DVDO

DVDO-Camera-Ctl-1

IP PTZ Camera Controller with Touch Screen Joystick

User Manual

Version v1.1

Introduction

Thank you for purchasing DVDO-Camera-Ctl-1. If you have any questions or require assistance, please feel free to contact us.

The purpose of this manual is to ensure that users can correctly utilize the product, minimizing the risk of operational hazards or property damage. Before using this product, we recommend carefully reading the product manual and keeping it safely for future reference.

The images and descriptions provided in this manual may differ from the version you are currently using. If you have any questions while using this manual, please contact our technical support for assistance. This manual's content will be periodically updated, and the company reserves the right to make changes without prior notice.

This manual provides a comprehensive overview of the functions, installation, and operation of the PTZ Camera Controller. Please read it carefully before installation and use.

1. Caution

a. Avoid damage to the product during transportation, storage, and installation due to heavy pressure, strong vibration, or immersion.
b. The outer shell of this product is made of organic materials. Do not expose it to any liquid, gas, or solid substance that may corrode the casing.
c. Do not expose the product to rain or moisture.
d. To prevent the risk of electric shock, do not open the casing. Installation and maintenance should only be performed by qualified technicians.
e. Do not exceed the specified temperature, humidity, and power supply specifications when using the product.
f. When cleaning your screen, wipe it down with a soft, dry cloth. If necessary, wipe gently with a mild detergent. Do not use strong corrosive cleaning agents, so as not to scratch the screen and affect the image.
g. This product does not contain user-maintainable parts. Any damage caused by unauthorized disassembly by the user is not covered by the warranty.

2. Electrical Safety

a. Installation and use of this product must strictly comply with local electrical safety standards.
b. The power supply of the product is ±12V, the max electrical current is 2A .

3. Installation

a. Place this product on a stable desktop or another horizontal surface.
b. Do not power on before complete installation.

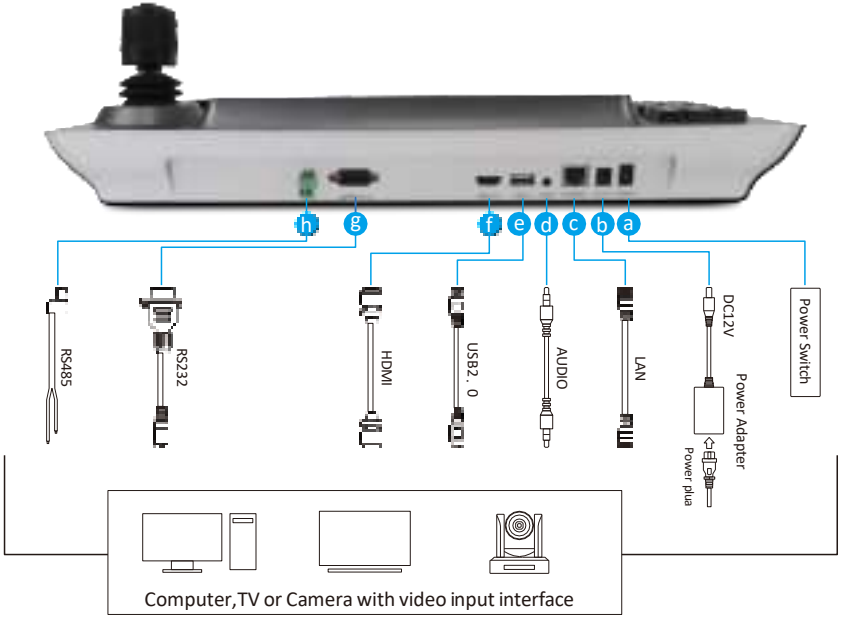
4. Magnetic Interference

a. Electromagnetic fields of specific frequencies may affect video images. This product is classified as a Class A product, which may cause radio interference in a residential setting. Proper measures are required to mitigate interference.

Contents

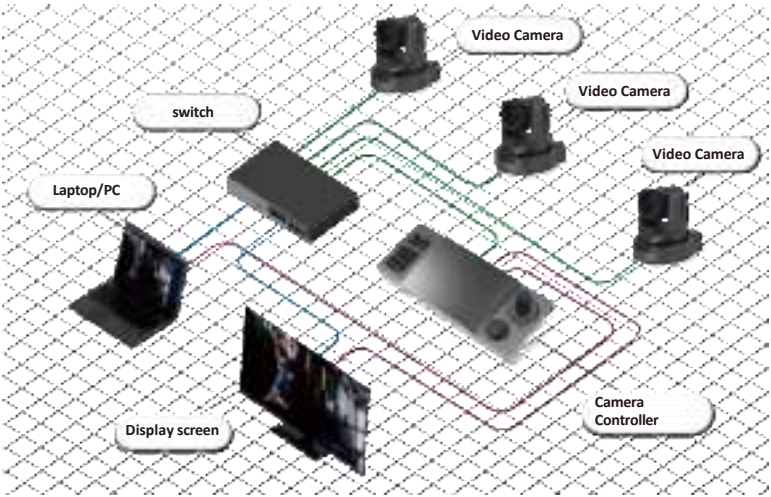
1. Controller interface

1.1 Controller interface and Connection



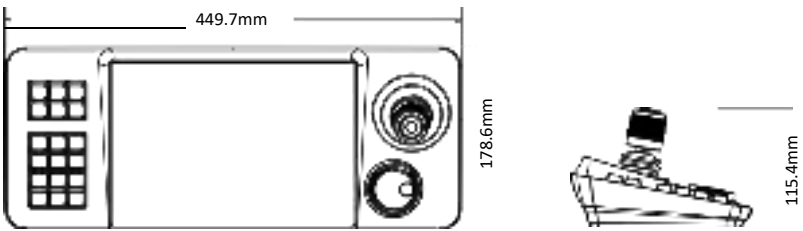
a. Power Switch	b. Power Interface: Standard 5.5/2.1 power interface, DC 12V2A±10%
c. Network Interface: Connects to the network	d. Audio Interface: 3.5mm headphone jack
e. USB: Device upgrade via USB flash drive or external mouse control	f. HDMI Output: Synchronizes the 10.1-inch screen display with an external monitor
g. RS232: Pelco-D / Pelco-P / Visca protocols	h. RS485: Pelco-D / Pelco-P / Visca protocols

1.2 Network pattern connection topology diagram



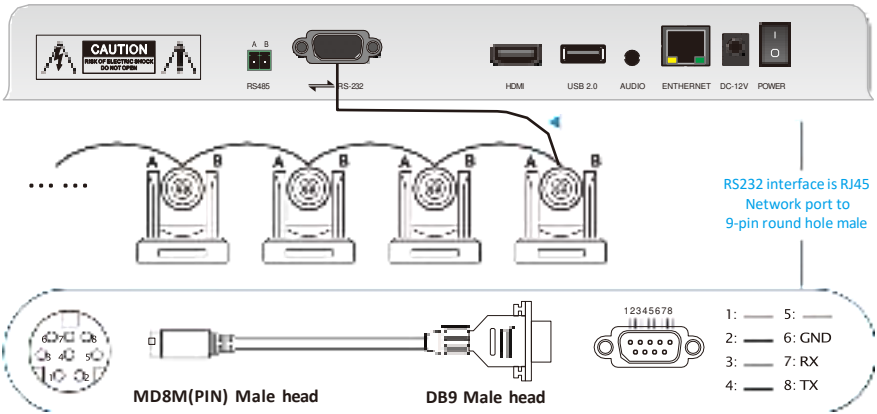
2. Product Overview

2.1 Dimensions

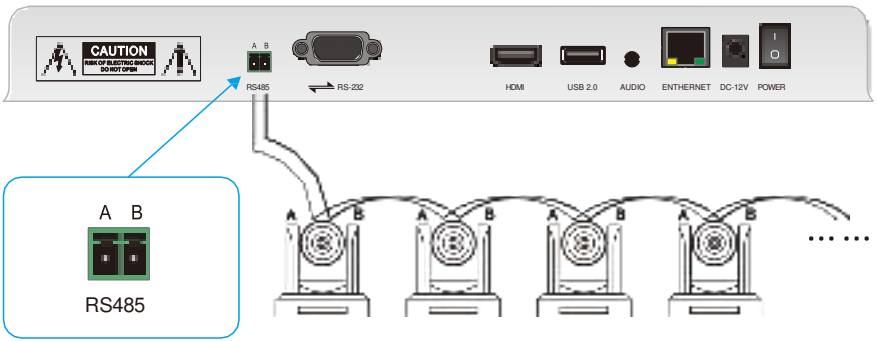


2.2 Functional Button Description

(1) Analog Mode RS232



(2) Analog Mode RS485/RS422



2.3 Product Overview

DVDO-Camera-Ctl-1 is a network based PTZ camera controller featuring a 10.1-inch capacitive touchscreen and a sleek and user-friendly user interface. It provides real-time preview through its touchscreen and can project images to an external display via the HDMI interface.

It supports H.265/H.264 single-channel decoding at 1080P@60fps, and 4-channel decoding at 720P@30fps. The 4D control joystick is used for controlling PTZ cameras, enabling quick target positioning. It can be applied in places with multiple network PTZ cameras, such as schools, hospitals, hotels, factories, workshops, etc., to achieve unified control of network cameras supporting the ONVIF protocol within the local network.

2.4 Product Features

- 10.1-inch capacitive touchscreen
- Android 6.0 operating system
- H.265/H.264 decoding, maximum 4-channel split-screen
- Allows viewing images on the touchscreen or projecting images to a display via HDMI
- Network connection to our full range of PTZ cameras
- PTZ control, preset points, cruise, and trajectory setting and calling
- ONVIF protocol for device integration
- Controls up to 1,024 cameras
- Firmware upgrade via USB, external mouse connection

2.5 Technical parameters

Parameter/model	DVDO-Camera-Ctl-1
Operating system	Android 6.0
Screen size	IPS 10.1 inch screen, resolution 1280*800 capacitive touch screen

HDMI out	HDMI 4K@30fps
Decoding capability	1) H264/H265 2) Maximum support h264 1x1080p@60fps 3) Maximum support h264 4x720p@30fps
Control protocols	Onvif 2.4, Visca, Pelco D/P and other protocols
Special features	1) Controls up to 1,024 cameras 2) Pan-tilt control 3) Up to 255 presets 4) Cruising 5) Pattern scanning
System Settings	Language Settings; U disk upgrade
Power supply	Standard 5.5/2.1 power interface, DC 12V2A±10%
Interface	An RJ45 (network); One RS485; One RS232; One HDMI output, version 1.4 one USB2.0; A standard 3.5mm headphone jack
Interface of operation	4 dimensional joystick; assisted touch control; button shortcut call
Power consumption	< 15W
Standby current	< 100mA
Humidity at work	10%-90% RH (no frost)
Operating temperature	-10°C~40°C
Temperature of storage	-40°C~60°C
Inner package size	517*221*151mm (inner size)
Net weight	1400g

3. Controller Buttons & Components

3.1 Button Function Description

The controller is equipped with a set of buttons and components designed for efficient and intuitive control:

Numeric Buttons (Num1-9):

Description: Used to display the corresponding inputted numbers on the TV wall page, possibly for identification, annotation, or other purposes.
Click: Clicking the numeric buttons will display the corresponding number on the top left corner of the screen.

Dot Button:

Description: Located on the controller, the dot (or period) button is used to add a "." symbol in the input.
Click: Clicking the dot button will insert a "." symbol at the current input position.

Delete Button:

Description: Used to delete characters (or numbers) after the cursor position. Click: Clicking the Delete button will remove the character after the cursor.

Shot Button:

Description: Used to invoke the preset position corresponding to the inputted number from the numeric buttons 1-9, and clear the current numeric input after invocation.
Input Number: Users input the corresponding number using numeric buttons 1-9.
Press Shot Button: Pressing the "Shot" button triggers the invocation of the preset corresponding to the entered number and clears the current numeric input.

Preset Button:

Description: Used to set the preset position corresponding to the inputted number from numeric buttons 1-9 and clear the current numeric input after setting. Input Number: Users input the corresponding number using numeric buttons 1-9.

Press Preset Button: Pressing the "Preset" button triggers the setting of the preset corresponding to the entered number and clears the current numeric input.

Patrol Button:

Description: Used to invoke the patrol route corresponding to the inputted number from numeric button 1-9, and clear the current numeric input after invocation.

Input Number: Users input the corresponding number using numeric buttons 1-9.
Press Patrol Button: Pressing the "Patrol" button triggers the invocation of the patrol route corresponding to the entered number and clears the current numeric input.

Pattern Button:

Description: Used to invoke the scan associated with the inputted number from numeric buttons 1-9, and clear the current numeric input after invocation.

Input Number: Users input the corresponding number using numeric buttons 1-9.
Press Pattern Button: Pressing the "Pattern" button triggers the invocation of the scan corresponding to the entered number and clears the current numeric input.

Address Button:

Description: Used to invoke the camera associated with the inputted address code from numeric buttons 1-9, and clear the current numeric input after invocation. Input Number: Users input the corresponding number using numeric buttons 1-9. Press Address Button: Pressing the "Address" button triggers the invocation of the camera associated with the entered address code and clears the current numeric input.

Inquire Button:

Description: Activated on the TV wall page, clicking the "Inquire" button opens the Add & Query dialog box. The dialog box displays the current list of added cameras. Long pressing or double-clicking on a corresponding camera allows it to be added to the TV wall.

Click Inquire Button: Clicking the "Inquire" button initiates the Add & Query dialog box to appear on the TV wall page.

Add & Query Dialog Box: The dialog box displays the current list of added cameras and provides options for further actions.
Long-press or Double-click on Camera: Users can perform a long-press or double-click on a camera in the list within the dialog box.
Add to TV Wall: Long pressing or double-clicking on a camera within the Add & Query dialog box adds it to the TV wall configuration.
Clear Input: The Inquire button functionality ensures that the current input is cleared after initiating the Add & Query dialog box.

3.2 Shuttle Ring

Focus Adjustment with Shuttle Outer Ring:

Description: This function is activated when selecting a camera on the TV wall page. Rotating the shuttle outer ring clockwise (from the upper right to the bottom) adjusts the focus to zoom in ("Focus-"), while rotating counterclockwise zooms out ("Focus+").
Clockwise Rotation: Rotate the shuttle outer ring from the upper right downward to zoom in, commonly known as "Focus-."

Counterclockwise Rotation:

Rotate the shuttle outer ring from the lower right upward to zoom out, commonly known as "Focus+." Automatic Focus Mode: If the camera is in automatic focus mode, rotating the shuttle outer ring switches the focus mode to manual before executing the focus adjustment.
This feature allows users to precisely control the focus by intuitively rotating the shuttle outer ring when selecting a camera on the TV wall. Ensure to consult the camera's user manual or documentation for specific focus adjustment ranges and other configuration options.

Aperture Adjustment with Shuttle Inner Ring:

Description: This function is activated when selecting a camera on the TV wall page. Rotating the shuttle inner ring clockwise (from the upper right to the bottom) decreases the aperture ("Aperture-"), while counterclockwise rotation increases the aperture ("Aperture+").

Clockwise Rotation: Rotate the shuttle inner ring from the upper right downward to decrease the aperture, commonly known as "Aperture-." Counterclockwise Rotation: Rotate the shuttle inner ring from the lower right upward to increase the aperture, commonly known as "Aperture+.".

Automatic Aperture Mode: If the camera is in automatic aperture mode, rotating the shuttle inner ring switches the aperture mode to manual before executing the aperture adjustment.
This feature allows users to control the aperture by intuitively rotating the shuttle inner ring when selecting a camera on the TV wall. Ensure to consult the camera's user manual or documentation for specific aperture adjustment ranges and other configuration options.

3.3 The four-dimensional joystick

The four-dimensional joystick is a crucial input device designed specifically for camera control by network based controllers. It integrates two-dimensional plane movement, diagonal motion, a rotatable polar shuttle, and a top button, providing users with an intuitive and flexible way to operate cameras. The following is a detailed description of the features of the four-dimensional joystick:

Four-Dimensional Joystick Features:

Two-Dimensional Movement: The joystick allows for movement in the up, down, left, and right directions, enabling users to select cameras on the TV wall page and perform basic directional control.

Diagonal Motion: In addition to basic movement, the joystick supports diagonal motion, allowing users to control the camera's direction in a more flexible manner.

Rotatable Polar Shuttle: The joystick's center features a rotatable polar shuttle designed to control the camera's zoom function. Clockwise rotation may result in zooming in, while counterclockwise rotation may lead to zooming out.

Top Button: The top of the joystick is equipped with a button that serves as a "confirm button" in certain situations. After selecting a camera on the TV wall page, users can press the top button to confirm the selection or activate settings.

Operation Procedure:

Selecting a Camera: On the TV wall page, users move the joystick to select a camera. A prominently displayed red frame indicates the selected camera.

Directional Control: Using the joystick's two-dimensional and diagonal movements, users can real-time control the camera's up, down, left, right, and diagonal movements.

Zoom Control: By rotating the rotatable polar shuttle at the center of the joystick, users can adjust the camera's zoom in real-time, achieving both zooming in and out.

Confirmation Operation: When confirmation of selection or the activation of settings is required, users can press the top button on the joystick to trigger the relevant operation.

4. System Setting

4.1 Network Connection

Direct Connection: Use a network cable to directly connect the camera to the controller.

Internet Connection Mode: Connect the camera and the controller to the Internet through a router or switch.

Note: Avoid placing the power and network cables in easily accessible locations to prevent unstable video signal transmission due to poor cable contact.

The controller must have the network segment to which the camera's IP address belongs. Without this segment, the device will be inaccessible. The default IP address for the camera is 192.168.5.163. To set up, first click on "System Settings" on the homepage, enter the system settings page, select "Network Settings," switch the network status to static, and add the IP Address, Net-mask, Gateway and DNS, subnet mask, and network segment. Click confirm to save the network information. Users can add the corresponding network segment based on the modified IP address of the camera.

Note: The IP address to be added must not be the same as that of other computers or devices. Before adding, it needs to be verified that the IP address does not already exist.

4.2 Language Switching

Switching languages on the controller can help users choose a language they understand. Currently, it only supports bilingual switching between Chinese and English. Here are the basic steps for language switching:

Open System Settings: On the controller's homepage, locate and click on the "System Settings" option.

Enter Language Settings: In the system settings page, choose the "Language Settings" option (it is usually the second option in the left sidebar).

Select Target Language: In the language settings, available language options will be listed. Use the touchscreen to select the desired language.

Confirm Switch: After selecting the target language, the system will typically automatically return to the homepage after completing the language switch.

Restart the Device (if necessary): In very rare cases, language switching may require a device restart to take effect. Follow the system prompts or manually power cycle the device.

4.3 Hardware Settings

The hardware settings section encompasses various hardware functionalities of the controller, including key sound toggle, screen brightness adjustment, controller log export (requires inserting a USB flash drive), and MCU version check.

Key Sound Toggle: Navigate to system Settings, especially the hardware Settings section. Then find the key sound option. Choose to enable or disable depending on your preference.

Screen Brightness Adjustment: To adjust the screen brightness, access the system settings, which can be found in either the hardware settings. Locate the screen brightness option, and use the adjustment buttons to increase or decrease the screen brightness as needed.

Controller Log Export (requires inserting USB flash drive): To export logs, insert a USB flash drive (formatted as Fat32) into the USB port on the controller. Navigate to system settings, specifically the hardware or log settings, find the option for exporting logs, and select export.
The system will generate a controller log file and save it to the USB flash drive.

MCU Version Check: Access system settings, either in the hardware settings or under device information. Find the MCU version information.
Check the displayed MCU version to understand the current software version of the controller's main control unit.

4.4 Auxiliary Settings

The auxiliary settings encompass various features, including the status bar toggle, HD mode switch, High-Speed mode, and audio mode toggle.

Status Bar Toggle: Access the system settings, either in the auxiliary settings or display settings. Locate the status bar option and choose to enable or disable it based on individual preferences.

HD Mode Switch: Within the system settings under auxiliary or display settings, find the HD mode option. Toggle it on or off to ensure that the first screen of the video wall outputs a high-definition stream from the camera's main stream.

High-Speed Mode: Access the system settings under auxiliary or display settings to find the High-

Speed mode option. Toggle it on or off to make all four screens of the video wall output a low-definition stream from the camera's sub-stream, suitable for extended usage with minimal system stress.

Audio Mode Toggle: In the system settings under auxiliary or audio settings, find the audio mode option. Choose to enable or disable audio mode according to specific requirements.

4.5 System Upgrade

The system upgrade provides a straightforward process. Simply place the upgrade file on an external storage device in a specific format, such as a FAT32-formatted USB drive, and insert it into the USB port on the back of the controller. After waiting for approximately 30 seconds to ensure the system reads the file correctly, click on the system upgrade. The system will automatically enter the installation program; click confirm to complete the upgrade. After the upgrade is finished, the system will restart and enter the controller software system.

4.6 System Factory Default

System initialization is performed when it is necessary to restore the configuration and parameters of the controller. To initiate the process, navigate to the "Restore Factory" section within the system settings and click the "Restore Factory" button. Prior to proceeding with initialization, consider the following recommendations:

Warning:
Executing system initialization will delete all current configurations and parameters, restoring the system to its factory settings. Ensure all critical data is backed up before proceeding.

Note:
Exercise caution when opting for system initialization, as it will clear all user-defined settings. After confirming the operation, the system will automatically restart and return to the main page.

4.7 Version

The version information feature allows users to access important details about the controller, including software version, hardware version, serial number (SN), IP address, and MAC address. By navigating to the version information page, users can effortlessly retrieve these crucial data points.

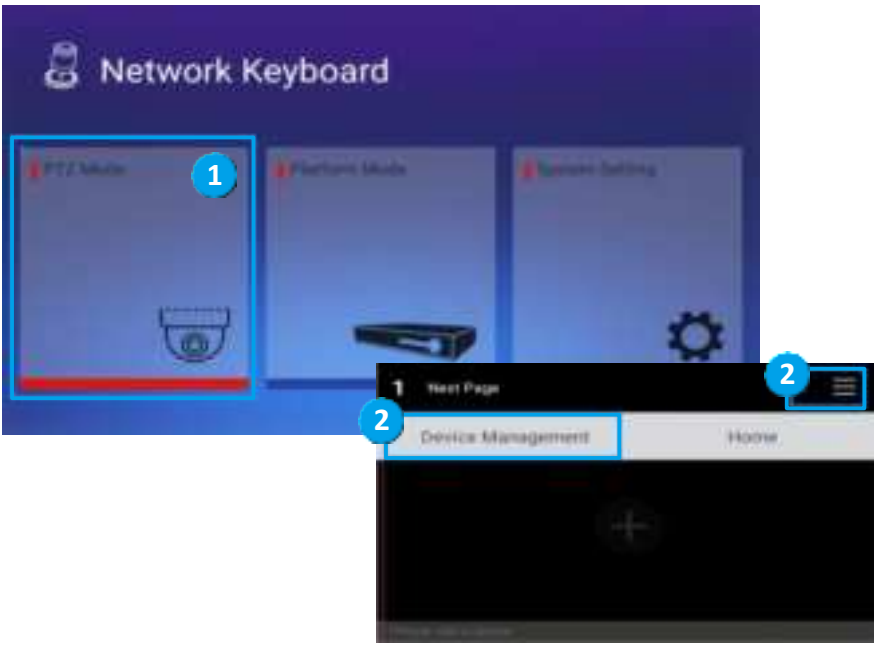
5. Operating instructions

5.1 Add Cameras and Create a Video Wall

Confirm Network Environment:

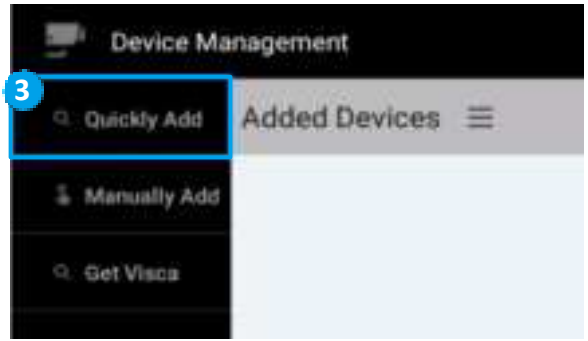
Ensure that the cameras and controller are in the same network environment, for example, under the same switch. Alternatively, directly connect the cameras and controller. This requires setting static IP addresses for both the cameras and the controller. Refer to the instructions in section 4.1 Network Settings for guidance.

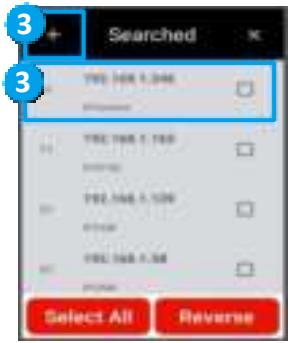
Click on "PTZ Mode" to enter the video wall.



Access Device Management:

On the video wall page, click on the menu button with three lines in the upper right corner to expand the menu. Switch to "Device Management" to enter the device management interface.





Quickly Add Cameras:

Click on "Quickly Add," and the controller will start automatic searching. After the search is complete, a list of discovered cameras will be displayed.

Note: Automatic search is based on the standard Onvif protocol. Some camera brands may require enabling the Onvif feature in the web settings.

The list displays camera IP addresses and names (the camera name is determined by the configuration obtained during the search and can be modified in the camera settings after adding). Check the cameras to be added and click the plus icon in the upper left corner.

Enter Account Information:

After clicking the plus icon, a prompt will appear to input the account and password. The default account is admin, and the password is admin. Input the actual account information for the cameras.

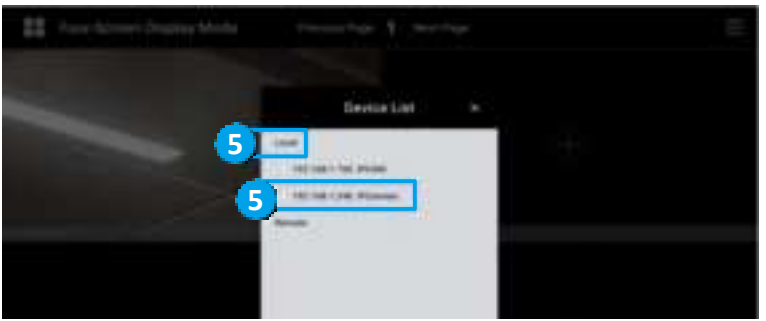
After inputting the information, click save to complete the addition.

After completion, the added cameras can be viewed in the list of added cameras.

Return to the Video Wall Page: After completing the camera addition, click on the menu button in the upper right corner again. Return to the "Video Display" page of the video wall.

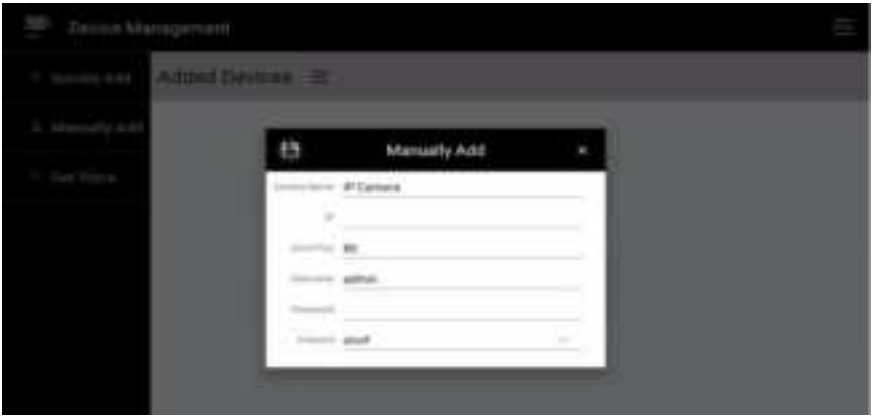
Configure the Video Wall Display: The video wall is preset with four displays. Click on the plus icon in the middle of one of the video wall areas to open the device list.
The device list displays both locally and remotely added cameras. The local list is mainly used, and the remote list is reserved for specific use cases.

After expanding the local camera list, cameras are listed in a combination of IP address and camera name. Find the corresponding camera and add it by either long-pressing or double-clicking.



5.2 Manually Add Cameras

Navigate to "Device Management" Page:	Return to the "Device Management" page based on the previous instructions.
Manual Camera Addition:	Click the "Manually Add" button located at the top right corner (Note: If you are not familiar with camera parameters such as Rtsp, it is recommended to use the Auto Search feature for accurate camera parameter retrieval, eliminating the need for manual input). After clicking, a prompt will appear for manual entry, displaying the following parameters:
Camera Name	(automatically generated, editable)
IP Address	(mandatory)
Onvif Port	(mandatory, applicable only under the Onvif protocol)
Username	(mandatory in case of Onvif authentication)
Password	(mandatory in case of Onvif authentication)
Protocol	(Onvif and Network Visca protocols) (appears only in
TCP Port	Visca mode, default is usually 5678)
Rtsp URL / Rtsp Url2	(default setting is " Rtsp://192.168.***.***:554/ ", input may vary based on camera settings)
Saving Configuration:	After entering the required information, click the save button at the top left corner to complete the manual camera configuration.
Return to TV Wall Page:	Go back to the TV wall page, and you can now play the cameras manually added.



5.3 Add Analog Cameras

Access Serial Port Page: Click on "Serial Port Communication" to navigate to the serial port page.

Add Camera: On the serial port page, click the "+" icon on the corresponding screen to add an analog camera.

Enter Camera Information: Enter the appropriate address code and select the communication protocol used by the camera.

Configure RTSP URL (If Required): If you need to transmit the camera's video feed, ensure that the device is in a network environment. Obtain the camera's RTSP URL and enter it into the respective "RTSP URL" field.

Save Configuration: After entering the details, click the "Add" button to save the configuration.

Complete the Addition: Once added, you can now access and play the video feed from the analog camera on the video wall.

Note: Ensure accurate input of the address code, communication protocol, and any necessary RTSP URL information. When configuring the RTSP URL, make sure the device is in a network environment for successful access to the camera's video feed.

5.4 Adding Cameras through Visca Search

Navigate to "Device Management" Page: Return to the "Device Management" page based on the previous instructions.

Visca Camera Search: Click the "Visca Search" button to initiate the search for Visca-enabled cameras. This feature is particularly useful when dealing with cameras that support the Network Visca protocol.

View Available Cameras: The system will display a list of available cameras discovered through the Visca search. Cameras may be listed by IP address and camera name.

Select and Add: Identify the desired camera from the list and proceed to add it by either long pressing or double-clicking on the camera entry.

Configure Camera Settings: Complete any prompted settings, such as account credentials (if required by the camera).

Complete the Process: After configuring the settings, save and complete the process. The added camera can now be accessed and played on the TV wall.

Note: Ensure that the cameras you intend to add through Visca search support the Network Visca protocol, and refer to the camera's documentation for any specific requirements or configurations.

DVDO

Follow us