Role of usage		Video Wall Processor
HDCP compliance		Yes
Video bandwidth		Input – Single link 600MHz [18Gbps] Output –Single-link 225MHz [6.75Gbps]
Video support		Input - 4K2K@60 (4:2:2 8bits) / 4K2K@60 (4:4:4 8bits) 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 x405 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]

VW-1404ZH-G as master

1. Connect the sources to HDMI / DisplayPort Input of the VW-1404ZH-G.

2. Connect all displays to HDMI Outputs of the VW-1404ZH-G.

3. Connect the +12V DC power supply to the VW-1404ZH-G.

CONNECTION DIAGRAM
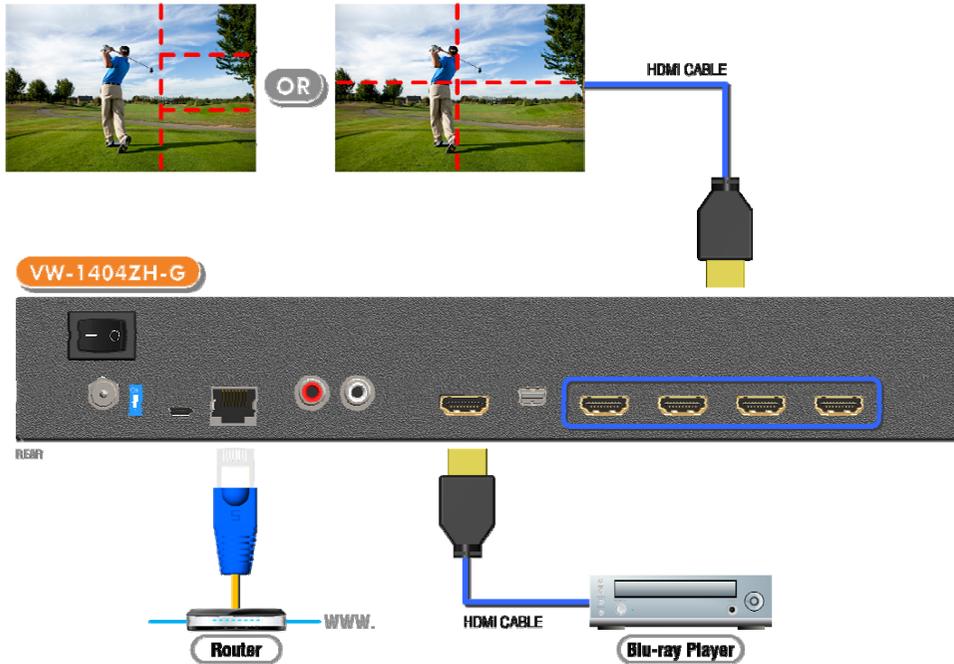
Front Panel

1. LED indicator:

PWR – Power indicator LED

LOCK – When device status is locked, it will shine

4K – If source resolution is 4K, the LED indicator will shine

Source – When source from HDMI, the LED indicator will shine

         Source 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
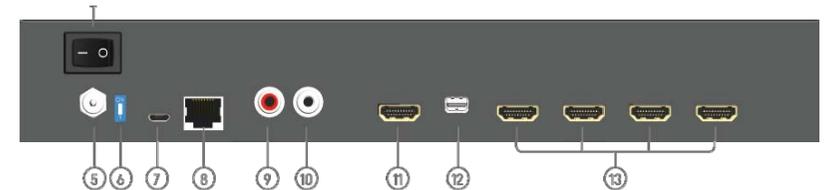
4. Power Switch: Power ON/OFF switch

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

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 8bits)	1280x768@60Hz
4K2K@60Hz (4:4:4 8bits)	1280x960@60Hz
	1280x1024@60Hz
	1366x768@60Hz
	1440x900@60Hz
	1680x1050@60Hz
	1920x1080@60Hz
	1920x1200@60Hz
	1600x1200@60Hz

Method A: IR Remote Control
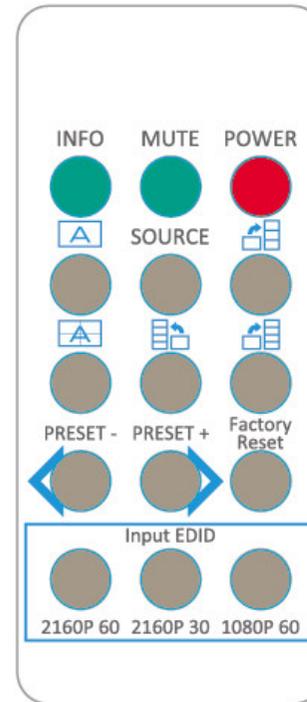
| Button	Function
INFO	Display device status (IN/OUT Resolution, EDID, Layout)
MUTE	Turn off the stereo audio output
POWER	Power ON/OFF the video wall processor
⃞A	Fast switch to VW1x1 (Full Screen)
SOURCE	Source setting (HDMI or DisplayPort)
⃞	Fast switch to VW3x1 (+90°)
⃞A	Fast switch to VW2x2
⃞	Fast 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

Method B: Software Operation

System Requirement and Precautions

1. Whenever power off VW-1404ZH-G, please stay unpowered at least 5 to 10 seconds to allow power capacitors to discharge.
2. The VW-1404ZH-G provides software control program which runs under Microsoft Windows 7, 8.1, 10 through the interface of USB virtual com control.
3. Before you click on the icon of the software, make sure you have secured the connection between your computer USB port and the VW-1404ZH-G.

Start the software control program

Executing the control software, the following dialog will pop up. It has two ways to control the VW-1404ZH-G device (under Microsoft Windows 7, please run as administrator).

1. USB Connection: Use USB to connect the port on device and computer. Select correct virtual COM port and click the OK button.
2. Ethernet Connection: Enter the device IP address and click the OK button.
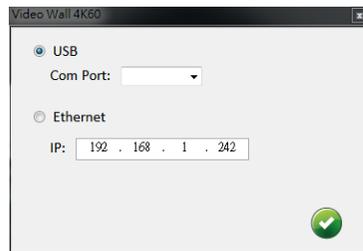
After the software control setting is accomplished, it will enter directly to the control interface.
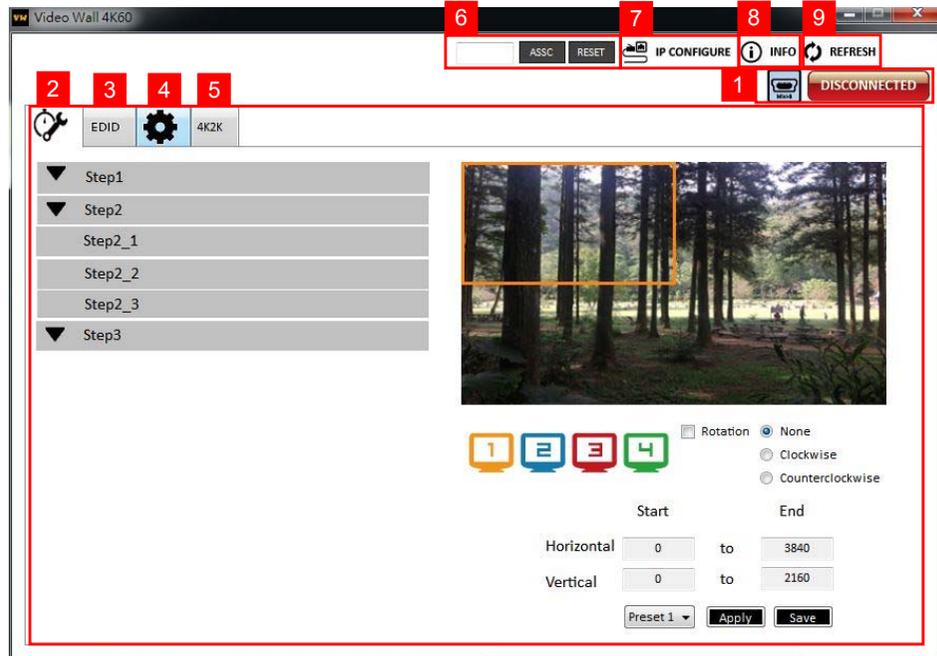
Control Interface

1. Connection Status:
   Show the connect information and status. If you use USB control Mode to connect device, the graph is . For IP control, the graph of Ethernet is .

2. Quick Selection: ***Quick Selection function is not available when the input resolution is 4K2K@60Hz**
   In this part, you can set up the screen resolution, screen coordinate and split screen. Firstly, you should select the TV picture and you can set up the corresponding function. The different colors of frame represent the different output TVs. The information of coordinate shows the position of output TV. We also provides 8 preset spaces to save the frequently used scenarios into the device.
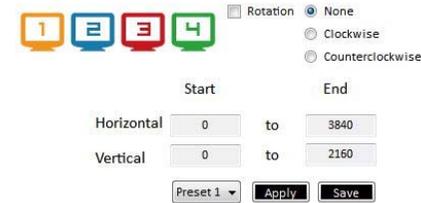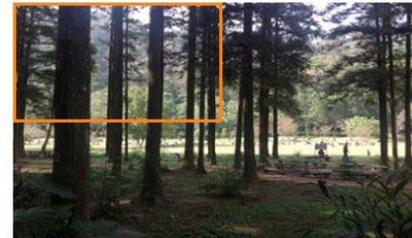
➢ Rotation: ***only at input is 1080p resolution**
   Use the software for independent rotation for each input. You can select clockwise or counterclockwise to rotate the screen.

➢ Output Selection and Resolution:

(1) Step 1: check input resolution and choose output resolution

Set the output resolution. You can choose the design display icon to select the output port and setup resolution. When setting the different resolution, the coordinate of output will also be changed. In this part, you also can select input source (HDMI or DisplayPort) or lock/unlock the device.

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

*If you lock the device, only factory reset function can work.
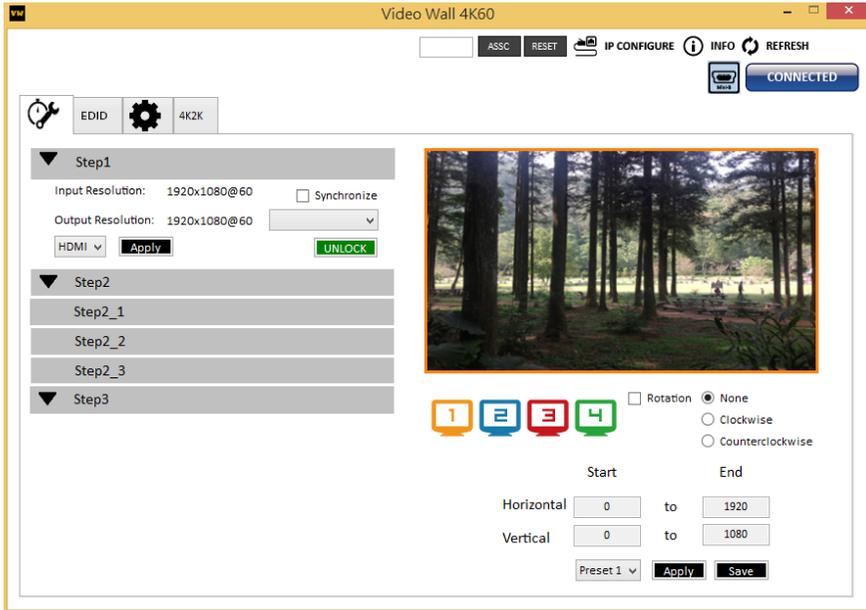
(2) Step 2: output setting

In here, it has three modes can set up the output TV resolution, position, size and split screen. The details of different mode are described in step 2-1, 2-2 and 2-3.

*Note that when you want to change another mode, you need to back to the step 2 to change.

➢ Quick Selection

➢ From file

➢ Custom define

(3) Step 2-1: quick selection
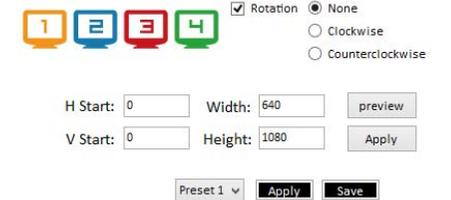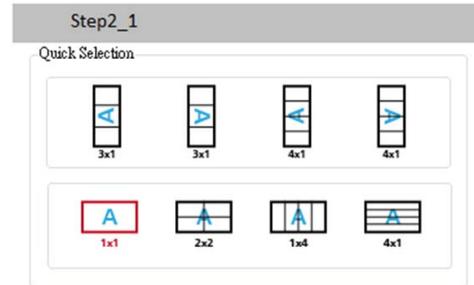
If you choose the Quick Selection mode in step 2, this window will automatically pop up. In this mode, you can select default screen split and rotate screen (rotate screen only at 1080p resolution).

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

➢ 4x1: The mode will divide the screen into 4 parts and rotate the figure.

When select the 3x1 or 4x1 mode, the picture in the right part of 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 coordinate.

4k2k60 (YUV 4:4:4) only can be displayed as an 2x2 layout (1080p60 for each output)

(4) Step 2-2: configuration from file

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

(5) Step 2-3: custom define

In Custom define mode, you can define how to cut in both directions and the part you want to show on output TV. If you want to understand or estimate which part you may select, you can select the Grid button to show grid on the graph. After the setting, please click the **Apply** button. Besides, you also can click the **SAVE AS** button to save the configuration for future usage. You can adjust the output position by setting coordinates.

(6) Step 3: adjust image

➢ 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 arbitrarily move the image on each screen in horizontal direction or vertical direction. Move one pixel at a time.

3. EDID (Extended Display Identification Data)

(1) Learn EDID from the default

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

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

(2) Learn EDID from Display

➢ Select the Output.

➢ Click **Learn** button to learn display EDID.

(3) Learn EDID from File

➢ Click **Load** button to select the EDID file and write it into input.

(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 Setting
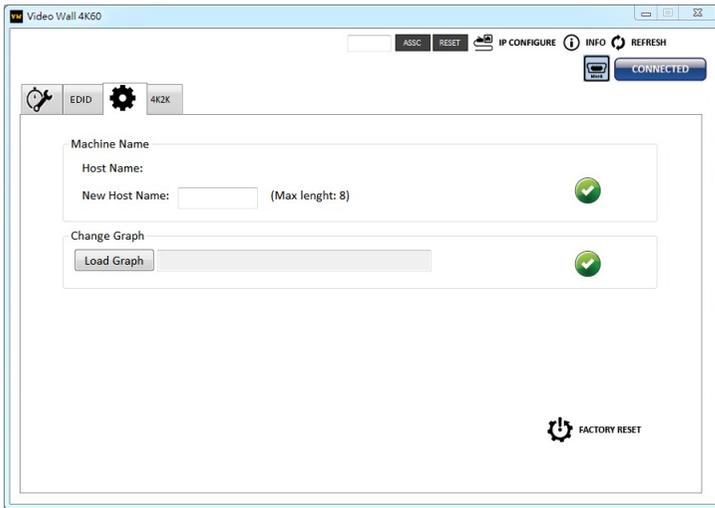
(1) Machine Name

You can set up your machine name in here. Please take a closer look at the length of string (Max Length: 8).

(2) Change Graph

You can change the default graph (splash screen) on this machine.
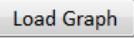
➢ Click **Load Graph** button to select the graph.

➢ After loading the graph step, please click ✓ button to write this graph into device.

(3) Factory Reset

➢ Click **FACTORY RESET** button to do factory default reset.

➢ This default reset process will take about 5 seconds.

➢ After pop-up a dialog indicates complete, please restart this machine.
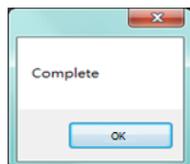
5. 4K2K Setting

When input is 4K2K@60Hz Resolution, the output display will be forced to 2x2 layout (other layout cannot set) and only can set up the output position. We also provides 8 preset spaces to save the frequently used scenarios into the device.
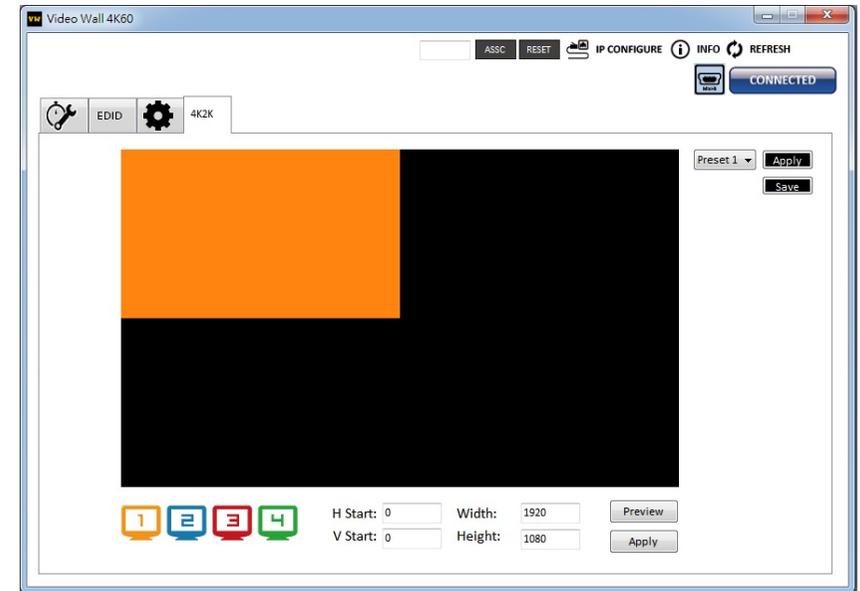
6. Cloud setting-Association Code

Clicking **ASSC** button to get an "association code". The device can use this code to pair with cloud server. After a successful pairing, you can reset cloud.

*Please pair device to cloud within 2 minutes when you get an association code.

7. IP Configure

You also can use the Ethernet to control software program. First, you should click the **IP CONFIGURE** button to setup network set. Next, you can read the Ethernet setting from device and manually set to device or click the DHCP button to automatically get the IP address. After the step of IP configuration, please restart the machine.
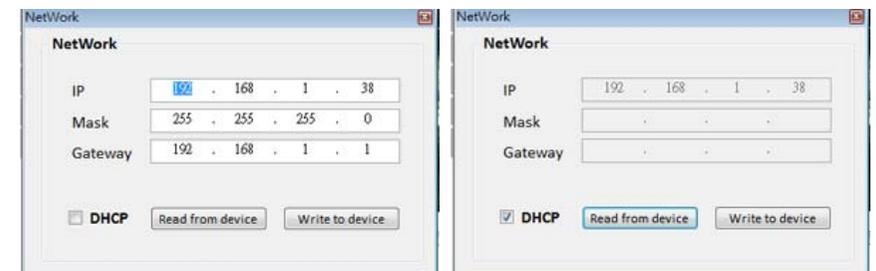
8. Info

Read the software and firmware version.
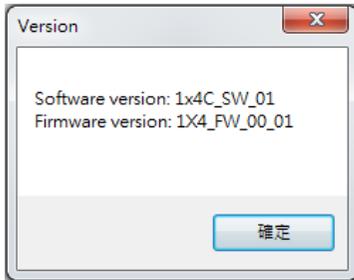
9. Refresh

This function not only can refresh the information of setting but also can reconnect this device. You can click ⟳ **REFRESH** button to update the control connection. A "ReConnectForm" window will pop up for you to select the approach to connect this device.
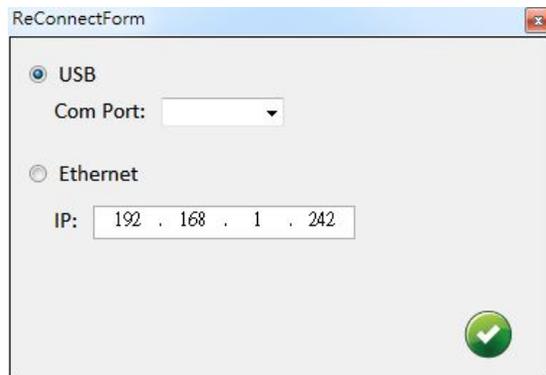
Method C: Firmware Update through mini-USB Port

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

Method D: Cloud Control (IntriCloud) through Ethernet Port

Create Account

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

1. Access IntriCloud (http://www.intri.cloud) and click "Create new account".
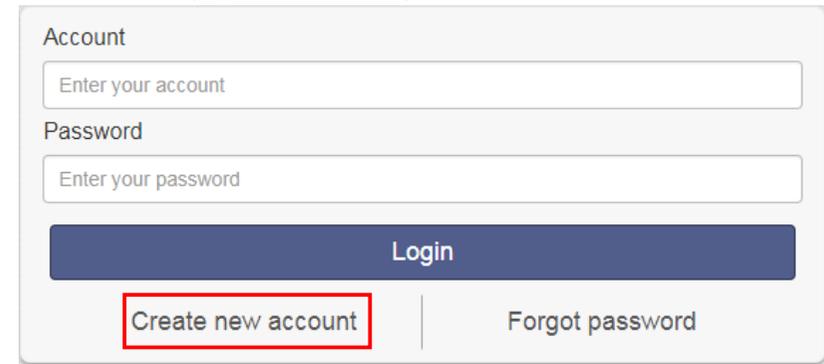
2. The Registration page will pop up and please fill in your email and password information to create your private account.
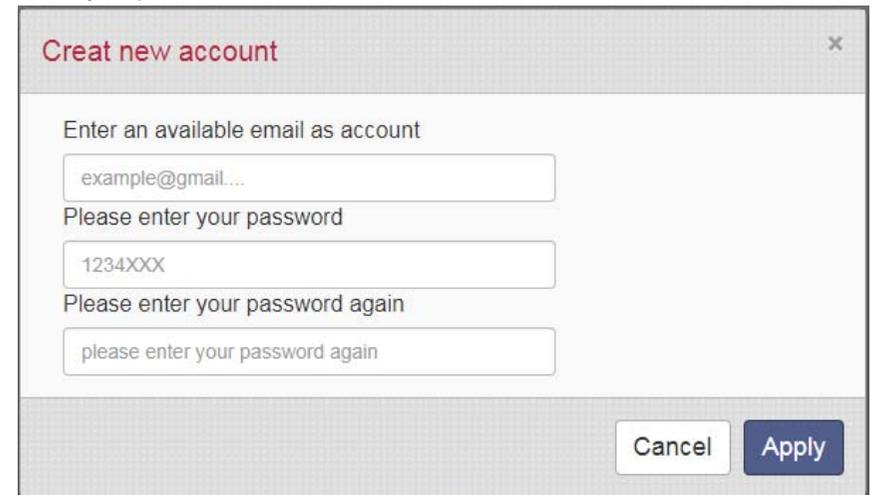
Add Device to IntriCloud

1. Firstly, please make sure the device is connected to the Ethernet. Then please executing the software with device to get the association code (Note: the status of software is connected).
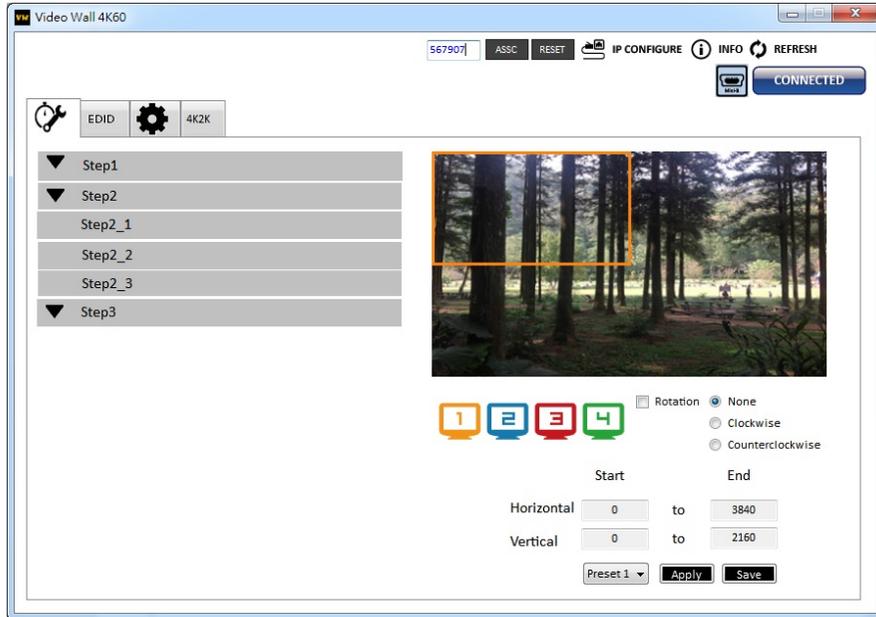
2. Access IntriCloud (http://www.intri.cloud), and then log in your account on the right top corner. Click **Add device** to add the device which you just got its association code.
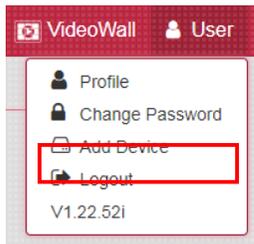
3. Enter the Installer Email for online support in the future, and the Association Code for pairing with your device.
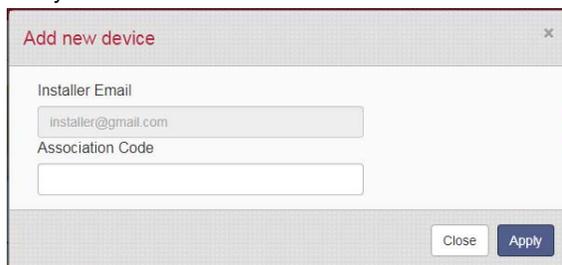
4. After adding the device, the list of device related to your account will show on the right top corner. You can click the button to switch device for control.

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.

The method on doing EDID learning please refer to the software operation section.

There are **five embedded default EDIDs** as below,

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

2. HD(1080i 720p@60)-24bit 2D & 2ch

3. 4K2K@60-24bit 2D & 2ch

4. 4K2K@30-3D-PCM2CH

5. 4K2K@60-420-3D-PCM2CH(2ch)

The SELLER warrants the **VW-1404ZH-G** **4K 1x4 Video Wall Processor** is 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 VW-1404ZH-G features and specifications is subject to change without further notice.**