C4i

Consultants for Industry

C4i
ul. Batalionu Platerówek 3, bud. B-7, I p.
03-308 Warszawa, Polska
+48 22 398 33 42, +48 22 390 62 36
biuro@c4i.com.pl c4i.com.pl

H.265/H.264 HDMI Encoder For IP TV

Max resolution 4K@30HZ 4:4:4

Catalogue

DEAR CUSTOMER

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

1. FEATURES

- Support H.265/H.264 encoding
- Support HTTP, RTSP, RTMP/RTMPS, HLS protocol
- CBR/VBR rate: up to 100Mbps.
- Support Audio encoding format: AAC
- Max resolution 4K@30HZ YUV 4:4:4, Support HDCP2.2/1.4
- Support WEB GUI Control, Support upgrade, reboot and reset by web page
- Support NTP (Network Time Protocol)
- Support video and audio parameter settings, Support audio and video synchronization
- Support network parameter configuration
- Support 1x looping HDMI output , Support RS232 pass through
- With LED to display firmware version, IP address, MAC address, Channel etc
- Support one to one, many to many when working with SX-UHE01-RX, transmit distance up to 120m over single Cat5e/6 cable. Support Video Wall, Multi-View, Matrix work with CMP system.
- DC12V Power supply

2. SPECIFICATIONS

Performance	
Protocol	H.265/H.264
Video format	480P/720P/1080P/4K2K/800*600/1280*1024@60hz etc
Audio format	PCM2.0, Audio sampling rate 48KHZ. Analog Extractor
HDCP	HDCP2.2/1.4
RS232 Baud Rate	2400\4800\9600\19200\38400\57600\115200bps
IP SETTING	
Request for Switch/Router	Support IGMP, support DHCP
Environmental & Power Requirements	
Operating temperature	-5 to + 40℃ （+23 to +95℉）
Operating Humidity Range	5 to 90%RH (No Condensation)
Power supply	12V1A
Power consumption	4.416W

Dimension	125*115*31mm
Net Weight	0.44 kg

2.1 Supported input resolution

Frequency	Resolution
50HZ	576P
	720P
	1080P
60Hz /59.94Hz	480P
	720P
	1080P
30/29.97Hz	720P
	1080P
	4K2K
24Hz	720P
	1080P
	4K2K
	720P
25Hz	720P
	1080P
	4K2K

VESA Resolution

Frequency	Resolution
60Hz	800×600
	1024×768
	1280×768
	1280×960
	1280×1024
	1680×1050
	1920×1080
	1280×720
	1360×768
	1400×1050
	1920×1200
	3840×2160（Yuv420）

PACKAGE CONTENTS

1). Main Unit Encoder x1

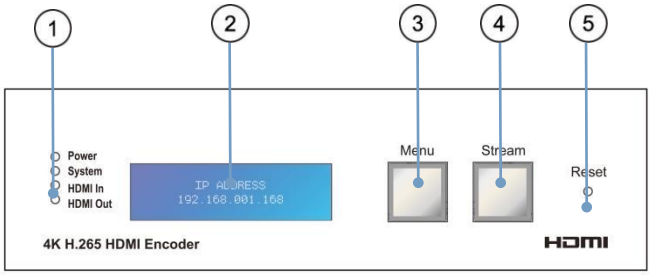
2). Power Adapter DC12V1A x1

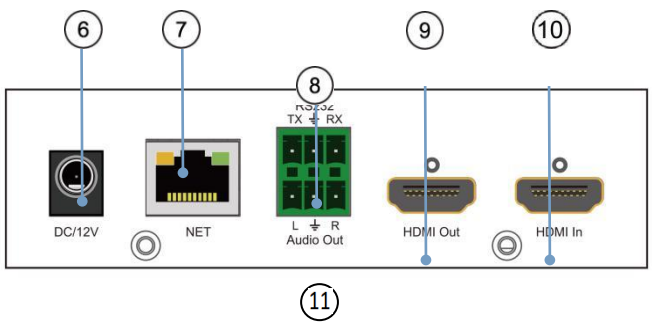
3). Fixed Hanger x2

4). Operating Instruction x1

5). 1*3 Phoenix Terminal x2

4. PANEL DESCRIPTIONS





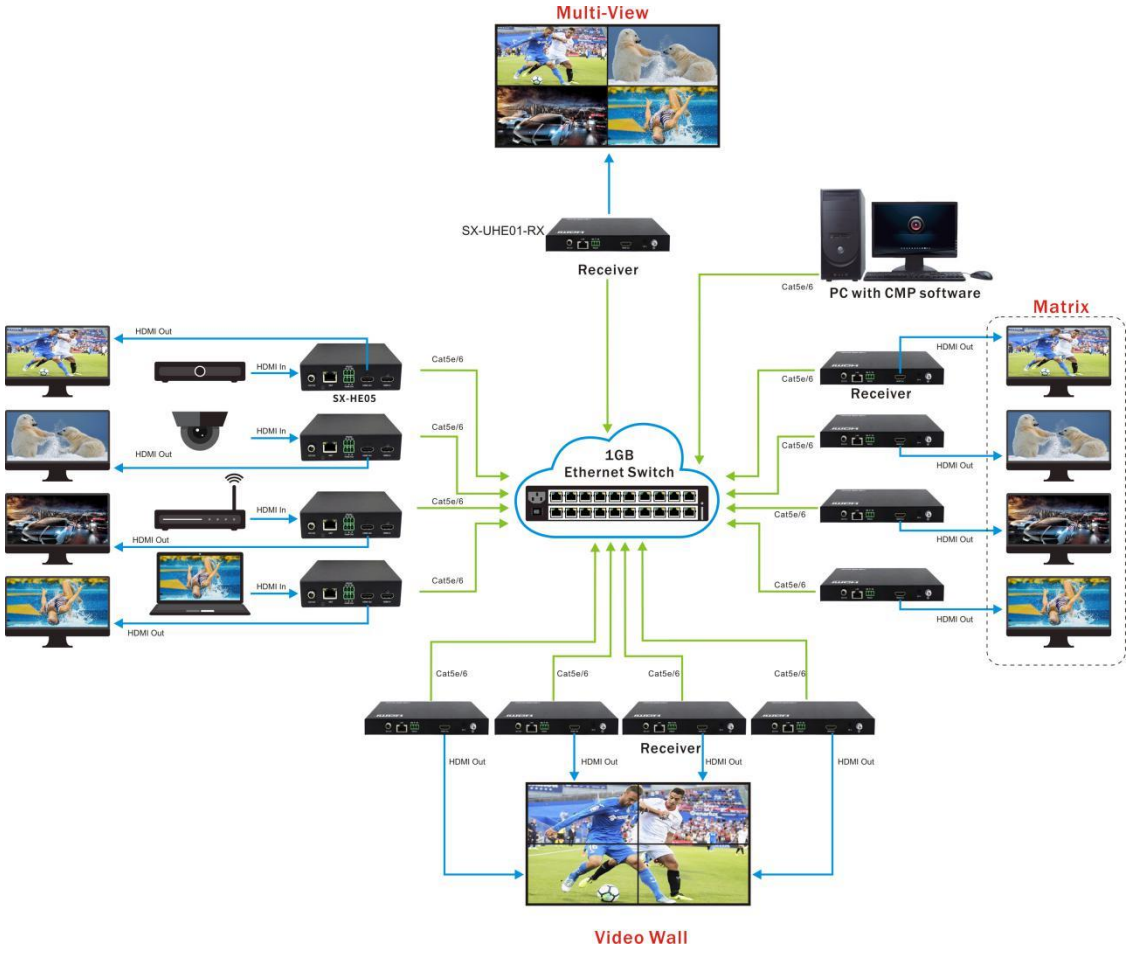
- ① Indicator of Power; Network; HDMI input; HDMI output
- ② LCD to display firmware version, IP address, MAC address, Channel etc
- ③ The button to switch LCD display
- ④ Video streaming buttons
- ⑤ Reset button
- ⑥ DC/12V input
- ⑦ Cat5/6 output
- ⑧ RS232 port
- ⑨ HDMI Output
- ⑩ HDMI Input
- ⑪ Audio Output

5. TYPICAL APPLICATION

5.1. Application 1

5.2. Application 2 Compatible with video player such as VLC etc

5.3. Application 3 Work with SX-UHE01-RX

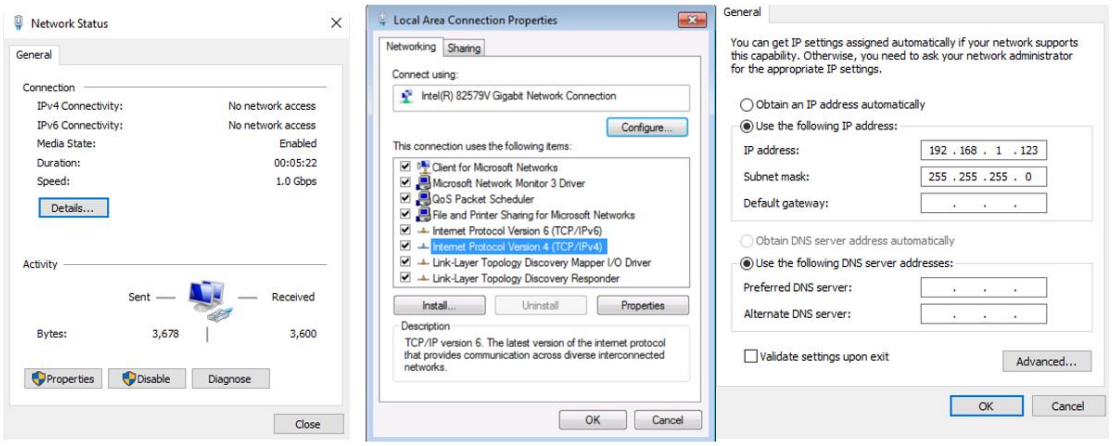


6. WEB INSTRUCTION:

6.1. Change the IP address of your PC

Before configuring the device through the web side, it is necessary to configure the IP address of the computer configured with the device (mainly to ensure that the computer and the device are set in the same network segment).

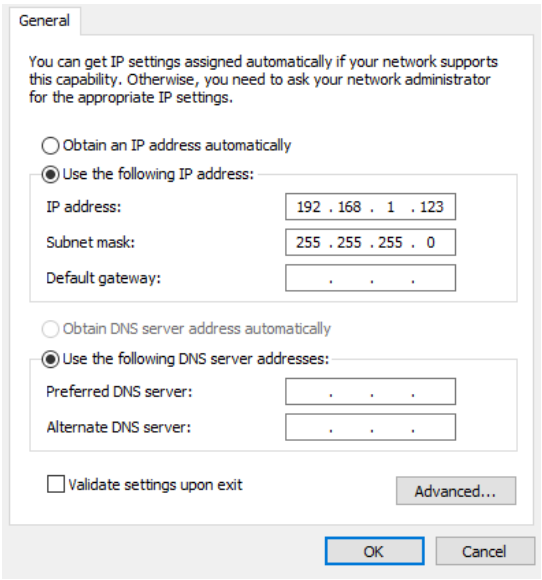
1). Open the network control center and set the computer's IP address ：



2). Choose to use Static IP, with the IP address set to 196.168.1.x (x ranges from 0 to 254, but cannot be consistent with the device's IP address),

3). Subnet mask set to 255.255.255.0

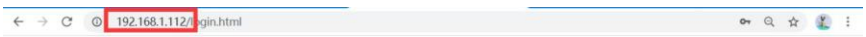
4). Gateway set to 192.168.1.1

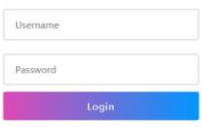


5) . Enter the device's IP address in the web browser for the device configuration interface.

Way to enter the device login interface:

(1) If the device IP is known, enter the device IP address in web browser to enter the device login interface.





Enter the user configuration interface after you enter the correct user name and password. You can view the relevant information of the device and Configure the device.

Note: Encoder Static default IP: 192.168.1.168 (device and computer directly connected by network cable).

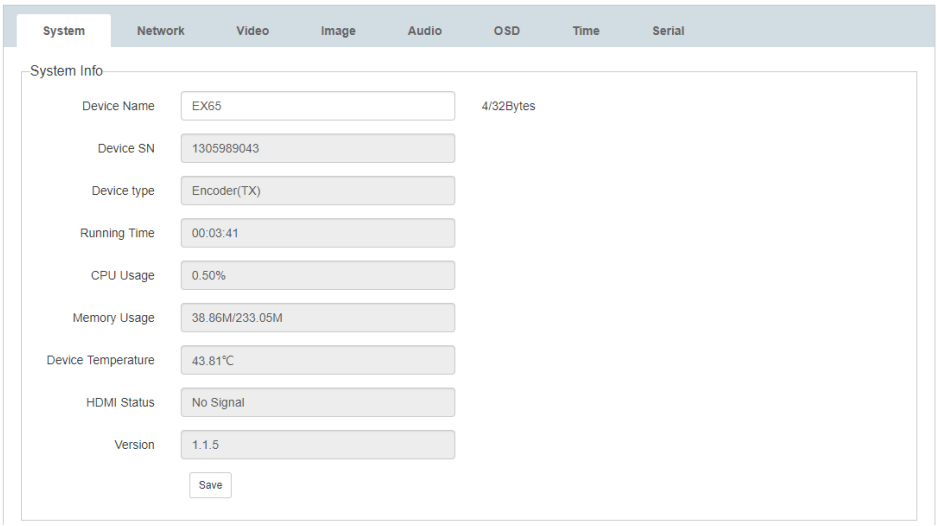
Device DHCP default open, if there is a router will directly assign IP address. You can view the IP address of the device by switching the third page on the LCD screen of the product.

6.2. System Setting:

1) System Information

●In the "System", you can view the Device name, Device SN, Device type, Running time, CPU usage, Memory usage, Device temperature, HDMI status, and Version in real time.

●The device name can be modified within 32 bytes. After the modification is completed, press “Save” to take effect immediately.



2) Language Switching

● In the "System" interface, the language of the interface can be switched

● Select the language we need, after the selection is completed, we can switch the interface language (support Chinese and English)

3) Channel

● The channel of the device can be configured in advance in the "System" before configuring to use the decoder;

● If the H.265 Encoder and decoder are configured on the same channel, the display connected to the decoder can play the audio and video signals from the Encoder .

● Through channel configuration, Can set one-to-many, many-to-many video matrix

(Note: channels between Encoder and Encoder cannot be set to be consistent, otherwise channel conflict will be caused).

4) Streaming switch

● "Stream" switch : When the "stream" switch is ticked, the video stream starts to output; when it is not checked, the video stream stops output

NOTE: (1) The function of Switch is same as the Video streaming buttons of product. When the video stream button is green, the video stream is output; when the button is red, the video stream stops output.

(2) Long press 2S to switch the status of the " Video streaming buttons " on the product , and the status of the "stream" switch on the web will also change in real time.

● "Stream button" switch: When the "Stream button" switch is checked, the "Video streaming button" on the product becomes invalid.

● "Multicast" switch: When the "multicast" switch is checked, the channel starts to transmit video streams; when the "multicast" switch is not checked, the channel stops transmitting video streams.

5) Upgrade Equipment

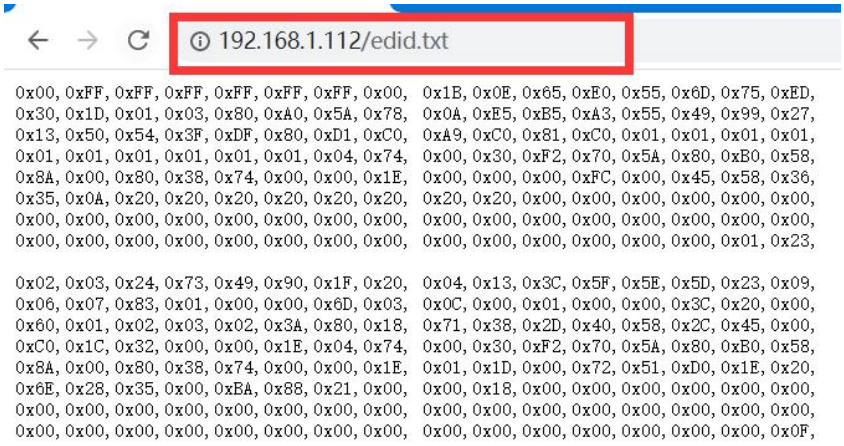
In the "system configuration" interface, you can upgrade the firmware, EDID, Logo of device.

● Firmware upgrade:

- Select "Firmware" in the upgrade type
- Find the file (bin format) to upgrade by selecting the path, and click the upgrade button after confirmation.
- The device can be upgraded for a moment, and you can view the current version in the system information.

● EDID upgrade:

- Select "EDID" in the upgrade type
- Find the file of EDID to upgrade by selecting the path, and click the upgrade button after confirmation.
- The device can be upgraded for a moment. Enter the device's IP address + / edid.txt in a web browser, such as 192.168.1.112/edid.txt, and you will view the device’s EDID.



(3) No devices with the same name in the LAN

- View looping EDID output: Enter the device's IP address + /loop_edid.txt in a web browser, such as http://192.168.1.112/loop_edid.txt , and you will view the looping EDID output.

  Download looping EDID output: Enter the device's IP address + /loop_edid.bin in a web browser, such as bin, and you will download the looping EDID output.

NOTE:(1) It is effective to view the downloaded EDID file when the corresponding display device is connected to the looping EDID out.

(2) If the device is upgraded to a downloaded EDID file, it will cause the picture not to be shown in the device when there is problem with the EDID file.

(3) When the upgrade causes the looping out without a picture, you can reset the device to return normal.

● EDID upgrade:

- Select "LOGO" in the upgrade type
- Find the file to upgrade by selecting the corresponding path, and click the upgrade button after confirmation.
- The device can be upgraded for a moment, it will output the upgraded LOGO image when the input source or input source is compatible.

6) Reset Device

● After confirming to Reset Device Settings, the device will restore factory Settings and all parameters will be restored to the original state;

● Reset Device Settings, and the product will be re-assigned the IP address by the router. If the original address is invalid, the device IP address should be re-entered in the web browser address bar.

7) Reboot Device

● The parameters set before reboot will be saved when reboot;

● After Reboot Device, the platform and the device will be temporarily offline, and the online state of the device will be restored automatically after the restart

8) User password

- The default password between the web server and the device is amdin
- The web browser will back to the user login interface after you change the password.
- Enter the user name and new password, you can re-enter the user configuration interface.

6.3. Network configuration

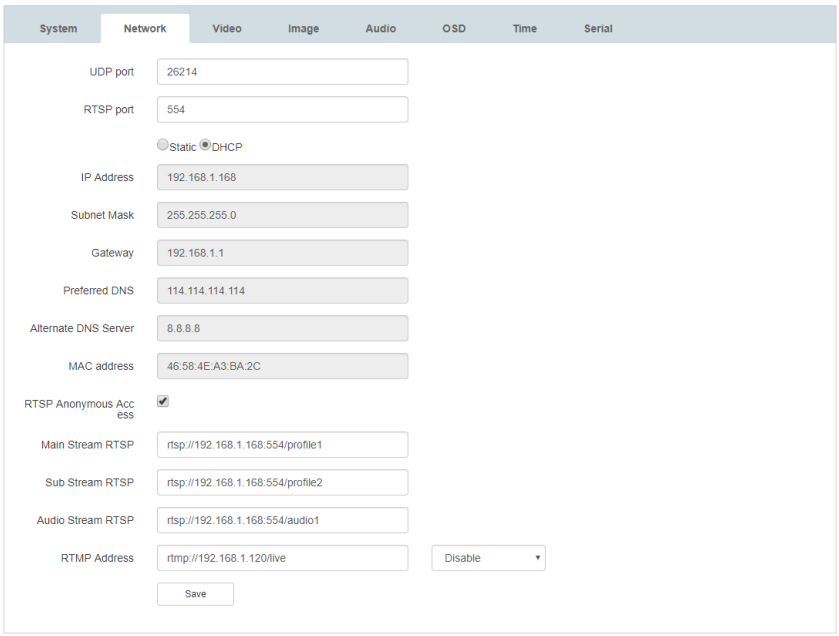
1) In the "Network" configuration, UDP, RTSP, Network address, Sub-net Mask, Gateway and Domain name server can be modified; After the network configuration is confirmed, the device needs to be restarted manually to take effect. (note: only when the static network address can be modified)

2) Two video streaming protocols are provided: primary and sub-code streams of RTSP; RTMP live streaming protocol.

3) RTSP anonymous access: check the box to indicate that there is no need to enter the account and password when receiving the video stream; otherwise, Need enter the account and password when not checked.

4) Default account and password: admin

5) Note: the modified IP address cannot be the same as the IP address of all connected devices in the network.



Note: 1)How to use RTSP and RTMP refer to the operating steps of the platform

2) The IP address used for communication between the network card and the device needs to be changed to H.264 before using RTMP

6.4. Audio configuration

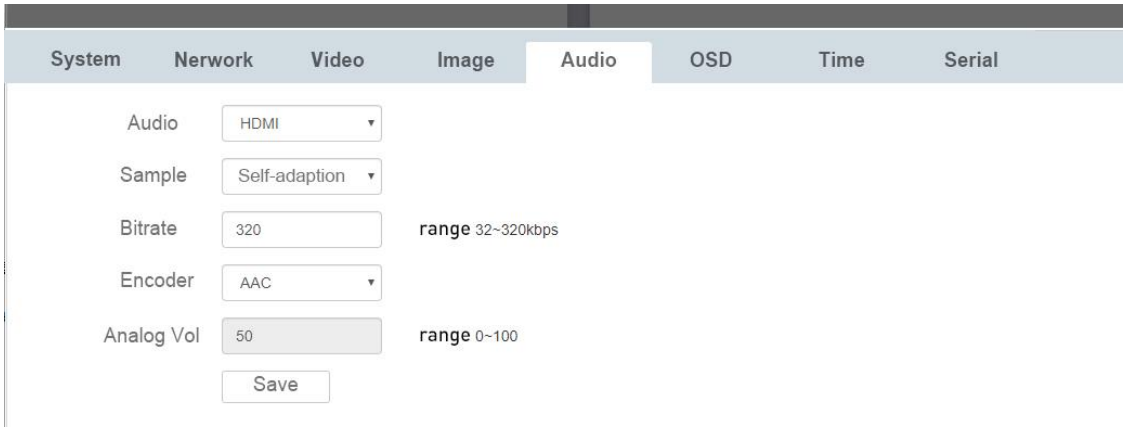
Digital audio (HDMI) and ANALOG audio (ANALOG) can be configured on the "Audio" interface

HDMI: audio of the source (Default)

- Sampling rate: Self-adaption
- Coder: ACC

● Analog audio volume: used to adjust analog audio output volume, default is 50, volume range 0-100

● Audio out, connect the Phoenix terminal to the 3.5mm audio female and then connect the audio equipment.



6.5. Video configuration

In the "Video Configuration" interface, the detailed parameters are as follows:

1)Main Data Rate:

● Encoding: H.264、H.265(Default)

● Resolution: 3840×2160(Default), 1920×1080, 1280×720, 640×360

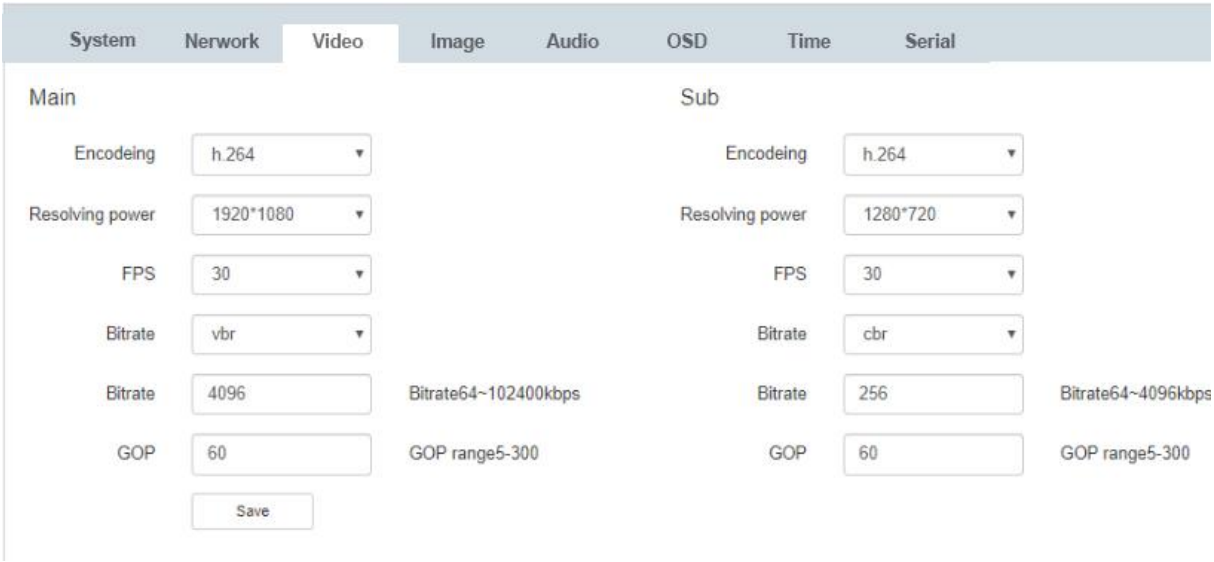
● FPS:30(Default), 1-60

● Control method: CBR、VBR

- Bitrate: 20480(Default)，64-102400Kbps
- Gop: 60（Default)，GOP5-300

2) Subprime Data Rate

- Encoding: H.264(Default)、H.265
- Resolution: 1280×720(Default)、1920×1080，640×360
- FPS:30(Default)，1-60
- Control method: CBR(Default)、VBR
- Bitrate: 256(Default)，64-4096Kbps
- Gop: 60(Default)，GOP5-300



6.6. Image settings

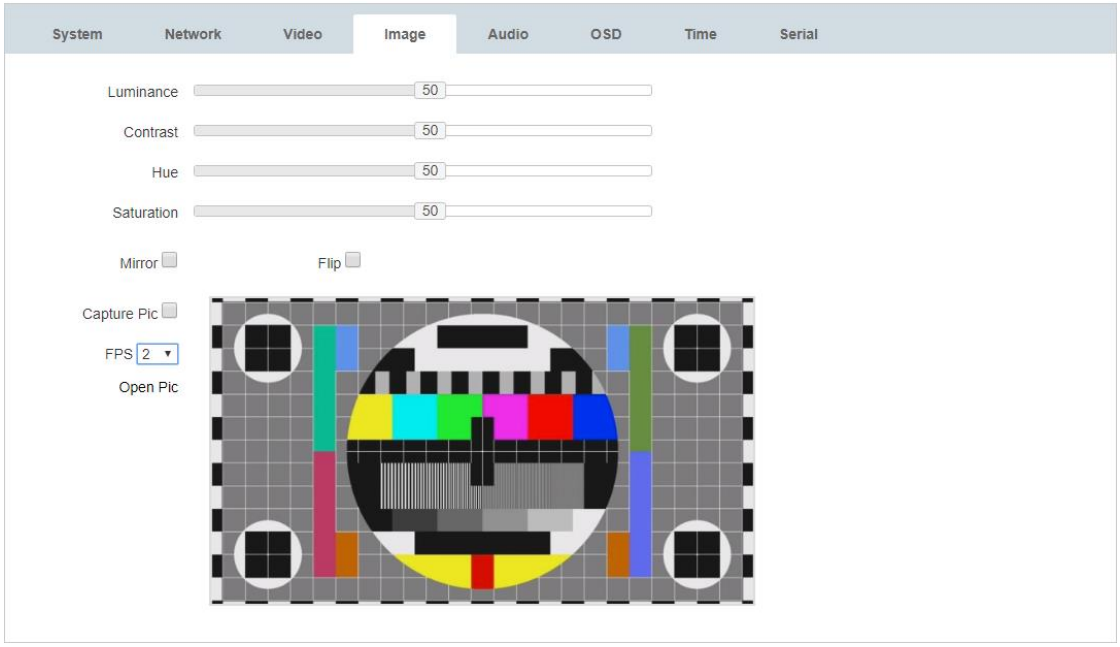
1) In the "Image Settings" interface, you can adjust the brightness, contrast ratio, hue, and saturation of the image

- Brightness: 0~100
- Contrast ratio: 0~100
- Hue: 0~100
- Saturation: 0~100
- System default : 50

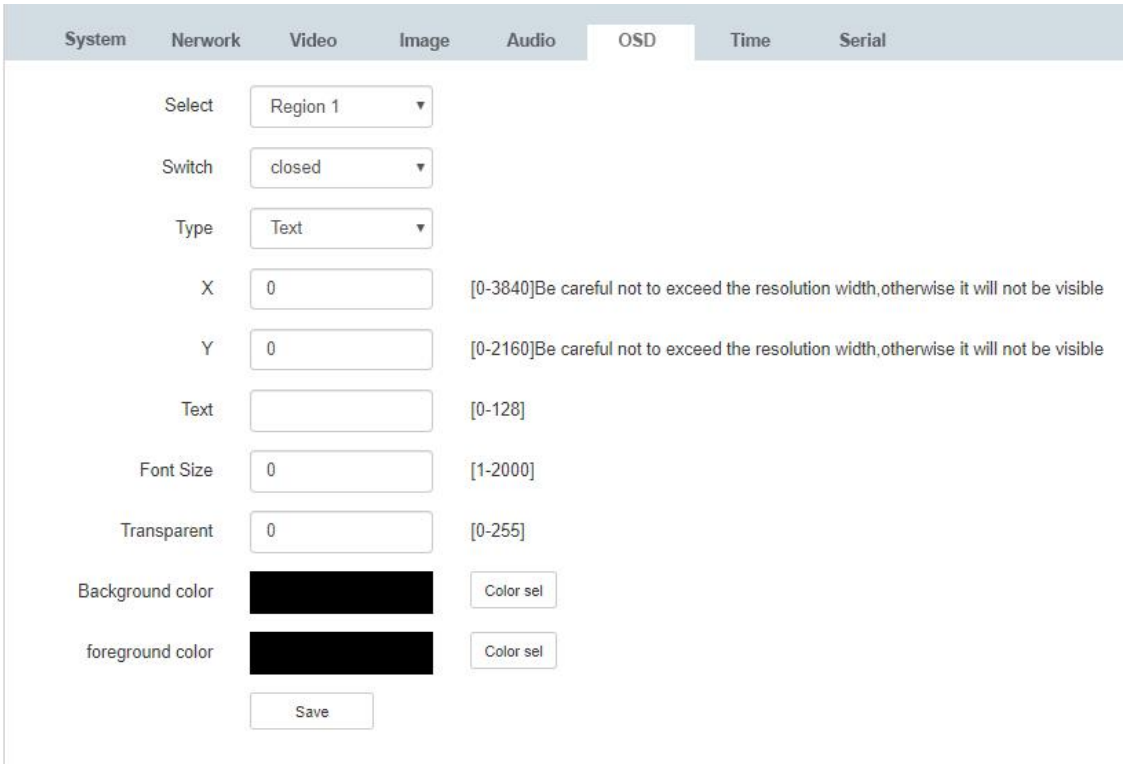
2) In the "On Image Settings" interface, you can check the "Mirror" and "Flip" switches to perform video image of "Mirror" and "Flip".

3) In the "Image Settings" interface, check the "Capture Image" switch to capture the current image in real time, and set the frame rate (1 ~ 15)

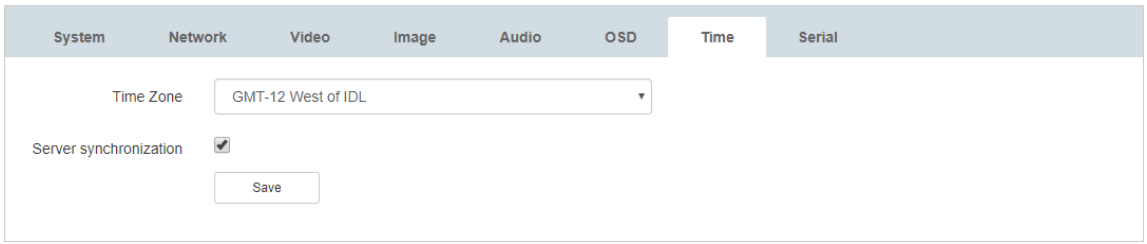
4) In the "Image Settings" interface, click to open the picture, it will grab an image of the current video in real time.


System
Network
Video
Image
Audio
OSD
Time
Serial
Luminance
50
Contrast
50
Hue
50
Saturation
50
Mirror
Flip
Capture Pic
FPS
2
Open Pic

6.7. OSD configuration



6.8. Time configuration



6.9. Serial port configuration

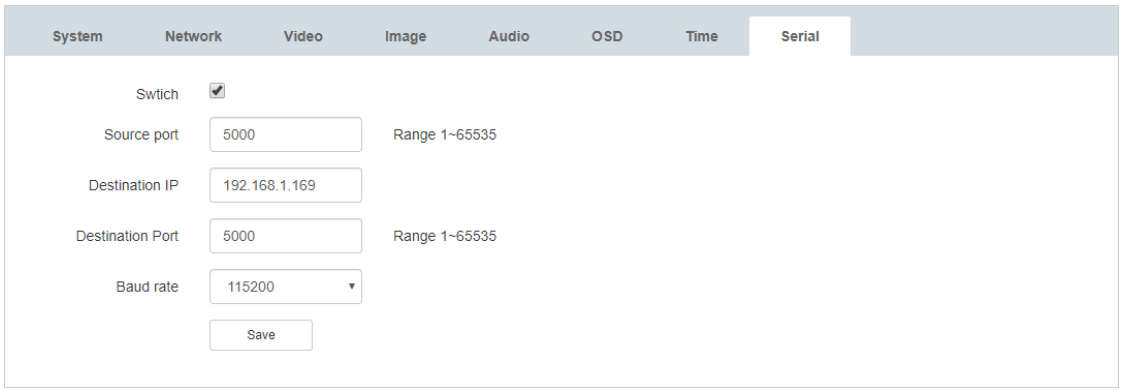
1) Switch: Turn on, Turn off

2) Source port: 0~65535 (Default 5000)

3) Target IP: fill in the IP address of the device to be communicated

4) Target port: 1~65535（Default 5000）

5) Baud Rate: 2400、4800、9600、19200、38400、57600、115200、230400、460800（Default 115200）

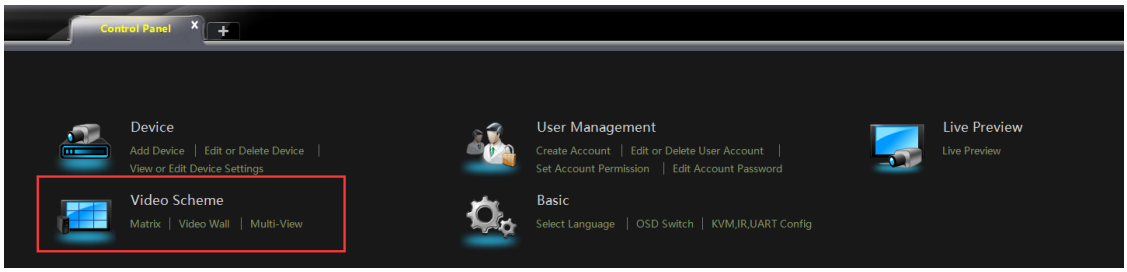


Note: (1) It must to bind each other's IP addresses when serial communication is required between two devices.

(2) The target address must be consistent with the IP address of the other party.

7. VIDEO SCHEME

When SX-HE05 work with SX-UHE01-RX, it support CMP system to realize the function of Matrix, Multi-View, Video Wall.



7.1. Matrix Configuration

Before use Decoder with the platform, set up the matrix configuration on the platform. Many-to-many or one-to-many can be preset as video matrix.

Factory default OSD interface is as follows:

The current software version information, Decoder IP address and Decoder MAC address are displayed in the light blue background.

Specific steps are as follows:

1. Open the function panel and select matrix configuration

2. The top of the left column represents the preview window, and the bottom of the left column represents the Encoder device list information

3. There are channel setting options below the left column and below the right column.

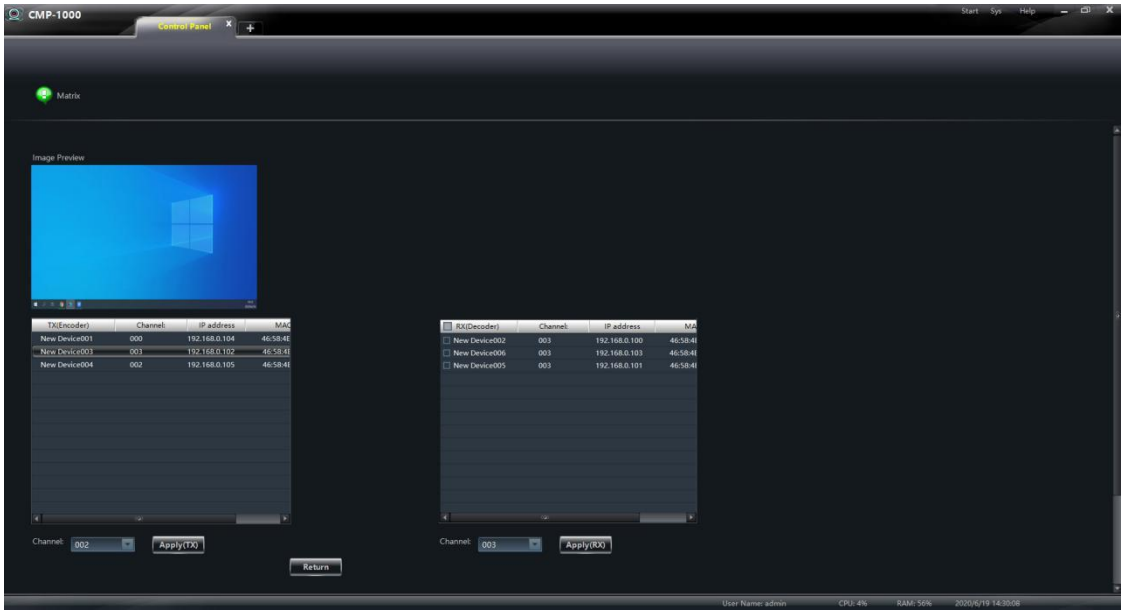
4. Click any device in the Encoder list once with the left mouse button, and the upper window will take the real-time preview image as the current signal source

5. Customize the channel ID of Encoder device (click the blank in the list to unselect it with the left mouse button)

6. The Decoder list corresponds to the Encoder device channel set to be consistent.

7. Completion of matrix configuration.

Note: The Encoder channel cannot be set to the same, otherwise it will cause conflicts. In the case of connect to a switch, if the device is reset together and no new channel is set, it will cause channel conflicts. At this time, the TV may cross-talk, etc. (After reset, the default channels are 000)



7.2. Multi-View

Multi-View means that multiple groups of signal sources are displayed in one screen. See the example image below：

1). Each group of video sources is presented as a sub stream within the Multi-View.

2). Up to 36 groups of signal source segmentation can be supported

Specific steps are as follows:

1) open the CMP integrated management platform and enter the main interface of the functional panel;

2) select the "OSD switch" option, check the OSD switch and return to the main interface of the functional panel;

3) select the "Multi-View" option to enter the large-screen divide interface;

4) set the required number of divide boxes (1, 4, 16, 25, 36);

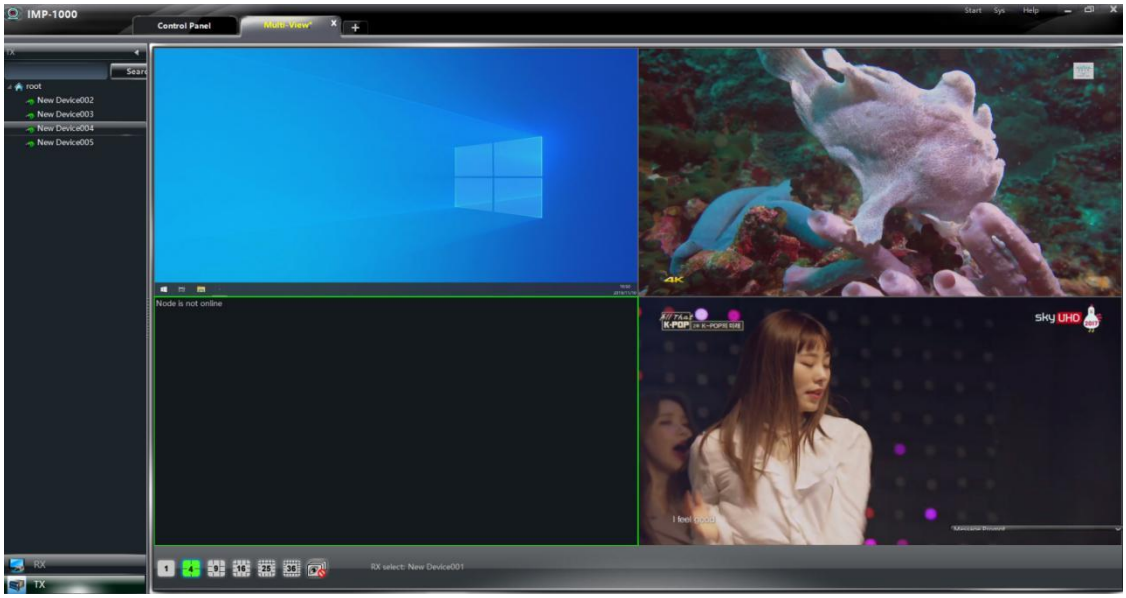
5) select the Decoder device to be divided according to the IP address displayed by OSD;

6) open the Decoder device list in the monitoring point area (left side), select the required Decoder device, and long press the left mouse button to drag it into the divide box;

7) open the Encoder device list in the monitoring point area, select the required Encoder device, and long press the left mouse button to drag it into the divide box;

8) large screen divide operation is completed.

Note: if the Decoder returns to normal one-to-many or many-to-many, it can be restored by re-entering the matrix configuration. Exit will prompt you to save the view.



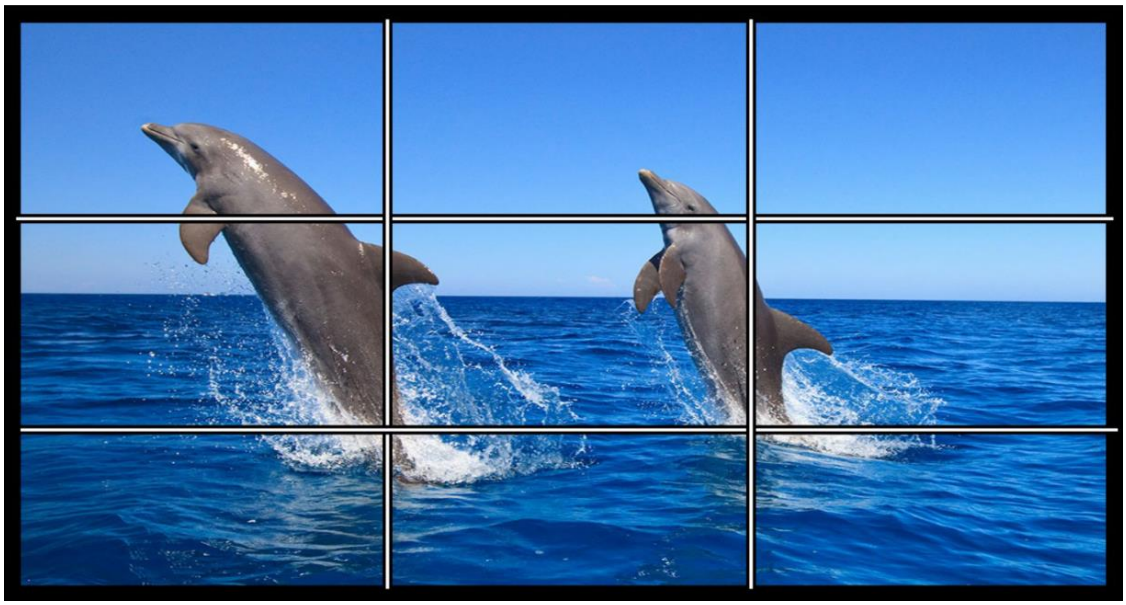
7.3. Video Wall

Video Wall consists of a single signal source splicing multiple sets of Decoder (TV) into a single image.See the example image below

1). Under Video Wall, the maximum resolution of each group of Decoder devices supports 4K30.

2). The current maximum support is 9×9 splicing

3). Edge shielding (screen width, screen height, display width and display height) can be set separately for each group of spliced images.



Specific steps are as follows:

1) Open the CMP integrated management platform and enter the main interface of the functional panel;

2) Select the "OSD switch" option, check the OSD switch and return to the main interface of the functional panel;

3) Select the "Video Wall" option to enter the big-screen splicing interface;

4) Select the required number of splicing boxes (1, 4, 16, 25, 36);

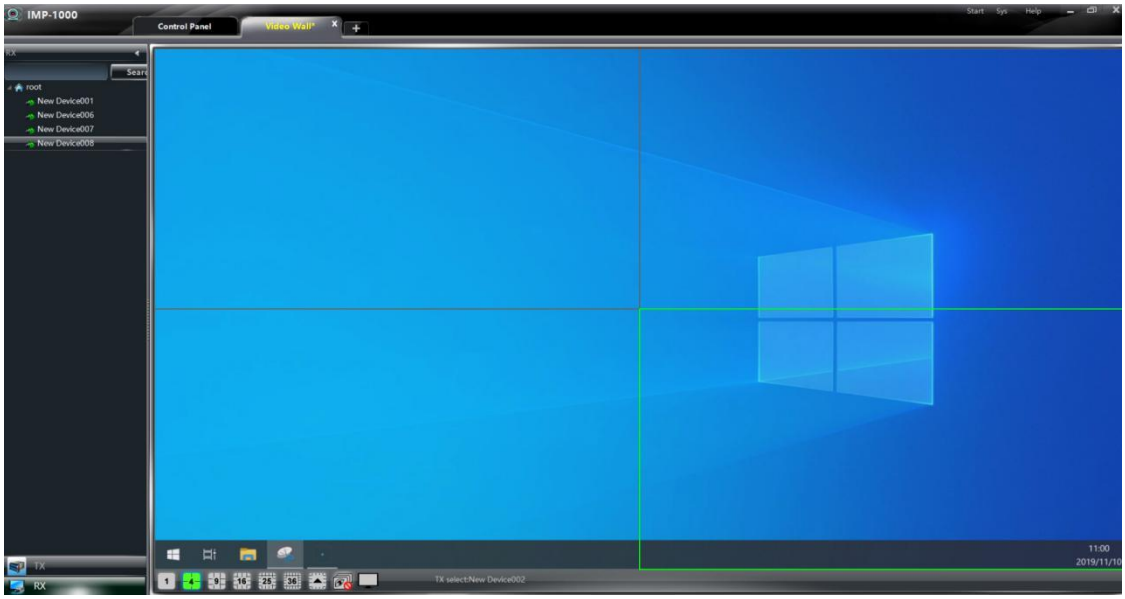
5) Select the Decoder device signal source required to be spliced first according to the IP address displayed by OSD;

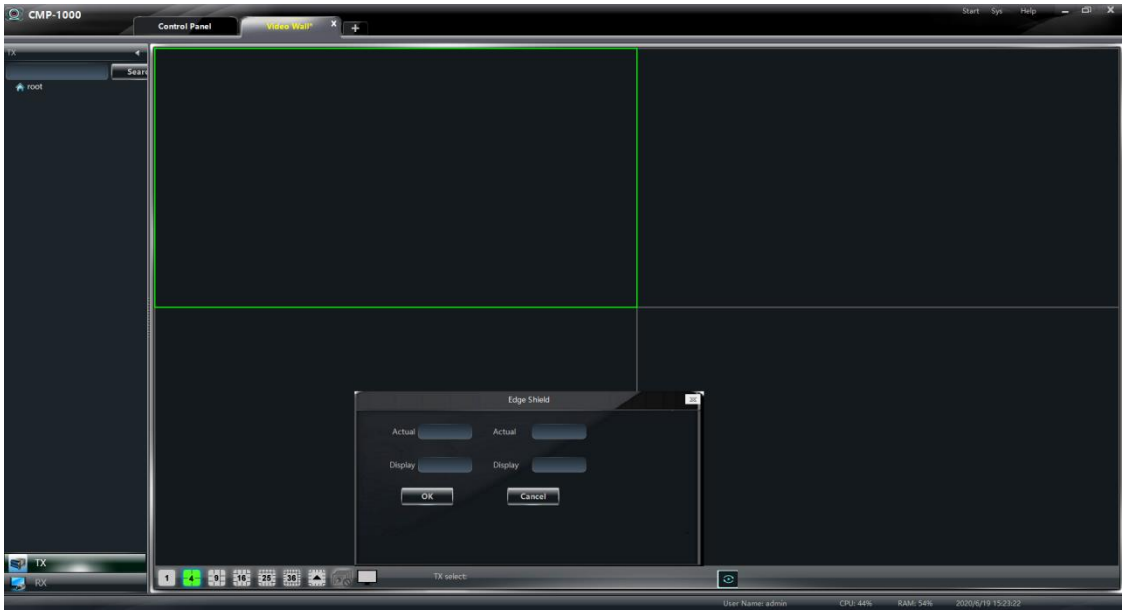
6) Open the Encoder device list in the monitoring point area, select the required Encoder device, and long press the left mouse button to drag it into the splicing box;

7) Open the Decoder device list in the monitoring point area, select the required Decoder device, and long press the left mouse button to drag it into the splicing box;

8) Large screen splicing operation is completed.

Note: if Decoder returns to normal one-to-many or many-to-many, that is, reentry into matrix configuration can be restored, exit will prompt whether to save the view.





Edge Shield is to adjust the entire picture. If the preview of the CMP platform is stuck or the picture is not synchronized, it is recommended to lower the resolution and bit rate of the main stream or substream.

MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner of benzine to clean this unit.

PRODUCT SERVICE

（1） **Damage requiring service:** The unit should be serviced by qualified service personnel if:

(a) The DC power supply cord or AC adaptor has been damaged;

(b) Objects or liquids have gotten into the unit;

(c) The unit has been exposed to rain;

(d) The unit does not operate normally or exhibits a marked change in performance; The unit has been dropped or the cabinet damaged.

（2） **Servicing Personnel:** Do not attempt to service the unit beyond that described in these operating instructions.Refer all other servicing to authorized servicing personnel.

（3） **Replacement parts:** When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other Hazards.

（4） **Safety check:** After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

WARRANTY

If your product does not work properly because of a defect in materials or workmanship, our Company (referred to as "the warrantor") will, for the length of the period indicated as below,

(Parts(2)Year, Labor(90) Days) which starts with the date of original purchase ("Limited Warranty period"), at its option either(a) repair your product with new or refurbished parts, or (b) replace it with a new of a refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labor" Limited Warranty period there will be no charge for labor.

During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

MAIL-IN SERVICE

When shipping the unit carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter detailing the complaint and provide a day time phone and/or email address where you can be reached.

LIMITED WARRANTY LIMITS AND EXCLUSIONS

1) This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage.

The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damage that is attributable to acts of God.

2) THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRNTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.)

3) PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.