



Prestel IPC-4KSDVOE-R2

Video over IP Controller



USER MANUAL

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.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

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1. Introduction

This Video over IP Controller is used to control and manage SDVoE IP products. It supports dual 1G network ports, which can realize dual-network isolation of Control network and Multi-cast video distribution network. The product supports Web GUI/TCP/RS-232/IR/GPIO controls and PoE function. Since the demand of IP products is daily increased in the current market, the IP Controller will be widely applied in more and more different scenarios.

2. Features

- ☆ Easy to create project, control and manage the system
- ☆ HTTPS, SSH security compatible
- ☆ Built-in Web GUI control interface, supporting Drag & Drop operations
- ☆ Support image preview
- ☆ Support video, audio, RS-232, IR, KVM control and management of the distributed system
- ☆ Dual network ports (VIDEO LAN port supports PoE function) to isolate Controls and Multicast networks.
- ☆ Support LAN/RS-232 port control and third-party central control
- ☆ Support IR signal receiving and loop output (3.5mm audio jack, 12V level)
- ☆ 4 channel GPIO control ports (5V/12V optional level)
- ☆ Multiple circuits protection, lightning protection and ESD design
- ☆ Reliable system design, ensuring 7*24 hours reliable and stable work

3. Package Contents

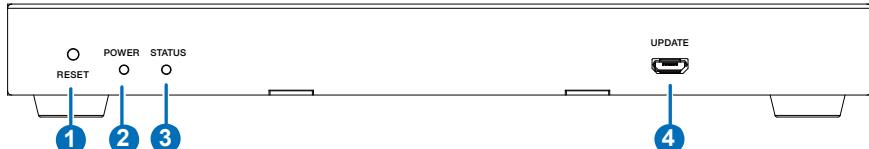
- ① 1x Video over IP Controller
- ② 1x 20kHz-60kHz 12V IR Receiver Cable (1.5 meters)
- ③ 1x IR Blaster Cable (1.5 meters)
- ④ 2x 3-pin 3.81mm Phoenix Connector (Male)
- ⑤ 1x 6-pin 3.81mm Phoenix Connector (Male)
- ⑥ 2x Mounting Ears
- ⑦ 4x Machine Screws (KM3*6)
- ⑧ 1x 12V/1A Locking Power Adaptor
- ⑨ 1x User Manual

4. Specifications

Technical	
Network Bandwidth	100M/1G
Transmission Distance	100m CAT 5E/6/6A/7
Control Ports	2x 1G LAN [RJ45 connector] [VIDEO LAN support PoE] 1x IR IN [3.5mm audio jack, 12V level] 1x IR OUT [3.5mm audio jack] 1x DIGITAL I/O [6-pin 3.81mm phoenix connector] 2x RS-232 [3-pin 3.81mm phoenix connector] 1x UPDATE [Micro USB, 5-pin female]
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Dimensions	204mm (W) × 98.5mm (D) × 21.5 mm (H)
Housing	Metal Enclosure
Color	Black
Weight	508g
Power Supply	12V/1A
Power Consumption	1.8W (Max.)
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Operating Humidity	20% ~ 80% RH (relative humidity, non-condensing)
Storage Humidity	10% ~ 90% RH (relative humidity, non-condensing)

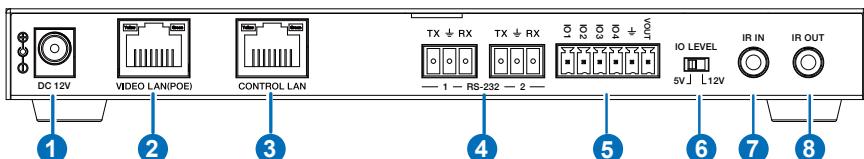
5. Operation Controls and Functions

5.1 Front Panel



No.	Name	Function Description
1	RESET Button	Press and hold this button (about 10 seconds) until STATUS LED starts flashing, Controller will be reset automatically.
2	POWER LED	The red LED will light on when the Controller is powered on.
3	STATUS LED	The status LED will flash in yellowish-green every 1 second until Controller boots up completely and Control LAN is ready, then it becomes solid.
4	UPDATE	Firmware update port. <i>Note: Must keep no connection on this port when Controller works in normal mode.</i>

5.2 Rear Panel



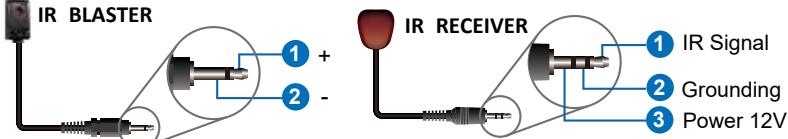
No.	Name	Function Description
1	DC 12V	DC 12V/1A power input port.
2	VIDEO LAN (POE)	1G Video LAN port, supporting PoE function. <i>Note: When PoE is enabled, DC 12V/1A power supply is not required.</i>
3	CONTROL LAN	The TCP/IP control network port.
4	3-pin Phoenix Connectors	Two identical RS-232 serial communication ports.
5	6-pin Phoenix Connector	4 channel I/O level outputs, 1 channel grounding, 1 channel power supply (supports up to 12V/0.5A) to the outside.
6	IO LEVEL DIP Switch	Used to control I/O level output and VOUT voltage. Switch to left: 5V I/O level output, VOUT is 5V. Switch to right: 12V I/O level output, VOUT is 12V.
7	IR IN	12V IR signal input port.
8	IR OUT	IR signal output port.

5.3 IR Pin Definition



IR BLASTER

IR RECEIVER



6. Rack Mounting Instruction

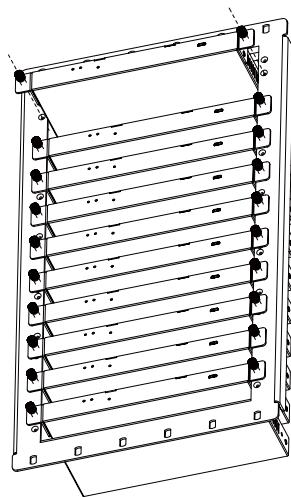
6.1 6U V2 Rack Mounting

This Controller can be mounted in a standard 6U V2 rack (Please contact your supplier for 6U V2 rack sale). The mounting steps are as follows:

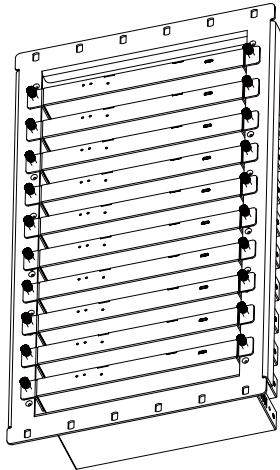
Step 1: Use included screws to fix two mounting ears on the Controller, as shown in the figure below:



Step 2: Insert the Controller with mounting ears into a 6U V2 rack (up to 10 units can be installed vertically), as shown in the figure below:



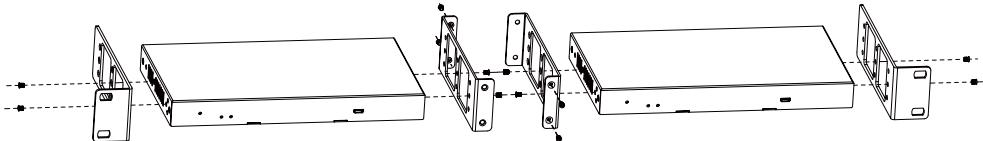
Step 3: Use screws to fix mounting ears on the rack to complete the mounting, as shown in the figure below:



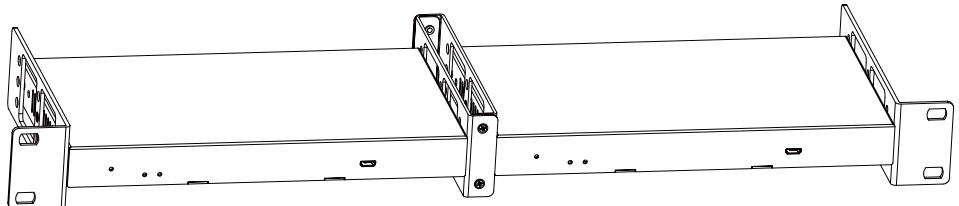
6.2 1U V2 Rack Mounting

This Controller also can be mounted in a standard 1U V2 rack. It is advised to install 2 units horizontally. The mounting steps are as follows:

Step 1: Use included screws to fix two 1U V2 rack panels on the Controller, and fix two rack panels on another Controller in the same way, as shown in the figure below:



Step 2: Fasten screws between two 1U V2 rack panels, so that two Controllers are mounted in a 1U V2 rack, as shown in the figure below:



7. Web GUI Operation Guide

7.1 Preparation before Entering the System

You can use Controller's Web GUI to control all IP products at the Switch.

The operation steps are as follows.

Step 1: Input the Controller's default IP address (Control LAN port: 192.168.6.100; Video LAN port: 169.254.8.100) or the URL (<http://controller.local>) into the Web browser address bar on the PC to enter the Web GUI login interface.



When logging in for the first time, please select the initial username (admin), input the initial password (admin), and select the desired language on the above login interface. Then click "Login" to enter the password modification interface, as shown below.



Please set a six-digit password using letters or numbers, then use the new password to login the Web GUI.

For the first time, you need to set up the system, as shown in the following figure:

Welcome to AV over IP system setup guide. It leads you to create the system easily by following steps.

You can click the [Close] button to load an existing system in web page directly.

Close

Next

Step 2: Click the “Close” button to load an existing system in web page directly, or click “Next” button to go to the next step.

To setup AV over IP system, you need to set the IP management mode of the Video LAN domain. The IP management modes are:

Automatically managed by Controller Box.

This is the mode as factory default. The IP address assignments to Controller Box Video LAN, Encoders and Decoders will be managed by Controller Box firmware automatically. In this mode, there is no need to add router in the system on Video LAN domain.

DHCP mode.

This is the mode for system in which there is a DHCP router on Video LAN domain to assign IP addresses for Controller Box Video LAN, Encoders and Decoders. The router acts as a DHCP server. It's recommended to set the net mask of router to 255.255.0.0.

Static IP mode by manual settings.

This is the mode for system in case IP address resources can be assigned manually for Controller Box Video LAN, Encoders and Decoders. Reminders as below:

- a. The network settings of Controller Box Video LAN, Encoders and Decoders must be on the same subnet.
- b. It's recommended to set the net mask of Controller Box Video LAN, Encoders and Decoders to 255.255.0.0.

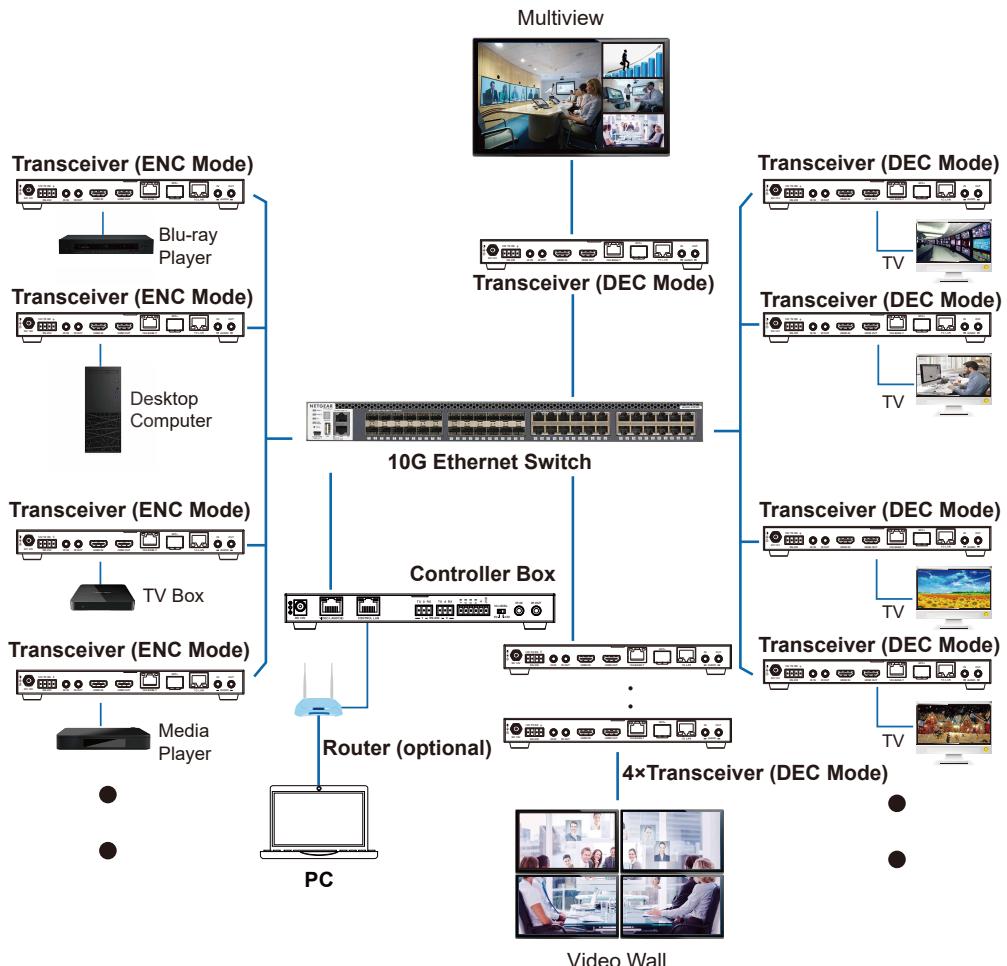
Close

Next

On this interface, you need to set the IP mode of Video LAN.

Mode 1: Automatically managed by Controller Box.

The IP addresses of the Video LAN port, Encoders and Decoders are assigned by the Controller automatically, and the connection method is as following.



Step 3: Click the “Next” button and wait for the completion to enter the interface as shown in the figure below.

Now you can select to automatically add all following discovered Encoders and Decoders to system or just list them in the web page and you can add each of them to system manually.

Please click the [Search] button to search Encoders and Decoders in the system:

- Automatically add Encoders and Decoders to system.
- List all discovered Encoders and Decoders.

[Close](#)

[Next](#)

- If you select “Automatically add Encoders and Decoders to system”, and click the “Next” button to enter the Device page, the system starts to search for devices. All the connected devices will be searched and added into the system (presented in the Encoder/Decoder list) automatically, as shown below.

ID	Name	MAC	IP	Firmware	Status	Up Time	RX Link	Member
1	Encoder 001	6C:DF:FB:00:A9:5F	169.254.10.1	15.0.12	●	00 day,01 hr,13 min	0	Null
2	Encoder 002	6C:DF:FB:00:84:3C	169.254.10.2	15.0.12	●	00 day,02 hr,23 min	1	Name

- If you select “List all discovered Encoders and Decoders”, and click the “Next” button to enter the Device page, the system starts to search for devices. All the connected devices will be searched and listed in the Device list. Then an inquiry box will pop up. If selecting “Yes”, all searched devices will be added into the system directly; If selecting “No”, you need to manually add them into the system by clicking the “Add” button behind each device one by one or clicking “Add All Into System”.

Now you can select to automatically add all following discovered Encoders and Decoders to system or just list them in the web page and you can add each of them to system manually.

Please click the [Search] button to search Encoders and Decoders in the system:

- Automatically add Encoders and Decoders to system.
- List all discovered Encoders and Decoders.

[Close](#)

[Next](#)

Add Device To System

Found 1 devices, including 1 Encoders and 0 Decoders. Will all devices be directly added to the system? If you choose Yes, all devices will be added to the system. If you choose No, these devices will be listed and presented in the device list below, and then you need to manually add them to the system.

No Yes

Device

Search Device Search Device Via Wizard Add All Into System

Encoder Decoder

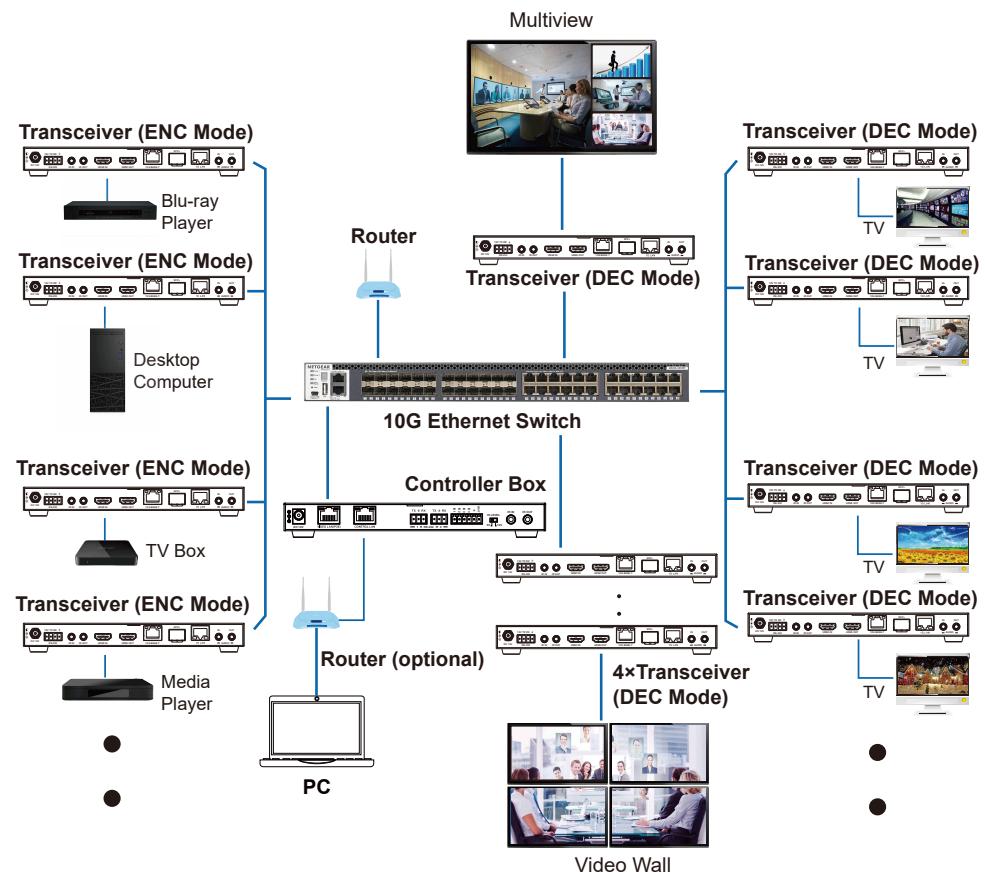
Index	MAC	IP	Index	MAC	IP
1	6C:DF:FB:00:84:3C	169.254.10.2			No Data

Clear All Clear All

If you want to change the IP mode of Video LAN, you can click "Search Device Via Wizard" on the Device interface, and switch back to the IP mode select interface.

Mode 2: DHCP mode.

The IP addresses of the Video LAN port, Encoders and Decoders are assigned by the Router automatically, and the connection method is as following.



Select “DHCP Mode” on the interface shown below, and click “Next”.

To setup AV over IP system, you need to set the IP management mode of the Video LAN domain. The IP management modes are:

Automatically managed by Controller Box.

This is the mode as factory default. The IP address assignments to Controller Box Video LAN, Encoders and Decoders will be managed by Controller Box firmware automatically. In this mode, there is no need to add router in the system on Video LAN domain.

DHCP mode.

This is the mode for system in which there is a DHCP router on Video LAN domain to assign IP addresses for Controller Box Video LAN, Encoders and Decoders. The router acts as a DHCP server. It's recommended to set the net mask of router to 255.255.0.0.

Static IP mode by manual settings.

This is the mode for system in case IP address resources can be assigned manually for Controller Box Video LAN, Encoders and Decoders. Reminders as below:

- The network settings of Controller Box Video LAN, Encoders and Decoders must be on the same subnet.
- It's recommended to set the net mask of Controller Box Video LAN, Encoders and Decoders to 255.255.0.0.

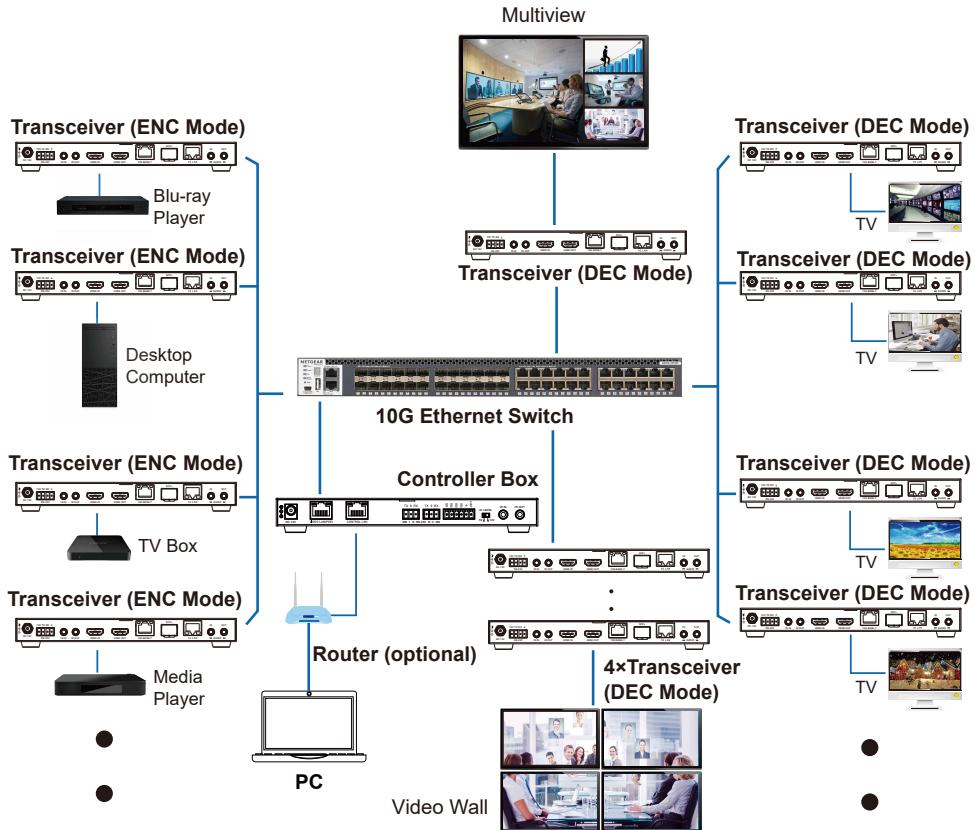
[Close](#)

[Next](#)

The rest of the steps are the same as the Mode 1 operation.

Mode 3: Static IP mode by manual settings.

The IP addresses of the Video LAN port, Encoders and Decoders are manually set by the user, and the connection method is as following.



Select “Static IP mode by manual settings” on the interface shown below, and click “Next”.

To setup AV over IP system, you need to set the IP management mode of the Video LAN domain. The IP management modes are:

- Automatically managed by Controller Box.

This is the mode as factory default. The IP address assignments to Controller Box Video LAN, Encoders and Decoders will be managed by Controller Box firmware automatically. In this mode, there is no need to add router in the system on Video LAN domain.

- DHCP mode.

This is the mode for system in which there is a DHCP router on Video LAN domain to assign IP addresses for Controller Box Video LAN, Encoders and Decoders. The router acts as a DHCP server. It's recommended to set the net mask of router to 255.255.0.0.

- Static IP mode by manual settings.

This is the mode for system in case IP address resources can be assigned manually for Controller Box Video LAN, Encoders and Decoders. Reminders as below:

- The network settings of Controller Box Video LAN, Encoders and Decoders must be on the same subnet.
- It's recommended to set the net mask of Controller Box Video LAN, Encoders and Decoders to 255.255.0.0.

[Close](#)

[Next](#)

After entering the interface shown in the figure below, manually set the IP address, subnet mask and gateway of the Video LAN.

Controller Box Video LAN port Network Settings:

IP Address

Subnet Mask

Gateway

Reminder:

Once Controller Box Video LAN network is set, the IP addresses of following discovered Encoders and Decoders will be assigned to the same domain with Controller Box Video LAN. Please click the [Next] button to set the IP address range of Encoders and Decoders.

[Close](#)

[Next](#)

Note:

It's strongly recommended to use different IP network domain from Control LAN port.

For example, we set the Video LAN network as shown in the above figure, and click the “Next” button. After the progress reaches 100%, enter the interface as shown in the figure below.

Encoders and Decoders IP Addresses Range Settings:

Encoders IP Address From To

Encoders SS IP Address From To

Decoders IP Address From To

Decoders SS IP Address From To

Reminder:

To easily manage the IP addresses of Encoders and Decoders, it's strongly recommended that you can set the IP addresses of Encoders and Decoders to different segments correspondingly. For example:

Encoders IP address from 169.254.10.1 to 169.254.12.255
Decoders IP address from 169.254.20.1 to 169.254.22.255

Close **Next**

On this interface, you can set the IP address range of Encoders and Decoders.

After the setting is complete, click the “Next” button to enter the interface as shown in the figure below.

Now you can select to automatically add all following discovered Encoders and Decoders to system or just list them in the web page and you can add each of them to system manually.

Please click the [Search] button to search Encoders and Decoders in the system:

Automatically add Encoders and Decoders to system.
 List all discovered Encoders and Decoders.

Close **Next**

The rest of the steps are the same as the Mode 1 operation.

7.2 Functions and Operation

7.2.1 Device

On this page, you can click the Encoder/Decoder tab to check the information of the Encoders and Decoders in the system, such as ID, name, MAC address, IP address, Firmware version, Online/Offline Status, Up Time, RX Link, Member/Source. Besides, you can configure each Encoder/Decoder after clicking the drop-down icon on the left side of ID.

The screenshot shows the 'Device' configuration page. On the left, there's a sidebar with various icons. The main area has tabs for 'Encoder' and 'Decoder', with 'Encoder' selected. A table lists a single device entry:

ID	Name	MAC	IP	Firmware	Status	Up Time	RX Link	Member
1	Encoder 001	6C:DF:FB:00:A9:5F	169.254.10.1	1.5.0.12	Green	00 day,01 hr,19 min	0	Null

Below the table, under 'Basic Settings', are the following configuration options:

- Name: Encoder 001
- Change ID: 1
- ENC Led: Off
- IR Voltage: Standard 5V
- CEC Command: Command

On the right, there's a 'Preview' section showing a small image of a device with colored bars (yellow, cyan, magenta, blue) and a black background.

Encoder Configuration

Basic Settings

① **Name:** The name of the Encoder can be changed. (The maximum length is 16 characters. Special characters are not supported.)

② **Change ID:** The ID of the Encoder can be set. (ID range:1-762)

Note: Both ID and name can not be duplicated.

③ **ENC Led:** The “Show me” function of the Encoder, used to quickly find the corresponding device. Click the drop-down menu to select the ENC Led status.

Off: The front panel ENC Led is steady on after flash status is turned off.

Flashing: The front panel ENC Led is flashing.

Flashing 90s then off: The front panel ENC Led is steady on after flashing for 90s.

④ **IR Voltage:** Click the drop-down menu to select the IR voltage.

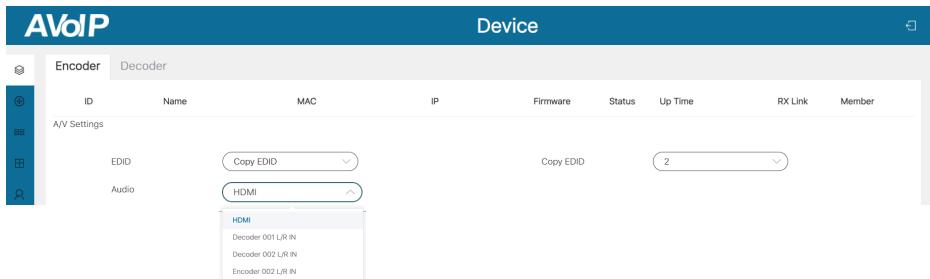
⑤ **CEC Command:** Click the “Command” button to pop up the CEC Command window. You can control the operation of each signal source device connected to the Encoder by pressing the corresponding buttons or icons. You can simultaneously control multiple signal source devices after checking “Select All”.

The screenshot shows the 'CEC Command' window. At the top, there's a header with a close button (X) and a 'CEC Command' label. Below the header, there's a list of devices:

- Select All
- Encoder 001
- Encoder 002

Below the list is a grid of control buttons:

⑥ Preview: The preview of the Encoder.



ID	Name	MAC	IP	Firmware	Status	Up Time	RX Link	Member
Encoder	Decoder							

A/V Settings

- ① **EDID:** Click the drop-down menu to select the EDID for the Encoder.
- ② **Copy EDID:** Click the drop-down menu to select a Decoder for EDID copy.
- ③ **Audio:** Click the drop-down menu to select the audio source (HDMI/L/R IN).
(1) When HDMI is selected, Encoder HDMI input is the audio source for Encoder HDMI output and Decoder audio output.
(2) When L/R IN is selected, Encoder/Decoder L/R IN audio is the audio source for Encoder HDMI output and Decoder audio output.



RS-232 Settings	
RS-232 Command Relay	Off
Baud Rate	115200
Stop Bits	1 bit
Parity	None
Data Bits	8 bit

Reboot Replace Remove Remove All Factory Reset Switch to Decoder

> 2 Encoder 002 6C:DF:FB:00:84:3C 169.254.10.2 15.0.12 00 day,02 hr,29 min 1 Name

Device

RS-232 Settings

- ① **RS-232 Command Relay:** Click the drop-down menu to select On/Off to turn on/off the RS-232 command relay function.

Note: When the RS-232 command relay function is turned on, the Decoder's locked signal routing function is disabled.

- ② **Parity:** Click the drop-down menu to set the parity.
- ③ **Baud Rate:** Click the drop-down menu to set the baud rate.
- ④ **Data Bits:** Click the drop-down menu to set the data bits.
- ⑤ **Stop Bits:** Click the drop-down menu to set the stop bits.

After setting, click "Apply" to take effect.

Reboot: Click the Reboot button to reboot the Encoder.

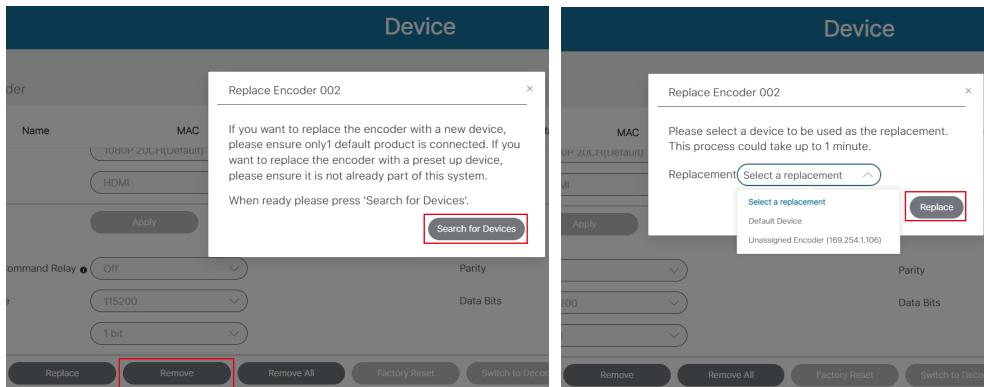
Replace: Click to replace the offline Encoder (which is in the system) with an online Encoder (which is not in the system).

For example, follow steps below to replace Encoder 001 with a new Encoder.

Step 1. Unplug the network cable of Encoder 001 to make it be offline. (Using external power supply.)

Step 2. Connect a new Encoder to the system.

Step 3. Click the Replace button, which is clickable after Encoder 001 is set to be offline. Then a window will pop up, as shown below. At this moment, click "Scan for Devices" to search devices. After the new Encoder is searched, select it and click "Replace" to replace Encoder 001.

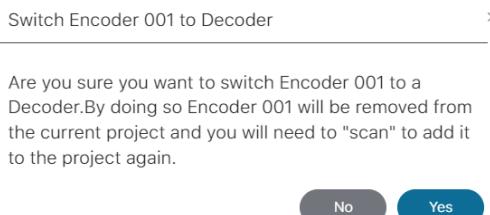


Remove: Click the Remove button to remove the Encoder from the system.

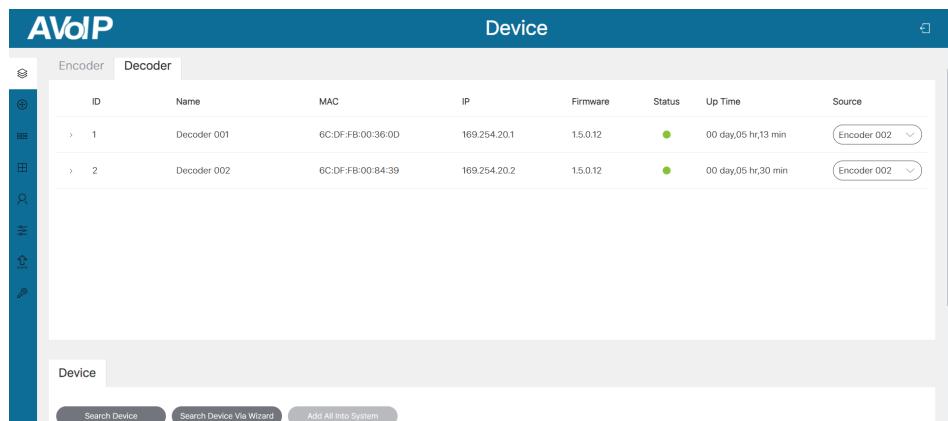
Remove All: Click this button to remove all Encoders from the system.

Factory Reset: Click this button to restore the Encoder to factory settings.

Switch to Decoder: Click this button to switch the current Encoder to Decoder mode. The following prompt window will pop up.



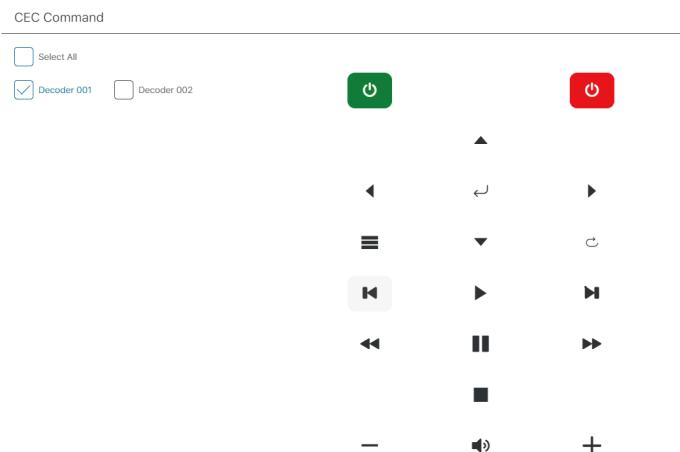
If you select "Yes", the Encoder will be removed from the current system and you will need to "scan" to add it to the system again.



Decoder Configuration

Basic Settings

- ① **Name:** The name of the Decoder can be changed. (Note: The maximum length is 16 characters. Special characters are not supported.)
- ② **Source:** Click the drop-down menu to select signal source for the Decoder.
- ③ **Change ID:** The ID of the Decoder can be set. (ID range:1-762)
Note: Both ID and name can not be duplicated.
- ④ **DEC Led:** The “Show me” function of the Decoder, used to quickly find the corresponding device. Click the drop-down menu to select the DEC Led status.
Off: The front panel DEC Led is steady on after flash status is turned off.
Flashing: The front panel DEC Led is flashing.
Flashing 90s then off: The front panel DEC Led is steady on after flashing for 90s.
- ⑤ **IR Voltage:** Click the drop-down menu to select the IR voltage.
- ⑥ **Stretch:** Click the drop-down menu to turn on/off the stretch function.
- ⑦ **CEC Command:** Click the “Command” button to pop up the CEC Command window. You can control the operation of each display device connected to the Decoder by pressing the corresponding buttons or icons. You can simultaneously control multiple display devices after checking “Select All”.



- ⑧ **Display Mode:** Click the drop-down menu to select the display mode (Fast Switch/Genlock).
- ⑨ **Preview:** The preview of the Decoder.

Encoder Decoder

ID	Name	MAC	IP	Firmware	Status	Up Time	Source
A/V Settings							
Video Output	On			Video Mute	Off		
Output Mode	Matrix			Video Auto On	On		
Scaling	1920x1080@60Hz			Show ID OSD	Off		

A/V Settings

- ① **Video Output:** Click the drop-down menu to select On/Off to turn on/off the video output.
- ② **Video Mute:** Click the drop-down menu to select On/Off to mute/unmute the video output.
- ③ **Output Mode:** Click the drop-down menu to select the output mode (Matrix/Video Wall/Multiview).
- ④ **Video Auto On:** Click the drop-down menu to select On/Off to turn on/off the video auto on function.
- ⑤ **Scaling:** Click the drop-down menu to set the video output scaling resolution.
- ⑥ **Show ID OSD:** Click the drop-down menu to select On/Off/On 90s to set the ID OSD display.

AVoIP

Device

Encoder Decoder

ID	Name	MAC	IP	Firmware	Status	Up Time	Source
Locked Signal Routing							
Video	Follow			Audio	Follow		
IR	N/A			RS-232	N/A		
USB	N/A						

Locked Signal Routing

Different signals can be independently routed between Encoders and Decoders, including Video, Audio, IR, RS-232 and USB; When clicking the drop-down menu and selecting “Follow”, the corresponding signal comes from the current Encoder.

For example, follow steps below to change the video routing of Decoder 001 to be from Encoder 001.

Step 1. Click the drop-down menu of Video to select “Encoder 001”.

Locked Signal Routing

Video

Encoder 001



Follow

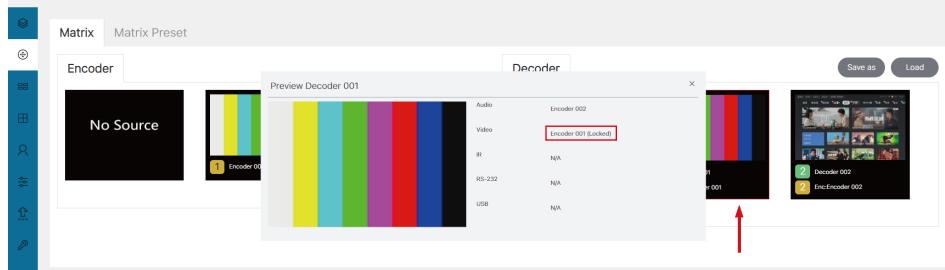
Encoder 001

Encoder 002

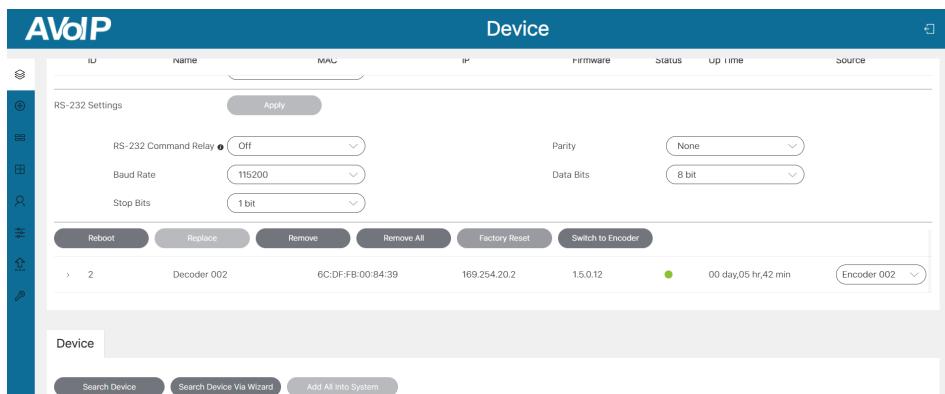
IR

USB

Step 2. Switch to the Matrix page and you will see a red frame on Decoder 001.



Step 3. Double-click the preview image of Decoder 001 to check the current settings. The video source has been locked to Encoder 001, while the audio signal still follows Encoder 002, as shown in the figure above. And you can change the source of IR, RS-232 and USB in the same way.



RS-232 Settings

① **RS-232 Command Relay:** Click the drop-down menu to select On/Off to turn on/off the RS-232 command relay function.

Note: When the RS-232 command relay function is turned on, the Decoder's locked signal routing function is disabled.

② **Parity:** Click the drop-down menu to set the parity.

③ **Baud Rate:** Click the drop-down menu to set the baud rate.

④ **Data Bits:** Click the drop-down menu to set the data bits.

⑤ **Stop Bits:** Click the drop-down menu to set the stop bits.

After setting, click "Apply" to take effect.

Reboot: Click the Reboot button to reboot the Decoder.

Replace: Click to replace the offline Decoder (which is in the system) with an online Decoder (which is not in the system). The method to replace Decoders is the same as the Encoder replacement.

Remove: Click the Remove button to remove the Decoder from the system.

Remove All: Click this button to remove all Decoders from the system.

Factory Reset: Click this button to restore the Decoder to factory settings.

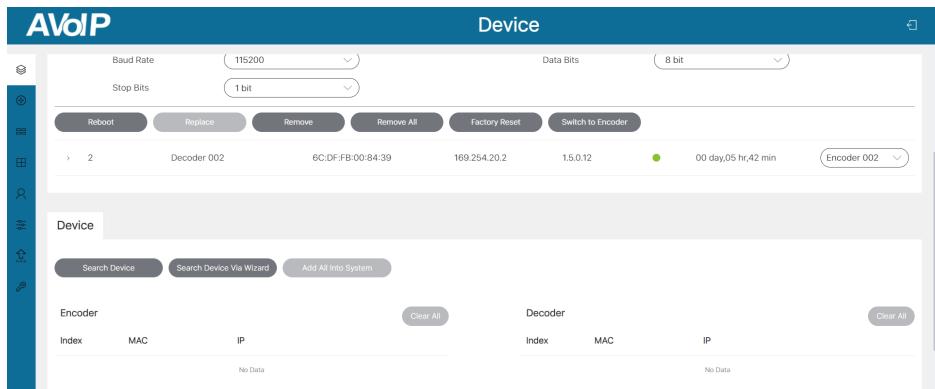
Switch to Encoder: Click this button to switch the current Decoder to Encoder mode. The following prompt window will pop up.

Are you sure you want to switch Decoder 001 to a Encoder. By doing so Decoder 001 will be removed from the current system and you will need to "scan" to add it to the system again.

No

Yes

If you select "Yes", the Decoder will be removed from the current system and you will need to "scan" to add it to the system again.



Device

- ① **Search Device:** Click this button to search devices which are not in the system.
- ② **Search Device Via Wizard:** Click this button to switch back to the IP mode select interface and follow the Wizard to set up the system.
- ③ **Add All Into System:** Click this button to add all searched devices into the system, then the devices will be listed on the Encoder/Decoder list.

7.2.2 Matrix

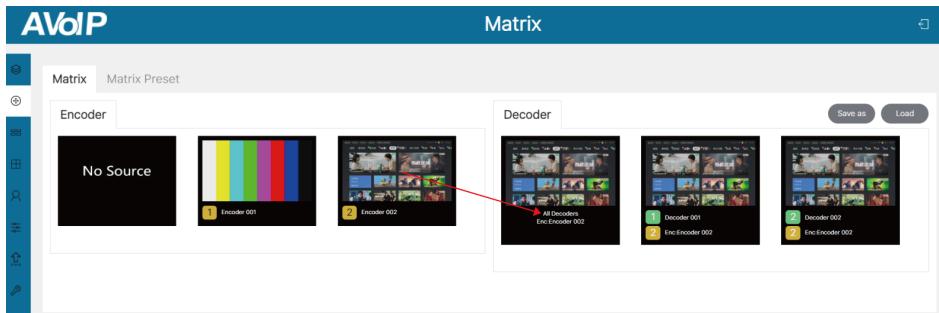
Matrix Switching

On the Matrix interface, you can switching the matrix correspondence in following five ways.

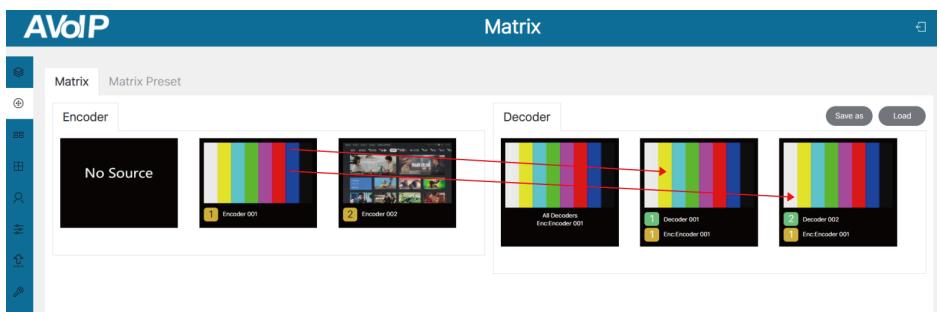
- ① Left-click the Encoder preview and drag it to Decoder, then release the mouse to realize one-to-one switching.



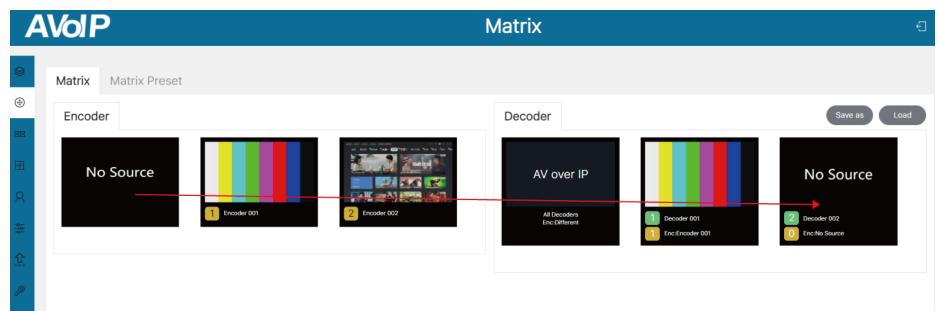
② Left-click the Encoder preview and drag it to “All Decoders”, then release the mouse to realize one-to-all switching.



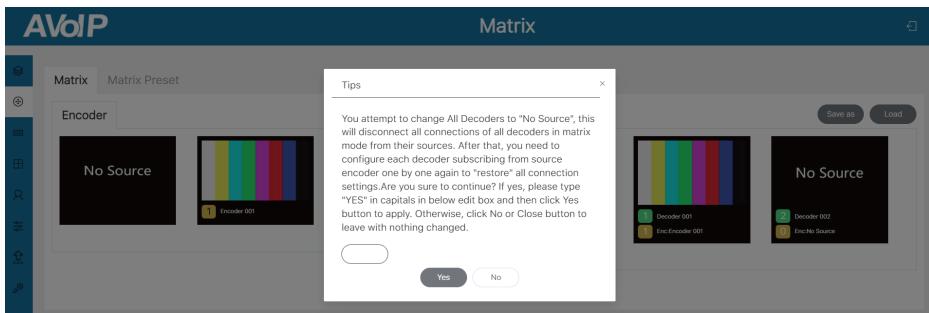
③ Left-click the Encoder preview and drag it to multiple Decoders, then release the mouse to realize one-to-many switching.



④ Left-click the “No Source” preview and drag it to one Decoder or multiple Decoders, then the corresponding Decoder/Decoders will display “No Source”.

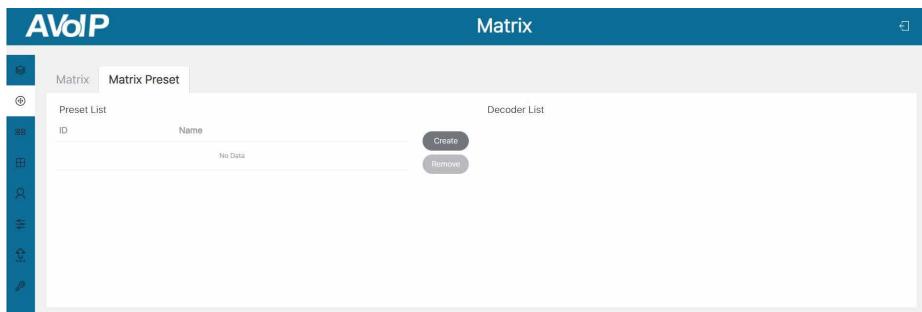


⑤ Left-click the “No Source” preview and drag it to “All Decoders”, then a tips window will pop up, as show below. If you input “YES” in the edit box and click “Yes” button, all Decoders in matrix mode will be disconnected from their signal sources and display “No Source”.

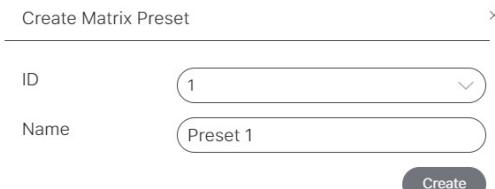


Matrix Preset

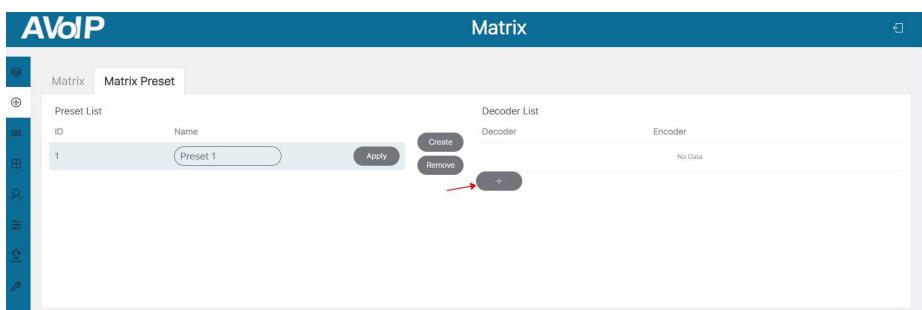
Enter the matrix preset setting interface by clicking the Matrix Preset tab. You can create and configure matrix presets as required. The operating steps are as follows.



Step 1: Click “Create”, a pop-up window will be shown as below.



Set the matrix preset ID and Name. Then click “Create” to create the matrix preset.



Step 2: Click the “+” icon to add Decoders.

Add Decoder

x

Decoder

Decoder 001

Encoder

Encoder 001

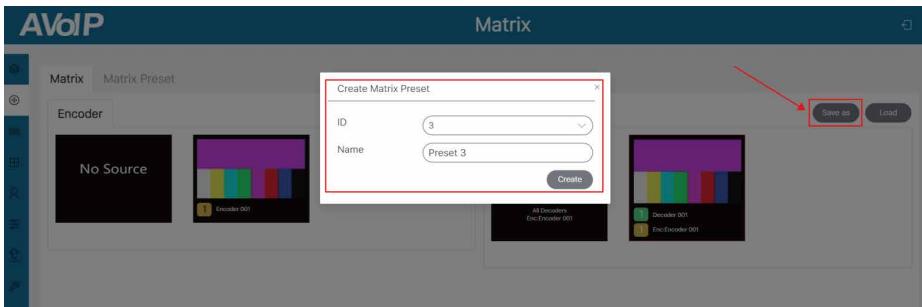
Create

Set the corresponding Encoder and Decoder, then click “Create” to complete the setting.

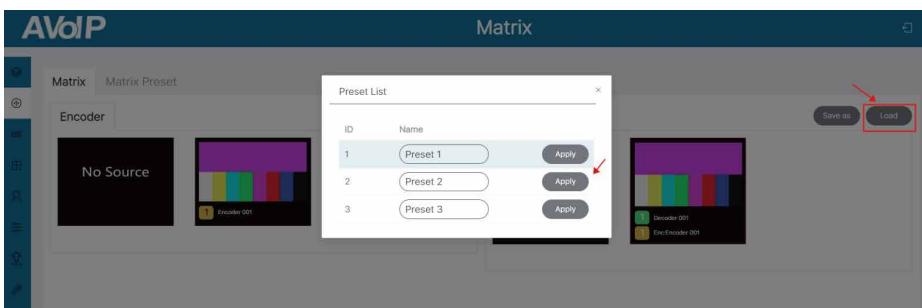


If you want to delete a matrix preset, just select the matrix preset on the “Preset List”, then click “Remove”. A prompt window will pop up and you can delete it after clicking “Yes”.

Besides, you can directly save the current matrix correspondence as a preset by clicking “Save as” on the Matrix interface.



For the saved matrix presets, you can apply them as required by clicking “Load” on the Matrix interface, then selecting the preset and clicking “Apply” on the Preset List window.

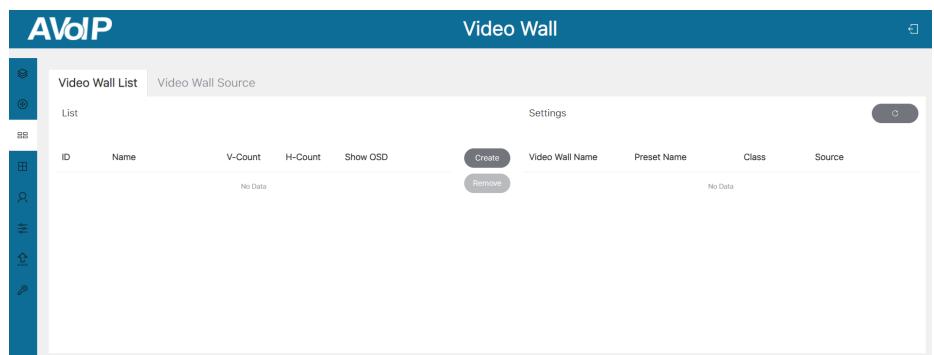


Signal Routing Query

On the Matrix interface, you can double-click the preview image of Decoder to check the Video/Audio/IR/RS-232/USB signal routing between the Encoder and Decoder.



7.2.3 Video Wall



Video Wall Creation

On the Video Wall List interface of this page, you can create and configure video wall as required. Please follow below steps to create and configure a video wall.

Step 1: Click "Create", a pop-up window will be shown as below.

Create a new Video Wall

Video Wall ID	<input type="text" value="1"/>
Video Wall Name	<input type="text" value="Video Wall 1"/>
Row Number	<input type="text" value="1"/>
Column Number	<input type="text" value="2"/>

Go

Set the Video Wall ID, Video Wall Name, Row Number and Column Number. Then click “Go” to create the video wall.

Note:

(1) Up to 9 video walls can be created.

(2) The video wall name can be changed after the video wall is created.

Step 2: Select the video wall that you want to configure, then click “Assign Decoder” at the bottom of the Video Wall List interface to enter the Decoder assignment interface. Click each screen to select the corresponding Decoder device, then click “Apply” to take effect.

The screenshot shows the AVoIP Video Wall configuration interface. The main title is "Video Wall". On the left, there is a sidebar with various icons. The main area has a table for "List" with columns: ID, Name, V-Count, H-Count, Show OSD, Create, Video Wall Name, Preset Name, Class, and Source. A row is selected with ID 1, Name "Video Wall 1", V-Count 1, H-Count 2, Show OSD "Off", Video Wall Name "Video Wall 1", Preset Name "Preset 1", Class "Class A", and Source "Encoder 001". Below the table are buttons for "Assign Decoder", "Class Preset", and "Border Adjustment". The "Assign Decoder" button is highlighted. In the center, there are two video wall panels. The left panel is labeled "Decoder 001(6C:DF:FB:00:36:00)" and the right panel is labeled "Decoder 002(6C:DF:FB:00:84:39)". At the bottom right, there is an "Apply" button.

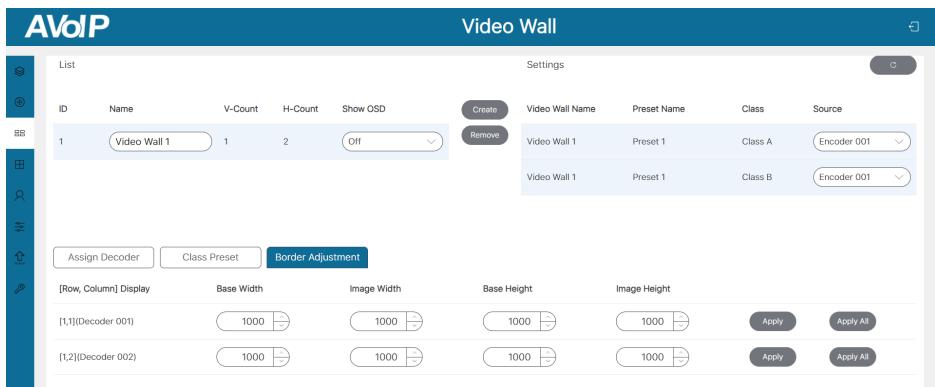
Notes: A Decoder can only be assigned to one video wall.

Step 3: Click “Class Preset” to enter the class configuration preset interface, then click each screen to select the corresponding Class as required (the same class name will form a video wall, you can create a regular or irregular video wall by Class Preset). Then click “Apply” to take effect.

The screenshot shows the AVoIP Video Wall configuration interface. The main title is "Video Wall". The sidebar icons are the same as the previous screenshot. The main area has a table for "List" with columns: ID, Name, V-Count, H-Count, Show OSD, Create, Video Wall Name, Preset Name, Class, and Source. A row is selected with ID 1, Name "Video Wall 1", V-Count 1, H-Count 2, Show OSD "Off", Video Wall Name "Video Wall 1", Preset Name "Preset 1", Class "Class A", and Source "Encoder 001". Below the table are buttons for "Assign Decoder", "Class Preset", and "Border Adjustment". The "Class Preset" button is highlighted. In the center, there are two video wall panels. The left panel is labeled "Class A" and the right panel is labeled "Class B". At the bottom right, there are buttons for "Preset 1", "Apply", "Clear", "Create Preset", and "Delete".

The preset name can be changed with letters or numbers (max length: 16 characters). Besides, you can click the drop-down menu icon behind the preset name to switch different presets (the selected preset will be high-lighted in Settings), click “Create Preset” to create up to 9 configurations for different application scenarios, click “Clear” to clear and reset video wall class settings, or click “Delete” to delete the current class preset from the system. After setting, you should click “Apply” to take effect.

Step 4: Click “Border Adjustment” to enter the Border Adjustment interface, then click the drop-down menu to set the Base Width, Image Width, Base Height and Image Height. Finally, click “Apply” to adjust the border of each Decoder, or click “Apply All” to adjust the borders of all Decoders.



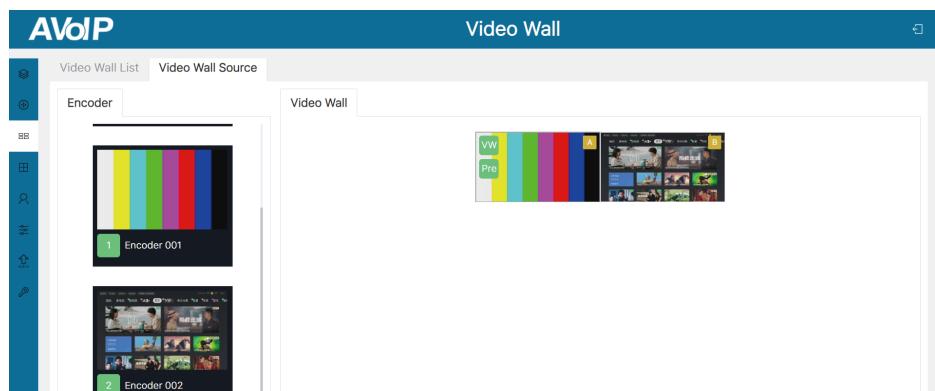
Note: The Base value cannot be more than 2 times the Image value.

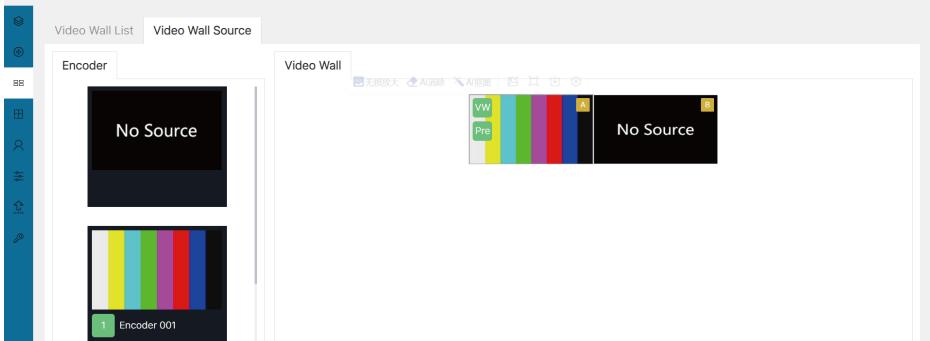
Video Wall Source

After the video wall is created and configured, you can click the Video Wall Source tab to check the video wall preview, video wall class, and its corresponding signal source. Click the “VW” icon on the preview of video wall to switch different video walls, or click the “Pre” icon to switch different presets.

In addition, you can directly drag Encoders to the video wall to change signal sources, or drag “No Source” to let the window display “No Source”, as shown in the figures below.

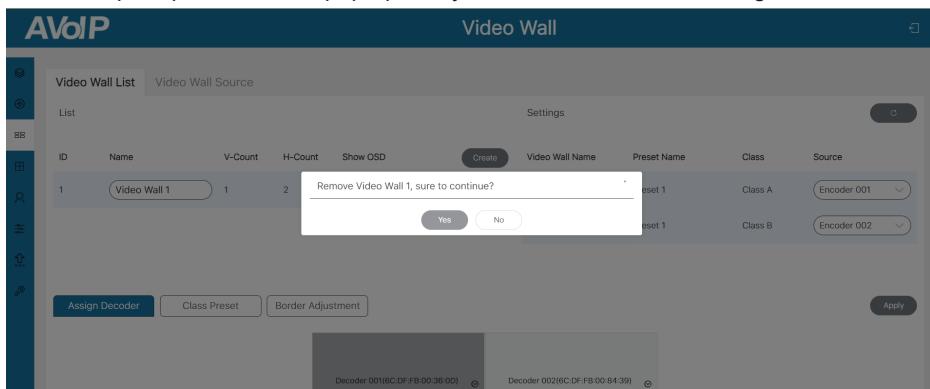
Note: If the Encoder is offline, it can't be dragged to the matrix of video wall.





Video Wall Remove

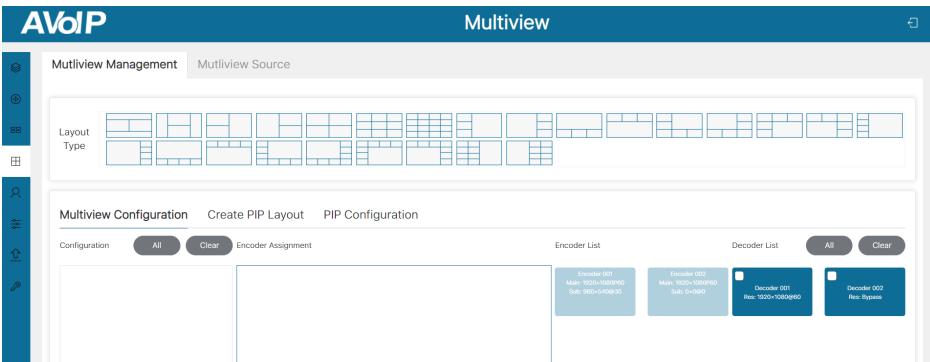
If you want to delete a video wall, just select the video wall on the “Video Wall List”, then click “Remove”. A prompt window will pop up and you can delete it after clicking “Yes”.



Notes:

- (1) Each Decoder can be set into a part of a video wall array. Each system can contain multiple video walls with different sizes. Each video wall can be assigned to different screens and different layouts that range from 1x2 up to 9x9.
- (2) The controller creates and manages the video wall configurations and provides a simplified control interface and API commands to third party control system.

7.2.4 Multiview



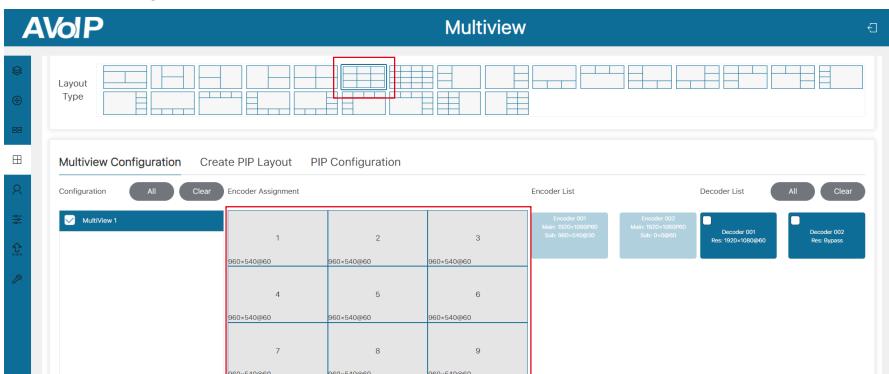
Multiview Configuration

Enter the multiview configuration interface by clicking the Multiview Configuration tab. You can create and configure multiviews as required. Follow below steps to create a multiview.

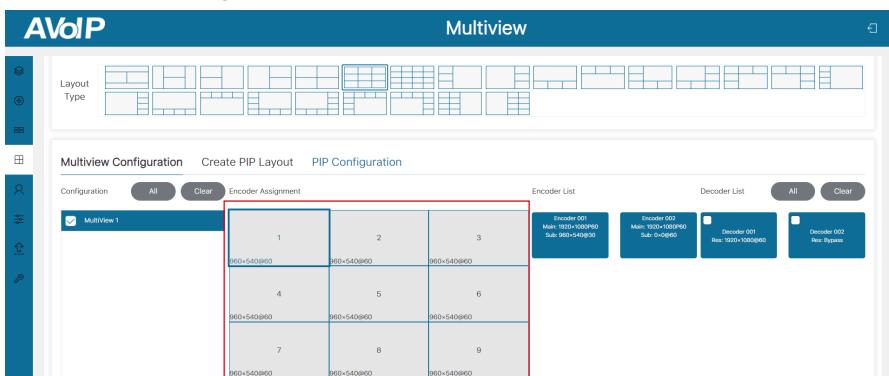
Step 1: Click the “Add” button to create a multiview preset, a pop-up window will be shown as below. You can set the Multiview Preset ID and Name, then click “Create”.



Step 2: Check to select the new created multiview preset, then click to select the desired Multiview Layout in the Layout Type area, which will be displayed in the Encoder Assignment, as shown in the figure below.



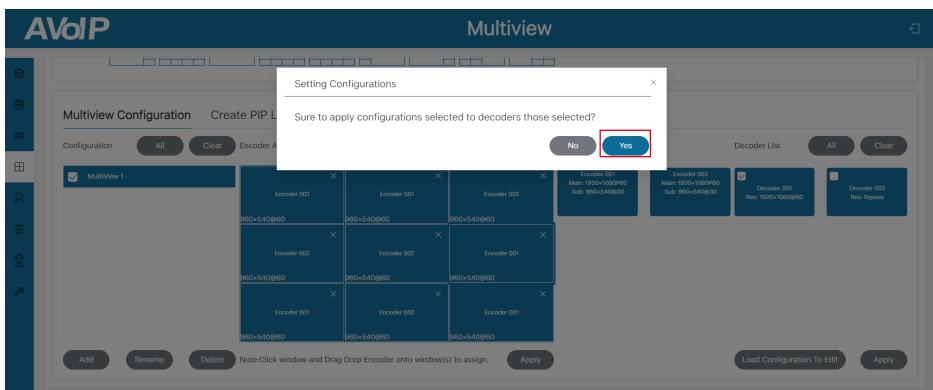
Step 3: Click to select a window in the Encoder Assignment, click and drag an Encoder from the Encoder List to the window, then the corresponding signal source will be displayed on the window. Select a signal source for each window in the same way. Finally, click “Apply” to take effect, as shown in the figures below.



Multiview 1 configuration has been updated.

Step 4: Click to select a Decoder in the Decoder List, or click “All” to select all the Decoders, then click the “Apply” button.

A pop-up window will be shown as below.



Setting Configurations

Sure to apply configurations selected to decoders those selected?

No Yes

Configuration All Clear Encoder

Multiview Configuration Create PIP List

Decoder List All Clear

Encoder 001 Encoder 001 Encoder 002

Encoder 002 Encoder 002 Encoder 001

Encoder 001 Encoder 002 Encoder 001

Main: 1920x1080@60 Sub: 960x540@60

Main: 1920x1080@60 Sub: 960x540@60

Main: 1920x1080@60 Sub: 960x540@60

Decoder 002 Decoder 001 Decoder 002

Decoder 001 Decoder 002 Decoder 001

Decoder 002 Decoder 001 Decoder 002

Add Rename Delete Note: Click window and Drag Drop Encoder onto window(s) to assign. Apply

Lead Configuration To Edit Apply

Click “Yes”, then the configured multiview will be applied on the selected Decoders.

Step 5: After configuration, you can switch to “Multiview Source” interface for multiview preview, as shown in below.



Multiview

Multiview Management Multiview Source

Encoder

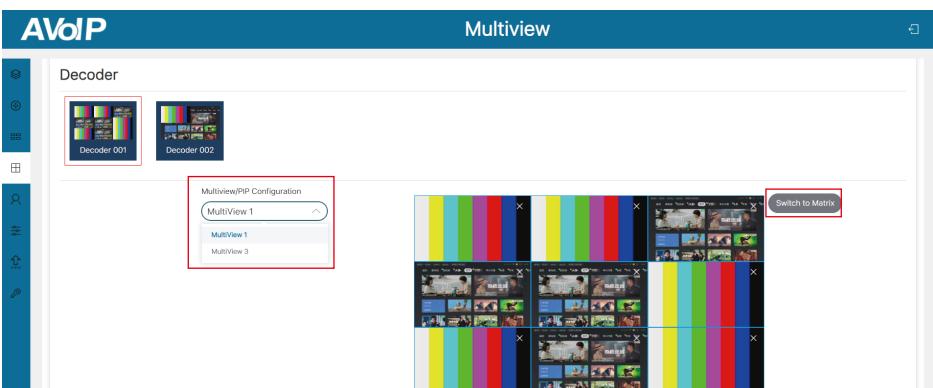
Decoder

Multi-view/PIP Configuration Select Switch to Matrix

Encoder 001 Encoder 002

Decoder 001 Decoder 002

On this interface, you can select different multiviews or PIP configurations that you have set up by clicking the drop-down menu of “Multiview/PIP Configuration”. Besides, you can directly drag Encoders to the multiview to change signal sources. Click a Decoder preview to view the multiview display of the corresponding Decoder. Click the “Switch to Matrix” button to switch the current Decoder to the Matrix mode, then the multiview display will be switched to only displaying the first signal source in the Encoder List.



Multiview

Decoder

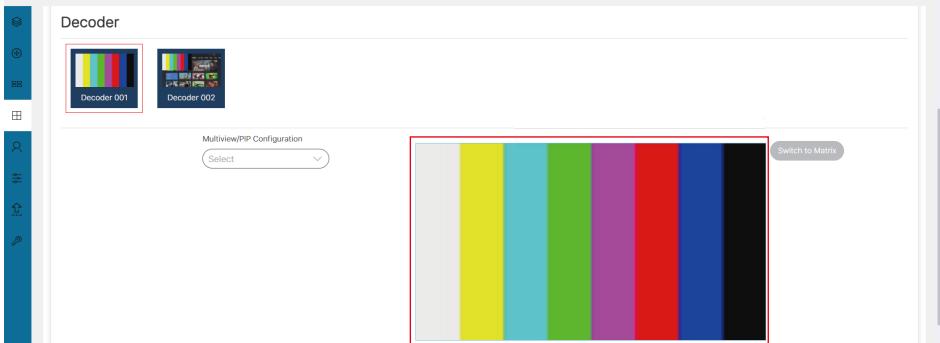
Multi-view/PIP Configuration MultiView 1

MultiView 1 MultiView 3

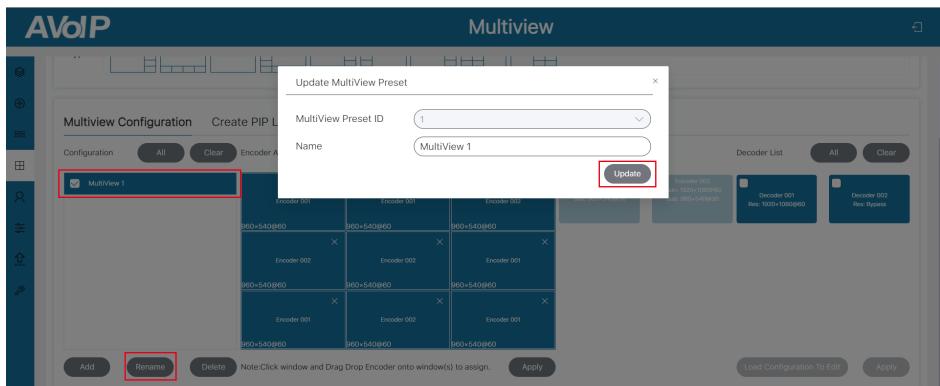
Switch to Matrix

Decoder 001 Decoder 002

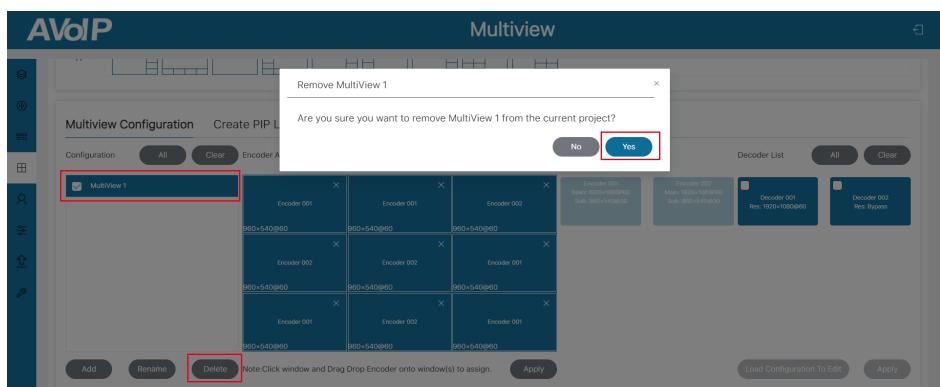
30 / 41



If you want to rename a multiview, just check to select the multiview and click the “Rename” button. A prompt window will pop up, enter a new name and click “Update” to take effect.



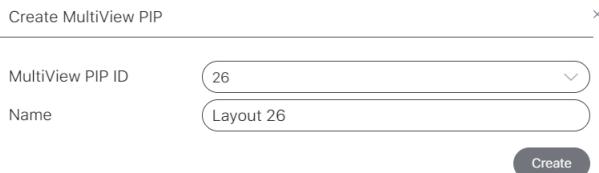
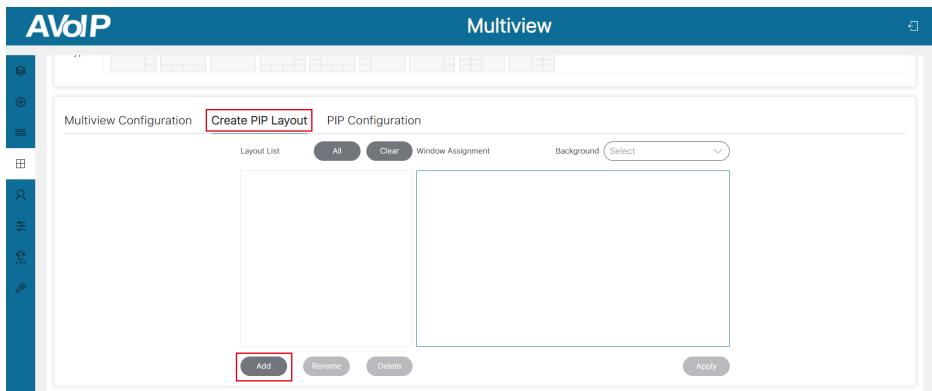
If you want to delete the multiview configurations you set before, just check to select the multiview, or click “All” to select all multiview presets, then click the “Delete” button. A prompt window will pop up and you can delete the multiview after clicking “Yes”.



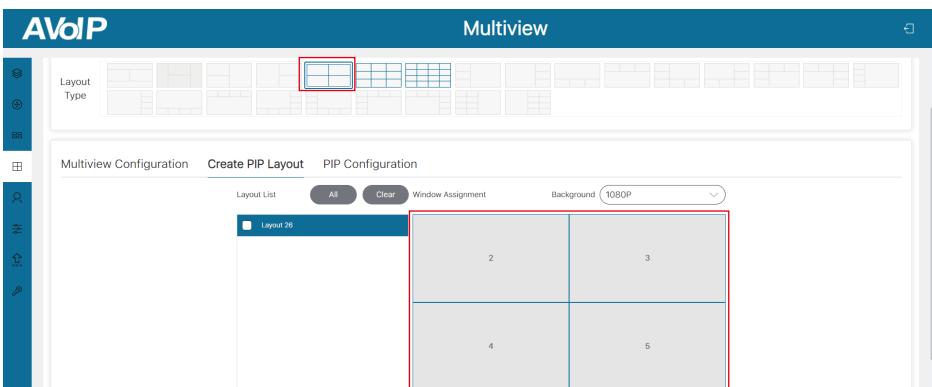
PIP Configuration

You can create PIP layout and configure the PIP as required. The operation steps are as follows.

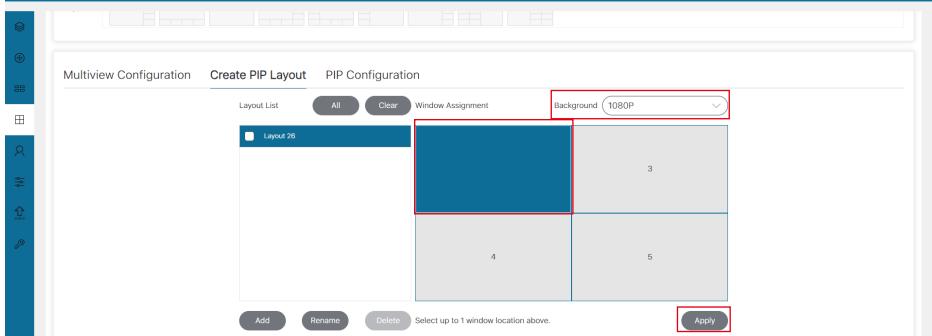
Step 1: Click the “Create PIP Layout” tab, then click the “Add” button to create a PIP layout, a pop-up window will be shown as below. You can set the Multiview PIP ID and Name, then click “Create”.



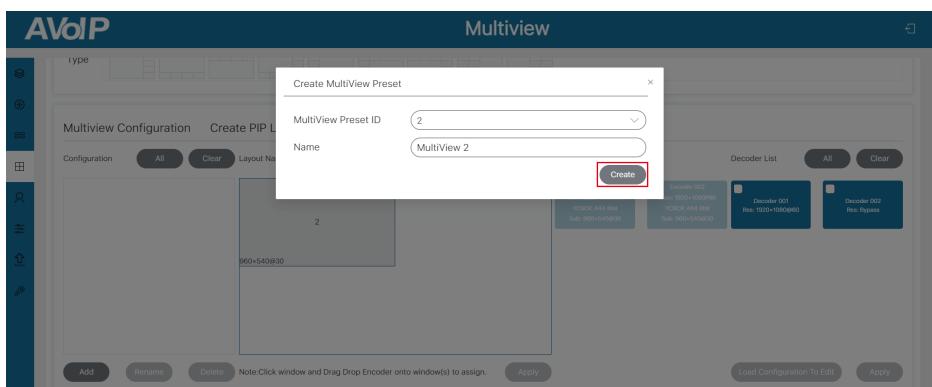
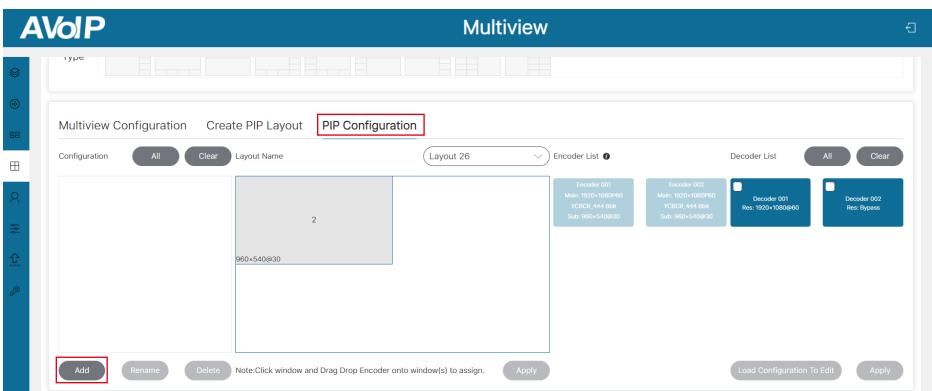
Step 2: Click to select the desired layout in the Layout Type area, which will be displayed in the Window Assignment, as shown in the figure below.



Step 3: Click the drop-down menu to select the resolution of background, then click to select a window in the Window Assignment to be the foreground, as shown in the figures below. Finally, click “Apply” to take effect.



Step 4: Click the “PIP Configuration” tab, then click the “Add” button to create a PIP multiview preset, a pop-up window will be shown as below. You can set the Multiview Preset ID and Name, then click “Create”.



Step 5: Click to select the foreground, click and drag an Encoder from the Encoder List to the foreground window, then the corresponding signal source will be displayed on the window. Select a signal source for the background window in the same way. Finally, click “Apply” to take effect, as shown in the figures below.

Multiview Configuration Create PIP Layout PIP Configuration

Configuration All Clear Layout Name Layout 26 Encoder List Decoder List

Encoder 001 Main: 1920x1080@60 YCbCr: 444 8bit Sub: 960x540@30

Encoder 002 Main: 1920x1080@60 YCbCr: 444 8bit Sub: 960x540@30

Decoder 001 Res: 1920x1080@60

Decoder 002 Res: Bypass

Add Rename Delete Note: Click window and Drag Drop Encoder onto window(s) to assign. Apply Load Configuration To Edit Apply

Multiview Configuration Create PIP Layout PIP Configuration

Configuration All Clear Layout Name Layout 26 Encoder List Decoder List

Encoder 001 Main: 1920x1080@60 YCbCr: 444 8bit Sub: 960x540@30

Encoder 002 Main: 1920x1080@60 YCbCr: 444 8bit Sub: 960x540@30

Decoder 001 Res: 1920x1080@60

Decoder 002 Res: Bypass

Add Rename Delete Note: Click window and Drag Drop Encoder onto window(s) to assign. Apply Load Configuration To Edit Apply

Multiview Configuration Create PIP Layout PIP Configuration

Configuration All Clear Layout Name Layout 26 Encoder List Decoder List

Encoder 001 Main: 1920x1080@60 YCbCr: 444 8bit Sub: 960x540@30

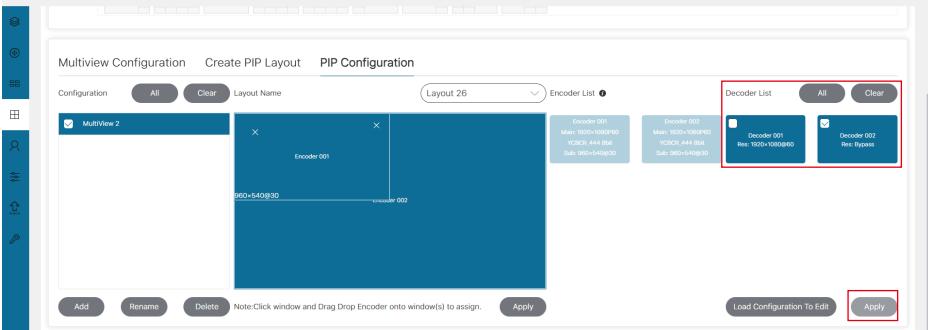
Encoder 002 Main: 1920x1080@60 YCbCr: 444 8bit Sub: 960x540@30

Decoder 001 Res: 1920x1080@60

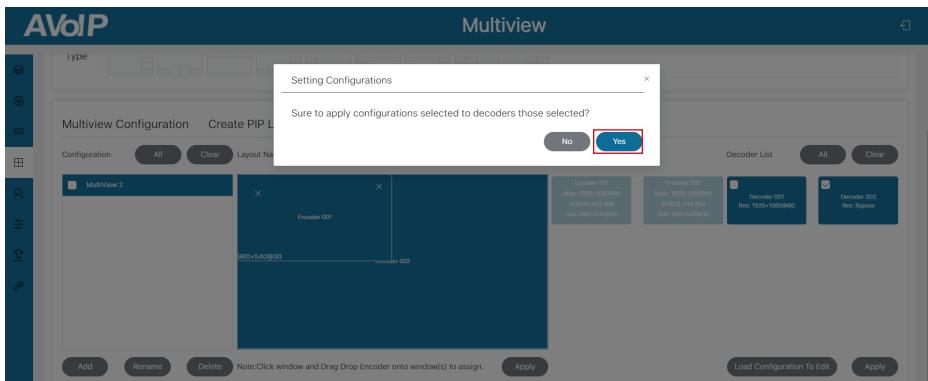
Decoder 002 Res: Bypass

Add Rename Delete Note: Click window and Drag Drop Encoder onto window(s) to assign. Apply Load Configuration To Edit Apply

Step 6: Click to select a Decoder in the Decoder List, or click “All” to select all the Decoders, then click the “Apply” button.

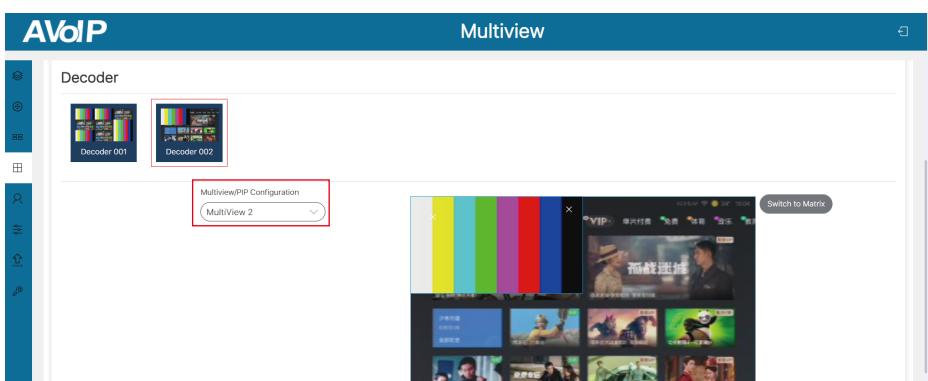


A pop-up window will be shown as below.



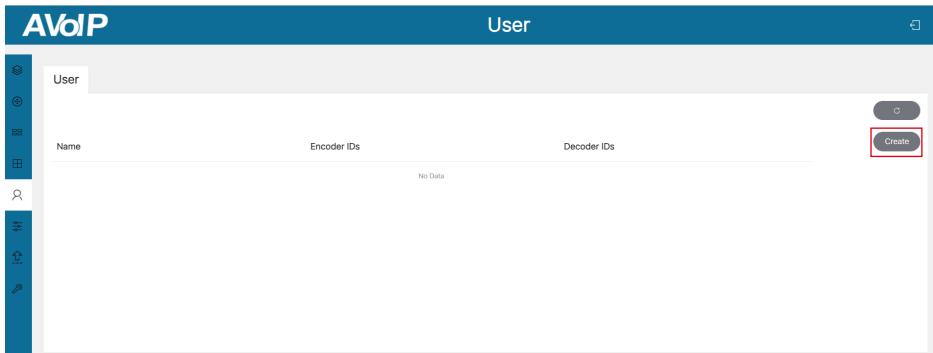
Click "Yes", then the configured PIP multiview will be applied on the selected Decoders.

Step 7: After configuration, you can switch to "Multiview Source" interface for multiview preview, as shown in below.



Select the PIP configuration that you have set up by clicking the drop-down menu of "MultiView/PIP Configuration". Besides, you can directly drag Encoders to the PIP multiview to change the signal source of the foreground/background. Click a Decoder preview to view the multiview display of the corresponding Decoder. Click the "Switch to Matrix" button to switch the current Decoder to the Matrix mode, then the multiview display will be switched to only displaying the first signal source in the Encoder List.

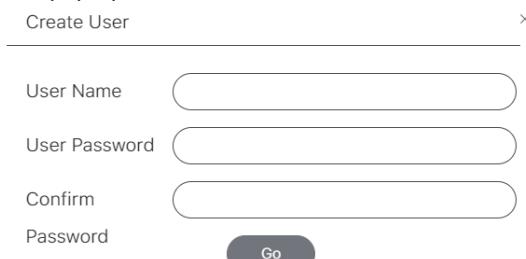
7.2.5 User



The screenshot shows the 'User' page of the AvoIP interface. On the left is a vertical toolbar with various icons. The main area has a header 'User' and a table with three columns: 'Name', 'Encoder IDs', and 'Decoder IDs'. The 'Encoder IDs' and 'Decoder IDs' columns both show 'No Data'. In the top right corner of the main area, there is a 'Create' button, which is highlighted with a red box.

On this page, you can add new user accounts with their own control privileges. This will allow you to create a unique login and limit features such as inputs and outputs that each person has access to. Follow steps below to create a new User.

Step 1: Click "Create", a pop-up window will be shown as below.



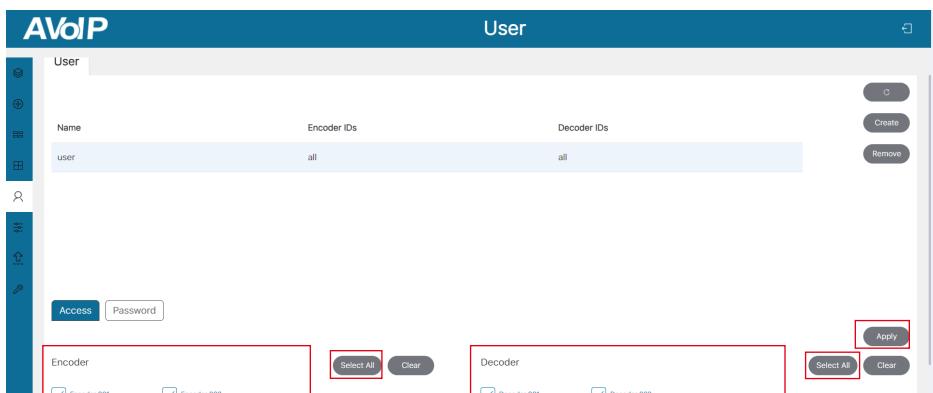
The 'Create User' pop-up window has a header 'Create User' and a close button 'X'. It contains four text input fields: 'User Name', 'User Password', 'Confirm', and 'Password'. Below these fields is a 'Go' button.

Step 2: Input the User Name, User Password and Confirm Password. Then click "Go" to create the User.

Notes:

(1) The user name requires a minimum of 6 characters and a maximum length of 12 characters. Special characters are not supported; The password has a minimum of 6 characters and a maximum of 8 characters.

(2) The Password and Confirm Password must be the same.



The screenshot shows the 'User' page of the AvoIP interface. The main area has a header 'User' and a table with one row containing the name 'user' and both 'Encoder IDs' and 'Decoder IDs' set to 'all'. Below the table are two sections: 'Encoder' and 'Decoder'. Each section has a list of devices (Encoder 001, Encoder 002, Decoder 001, Decoder 002), a 'Select All' button, a 'Clear' button, and an 'Apply' button. The 'Encoder' section is highlighted with a red box.

After the new User is created, you can select the Encoders and Decoders as required by checking the devices on the bottom of the User page one by one, or directly click "Select All" to select all devices in the system. Then click "Apply" to take effect.

Besides, you can click “Password” to change the User’s password, or click “Remove” to delete the User. If you want to login with the new User, just click the logout icon at the upper right corner of this page to log out, and then login with the new user name and password.

The screenshot shows the AVoIP User management interface. At the top, there are buttons for 'Create' and 'Remove' (which is highlighted with a red box). Below that, there is a table with columns 'Name', 'Encoder IDs', and 'Decoder IDs'. A single row is shown with 'user' in the Name column, 'all' in both the Encoder and Decoder ID columns. At the bottom of the table, there are 'Access' and 'Password' buttons, with 'Password' highlighted with a red box. To the right of the table is an 'Apply' button. On the left side of the interface, there is a vertical sidebar with various icons.

7.2.6 Controller Settings

The screenshot shows the AVoIP Controller Settings interface. At the top, there is a 'Controller Settings' tab. Below it, there are two main sections: 'System Configurations' and 'Controller Settings'. Under 'System Configurations', there are buttons for 'Save', 'Load', and 'Clear'. Under 'Controller Settings', there is a 'General' tab. The 'General' section contains various configuration parameters with dropdown menus and text inputs. The parameters include: Version (3.10.08), GUI Version (1.6.9), IR Control (On), Telnet Port (23), RS-232 BaudRate (57600), SSH (Off), Web Control (On), SSH Port (22), HTTPS (Off), and Domain Name (CONTROLLER). On the left side, there is a vertical sidebar with icons.

System Configurations: Click “Save” to save the current configuration; click “Load” to load the system configuration JSON file and replace the current system configurations (It’s strongly recommended to save the current configurations before loading); click “Clear” to clear system configurations already created and configured in the controller, and you need to set up the system again.

Controller Settings

① **General:** The general settings of the Controller. You can check the Controller Version, GUI Version, Telnet Port, SSH Port and Domain Name. In addition, you can click the drop-down menu to set the IR Control, RS-232 BaudRate, Web Control, HTTPS, Telnet and SSH.

② **GPIO:** Click the drop-down menu to set GPIO 1/2/3/4 respectively.

③ **Control Network:** The network port configuration of the Controller connected to the router, PC directly or network Switch in where the PC for control is. When DHCP is set to “Off”, you can manually set the IP Address, Subnet Mask and Gateway as required, then click “Apply” to take effect.

When DHCP is set to “On”, the system will search and fill the IP Address with the one assigned by the router automatically.

Note: When DHCP is set to “Off” which is in Static IP mode, the network settings of Control LAN and PC should stay in same network segment. Otherwise, the controller Web GUI can not be accessed from PC until you change PC network settings in same network segment.

④ **Video Network:** The network port configuration of the Controller connected to the network where the Encoders and Decoders stay. When DHCP is set to "Off", you can manually set the IP Address, Subnet Mask and Gateway as required, then click "Apply" to take effect. When DHCP is set to "On", the system will search and fill the IP Address with the one assigned by the router automatically.

Note: When DHCP is set to "Off" which is in Static IP mode, the network settings of Video LAN and Encoders/Decoders should stay in same network segment. Otherwise, Encoders/Decoders would be showed as offline. In this case, you should change Video LAN or Encoders/Decoders IP settings to be in same network segment to bring Encoders/Decoders back online. If the Encoders/Decoders are actually alive in the system but with incorrect network segment settings, even though Encoders/Decoders are showing offline, their network settings including IP address can be changed and set.

⑤ **Controller Reset:** Click "Settings Reset" to reset controller all settings except network settings; Click "Network Reset" to reset controller network settings; Click "Reset All" to reset controller all settings including network settings.

7.2.7 Firmware Update

① **Upload User EDID 1/2:** Click the button to open an EDID binary file and upload it to User EDID 1/2.

② **Upload Decoder Logo Picture:** Click the button to upload the Decoder Logo Picture. Then click "Update All" to apply the picture for all Decoders or click "Update" to apply the picture for a single Decoder.

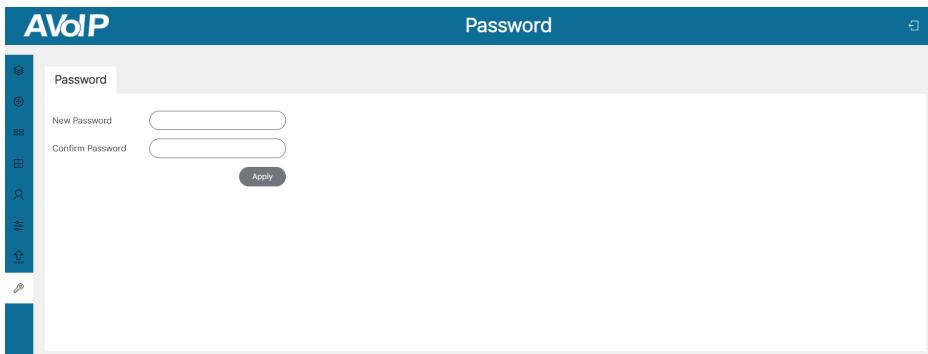
Note: The jpg picture must be greater than 4kB, less than or equal to 512kB, and the resolution of the picture must be less than or equal to 1920x1080.

ID	MAC	IP	Firmware	Update
1	6C:DF:FB:00:AB:5F	169.254.10.1	1.5.0.12	Update
2	6C:DF:FB:00:84:3C	169.254.10.2	1.5.0.12	Update

ID	MAC	IP	Firmware	Update
1	6C:DF:FB:00:36:0D	169.254.20.1	1.5.0.12	Update
2	6C:DF:FB:00:84:39	169.254.20.2	1.5.0.12	Update

- ③ **Upload Controller Firmware:** Click the button to upload the Controller update firmware.
- ④ **Upload Encoder or Decoder Firmware:** Click the button to upload the Encoder/Decoder update firmware. After loading, you need to click “Update All” to update firmware for all Encoders/Decoders, or click “Update” to update firmware for a single Encoder/Decoder.

7.2.8 Password Update



AVoIP

Password

Password

New Password

Confirm Password

Apply

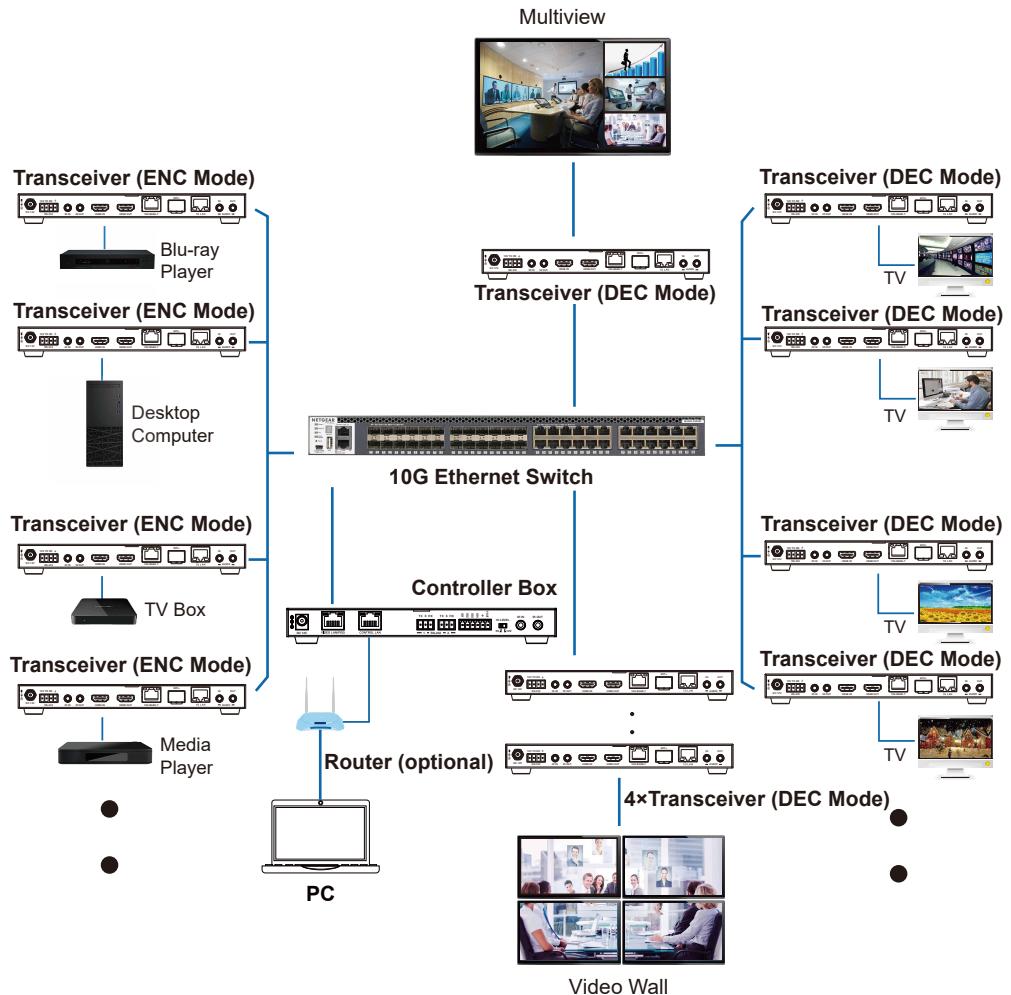
On this page, you can change the password by inputting the New Password and Confirm Password, and then clicking “Apply” to take effect.

Notes:

- (1) *The password requires a minimum length of 6 characters and a maximum of 8 characters. Special characters are not supported.*
- (2) *The New Password and Confirm Password must be the same.*
- (3) *After changing password, the system will skip to the Web GUI login interface automatically. You need to log in the Web GUI again with the new password.*

In addition, there is a logout icon in the upper right corner of each page of the Web GUI. Clicking the icon will exit the Web GUI and automatically skip to the login interface.

8. Application Example



Notes:

(1) The Controller has two LAN ports, one is Video LAN and the other one is Control LAN. The purpose of designing Controller with two LAN ports is to isolate audio/video (AV) network from control network. So to make AV network as an independent network which can not be accessed from control network directly, it's for bringing network security and avoiding AV network traffic flowing into the network in which the controls and managements are for the IP system.

The strongly recommended system setup is connecting Video LAN and Encoders/Decoders in a network Switch, connecting Control LAN and PC in another network Switch. The controls from Control LAN can be achieved by Web GUI/Telnet or SSH login/API commands, all these controls can be bridged by the Controller and applied onto Video LAN. The two LANs are isolated.

For simple usage, you can only connect all Encoders/Decoders and Video LAN and PC RJ-45 port into a single network, and let the Control LAN port not-connected (floating), as Video LAN also supports Web GUI/Telnet or SSH login/API commands controls, this seems "convenient" for general use scenarios, but this is only suggested for system in which there is no network isolation requirement or network traffic non-sensitive.

Only Control LAN connected while Video LAN floating, this is not allowed.

(2) For the default IP mode of Control LAN port of the Controller Box is DHCP, the PC also needs to be set to "Obtain an IP address automatically" mode, and an optional DHCP server (e.g. network router) is recommended in the system.

(3) If there is no DHCP server in the system, 192.168.6.100 will be used as the IP address of Control LAN port. You need to set the IP address of the PC to be in the same network segment. For example, set PC's IP address as 192.168.6.88.

(4) You can access the Web GUI by inputting URL "http://controller.local" or the Control LAN port IP address 192.168.6.100 (in case of no optional router) on your computer's browser.

(5) No need to care about settings of Video LAN port of the Controller Box, as they are managed by Controller automatically (Default).

(6) When the Network Switch does not support PoE, the Encoder, Decoder and Controller Box should be powered by DC power adapter.