PTZ Camera Controller

User Manual

Rev 1.2 2025-12-09

Statement

This manual is intended to guide users in the **safe and proper** use of this product to prevent personal injury or property damage.
Please **read this manual carefully** before using the device, and keep it properly stored for future reference.

Warnings and Precautions

To ensure safe operation, please observe the following precautions:

※ Do not place the device on an unstable cart, stand, or table to prevent it from falling and causing damage.

※ Use the device only with the specified power voltage.

※ Do not place heavy or sharp objects on the power cord. Do not pull the power cord. Regularly check for excessive wear or damage to the cord to avoid risks of fire or electric shock.

※ Never operate the device in flammable, explosive, or otherwise hazardous environments.

※ Do not allow liquids, metal fragments, or other foreign objects to enter the device.

※ Handle the device with care during transportation and avoid strong vibrations. Use the original packaging or protective material of equal quality.

※ Do not disassemble the housing or perform circuit maintenance while the device is powered on! Always turn off the power and unplug the device before disassembly or maintenance. Internal repairs and adjustments must be performed by qualified personnel.

※ In case of abnormal operation or malfunction, immediately power off the device. Disconnect all cables before moving the device.

Package Contents

Item	Quantity
PTZ Camera Controller	1
Power Adapter	1

Note: Due to continuous product upgrades, specifications are subject to change without prior notice.

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1.Introduction

1.1 Product Features

- Supports both network and serial control modes, adaptable to various deployment scenarios
- Compatible with multiple control protocols: VISCA, VISCA over IP, VISCA TCP/UDP, ONVIF, Pelco-D/P, NDI (optional)
- Equipped with a 5-inch touchscreen (1280×720 resolution), supporting H.264/H.265 decoding up to 4K@60fps
- Offers full-featured control and status feedback for specific camera brands (customizable)
- Includes 4 programmable function keys for user-defined shortcuts
- Integrated with a comprehensive web management system for remote configuration and advanced functionality
- Supports quick preset call/set and allows creation of custom control plans for multi-camera soft cruise
- Built-in command compatibility system to resolve protocol issues between different brands
- Enables automatic discovery of ONVIF/NDI devices and offers IP configuration for certain camera brands (customizable)
- Features professional adjustment knobs for quick tuning of key parameters such as exposure (iris, shutter, gain) and white balance (red/blue gain)
- Equipped with a 4D variable-speed joystick with pressure sensing for precise pan/tilt and zoom control
- Includes independent speed adjustment knobs for pan/tilt movement, zoom speed, and preset call movement speed
- Full backlit keypad design with independently controllable backlight switch

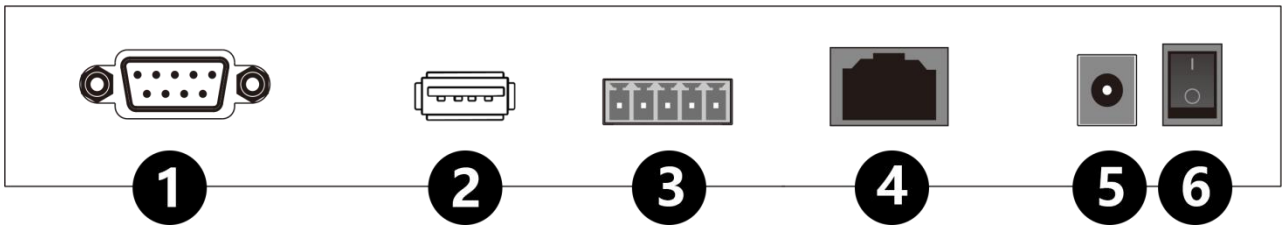
1.2 Specifications

Supported Protocols	VISCA, VISCA over IP, VISCA TCP/UDP, ONVIF, Pelco-D, Pelco-P, NDI (optional)
Manageable Devices	Up to 999 cameras
Joystick	4D joystick with pressure sensing
Display	5-inch TFT LCD (1280×720 resolution), touch-enabled
Video Decoding	Supports H.264 / H.265, up to 4K@60fps
Input/Output Interfaces	1 x RS232 (Camera Control)
	1 x RS485/RS422 (Camera Control)
	1 x RJ45 (Camera Control, PoE supported)
	1 x USB-A OTG
	1 x DC 12V Power Input

Input Voltage	DC 12V / PoE (802.3af)
Input Current	2A
Operating Temperature	-10°C ~ 60°C
Storage Temperature	-20°C ~ 70°C
Dimensions	305 × 205 × 110 mm
Weight	1.05Kg

2. Interfaces

2.1 Interface Overview

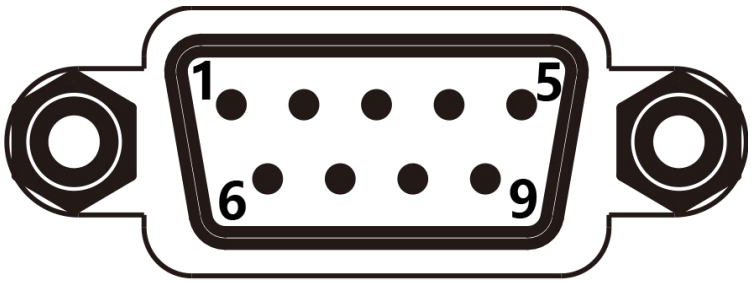


No.	Interface Type	Description
1	RS232	Supports devices using PELCO-D / PELCO-P / VISCA protocols
2	USB-A (OTG)	OTG interface
3	RS-422/485	Supports devices using PELCO-D / PELCO-P / VISCA protocols
4	NET (RJ45)	Supports PoE power supply; compatible with ONVIF / VISCA Over IP / NDI (optional) protocols
5	DC-12V	DC power input (center positive, outer negative)
6	Power Switch	Device power switch

2.2 Interface Definitions

RS-422 & RS-485

Pin No.	RS-422 Mode Function	RS-485 Mode Function (Channel 1)	RS-485 Mode Function (Channel 2)
1	TX-	485-1 B	-
2	TX+	485-1 A	-
3	GND	GND	GND
4	RX-	-	485-2 B
5	RX+	-	485-2 A

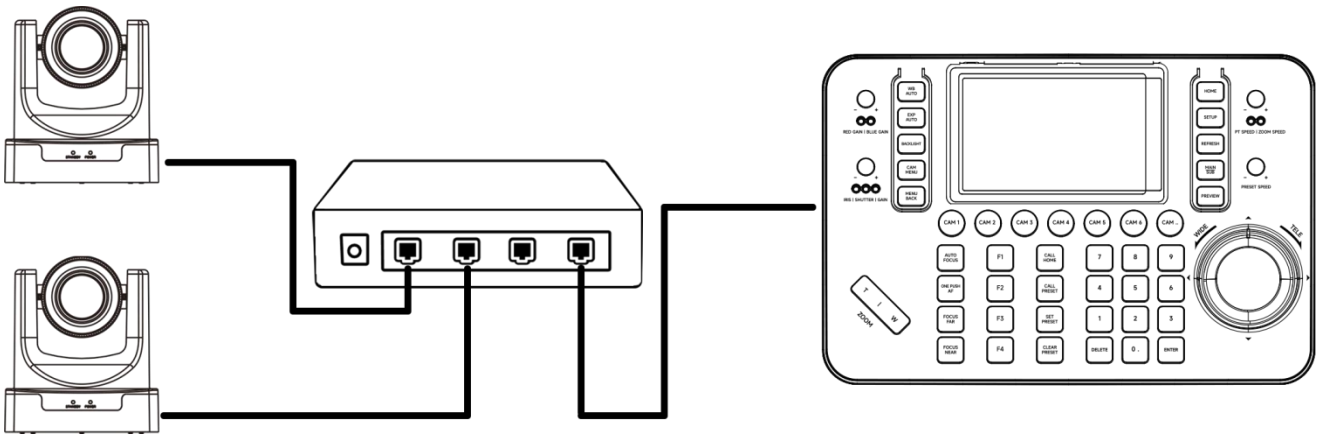


RS-232

No.	Function
1	N/C
2	RX
3	TX
4	N/C
5	GND
6	N/C
7	N/C
8	N/C
9	N/C

2.3 Device Connections

2.3.1 Network Connection

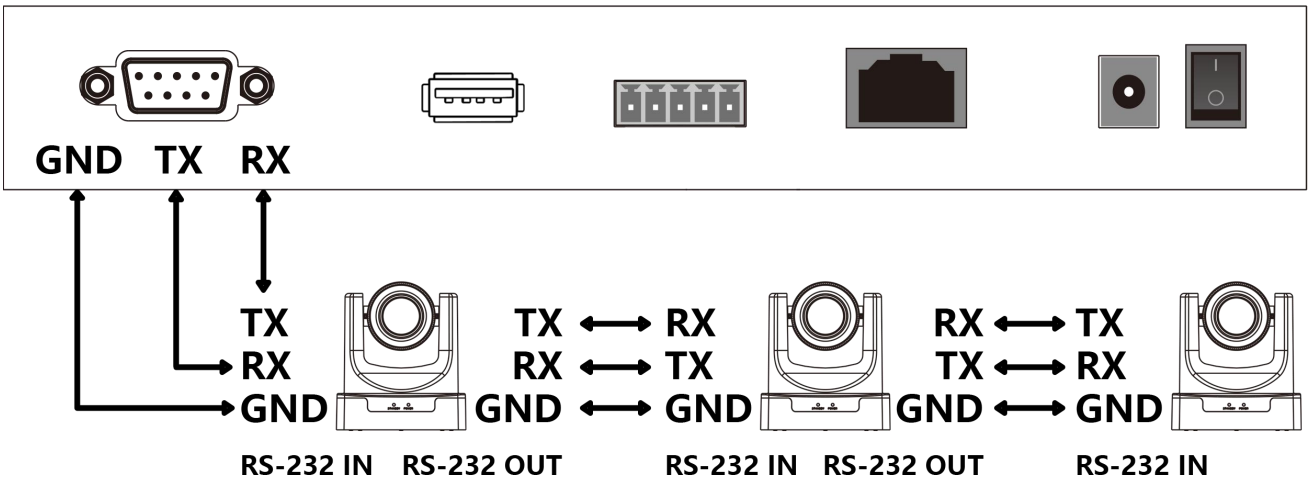


When the PTZ camera communicates with the controller via the **network**:

1. Ensure that both the camera and the controller are connected to the **same local area network** (e.g., the same router or switch).
2. Set the IP addresses of the camera and the controller within the **same subnet**.

Note: If the camera and controller are connected to different switches (even if the switches are bridged), the controller may not be able to discover the camera using the **[Camera Search]** function

2.3.2 RS-232 Connection



Single Camera Connection:

Connect the controller's **RS-232** port to the PTZ camera's **RS-232 IN** port using the following wiring:

Controller **TX** <---> Camera **RX**

Controller **RX** <---> Camera **TX**

Controller **GND** <---> Camera **GND**

Multiple Camera Daisy Chain Connection:

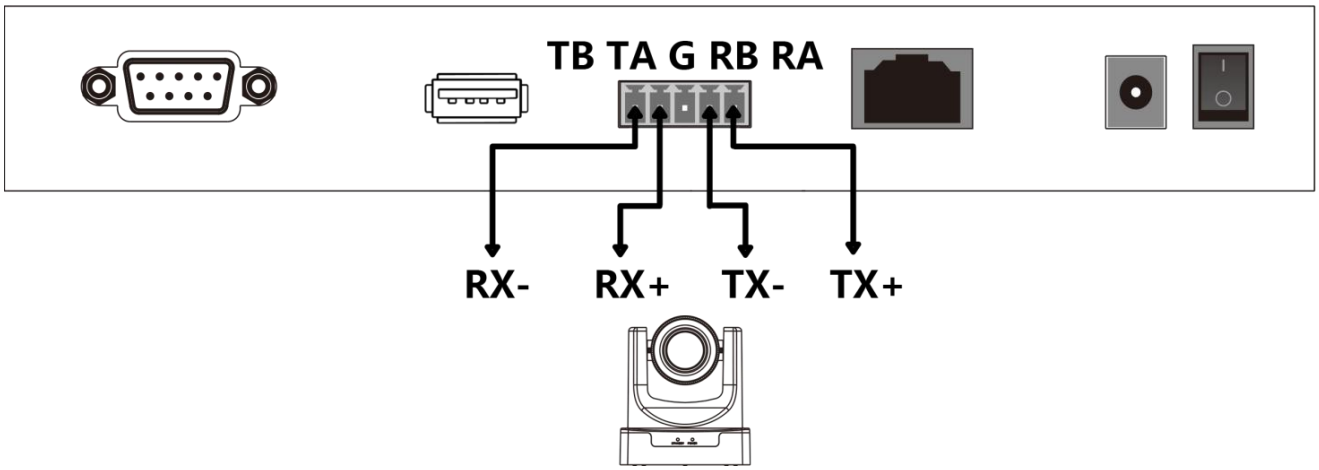
1. First, connect the **RS-232 IN** port of the **first camera** to the **controller**'s **RS-232** port using the same wiring method as for a single camera.
2. Then, connect the **RS-232 OUT** port of the **first camera** to the **RS-232 IN** port of the **second camera** as follows:

   Camera 1 **TX** (RS-232 OUT) <---> Camera 2 **RX** (RS-232 IN)

   Camera 1 **RX** (RS-232 OUT) <---> Camera 2 **TX** (RS-232 IN)

   Camera 1 **GND** (RS-232 OUT) <---> Camera 2 **GND** (RS-232 IN)
3. Repeat this pattern to connect the **RS-232 OUT** of **each camera** to the **RS-232 IN** of the **next camera**, enabling cascading connection.

2.3.3 RS-422 Connection



Single Camera Connection (RS-422):

Connect the controller's **RS-422** port to the PTZ camera's **RS-422** port using the following wiring scheme:

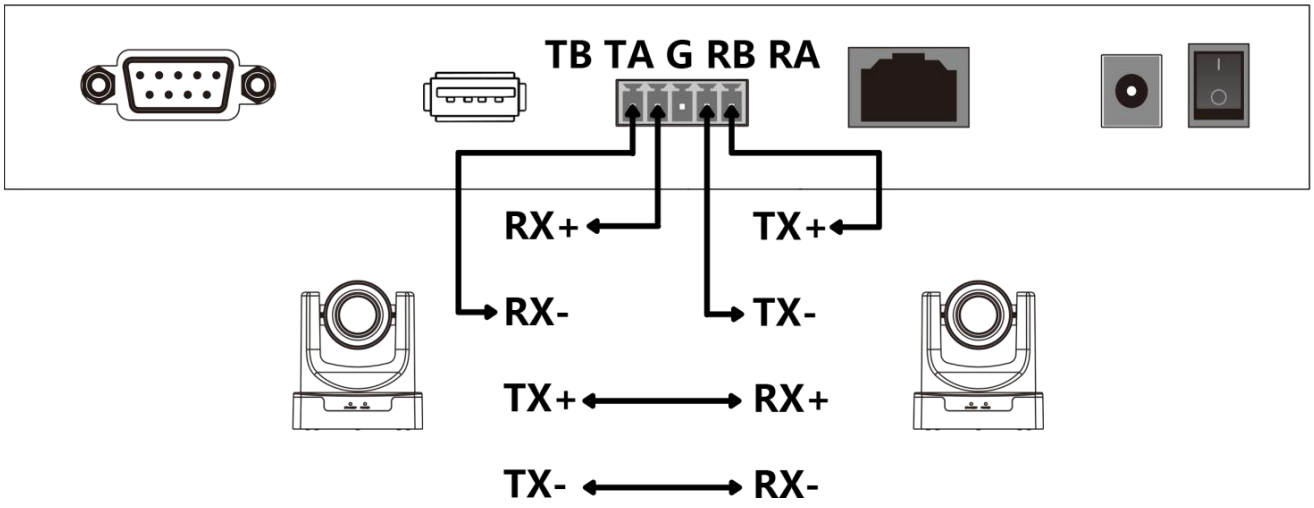
Controller **TX+ (TA)** <---> Camera **RX+**

Controller **TX- (TB)** <---> Camera **RX-**

Controller **RX+ (RA)** <---> Camera **TX+**

Controller **RX- (RB)** <---> Camera **TX-**

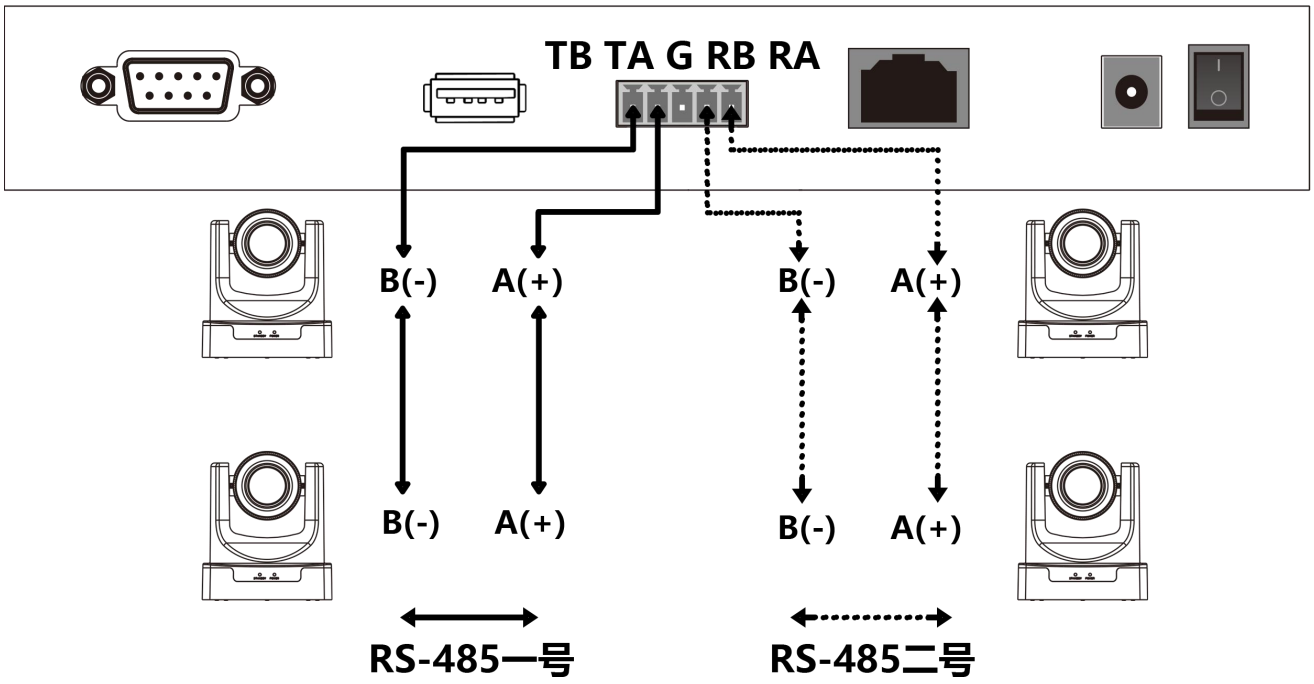
Controller **GND** <---> Camera **GND** (if available on the camera)



Multiple Camera Daisy-Chain Connection (Closed Loop):

1. Connect the **controller**'s **TX+ (TA)** and **TX- (TB)** to the **RX+** and **RX-** of the **first camera**.
2. Connect the **first camera**'s **TX+** and **TX-** to the **RX+** and **RX-** of the **second camera**.
3. Repeat this wiring for each subsequent camera (i.e., the **TX+** / **TX-** of **camera N** connects to the **RX+** / **RX-** of **camera N+1**).
4. Finally, connect the **TX+** / **TX-** of the **last camera** back to the **controller**'s **RX+ (RA)** and **RX- (RB)** to complete the closed loop, as shown in the diagram above.

2.3.4 RS-485 Connection



The controller provides **two independent RS-485 channels**:

Channel 1: Pins **TA (A+)**、**TB (B-)**

Channel 2: Pins **RA (A+)**、**RB (B-)**

When using RS-485 Channel 1, connect as follows:

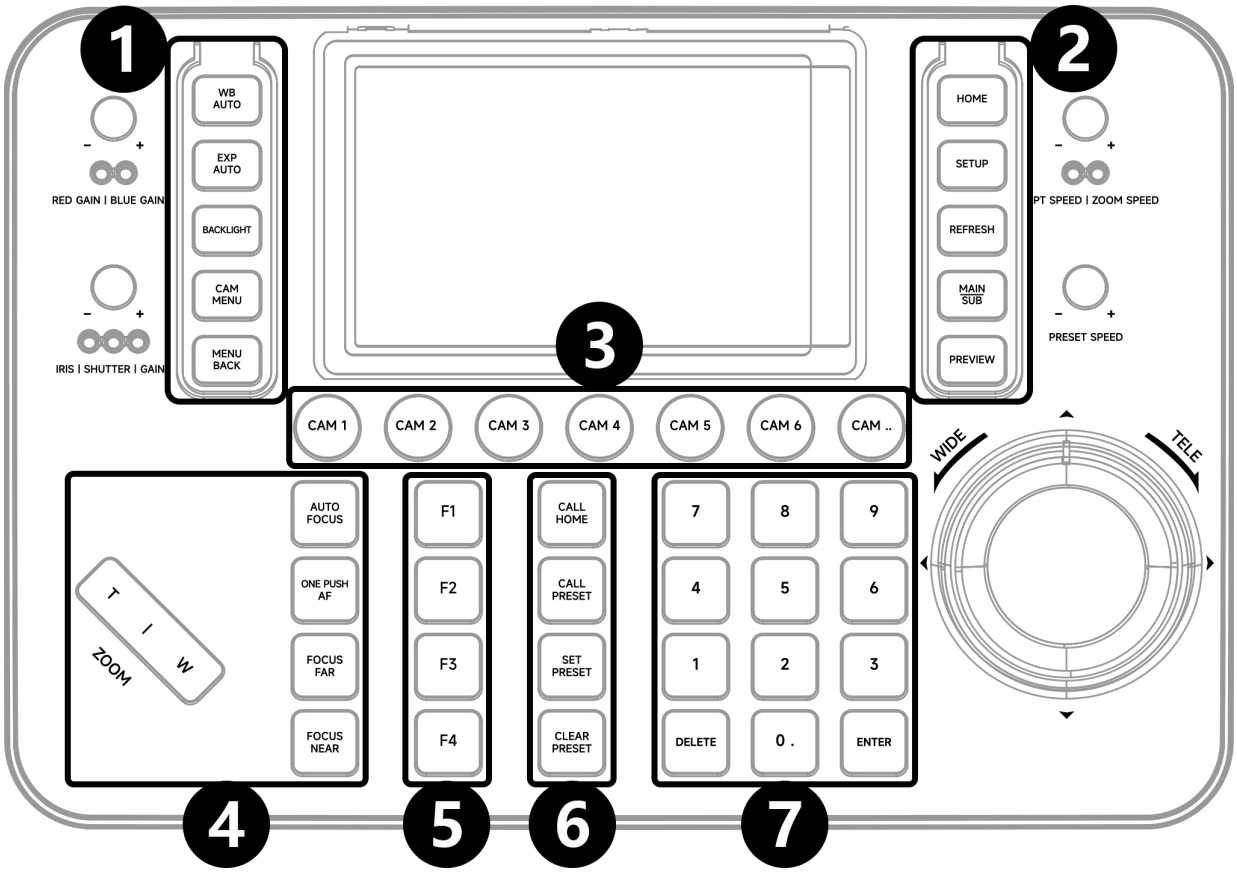
Controller **TA**	<--->	Camera 1 **A(+)**	<--->	Camera 2 **A(+)**	<--->	...	<--->	Camera N **A(+)**
Controller **TB**	<--->	Camera 1 **B(-)**	<--->	Camera 2 **B(-)**	<--->	...	<--->	Camera N **B(-)**

When using RS-485 Channel 2, connect as follows:

Controller **RA**	<--->	Camera 1 **A(+)**	<--->	Camera 2 **A(+)**	<--->	...	<--->	Camera N **A(+)**
Controller **RB**	<--->	Camera 1 **B(-)**	<--->	Camera 2 **B(-)**	<--->	...	<--->	Camera N **B(-)**

3. Control Panel

3.1 Button Functions



Button Group 1 (**White Balance / Exposure / Menu Control**):

WB AUTO	Set camera white balance mode to **auto**
EXP AUTO	Set camera exposure mode to **auto**
BACKLIGHT	**Enable / Disable** camera backlight compensation
CAM MENU	**Open / Close** the camera OSD menu
MENU BACK	Execute the **back** operation in the camera menu

Button Group 2 (**System / Preview Control**):

HOME	Return to the **main control interface** of the keyboard
SETUP	Enter the **system settings interface**
REFRESH	**Refresh** the current camera status
MAIN | SUB	**Switch** between main and sub video streams
PREVIEW	**Enable / Disable** video preview

Button Group 3 (**Camera Selection**):

CAM 1 - CAM 6	**Quickly connect to and control** cameras 1 - 6
CAM ..	**Camera selection button** (for accessing cameras numbered above 6)

Button Group 4 (Lens Control):

ZOOM T (Tele)	**Zoom in** (hold to zoom continuously, release to stop)
ZOOM W (Wide)	**Zoom out** (hold to zoom continuously, release to stop)
AUTO FOCUS	Set camera focus mode to **auto**
ONE PUSH AF	Trigger **one-push autofocus**
FOCUS FAR	Manually adjust focus **farther** (hold to adjust, release to stop)
FOCUS NEAR	Manually adjust focus **closer** (hold to adjust, release to stop)

Button Group 5 (**Custom Function Keys**):

F1 - F4	**User-defined function keys** (functions must be configured in system settings)

Button Group 6 (**Preset Control**):

CALL HOME	**Call** the camera's **HOME** (initial/reset) position
CALL PRESET	**Call** a saved camera **preset** (use number keys to select preset ID)
SET PRESET	**Save** current camera position to a **preset** (use number keys to assign ID)
CLEAR PRESET	**Delete** a specific **preset** (use number keys to select preset ID)

Button Group 7 (**Numeric Input**):

0 - 9	Number keys **Short press:** Quickly **call** the corresponding **preset** **Long press**: **Save** current status to the corresponding **preset**
DELETE	**Delete** characters or numbers in input fields
ENTER	**Confirm** input or execute an action

3.2 Knob Functions

This controller is equipped with **4 multifunction control knobs**, **3 of which support press-to-switch control modes**. The **LED indicator** below each knob lights up to indicate the currently active control function.

RED GAIN | BLUE GAIN	Adjust the **red and blue gain** for camera white balance
IRIS | SHUTTER | GAIN	Adjust the **iris, shutter speed, and gain** for camera exposure
PT SPEED | ZOOM SPEED	Adjust the **pan/tilt movement speed** and **lens zoom speed**
PRESET SPEED	Adjust the **pan/tilt speed when calling a preset position (only supported by some camera models)**

3.3 Joystick Functions

This controller features a **4D joystick** with support for **up/down/left/right** directional movement, as well as **press** functions:

Directional movement: Controls the camera's pan/tilt motion (up/down/left/right)

Rotating the joystick: 控制摄像机镜头变焦

Rotate left: Zoom out (**wide angle**)

Rotate right: Zoom in (**telephoto**)

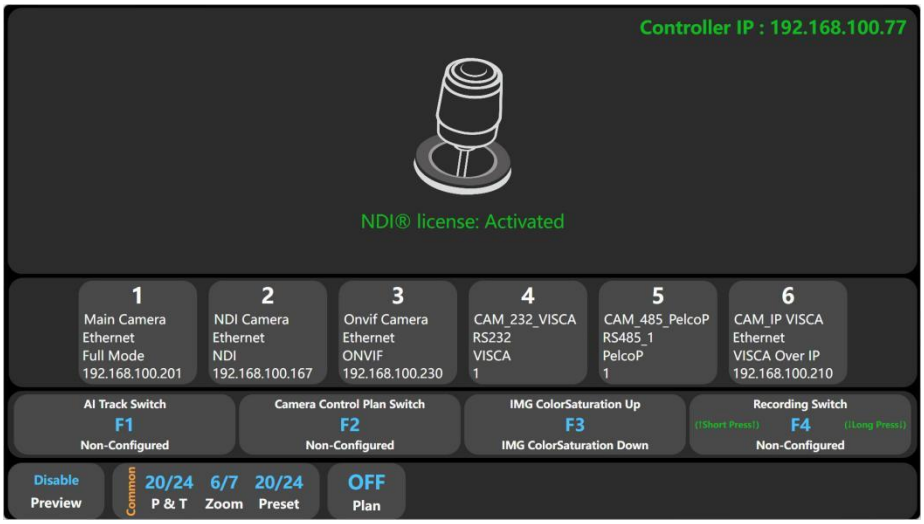
Pressing the joystick button:

Short press: Confirms selection in the camera menu (**OK/ENTER**)

Long press: Calls the camera's **HOME** position (initial/reset)

3.4 Main Control Interface

3.4.1 Overview



After powering on, the controller enters the **Main Control Interface** by default. You can also return to this interface at any time by pressing the **HOME** key.

Main Interface Display Includes:

Controller status (e.g., error messages)

Controller IP address

NDI license status

Camera list

User-Defined Key Configuration Status (F1-F4)

Video preview status

PTZ control speed

Control plans (visible only if added via the Web Management System)

Operation prompts and instructions

1. **Camera List**

Displays the configured cameras with their **ID, name, connection method, protocol, and IP/device address**.

Connection Methods:

Touch: Tap the camera name in the list to connect.

Physical buttons: Use **CAM 1** – **CAM 6** keys for quick access to cameras 1–6.

Quick select: Use the **CAM ..** key to access cameras numbered above 6.

2. User-Defined Key Configuration Status

Display Content: Dynamically shows the current configuration of the user-defined function keys **F1 - F4**.

Interface Layout (Using F1 as an example):

Center: Displays the key identifier **F1**

Top: Displays the function name configured for the key's **short-press action**

Bottom: Displays the function name configured for the key's **long-press action**

Interactive Operation: Tapping any of the **F1 - F4** status areas on the screen will jump to the **[4.4 User-Defined Key Configuration]** page.

3. Preview Function

Codec Support: H.264, H.265

Toggle preview: Tap on screen or use the **PREVIEW** key to **enable/disable** video stream preview.

Switch stream channel: Use the **MAIN | SUB** key to toggle between **main stream** and **sub stream**.

Common Preview Issues & Tips:

If video fails to play, try switching **stream channels**.

If preview affects the camera's main function (e.g., recording/live stream), use **sub stream** instead.

NDI video stream preview requires:

Controller **NDI license activated**

Camera **NDI license activated** and **properly configured with NDI video encoding**

4. PTZ Control Speed

Pan/Tilt Speed: Controls camera movement speed (**range: 1–24**), adjustable via **PT SPEED** knob

Zoom Speed: Controls lens zoom speed (**range: 1–7**), adjustable via **ZOOM SPEED** knob

Preset Call Speed: Controls pan/tilt speed during preset recall (**range: 1–24**), adjustable via **PRESET SPEED** knob (**only for supported camera models**)

Speed Configuration Modes:

The default **[Common]** setting applies to **all cameras**

After selecting the **[Separate]** option, the controller will save individual speed settings for each camera (i.e., per-camera speed)

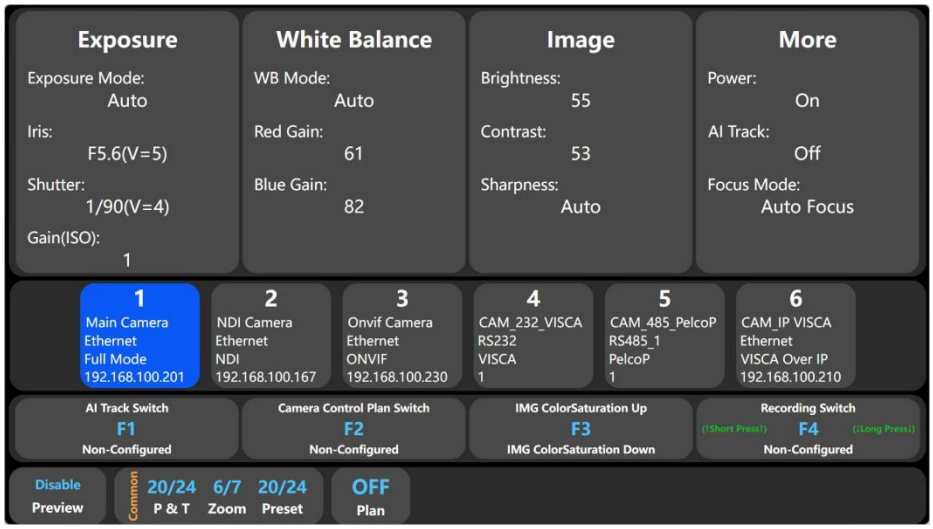
5. Control Plan

Display condition: This section appears only if a control plan is added via the **Web Management System**

Management: Adding, editing, and deleting plans must be done via the **Web Management System**

Execution limitation: Only one control plan can be active at any given time

3.4.2 Interface (Preview Disabled)

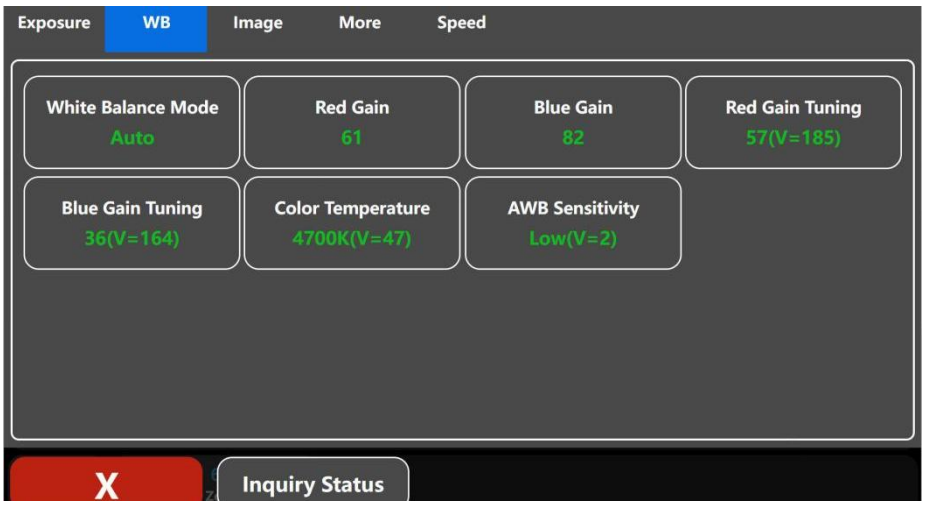


When a camera is connected but the **Preview Function is turned off**, the Main Control Interface will display the following **four main function areas**:

1. **Exposure**
2. **White Balance**
3. **Image**
4. **More**

How to Operate:

Tap the corresponding area on the screen (e.g., **[White Balance]**) to enter the **detailed control page** for that function.



Function Area Description (Example: White Balance) :

Upon entering the **White Balance** function area, the interface will display all status information and control options related to the camera's white balance.

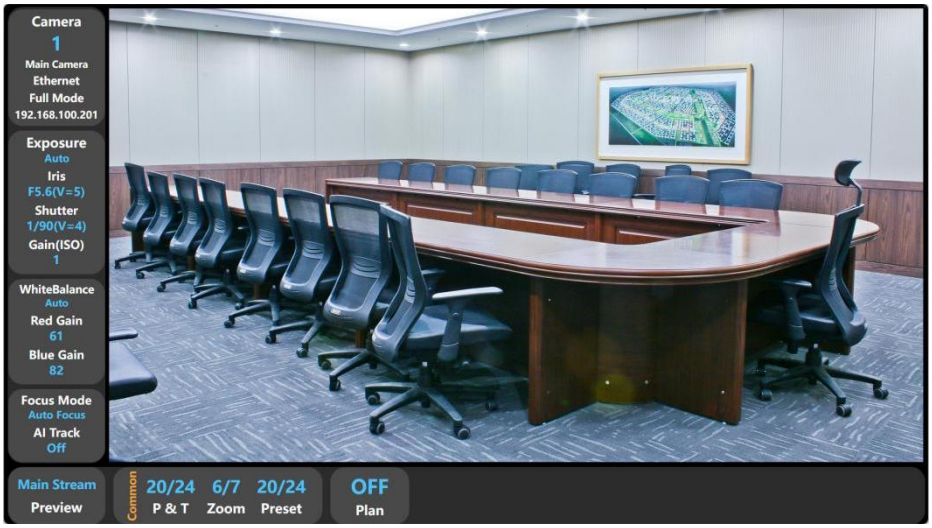
Control Item Availability: Some control items are only available in specific modes. For example, the **[RED GAIN]** adjustment is typically only available when the white balance mode is set to **Manual**.

Compatibility Notes: Due to differences in protocol support among camera brands and models, some status information may not be retrievable, or certain control items may be unavailable.

Compatibility Configuration: The system defaults to the **Auto-Match Mode**. If necessary, you can manually modify the control command mode through the **[Compatibility Setting]** function in the **Web Management System** to adapt to cameras of different brands.

Full Mode Protocol Description:
In **Full Mode**, the controller is pre-optimized for camera compatibility and supports more precise value displays (e.g., **Saturation 100%**, **Color Temperature 6500K**).
If your camera supports this mode, it is **recommended** to use Full Mode for a more complete control experience.

3.4.3 Interface (Preview Enabled)



When a camera is connected and the **preview function is enabled**, the main control interface will display the following **five main sections:**

1. **Video Preview Area**
2. **Camera Selection Area**
3. **Exposure**
4. **White Balance**
5. **More**

Operation Instructions:
Tap the section titles such as **[Exposure]**, **[White Balance]**, or **[More]** to enter the corresponding detailed control pages (functions and operations are the same as described in section **[3.4.2]**).
Tap the **[Camera Selection Area]** to open the **camera list**, from which you can select and connect to another camera.

4. System Settings

4.1 Overview

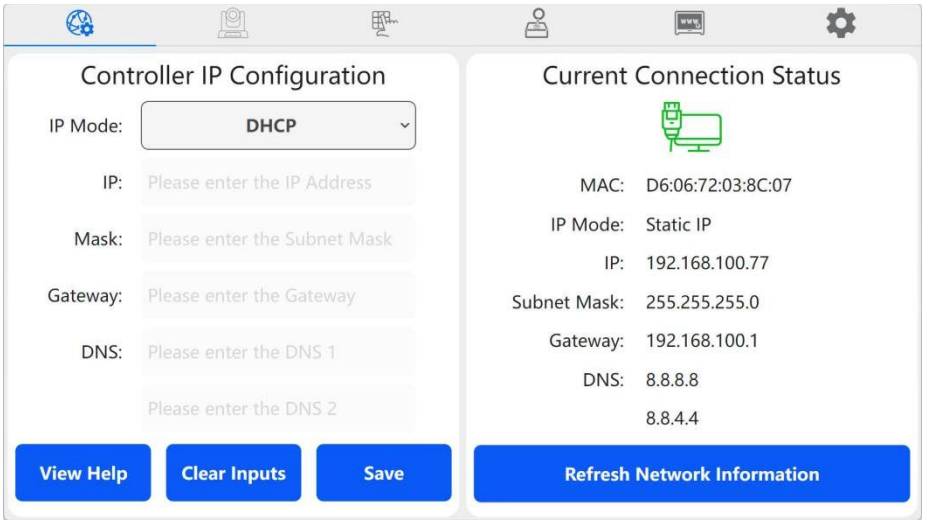
Pressing the **SETUP** key will open the **System Settings Main Page**, which provides access to the following core configuration options:

1. **Controller IP Configuration**
2. **Camera List Management**
3. **User-Defined Key Configuration**
4. **Hardware Setting**
5. **Web Service Setting**
6. **System And More Setting**

Advanced Features:

Additional advanced settings—such as **Compatibility Settings**, **Control Plan Management**, **NDI Configuration**, and **Firmware Upgrade**—must be accessed and configured through the **Web Management System**.

4.2 Controller IP Configuration



Page Layout Explanation:

Left Section: IP configuration settings (input fields for IP address, gateway, etc.)

Right Section: Displays current network connection status (e.g., current IP address and connection state)

Network Connection Requirements:

When controlling PTZ cameras over a local area network (LAN), ensure the following conditions are met:

The controller and the camera must be connected to the **same LAN** (e.g., the same router or switch).

The controller's IP address must be on the **same subnet** as the camera's IP address. For example:

Camera IP Address: 192.168.100.200, **Gateway**: 192.168.100.1

Controller IP Address: 192.168.100.77, **Gateway**: 192.168.100.1

IP Configuration Modes:

DHCP Mode:

The controller's IP address, gateway, subnet mask, and DNS will be **automatically assigned** by the router or switch.

Requirement: **DHCP service** must be enabled on the router or switch.

Static IP Mode:

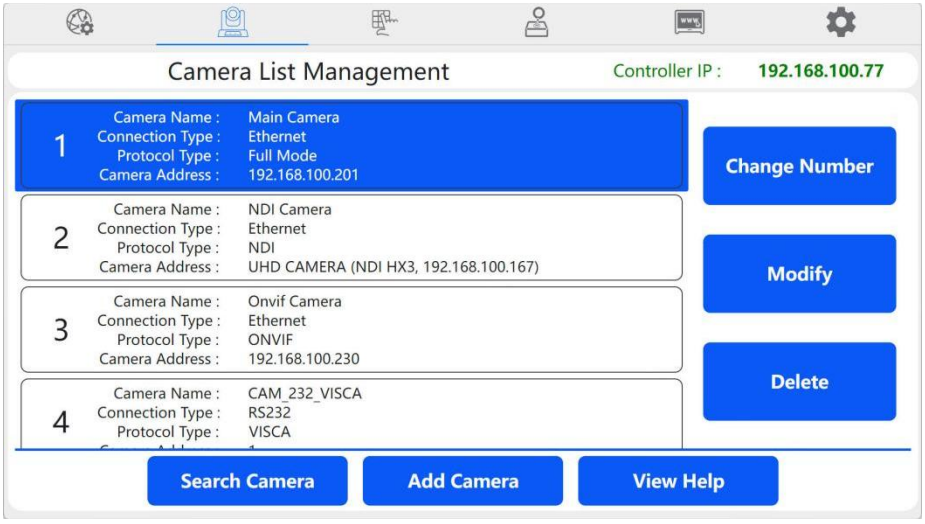
Users must manually configure the controller's **IP address**, **subnet mask**, **gateway**, and **DNS** server address.

Note:

After configuration is complete, the system may take approximately **10 seconds** to apply the new settings and acquire an IP address.

4.3 Camera List Management

This function is used to manage the list of PTZ cameras that the controller can connect to and control. It supports operations such as **add**, **delete**, **edit**, and **search cameras**.



4.3.1 Camera Connection Methods and Protocols

Supported Connection Methods:

(For detailed physical interface definitions and wiring instructions, please refer to [**Chapter 2: Interfaces**].)

Connection Method	Physical Interface
LAN (Local Network)	NET (RJ45)
Serial Port	RS-232
	RS-422
	RS-485 Channel 1 (TA/TB)
	RS-485 Channel 2 (RA/RB)

Supported Communication Protocols:

Connection Method	Supported Protocols
LAN (Local Network)	Full Mode (Recommended)
	ONVIF
	VISCA Over IP
	VISCA TCP/UDP
	NDI (Optional)
Serial Port	VISCA
	PELCO-D
	PELCO-P

Protocol Descriptions:

Full Mode (Recommended):

Integrates multiple protocols with deep optimization for specific camera brands.

Supports comprehensive reading and display of advanced camera parameters (e.g., iris value, shutter speed, saturation, color temperature).

How to Add: Enter the camera's **IP address**, **HTTP port**, and **login credentials** (username/password) for automatic detection and addition.

ONVIF:

ONVIF port numbers may vary between camera brands. When adding manually, please refer to the camera's user manual to confirm the correct port number.

VISCA TCP/UDP:

Port numbers for VISCA over TCP/UDP may differ depending on the camera brand. When adding manually, please refer to the camera's user manual to confirm the correct port number.

NDI (Optional Feature):

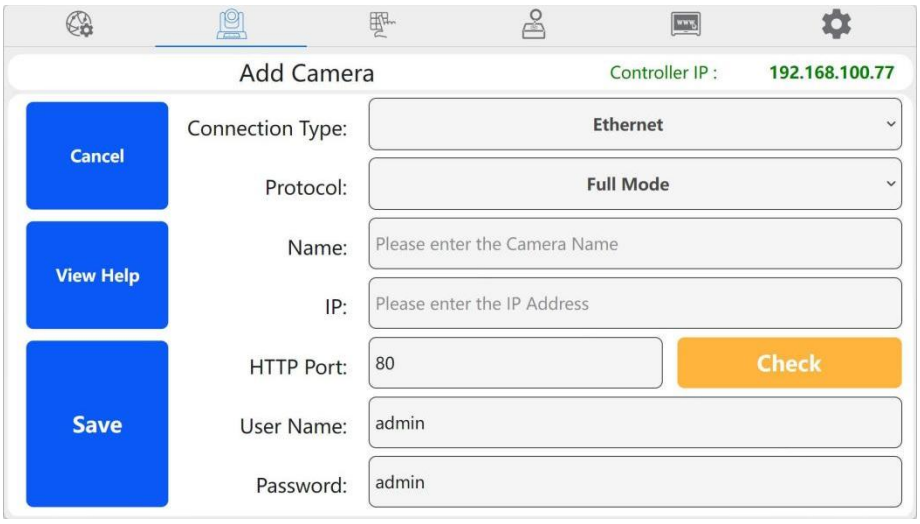
Prerequisites: Both the **controller** and **camera** must have **valid NDI licenses activated**. The camera must also be **properly configured** to output NDI-compatible encoding.

Trial Mode Limitation: If either device lacks an activated license, the NDI stream will enter trial mode, running for a maximum of **30 minutes**.

Serial Protocols (VISCA / PELCO-D / PELCO-P):

When adding cameras via serial connection, you must accurately set the following parameters: **Device Address** and **Baud Rate**.

4.3.2 Add Camera



Operation Steps:

1. Enter the **Camera List Management** interface and click **[Add Camera]**.
2. **Select Connection Type:**

   Choose based on the actual physical connection between the camera and the controller. Supported options include:

   Ethernet
   RS-232
   RS-422
   RS-485 CH1
   RS-485 CH2
3. **Select Control Protocol:**

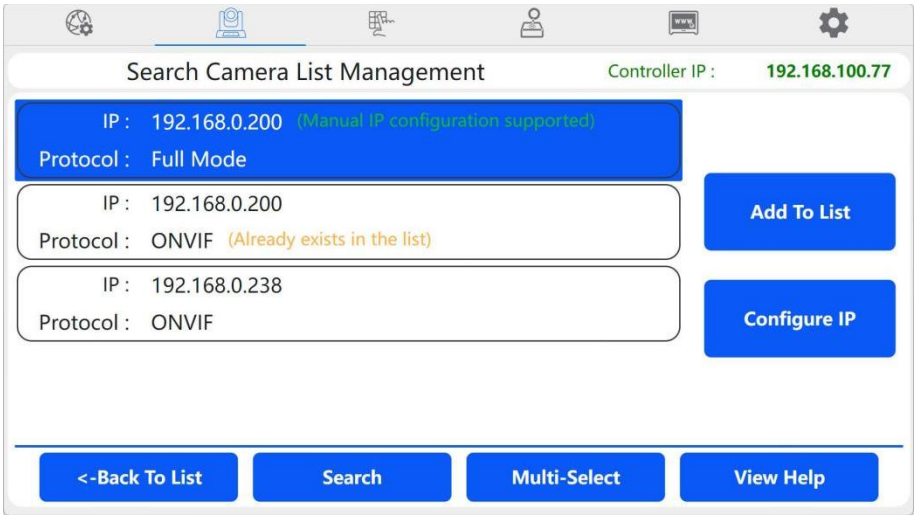
   The system will display available protocols based on the selected connection type. Choose the protocol compatible with your camera.

   Recommendation: If using LAN and the camera supports **Full Mode**, it is recommended to select this protocol for more comprehensive feature support.
4. **Enter Required Information:**

   Depending on the selected protocol, fill in the following key information (may vary by protocol):

   IP Address
   Communication Port
   Device Address
   Baud Rate
   Username / Password (if login authentication is required)
5. **Save Settings:** After completing the information, click the **[Save]** button to add the camera to the list.

4.3.3 Search Cameras



Function Overview:

This feature is used to automatically discover supported camera devices within the **local area network (LAN)**, allowing for quick access and management through the controller.

Discovery Scope:

The system can typically detect cameras that are **connected to the same switch or router** as the controller.

Limitations:

Complex network structures, routing isolation, firewalls, or camera security settings (e.g., ONVIF discovery disabled) may result in unsuccessful discovery.

Some camera models require manual activation of protocols such as **NDI** or **ONVIF** to support automatic discovery.

Supported Protocols and Brands:

Primarily supported protocols: ONVIF and NDI

Also supports discovery of certain proprietary-protocol cameras from specific brands.

For some camera brands, **IP address configuration can be performed directly through this interface**.

Operation Process:

1. Click the **[Search]** button to scan for cameras in the LAN.
2. Search results will show each camera's **IP address** and supported **protocol**(s).

Search Result Indicators:

Manual IP configuration supported: The camera allows its IP address to be modified directly from this interface.

Already exists in the list: The camera is already present in the current camera list and cannot be added again.

Operation Options:

Single-camera operation: Select an individual camera to configure its IP or add it to the list.

Batch operation: Use the **[Multi-Select]** option to choose multiple cameras, then click **[Batch Add]** to add them all to the list at once.

4.3.4 Configuring Camera IP Information

Function Overview:

This feature allows you to quickly configure network parameters for supported camera brands (e.g., newly added devices or devices requiring IP address changes).

Main Advantage:

Eliminates the need for brand-specific IP configuration tools, streamlining the setup process.

Operation Steps:

1. From the **[Search Camera]** results list, select the target camera.
2. Click the **[Configure IP]** button.
3. Enter the new network settings, including: **IP Address**, **Subnet Mask**, **Gateway**, and **DNS**.
4. After confirming the information is correct, click **[Save]** to apply the settings.

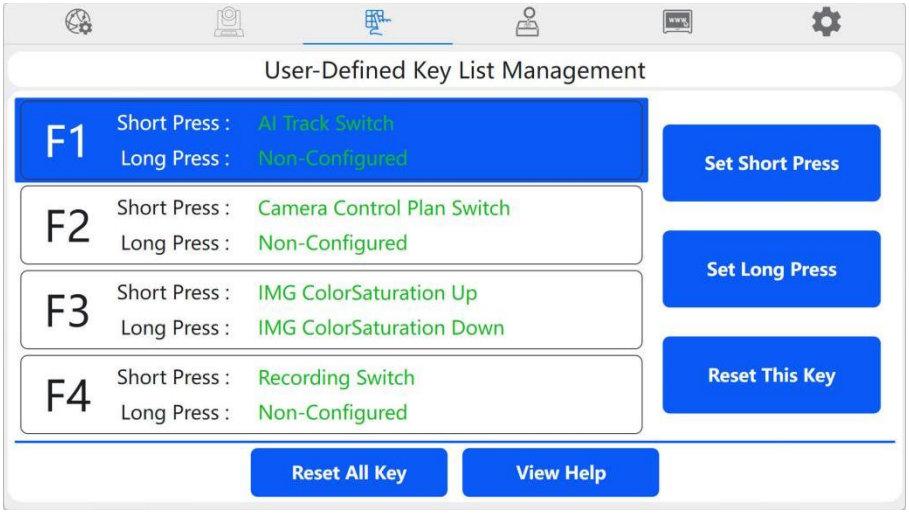
Important Notes:

After applying new network parameters, the camera will typically **restart automatically** to apply the changes.

If the camera does not restart automatically, please perform the following:

1. **Manually restart the camera.**
2. **Wait for the camera to fully boot and complete initialization.**

4.4 User-Defined Key Configuration



The controller offers **4 programmable function keys (F1–F4)**, each supporting **two separate trigger actions**: **short press** and **long press**.

Configuration Steps (Example: F1 Short Press):

1. Enter the **[F1 Short Press Function Configuration]** interface.
2. In the left panel:

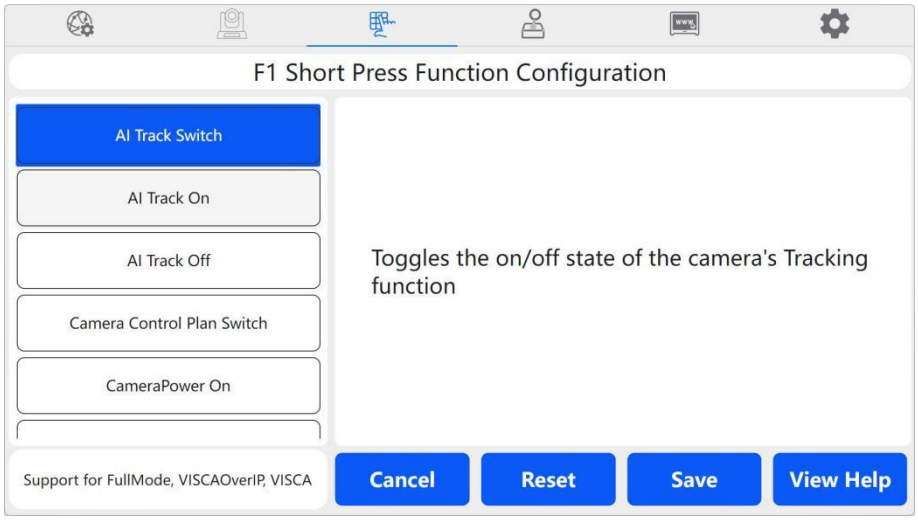
   Browse and select from built-in system commands (e.g., **AI tracking Switch**, **Camera Control Plan Switch**), or define a **custom HTTP or Serial command**.

   At the bottom, the supported **communication protocols** for the selected command (e.g., VISCA, ONVIF) will be displayed.

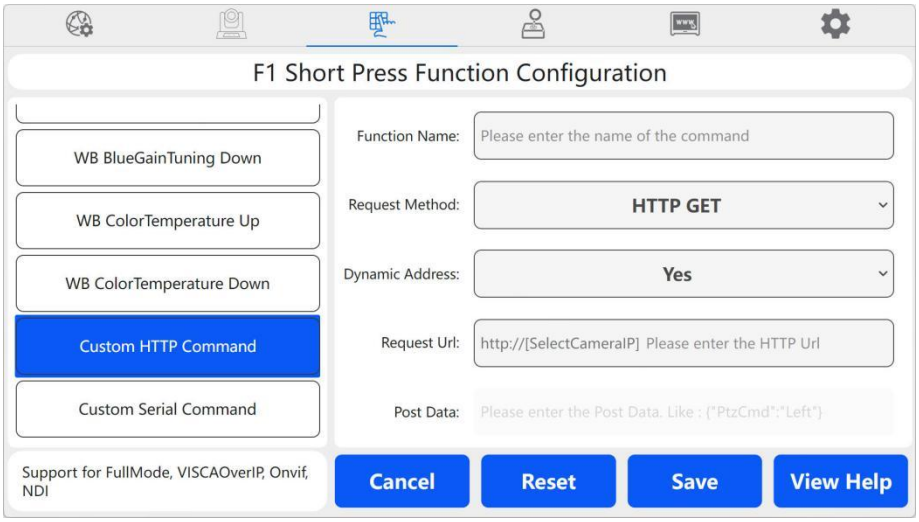
3.In the right panel:

View the function description and parameter information for the selected command.

4.After completing the configuration, click the **[Save]** button to apply the settings.



4.4.1 Custom HTTP Command Description



Function Overview:

The controller supports remote camera control by sending **HTTP GET/POST requests**, enabling personalized and extensible control operations.

[Dynamic Address] Feature Explanation:

When enabled, the system will automatically **replace the [Camera IP] placeholder in the URL** with the **IP address of the currently connected camera**.

This feature is particularly useful in multi-camera network environments, simplifying command configuration.

Example – PTZ Reset Command:

Original CGI:

http://[Camera IP]/cgi-bin/param.cgi?pan_tiltdrive_reset

With Dynamic Address Enabled:

Function Name: **PTZ Reset**

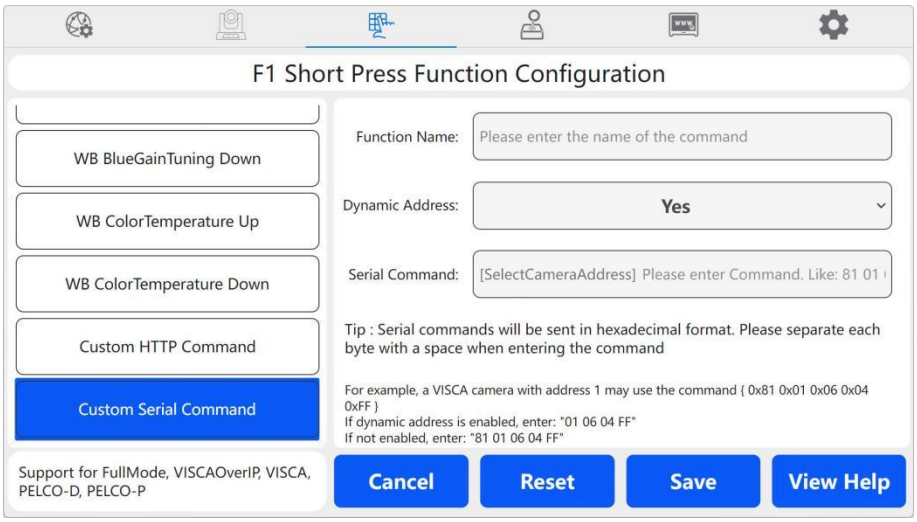
Request Method: **HTTP GET**

Dynamic Address: **Yes**

Request Url: **/cgi-bin/param.cgi?pan_tiltdrive**

Note: The system will automatically prepend the IP address as: **http://[Camera IP]**

4.4.2 Custom Serial Command Description



Function Overview:

The controller supports sending **hexadecimal serial commands** to control cameras, enabling personalized and extensible control operations.

[Dynamic Address] Feature Explanation:

When enabled, the system will automatically **replace the address field** in the command with the **device address of the currently connected camera**.

For example, in the **VISCA protocol**, the first byte will be auto-filled as **8x**, where **x** is the device address.

This feature simplifies command configuration in scenarios with **multiple serial-connected cameras**.

Example – VISCA Motion Sync Command:

Target Camera Address: **1**

Dynamic Address	Serial Command Content
Yes	0A 11 13 02 FF (First byte auto-filled as **81**)
No	81 0A 11 13 02 FF (Manually specified full command)

Note: Use spaces between bytes. Example: 81 01 06 01 02 FF

4.5 Hardware Settings

1. **Screen Brightness:**

   Brightness:

   Value range: **1–16** (default: 13)

   Higher values produce a **brighter screen backlight**.

2. **Keyboard Backlight:**

   Mode: Globally enable or disable key backlight.

   CAM 1-6 Key Special Logic:

   These keys always indicate the currently connected camera (inverted from global backlight settings).

   Example: When backlight is off globally, connecting to Camera 1 will light up the CAM 1 key, while others remain off.

3. **Joystick Calibration:**

   Dead Zone Range:

   Defines the non-responsive zone around the joystick's center to avoid accidental movement.

   Value range: **1–6** (default: 2)

   Higher values **reduce sensitivity**.

   Speed Levels:

   Defines the number of speed levels for joystick movement.

   Value range: **1–7** (default: 5)

   Higher values result in **smoother speed transitions**.

4. **Knob Sensitivity:**

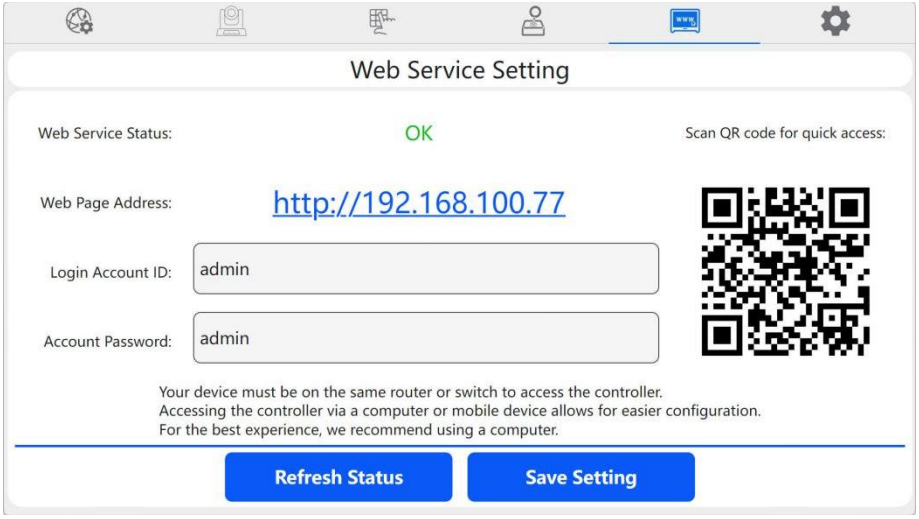
   Trigger Step:

   Defines how many notches the knob must rotate before triggering a control action.

   Value range: **1–5** (default: 1)

   Higher values result in **lower sensitivity**.

4.6 Web Service Setting



Function Overview:

This page allows users to **view the service status** and **login address** of the web management system.

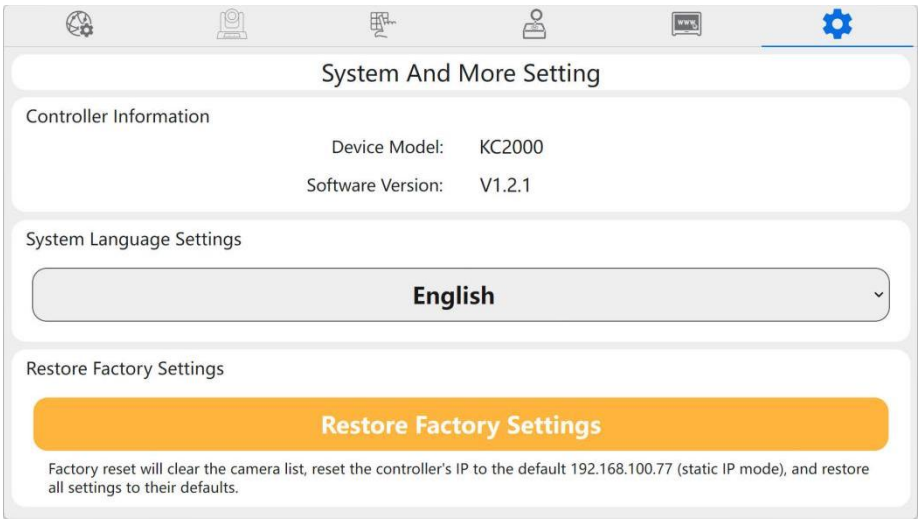
It also provides options to **change the login username and password** for accessing the web interface.

Access Requirements:

1. The device used to access the system (PC or mobile phone) **must be connected to the same local area network (LAN)** as the controller.
2. In a web browser, **enter the IP address displayed on the controller** (e.g., 192.168.100.77) to access the web management interface.

It is **recommended to use a PC browser** for the best experience and full feature access.

4.7 System And More Setting



Function Overview:

This page allows users to:

View the device model and **current firmware version**

Set the system language

Perform a factory reset

Factory Reset Instructions:

Effect: Clears the camera list and resets all system settings to factory defaults

Network Parameters Reset Rule:

IP mode will be forced to **Static IP**

IP address will be reset to the default value: 192.168.100.77

Note: This operation is irreversible. Please proceed with caution.

5. Web Management System

5.1 Overview

Access Method:

Ensure that the accessing device (PC or smartphone) is connected to the **same local network** as the controller.

In a web browser, enter the controller's current **IP address** (e.g., 192.168.100.77) in the address bar.

Login credentials (**username/password**) can be viewed on the controller's **[4.6 Web Service Setting]** page.

Note: It is recommended to use a **PC browser** for full functionality support

Functional Scope:

Basic Configuration Features:

Provides the same functionality as the controller's local settings, including:

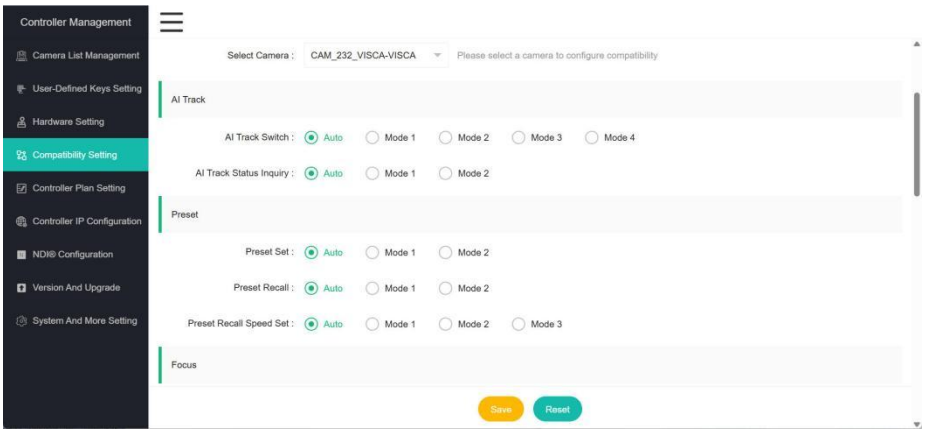
Controller IP Configuration
Camera List Management
User-Defined Key Configuration
Hardware Setting
System Parameter Adjustments

Advanced Feature Extensions (Web Only):

Includes the following enhanced modules, available exclusively via the web interface:

Compatibility Setting
Control Plan Setting
NDI Configuration
Firmware Upgrade

5.2 Compatibility Setting



Function Overview:

This function is used to resolve control anomalies caused by **VISCA command set variations** among different camera brands (e.g., inability to open the menu, non-response of specific functions).

Prerequisite for Use:

Only use this function if the camera's official manual explicitly states support for controlling the relevant feature via **VISCA, VISCA Over IP, or VISCA TCP/UDP** protocol.

Important Warnings:

Applicable Protocols: Only for devices connected via **VISCA, VISCA Over IP, or VISCA TCP/UDP**

Operation Risk: Incorrect command configuration may cause the controller to **completely lose control** of the camera

Recovery Solution: If control fails after configuration, use the **[Reset]** function to restore all compatibility settings for that camera to their default state.

Working Logic:

Default Auto-Match: When a camera using the aforementioned protocols is connected, the system automatically enables the **Auto-Match Mode** (**Auto**). This mode intelligently matches the control and status query commands for the current camera model.

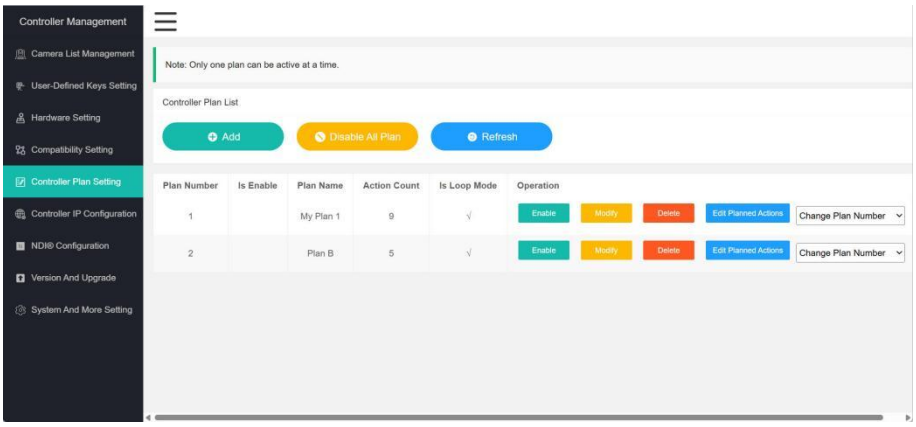
Manual Mode Override: If the system's automatic recognition fails to control a specific function correctly (e.g., cannot open the menu, AI tracking fails), you can manually switch that specific function item to other compatible modes (e.g., **Mode 1, Mode 2**···) for testing.

Operational Guide:

If you encounter control abnormalities, follow these steps for manual adaptation:

1. Log in to the Web Management System and navigate to the **[Compatibility Setting]** page.
2. **Select the target camera** from the device list (this page lists only devices connected via the VISCA series of protocols).
3. In the configuration interface, locate the malfunctioning function item (e.g., Menu Open, AI Tracking Switch).
4. Change its control mode from the default Auto to another preset mode (e.g., Mode 1 or Mode 2) for testing.
5. Click **[Save]**, and **immediately verify in actual operation** whether the function has been restored to normal.

5.3 Controller Plan Setting



Function Overview:

The **Control Plan** feature enables automatic execution of control actions in a predefined sequence, allowing **multi-camera automated patrol control**. This function relies on the **preset position** support of the connected cameras.

Usage Notes:

The **[Plan]** control section will only appear on the controller's main interface after a plan has been added.

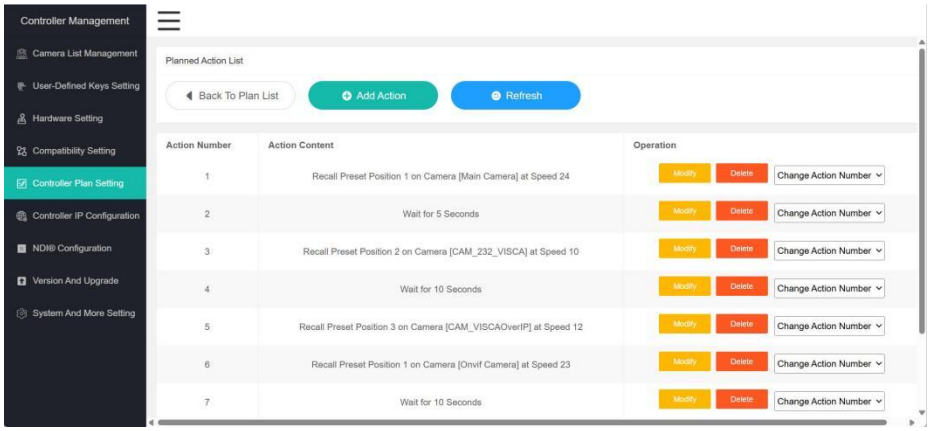
Before using this feature, it is **recommended to ensure that all relevant cameras have valid preset positions configured**.

5.3.1 Plan Attributes

Each control plan includes the following key attributes:

Attribute	Description
Number / Name	A unique identifier and customizable name for the plan, used for easy recognition and management.
Loop Mode	**Enabled**: The action list will execute in a continuous loop.
	Disabled: The action list will execute only once and stop after completion.
Action List	A sequence of control commands executed in order. Can be configured and managed via the **[Edit Planned Actions]** button.
Enable Status	Only **one plan** can be active at a time. Enabling a new plan will **automatically disable** the currently active one.

5.3.2 Plan Action Description



A control plan can include **multiple actions**, which will be executed sequentially based on the configured order.

Action Types:

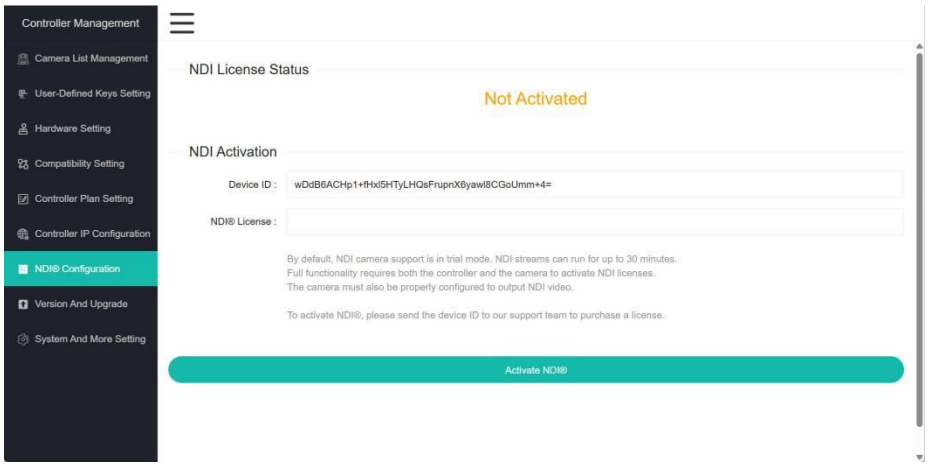
The control plan supports the following two types of actions:

1. **Wait:** Pauses for a specified duration before executing the next action.

2. **Recall Preset Position:** Commands the selected camera to move to a specified preset position.

Action Type	Attribute	Description
Wait	Waiting Time	Duration to pause before the next action, in **seconds**.
Recall Preset Position	Camera	Select the target device from the added camera list.
	Preset Preset	Specify the camera preset to call (**must be set in advance**).
	Recall Speed	PTZ movement speed when calling the preset (**range: 1–24**). **Note:** Only effective for cameras that support preset call speed adjustment.

5.4 NDI Configuration



Feature Overview:

This feature is used to **activate the NDI license** on the controller, enabling stable and full-featured access and preview of NDI cameras.

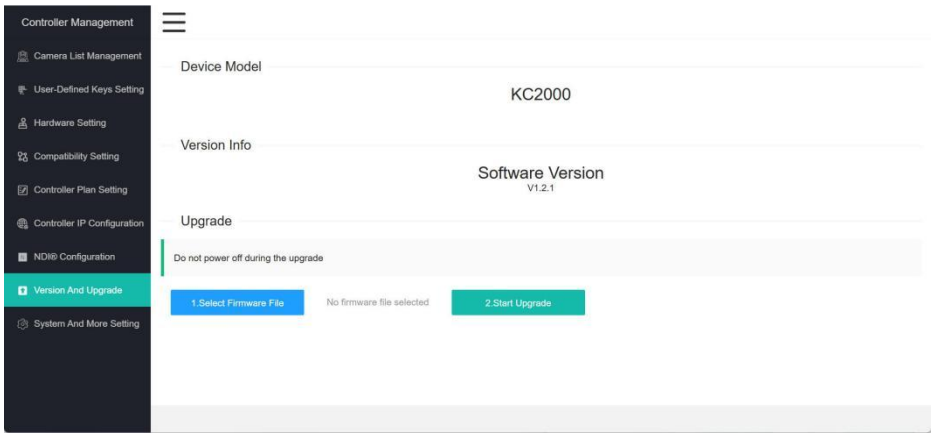
Activation Process:

1. Go to the **[NDI Configuration]** page and **copy the full Device ID** (including all letters, numbers, and symbols).
2. Submit the Device ID to the after-sales service team to purchase the corresponding license.
3. After receiving the license, return to the **[NDI Configuration]** page, **paste the license**, and click **[Activate NDI]** to complete the activation.

Important Notes:

1. By default, the controller supports NDI cameras in **trial mode**, and NDI video streams can run for **a maximum of 30 minutes**.
2. To fully use all features, **both the controller and the camera must have valid NDI licenses activated**.
3. The camera must be properly configured with a supported **NDI video encoding format** to allow normal video preview on the controller.

5.5 Firmware Upgrade



Feature Overview:

The controller supports **firmware upgrades via the Web Management System**, making it easy to obtain new features, fix issues, or improve system stability.

Upgrade Procedure:

1. **Obtain a firmware file** that exactly matches the current device model.
2. Navigate to the **[Version And Upgrade]** page in the web management system.
3. Follow these steps:

   Click **[1. Select Firmware File]** to choose the firmware you wish to install

   (This step only selects the file; it does not upload it yet)

   Click **[2. Start Upgrade]** to upload and begin the firmware upgrade process

Important Notes:

1. Ensure that the selected firmware **matches your device model exactly**.
   Installing the wrong firmware may cause the device to become unresponsive.
2. **Do not power off** the device during the upgrade.
   Power interruption during the process may result in permanent damage.
3. After a successful upgrade, the device will **automatically reboot** (takes approximately 1 minute).
   Do not perform any operations during this time.