

MuxLab

PRODIGITAL™

4X2 HDMI 2.0 Quad-View Processor

Operation Manual

500446



SAFETY PRECAUTIONS

To insure the best performance from the product, please read all instructions carefully before using the device. Save this manual for future reference.

- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burns.
- Do not open or remove the housing of the device as you may be exposed to dangerous voltage or other hazards.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture and do not install this product near water. Keep the product away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- Install the device in a place with adequate ventilation to avoid damage caused by overheat.
- Unplug the power when left unused for a long period of time.
- Information on disposal of devices: do not burn or mix with general household waste, please treat them as normal electrical waste.

NOTICE: Please read this manual carefully before using this product.

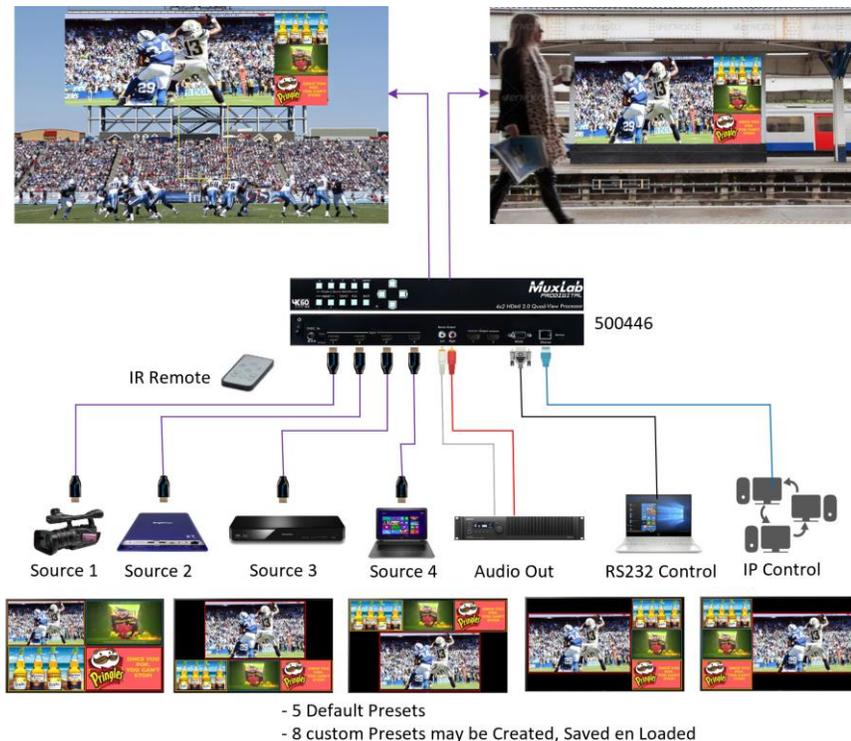
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1.Introduction

The 4x2 HDMI 2.0 Quad-View Processor supporting 4K/60 (4:4:4) resolution provides the most flexible and cost effective solution in the market to route ultra-high definition video sources from any of the four UHD HDMI sources to the remote display at the same time. This solution is also well suited for use in digital signage, conference room presentation systems or other similar settings or applications.

With up to 4K/60 (4:4:4) output resolution, users can display the mixed video with improved presentation quality. This unit can be controlled thru an RS232 serial port and Ethernet port to provide flexible control methods to fit numerous applications. May also be controlled via IR remote and front panel buttons.



2. Features

- 4 HDMI inputs and 2 HDMI outputs
- Input resolution support from 640x480 to 4096x2160@60Hz (4:4:4 8bits), interlaced or progressive
- Output resolution support up to 4096x2160@60Hz (4:4:4 8bits)
- Adjustable size & position through software and Cloud
- Supports PIP, PBP, POP, full screen & quad-view display
- HDCP 1.4/2.2 compliant
- Firmware upgradable to support new features and product enhancements
- Supports titles, borders and colored backgrounds
- Supports Background picture & logo update
- Resize, position, zoom & pan and blend output video
- Supports seamless, fade-in-&-out, wipe and dissolve switching in 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 and front panel control
- Supports Cloud Control (Cloud support is through encrypted communication for security/privacy protection)

3. Package Contents

- One (1) 4x2 HDMI 2.0 Quad-View Processor
- One (1) 12VDC/3.33A power adapter
- One (1) Installation Guide
- One (1) IR Remote control
- One (1) IR Sensor
- One (1) Quick Reference sheet

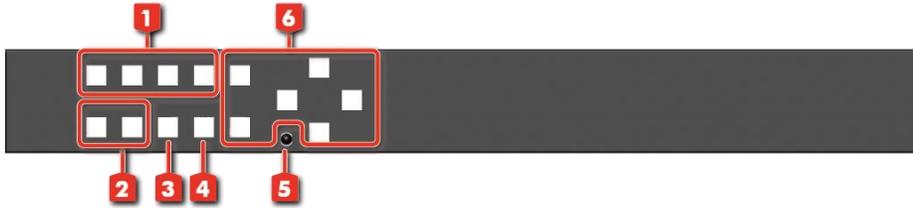
Notes: Confirm that the product and accessories are all included. If not, please contact the supplier from which you purchased the unit.

4. Specifications

Model Name		500446
Technical		
Role of usage	Multi-viewer / video processor	
Background picture update	Yes	
HDCP compliance	1.4 / 2.2	
HDMI compliance	HDMI 2.0a	
Video bandwidth	HDMI [594MHz [18Gbps]	
Output Video Support	Up to 4K@60Hz (4:4:4 8bits)	
Input Video Support	Up to 4K@60Hz (4:4:4 8bits)	
Video Format Support	HDMI 2.0	
Audio support	Bypass (signal pass-thru)	
Control	RS-232/ Ethernet/ IR/ Front panel Control/ Cloud	
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	Four HDMI, one RS-232, one RJ-45 (Ethernet) & one 3.5mm	
Output	Two HDMI & Two RCA Jack	
HDMI connector	Type A [19-pin female]	
RS-232 connector	DB-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 248 x 44mm [1'3" x 9.8" x 1.7"]
	Package	526 x 318 x 156mm [1'7" x 12.5" x 6.1"]
	Carton	543 x 335 x 344mm [1'8" x 13.2" x 1'1"]
Weight	Model	2.2 kg [5 lbs]
	Package	3.3 kg [7.3 lbs]
Power supply	12VDC 3.33A	
Power Consumption	22 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]	

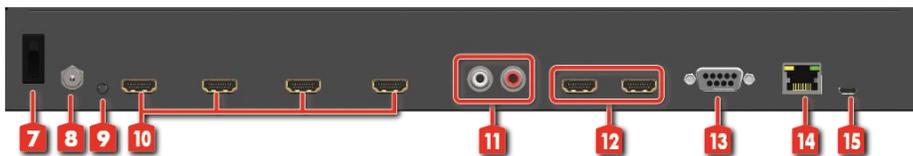
5. Panels Description

5.1 Front Panel



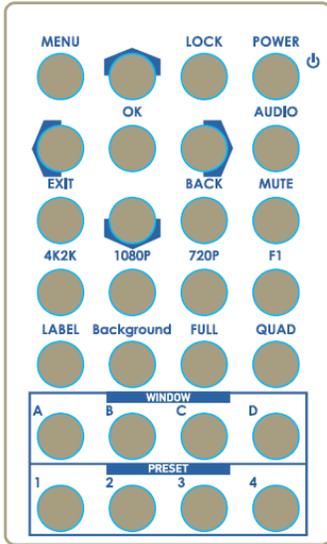
No.	Name	Description
1	Window Source Selection	Select the Window source A, B, C & D.
2	Presets	Recall preset 1 or preset 2.
3	Quad	Fast Selection to view Quad-View Mode
4	Full	Switch output Window to full screen mode
5	IR	IR Sensor for receiving the IR commands from the IR Remote Control.
6	OSD	Buttons to navigate and manage the internal menus of the product.

5.2 Rear Panel



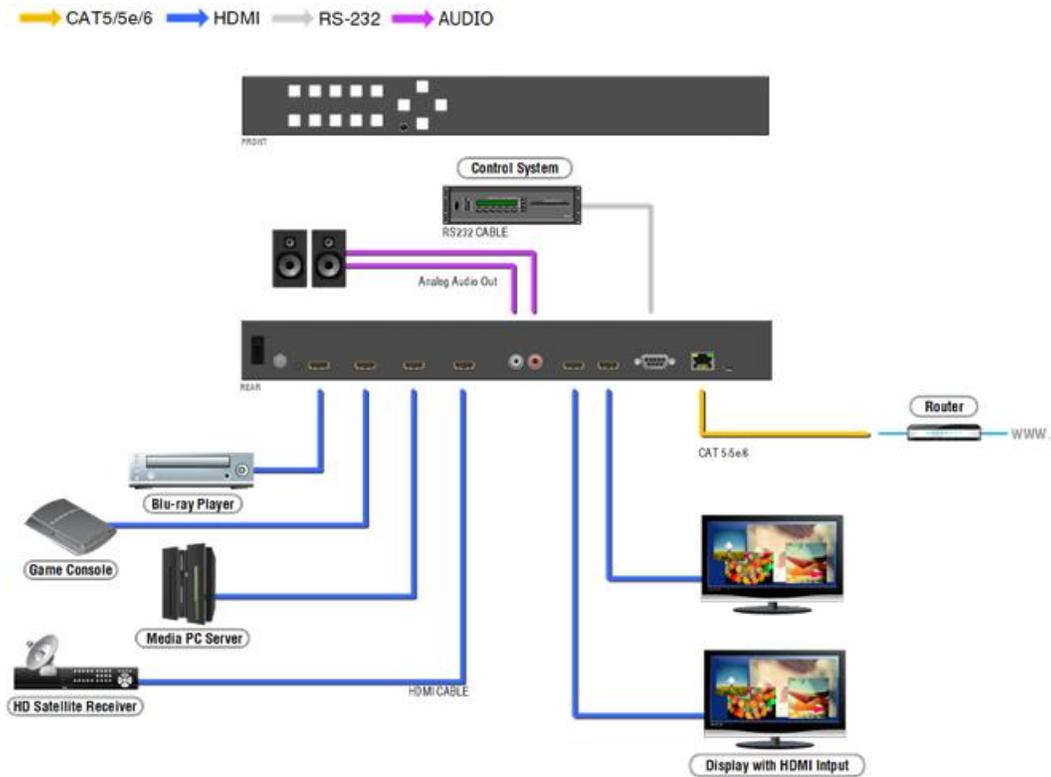
No.	Name	Description
7	Power Switch	Power On/Off Switch.
8	Power Jack	Use included DC adaptor to power the product.
9	IR Ext.	This port is for a local IR sensor, used to extend the IR signal. Connect to an IR Sensor.
10	HDMI Input	Connect HDMI input sources 1 to 4.
11	Stereo Output	Stereo Audio Output extraction (L/R).
12	HDMI Output	Output for HDMI displays 1 and 2.
13	RS232	RS232 Serial Port for remote control.
14	Ethernet	Ethernet LAN Port, for remote control.
15	Service	For Firmware Upgrades.

6. Remote Control



Button	Function
POWER	Power on/off the device
LOCK	Lock/unlock the device
▲	Arrow button (up)
MENU	OSD (On Screen Display) menu
AUDIO	Select audio sources
▶	Arrow button (right)
OK	Select the setting (similar to Enter)
◀	Arrow button (left)
MUTE	Turn off the audio
BACK	Back to previous page of OSD menu
▼	Arrow button (down)
EXIT	Exit from the menus
F1	Reserved
720P	Switch output resolution to 720p @ 60Hz
1080P	Switch output resolution to 1080p @ 60Hz
4K2K	Switch output resolution to 4K @ 60Hz
QUAD	Fast switch to quad-view mode
FULL	Fast switch to full screen mode
Background	Set up the background picture of a window
LABEL	Window label ON/OFF
A	Select source A to be the input source
B	Select source B to be the input source
C	Select source C to be the input source
D	Select source D to be the input source
P1	User preset 1
P2	User preset 2
P3	User preset 3
P4	User preset 4

7. Operate and Connect



Software Control through RS-232 / Ethernet port

1. System Requirement

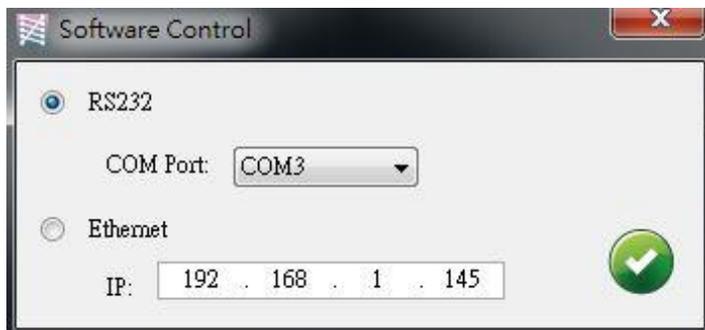
- (1) OS information: MS Win XP/7/8/10
- (2) Baud rates: 115200
- (3) Free space taken on hard disk (software size): 10 MB
- (4) Minimum RAM requirement: 256MB

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 method setting is selected, the system control interface will automatically start up.

Control Interface



1. Connection Status:

Shows the connect information and status. If the User uses RS-232 serial Mode to control the device, the following graph is shown: 

Else if the User uses Ethernet Mode to control the device, the following graph is shown: 

In addition, if the User would like to change the control method, the User can click on the

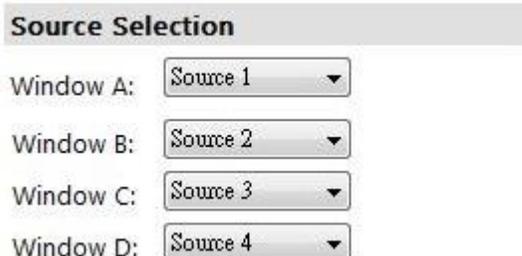
 or  button to change modes.

2. Output Settings

In this section, the User can configure the inputs, the source of window A~D, output resolution, layout setting (PAP or full screen) and switch mode.

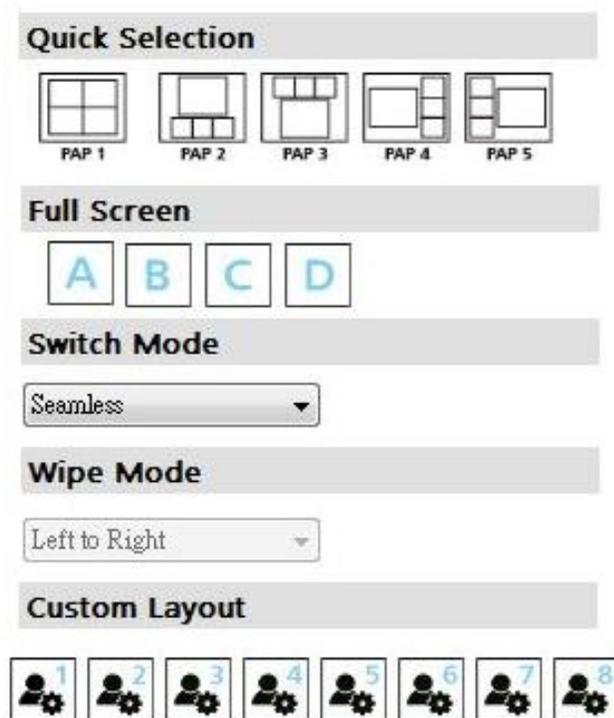
(1) Source Selection

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



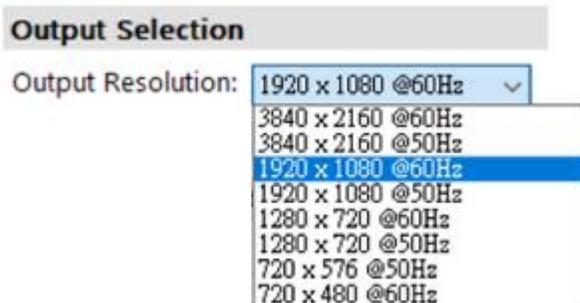
(2) Quick Selection

The system provides 5 default modes, 8 custom modes and 4 switching effects (Seamless, Fade in/out, Dissolve, Wipe) for the User to select from.



(3) Output Resolution

Set the output resolution.



(4) Save Layout

The system provides 8 custom layouts, for Users to save frequently used scenarios.

Save Layout

Save layout to

Custom Layout 1

- Custom Layout 1
- Custom Layout 2
- Custom Layout 3
- Custom Layout 4
- Custom Layout 5
- Custom Layout 6
- Custom Layout 7
- Custom Layout 8

OK

(5) Display Panel

In the left portion of the control interface, the User can customize the display. The different colored frames represent the different input windows. The coordinate information shows the position of the input source screen. In addition, the User is provided with display ratios, used to set the display panel sizes. The User can change the window layer level/order by dragging the window icons in Layer Control section.

Display Ratio: 14%

Coordination in input

Horizontal: 0 to 1920

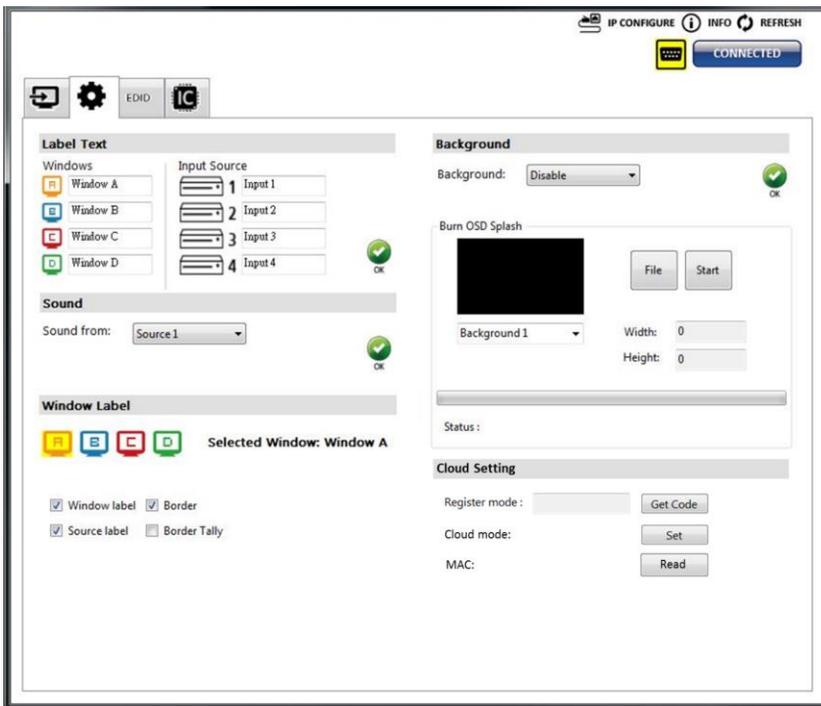
Vertical: 0 to 1080

Layer Control

Top: A, B, C, D

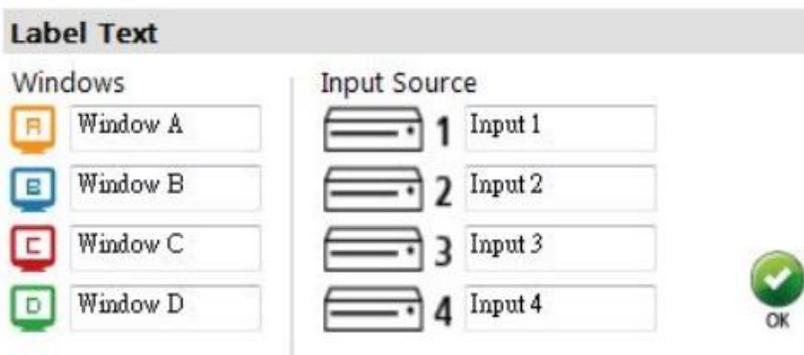
Bottom: D

3. Advanced Setting



(1) Label Text

In this section, Users can input the text to be shown along with the video.



(2) Sound

To select which input source drives the audio output R/L channels.



(3) Window Label

The User 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

To setup the background image of a window. There are 4 available memory banks for the User to upload background images. The User can click on the **File** button to load the picture he wants to use, and click on the **Start** button to write this picture into the devices memory.

Background

Background: Disable 

Burn OSD Splash



File
Start

Background 1

Width: 0

Height: 0

Status :

(5) Cloud Setting

Cloud Setting

Register mode : Get Code

Cloud mode: Set

MAC: Read

➤ Register mode

To get an “association code”. The device can use this code to pair with a cloud server.

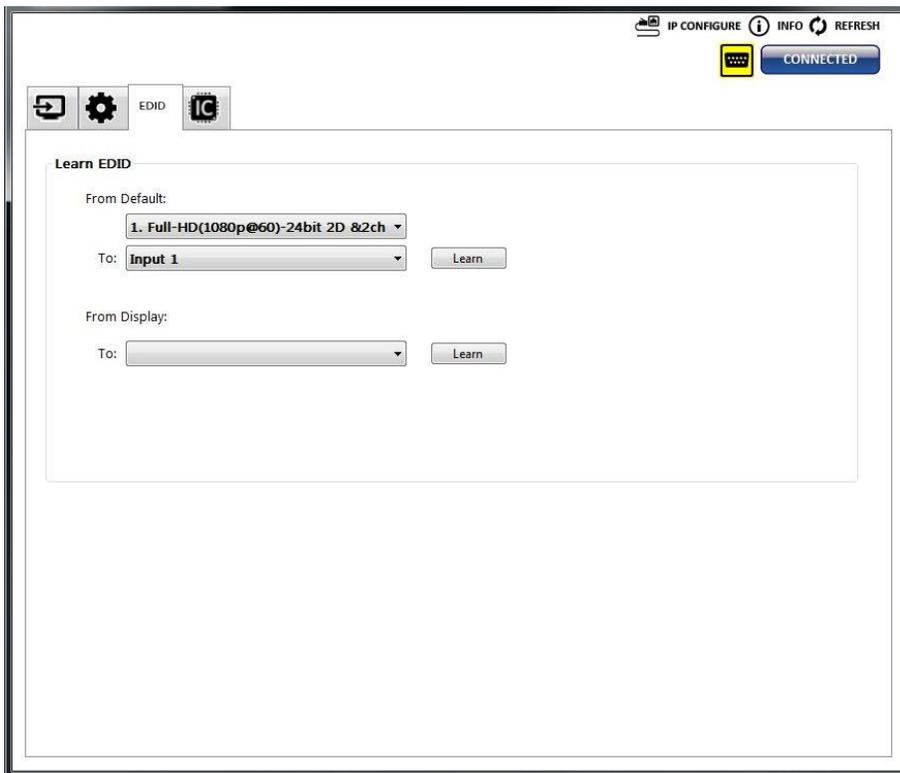
➤ Cloud mode

To reset the cloud after a successful pairing.

➤ MAC

Read the device’s MAC address information.

4. EDID (Extended display identification data)

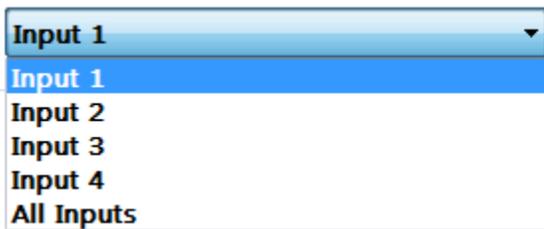


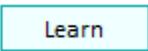
(1) Learn/Set Default EDID

- Select Default EDID

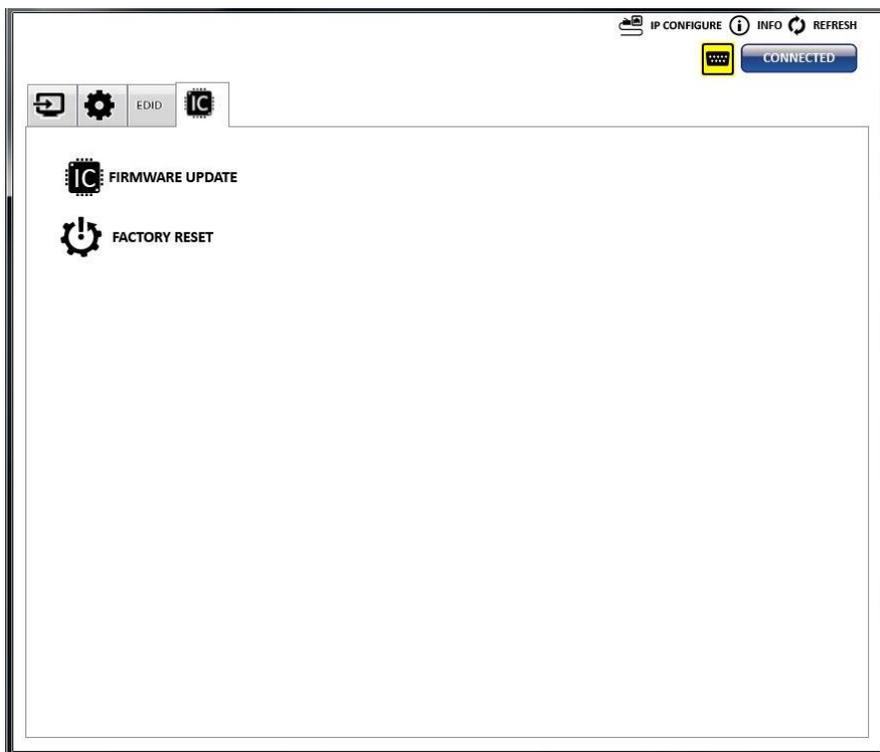


- Select Input



- Click  button to set Default EDID.

5. System Setting



(1) Firmware Update

- Click the  **FIRMWARE UPDATE** button to do a firmware update.
- The “Firmware update” window appears as shown below.

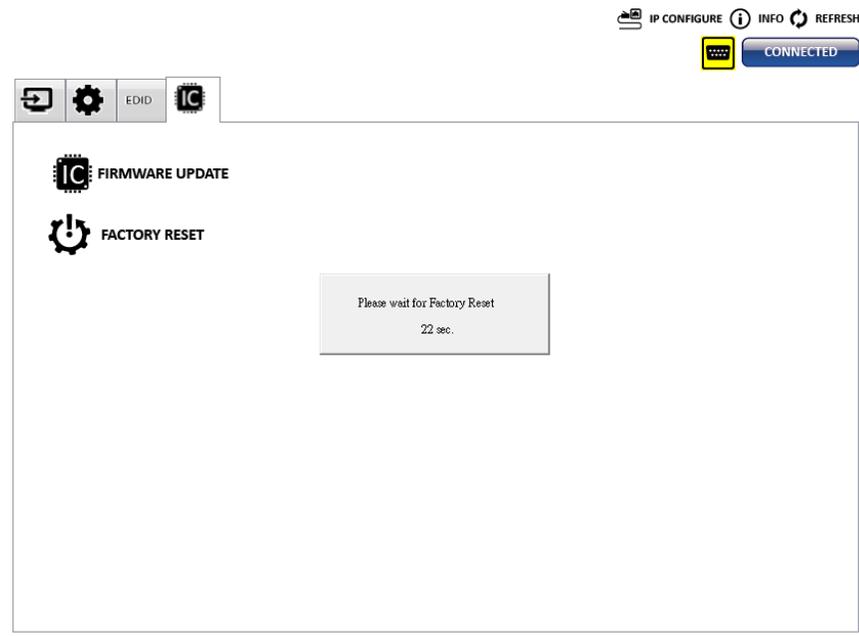


- Please select the correct COM port, or click the “Scan” button to connect the device.
- Click “update” button to do a firmware update.



(2) Factory Reset

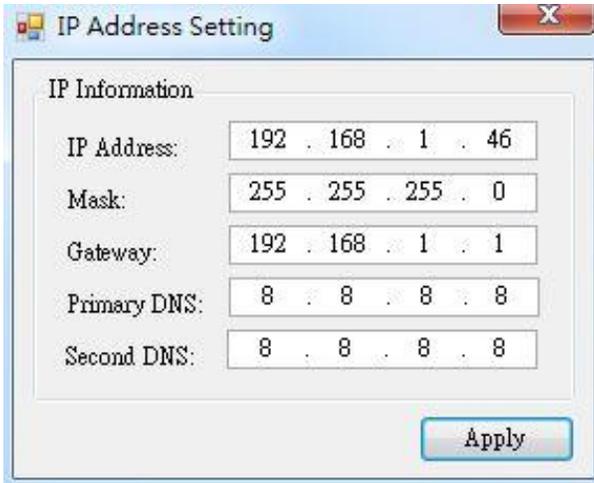
- Click the  **FACTORY RESET** button to do a factory (default) reset.
- The Factory Reset process will take about 25 seconds.



6. IP Configure

The User can also manage this device via WEB Interface control. First the User should click on  IP CONFIGURE to configure the network settings. The User can then setup the Ethernet Ip information for the unit as shown below. Once the information has been entered, click on  to save the settings.

Unit default IP Address: **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



7. Info

Get the unit Software and Firmware versions.



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

Status	
Firmware Device Version - 1:	Ver 1.06

Note: The Software and Firmware version shown above are only examples and may change as needed.

8. Refresh

This function refreshes the information presented, and can get updated information of the device and software states.

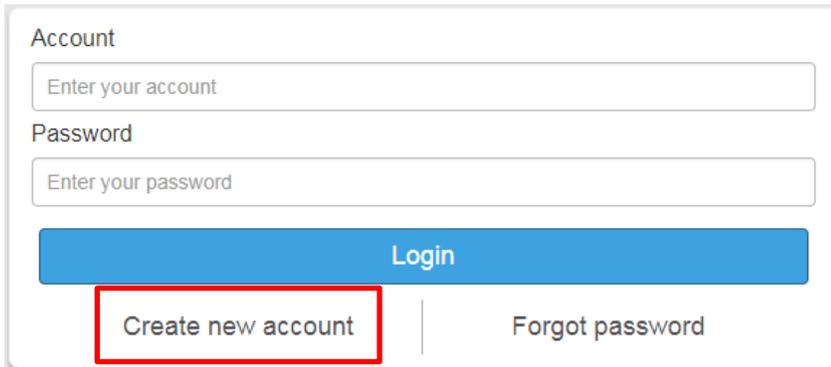
Cloud Control (Eagleyes) through the Ethernet Port

Control via the cloud is available via the Eagleyes Cloud service.

Create an Eagleyes Cloud Account

For first time users of the Eagleyes service, please create a new account as follows.

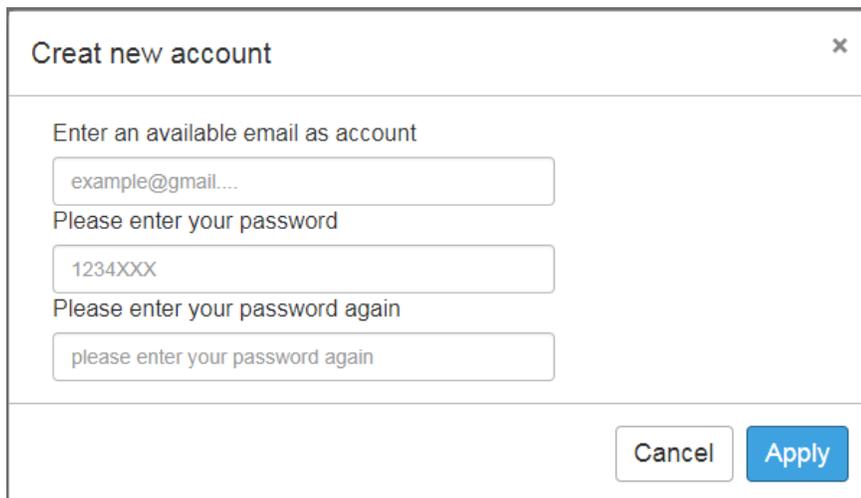
1. Access Eagleyes (<http://www.eagleyes.io>) and click “Create new account”.



The screenshot shows a login form with the following elements:

- An "Account" label above a text input field containing the placeholder "Enter your account".
- A "Password" label above a text input field containing the placeholder "Enter your password".
- A blue "Login" button.
- A "Create new account" button, which is highlighted with a red rectangular box.
- A "Forgot password" link.

2. The Registration page will pop up. Fill in your email and password information and click on “Apply” to create your private account.

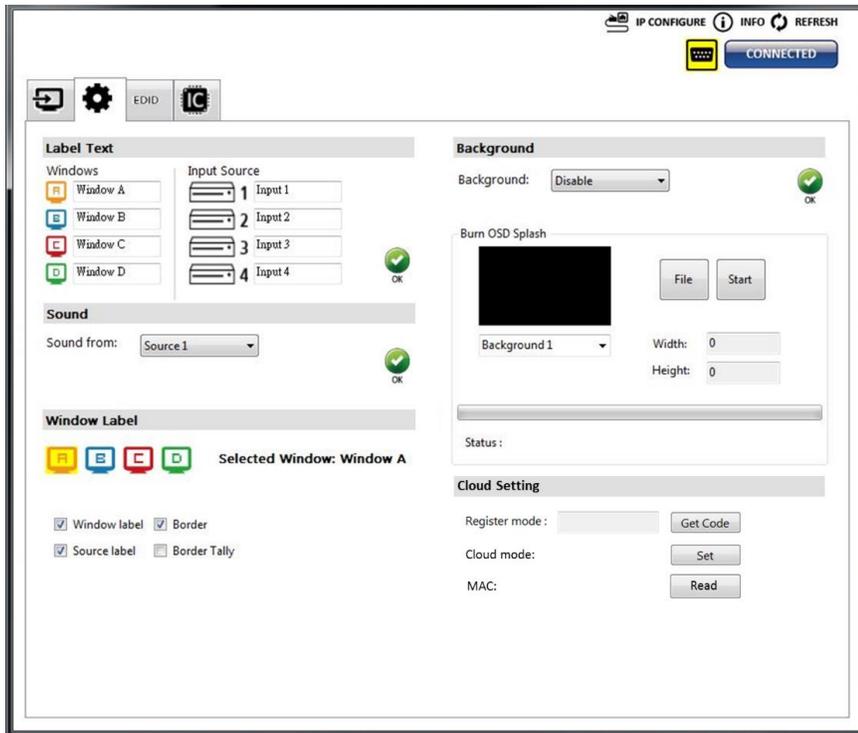


The screenshot shows a registration pop-up window titled "Creat new account" with a close button (X) in the top right corner. The form contains the following fields and buttons:

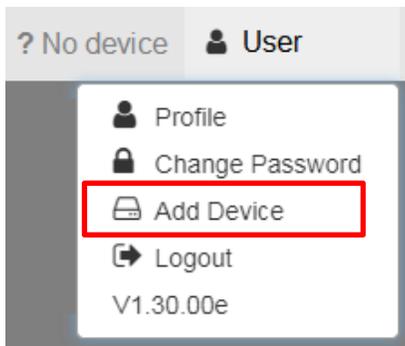
- A label "Enter an available email as account" above a text input field with the placeholder "example@gmail...".
- A label "Please enter your password" above a text input field with the placeholder "1234XXX".
- A label "Please enter your password again" above a text input field with the placeholder "please enter your password again".
- At the bottom right, there are two buttons: a "Cancel" button and a blue "Apply" button.

Add a Device to the Eagleyes Cloud Service

1. First, please make sure the device is connected to the Ethernet. Then run the software with the device to get the register code (Note that the status of software is set as “Connected”). Get the code on bottom right.



2. Access the Eagleyes Cloud Service (<http://www.eagleyes.io>), and then log into your account on the right top corner. Click **Add device** to add the device which you just got its associated code.



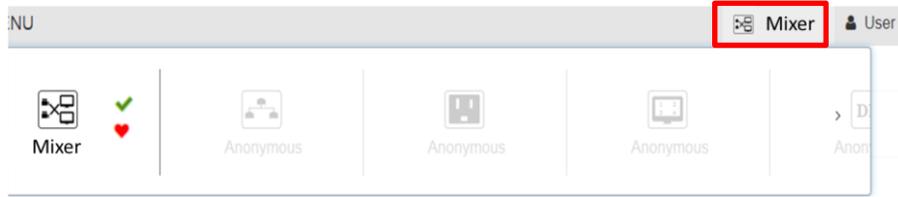
3. Enter the Installer Email for online support in the future, and the Association Code to pair with your device.

The screenshot 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:** A text input field containing 'installer@gmail.com'.
- Association Code:** An empty text input field.

 At the bottom right of the dialog, there are two buttons: 'Close' and 'Apply'.

4. After adding the device, the list of devices related to your account will show on the upper right corner. You can click the button to switch between devices for control.



Regulatory Compliance

Disclaimer

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CE/FCC & Recycling Information

CE Certification

This equipment complies with the requirements relating to Electromagnetic Compatibility Standards EN55022/EN55024 and the further Standards cited therein. It must be used with shielded cables only. It has been manufactured under the scope of RoHS compliance.

FCC Certification

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. You are cautioned that changes or modification not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation



WEEE (Waste of Electrical and Electronic Equipment), Recycling of Electronic Products

In 2006 the European Union introduced regulations (WEEE) for the collection and recycling of all waste electrical and electronic equipment. It is no longer allowable to simply throw away electrical and electronic equipment. Instead, these products must enter the recycling process.

Each individual EU member state has implemented the WEEE regulations into national law in slightly different ways. Please follow your national law when you want to dispose of any electrical or electronic products. More details can be obtained from your national WEEE recycling agency.



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