



HDMI 2.0 4-Display Video Wall Processor

User Manual



04-1141A

P/N: CE-H23J11-S1



Safety and Notice

The **HDMI 2.0 4-Display 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 **HDMI 2.0 4-Display Video Wall Processor** 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



Thank You
for your purchase!

Features

- DisplayPort 1.2a & HDMI 2.0a compliant
- HDCP compliant
- Four HDMI outputs from 640x480 to 1920x1200
- Supports HDMI and DisplayPort input from 640x480 to 4K2K@60 (YUV 4:4:4), interlaced or progressive
- 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
- Cloud support is thru an encrypted communication to provide the best private protection when using device
- 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

Package contents

- HDMI 2.0 4-Display Video Wall Processor
- Power adapter DC 12V / 1A
- IR Remote control
- Rack-mounting ear set
- User Manual

SPECIFICATIONS

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	PCM 2ch	
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 / 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 x 405mm [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]	

Layout

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

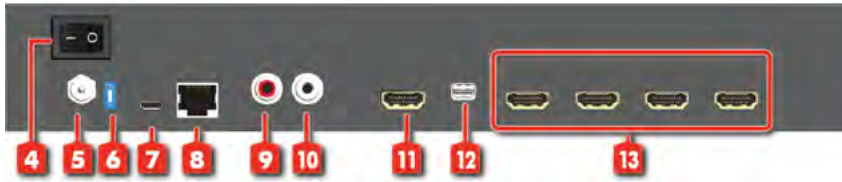
Button 4 (+90°) – Fast switch to 3x1 90° and 4x1 90°

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: On for normal use
Off for F/W upgrade

7. USB virtual COM

8. Ethernet: Ethernet control port

9. Stereo audio output - L

10. Stereo audio output - R

11. HDMI INPUT

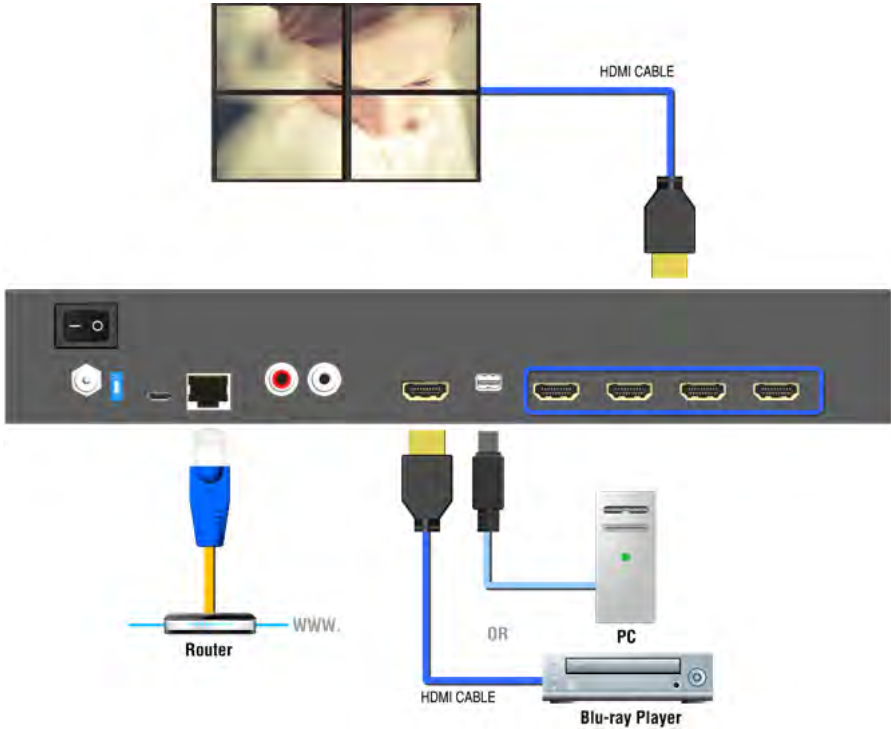
12. DisplayPort INPUT

13. Output 1-4: HDMI outputs

SUPPORTED RESOLUTION

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
	1600x1200@60Hz
	1680x1050@60Hz
	1920x1080@60Hz
	1920x1200@60Hz

Application



Operation Approach

Method A: Software Operation

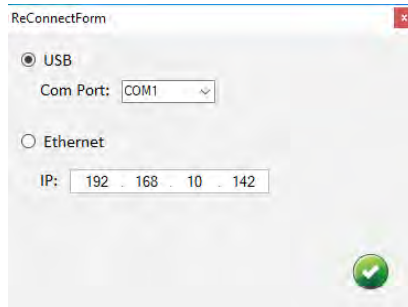
System Requirement and Precautions

1. Whenever power off HDMI 2.0 4-Display Video Wall Processor, please stay unpowered at least 5 to 10 seconds to allow power capacitors to discharge.
2. The HDMI 2.0 4-Display Video Wall Processor 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 HDMI 2.0 4-Display Video Wall Processor.

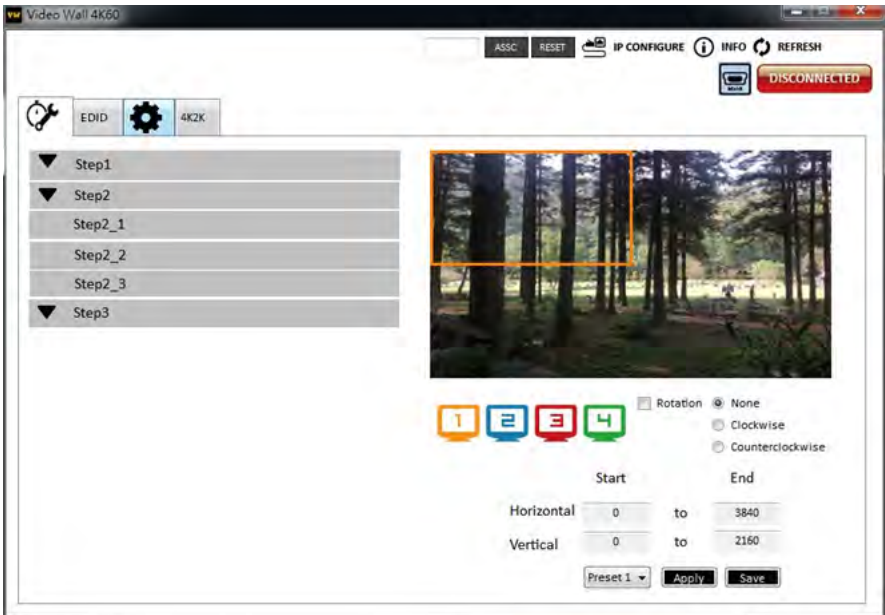
Start the software control program

Executing the control software, the following dialog will pop up. It has two ways to control the HDMI 2.0 4-Display Video Wall Processor 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.



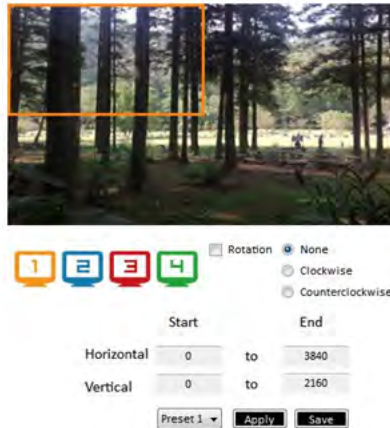
1. Connection Status:

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.

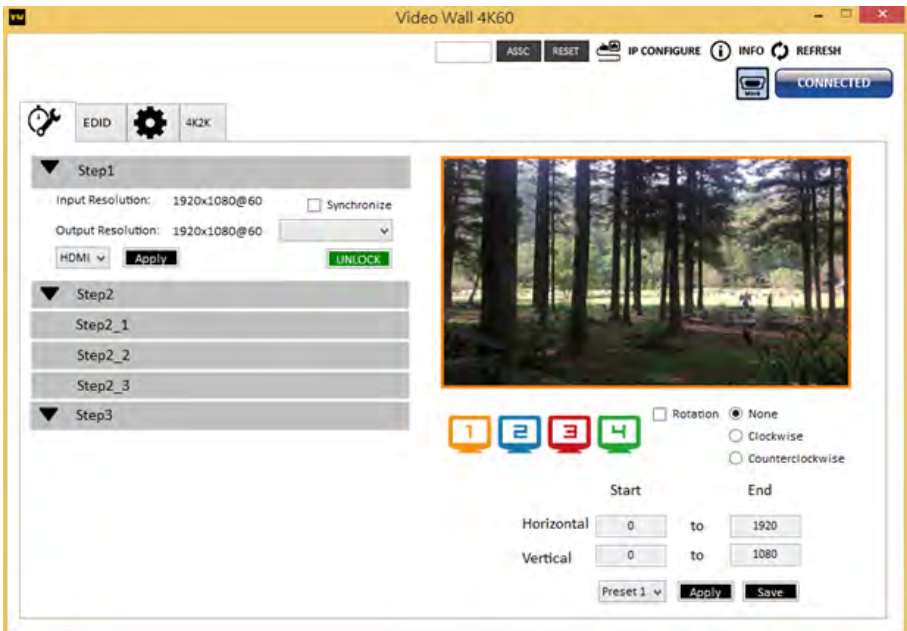
Output Selection and Resolution:

(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 need to be set up at 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

It has three modes to 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 to another mode, you need to go back to the step 2.

1.Quick Selection 2.From file 3.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.

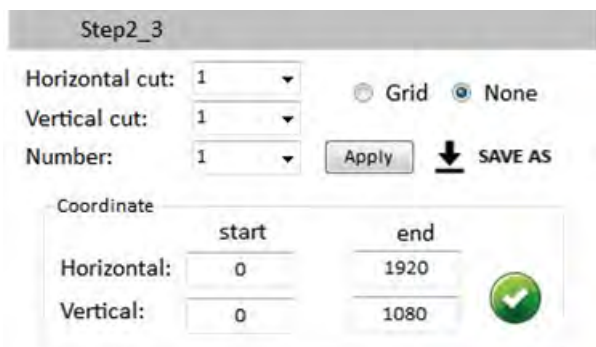
***4k2k60 (YUV 4:4:4) only can be displayed as an 2x2 layout (1080p60 for each output)**

(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 know or estimate which parts you select, you can click the Grid button to show grid on the graph. After the setting, please click the "SAVE AS" 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.

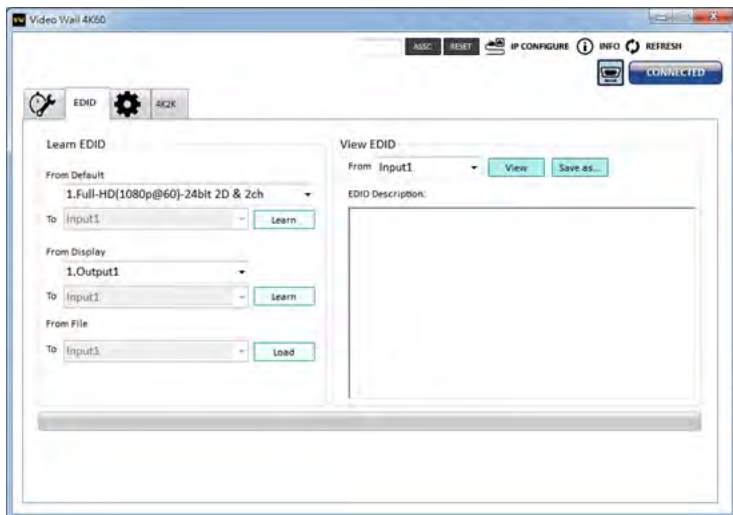
(6) Step 3: adjust image



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)

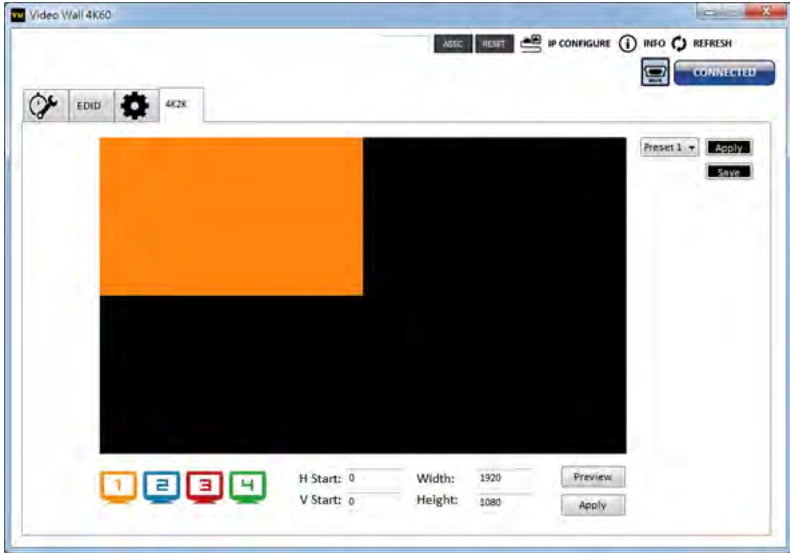


4. Advanced Setting



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 provide 8 preset spaces to save the frequently used scenarios into the device.



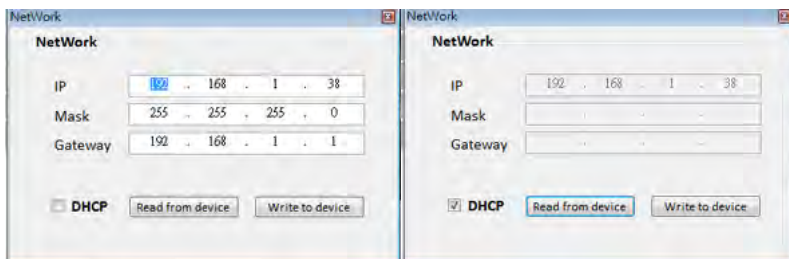
6. Cloud setting-Association Code

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

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

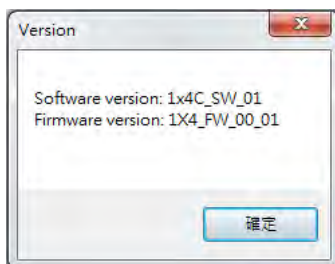
7. IP Configure

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



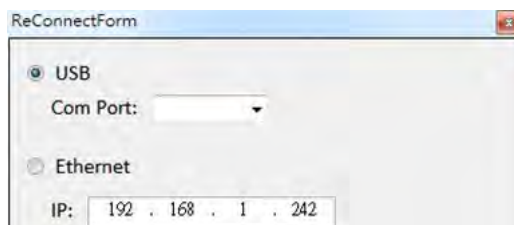
8. Info

Read the software and firmware version.



9. Refresh

This function can not only refresh the information of the setting but also 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.



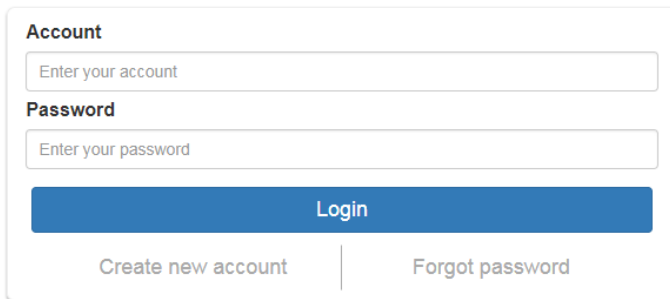
Method B: Firmware Update through mini-USB Port

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 C: Control through "intriCloud" on Internet Create Account

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

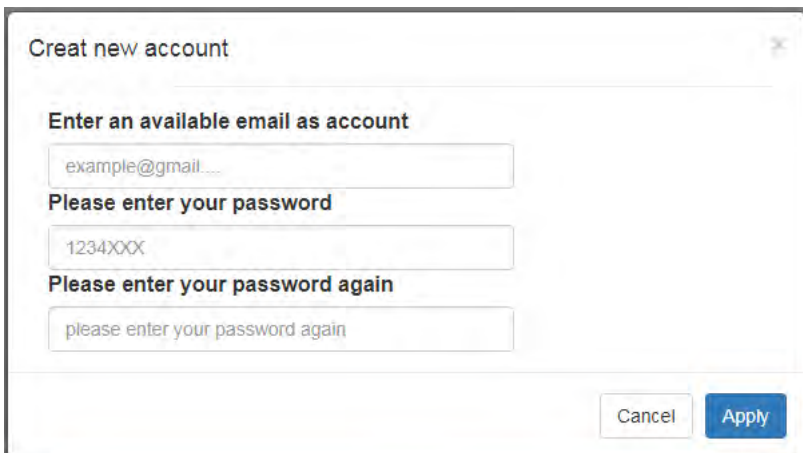
1. Access intriCloud (www.intri.cloud) and click "Create new account".



The screenshot shows a login form with the following elements:

- Account** label above a text input field containing the placeholder "Enter your account".
- Password** label above a text input field containing the placeholder "Enter your password".
- A blue **Login** button.
- Two links at the bottom: "Create new account" and "Forgot password".

2. The Registration page will pop up and please fill in your email and password information to create your private account.

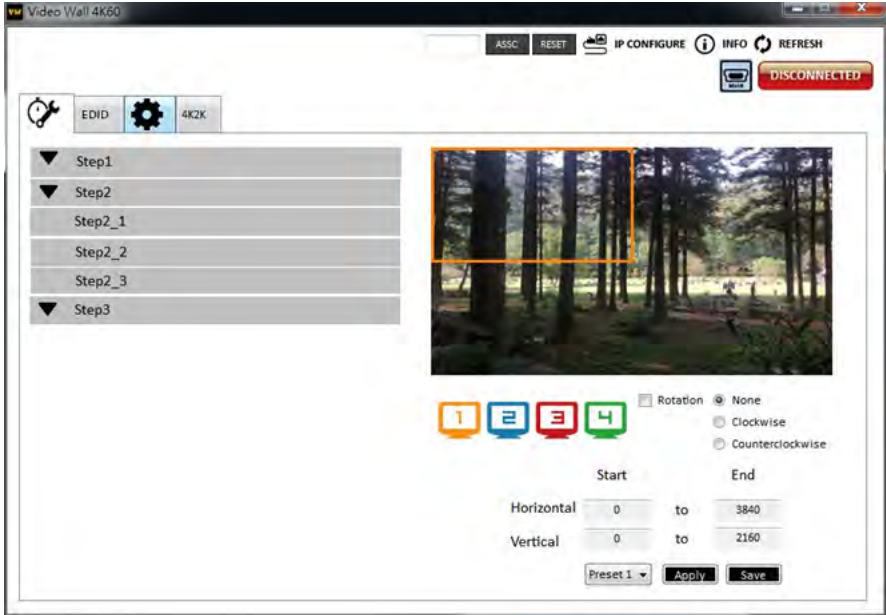


The screenshot shows a registration form titled "Creat new account" with the following elements:

- A header "Creat new account" with a close button (X) on the right.
- A label "Enter an available email as account" above a text input field containing the placeholder "example@gmail...".
- A label "Please enter your password" above a text input field containing the placeholder "1234XXX".
- A label "Please enter your password again" above a text input field containing the placeholder "please enter your password again".
- Two buttons at the bottom right: "Cancel" and "Apply".

Add Device to intriCloud

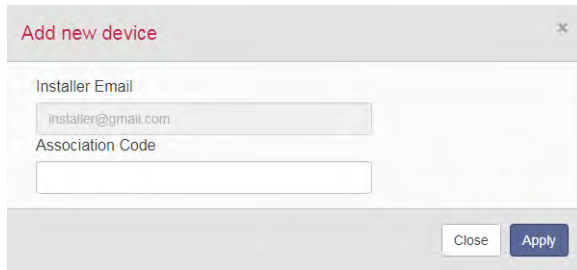
1. Firstly, please make sure the device is connected to the Ethernet. Then please execute the software from the device to get the association code (Note: the status of software is connected).



2. Access intriCloud (www.intri.cloud) or download IntriCloud APP, 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.



The image shows a dialog box titled "Add new device" with a close button (X) in the top right corner. It contains two input fields: "Installer Email" with the text "installer@gmail.com" and "Association Code" which is currently empty. At the bottom right, there are two buttons: "Close" and "Apply".

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.



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 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)

Support

For more info or tech support
<http://www.siig.com/support>

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