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.

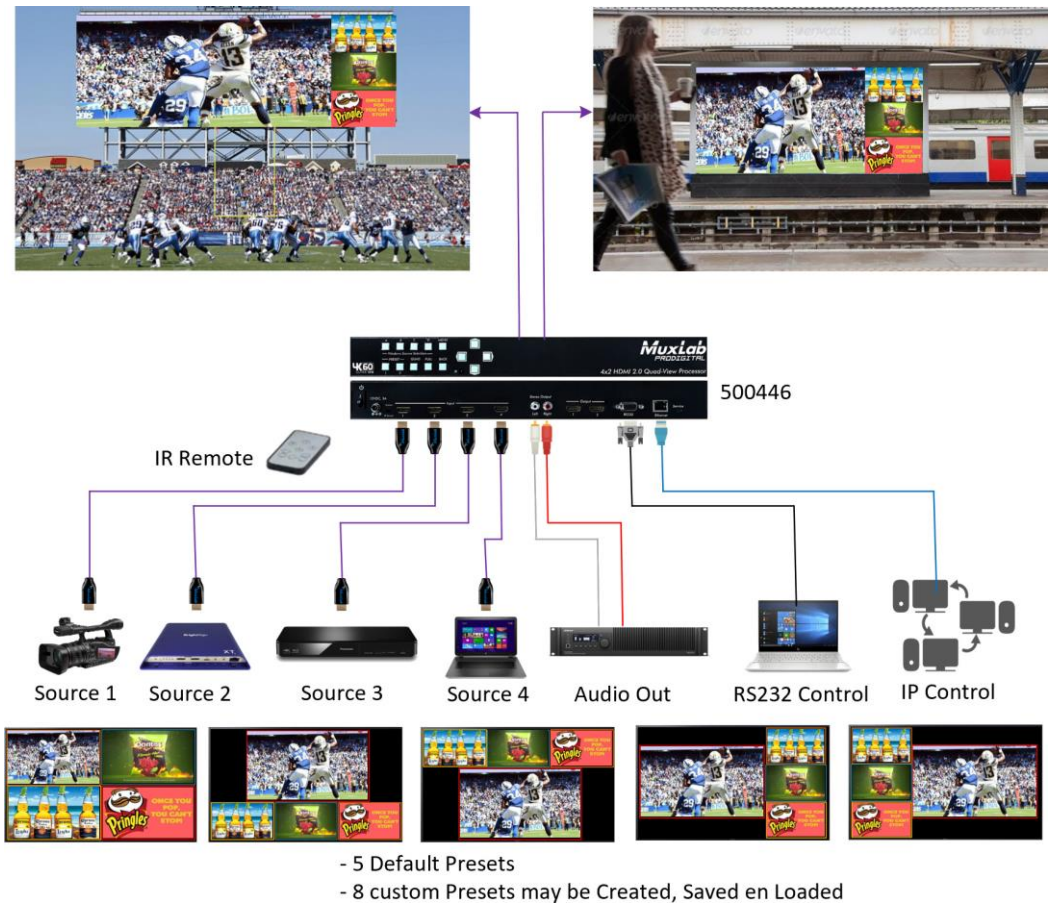
NOTICE: Please read this manual carefully before using this product.

Table of Contents

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 two separate displays 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) resolution at each output, 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. The unit may also be controlled via IR remote, front panel buttons, WEB GUI or OSD (On Screen Display).



2. Features

- 4 HDMI inputs and 2 HDMI outputs
- Input resolution supports from 640x480 to 4096x2160@60Hz (4:4:4 8bits), interlaced or progressive
- Output resolution supports 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, front panel buttons, WEB GUI and OSD 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

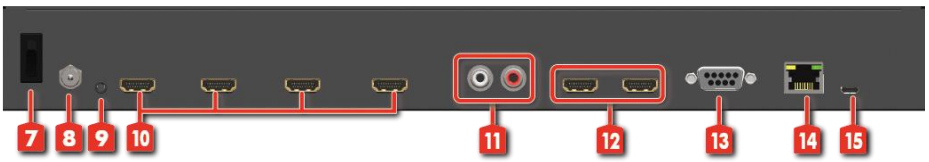
Model Name		500446
Technical		
Role of usage		Multi-viewer / video processor
Background picture update		Yes
HDCP compliance		1.4 / 2.2
HDMI compliance		HDMI 2.0a
Video bandwidth		HDMI [594MHz [18Gbps]
Output Video Support		Up to 4K@60Hz (4:4:4 8bits)
Input Video Support		Up to 4K@60Hz (4:4:4 8bits)
Video Format Support		HDMI 2.0
Audio support		Bypass (signal pass-thru)
Control		RS-232/ Ethernet/ IR/ Front panel buttons/ WEB GUI/ OSD/ 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

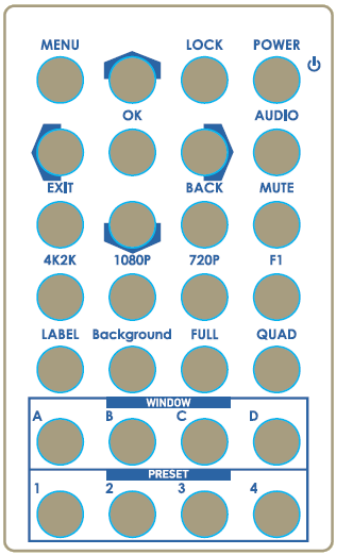
No.	Name	Description
1	Window Source Selection	Select the Window source A, B, C & D.
2	Presets	Recall preset 1 or preset 2.
3	Quad	Fast Selection to view Quad-View Mode
4	Full	Switch output Window to full screen mode
5	IR	IR Sensor for receiving the IR commands from the handheld IR Remote Control.
6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

5.2 Rear Panel



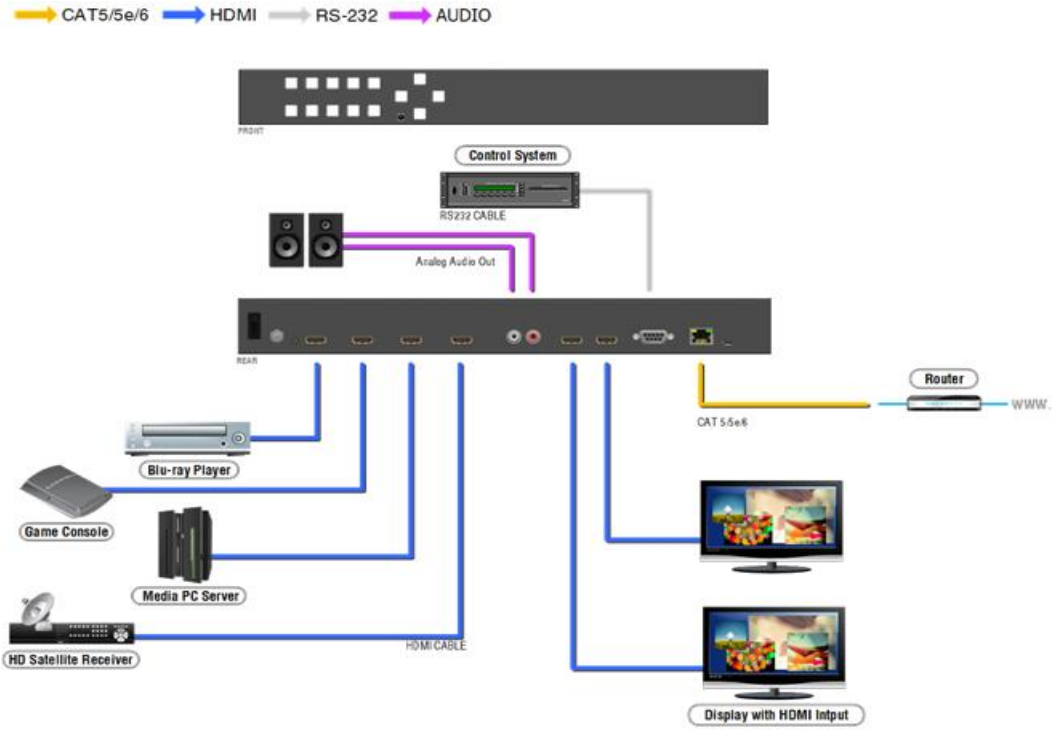
No.	Name	Description
7	Power Switch	Power On/Off Switch.
8	Power Jack	Use included DC adaptor to power the product.
9	IR Ext.	This port is for a local IR sensor, used to extend the IR signal. Connect to an IR Sensor.
10	HDMI Input	Connect HDMI input sources 1 to 4.
11	Stereo Output	Stereo Audio Output 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



1. **Software Control through RS-232 / Ethernet port**
   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

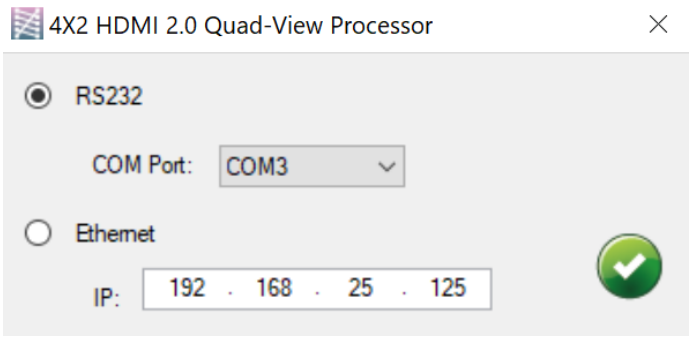
   (4) Minimum RAM requirement: 256MB

2. **Control interface**

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

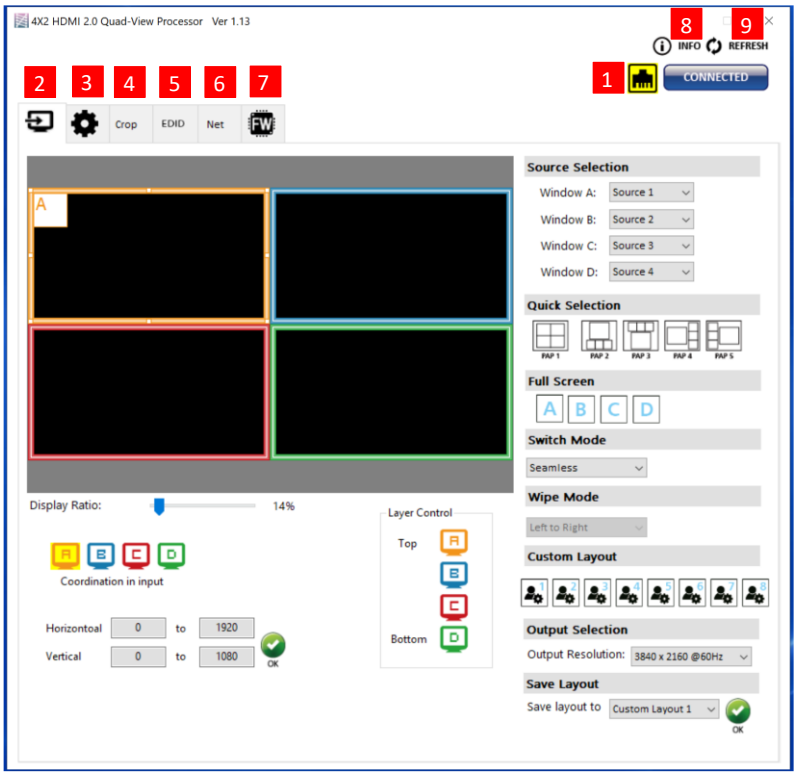
   RS-232 serial Mode: Use RS-232 to connect the port on device and computer. Select correct COM port and click the OK button.

   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: 

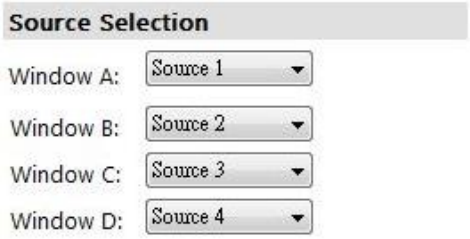
In addition, if the User would like to change the control method, the User can click on the  or  button to change modes.

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.

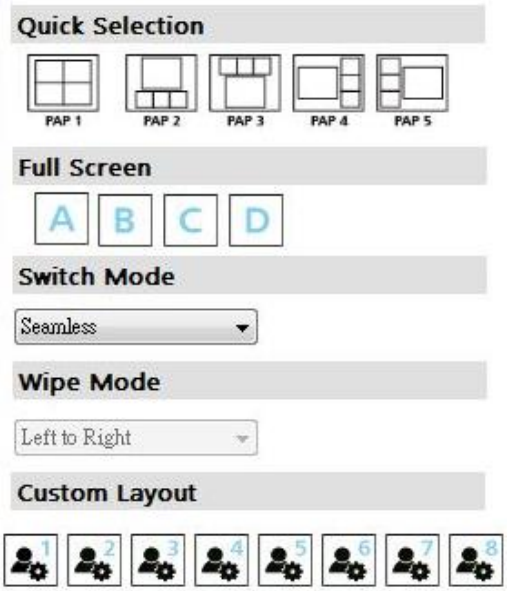
(2.1) Source Selection

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



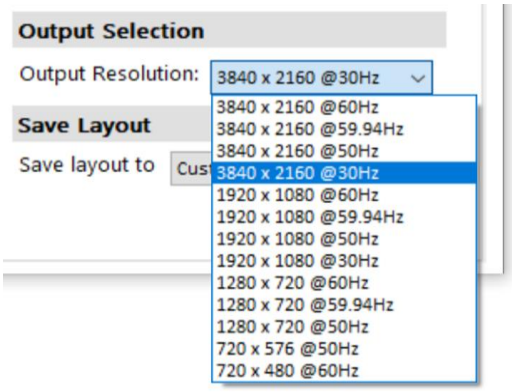
(2.2) Quick Selection

In the control software, 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.



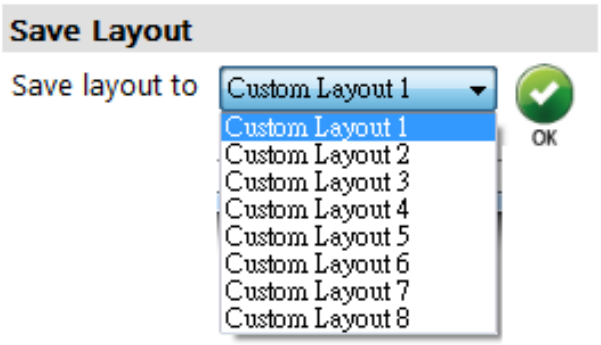
(2.3) Output Resolution

Set the output resolution.



(2.4) Save Layout

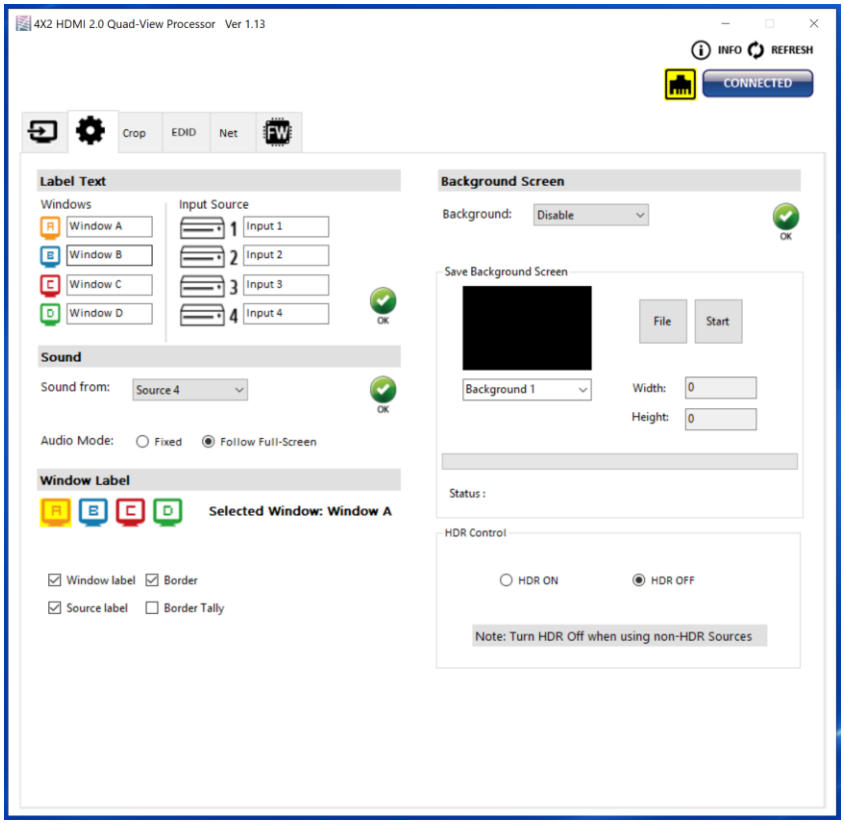
The system provides 8 custom layouts, for Users to save frequently used scenarios.



(2.5) Display Panel

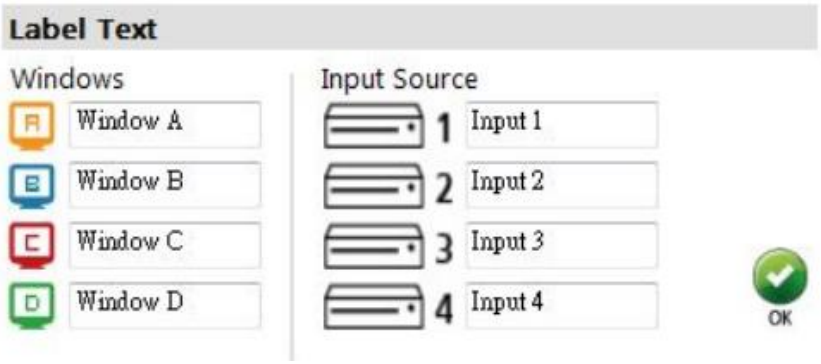
In the left portion of the control interface, the User can customize the display. The different colored frames represent the different input windows. The coordinate information shows the position of the input source screen. In addition, the User is provided with display ratios, used to set the display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

3 Advanced Setting



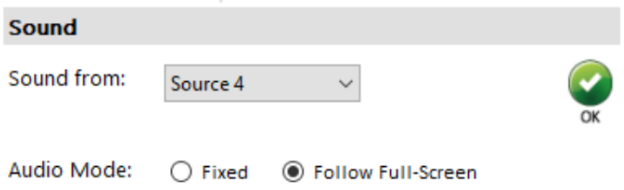
(3.1) Label Text

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



(3.2) Sound

In This section, Users can select which input source controls the R / L audio output channels. Or select the “Follow Full-Screen" option so that the source associated with Full-Screen automatically controls the audio output channels.

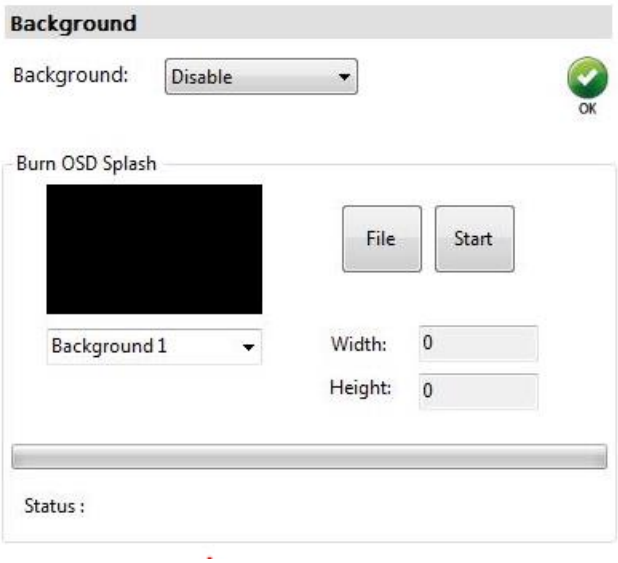


(3.3) Window Label

The User can determine if the window's label/border is turned on or off.

(3.4) 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 device's memory.

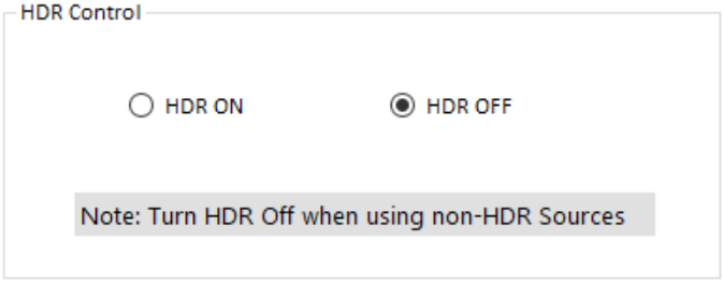


Note: The limitations of the Background are:

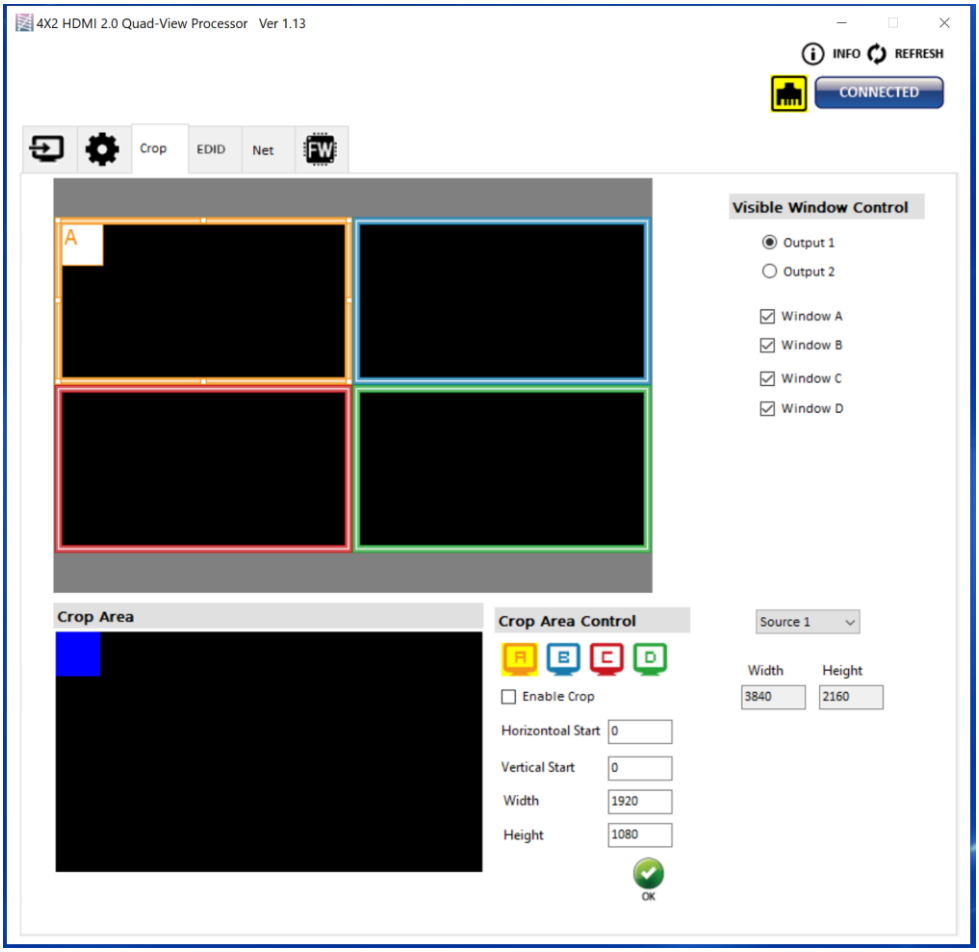
- The color must not exceed 256.
- The image width must be a multiple of 128.
- The background cannot be saved in custom patterns.

(3.5) HDR Control

Users can select HDR mode in the output video.

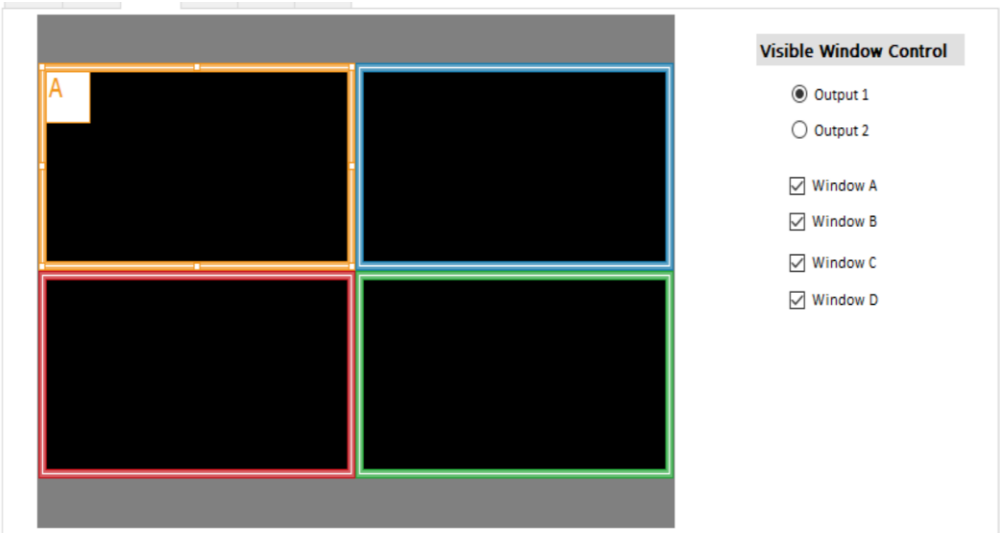


4 Crop

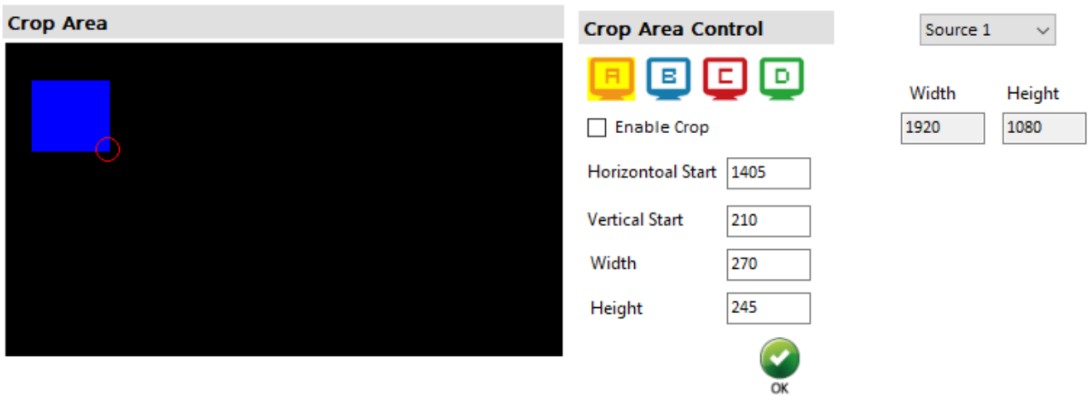


(4.1) Visible Windows Control

In this section, the User can select which windows will be displayed in each of the two outputs.

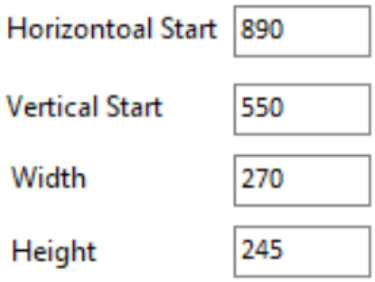


(4.2) Crop Area



1. Select window and enable Crop

2. Set the position and size of the Crop area. (You can enter the corresponding values or use the mouse)

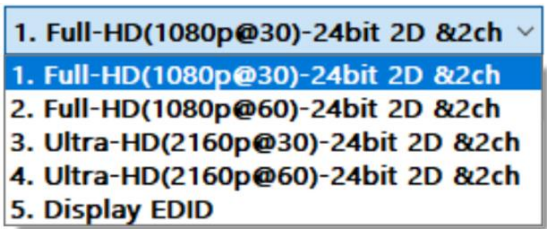


3. Click  to view the selected area.

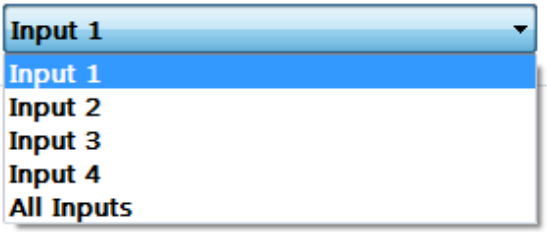
5 EDID

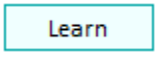
(5.1) Learn EDID

1. Select Default EDID



2. Select Input



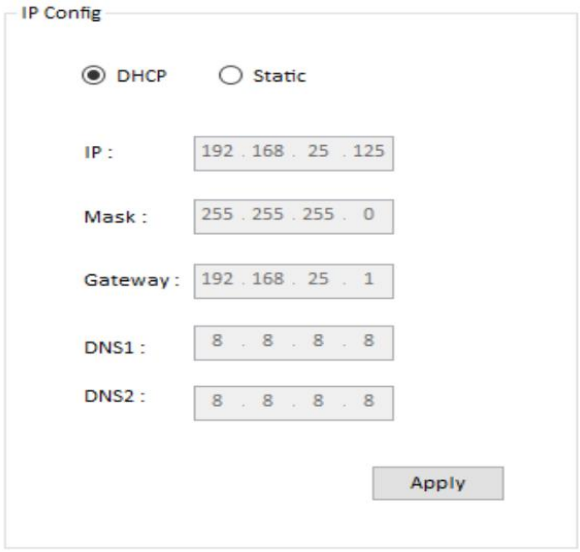
3. Click the  button to set Default EDID.

6 Net

(6.1) IP Config

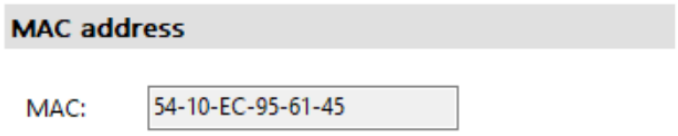
The User can setup the Ethernet IP information for the unit as shown below. Once the information has been entered, click on Apply to save the settings.

The unit default IP Address is: 192.168.168.40



(6.2) MAC Address

This section shows the MAC address of the unit.



(6.3) Cloud Setting

- Register mode

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

- Cloud mode

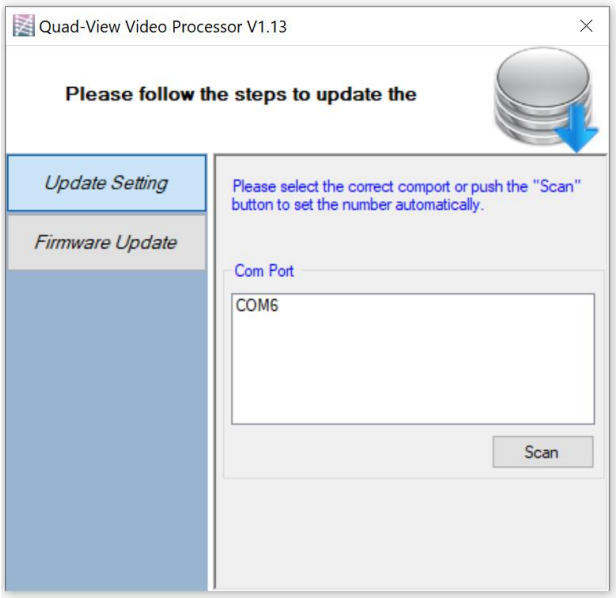
  To reset the cloud after a successful pairing

  Note: See page 22 on how to configure cloud control through the “Eagleyes Cloud” service.

7 FW

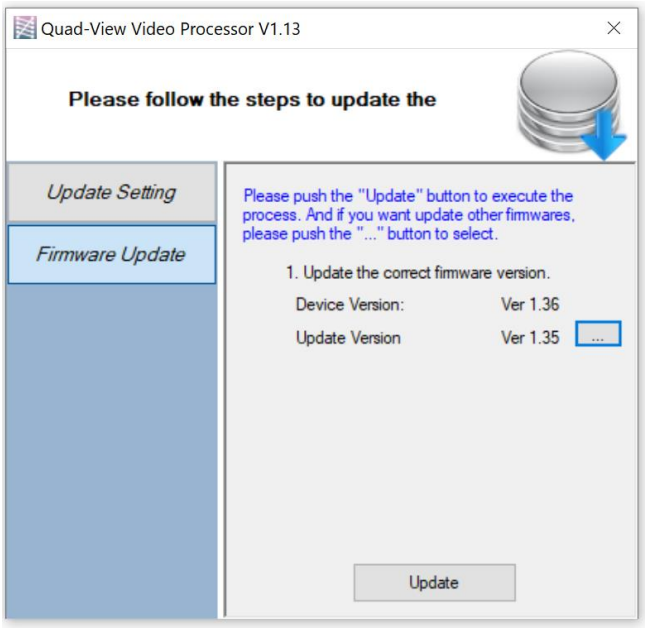
(7.1) Firmware Update

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



3. Please select the correct COM port or click the “Scan” button to connect the device.

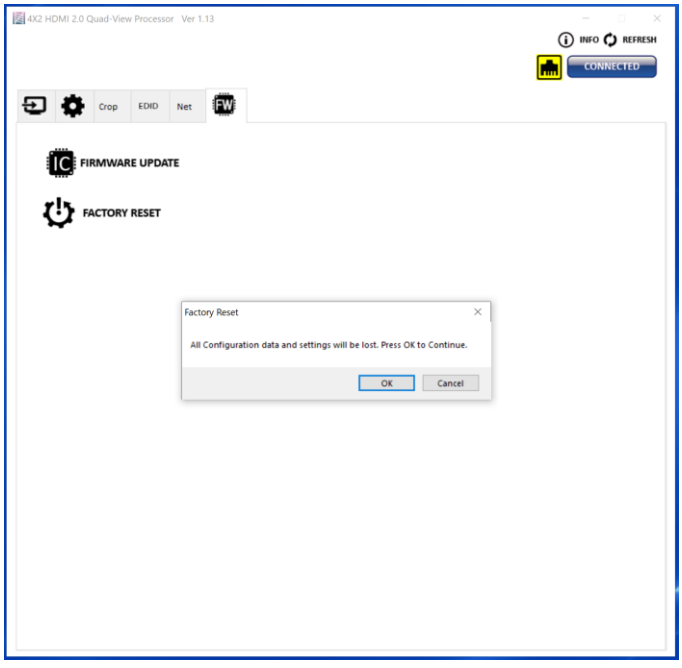
4. Upload the file and click the “update” button to perform a firmware update.



(7.2) Factory Reset

1. Click the FACTORY RESET icon button to do a default Factory Reset.

2. The Factory Reset process will take about 25 seconds. Please allow the process to fully complete.



8 INFO

Get the unit Software and Firmware versions.

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

9 Refresh

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

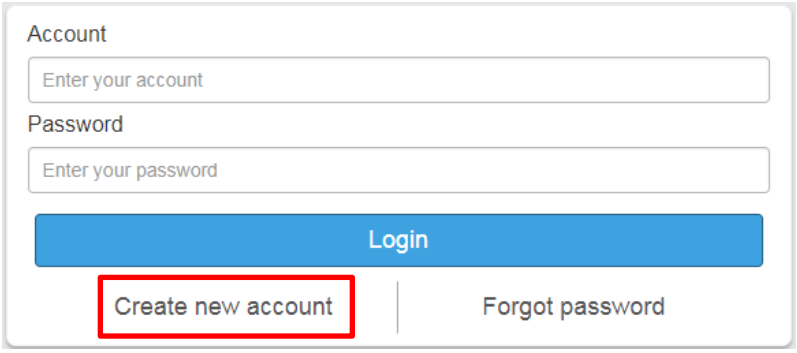
8. Cloud Control

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

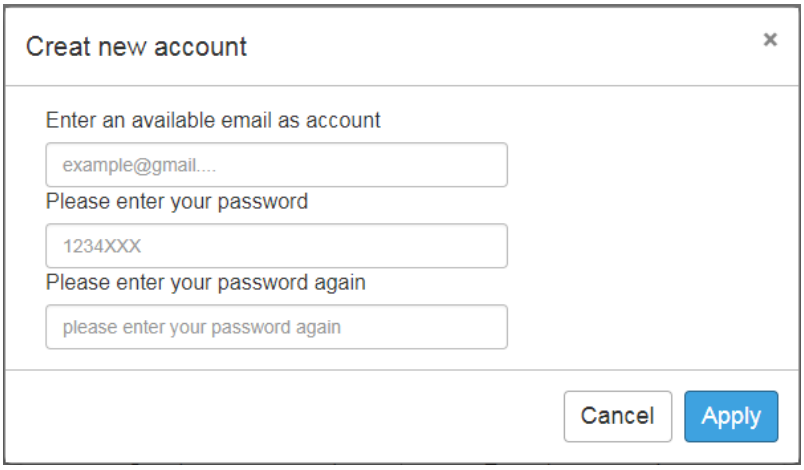
Create an Eagleyes Cloud Account

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”.

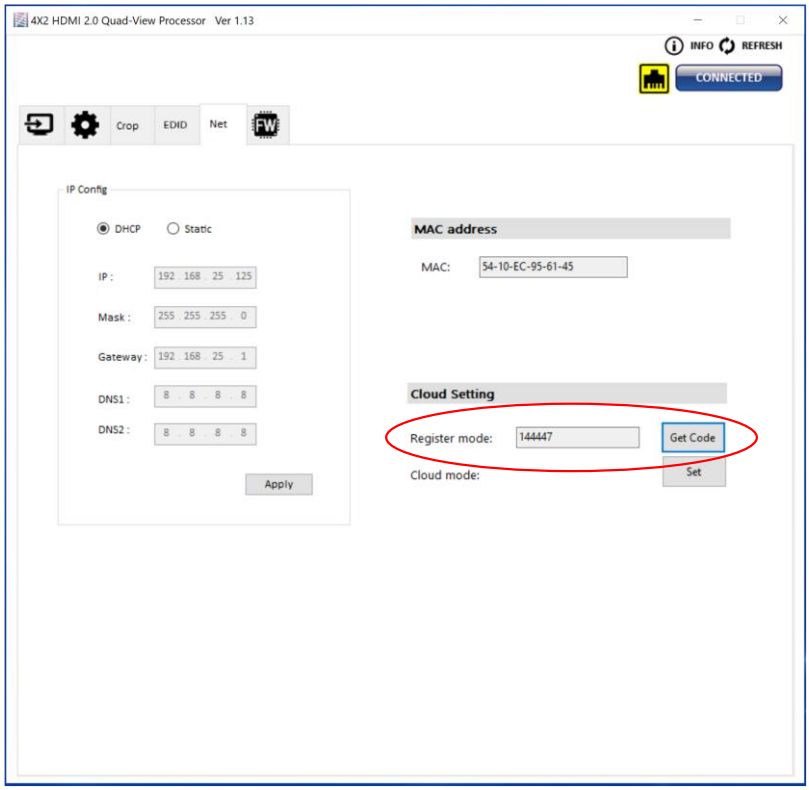


2. The Registration page will pop up. Fill in your email and password information and click on “Apply” to create your private account.

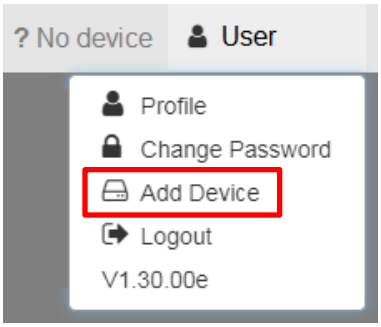


Add a Device to the Eagleyes Cloud Service

(1) First, please make sure the device is connected to the Internet. 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 the bottom right.

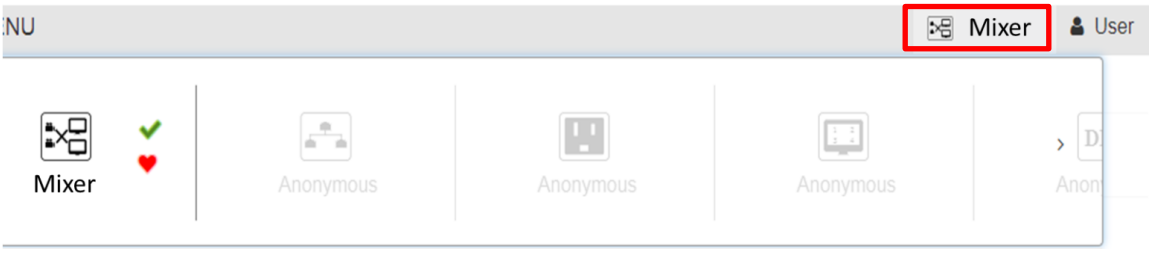


(2) Access the Eagleyes Cloud Service (http://www.eagleyes.io), and then log into your account on the right top corner. Click **Add device** to add the device which you just received an associated code.



(3) Enter the Installer Email for future online support, and the Association Code to pair with your device and press “Apply”.

(4) After adding the device, the device under control in your account will show on the upper right corner. You can click on the buttons below to switch between devices for control purposes.

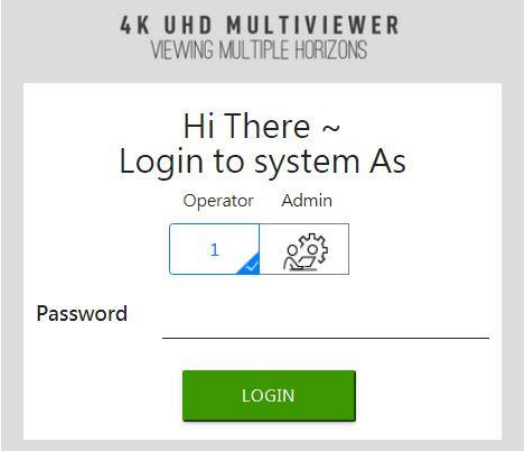


9. WEB GUI Control

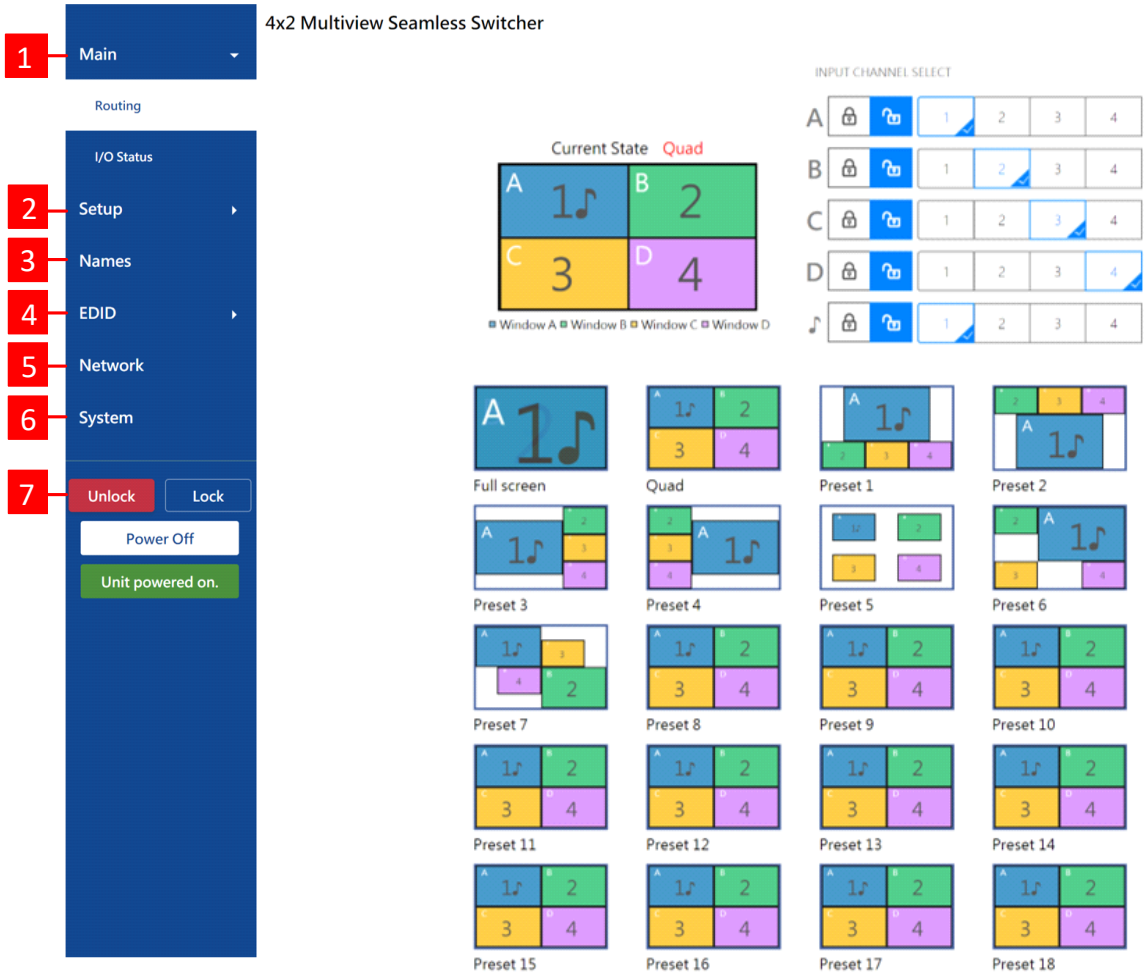
Login

The default IP address is: 192.168.168.40

The User can choose the Operator or Admin account to login. Admin provides more control options.
The password of the Operator is: **operator**
The password of the Admin is: **admin**



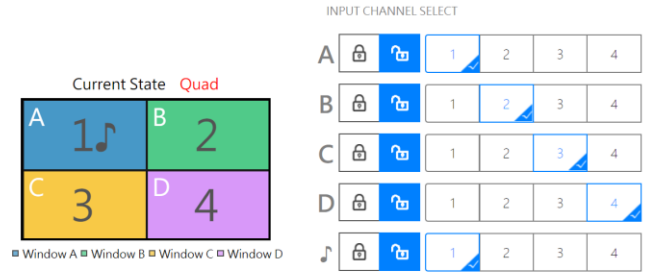
WEB GUI Control Interface

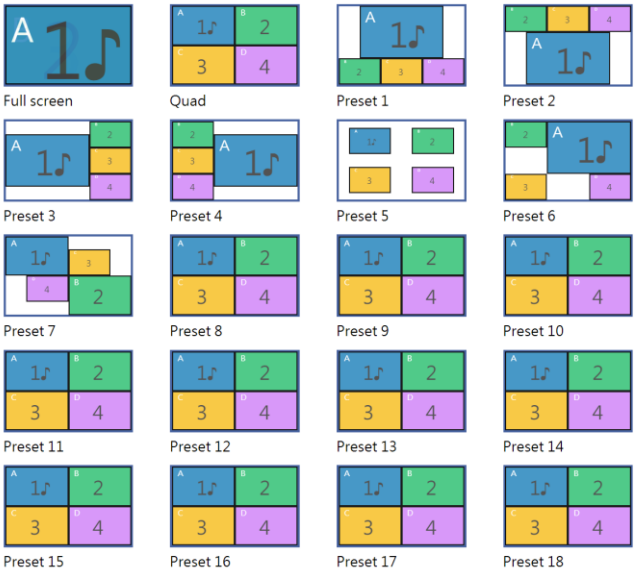


1 Main

(1.1) Routing:

We provide full screen, quad, and 18 preset modes for the user to select. Then you can set different channels (1-4) for windows (A-D) and select the sound output source. In addition, you can turn on or turn off the sound and screen of each window independantly.





(1.2) I/O Status:

You can check input and output status here.

Output

Feature	Output
RSENSE	low
HPD	low
HDCP	N

Input

Feature	Input 1	Input 2	Input 3	Input 4
Color Depth	n/a	n/a	n/a	n/a
Color Space	n/a	n/a	n/a	n/a
HDCP	N	N	N	N
Active Signal	N	N	N	N
Horizontal Resolution	0	0	0	0
Vertical Resolution	0	0	0	0
Progressive / Interlaced	n/a	n/a	n/a	n/a
Refresh Rate	n/a	n/a	n/a	n/a
Video Mode	n/a	n/a	n/a	n/a

2 Setup:

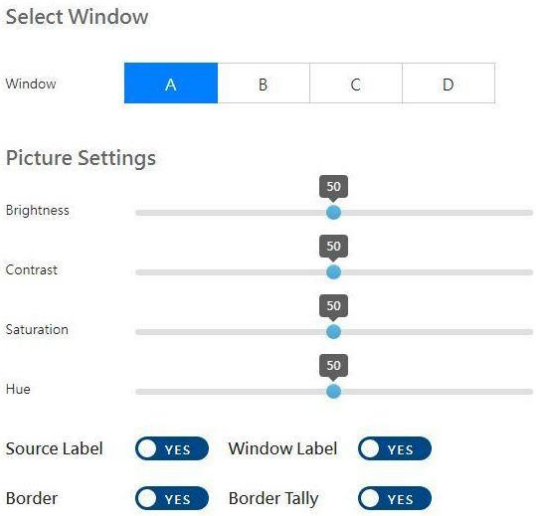
(2.1) Video:

Output Resolution: Select the output resolution.

Select Window: Select the window you want to set.

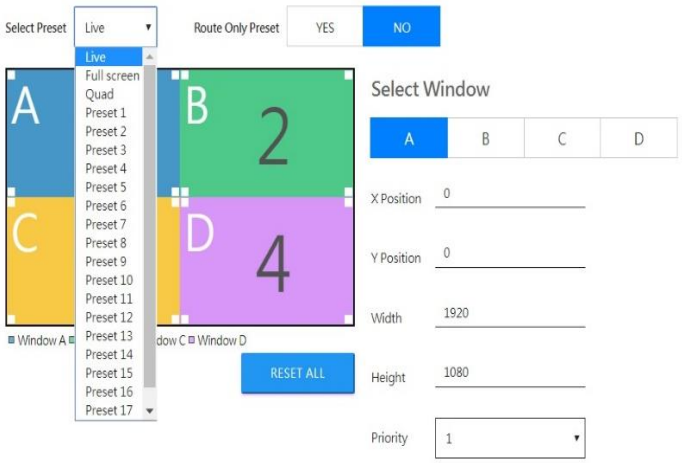
Picture Settings: Set the picture details for the selected window, including “Brightness”, “Contrast”, “Saturation”, and “Hue”. In addition, you can determine if the window’s label/border is turned on or off.

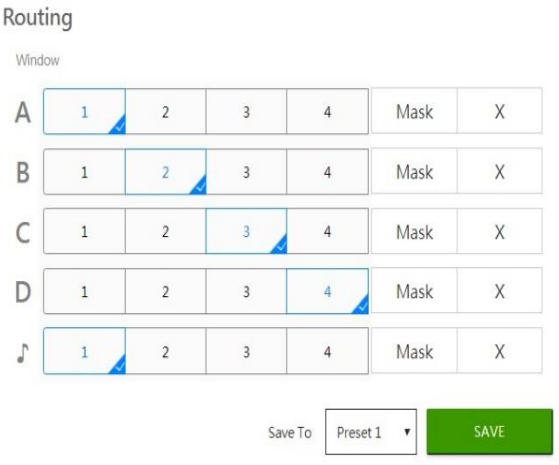
Additional settings: You can also turn on or off the Source Label, the Window Label, the Border and Border Tally.



(2.2) Windows Setup:

First, choose a preset mode to set, and then you can set parameters individually for each window, including “X Position”, “Y Position”, “Width”, “Height”, etc. You can also directly select the area to move the position and change the size. If you choose live mode, you can immediately see the changes on the screen after making changes. You can also set different channels (1-4) for windows (A-D) and select the sound output source.



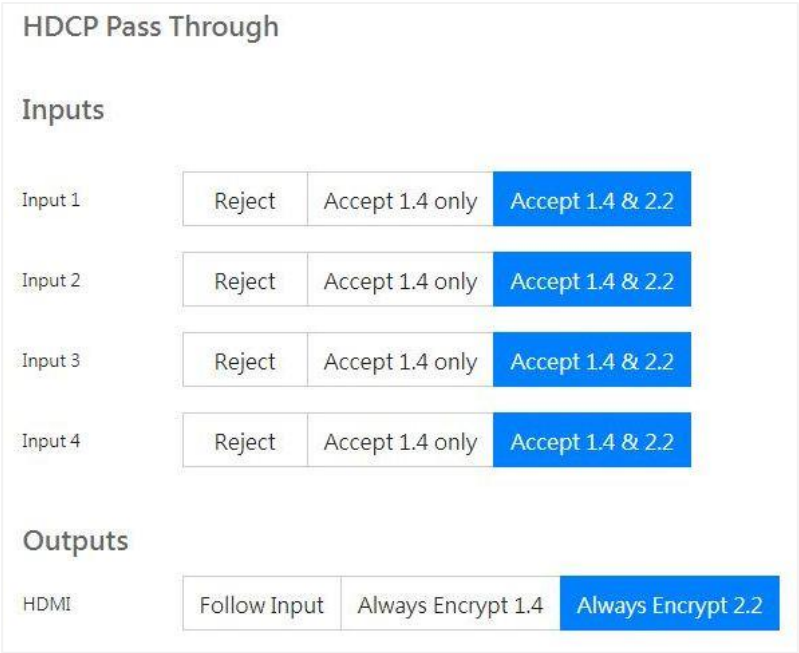


(2.3) HPD Control:

You can perform an un-plug and re-plug of any input and output by clicking the PULSE button.

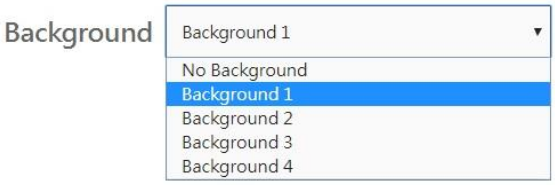
(2.4) HDCP:

You can set HDCP mode for each input, including “Reject”, “Accept 1.4 only”, and “Accept 1.4 & 2.2”. You can also set the output mode, including “Follow Input”, “Always Encrypt 1.4”, and “Always Encrypt 2.2.”



(2.5) Background:

You can set the background of the window.



3 Names:

You can set names for 18 preset modes. You can also set names for inputs and windows to be shown with the video. After you finish naming, remember to click on the SAVE button to save the settings

4 EDID:

(4.1) Mode:

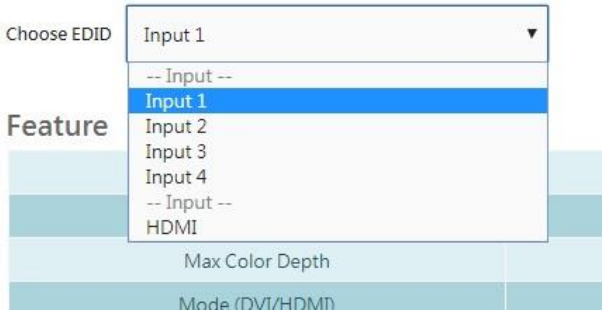
You can select the EDID mode of each input (1-4), and check the name of each EDID and whether to lock it.

(4.2) Copy:

You can copy the EDID from a selected input or output, to a selected destination. Then click the Copy button to complete the copy process.

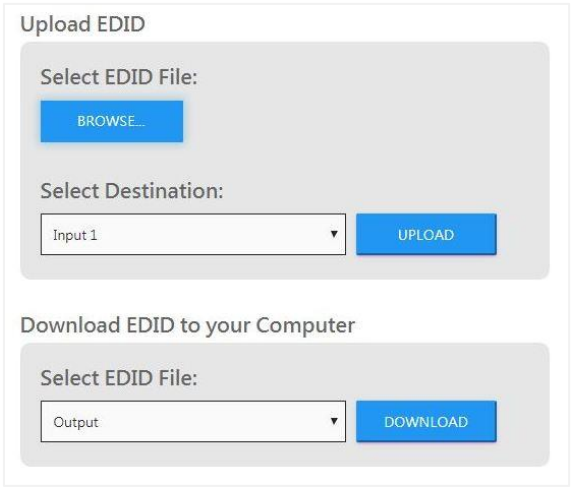
(4.3) EDID Info:

You can choose an input EDID through the drop-down list to check the feature and audio formats.



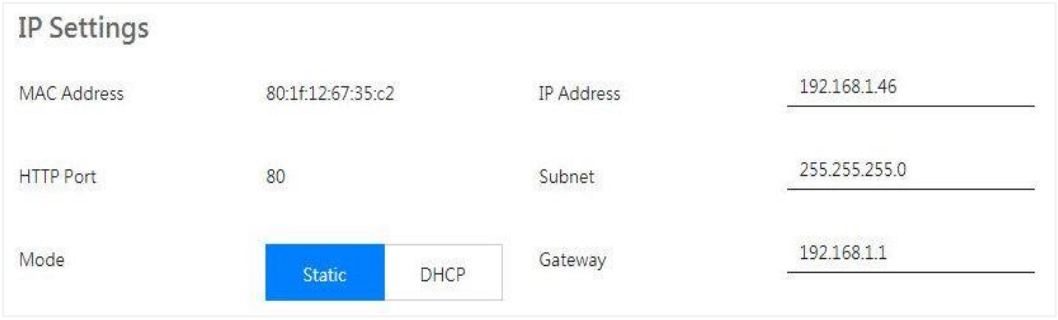
(4.4) Upload/Download:

You can click the BROWSE... button to open an EDID from a file and select the destination. Then Press the UPLOAD button to upload the EDID. You can also download the EDID to your computer.

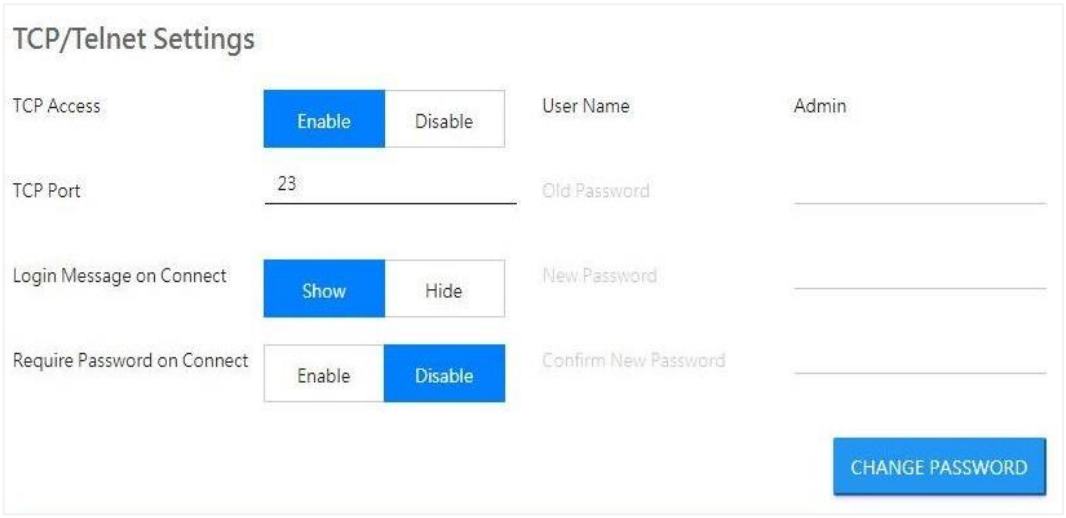


5 Network:

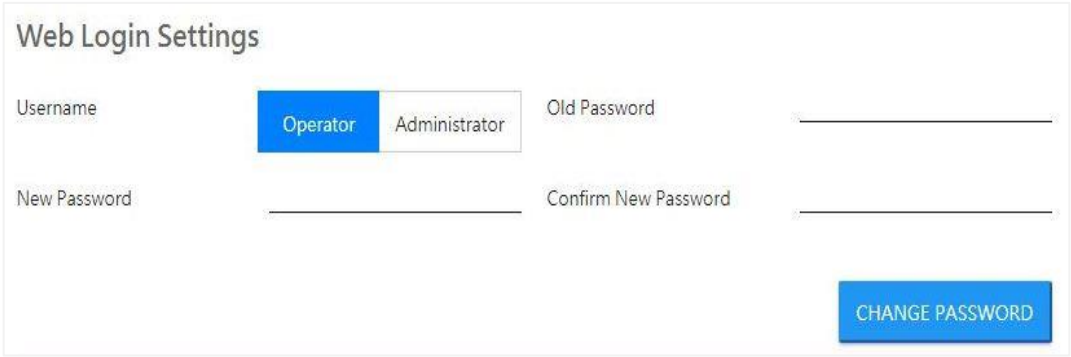
- IP Settings: Select the Ethernet settings for the device and check relevant information here.



- TCP/Telnet Settings: Select the TCP/Telnet settings for the device and check relevant information here.

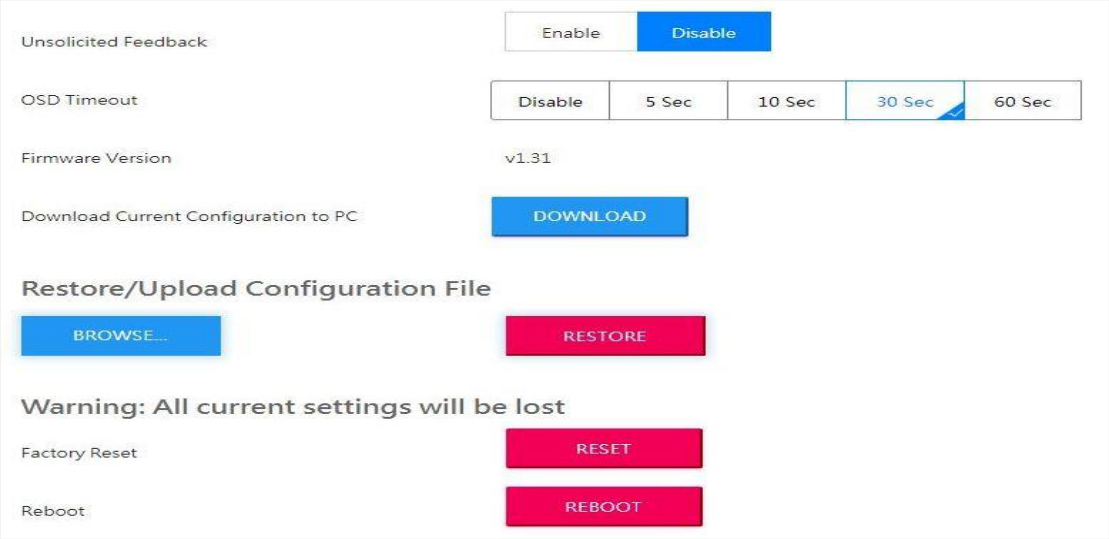


- Web Login Settings: Set new password for Operator and Administrator account.



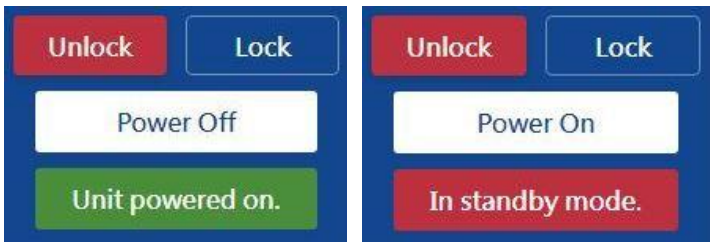
6 System:

This function allows the user to set the unsolicited feedback (This command allows the user to monitor the device, connect the device to a computer with an RS-232 cable and open PuTTY, the software will record every command that is giving to the device.) and OSD display time, and you can also read the firmware version here. Plus the user can download, upload, or restore the configuration file, and you can click the RESET button to do a default factory reset (warning all settings will be lost), or click the REBOOT button to reboot the device (similar to power-cycling the device).



7 Power:

- Lock / Unlock: Click the Lock or Unlock button to lock or unlock the device.
- Power Off / Unit powered on: The device is powered on. Click the Power Off button to turn off the power.
- Power On / In standby mode: The device is in standby mode. Click the Power On button to turn on the power.



10. OSD Control

The OSD controls are similar to the ones already discussed in this manual. The below table summarizes the controls available. The table is organized with the main sections on the left, followed by the commands and their parameters.

1. Main	Presets	Full Screen, Quad, Preset 1-18
	Routing	Input 1-4, Off
	Audio	Input 1-4, Mute
	Switch Mode	Seamless, Fade In/Out, Dissolve, Wipe
	Wipe Mode	Left to Right, Right to Left, Up to Down, Down to Up
	Transition Time	0.0-10.0
	HDR	Enable, Disable
2. Setup	Output Resolution	480p, 576p, 720p 50Hz, 720p 59.94, 720p 60Hz, 1080p 50Hz, 1080p 59.94Hz, 1080p 60Hz, 2160p 50Hz, 2160p 59.94Hz, 2160p 60Hz
	Window Setup	Picture (Brightness, Contrast, Saturation, Hue), Layout (X Position, Y Position, Width, Height, Priority), Label (On, Off)
	HPD Control	Input 1-4, Pulse ALL, Output
	HDCP	Follow Input, Always On 1.4, Always On 2.2
	Background	Disable, Background 1-4
	Audio Mode	Follow Full-Screen, Fixed
	Save Preset	Preset 1-18
3. EDID	Input1-4	External, Custom, Internal
4. Network	IP Settings	Mode, IP Address, Subnet, Gateway, HTTP Port
	TCP/Telnet Settings	TCP Access, Telnet Port, Login Message, and Telnet Login
5. System	Unsolicited Feedback	Enable, Disable
	OSD Timeout	Off, 5 seconds, 10 seconds, 30 seconds, 60 seconds
	Firmware Version	Firmware Version information
	Factory Reset	No, Yes
	Reboot	No, Yes

Regulatory Compliance

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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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