Multifunctional PTZ Remote Controller

User Manual

Contents

Tips

Thank you for using our products.

In order to enable you to operate this machine proficiently as soon as possible, please carefully read the instruction manual we provide for you, from which you can obtain product safety precautions, product introduction and product usage methods and other related knowledge. After you have read the instruction manual, please keep it properly for future reference.

If you find any problems during the use of the product, please contact our relevant service personnel, thank you for your cooperation.

Precautions

1. Before connecting to the device, make sure the power supply voltage is correct. Only use the original uncut (unspliced) power supply that came with your keyboard.

2. If the product does not work properly, please contact your dealer. Never attempt to disassemble the device yourself. (We are not responsible for problems caused by unauthorized repair or maintenance.)

3. This product is an indoor device, please do not place this product in a place with water or humidity.

4. When transporting, the equipment should be packed in the original packaging.

5. Do not drop or subject the unit to physical impact.

6. Do not use strong detergent to clean the machine, when the dust is thick, wipe gently with a neutral detergent, and only for external cleaning.

7. Keep RJ-45 ports free of dust and moisture.

8. Avoid moving the machine between places that are too cold or too hot to avoid fogging inside the machine and affect its service life.

Affirm

1. We have done our best to complete and correct the content of this manual, but there will inevitably be errors and omissions, and we will not be responsible for any technical or printing errors in this manual.

2. The appearance of the product shown in this manual is for reference only, and may differ from the actual appearance of the device you purchased.

3. This instruction manual guides multiple product models, so it is not intended to be used alone for any specific product.

4. The display interfaces in this manual, illustrations, parameters, drawings and model value ranges may be different. Please refer to the actual product for details.

5. The content of this manual is subject to change without prior notice.

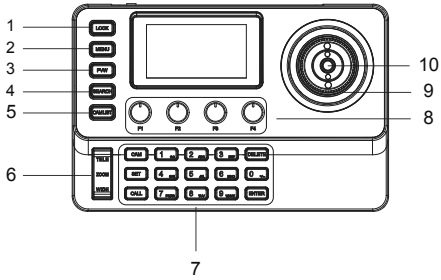
6. If there is a discrepancy with this manual due to software version upgrades, please refer to the software as the standard.

Feature

- **4D precise Joystick+3D knobs+ergonomic zoom button:**
  Camera parameters control such as white balance, exposure, focus and zoom etc.
- **Built-in 3-inch color screen:**
  Support real-time PVW of current camera viewing through up streaming (RTSP only).
- **Powerful WEB background operation interface:**
  Support remote customized functions and parameter configuration through the WEB background, and support WEB device upgrades.
- **Remote control of PTZ camera menu:**
  Open camera's menu quickly and combine PVW screen or image screen to control.
  * This function is recommended to be used with our camera.
- **Support customizable buttons:**
  Support customizable buttons F1, F2,F3, F4, can set the best operation function according to requirement.
- **White and red backlight silicone buttons:**
  High-quality silicone, excellent touch, support white and red backlight so it can be operated smoothly in a low-light environment; support letters and common characters input and other operations such as editing camera's name and address.
- **Support buttons lock via one click:**
  Lock buttons via one click to avoid misoperation.
- **Multiple control protocols, apply to abundant venues:**
  Support VISCA, VISCA Over IP, VISCA TCP, PELCO P/D, Onvif, support automatic protocol recognition.
- **Abundant interfaces, multiple connection methods:**
  External RS422/485 serial port and RJ45 network interface. The network interface supports POE function, thereby reducing wiring trouble.

Product diagram

The Frontboard:



Button Function:

1. "LOCK", lock keyboard

2. "MENU", short press to control keyboard settings, press and hold for 3 seconds to open the OSD menu of camera

3. "PVW", preview current-controlled device's video (customizable)

4. "SEARCH", for searching IP device

5. "CAM LIST", IP device list

6. Optical zoom adjustment, "ZOOM"TELE WIDE, control camera's optical zoom

7. Shortcut buttons to select cameras, preset operation area, characters, number keyboard

8. Custom knobs, support 4 custom knobs F1, F2, F3, and F4.

The corresponding knob functions are displayed at the bottom of the display screen, which can adjust the WBC, exposure, focus and other key parameters of cameras.

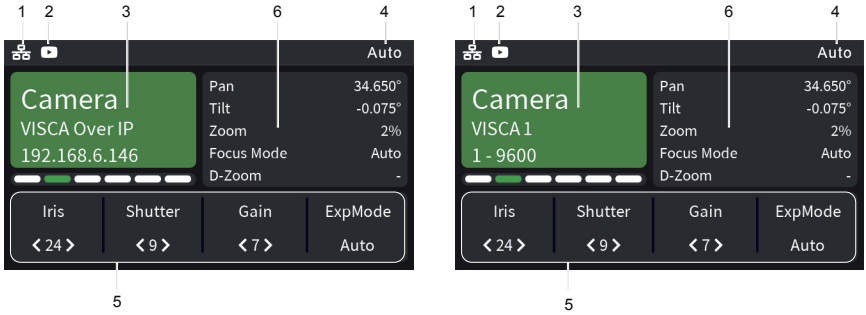
9. PTZ joystick

The left and right direction of the joystick is panning, and the up and down is tilting. Turn the knob on the joystick clockwise, ZOOM TELE, turn the knob on the joystick anticlockwise, ZOOM WIDE.

10. "HOME", one click for PT back to the original position, long press 5 seconds for PT reset

Product diagram

Screen:



1.Network connection indicator icon“ ” indicates that the network has been connected successfully;

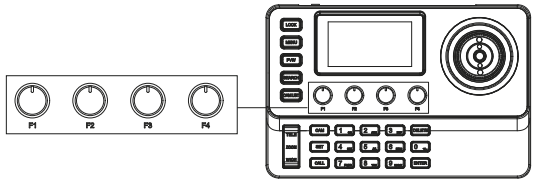
2.Preview video indicator icon“ ” indicates that current device you control has the preview video streaming;

3.Control camera through network, it shows device name, control protocol, device IP address respectively;

Control camera through Serial port, it shows device name, control protocol, device ID address, baud rate respectively;

4. Operation record area;

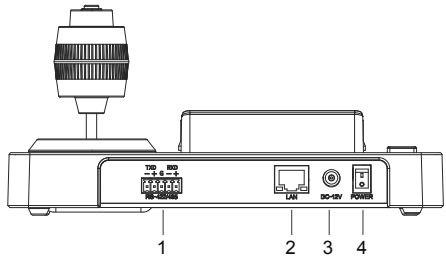
5. The bottom of the display is the custom function display area, which displays the current functions of the 4 knobs F1/F2/F3/F4. This area supports page switching. The F4 knob can switch function pages. There are a total of 6 custom pages, and each page supports 4 custom functions.



6. Camera's current mode display area.

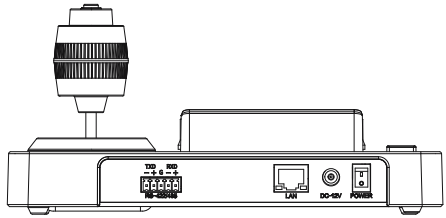
Product diagram

Interface:



1.RS-422/485 interface;
Connect with RS-422 cable, up to 7 cameras can be controlled through VISCA protocol;
Connect with RS-485 cable, up to 7 cameras can be controlled through ViSCA protocol and up to 255 cameras through PELCO protocol.
2.LAN port, connect the controller with network (up to 1000 network cameras can be saved);
3.DC-12V power input interface;
4.Power on/off.

Interface pin definition



Pin NO	RS-422 Function	RS-485 Function
1	TXD-	B-
2	TXD+	A+
3	GND	GND
4	RXD-	/
5	RXD+	/

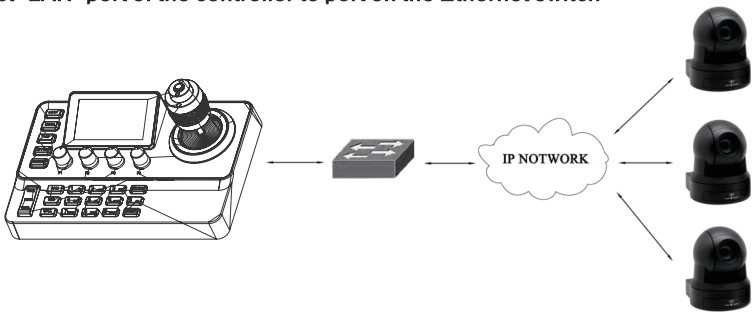
Pin NO	Function	Color
1	TXD+	Orange/White
2	TXD-	Orange
3	RXD+	Green/White
4	POE45	Blue
5	POE45	Blue/White
6	RXD-	Green
7	POE78	Brown/White
8	POE78	Brown

Power supply

Supply controller's power by the following methods
1.DC power adapter power supply (standard 12V)
2.POE power supply (connect the Ethernet IP port to the POE switch)
Use CAT6 cable, the maximum distance is 100 meters (802.3af)

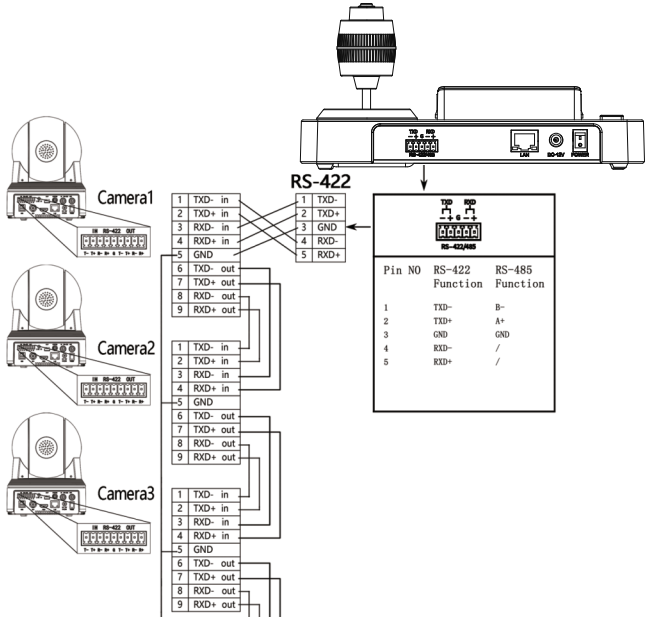
IP connection

Connect "LAN" port of the controller to port on the Ethernet switch



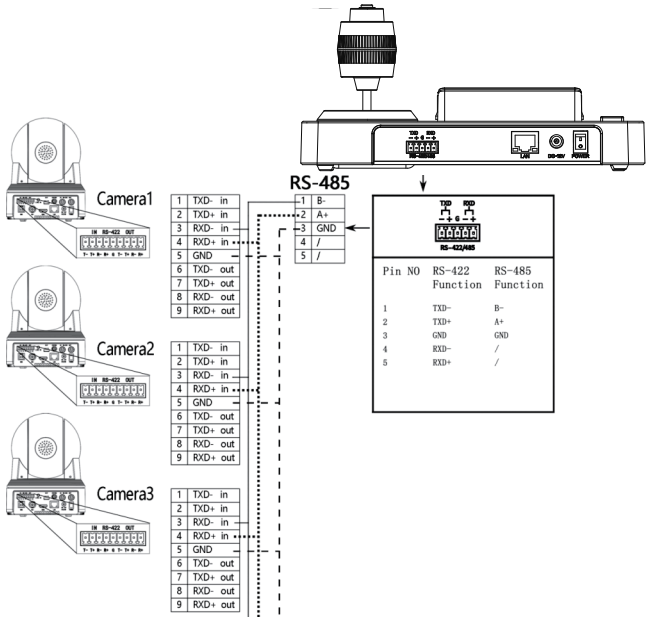
Serial connection

1 .Phoenix connector for RS-422 connection



Serial connection

2.Phoenix connector for RS-485 connection



Keyboard OSD menu settings

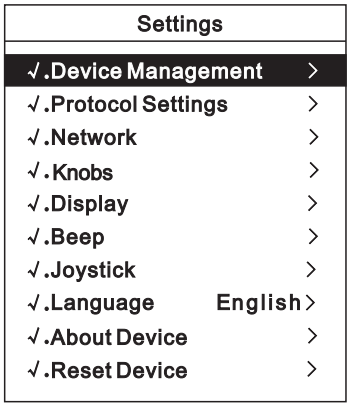
- Press the " MENU " button to open / exit the keyboard menu
- Use the joystick to operate the keyboard menu
  a. Move the joystick cursor up and down
  b. Move the joystick to the right to enter the next menu / switch parameters
  c. Move the joystick to the left to return to the previous menu / switch parameters
  d. "HOME" button on the top of the joystick to enter the next menu / save and exit
- Use the " F4 " knob to operate the keyboard menu
  a. Rotate the cursor clockwise down
  b. Rotate the cursor counterclockwise up
  c. Click the " F4 " knob to enter the next menu / saveand exit
- Click the " F3 " knob to return to the previous menu / exit without saving

Keyboard input

- Each button with number and letter or symbol input, select the character you want to input by clicking the button continuously
- Adjust the cursor position by rotating the joystick left or right or the " F4 " knob
- Case switching:
  a. Click the button "1" twice continuously to switch to uppercase English
  b. Click the button "1" three times continuously to switch to lowercase English
- "DELETE" : delete a single character
- "ENTER", "HOME" , "F4" knob: save and exit
- " F3 " knob : do not save and exit

Menu introduction

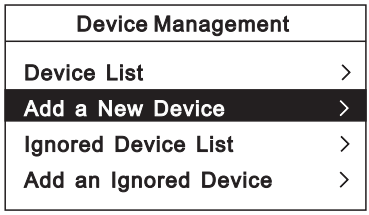
Main menu list



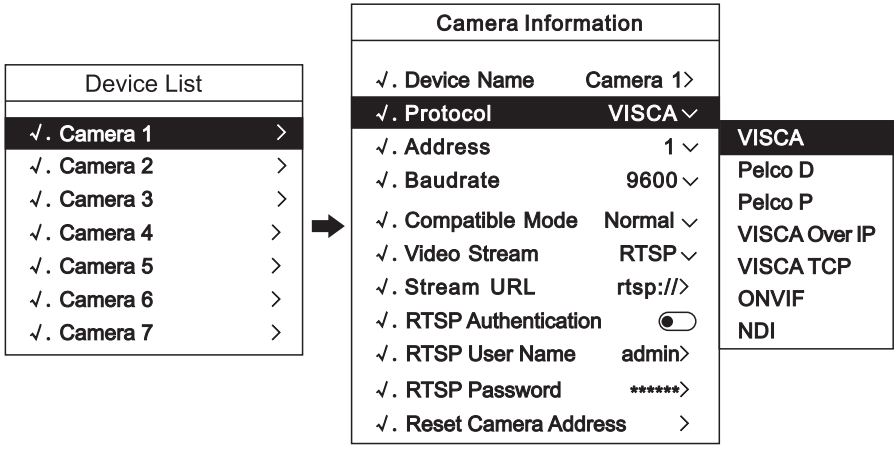
Language:Set the keyboard display language;
About Device:Display equipment information (the following information is given by the manufacturer and cannot be modified without permission. If you have any questions, please contact the manufacturer);
Reset Device:Restore to factory default setting state.

Menu introduction

1.Device Management



Device list: You can See the device that has been added to the keyboard or modify the device information that has been added to the keyboard;
Add a new device: Manually add devices to the keyboard;
Ignored device list: block specified devices in the search list;
Add an ignored device: Manually add devices that need to be blocked in the search list.



Device Name: Modify the device name which is displayed on the home page;
Protocol: Select a protocol based on your needs, "VISCA", "PELCO D", "PELCO P", "VISCA Over IP", "VISCA TCP" can be manually input, "ONVIF" and "NDI" cannot be manually selected, needs to be selected from the device list,
Address: match the camera address;
Baudrate: match the camera baud rate;
Compatible mode: When it has problem to use the standard mode to work with the camera, pls try to use other modes;
Video stream: A protocol that supports video streaming over a network;
Stream URL: Enter the camera stream address to pull the video signal of the camera;
RTSP Authentication: Users can choose to turn on/off RTSP authentication and set the login username and password.
Reset camera address: When cascading multiple cameras and using the VISCA protocol, this function can assign corresponding addresses to the cameras according to the connection sequence (only valid under the VISCA protocol);

Menu introduction

2. Protocol settings

Protocol settings
√. NDI >
√. RTSP >

NDI: display NDI authorization status and edit NDI group, if not authorized, please enter the activation code factory provided.
RTSP: display the current URL suffix. The device streaming suffix can be modified. default is /1/h264major

3. Network

Network	
√. DHCP	
√. IP Address	192. 168. 1. 119>
√. Net Mask	255. 255. 255. 0>
√. Gateway	192. 168. 1. 1>
√. DNS1	192. 168. 1. 1>
√. DNS2	8. 8. 8. 8>
√. Extra IP1	OFF>
√. Extra IP2	OFF>
√. Extra IP3	OFF>

DHCP: DHCP ON means network-related IP address can be attained automatically (dynamic address), DHCP OFF means network-related IP address need to be added manually (static address);
Extra IP 1/2/3: You can manually add the IP of other network segments, and after enabling it, it can be used to control cameras in other different network segments in the LAN (should be used when DHCP is off).

4. Knobs

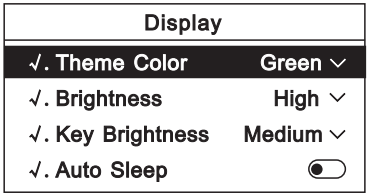
Knobs	
√. Page 1	>
√. Page 2	>
√. Page 3	>
√. Page 4	>
√. Page 5	>
√. Page 6	>
√. Keypad numeric mode	10

Page 2	
√. F1	>
√. F2	>
√. F3	>
√. F4	>

Pages 1-6: Users can customize the functions of the F1-F4 knobs in each function page
Digital key mode: Users can select the corresponding camera number and the maximum range of camera preset position number input
F1-F4: Users can customize the knob functions, including "Pan/Tilt Speed", "Zoom Speed", "Iris", "Shutter", "Exposure Mode", "White Balance Mode", "camera select", custom commands, etc.

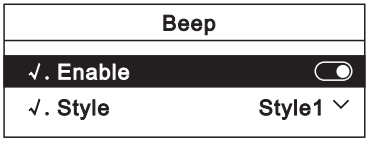
Menu introduction

5. Display



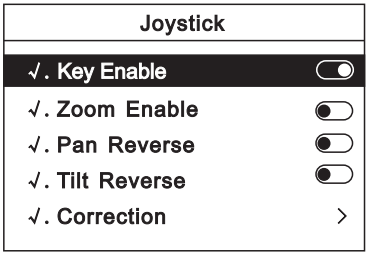
Theme color: Modify the display color of the controller theme;
Brightness: Modify the screen brightness;
Key brightness: modify the buttons brightness;
Auto sleep: the controller will sleep after 30 minutes when you turn on the automatic sleep, and the buttons and screen brightness become low.

6. Beep



On: the buzzer works when prompt tone is turned on, and there is sound feedback when the buttons are pressed;
Style: select the prompt tone style.

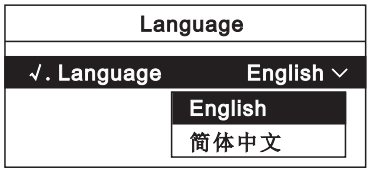
7. Joystick



Key Enable: After turning on, click the top button can control the camera back to home position
Zoom Function: After turning on, rotate the joystick to control the zoom of the camera;
Pan Reverse: Turn on, the left and right direction is reversed when you control the camera;
Tilt Reverse: Turn on, the up and down direction is reversed when you control the camera;
Calibration: When the joystick is abnormal, try to calibrate the joystick according to the prompts (click the " F3 " knob to back from the calibration mode).

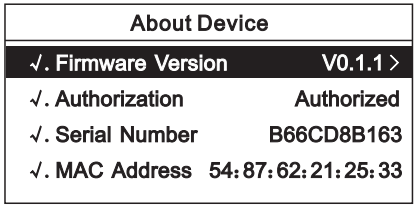
Menu introduction

8. Language



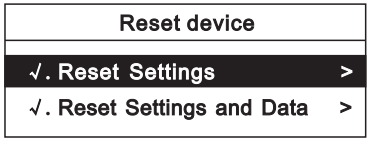
Set the keyboard display language.（Default “English”）

9. About Device



Firmware version: display the current program version of the keyboard;
Authorization: display the current authorization status of the keyboard (unauthorized keyboards can only be used for 1 minute, and cannot be operated beyond 1 minute);
Serial number: display keyboard serial number;
MAC address: display keyboard MAC address.

10. Reset device



Reset settings: restore the keyboard basic menu setting options to the factory state (network settings, language, user-added device data will not be restored);
Reset settings and data: restore all keyboard settings and clear all device data added by users.

Camera assignment

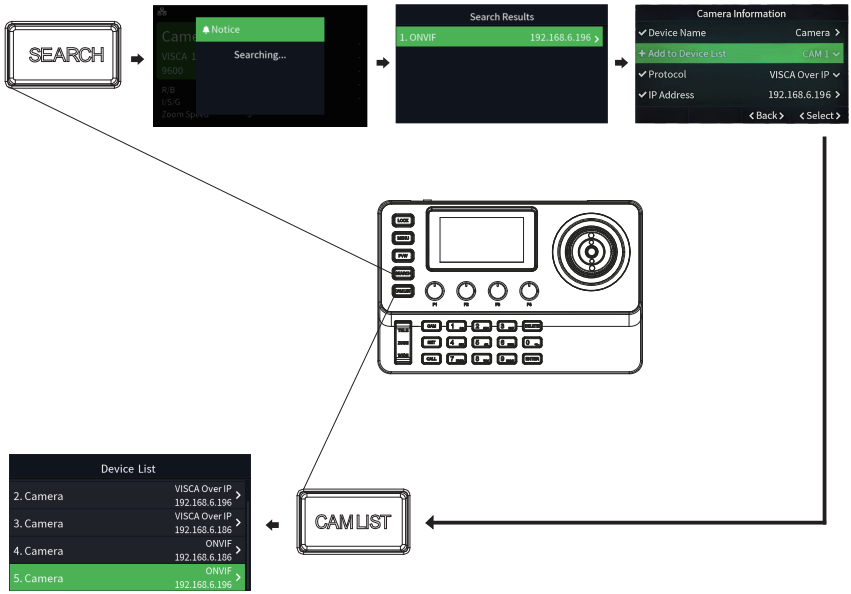
Add IP camera to keyboard

1. Search the local network and add the IP camera to the keyboard;

- Press "SEARCH" button to search IP camera;
- The keyboard screen displays "Searching for devices, please wait";
- Display the discovered IP cameras, use the joystick or " F4 " knob to browse the discovered cameras;

(For discovered cameras, camera parameters can be modified, added to the device list, and added to the ignore list);

- Edit discovered cameras and add cameras to the device list (device that has been added to the device list will no longer be displayed in the search list);
- Exit the search list;
- Press the "CAM LIST" button to open the device list, use the joystick or the " F4" knob to select the corresponding camera.



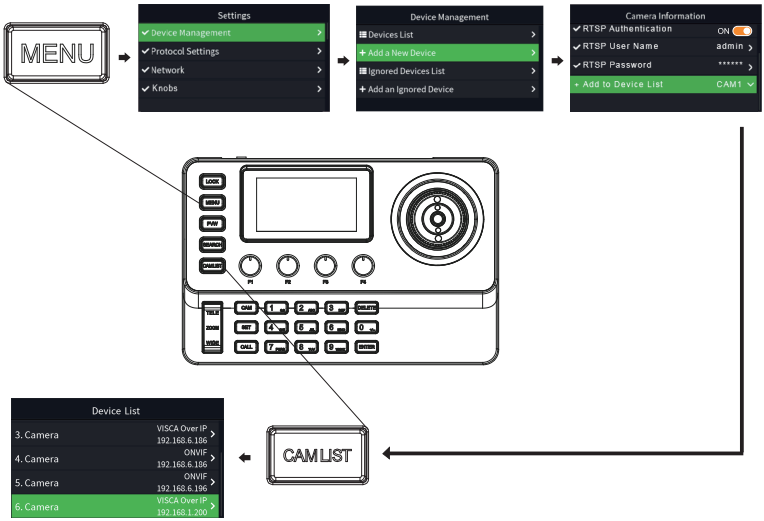
Camera assignment

2. Manually add VISCA_IP, VISCA_TCP cameras to the keyboard:

● Click " MENU " to open the keyboard menu, select the "Device List" column, select the "Add Device" column, modify the corresponding camera parameters and click "Add to Device List" (when the iP address needs to fill in an odd number, add 00 before the odd number,such as 005);

● Exit keyboard menu;

● Short press the "CAM LIST" button to open the camera list, use the joystick to select the added custom camera (IP control).

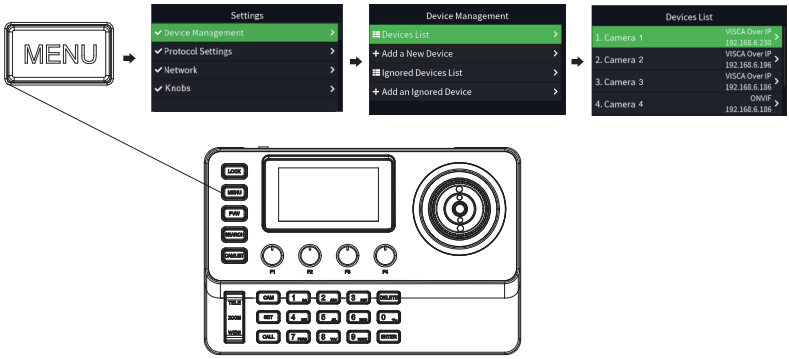


3. Edit camera list

● Click " MENU " to enter the menu, select "Device Management" column, select "Device List"

● It can edit the devices added to the camera list from the "search list" and "add list";

(You can edit camera name, protocol (ONVIF and NDI device list does not allow manual selection), IP address, compatibility mode, video stream address, delete device, ONVIF device settings can also edit user name and password)



Interact with the camera

- Click "CAM LIST" to open the device list, and then select the device through the joystick
- or "F4" knob;

Press the shortcut key "CAM"+number to select camera to be controlled;

（When it's VISCA protocol, there are multiple cameras, in protocol for VISCA camera information, click "Reset Came ra Address" to assign the address).

Camera control

1.Manual movement

- Horizontal, vertical and zoom can be executed simultaneously;
- Joystick can be used to move horizontally and vertically in any direction;
- The joystick can quickly return the gimbal and lens to the initial position through the top button;
- Rotate the rocker to adjust Zoom In/Out.

2.Set and recall preset position

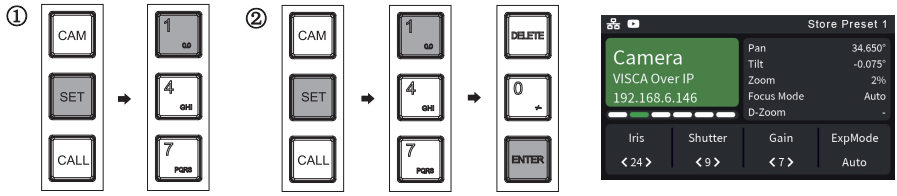
- set preset position

a. Move the camera to the desired position;

b.① Keypad numeric mode is 10: first press the " SET " key, and then press the number "1" key to set the No. 1 preset position;

② Keypad numeric mode is 255: first press the " SET " key, and then press the number "1" key, and then press the "ENTER" key to set the No. 1 preset position;

c. The upper right corner of the keyboard screen displays "Save Preset 1";

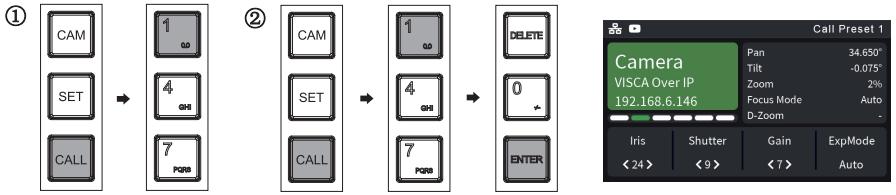


- Call preset

a. ① Keypad numeric mod e is 10: first press the " SET " key, and then press the number "1" key to call the No. 1 preset position;

② Keypad numeric mode is 255: first press the "SET" key, then press the number "1" key, and then press the "ENTER" key to call the No. 1 preset position;

b. The upper right corner of the keyboard screen displays "Recall Preset 1";



WEB Backstage Management

1.Connection Ways

Direct connection mode: connect the controller directly to the computer with a network cable.

Network connection mode: connect the controller to the Internet network, and access the network through a router or switch. Users can login to the device through the browser.

The computer must have the network segment where the controller IP is located. If the network segment is not added, you will not be able to login . If the default I Paddress of the controller is 192.168.1.119, you need to add 1 network segment to the computer. The specific method is as follows :

Firstly open the computer network local connection properties window, select “Internet Protocol Version 4 (TCP/Ipv4)” double click or click the property “Internet Protocol Version 4 (TCP/IPv4)” enter the properties window, click “Advanced” to enter advanced TCP/IP Set the IP address and subnet mask in the IP address field. After the addition is completed, click 0K to complete the IP network segment addition. Users can add corresponding network segments according to the modified controller IP address.

2.WEB Login In

WEB login:

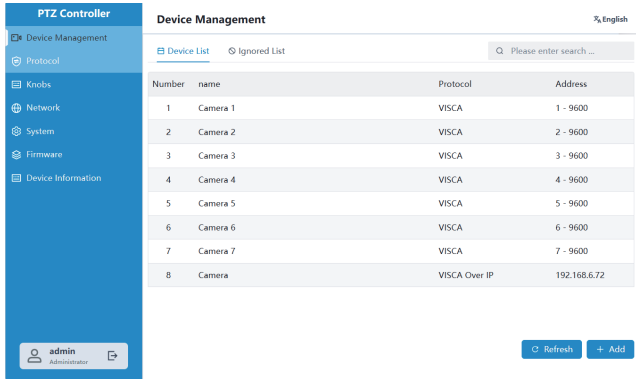
Enter the device IP address in the browser address bar to default to 192.168.1.119, and press Enter to enter the web client login interface. Enter “admin” in the [Username] field, “admin” in the [Password] field, and pass the verification to enter the background preview interface.

Language selection: The selected language can be displayed at the bottom of the login interface.

3.WEB Backstage Management

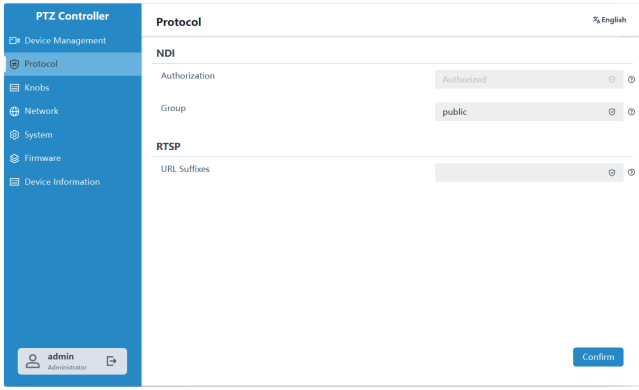
The below is WEB Backstage Management interface after login in.

(1): Devide management: edit controller’s “device list” and “backlist”

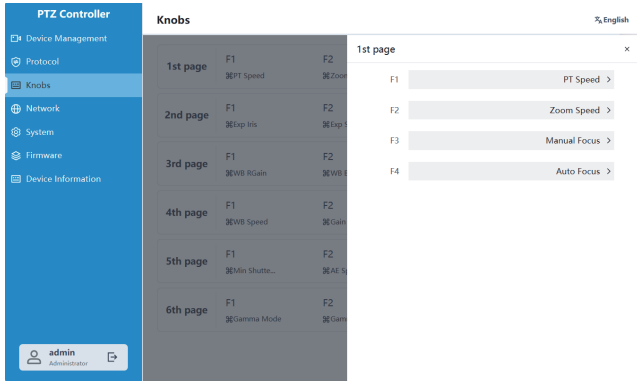


WEB Backstage Management

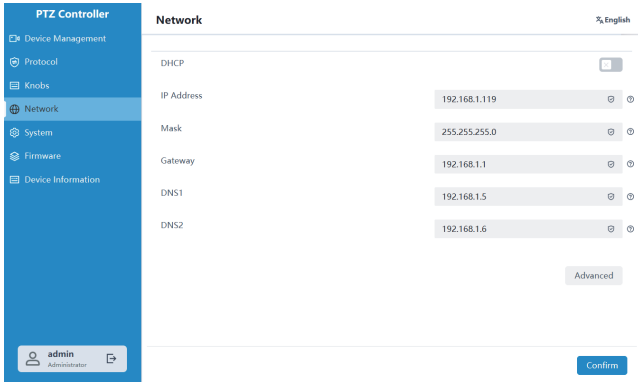
(2): Protocol: authorize controller's NDI protocols and manage URL suffix of RTSP's up streaming



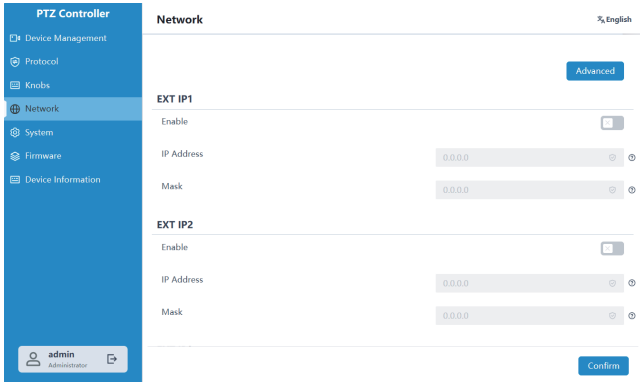
(3): Knobs: edit infomation about custom commands of knobs F1, F2,F3,F4



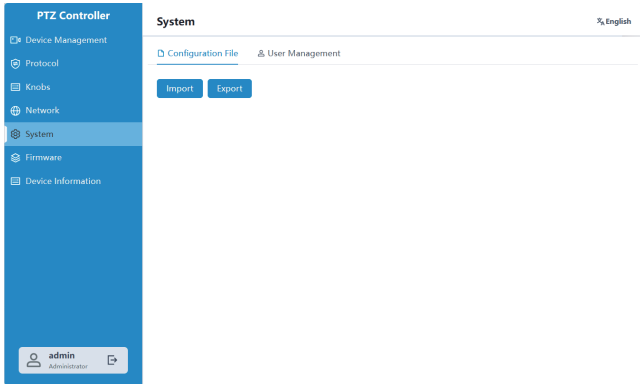
(4): Network: set up controller's network



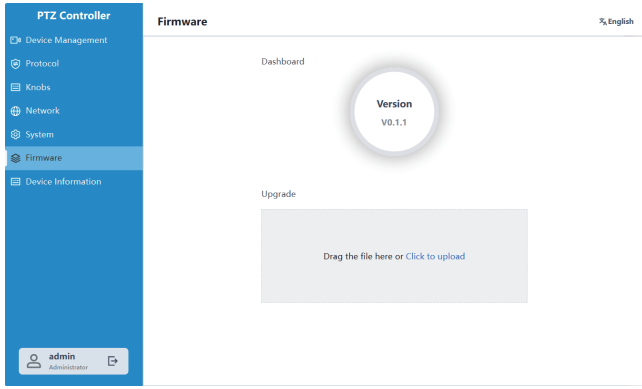
WEB Backstage Management



(5):System: import or export configuration files and log in account management

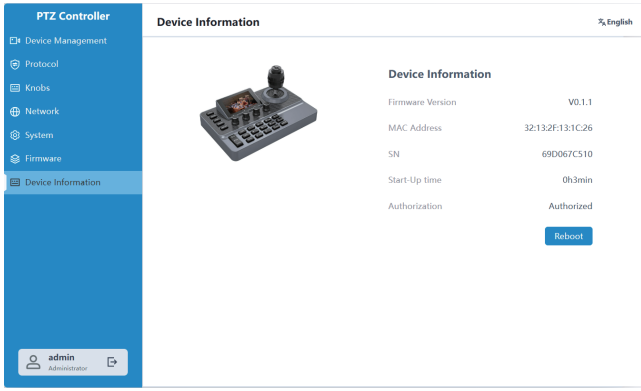


(6): Hardware upgrade: upgrade controller

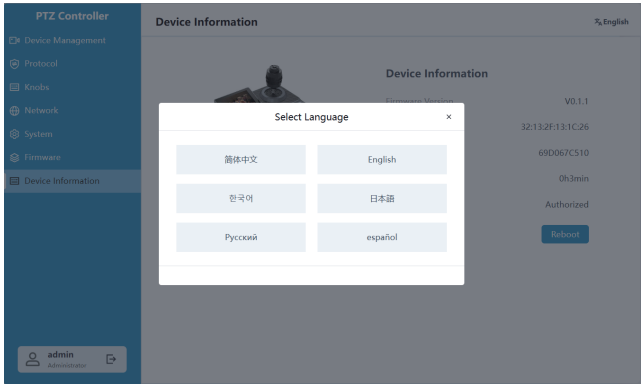


WEB Backstage Management

(7): Device information: for checking controller's basic information and rebooting devide



(8): Languages volume: switch languages (synchronize controller's language after switched language.)



Specifications

Keyboard Parameters	
Joystick	4D precision Joystick
Knobs	3D knobs, support scale rotation to adjust parameters, support button function to select mode
Buttons	High-quality silicone buttons, support white and red two-color backlight
Screen	3" LCD color display
Button Prompt Tone	Button sound prompt On/0ff
Lock Button	support one-key lock function
Max.Control Quantity	1000
Max.Preset Position	255
Customizable Knobs	Support four knobs to customize
Control	
Control interface	RJ45(support PoE and NDIHX2(optional))、RS-422/485
IP Control Protocol	Onvif、VISCA Over IP、 VISCA TCP、NDI
Serial Port Protocol	VISCA、Pelco D、Pelco P
Power supply	
Input Voltage	12V
Input Current	0.25A
POE	802.3af
Rated Power	3W
Other	
Dimensions	210*138*101mm(Joystick height is included)
Operating Environment	Indoor
Operating Temperature	-10°C -40℃
Storage Temperature	-20°C-60°C
Weight	About 0.8 kg