ClearOne.

UNITE® 200 Pro PTZ HD Camera

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Notices

Contents

Introduction

This user manual provides advanced information regarding control of the ClearOne UNITE 200 Pro PTZ HD Camera. Additional information about the camera is provided in the corresponding Datasheet and Quick-Start Guide, which are available in ClearOne's Resource Library.

Remote Control

1. **Standby Button**

   Press this button to enter standby mode. Press it again to enter normal mode.

   Note: Power consumption in standby mode is approximately half of the normal mode

2. **Position Buttons**

   To set preset or call preset

3. *** Button**

4. **Set/Preset Buttons**

   Set a corresponding numeric key preset position

   [PRESET] + Numeric button (0-9)

   Note: Preset 0-9 via remote control and the rest from keyboard and the serial port.

5. **Pan-Tilt Control Buttons**

   Press the arrow buttons to perform panning and tilting. Press the [HOME] button to face the camera back to front.

6. **Return Button**

   Press to return to previous menu.

7. **Zoom Buttons**

   Slow Zoom: Zoom In [+] or Zoom Out [-] slowly

   Fast Zoom: Zoom In [+] or Zoom Out [-] fast

8. **L/R Set Button**

   Press at the same time as the numeric button 1 [STD] and button 2 [REV] to set the direction of the Pan-Tilt

   L/R Set +1[STD]: set the Pan-Tilt turn the same direction as the L/R Set

   L/R Set +2[REV]: set the Pan-Tilt turn the opposite direction as the L/R Set

9. **Focus Buttons**

   Press [AUTO] to adjust the focus on the center of the object automatically.

   Press [MANUAL] to adjust the focus manually.

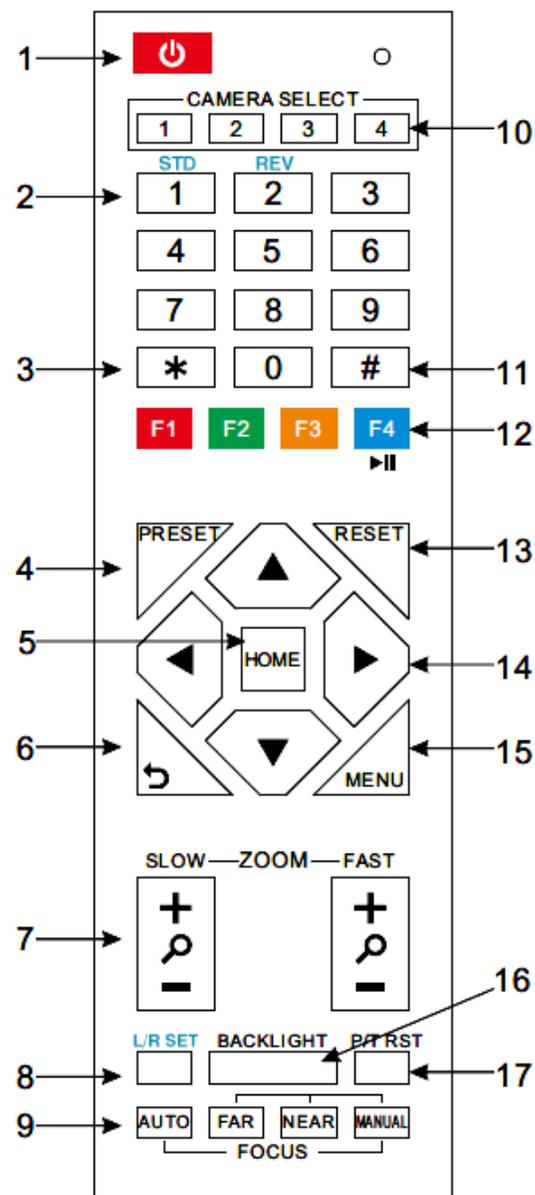   Press [FAR] to focus on a far object.

   Press [NEAR] to focus on a near object.

10. **Camera Select Buttons**

    Press the button corresponding to the camera you want to control with the remote controller.

11. **\# Button**

    Used with other buttons

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12.   **Set Camera IR Address Buttons**

Function 1. Set camera IR address

[*]+[#]+[F1]: Address 1

[*]+[#]+[F2]: Address 2

[*]+[#]+[F3]: Address 3

[*]+[#]+[F4]: Address 4

Function 2: Image freezing function

Press [F4] to start the freeze function. The word "Freeze" displays in the upper left. After five seconds, the display automatically disappears (though the freeze feature continues). To cancel the freeze, press the [F4] key the word "Unfreeze" displays in the upper left. After five seconds, the display automatically disappears.

13.   **Reset Buttons**

Clear a specific preset: [Reset] + Numeric button (0-9)

Clear all presets: [*]+[#]+[Reset]: Erase all presets

14.   **Pan/Tilt Control Buttons**

Press arrow buttons to perform panning and tilting. Press [HOME] button to face the camera back to front.

15.   **MENU**

Press MENU to enter or exit the OSD menu.

16.   **BLC (Backlight Compensation) Button**

If there is light behind the subject, the subject will appear dark.

Press this button to enable the backlight compensation. Press it again to disable the backlight compensation.

Press the backlight ON / OFF button. To cancel this function, press the backlight ON / OFF button.

Note: The BLC feature is effective only in auto exposure mode.

Note: If light behind the subject exists, the subject appears dark. In this case, press the backlight ON / OFF button. To cancel this function, press the backlight ON / OFF button.

17.   **Pan/Tilt Reset**

Reset Pan/Tilt self-test.

Shortcut Set:

[*]+[#]+[1]: Display OSD menu in English

[*]+[#]+[3]: Display OSD menu in Chinese

[*]+[#]+[5]: Save OSD

[*]+[#]+[6]: Quickly recover the default settings

[*]+[#]+[8]: Show the camera version

[*]+[#]+[9]: Quickly set mount mode (flip/normal)

Command List

The camera uses the VISCA/Pelco-D/Pelco-P serial standard.

If you need ISCA/Pelco-D/Pelco-P protocol command list detail, please contact ClearOne Technical Support.

Menu Settings

Press the [MENU] button to display the main menu. Use the arrow buttons to select the item to be set.

Press the [HOME] button to enter a sub-menu.

```
                      MENU
              ►  Exposure
                 Color
                 Image
                 P/T/Z
                 Noise Reduction
                 Setup
                 Communication Setup
                 Restore Default


                 [Home] Enter
                 [Menu] Exit
```

EXPOSURE

Select Exposure from the main menu and press the [HOME] button.

The EXPOSURE menu appears.

The table on the following page provides information about Exposure settings.

```
                 EXPOSURE
  ► Mode              Auto
    ExpCompMode       Off
    Backlight         Off
    Gain Limit        2
    Anti-Flicker      60Hz
    Meter             Average
    DRC               2
      ▲▼ Select Item
      ◄►Change Value
    [Menu] Back
```

Setting	Description	Options		Effective only when the exposure mode is set to...
Mode		• Auto	• AAE	
		• Manual	• Bright	
		• SAE		
ExpCompMode	Exposure compensation mode	• On		Auto
		• Off		
ExpComp	Exposure Compensation value	-7 ~ 7		NA Only when ExpCompMode is on.
Gain Limit	Maximum gain limit	0 ~ 15		Auto/AAE/Bright.
Backlight	Set the backlight compensation	• On		Auto.
		• Off		
DRC	DRC strength	0 ~ 8		NA
Bright	Intensity control	00~17		Bright.
Anti-Flicker	Anti-flicker	• Off	• 60 Hz	Auto/Bright.
		• 50 Hz		
Meter		• Average	• Bottom	NA
		• Center	• Top	
Iris	Aperture value	• F1.8	• F5.6	Manual/AAE
		• F2.0	• F6.8	
		• F2.4	• F8.0	
		• F2.8	• F9.6	
		• F3.4	• F11.0	
		• F4.0	• Close	
		• F4.8		
Shutter	Shutter value	• 1/30	• 1/725	Manual/SAE
		• 1/60	• 1/1000	
		• 1/90	• 1/1500	
		• 1/100	• 1/2000	
		• 1/125	• 1/3000	
		• 1/180	• 1/4000	
		• 1/250	• 1/6000	
		• 1/350	• 1/10000	
		• 1/500		

COLOR

From the main menu, select Color, then press the [HOME] button.

The system displays the COLOR menu.

```
          COLOR

   ▶ WB Mode          Auto

     RG Tuning        +6

     BG Tuning        0

     Saturation       100%

     Hue              5



     ▲▼ Select Item

     ◀▶ Change Value

   [Menu] Back
```

Setting	Description	Options		Effective only when...
WB-Mode	White balance mode	• Auto • Indoor • Outdoor	• OnePush • Manual	NA
RG	Red gain	0 ~ 255		WB-Mode is set to Manual.
BG	Blue gain	0 ~ 255		WB-Mode is set to Manual.
RG Tuning	Red gain fine-tuning	-10 ~ +10		AWB sens is set at Low.
BG Tuning	Blue gain fine-tuning	-10 ~ +10		AWB sens is set at Low.
Saturation	Saturation	60% ~ 200%		NA
Hue	Chroma adjustment	0 ~ 14		NA

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IMAGE

From the main menu, select Image, then press the [HOME] button.
The system displays the IMAGE menu.

```
             IMAGE

  ▶ Luminance          7

    Contrast           9

    Sharpness          3

    Flip-H             Off

    Flip-V             Off

    B&W-Mode           Off

    Gamma              0.45

    Style              CStyle

         ▲▼ Select Item

         ◀▶Change Value

         [Menu] Back
```

Setting	Description	Options	
Luminance	Brightness adjustment	0 ~ 14	
Contrast	Contrast adjustment	0 ~ 14	
Sharpness	Sharpness adjustment	• Auto • 0 ~ 15	
Flip-H	Image flipped horizontal	• On • Off	
Flip-V	Image flipped vertical	• On • Off	
B&W-Mode:	Image color	• On • Off	
Gamma		• Default • 0.45 • 0.5	• 0.56 • 0.63
Style		• Norm • Clarity	• Bright • CStyle

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P/T/Z

From the main menu, select P/T/Z, then press the [HOME] button. The system displays the P/T/Z menu.

Setting	Description	Options
SpeedByZoom	The depth of field scale switch	• On • Off
AF-Zone	Interested in focusing area	• Top • Bottom • Center
AF-Sense	Automatic focusing sensitivity options	• Low • High • Normal
L/R Set		• STD • REV
Display Info		• On • Off
Image Freeze		• On • Off
Digital Zoom		• 2X • 16X • 4x • Off • 8X
Call Preset Speed		1 - 24

```
                P/T/Z

  ▶ SpeedByZoom          On

     AF Zone             Center

     AF-Sense            High

     L/R Set             STD

     Display Info        On

     Image Freeze        Off

  Digital Zoom        Off

  Call Preset Speed     24

         ▲▼ Select Item

         ◄►Change Value

     [Menu] Back
```

NOISE REDUCTION

From the main menu, select Noise Reduction, then press the [HOME] button.

The system displays the NOISE REDUCTION menu.

Setting	Description	Options	
NR2D-Level	2D noise reduction	• Off • Auto	• 1 - 5
NR3D-Level	3D noise reduction	• Off	• 1 - 8
D-HotPixel	Dynamic bad points	• Off • Auto	• 1 - 5

```
NOISE REDUCTION

  ▶ NR2D-Level    off

     NR3D-Level    3

     D-HotPixel    Off


     ▲▼  Select Item

     ◀▶Change Value

     [Menu] Back
```

SETUP

From the main menu, select Setup, then press the [HOME] button.
The system displays the SETUP menu.

Setting	Description	Options	
Language	Menu language	• EN • Chinese	• Russian
System Frequency		• 50 Hz	• 60 Hz

```
SETUP

  ▶ Language              EN

     System Freq       60HZ

        ▲▼  Select Item

        ◀▶Change Value

     [Menu] Back
```

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COMMUNICATION SETUP

From the main menu, select Setup, then press the [HOME] button.
The system displays the COMMUNICATION SETUP menu.

Setting	Description	Options	
Protocol	Control protocol type	• AUTO • VISCA	• PELCO-D • PELCO-P
P_D_ Address	PELCO-D protocol	0 ~ 254	
P_P_Address	PELCO-P protocol	0 ~ 31	
V_AddrFix	Set whether users can change VISCA address through serial port or keyboard	• On (set to On, useless in 88 30 01 FF Command) • Off	
V_Address	Protocol address decided according to agreement (AUTO, VISCA protocol)	1 ~ 7	
Net Mode	Set the serial port control networking	• Serial • Parallel	
Baudrate	Serial port baud rate	• 2400 • 4800	• 9600

COMMUNICATION SETUP

▶Protocol　　　　　VISCA

　V_Address　　　　1

　V_AddrFix　　　　Off

　Net Mode　　　　Serial

　Baudrate　　　　9600

　　　　▲▼ Select Item

　　　　◄►Change Value
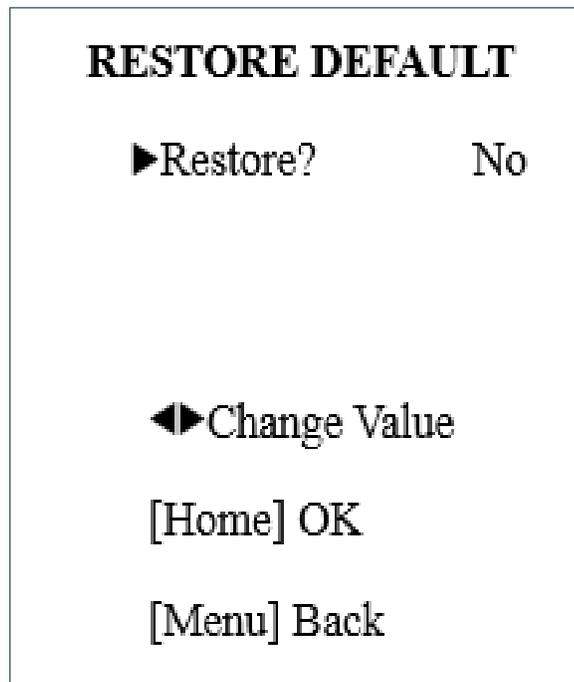
　　[Menu] Back

RESTORE DEFAULT

From the main menu, select Restore Default, then press the [HOME] button.

The system displays the RESTORE DEFAULT menu.

Setting	Description	Options
Restore	Confirm restore factory settings	• Yes • No

Note: Press [HOME] button to confirm.

```
       RESTORE DEFAULT

   ▶Restore?          No




        ◀▶Change Value

     [Home] OK

     [Menu] Back
```

USB 3.0

The camera supports UVC protocol, compatible USB 2.0 & USB 3.0.

USB 3.0 support 1920x1080p/30 max output.

Support OS: Windows 7/8/8.1/10, Linux, Mac OS, etc.

General software are as follows:

  • Windows: AMCAP, VLC, Debut Video Capture, etc.

  • Linux:V412 software driver and VLC media player, etc.

  • Mac OS: FaceTime. iChat, Photo Booth and Debut Video Capture, etc.

Note the following:
  • ClearOne recommends the use of AMCAP version 8.0 in Windows, as its software performance is more stable. When you use the high version of AMCAP in a low configuration system, it shows the stream rendering.
  • The first time the camera is accessed by USB cable, you must install a plug-in.

IP Function

Access Through a Local Area Network (LAN)

1. Setup IP address

The camera's default IP address is 192.168.100.88.

If you forget the camera's IP address or have changed it, to show the camera IP address on screen, on the remote control, press * and # and 4.

To change the camera's IP address:

a. Open the camera's Web interface (see Access Camera's Web Interface later in this Manual for detailed instructions).

b. On Web interface page, find "Network"--->Change IP. Enter a new IP address, then Click "Apply".

c. Restart camera.

2. Access camera's web

Input http://192.168.100.88 into a browser (Internet Explorer and Firefox work best).

Note the following:

- If you have changed the camera's IP address, enter the new address.
- To access the camera with an IP address, you must be on the same network as the camera.

A login window appears. Input the user name and password. The default for both is "admin".

Your login window may not look exactly like this, depending on your operating system and browser):

After login, the Web interface appears, as shown below:

Access Through a Wide Area Network (WAN)

Dynamic DNS setup for accessing the camera

Once you have set a domain name to the camera, and have forwarded the traffic to the correct address and port number, you can use a domain name to access the camera. The access link is: http://hostname: port number.

For example, set up host computer name as: youdomain.f3322.org, camera port number: 554. The access link would be: http://youdomain.f3322.org:554.

VLC stream media player monitoring

VLC media server procedure

1. Open VLC media player, click "Media"->"Open Network Steam", or type "Ctrl + N".

2. Input stream address: rtsp://ipaddress:port number/1 (Main stream).

3. Example: rtsp://192.168.100.88:554/1

4. rtsp://ipaddress:port number/2 (Sub stream).

5. Example: rtsp://192.168.100.88:554/2

Note: The default RTSP port number is 554.
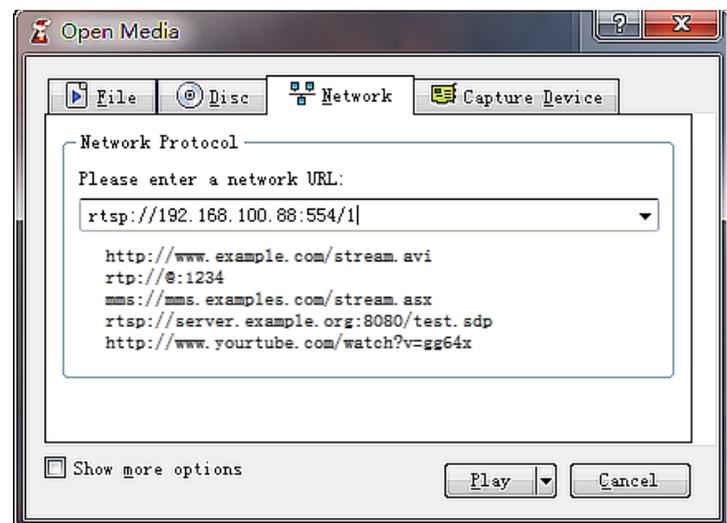
# IP Camera Parameter Setup

Homepage

Menu

All pages include two menu bars:

• Real time monitoring: displaying video image

• Parameter setup: with function buttons

Video viewing window

The video viewing window must be the same as video resolution; the bigger the resolution, the bigger the playing area. To show full-screen, double-click the viewing window; to return to initialized size, double-click again.

- Pan-Tilt control: Up, Down, Left, Right, Home button.
- Rate: You can choose vertical speed as 1 - 24, horizontal direction at the rate of 1 - 20. Select corresponding speed and click direction button to realize PTZ speed increase or decrease.
- Zoom In/ Zoom out: for zooming in or zooming out. Focus In/ Focus Out: Focusing on distant objects or Focusing on close objects.
- Set/Call: After you have set PTZ to a desired position, you can save that configuration as a preset for later use. Click the "Set" button to save a preset. At any point later, you can click the "Call" button to call this preset.
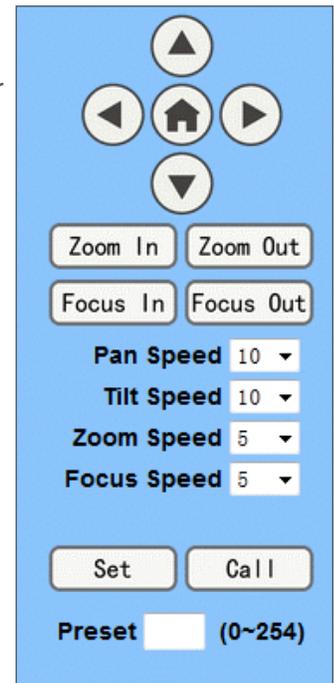
Media

Select "Video".

- Video format

  Supports 50 HZ (PAL) and 60 HZ (NTSC), and Dial priority.

- Encode Protocol

  Supports MJPEG, H.264 and H.265.

- Encode Level

  Supports baseline, main profile, and high profile.

- Resolution

  Main bit rate supports 1920x1080, 1280x720 and 1024x576.

  Minor bit rate supports 720x480, 720x576 and 320x240.

  The higher the resolution, the clearer the image, but this uses more network bandwidth.

- Bit Rate

  You can assign bit rate/stream. Generally, the higher the bit rate, the clearer the image. The bit allocation must combine with network bandwidth. If the network bandwidth is too low and the allocated bit rate is too high, the video quality suffers.

- Frame rate

  You can specify the frame rate. Generally speaking, the higher the frame rate, the smoother the image; the lower the frame rate, the choppier the image.

- I key frame interval

  Set the interval between 2 and 150. The larger the interval, smaller the response from the viewing window.

- Bit Rate control

  Options:

  Constant bit rate: video coder codes per preset speed

  Variable bit rate: video coder adjusts the speed to gain the best image quality
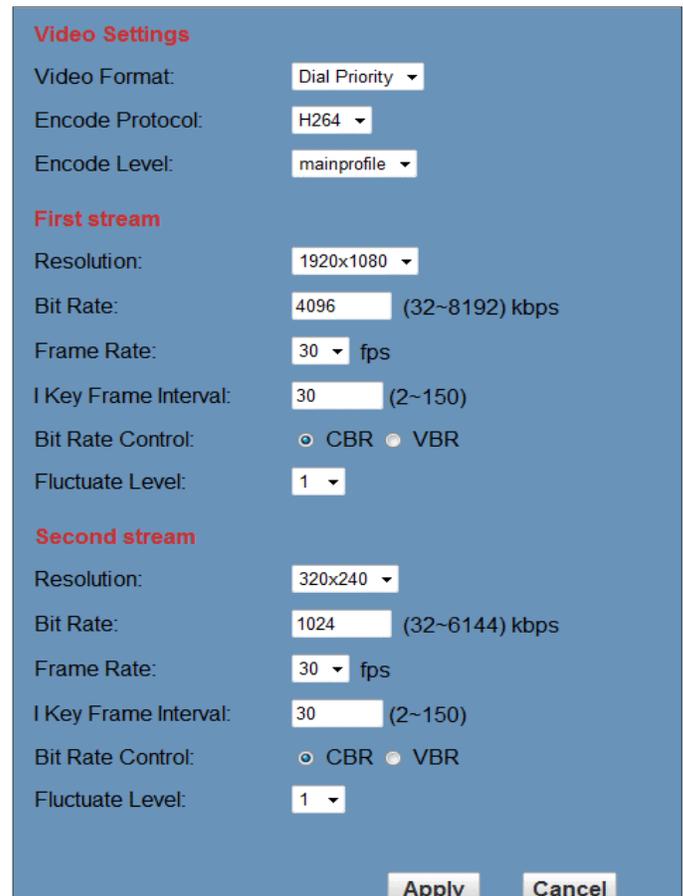
- Fluctuate level

  Restrain the fluctuation magnitude of variable rate. Options: 1 - 6

Image Setup

Click "Image."

- **Brightness**

  Image brightness, 0 -14, slider control, on the right shows the corresponding numerical value. The default value is 7.

- **Saturation**

  Saturation 0 - 14, slider control, on the right shows the corresponding numerical value. The default value is 4.

- **Contrast**

  Contrast 0 - 14, slider control, on the right shows the corresponding numerical value. The default value is 8.

- **Sharpness**

  Sharpness 0 - 15, slider control, on the right shows the corresponding numerical value. The default value is 3.

- **Hue**

  Hue 0 - 14, slider control, on the right shows the corresponding numerical value. The default value is 6.

- **Flip & Mirror**

  Select Flip to turn the image upside down; select Mirror to flip the image horizontally. The default value for both is not selected.

- **Apply, Cancel, and Default Buttons**

  After you adjust any parameters, to save the settings click "Apply"; to cancel the parameter adjustments, click "Cancel". To revert to the default value, click "Default".

Audio Setup

Click "Audio."

- **Audio Type**

  Option: AAC.

- **Sample rate**

  Options: 44.1K and 48K.

- **Bit rate**

  Options: 96K, 128K, 256K.

- **Input Type**

  Option: line in only

- **Input Vol L and Input Vol R**

  The gain of the Line in.

- **Apply and Cancel buttons**

  To save changes, click "Apply", or to discard the changes click "Cancel".
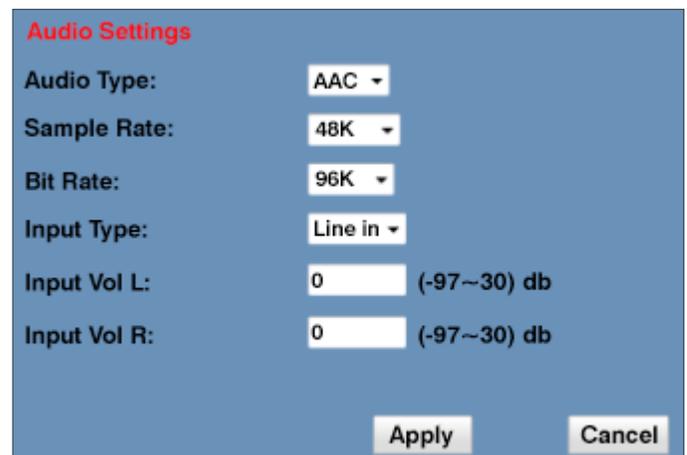
System Setting

Click "System."

- Work Mode

  Work Mode RTSP

- Reboot

  Click the "Reboot" button to restart the system.

- User and password

  You can modify the password (letters and numbers only)

- Apply / Cancel

  Modify the password, then to change the password, click "Apply", or to cancel the change click "Cancel".
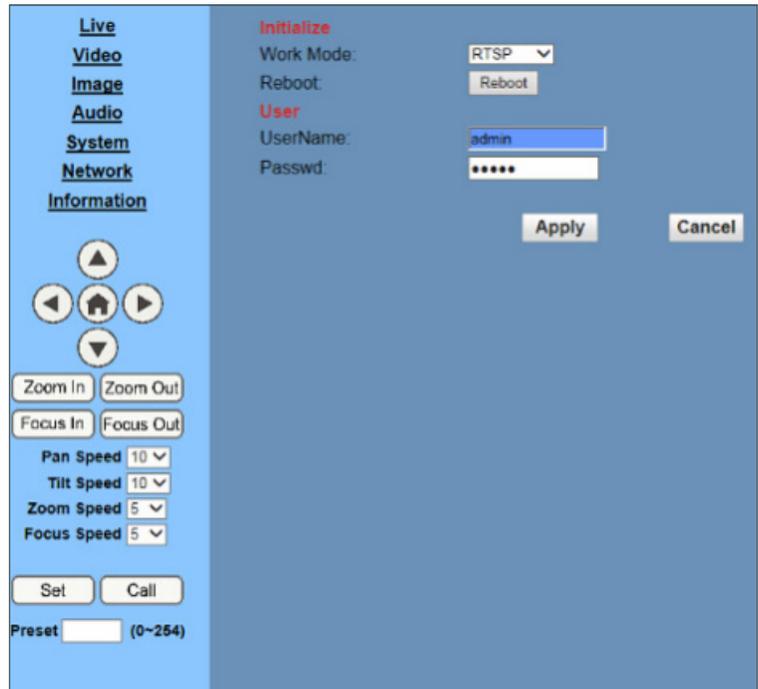
Network Setting

Click "System."

- LAN Settings

  The default IP address is 192.168.100.88. The MAC address can be modified.

- **Port Settings**

  HTTP Port, Default port number: 80

  RTSP Port, Supports the RTSP protocol. Default port number: 554.

  PTZ Port, Supports PTZ protocol. Default port number: 5678.

- **Control Protocol Setting**

  Camera control communication protocols include Visca address, Pelco-D address, and Pelco-P address.

- **RTMP Setting**

  When configuring the camera stream, can set up two streams, in the two stream selection control code stream of "On", "Off", "Video", "Audio", etc.

- **RTSP Setting**

  Setting network camera RTSP protocol of "On", "Off".

- **Multicast Setting**

  Multicast switch, multicast address (default address 224.1.2.3) and port (default port number: 6688) can be set.

- **Apply / Cancel**

  Modify network parameters then click "Apply" to save the changes, or click "Cancel" to discard the changes.
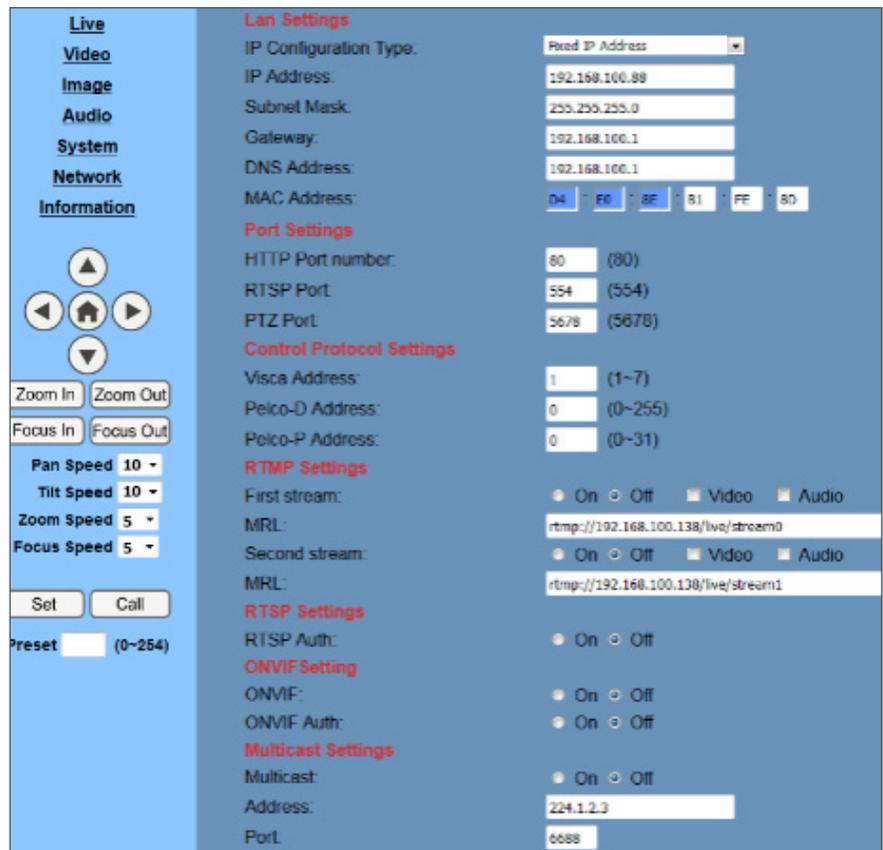
Device Information

Click "Information", the current device information as shown.
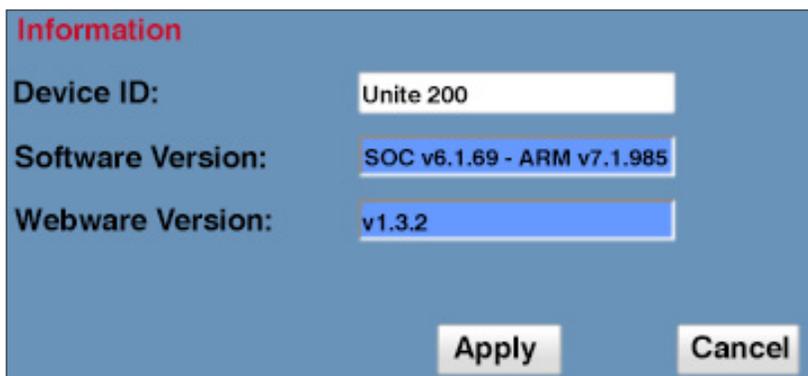
Serial Command Control

In default working mode, the camera can be controlled via RS-232 or RS-485 (half-duplex mode).

The parameters are as follows:

- Baud rate: 2400/4800/9600 bits
- Start bit: 1 bit
- Data bit: 8 bits
- Stop bit: 1bit
- Parity bit: none

The process of initialization is complete when the camera pan-tilt rotates to the maximum position of top right and then returns to the center.

Note: If the position preset 0 has been stored, the position preset 0 is called up after initialization, and users can control the camera with commands in the following command list.

Control Interface Definition

Pin Number	Function
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	RS485-
7	IR OUT
8	RS485+

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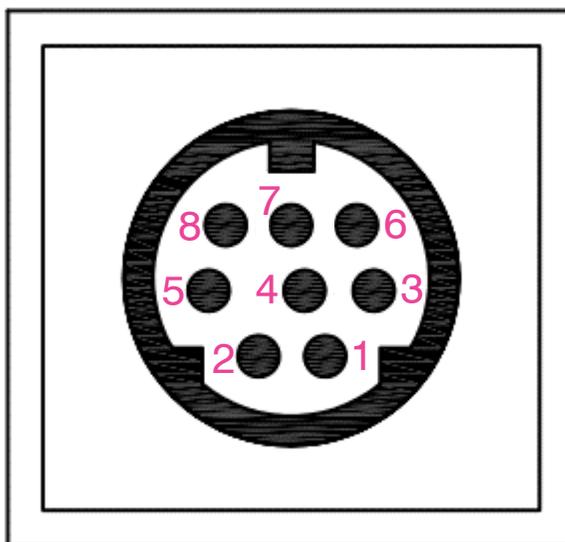
Camera	DB - 9 Serial
1. DTR	1. CD
2. DSR	2. RXD
3. TXD	3. TXD
4. GND	4. DTR
5. RXD	5. GND
6. RS485-	6. DSR
7. IR OUT	7. RTS
8. RS485+	8. CTS
	9. RI

Camera In	Camera Out
1. DTR	1. DTR
2. DSR	2. DSR
3. TXD	3. TXD
4. GND	4. GND
5. RXD	5. RXD
6. RS485-	6. GND
7. IR OUT	7. NC
8. RS485+	8. NC

Network Configuration

With VISCA

VISCA Controller   VISCA Equipment

With Pelco

Pelco-D/P Controller   Pelco-D/P Equipment

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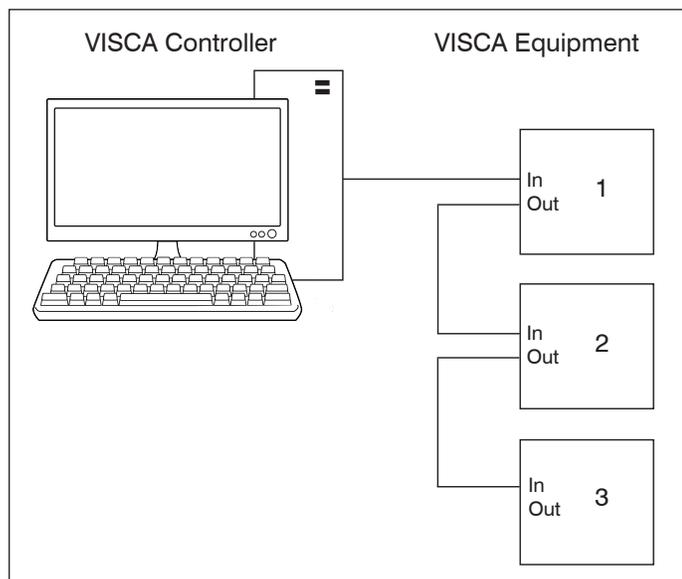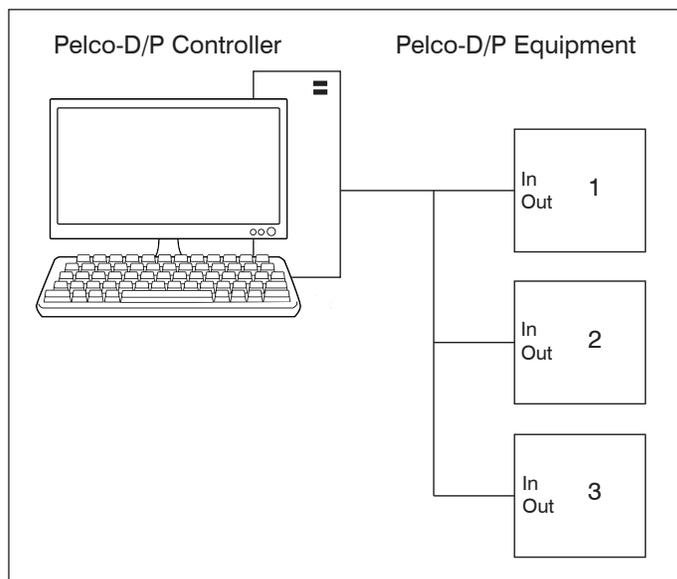
Maintenance and Troubleshooting

Camera Maintenance

- If you choose not to use your camera for a long time, turn off the power switch and disconnect AC power cord of AC adapter to the outlet.

- Use soft cloth to clean the camera cover.

- Use the soft dry cloth to clean the lens. If the camera is very dirty, clean it with diluted neutral detergent. Do not use any type of solvents, which may damage the surface.

Unqualified Application

- Do not shoot extremely bright objects for a long period of time, such as sunlight, strong light sources, etc.

- Do not operate in unstable lighting conditions, as image may flicker.

Troubleshooting

Trouble	Solution
No Image	• Check whether the power cord is connected, voltage is OK, POWER lamp is lit. • Check whether the camera can self-test after start up. • Check the video cable to make sure it is connected correctly.
Abnormal display of image	• Check the video cable to make sure it is connected correctly.
Image dithering even at widest zoom position	• Check whether the camera is fixed correctly. • Make sure there is nothing nearby causing vibrations.
IE browser does not show video image	• When the camera is accessed the first time by Internet Explorer (or another web browser), you must install the plug-in. • The first time you use the camera by internet (only for new user), you must install the player software (VLC). Please go to VLC website http://www.videolan.org/vlc and Install VLC (player software). • After installation, log in again. You should see the video stream on the home page of the Web interface.
Unable to access IP Camera by browser	• To rule out cable failure or network failure caused by a virus, make sure your computer is connected to the network, Make sure you can ping the computer from another computer and that computer can ping other computers on the local network or the gateway. • Disconnect the camera from the network, ensure that the camera and PC are connected (either directly, with a crossover cable, or with a router or switch), and then follow the directions earlier in this guide to reset the IP address. • Check the server's IP address and subnet mask and gateway address. • Check for MAC address conflicts. • Make sure the HTTP port is not occupied by other devices, or that routing rules are not sending the traffic to a different address or port.
IP address modified incorrectly or forgot Web interface password	• You can recover access to the camera with use of the IR remote control. Press "[*] + [#] + [Manual]" to restore the default values (default IP: 192.168.100.88, default username: admin, default password: admin).
The IR remote control cannot control the camera	• Change the remote control battery. • Check the camera working mode. • Check that the IR address of the Remote Commander is set correctly.

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Trouble	Solution
Serial communication cannot control the camera	• Check the camera working mode. • Check that the control cable is connected correctly.
No sound	• Check the audio connection to the host PC • Check IP Camera audio parameter settings, and check if intercepting function is on .