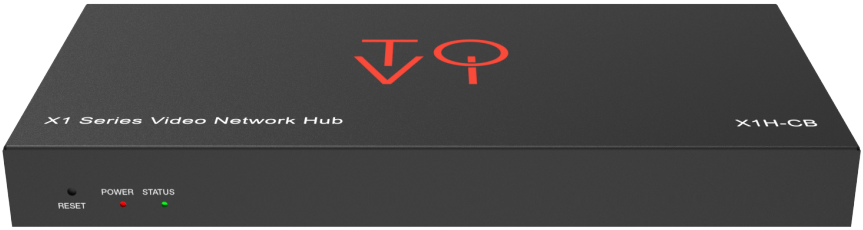

X1H-CB

X1 Series Video Network Hub

USER MANUAL

Follow us on Youtube and Facebook

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Table of Contents

Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating, or adjusting this product. Keep this manual for future reference.

Important Safety Note – Surge Protection Recommended

This product contains sensitive electronic components that may be damaged by electrical spikes, surges, lightning strikes, or static discharge. To protect and extend the service life of your equipment, we strongly recommend using a surge protection device.

Warranty Registration

Activate your warranty by registering your product at:
→ **www.orei.com/register**

Need Technical Support? We're Here to Help.

Our experienced Technical Support Team is available to answer your questions, offer expert advice, and help troubleshoot any issues to keep your project on track—on time and on budget.

Live Support Hours (US/Canada/Mexico):

⏰ Monday–Friday | 9:00 a.m. – 5:00 p.m. Central Time

Contact Us:

📧 Email: info@orei.com

✆ Phone: 877-290-5530

💬 Chat Live: www.orei.com

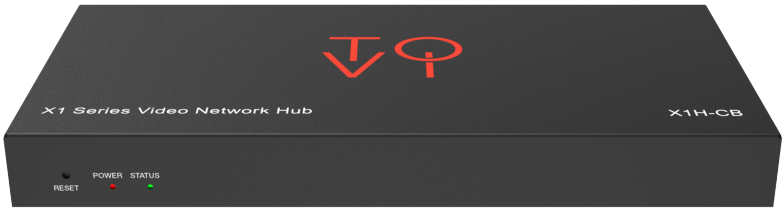
Send us an instant message—our team typically responds within moments during live support hours.

Introduction

The X1H-CB is a dedicated IP video control box designed to work seamlessly with ToVi's X1 series of H.264/H.265 AV over IP products. It simplifies system control and integration by managing video, audio, RS-232, IR, and KVM signals across distributed IP-based setups.

Equipped with dual 100M ports, the X1H-CB isolates control and multicast networks for stable and efficient performance. The unit features a user-friendly Web GUI with drag-and-drop capabilities and supports HTTPS and SSH protocols for secure remote access and configuration.

Additional functionality includes a PoE-supported VIDEO LAN port, a 12V-compatible IR input via 3.5mm jack, and four GPIO ports with selectable 5V or 12V output. It supports third-party control system integration and is protected against lightning, surges, and ESD—making it a reliable choice for 24/7 commercial or industrial operation.



Features

1. **H.264/H.265 IP Video Control Support** – Optimized for use with ToVi's X1H series for efficient AV signal management.
2. **Dual 100M Network Ports** – Separates control and multicast traffic to ensure system stability.
3. **Web GUI with Drag & Drop** – Provides an intuitive user interface for simplified setup and operation.
4. **HTTPS & SSH Protocols** – Enables secure remote access and configuration.
5. **Full Signal Control** – Supports video, audio, RS-232, IR, and KVM across distributed IP systems.
6. **PoE-Enabled VIDEO LAN Port** – Reduces cabling and simplifies power delivery.
7. **IR Input via 3.5mm Jack** – Accepts 12V wide-band IR signals for flexible control options.
8. **Four GPIO Ports** – Offers selectable 5V or 12V control outputs for custom integration.
9. **Third-Party Control Compatibility** – Supports LAN, RS-232, and external control systems.
10. **Built for 24/7 Operation** – Includes surge, lightning, and ESD protection for mission-critical environments.

Package Contents

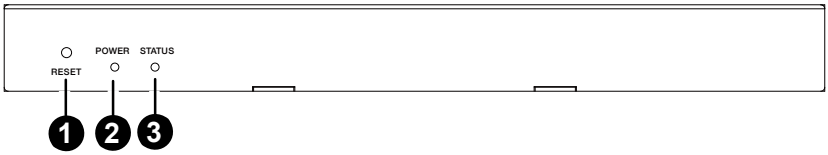
1.	X1H-CB	1pcs
2.	IR Receiver Cable (1.5 meters)	1pcs
3.	3-pin 3.81mm Phoenix Connector (male)	1pcs
4.	6-pin 3.81mm Phoenix Connector (male)	1pcs
5.	Mounting Ear	2pcs
6.	Machine Screw (KM3*6)	4pcs
7.	Power Adapter	1pcs
8.	User Manual	1pcs

Specifications

Technical	
Network Bandwidth	100M
Transmission Distance	100m (CAT5E/6/6A/7)
Control Ports	2 x LAN [RJ45] 1 x IR IN [3.5mm stereo jack, 12V level] 1 x DIGITAL I/O [6-pin 3.81mm phoenix connector] 1 x RS-232 [3-pin 3.81mm phoenix connector]
Dimensions	L: 204mm / 8.03in | W: 98.5mm / 3.88in | H: 21.5mm / 0.85in
Housing	Metal Enclosure
Color	Black
Weight	509g / 1.12lbs
Power Supply	12V/1A
Power Consumption	4.5W
Operating Temperature	0˚C ~ 40˚C / 32˚F ~ 104˚F
Storage Temperature	-20˚C ~ 60˚C / -4˚F ~ 140˚F
Operating Humidity	20%~80% relative humidity, non-condensing
Storage Humidity	10%~90% relative humidity, non-condensing

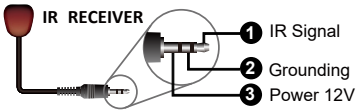
Operation Controls and Functions

Front Panel



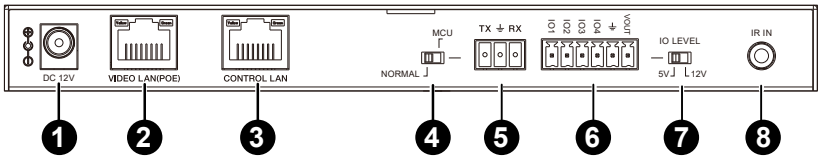
No.	Name	Function Description
1.	RESET button	Press and hold this button (about 10 seconds) until Status LED starts flashing, Controller will be reset automatically.
2.	POWER LED	The red LED will light up when the device is powered on.
3.	STATUS LED	The LED will light up yellowish-green when the device is powered on. It will become steady once the device is ready to use.

IR Pin Definition



Operation Controls and Functions

Rear Panel



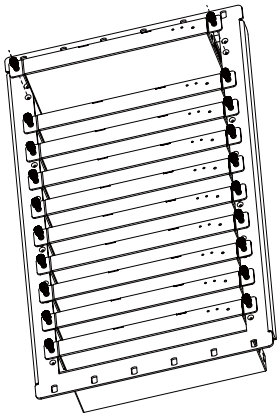
No.	Name	Function Description
1.	DC 12V	Connect the included power adapter. Power adapter is not needed as the Control Box can accept PoE from the network switch.
2.	VIDEO LAN (POE)	100M Video LAN port, supporting PoE function. Note: When PoE is enabled, DC 12V/1A power supply is not required.
3.	CONTROL LAN	The TCP/IP control network port.
4.	MCU/Normal DIP switch	**Normal mode (Default):** The RS-232 port is used for serial port commands control. **MCU mode:** The RS-232 port is used for MCU software upgrade.
5.	3-pin phoenix connector	RS-232 serial communication port.
6.	6-pin phoenix connector	4 channel I/O level outputs, 1 channel grounding, 1 channel power supply to the outside.
7.	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.
8.	IR IN	12V IR signal input port.

Rack Mounting Instruction

6U V2 Rack Mounting

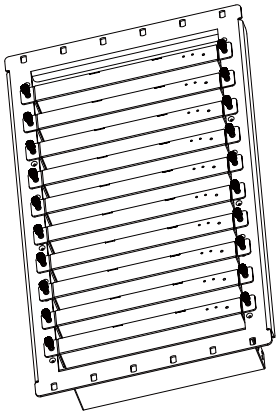
This Controller can be mounted in a standard 6U V2 rack (Please contact your supplier for 6U V2 rack sale). The mounting steps are as follows:
Step 1: Use included screws to fix two mounting ears on the Controller, as shown in the figure below:

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



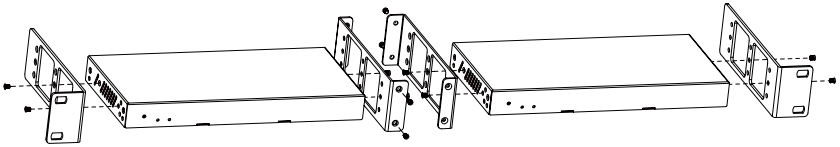
Step 3: Use screws to fix mounting ears on the rack to complete the mounting, as shown in the figure below:

Rack Mounting Instruction

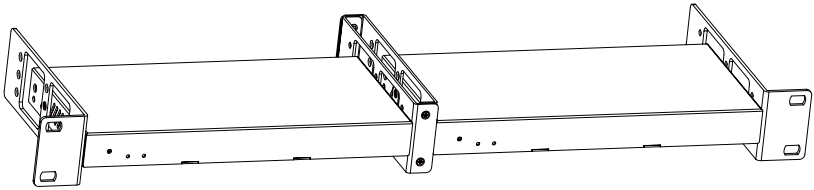


1U V2 Rack Mounting

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:

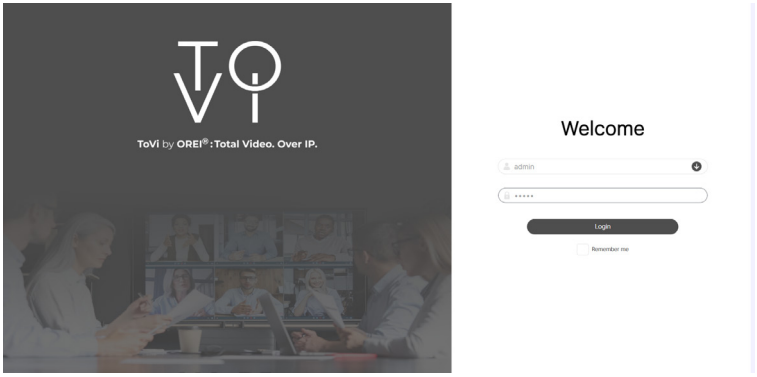


Step 2: Fasten screws between two 1U V2 rack panels, so that two Controllers are mounted in a 1U V2 rack, as shown in the figure below:

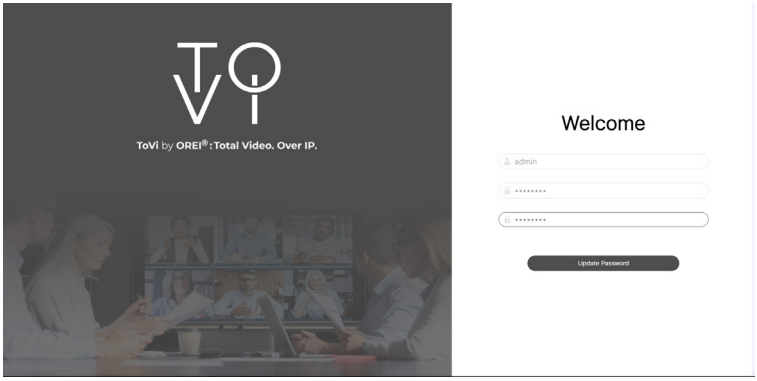


Preparation before Entering the System

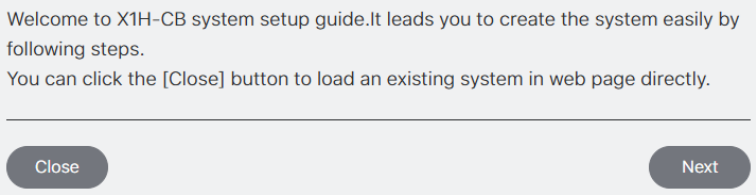
You can use Controller's Web GUI to control all IP products at the Switch.
The operation steps are as follows:
Step 1: When the system is not connected to a router, directly input the Controller's default IP address (Control LAN port: 192.168.6.100; Video LAN port: 169.254.8.100) or the URL (http://controller.local) into the Web browser address bar on the PC to enter the Web GUI login interface.



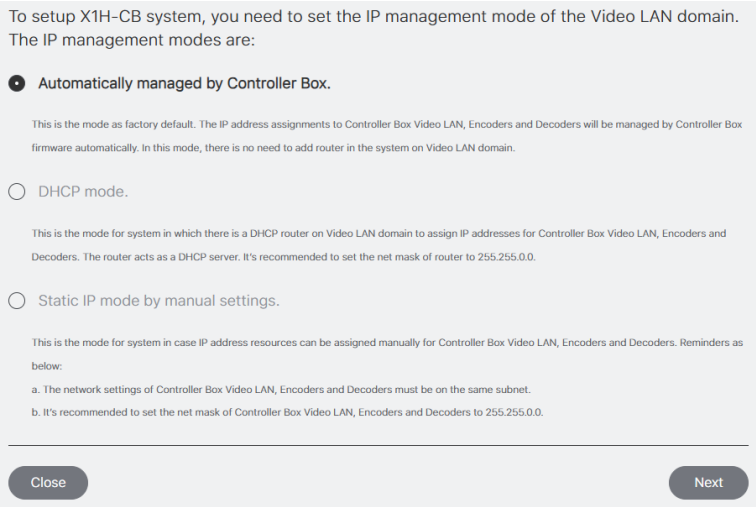
At first login, please select the initial username (admin), and input the initial password (admin). Then click "Login" to enter the password modification interface, as shown below.



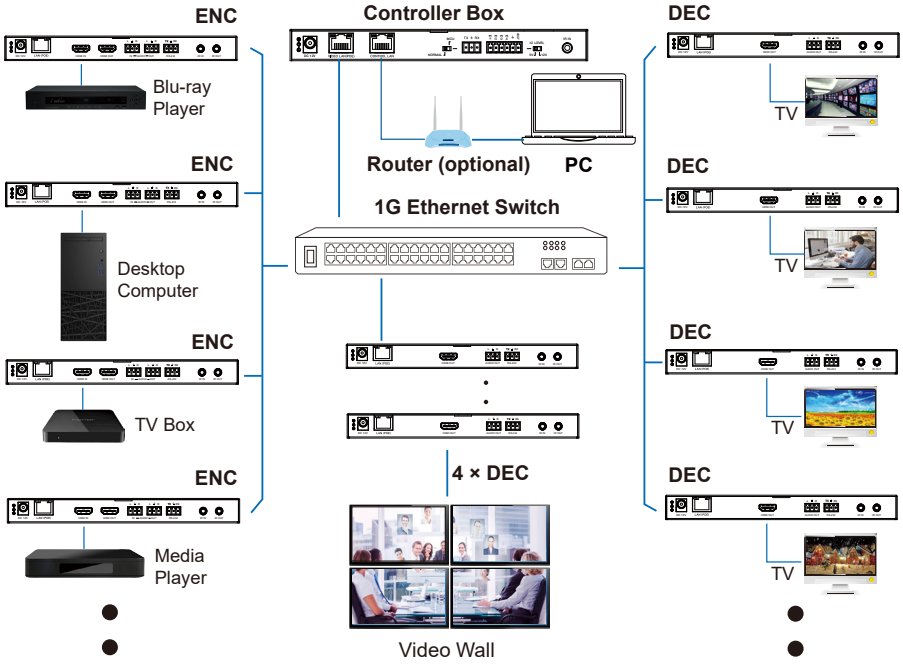
Please set a six-digit password using letters or numbers, then use the new password to login the Web GUI.
For the first time, you need to set up the system, as shown in the following figure:



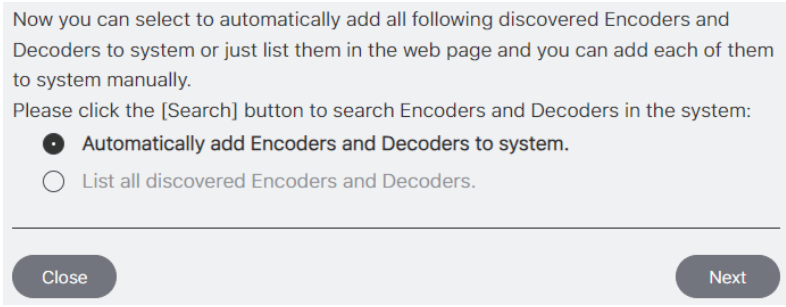
Step 2: Click the "Close" button to load an existing system in web page directly, or click "Next" button to go to the next step.



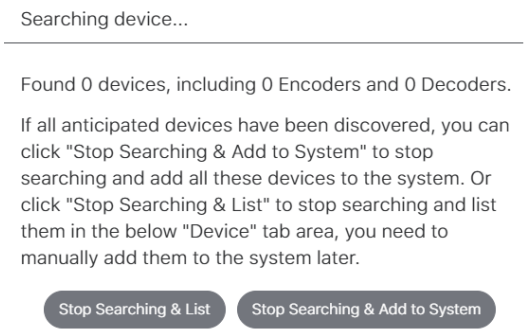
On this interface, you need to set the IP mode of Video LAN.
Mode 1: Automatically managed by Controller Box.
The IP addresses of the Video LAN port, Encoder and Decoder will be assigned by the Controller automatically, and the connection method is as following.



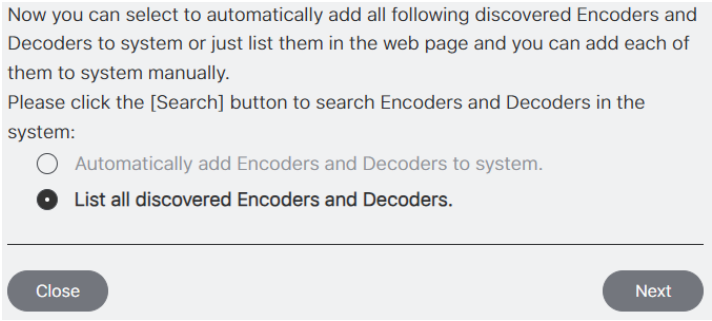
Step 4: Click the "Next" button and wait for the completion to enter the interface as shown in the figure below.

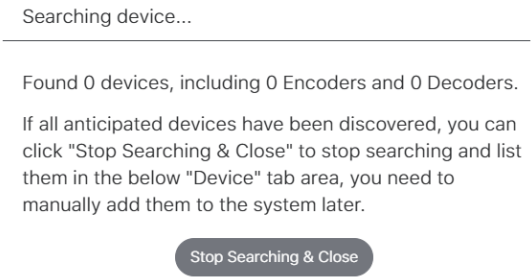


If you select “Automatically add Encoders and Decoders to system” , and click the “Next” button to enter the Device page, the system starts to search for devices. After searching, an inquiry box will pop up. You can select “Stop Searching & Add to System” to stop searching and automatically add all searched devices to the system (presented in the Encoder/Decoder list), or select “Stop Searching & List” to stop searching and list the searched devices in the below “Device” tab area, then manually add them to the system, as shown below.



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. After searching, an inquiry box will pop up. You can select “Stop Searching & Close” to stop searching and list searched devices in the below “Device” tab area, then manually add them to the system by clicking the “Add” button behind each device one by one or clicking “Add All Into System”.

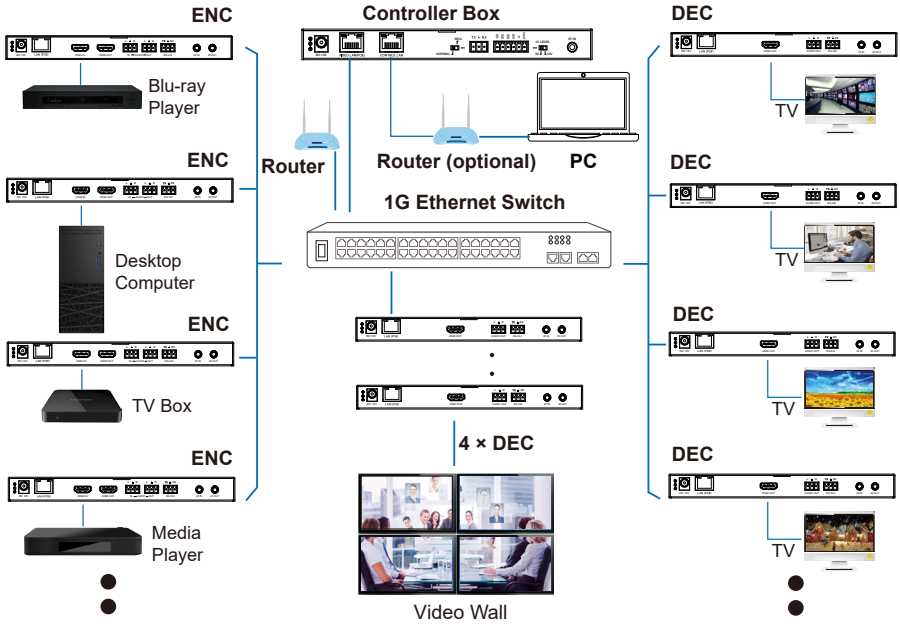




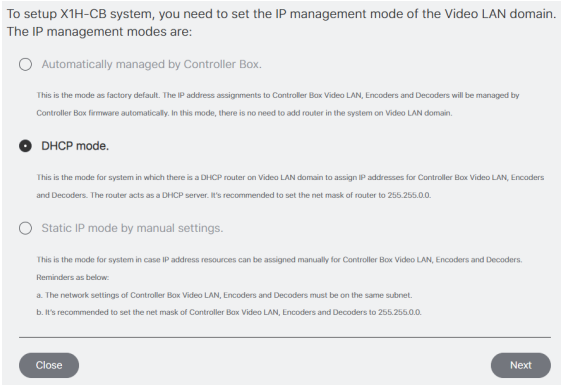
If you want to change the IP mode of Video LAN, you can click “Search Device Via Wizard” on the Device interface, and switch back to the IP mode select interface.

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

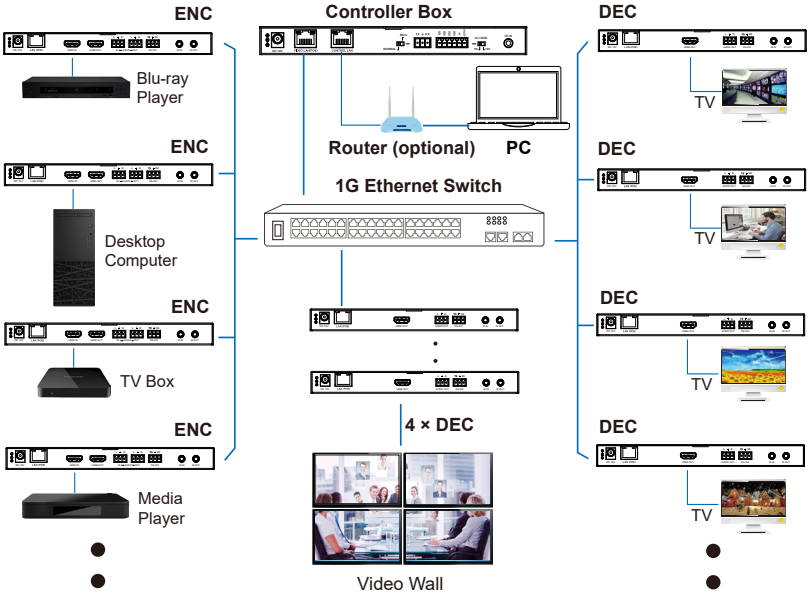


Select “DHCP Mode” on the interface shown below, and click “Next”.

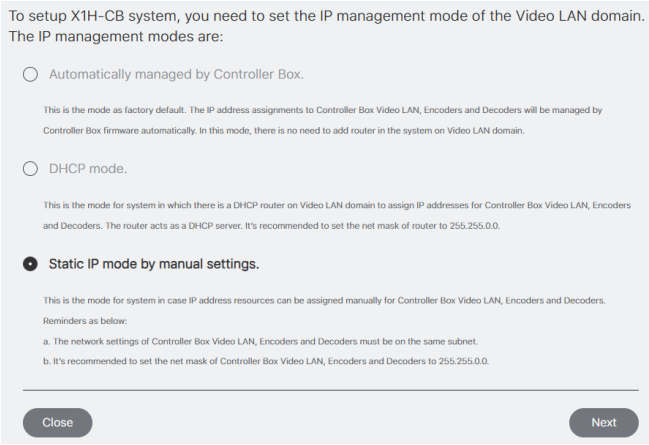


The rest of the steps are the same as the Mode 1 operation.

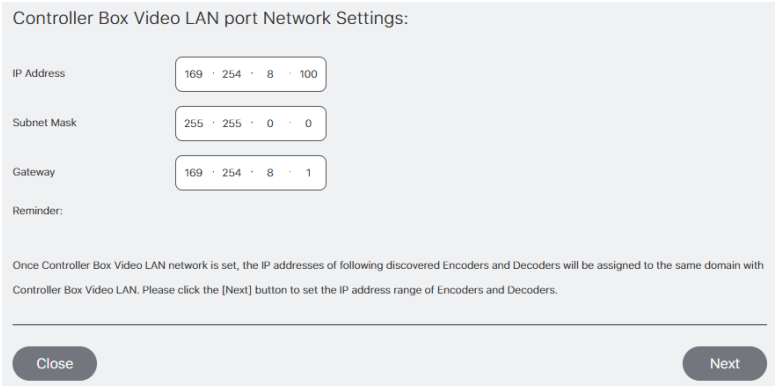
Mode 3: Static IP mode by manual settings.
The IP addresses of the Video LAN port, Encoders and Decoders are manually set by the user, and the connection method is as following



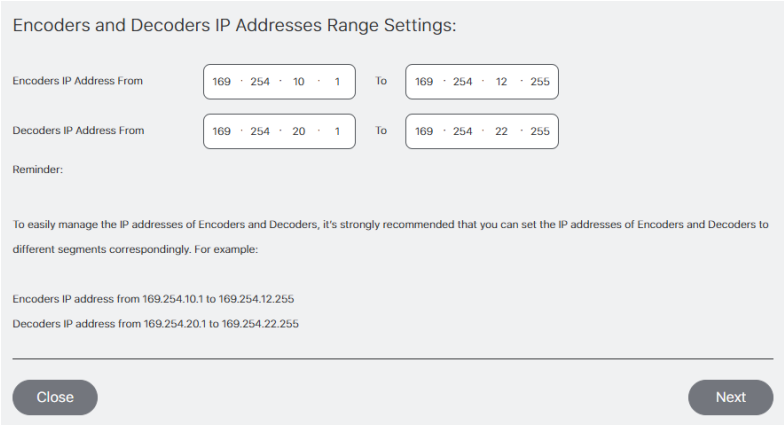
Select “Static IP mode by manual settings” on the interface shown below, and click “Next”.



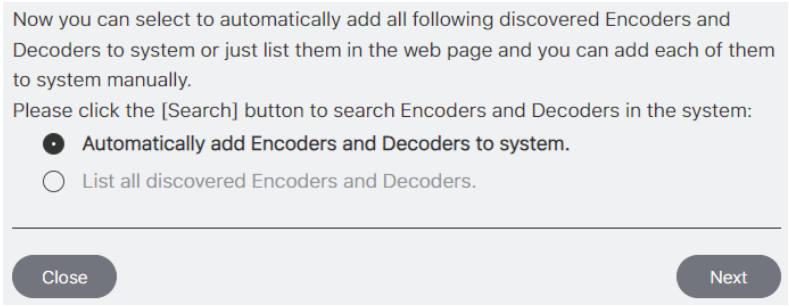
After entering the interface shown in the figure below, manually set the IP address, subnet mask and gateway of the Video LAN.



Note: The IP network domain of the Video LAN port must be different from that of the 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.



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.



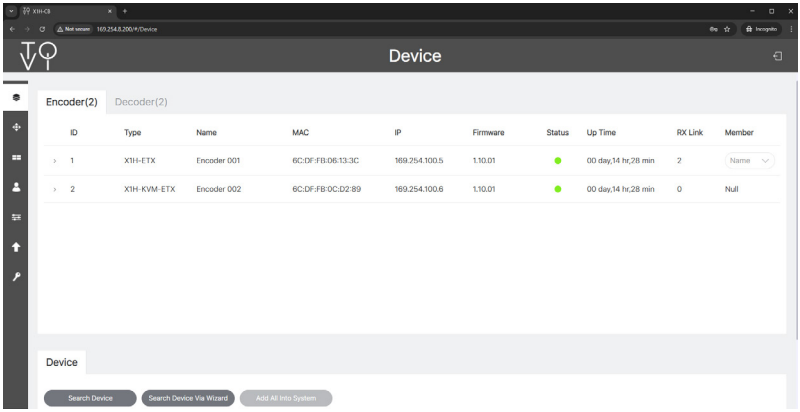
The rest of the steps are the same as the Mode 1 operation.

Functions and Operation

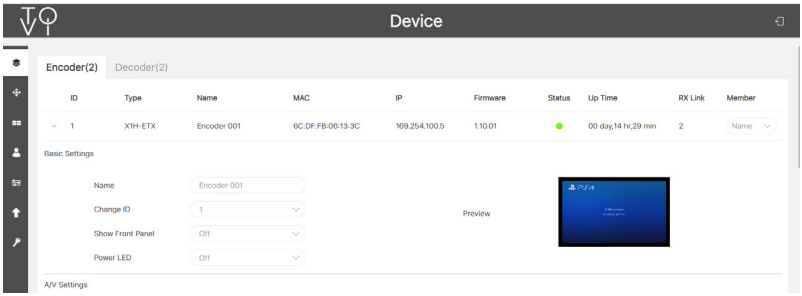
The main interface of the Web GUI consists of seven sections, including Device, Matrix, Video Wall, User, Controller Settings, Firmware Updates and Password. Click the item icon on the left to enter the corresponding interface.

Device

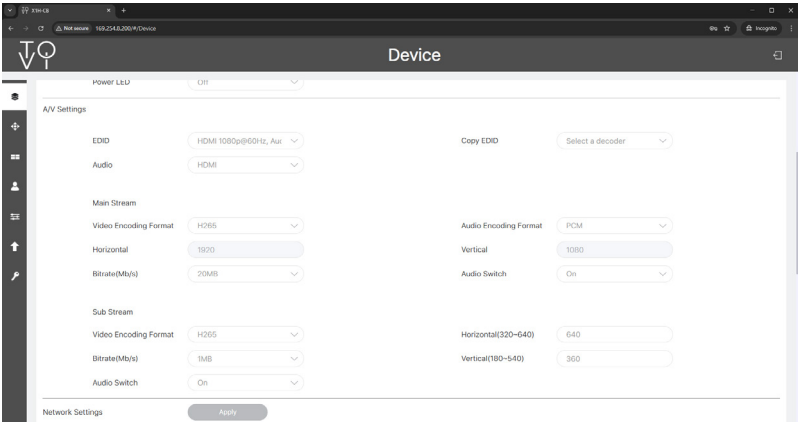
On this page, you can click the Encoder/Decoder tab to check the information of the Encoders and Decoders in the system, such as ID, Type, Name, MAC address, IP address, Firmware version, Online/Offline Status, Up Time, RX Link, Member/Source. Besides, you can configure each Encoder/Decoder after clicking the drop-down icon on the left side of ID. Please note that configuration options may be different for different models.



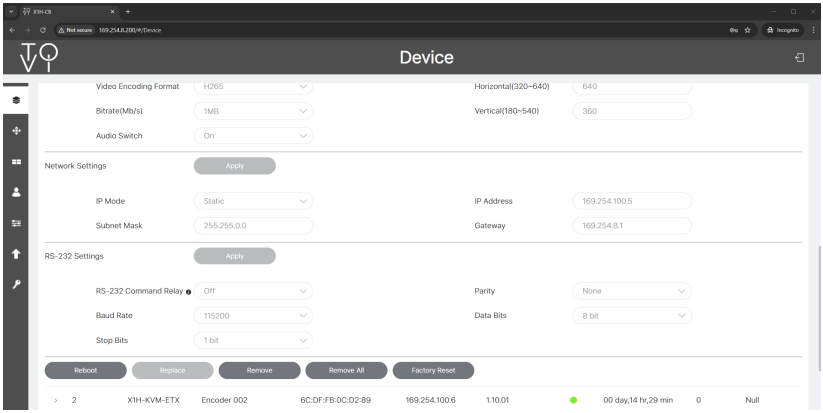
Note: The Controller can simultaneously control different types of Encoders and Decoders in one system.



Encoder Configuration
Basic Settings
Name: The name of the Encoder can be changed. (Note: The maximum length is 16 characters. Special characters are not supported.)
Change ID: The ID of the Encoder can be set. (ID range:1-762)
Note: Both ID and name can not be duplicated.
Show Front Panel: Click the drop-down menu to select On/Off to set the flash status of the nixie tube on the front panel.
Power LED: Click the drop-down menu to select the power LED flash status.
Off: The front panel power LED is steady on after flash status is turned off.
Flashing: The front panel power LED flashes.
Flashing 90s then off: The front panel power LED is steady on after flashing for 90s.
Preview: The preview of the Encoder.



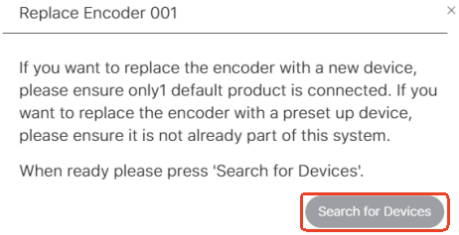
A/V Settings
EDID: Click the drop-down menu to select the EDID for the Encoder.
Copy EDID: Click the drop-down menu to select a Decoder for EDID copy.
Audio: Click the drop-down menu to select the audio source (HDMI/Analogue).
(1) When HDMI is selected, Encoder HDMI input is the audio source for Encoder HDMI output and Decoder audio output.
(2) When Analogue is selected, Encoder audio input is the audio source for Encoder HDMI output and Decoder audio output.
Main Stream: You can set the video encoding format (H265/H264), audio encoding format (PCM/AAC), bitrate and audio switch.
Sub Stream: You can set the video encoding format (H265/H264), horizontal, vertical, bitrate and audio switch.



Network Settings
IP Mode: Click the drop-down menu to set the IP mode (Static/DHCP).
IP Address: The IP address of the Encoder.
Subnet Mask: The Subnet Mask of the Encoder.
Gateway: The Gateway of the Encoder.
Notes:
(1) If the IP mode is set to "Static", you can manually set the IP Address, Subnet Mask and Gateway as required. Then click "Apply" to take effect.
(2) If the IP mode is set to "DHCP", it will search and be filled with the IP Address assigned by the router automatically.
(3) If the Encoder is actually alive in the system but with incorrect network segment settings, even though the Encoder is offline, its network settings including IP address can be changed and set to make it being discovered again.

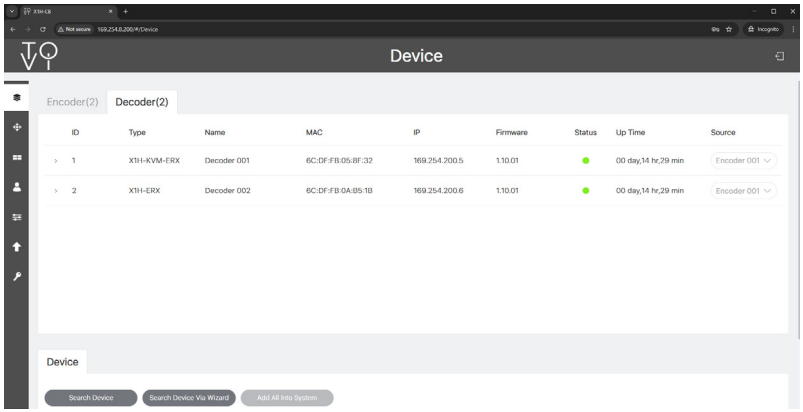
RS-232 Settings
RS-232 Command Relay: Click the drop-down menu to select On/Off to turn on/off the RS-232 command relay function.
Note: When the RS-232 command relay function is turned on, the Decoder's locked signal routing function is disabled.
Parity: Click the drop-down menu to set the parity.
Baud Rate: Click the drop-down menu to set the baud rate.
Data Bits: Click the drop-down menu to set the data bits.
Stop Bits: Click the drop-down menu to set the stop bits.
After setting, click "Apply" to take effect.

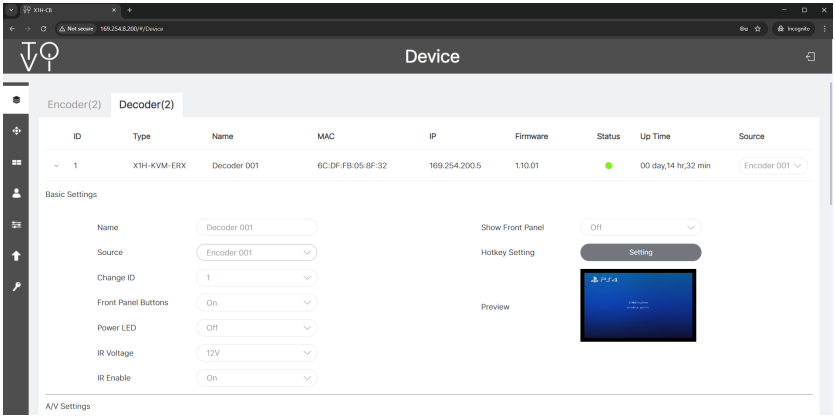
Reboot: Click the Reboot button to reboot the Encoder.
Replace: Click to replace the offline Encoder (which is in the system) with an online Encoder (which is not in the system).
For example, follow steps below to replace Encoder 001 with Encoder 006:
Step 1. Unplug the network cable of Encoder 001 to make it be offline. (Using external power supply.)
Step 2. Connect Encoder 006 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 Encoder 006 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.

Decoder Configuration





Basic Settings

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

Source: Click the drop-down menu to select signal source for the Decoder.

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

Note: Both ID and name can not be duplicated.

Front Panel Buttons: Click the drop-down menu to select On/Off to unlock/lock front panel buttons. “On” indicates that panel buttons are available; “Off” indicates panel buttons are unavailable.

Power LED: Click the drop-down menu to select the power LED flash status.

Off: The front panel power LED is steady on after flash status is turned off.

Flashing: The front panel power LED flashes.

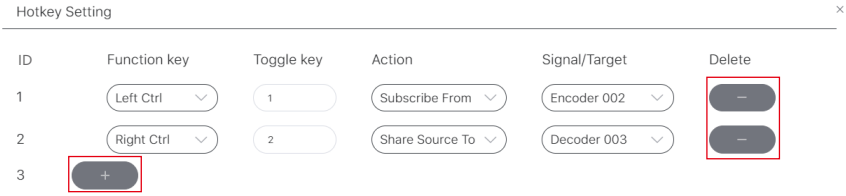
Flashing 90s then off: The front panel power LED is steady on after flashing for 90s.

IR Voltage: Click the drop-down menu to select the 5V/12V IR voltage.

IR Enable: Click the drop-down menu to select On/Off to enable/disable the IR transmission.

Show Front Panel: Click the drop-down menu to select On/Off to set the flash status of the nixie tube on the front panel.

Hotkey Setting: You can set up to 20 sets of hotkeys for Decoders. Click the “Setting” button to pop up the Hotkey Setting window, as shown in the following figure. Click the “+” icon to create a new hotkey, and then set the function key, toggle key, action, signal/target separately. Click the “-” icon to delete the corresponding hotkey settings.



For example:
After completing the hotkey settings for ID 1 and 2, as shown in the above figure. Press the function key "Left Ctrl" and toggle key "1" simultaneously to execute the action "Subscribe From" to the signal "Encoder 002", that is, switch the signal source of Decoder 001 to Encoder 002. If the function key "Right Ctrl" and toggle key "2" are pressed simultaneously, the action "Share Source To" can be executed to the target "Decoder 003", that is, the current signal source "Encoder 002" of Decoder 001 will be switched to Decoder 003 at the same time.

Notes:

(1) Only Encoders and Decoders that support KVM functionality can perform hotkey settings.

(2) The toggle keys are limited to the keys within the red box on the keyboard, as shown in the following figure.

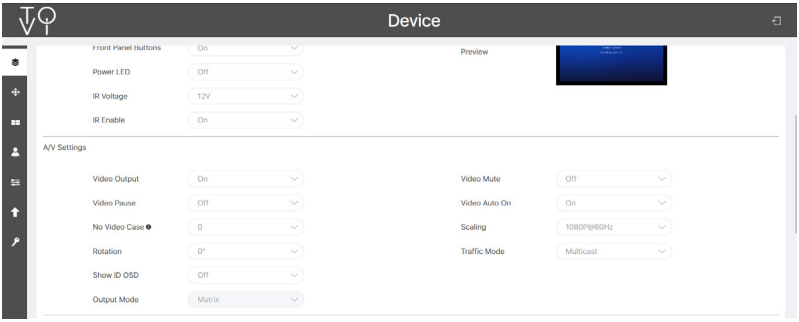
Preview: The preview of the Decoder.
Besides, you can click the drop-down menu of "Source" on the Decoder list to select signal source for the Decoder.

A/V Settings

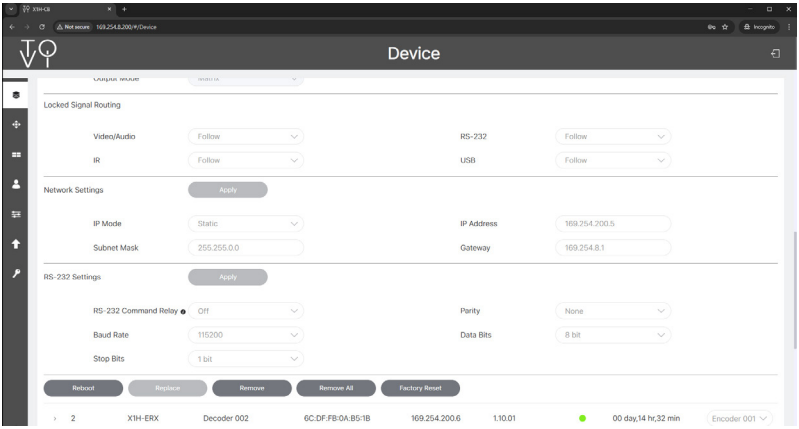
Video Output: Click the drop-down menu to select On/Off to turn on/off the video output.

Video Pause: Click the drop-down menu to select On/Off to pause/proceed the video output.

No Video Case: Click the drop-down menu to select the time for turning off HDMI output when no video signal is sensed.



Rotation: Click the drop-down menu to select the rotation angel (0˚/90˚/180˚/270˚) of the image.
Show ID OSD: Click the drop-down menu to select On/Off to turn on/off the ID OSD display.
Output Mode: In the Video Wall mode, you can click the drop-down menu to select Matrix or Video Wall as the output mode. While, in the Matrix mode, this option cannot be selected.
Video Mute: Click the drop-down menu to select On/Off to mute/unmute the video.
Video Auto On: Click the drop-down menu to select On/Off to turn on/off the video auto on function.
Scaling: Click the drop-down menu to select the scaling resolution.
Traffic Mode: Click the drop-down menu to select the traffic mode.

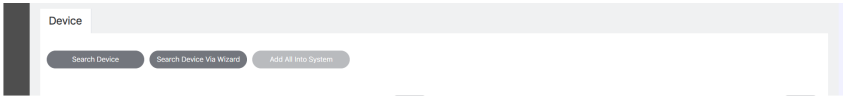


Locked Signal Routing
Different signals can be independently routed between Encoders and Decoders, including Video/Audio, IR, RS-232 and USB; When clicking the drop-down menu and selecting "Follow", the corresponding signal comes from the current Encoder.

Network Settings
IP Mode: Click the drop-down menu to set the IP mode (Static/DHCP).
IP Address: The IP address of the Decoder.
Subnet Mask: The Subnet Mask of the Decoder.
Gateway: The Gateway of the Decoder.
Notes:
(1) If the IP mode is set to "Static", you can manually set the IP Address, Subnet Mask and Gateway as required. Then click "Apply" to take effect.
(2) If the IP mode is set to "DHCP", it will search and be filled with the IP Address assigned by the router automatically.
(3) If the Decoder is actually alive in the system but with incorrect network segment settings, even though the Decoder is offline, its network settings including IP address can be changed and set to make it being discovered again.

RS-232 Settings
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.
Parity: Click the drop-down menu to set the parity.
Baud Rate: Click the drop-down menu to set the baud rate.
Data Bits: Click the drop-down menu to set the data bits.
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.

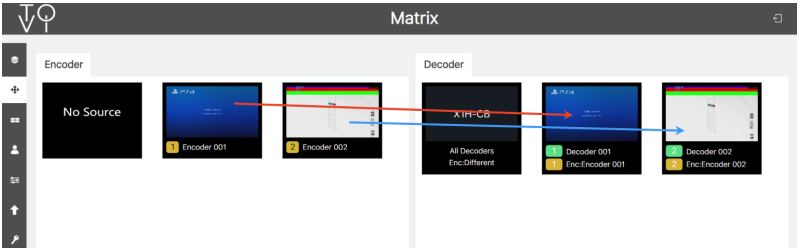


Device
Search Device: Click this button to search devices which are not in the system.
Search Device Via Wizard: Click this button to switch back to the IP mode select interface and follow the Wizard to set up the system.
Add All Into System: Click this button to add all searched devices into the system,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

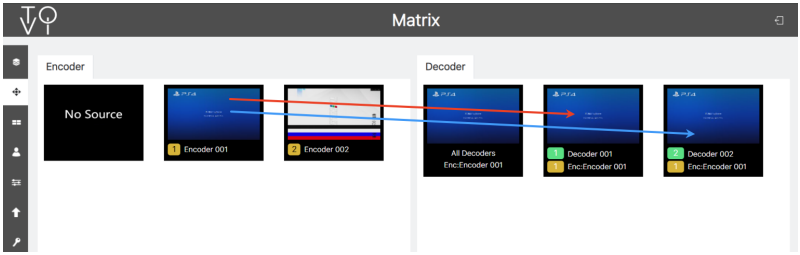
Matrix

Matrix Switching Function

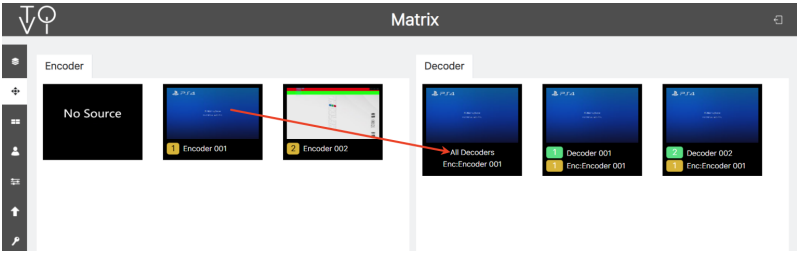
1. Left-click the Encoder preview picture and drag it to Decoder, then release the mouse to realize one-to-one switching.



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



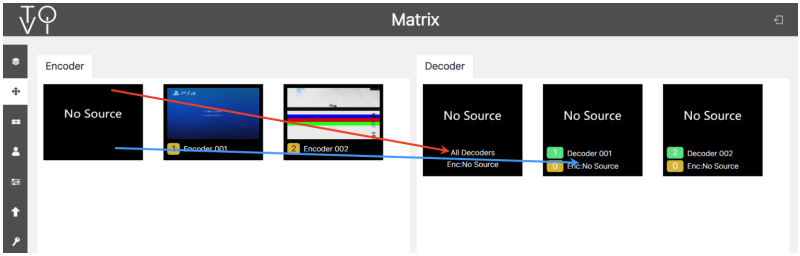
3. Left-click the Encoder preview picture and drag it to All Decoders, then release the mouse to realize one-to-all switching.



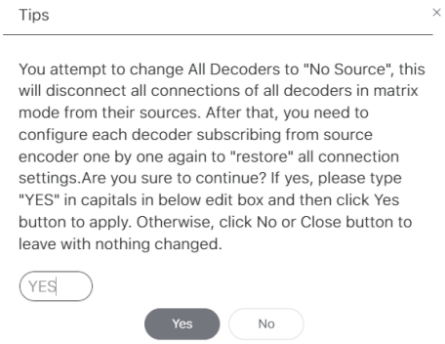
Note: Encoders can only be dragged to the Decoder preview of the same type to achieve signal switching. For one-to-all switching, only the Decoders of the same type will output the same signal.

Disconnect the Signal Connection

Click the "No Source" image in the Encoder preview list with the left mouse button and drag it to the Decoder preview image. Release the mouse to disconnect the Decoder from the signal source, and the corresponding display will show "No Source". If you drag the "No Source" image to "All Decoders" and release the mouse, a prompt window will pop up as shown below.

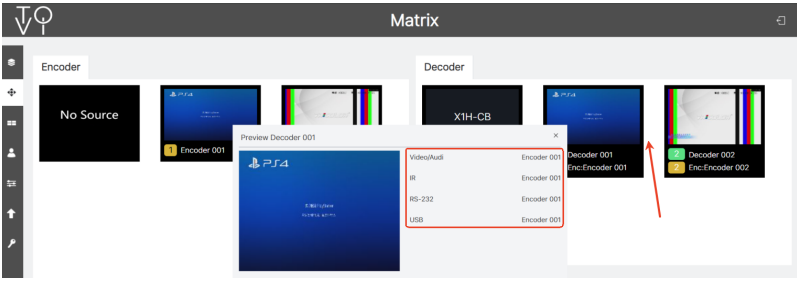


Manually enter "YES" and then click "Yes", all Decoder signal sources in matrix mode will be disconnected. After that, you need to configure Encoders for Decoders again. Therefore, please proceed with caution.

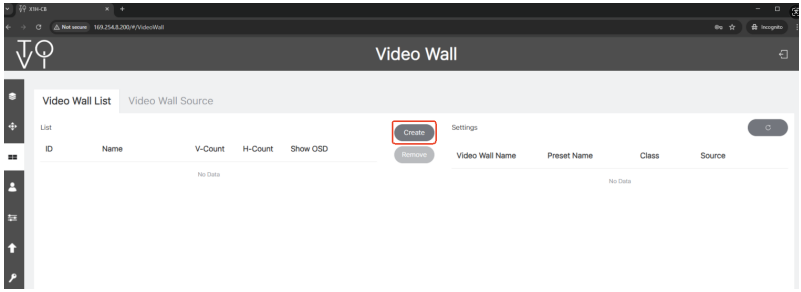


Corresponding Relationship Query

Double-click the preview image of Decoder to check the Video/Audio/IR/RS-232/USB corresponding relationship between the Encoder and Decoder.



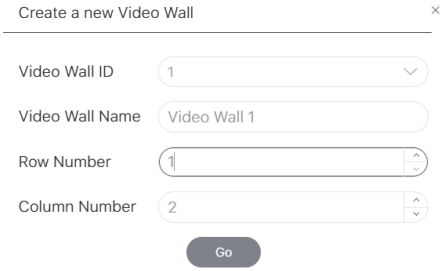
Video Wall



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.



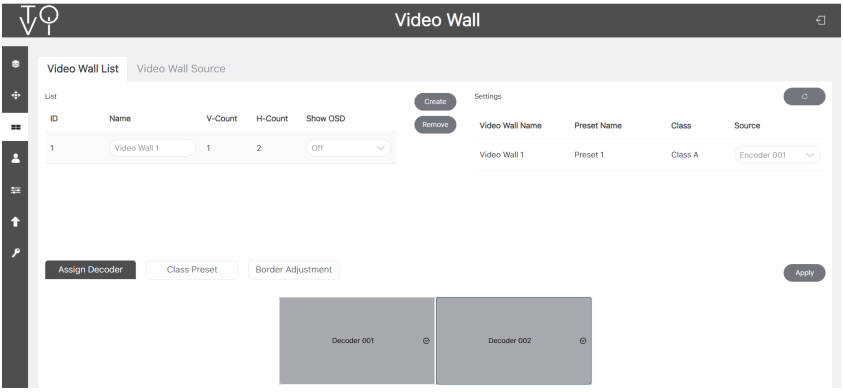
You can set the Video Wall ID, Video Wall Name, Row Number and Column Number. Then click "Go" to create the video wall.

Notes:

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

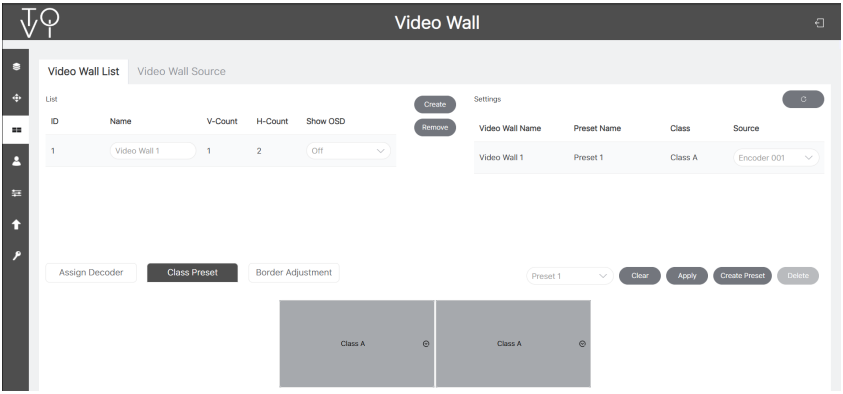
(2) The video wall name can be changed after the video wall is created.

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.



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

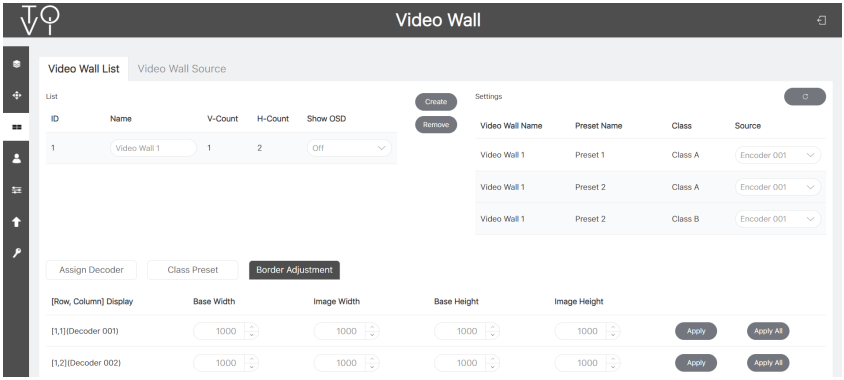
Step 3. Click “Class Preset” to enter the class configuration preset interface, then click each screen to select the corresponding Class as required (the same class name will form a video wall, you can create a regular or irregular video wall by Class Preset). Then click “Apply” to take effect.



The 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.

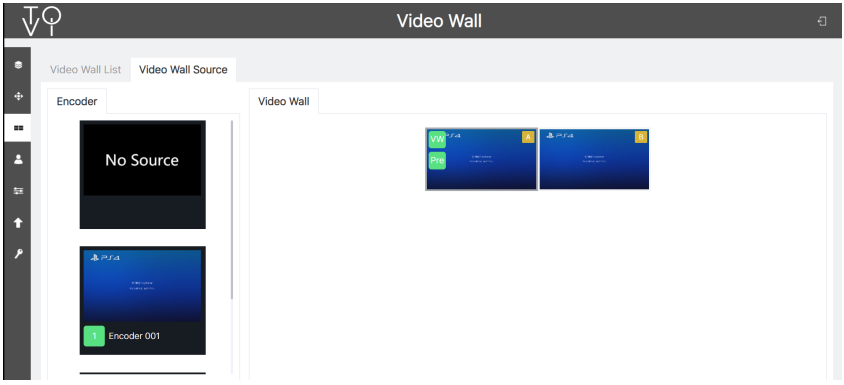
After setting, you should click “Apply” to take effect.

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.

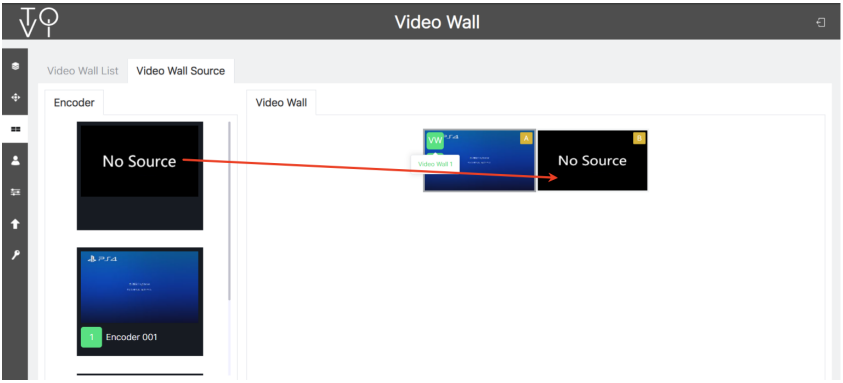


Note: The Base value cannot be more than 2 times the Image value.

Video Wall Source



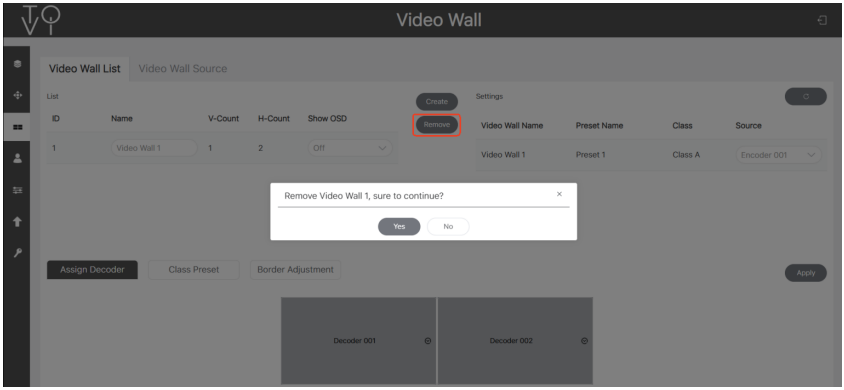
After the video wall is created and configured, you can click the Video Wall Source tab to check the video wall preview, video wall class, and its corresponding signal source. You can click the “VW” icon on the preview of video wall to switch different video walls, or click the “Pre” icon to switch different presets.
Besides, you can directly drag Encoders to the video wall to change signal sources. If you drag “No Source” to the video wall, then the signal source of the video wall will be disconnected, and the corresponding windows will display “No Source”.



Notes:
(1) If the Encoder is offline, it can't be dragged to the matrix of video wall.
(2) Only Encoders of the same type can be dragged to the video wall to switch signals.

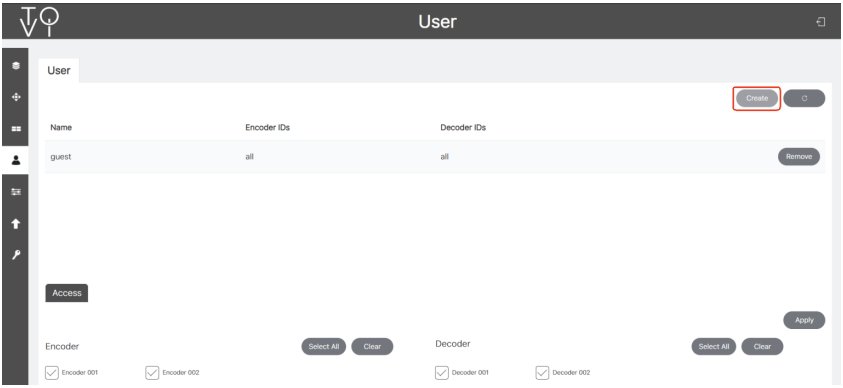
Video Wall Remove

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".

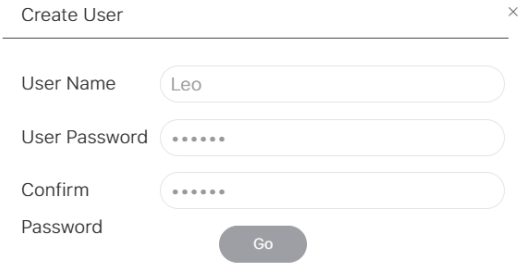


Notes:
(1) Each Decoder can be set into a part of a video wall array. Each system can contain multiple video walls with different sizes. Each video wall can be assigned to different screens and different layouts that range from 1x2 up to 9x9.
(2) The controller creates and manages the video wall configurations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

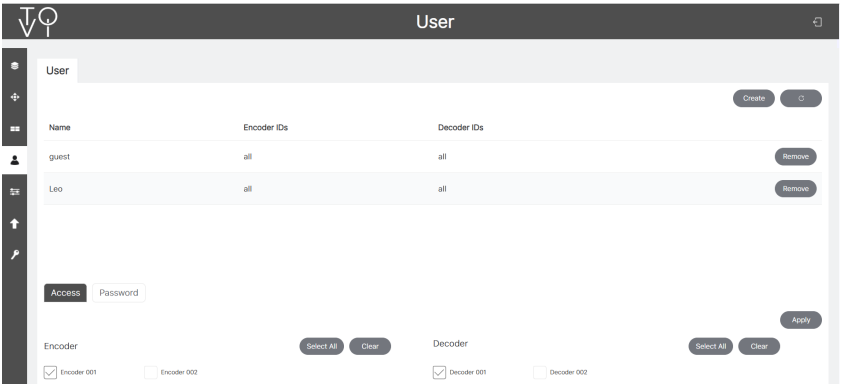
User



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.



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



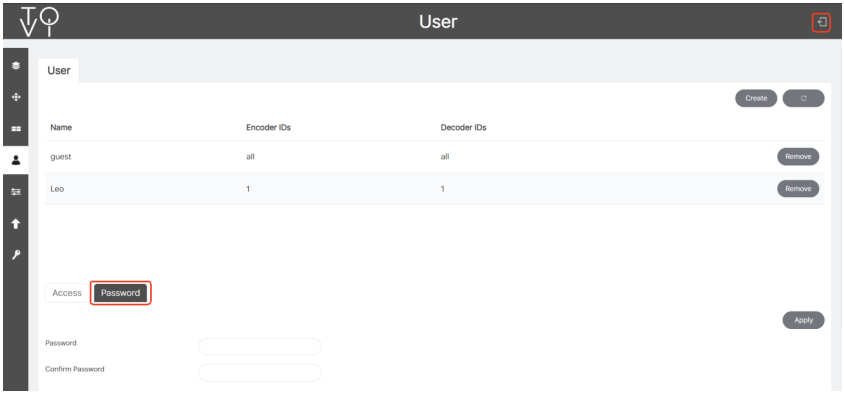
Notes:

(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.

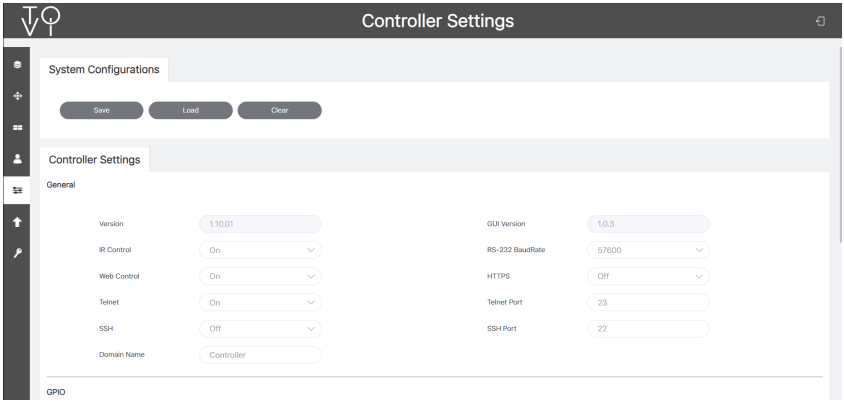
(2) The Password and Confirm Password must be the same.

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.



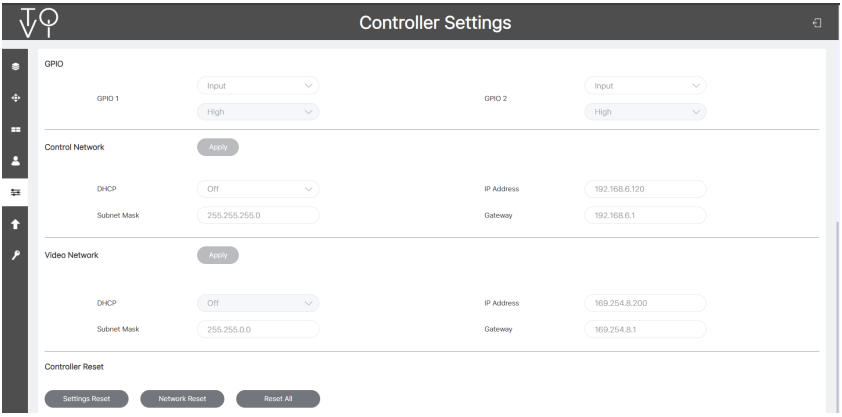
Controller Settings



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.

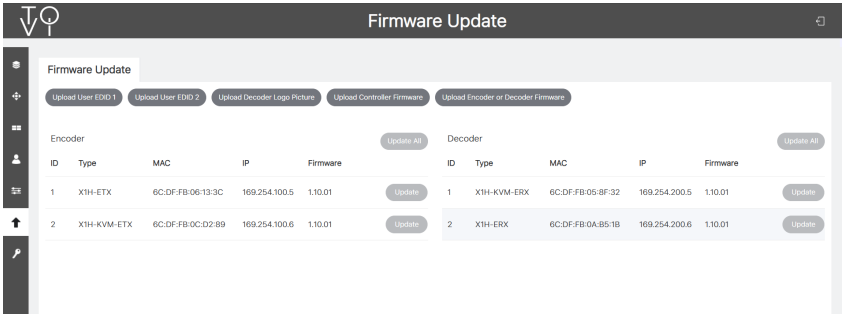
Controller Settings

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



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

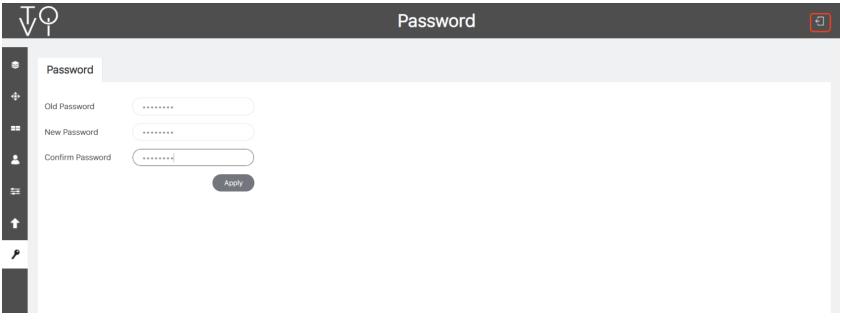
Firmware Update



Upload User EDID 1/2: Click the button to open an EDID binary file and upload it to User EDID 1/2.
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.
Upload Controller Firmware: Click the button to upload the Controller update firmware.
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.

Password

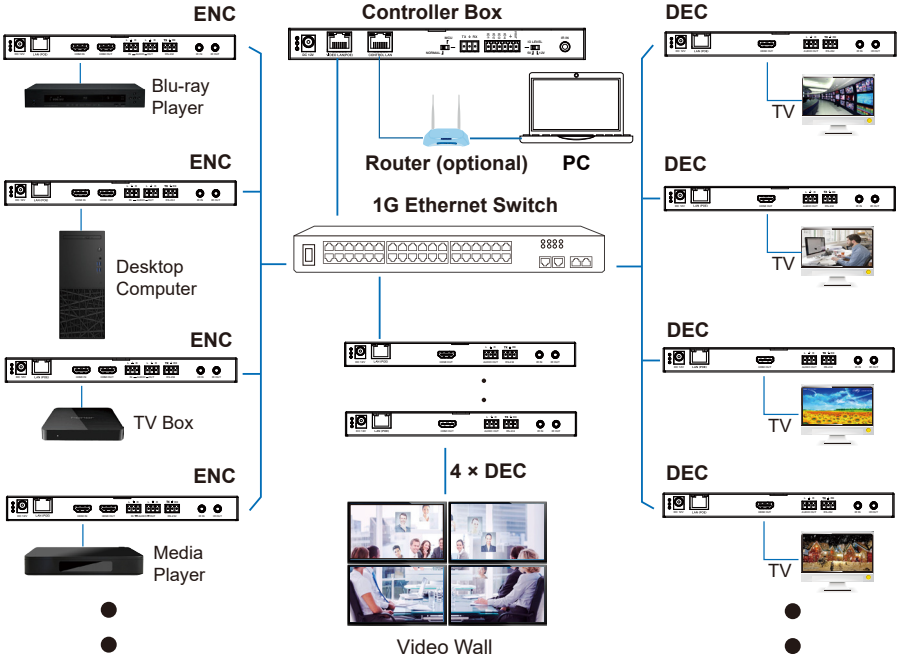
On this page, you can change the password by inputting the New Password and Confirm Password, and then clicking "Apply" to take effect.



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.

Application Example



Application Example

ToVi Controller Box – Usage Instructions

1. LAN Ports and Network Isolation

- The Controller is equipped with two LAN ports: **Video LAN** and **Control LAN**.
- The purpose of having two LAN ports is to isolate the audio/video (AV) network from the control network. This ensures that the AV network operates independently and cannot be accessed directly from the control network.
- This design enhances **network security** and prevents AV traffic from interfering with the control and management network of the IP system.

Recommended setup:

- Connect the **Video LAN** and all Encoders/Decoders to one network switch.
- Connect the **Control LAN** and the PC to another network switch.
- Controls from the Control LAN (via Web GUI, Telnet, SSH login, or API commands) are bridged by the Controller and applied to the Video LAN. Both LANs remain isolated.

Simplified setup (optional):

- All Encoders/Decoders, the Video LAN, and the PC's RJ-45 port can be connected to a single network switch, while the Control LAN is left unconnected ("floating").
- Since the Video LAN also supports Web GUI, Telnet, SSH login, and API commands, this setup can be convenient for general use.
- However, this method is only recommended when **network isolation is not required** or when **network traffic sensitivity is low**.
- **Important:** Connecting only the Control LAN while leaving the Video LAN floating is **not allowed**.

2. Default IP Mode – Control LAN

- By default, the Control LAN port operates in **DHCP mode**.
- The PC should also be set to "**Obtain an IP address automatically**".
- An optional **DHCP server** (e.g., a network router) is recommended in the system.

3. Without a DHCP Server

- If no DHCP server is available, the Control LAN port will use the default IP address **192.168.6.100**.
- In this case, set the PC's IP address to the same network segment (e.g., **192.168.6.88**).

4. Accessing the Web GUI

- Open a browser on your PC and enter either:
  http://controller.local
  or the Control LAN IP address (**192.168.6.100**, if no router is present).

5. Video LAN Port Settings

- No configuration is required for the Video LAN port. It is managed automatically by the Controller (default).

6. Power Supply Requirements

- If the network switch does **not support PoE,** the Encoder, Decoder, and Controller Box must be powered using a **DC power adapter**.

FAQs & Troubleshooting

1. What is the primary function of the X1H-CB?
The X1H-CB is an IP video network hub designed for ToVi's X1 series AV over IP products. It manages video, audio, KVM, RS-232, and IR signal distribution over an IP network, allowing you to control all your ToVi X1 products from a single place.

2. How do the dual LAN ports work?
Video LAN: Handles AV-over-IP video, audio, and control distribution. **Control LAN:** Handles Web GUI, Telnet/SSH access, API commands, and integration with external control systems. Both networks are isolated for security and traffic optimization.

3. Can I control the system without connecting the Control LAN?
Yes, the Video LAN also supports Web GUI, Telnet, SSH, and API control. However, for maximum security and stability, it is recommended to use Control LAN for system management and Video LAN for video distribution.

Still have some questions?

Please feel free to contact us at: info@orei.com. OR Fill out the form on the 'Contact Us' page on the website.
Our team will be more than happy to help you.

OREI Live Technical Support Hours

US team (US/Canada/Mexico): Monday-Friday, 9 a.m. - 5 p.m. Central Time

Support Email - info@orei.com | **Support Number** - 877-290-5530

X1 Series
Video Network Hub

X1H-CB

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