

Prestel HD-PTZ9IP

PTZ Camera

USER MANUAL



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Operating Instructions

Thank you for purchasing our product. If there are any questions, please contact the authorized dealer.

Before operating the unit, please read this manual thoroughly and retain it for future reference.

IMPORTANT INFORMATION

Legal Notice

Attention:

To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters). Password login does not apply to some models that do not need password login.

The contents of this document are subject to change without prior notice. Updates will be added to the new version of this manual. We will improve or update the products or procedures described in the manual.

Best effort has been made to verify the integrity and correctness of the contents in this document, but no statement, information, or recommendation in this manual shall constitute formal guarantee of any kind, expressed or implied. We shall not be held responsible for any technical or typographical errors in this manual.

The product appearance shown in this manual is for reference only and may be different from the actual appearance of your device.




This manual is a guide for multiple product models and so it is not intended for any specific product.

In this manual, the illustrations of displayed interface, parameters displayed, drawings and value ranges may vary with models. Please see the actual product for details.

Due to uncertainties such as physical environment, discrepancy may exist between the actual values and reference values provided in this manual.

Use of this document and the subsequent results shall be entirely on the user's own responsibility.

Symbols

Symbol	Description
 WARNING!	Contains important safety instructions and indicates situations that may cause bodily injury.
 CAUTION!	User must be careful and improper operations may cause damage or malfunction of product.
 NOTE!	Indicates useful or supplemental information about the use of product.

Safety Information



WARNING!

Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.

Warnings:

- If the product does not work properly, please contact your dealer. Never attempt to disassemble the camera yourself. (We will not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- This installation should be made by a qualified service person and should conform to all the local codes.
- When shipping, the camera should be packed in its original packaging.
- Make sure the power supply voltage is correct before using the camera.

- Ⓜ Do not drop the camera or subject it to physical shock.
- Ⓜ Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.
- Ⓜ Do not aim the camera lens at the strong light such as sun or incandescent lamp. The strong light can cause fatal damage to the camera.

Maintenance Precautions:

- Ⓜ If there is dust on the front glass surface, remove the dust gently using an oil-free brush or a rubber dust blowing ball.
- Ⓜ If there is grease or a dust stain on the front glass surface, clean the glass surface gently from the center outward using anti-static gloves or an oil-free cloth. If the grease or the stain still cannot be removed, use anti-static gloves or an oil-free cloth dipped with detergent and clean the glass surface gently until it is removed.
- Ⓜ Do not use organic solvents, such as benzene or ethanol when cleaning the front glass surface.

Regulatory Compliance

FCC Part 15

This equipment has been tested and found to comply with the limits for digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.



LVD/EMC Directive

This product complies with the European Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.



WEEE Directive–2002/96/EC

The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.



WHAT'S IN THE BOX



Camera x 1



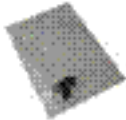
Power Adaptor and Power cord x 1



IR Remote Controller x 1
(AA Battery Required)



Control Port Connector x 1



Bag of Mounting Screws x 1



Information Card/User Manual x 1

Accessories (Optional)



Wall Mount



Ceiling Mount

Overview

Camera Version

This user guide is suitable for the following models:

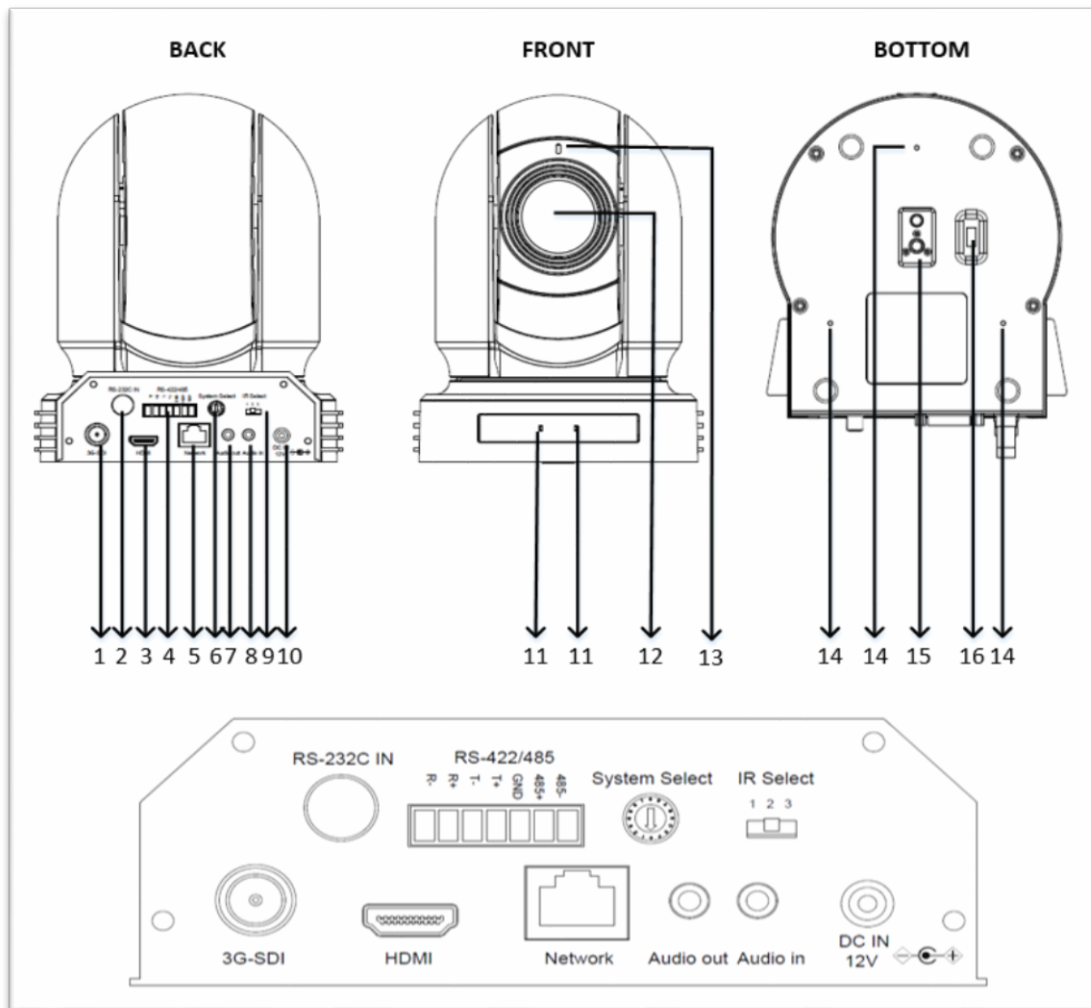
- HD-PTZ9IP

Features

- ☐ Resolution: 1080P,720P
- ☐ Zoom: Optical 20X, 30X
- ☐ Video Output: HDMI, HD-SDI, IP
- ☐ The camera can simultaneously stream IP video output and SDI video output and HDMI video output.
- ☐ Supports Audio input, Audio output
- ☐ Power: DC 12V
- ± 350 -degree continuous pan, ± 120 -degree continuous tilt
- ☐ 128 presets, Speed up to 100 degrees/sec
- ☐ Standard mounting and ceiling mounting with E-Flip function
- ☐ IR remote control, RS-232 control, RS-422/485 control
- ☐ You can use the infrared remote controller to set the camera and also to select panning, tilting and zooming from the setting menu.
- ☐ You can store up to 6 presets of camera direction and camera parameters into the camera. (Up to 6 presets on remote controller or 128 presets via protocol programming.)

Camera Diagrams

Camera



- 1. SDI Port**
3G-SDI
- 2. RS-232 Control Port**
The control cable is not included. The RS-232 cable usually be provided by controller.
- 3. HDMI Port**
HDMI 1.4
- 4. RS-422 Control Port**
Control connector is provided.
- 5. IP Network RJ45 Port**
For IP video output
- 6. System Selector**
For video format selection
- 7. Audio Output**
- 8. Audio Input**
- 9. IR Remote ID**
Camera ID for IR remote controller
- 10. 12V DC Power Port**
Connect the supplied AC power adaptor and cord.
- 11. IR Remote Controller Sensors**
These are sensors to receive commands from infrared remote controller.
- 12. Lens**
This is a 20X/30X magnification optical zoom lens.
- 13. Power LED Indicator**
Turns green when the camera is connected to power outlet. When the power is turned on, it takes about 15 to 30 seconds to display the image after LED turns on.

14. Fix mounting holes

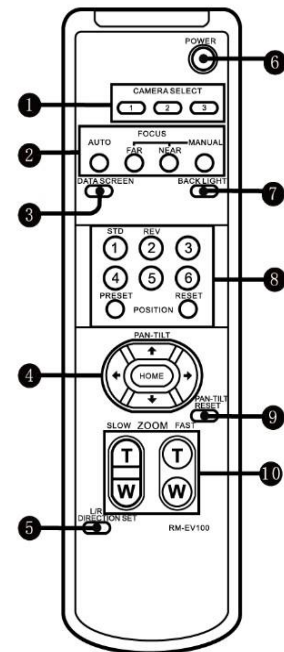
For original wall/ceiling mount bracket

15. Tripod mounting holes

16. Bottom DIP Switch

Remote Controller

1. CAMERA SELECT
 - Auto
 - Far
 - Near
 - Manual
2. FOCUS
 - Auto
 - Far
 - Near
 - Manual
3. DATA SCREEN
 - On screen menu display ON/OFF
4. PAN-TILT
 - Pan and Tilt direction control
 - HOME: Home position, Resolution reset
5. L/R DIRECTION SET
 - Left and right orientation setting
6. POWER
7. BACK LIGHT
8. PRESET POSITION
9. PAN-TILT RESET
10. ZOOM IN/OUT
 - Slow T
 - Slow W
 - Fast T
 - Fast W

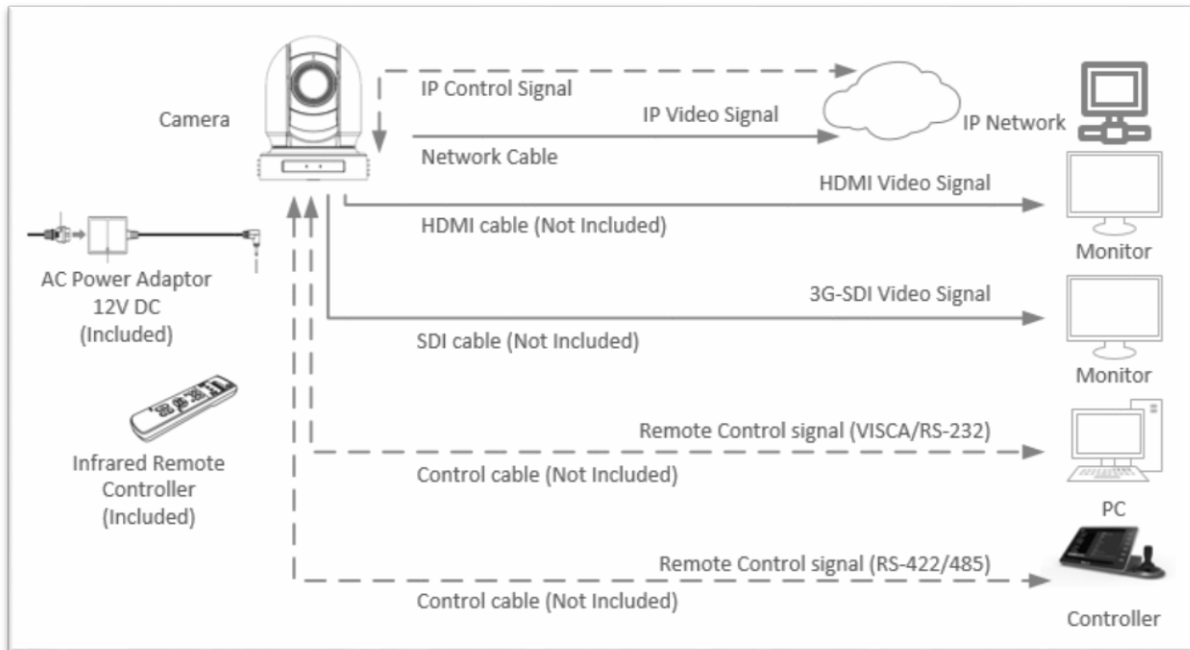


System Configuration

Connection

When the camera is connected to a computer and joystick keyboard with a VISCA cable (cross type, RS-232), you can operate the camera with the computer and the joystick keyboard.

When the camera is connected to a joystick keyboard a control cable (cross type, RS-422/485), you can operate the camera's pan, tilt, zoom with the joystick keyboard.



In this connection configuration, HDMI cable, SDI video cable, data cable, Network cable is required. To obtain these third party components or accessories, consult the dealer where you bought your camera.

Notes

- ② Use only the AC power adaptor (JEITA type4) supplied with the unit. Do not use any other AC power adaptor.
- ② Polarity of the plug
- You have to set the video format of the signal to output from the camera. For detailed information on how to set the video format, see "SYSTEM SELECT switch" on page 19.



Obtain Video Signal

The camera can simultaneously have SDI video output and HDMI video output.

The camera can simultaneously stream IP video output and SDI video output and HDMI video output on video format 1080P25 and 1080P30.

HDMI HD Video signal

1. Connect the camera to a HD monitor/TV using HDMI cable.
2. Turn on the camera, video will display on the monitor after running initializing.
3. Information of the camera initial setting status will display for 5 seconds.
4. You can set the video format of the camera to the one you want to display. (How to set video format, see page 20)

SDI Video Signal

The camera can simultaneously stream SDI video output with HDMI video output.

1. Connect SDI cable in between the camera your SDI Device/display.
2. You now have SDI video output.
3. SDI video only supports 1080P.

IP Video Signal

The camera can simultaneously stream IP video output and SDI video output and HDMI video output on video format 1080P25 and 1080P30.

1. Connect the camera to the network using Cat5/Cat6 network cable.
2. Set camera video format to 1080P25 or 1080P30. (Refer to Page 16, 20)
3. PELCO address and Baud Rate setting on the camera has to be as same as the setting on camera IP WEB interface.
4. To obtain IP video and configure IP video, please refer to Network Camera User Manual included.

Camera Initial setting status Information

Information of the camera initial setting status will display for 5 seconds.

1. Camera PELCO ID for RS-485 control
2. Camera ID for IR Remote Controller
3. IR remote control signal receive current setting
4. Baud Rate current setting
5. Control COMM Port current setting
6. Video format current setting
7. HDMI current setting
8. Model number
9. Firmware version

PELCO ID:	001
IR ID:	01
IR-RECEIVE:	ON
BAUD RATE:	9600
COMM TYPE:	232
VIDEO FMT:	1080P30
HDMI OUT:	HDMI
MODEL TYPE:	-----
SV:	V0B0400S090401A01

Camera Control Methods and System Configurations

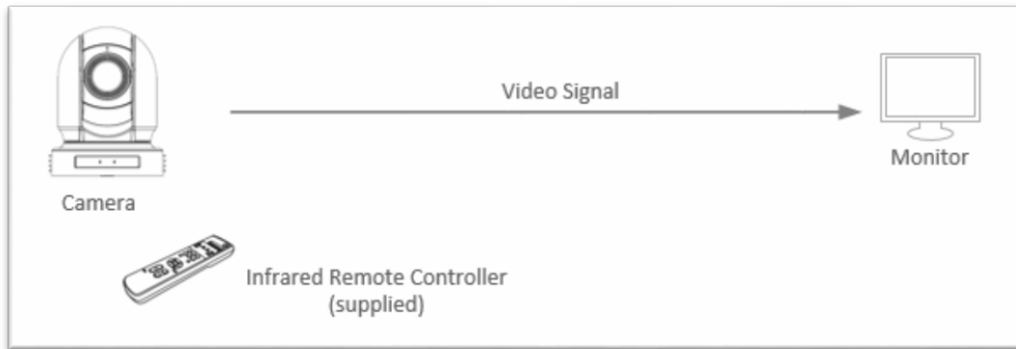
This unit has multiple ways of controlling the camera and various system configuration capabilities using optional products. This section describes ways of controlling and typical system examples with the required components and usage of each system.

1. Use the Infrared Remote Controller
2. Use RS-232 (VISCA)
3. Use RS-422/485 (PELCO P/D)
4. IP Control (See Network Camera User Manual)

Use the Infrared Remote Controller

To operate the camera from a short distance.

System Configuration A



For IR remote control details, refer to Operation Using the Infrared Remote Controller, see page 21.

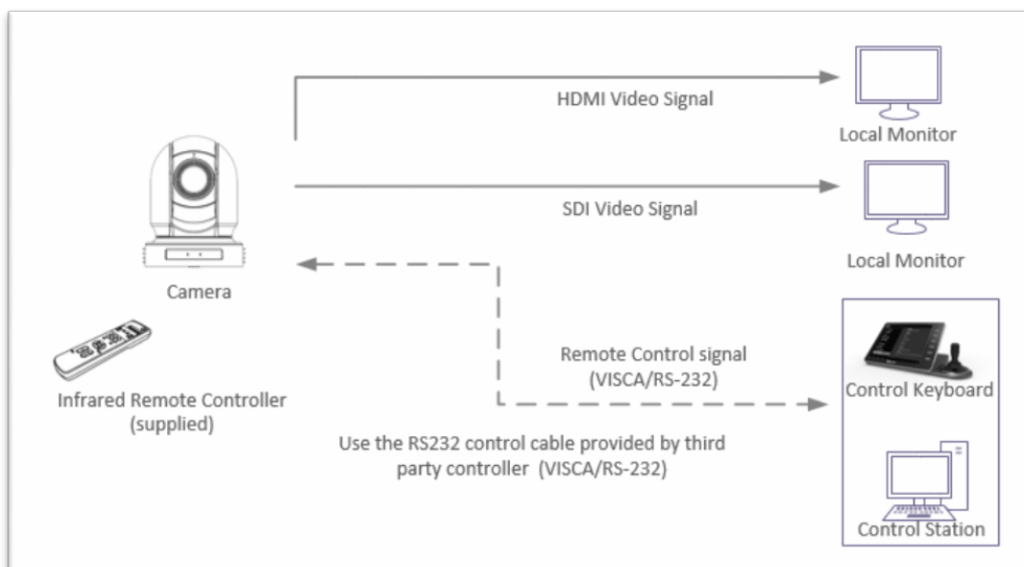
Use RS-232 (VISCA)

You can use RS-232 port to connect to optional controllers, such as joystick control keyboard, control PC station, to operate the camera.

To perform pan/tilt and zoom operations using the joystick of the control keyboard, and to perform the Preset operation using the control buttons.

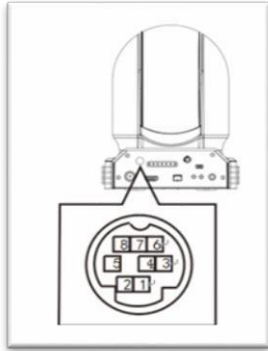
An application software that supports this unit is needed if you use PC station.

System Configuration B

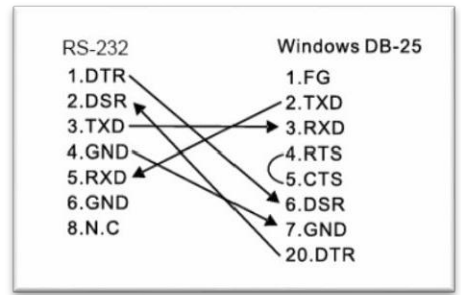
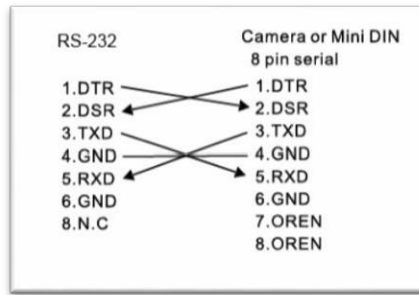
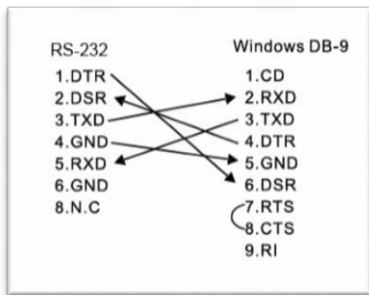


RS232 Connection

1. Set RS232 control method on Bottom Dip Switch. (See page 15).
2. Set Baud Rate on Bottom Dip Switch to the same as Baud Rate setting on the keyboard you are using. (See page 16).
3. Reboot the camera by turning it Off/On after the Bottom Dip Switch has been set up correctly.
4. Does not need setting camera address in way of RS232 controlling.
5. Use the RS232 control connection cable provided by third party controller (VISCA). The controller must be VISCA compatible.
6. Camera does not support Daisy Chain in RS232 control mode.
7. You can make RS232 connection cable if you have the following applications:



NO.	
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
8	N.C



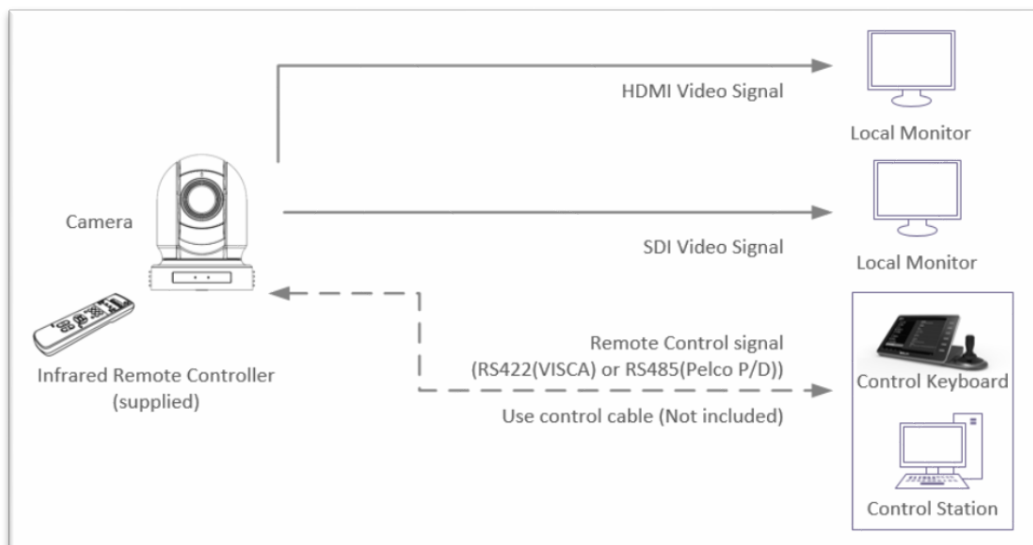
Use RS-422(VISCA) / RS485 (PELCO P/D)

You can use RS-422/485 port connect to optional controllers, such as joystick control keyboard, control PC station, to operate the camera.

To perform pan/tilt and zoom operations using the joystick of the control keyboard, and to perform the Preset operation using the control buttons.

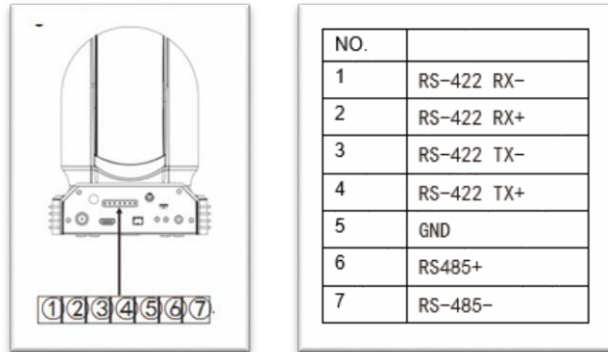
An application software that supports this unit is needed if you use PC station.

System Configuration C

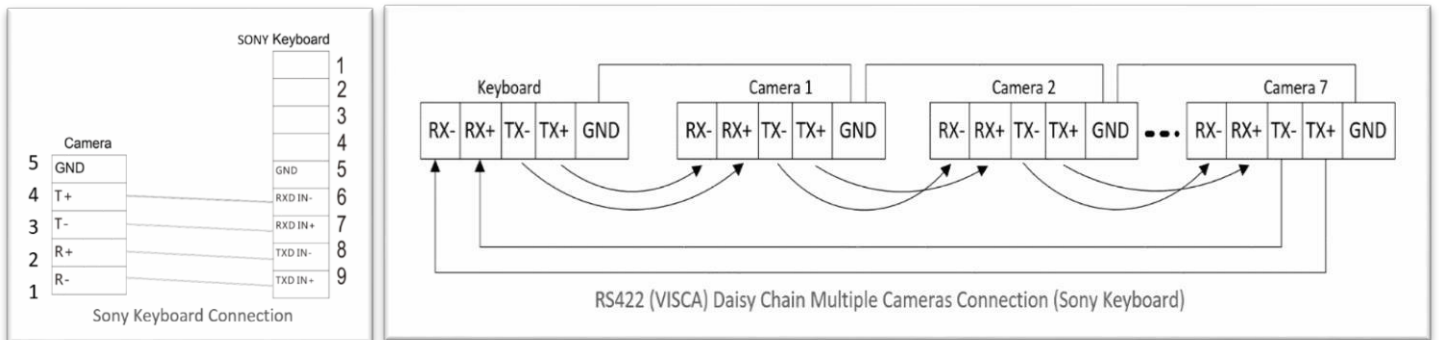


RS422 (VISCA) connection

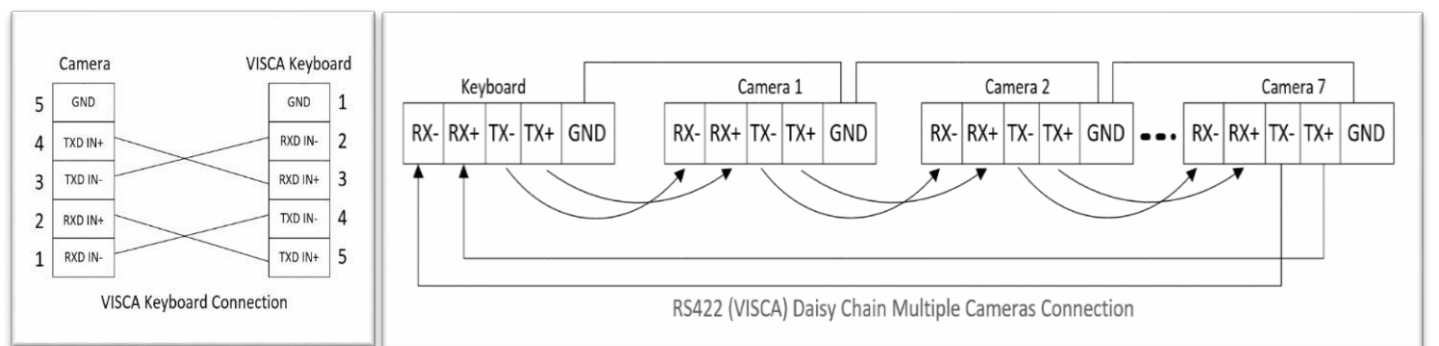
1. Set RS422 control method on Bottom Dip Switch (See page 15).
2. Set Baud Rate on Bottom Dip Switch to the same as Baud Rate setting on the keyboard you are using. (See page 16).
3. Reboot the camera by turning it Off/On after the Bottom Dip Switch has been set up correctly.
4. Does not need setting camera address in way of RS422 (VISCA) controlling.
5. Use the RS422 control cable provided by third party controller. The controller must be VISCA compatible.
6. Camera supports Daisy Chain connection up to 7 cameras.
7. The connection of SONY keyboard is different than other VISCA (None-Sony) keyboard.



SONY Keyboard RS422 Connection

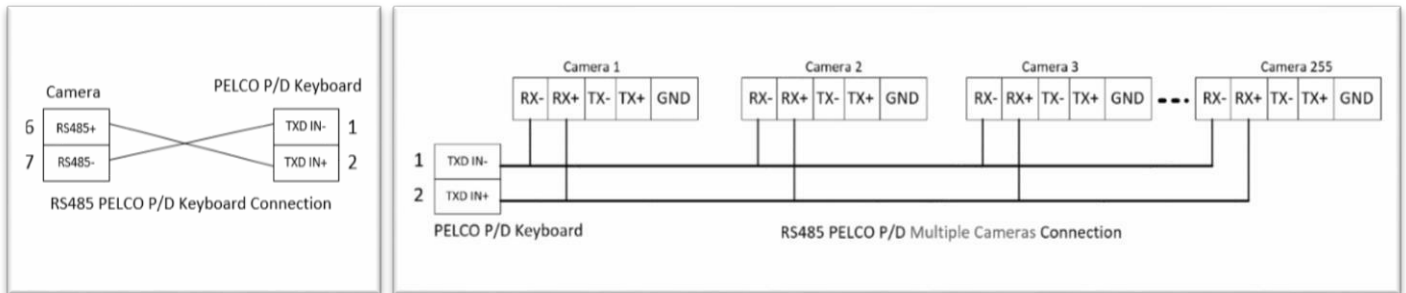


VISCA (None-Sony) Keyboard RS422 Connection



PELCO P/D Keyboard RS485 Connection

1. Set RS422 control method on Bottom Dip Switch (See page 15).
2. Set Baud Rate on Bottom Dip Switch to the same as Baud Rate setting on the keyboard you are using. (See page 16).
3. Reboot the camera by turning it Off/On after the Bottom Dip Switch has been set up correctly.
4. Use PELCO P/D compatible keyboard.
5. Use preset 95# on the keyboard to bring up/exit camera OSD menu.
6. Use joystick and Button “OPEN” or “CLOSE” to navigate OSD menu.
7. To operate keyboard, please refer to the user manual of the keyboard you are using.



Note

For RS-232 VISCA control, this unit does not support daisy chain connection for using multiple cameras. For control details, refer to Operating Instructions of control keyboard/station software.

- You need to match the communication speed between the camera and the joystick controller.
- You cannot use the RS-232 connections when using the RS422/485 connection.

Operating Multiple Cameras Using RS-422/485

- Using RS-422 (VISCA), you can connect up to 7 cameras.
- Using RS-485 (PELCO), you can connect up to 255 cameras.
- Using RS-485 (PELCO), all camera addresses must be set up before the connection. You can set the camera address by operating OSD menu, or by setting the Dip Switch on the bottom of the camera.
- In this case, you can use multiple control keyboards.
- The joystick of the remote keyboard controller allows comfortable pan/tilt and zoom operations.

DIP SWITCH SETTINGS

The Dip switches are for setting the camera configuration for following items:

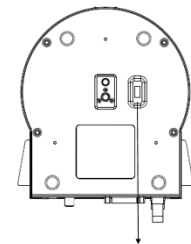
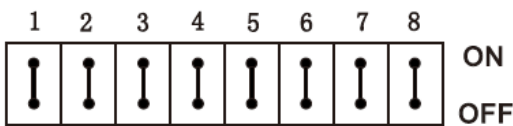
1. Camera ID Address for RS-485 PELCO protocol
2. Video output / Video color space
3. RS-232 / RS-422/485 selection
4. RS-232 / RS-422/485 baud rate
5. Video resolutions selection
6. IR remote controller ID

Setting of the BOTTOM DIP Switches

Turn off power to the camera before changing the DIP switch settings.
Power on the camera to have the new Dip Switch setting activated.

From the above list, No.1 Camera ID address and NO.2 Video resolution settings can be set in camera OSD menu as well. The camera takes either the way of OSD menu setting or the way of bottom DIP switch setting. They override each other. After the camera is turned on, the camera takes the last setting before it is turned on, either set through the OSD or bottom DIP switch.

The Bottom DIP Switch Settings



Bottom Dip Switch

- Bit 1~3: Camera Address setting for PELCO protocol
- Bit 4: Video Output/Video Color Space
- Bit 5: Reserve
- Bit 6: RS-232/RS-422
- Bit 7~8: RS-232/RS-422 Baud Rate

1. Camera Address setting for PELCO protocol

B1	B2	B3	Address
ON	OFF	OFF	1
OFF	ON	OFF	2
ON	ON	OFF	3
OFF	OFF	ON	4
ON	OFF	ON	5
OFF	ON	ON	6
ON	ON	ON	7

2. Video Output/Video Color Space

When using HDMI output to display on HDMI device, set the Dip switch B4 to OFF.

When using HDMI to DVI convertor to have DVI video output, set the Dip switch B4 to ON.

B4	Color Space Setting
OFF	HDMI YUV
ON	DVI-D RGB

3. RS-232 / RS-422 Setting

B6	RS-232 / RS-422
OFF	RS-232
ON	RS-422

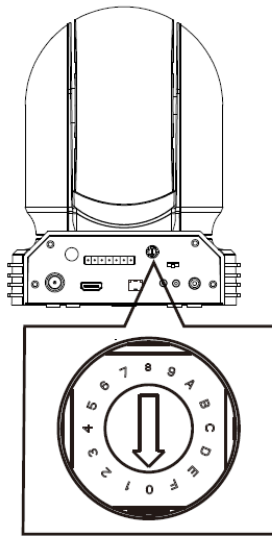
4. RS-232 / RS-422 Baud Rate Setting

B7	B8	RS-232 / RS-422 Baud Rate Setting
OFF	OFF	2400 bps
ON	OFF	4800 bps
OFF	ON	9600 bps
ON	ON	38400 bps

Setting of the back panel Rotate DIP Switches

The Rotate Dip Switch is for setting video format.

Use small screw driver to turn the switch, the arrow points to the Numbers or the Letters. The video format that the Number or Letter stands for refer to the video format as the chart following:



Numbers & Letters	Video Resolution
0	1080i59.94
1	1080P29.97
2	720P59.94
3	1080P59.94
4	720P29.97
5	1080I60
6	1080P30
7	1080P60
8	1080I50
9	1080P25
A	720P50
B	1080P50
C	720P25
D	720P30
E	720P60
F	-

IR Remote Controller ID Setting

Set the IR SELECT switch on the back panel of the camera to 1, 2 or 3, which is the camera ID number that you want to operate on the Remote Controller.



Adjusting and Setting with Menus

About On-Screen Menus

You can change various settings, such as shooting conditions and system setup of the camera, while observing menus displayed on a connected computer screen.

This section explains how to read the on-screen menus before starting menu operations.

The menu parameters may vary according to the different product model numbers.

For a complete configurations menu, see “Menu Configuration” (page 24).

Note

You cannot perform pan/tilt operations while the menu is displayed.

Main Menu

To display the main menu, press the DATA SCREEN button on the supplied infrared remote controller.

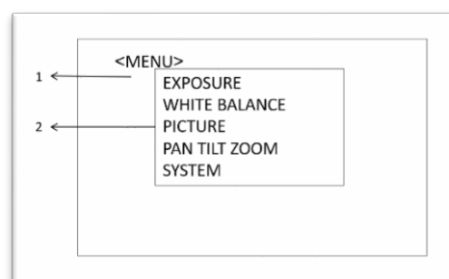
1. Selected Items

Selects a setting menu.

The selected item is shown by the cursor. The cursor moves up or down by pressing the “↑, ↓” button on the infrared remote controller.

2. Menu Items

To display a setting menu, select one using the “↑, ↓” button on the infrared remote controller and press the HOME button on the infrared remote controller.



Setting Menu

The setting menu selected on the main menu is displayed.

1. Setting Menu

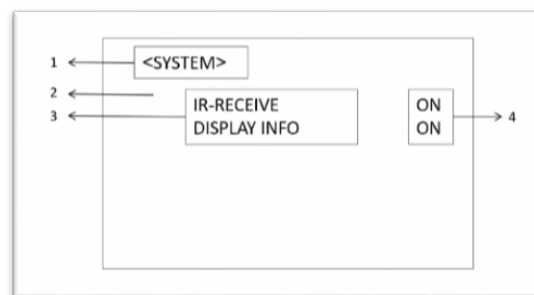
The name of the setting menu currently selected is displayed here.

2. Selected Item

Selects a setting item.

The selected item is shown by the cursor.

Move the cursor up or down by pressing the “↑, ↓” button on the infrared remote controller.



3. Setting Items

The setting items for this setting menu are displayed. Select the setting item using the “↑, ↓” button on the infrared remote controller.

4. Set Value

The currently set values are displayed.

To change a set value, use the “←, →” button on the infrared remote controller.

Note

In some product models, only use “←” button on the infrared remote controller to change the value. To confirm the value, you can use either “→” button or HOME button.

Control Button

You can select the item by pressing “↑, ↓, ←, →” and HOME button.

1. You can select a menu item by “↑, ↓” button on the infrared remote controller. The selected item is shown by the cursor (Color change). You can change the value of the item by pressing “←, →” button.

2. You can move to the next layer by pressing the HOME button.

3. You can return to the normal display by pressing the DATASCREEN button.

Note

When you are operating the menu using the infrared remote controller, you cannot set IR- RECEIVE in the SYSTEM menu to OFF. To set IR- RECEIVE to OFF, use the appropriate VISCA command.

EXPOSURE Menu

The EXPOSURE menu is used to set the items related to exposure.

MODE (Exposure Mode)

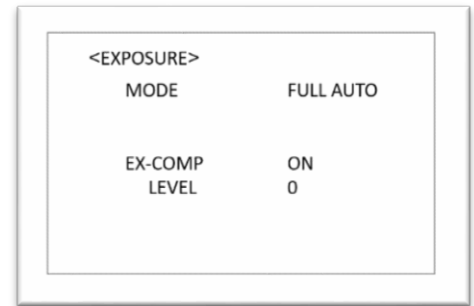
FULL AUTO: The exposure is adjusted automatically using the sensitivity, electronic shutter speed, and iris.

BRIGHT: Adjust the brightness level (LEVEL) manually.

SHUTTER PRI: Shutter Priority mode. The exposure is adjusted automatically using the sensitivity and iris. Adjust the electronic shutter speed (SPEED) manually.

IRIS PRI: Iris Priority mode. The exposure is adjusted automatically using the sensitivity and electronic shutter speed. Adjust the iris (IRIS) manually.

MANUAL: Adjust the sensitivity (GAIN), electronic shutter speed (SPEED) and iris (IRIS) manually.



When you select one from various exposure modes, some of the following setting items that are required for the selected mode appear.

GAIN: Select the gain from the following:

-3, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28 dB

SPEED: Select the electronic shutter speed from the following:

When video format is set to 720P25, 1080P50, 1080i50, 1080P25, 720P50, Speed can be selected from the following:

1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10K.

When video format is set to 720P30, 1080i59.94, 1080P29.97, 720P59.94, 1080P59.94, 1080I60, 1080P30, 1080P60, 720P60, Speed can be selected from the following:

1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10K.

IRIS: Select the iris the following: CLOSE, F14, F11, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.6

LEVEL: Select the brightness level from 0, 5 to 31.

EX-COMP (Exposure Compensation)

When MODE is set to one of FULL AUTO, SHUTTER PRI or IRIS PRI, set this item to ON to enable exposure compensation. When you set EX-COMP to ON, LEVEL appear and you can select the exposure compensation level from the following:

-10.5, -9, -7.5, -6, -4.5, -3, -1.5, 0, +1.5, +3, +4.5, +6, +7.5, +9, +10.5

If you set the level to 0, exposure compensation will be disabled. Level +10.5 is the brightest and -10.5 is the darkest compensation value.

When EX-COMP is set to OFF, exposure compensation does not function.

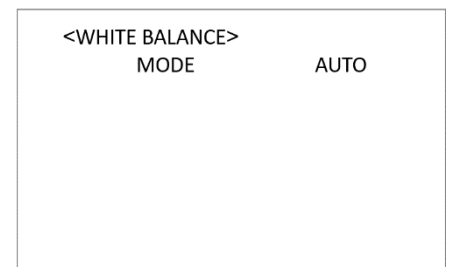
WHITE BALANCE Menu

The WHITE BALANCE menu is used to select the white balance mode.

MODE (white balance mode)

Select the white balance mode from the following: AUTO, IN DOOR, OUT DOOR, OPW (One Push White Balance), ATW (Auto Tracing White Balance), USER.

When you select USER, R. GAIN (red gain) and B. GAIN (blue gain) appear. You can select each item in the range from 0 to 255.



When you select the OPW (One Push White Balance)

Perform the following operations:

1. Place an image of white subject (For example: A piece of white paper) in the center of the screen.
2. Press the HOME button of the infrared remote controller.

The one-push white balance adjustment is activated.

PICTURE Menu

The PICTURE menu is used to set the items related to the picture.

SHARPNESS:

Picture sharpness value ranges from 0 to 15. You can enjoy emphasized edge and high-resolution images.

EFFECT: (Picture Effect)

It consists of the following functions:

Neg. Art: Negative/PositiveReversal

Black & White: MonochromeImage

Image effect from Off, B&W

NOISE REDUCTION:

Noise reduction - you can enjoy clearer images by removing unnecessary noise. You can select 6 levels from OFF (MIN), 1 to 5 (MAX).

FLIP:

Image E-Flipper – Used when ceiling mounting or upright mounting. Set to OFF is upright mode, set to ON is for ceiling mount.

DE-FLICKER:

You can turn it ON if the Video output format frame rate is difference from your country's electricity Frequency.

GAMMA:

In this mode, the gamma can be set to value from 0 to 2.

WDR: (Wide dynamic range mode): WDR feature is available on certain product models.

Wide Dynamic: ON, OFF. The camera distinguishes light and dark areas within the same scene, adjusts the brightness for dark areas, and also controls the blown out highlights.

You can select the wide dynamic range mode between ON and OFF

COLOR

You can configure the color gain from 1-15. Use this setting when bright color is particularly important.

HUE

You can adjust color phase from 1-15.

Defog mode

When the surrounding area of the subject is foggy and low contrast, the defog mode will make the subject appear clearer.

When it is set to ON, you can select 3 levels from: HIG/MID/LOW

PAN TILT ZOOM Menu

The PAN TILT ZOOM menu is used to select the pan/tilt/ zoom mode.

DIGITAL ZOOM:

Set to DIGITAL ZOOM ON, 12X digital zoom is activated.

You can set digital zoom to ON or OFF. When set to OFF, digital zoom does not operate, and only optical zoom is available. When set to ON, digital zoom takes over after optical zoom reaches MAX (20X/30X). Up to 200X/300X can be zoomed digitally.

When digital zoom is available, the resolution decreases

P/T SPEED:

Set P/T Speed value to from 1 to 5 (The speed from low to high), to change the speed of P/T on remote controller.

ZOOM RATIO OSD (Zoom times display):

Set Ratio OSD to ON, the number of the zoom times that you are operating displays on screen.

<PICTURE>	
SHARPNESS	3
EFFECT	OFF
NOISE REDUCTION	OFF
FLIP	OFF
DE-FLICKER	OFF
GAMMA	0
WDR	OFF
COLOR	5
HUE	8
DEFOG MODE	OFF

<PAN TILT ZOOM>	
DIGITAL ZOOM	OFF
ZOOM RATIO OSD	OFF
P/T SPEED	1

SYSTEM Menu

PELCO ID

When using RS485 (PELCO P/D) control, Set Camera ID to the address that you want to control to. This value is from 001-255.

IR-RECEIVE (Infrared Signal Reception)

When this is set to OFF, the camera does not receive the signal from the infrared remote controller.

Be sure to keep it set to ON when you use the infrared remote controller.

<SYSTEM>	
PELCO	001
IR-RECEIVE	ON
DISPLAY INFO	ON
FACTORY RESET	
RELOAD PRESET 1	ON
AUTO FOCUS	NORMAL
VIDEO FMT	1080P30

Note

You cannot set IR-RECEIVE to OFF when you operate the menu using the infrared remote controller. To set it to OFF, use the appropriate VISCA controller.

DISPLAY INFO

When this item is set to ON, the message of the camera configuration appears for about 3 seconds on the screen, after the camera is powered on or rebooted.

FACTORY RESET

You can select this item to set camera back to Factory Default setting by pressing HOME button to confirm the action. All data of the camera that have been set will be deleted.

RELOAD PRESET 1:

When this item is set to ON, preset 1 is set to Home position. The camera goes to Home position when it is powered on or reset.

AUTO FOCUS

Set speed of auto-focusing from Low to Normal.

VIDEO FORMAT:

You can change the video format by adjusting this item. Select the item, press “←” button to choose the video format you want to set to, then press “→” (Pressing “→” button changes value on some product models) or HOME button to confirm it. After you confirm your choice, press HOME button again to restore it. The camera will reboot by itself. The new video format is activated.

You can cancel it by pressing the DATA SCREEN button.

Depending on the video client software you are using, some video software may need to be restarted to obtain the new video format.

On 20X zoom lens model: The video formats that you can select from are: 720P30, 1080I59.94, 1080P29.97, 720P59.94, 1080P59.94, 720P29.97, 1080I60, 1080P30, 1080P60, 720P60, 720P25, 1080P50, 1080I50, 1080P25, 720P50.

On 30X zoom lens model: The video formats that you can select from are: 1080I59.94, 1080I50, 1080P29.97, 1080P25, 720P59.94, 720P50, 720P29.97, 720P25, 1080P59.94, 1080P50.

Note

The camera video format can be changed by setting bottom DIP switch as well. For detail, see page 16.

Operation Using the Infrared Remote Controller

Pan/Tilt and Zoom Operation

Panning and Tilting

1. Press the POWER switch.

The camera will turn on and perform the pan/tilt reset operation automatically.

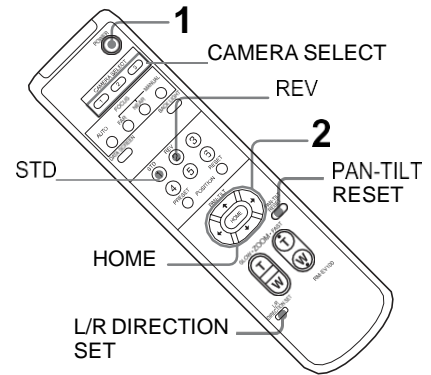
2. Press the arrow button to pan or tilt the camera.

While checking the picture on the screen, press the desired arrow button.

To move the camera in short increments, press the button just for a moment.

To move the camera in long increments, press and hold the button.

To move the camera diagonally, press the “←, →” button while holding down the “↑, ↓” button.



Restore to starting position

Press the HOME button.

If the camera moves in a different direction from the one that you intended

The camera is preset so that the image output from the camera is rotated toward the right whenever you press the “←, →” button.

To face the camera toward the opposite direction

You might wish to face the camera toward the opposite direction from that of the button you pressed, for example, when you change the direction of the camera while checking the picture on the screen. In such a case, press the 2 (REV) button while holding down the L/R DIRECTION SET button.

Arrow button	Movement of the camera	Setting
		 While holding down Press

To reset the setting

To reset the setting, press the 1 (STD) button while holding down the L/R DIRECTION SET button.

Arrow button	Movement of the camera	Setting
		 While holding down Press

Note

The above setting only changes the signal emitted from the infrared remote controller, and does not change the setting of the camera itself. Therefore, repeat the setting for each infrared remote controller if you are using more than one infrared remote controller.

When the STANDBY lamp is blinking

If the camera is moved forcibly, or a finger or other object interferes with camera movement, the camera may fail to memorize the pan/tilt position.

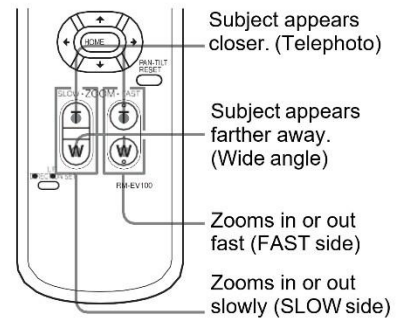
Press the PAN-TILT RESET button to reset the pan/tilt position.

Zooming

Press either of the ZOOM buttons.

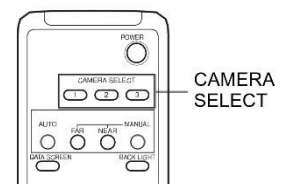
Note

When you perform pan/tilt operation while the camera is in the telephoto mode, the moving speed of the image on the screen may be a little jerky.



Operating Multiple Cameras with the Infrared Remote Controller

1. Set the DIP Switch on the bottom of the camera to the number of camera you want to operate to 1, 2 or 3.
(See bottom DIP Switch setting instruction)
2. Press the CAMERA SELECT button on the infrared remote controller that corresponds to the number set in step 1.



Then, you can operate the camera(s) specified by number. Every time you operate the camera(s) using the infrared remote controller, the CAMERA SELECT button pressed in step 2 lights.

Adjusting the Camera

Focusing on a Subject

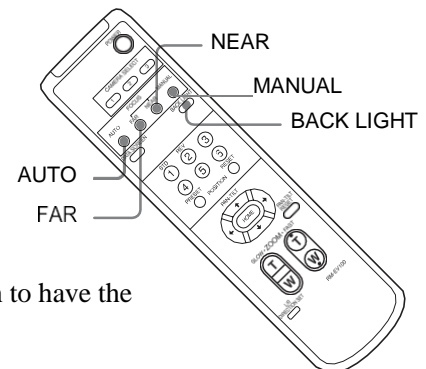
Focusing the camera on a subject automatically

Press the AUTO button.

The camera focuses on the subject at the center of the screen automatically.

Focusing the camera on a subject manually

After pressing the MANUAL button, press either the FAR or the NEAR button to have the camera focus on the subject.



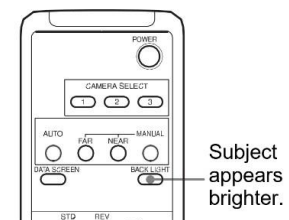
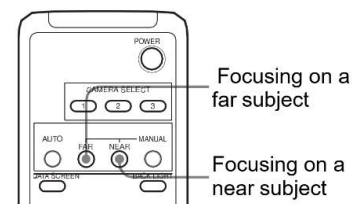
Shooting with Back Lighting

When you shoot a subject with a light source behind it, the subject becomes dark. In such a case, press the BACK LIGHT button.

To cancel the function, press the BACK LIGHT button again.

Note

The BACK LIGHT function is effective if MODE is set to FULL AUTO in the EXPOSURE menu of the camera.



Storing the Camera Settings in Memory — the Presetting Feature

Memory (Preset)

Using the preset function, 6 sets of camera shooting conditions can be stored and recalled. 6 sets of camera shooting conditions can be stored and recalled by using remote controller. Up to 128 presets via protocol programming.

This function allows you to achieve the desired status instantly, even without adjusting the following items each time.

- Pan/Tilt Position
- Zoom Position
- Digital Zoom On/Off
- Focus Auto/Manual
- Focus Position
- AE Mode
- Shutter control parameters
- Bright Control
- Iris control parameters
- Gain control parameters
- Exposure Compensation On/Off
- Exposure Level
- Backlight Compensation On/Off
- White Balance Mode
- R/B Gain
- Aperture Control
- WD Parameter

The settings stored using this function are recalled when the power is turned on.

1. Press the PAN-TILT RESET button to reset the pan/ tilt position.
2. Adjust the position, zooming, focusing and backlighting of the camera.

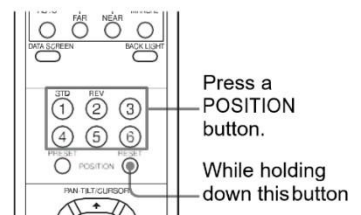
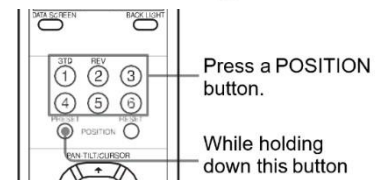
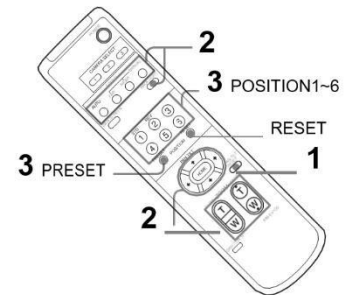
While holding down the PRESET button, press any of the POSITION buttons, 1 to 6, in which you want to store the settings.

Recalling the stored settings

Press any of the POSITION buttons, 1 to 6, in which you have stored the settings.

Cancelling the preset memory

While holding down the RESET button, press the POSITION button from which you want to cancel the settings.



Notes

- When the power is turned on, the camera starts with the settings stored in POSITION 1.
- If you want to retain the previous pan and tilt positions, etc. before the power is turned off and turned on again, store those positions in POSITION 1.
- When you are storing or cancelling the settings in one POSITION, you cannot call up, store or cancel the settings in another POSITION.
- When the menu is displayed on the screen, you cannot perform the operation for storing, recalling, or cancelling the setting. Be sure to return to the normal display before starting these operations.

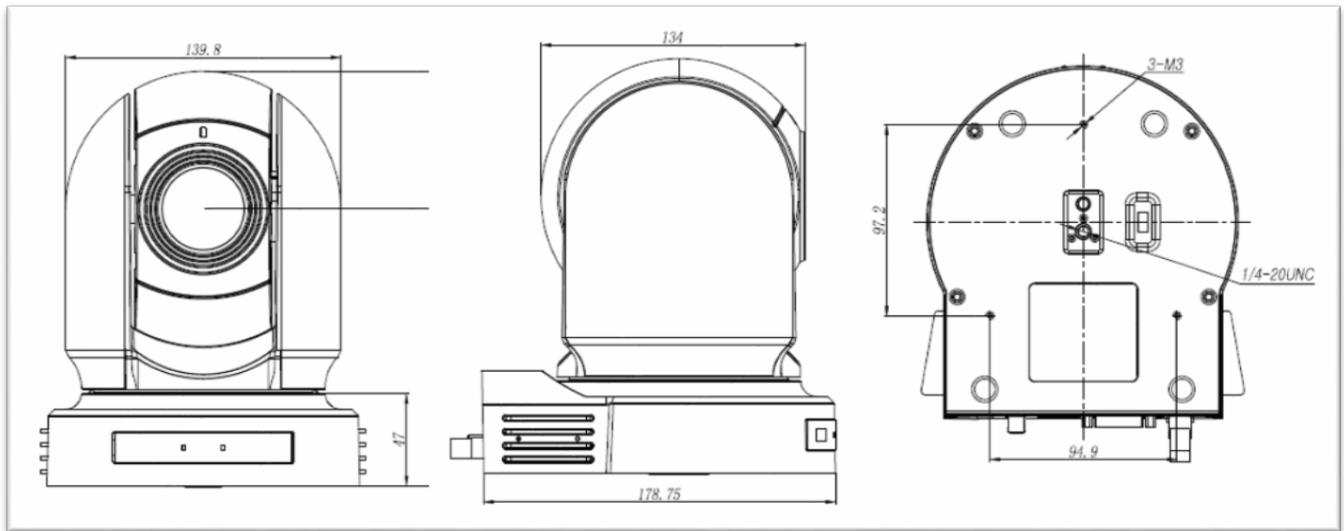
Menu Configuration

The menus of the camera are configured as described below. For more details, refer to the pages in parentheses. The initial settings of each item are in bold.

DATA SCREEN	EXPOSURE	MODE	<i>FULL AUTO</i>
			IRIS PRI CLOSE, F14, F11, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.6
			SHUTTER PRI 1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 sec. See Page 18
			BRIGHT 0, 5-31
		MANUAL	GAIN -3, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28 dB
			SPEED 1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 sec. See Page 18
			IRIS CLOSE, F14, F11, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.6
		EX-COMP	<i>OFF</i>
		ON	LEVEL -10.5, -9, -7.5, -6, -4.5, -3, -1.5, 0, +1.5, +3, +4.5, +6, +7.5, +9, +10.5
	WHITE BALANCE	MODE	<i>AUTO</i>
			INDOOR
			OUTDOOR
			OPW
			ATW
		USER	R GAIN 0-255
			B GAIN 0-255
	PICTURE	SHARPNESS	0, 1, 2, 3 -15
		EFFECT	<i>OFF</i> , B&W, NEG.A
		NOISE REDUCTION	<i>OFF</i> , 1-5
		FLIP	<i>OFF</i> , ON
		MIRROR	<i>OFF</i> , ON
		DE-FLICKER	<i>OFF</i> , ON
		GAMMA	0-2
		WDR	<i>OFF</i> , ON
		COLOR	1-15
		HUE	1-15
		DEFOG MODE	<i>OFF</i> , LOW, MID, HIGH
	PAN TILT ZOOM	DIGITAL ZOOM	<i>OFF</i> , ON
		ZOOM RATIO OSD	<i>OFF</i> , ON
		P/T SPEED	1, 2, 3 , 4, 5
	SYSTEM	IR-RECEIVE	<i>OFF</i> , <i>ON</i>
		DISPLAY INFO	<i>OFF</i> , <i>ON</i>
		FACTORY RESET	
		LOAD PRESET 1	<i>OFF</i> , <i>ON</i>
		AUTO FOCUS	<i>NORMAL</i> , LOW
		VIDEO FMT	1080P30, 1080I60, 1080P59.94 , 720P59.94, 1080P29.97, 1080I59.94, 720P60, 720P30, 720P25, 1080P50, 720P50, 1080P25, 1080I50, 1080P60

Dimension

Unit: mm



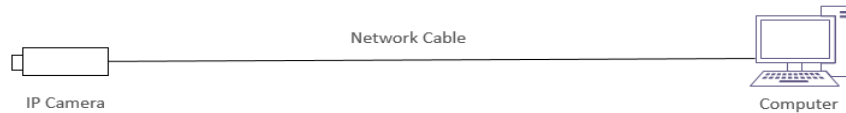
Specifications

Model No.	HD-PTZ91P		
Camera	20X		30X
Image Sensor	1/2.8" CMOS 2.38MP		1/2.8" CMOS 2.38MP
Lens	4.7~94mm		4.3~129mm
Digital Zoom	12X		12X
Horizontal Angle of View	59.5°(W)~3.3°(T)		63.7°(W)~2.3°(T)
Aperture	F1.6(W)~F3.5(T)		F1.6(W)~F4.7(T)
Min. Illumination	0.1 lux (ICR Off), 0.008 lux (ICR On),(1/30s, 50% High Sensitivity mode on)		0.35 lux (ICR Off), 0.013 lux (ICR On),(1/30s, 50% High Sensitivity mode on)
Shutter Speed	1/1~1/10000s		1/1~1/10000s
Resolution	1080P30, 1080i60, 1080P59.94, 720P59.94, 1080P29.97, 1080i59.94,720P29.97, 720P60, 720P30, 720P25, 1080P50, 720P50, 1080P25, 1080i50, 1080P60		1080P30, 1080i60, 1080P59.94, 720P59.94, 1080P29.97, 1080i59.94,720P29.97, 720P60, 720P30, 720P25, 1080P50, 720P50, 1080P25, 1080i50, 1080P60
Focus	Auto, Push		
White Balance	Auto,Indoor,Outdoor,Manual,OPW,ATW		
Exposure	Auto,Manual,Shutter/Iris Priority		
Day/Night	YES		
Backlight Compensation	YES		
WDR	YES		YES(130dB)
Defog	YES		
Motion Detection	YES		
Privacy Zone Masking	YES		
E-FLIP	YES		
Image Stabilizer	YES		
Noise Reduction	2D/3D		
S/N Ratio	≥50db		
Mechanical			
Pan Movement	Horizontal ±350 degrees continuous pan (Highest Speed: 200 degrees / sec)		
Tilt Movement	Vertical +90 degrees to -30 degrees (Max Speed:120 degrees/sec)		
Preset Position	128 (Speed:260 degrees / sec)		
Home Position	Support		
Environmental	Indoor		
Interface			
Video Output	SDI, HDMI, CVBS, YPbPr	SDI,HDMI,IP	SDI, DVI, HDMI, CVBS
Audio I/O	Audio input x1, Audio out put x1, 3.5mm audio jack (IP Models)		
Control Interface	RS232/RS422/RS485, IR Remote Controller		
Control Protocol	VISCA / Pelco P,D / Onvif (IP Models)		
3G-SDI Signal			
3G-SDI	Signal Fluctuations 800mv +/-10% (external cable extension requirements 75-5, 128 twisted pair shielding , coaxial cable)		
Signal Format	1080P30, 1080i60, 1080P59.94, 720P59.94, 1080P29.97, 1080i59.94,720P29.97, 720P60, 720P30, 720P25, 1080P50, 720P50, 1080P25, 1080i50, 1080P60		
Network	Only for IP Model (Model Number with 'N')		
Video Compression	MJPEG,H.264 High Profile		
Frame Rate	1080P (1920*1080) MAX:30 FPS,720P(1280*720) MAX:30 FPS,D1(720*576) MAX:25 FPS		
Protocols	L2TP,IPV4,IGMP,ICMP,ARP,TCP,UDP,DHCP,PPPoE,RTSP,QoS,DNS,DDNS,NTP,FTP,UPnP,HTTP,SNMP,SIP IP Auto Adaptations, Effective monitoring even under data loss environment		
Multi-stream	3 data stream function will satisfy various bandwidth, frame rates and storage requirements in real time		
Audio Compression	AAC-LC Broadband Audio Encoding		
Special Function	UNP Technique, resolve Private Network NAT throughput, support movement testing, audio testing, various intelligent functions.		
OSD	Customized OSD, Support Side Hook and Artistic Font		
Compatible Integration	ONVIF		
General			
Operating Temperature	-20 to +60 (°C)		
Operating Humidity	≤80% Suitable for Use		
Power Input	DC12V		
Power Consumption	10.8W		
Dimension	160x178x220mm		
Weight	2.0kg		

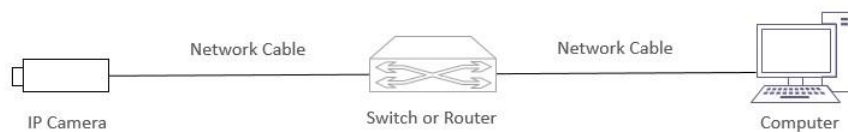
Part Two: Network Camera User Manual

Network Connection

Before accessing a network camera (also known as IP Camera or IPC) from a PC, you need to connect the network camera to the PC directly with a network cable or via a switch or router.



Use a Shielded Twisted Pair (STP) cable to connect the network interfaces of the network camera and the PC.



Use Shielded Twisted Pair (STP) cables to connect the network interfaces of the camera and the switch or router.

Login

Preparation

After you have completed the installation in accordance with the quick guide, connect the camera to power to start it. After the camera is started, you can access the camera from a PC client installed with a web browser or the video management software. Internet Explorer (IE) is a recommended web browser. Please contact your dealer to get the video management software. Please refer to the user manual of video management software for detailed information.

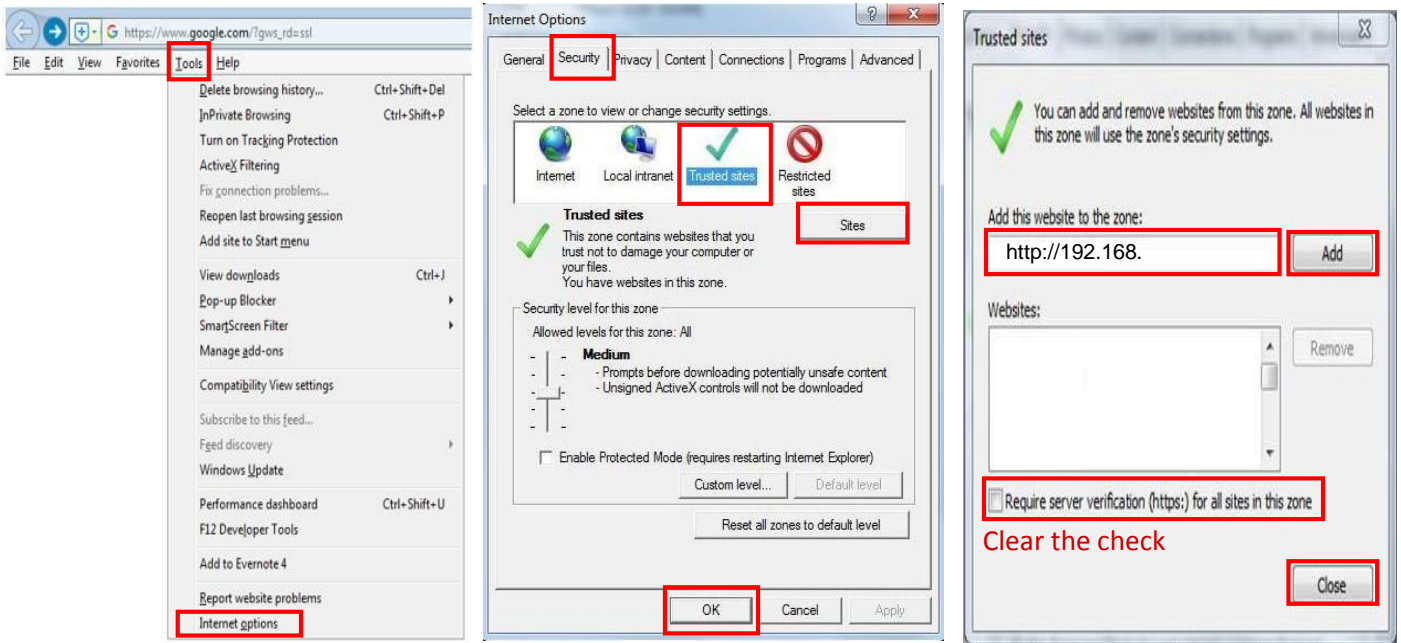
The following takes IE on a Microsoft Windows 7.0 operating system as an example.

Check before login

- The camera is operating correctly.
- The network connection between the PC and the camera is normal.
- The PC is installed with Internet Explorer 8.0 or higher.
- Use default video format setting or set the camera video format to 1080P30 or 1080P25 using RS485 keyboard (Refer to camera setting menu).

Add the IP address as a trusted site

Follow the illustrations below:

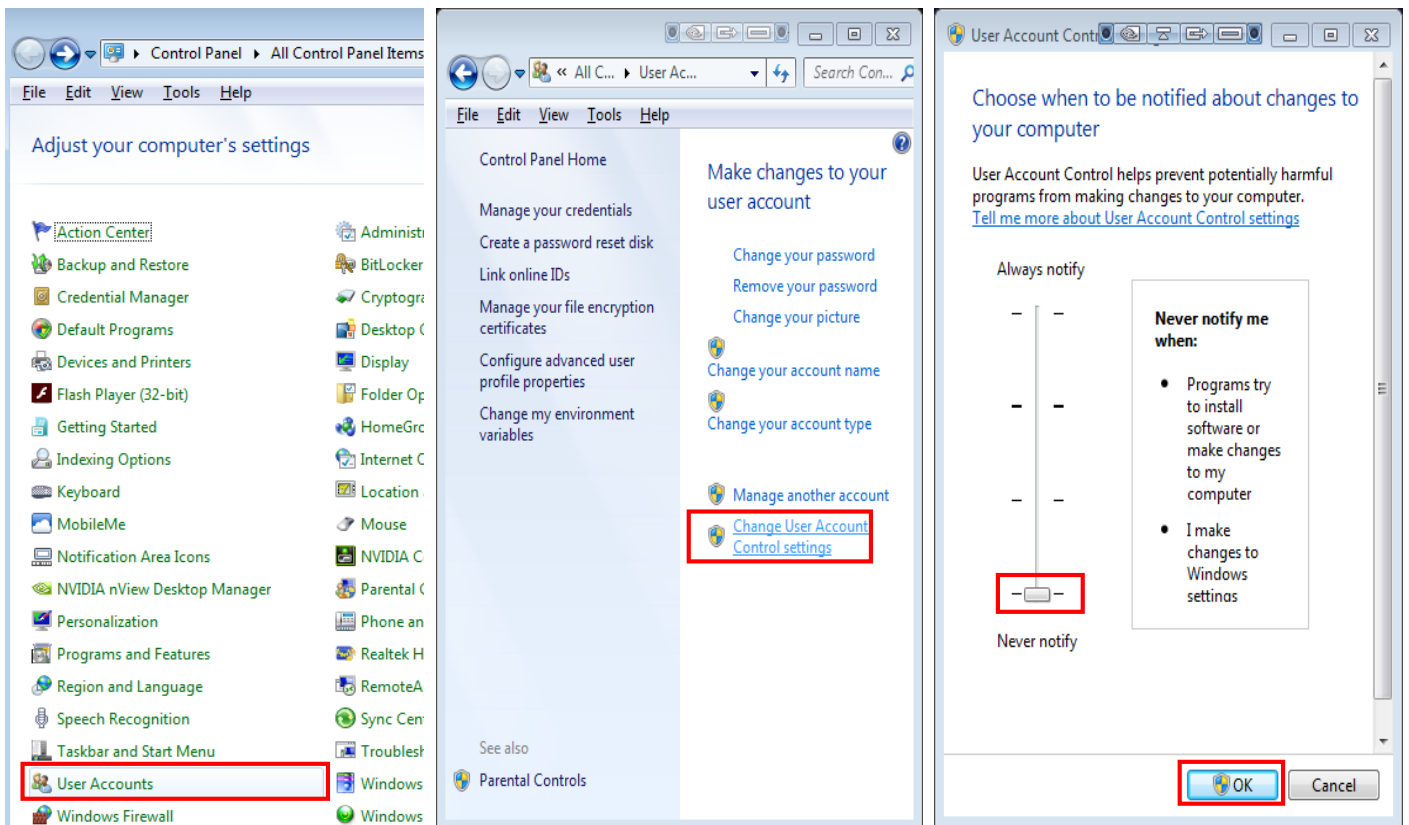


NOTE:

- The IP address 192.168.0.13 in this example is the default IP address. Please replace it with the actual address of your camera if it has been changed.

Modify user access control settings(Optional)

Before you access the camera, follow the steps to set User Account Control Settings to Never notify.



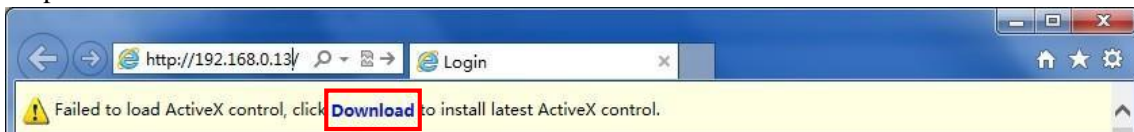
Logging In to the Web Interface

The default static IP address of the camera is 192.168.0.13, and the default subnet mask is 255.255.255.0. DHCP is turned on by default. If a DHCP server is used in the network, the IP address of your camera may be assigned dynamically, and you need to use the correct IP address to log in. Use the video management software to view the

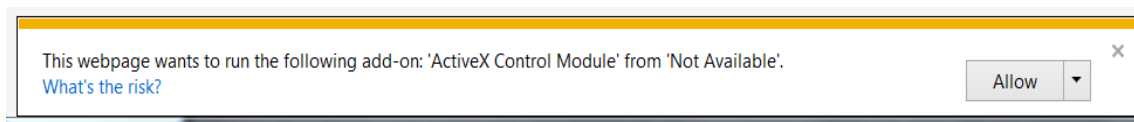
dynamic IP address of your camera.

The following takes IE as an example to describe the login procedure.

1. Browse to the login page by entering the correct IP address of your camera in the address bar.
2. If you log in for the first time, follow system prompts and install the ActiveX. You need to close your browser to complete the installation.



3. Click **Allow** to proceed the login process.



NOTE:

- To manually load the ActiveX, type `http://IP address/ActiveX/Setup.exe` in the address bar and press **Enter**.
- The default password is used for your first login. To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).
- The camera protects itself from illegal access by limiting the number of failed login attempts. If login fails six times consecutively, the camera locks automatically for ten minutes.

4. Enter the username and password, and then click **Login**. For the first login, use the default username **admin** and password **123456** or **admin**.

- If you log in with **Live View** selected, live video will be displayed when you are logged in. Otherwise, you need to start live video manually in the live view window.
- If you log in with **Save Password** selected, you do not need to enter the password each time when you log in. To ensure security, you are not advised to select **Save Password**.
- To clear the **Username** and **Password** text boxes and the **Save Password** check box, click **Reset**.



NOTE:

- *Important: Be sure to keep the new password written down and put in a safe place. If the password is forgotten, camera will require hardware resetting. Additional charges may apply for reset services.*
- **Forgot Password ?** If you forget the password, email the device Product Bar Code and camera's current time mm/dd/yy to support@bolintechnology.com for a temporary password. You will be able to change the password after login.

Introduction to the Web Interface

By default, the live view window is displayed when you are logged in to the Web interface. The following shows an example.

Initial Configuration

After you log in to the device, please perform the following initial configuration.

1. Set the TCP/IP address for the device: Reconfigure the device IP and network parameters based on the actual networking.
2. Log out and log in again to the Web using the new IP address.
3. Set the system time for actual situation.
4. (Optional) Setting the management server based on the actual networking.
5. Set OSD, set the information displayed on the screen as needed.
6. (Optional) Manage users. Change the default password and add common users as needed.

You can watch the live video after finishing the initial configuration. Please configure other parameters as needed.



1. Menu
2. PTZ control area. This area is available for PTZ dome cameras and PTZ cameras.
3. Live view window
4. Live view toolbar

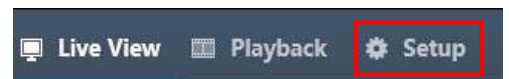
NOTE:

- The displayed live view interface, parameters displayed and value ranges may vary with models. Please see the actual Web interface for details.
- The parameters that are grayed out cannot be modified. For the actual settings, see the Web interface.
- It is recommended that you change the password when you are logged in the first time. For details about how to change a password, see Security.

Configuring Parameters

Local Parameters

Set local parameters for your PC.



NOTE:

- The local parameters may vary with models, please see the actual Web interface for details.

Select **Setup** to go into IP camera setting up menu.

1. Select **Setup > Common > Basic Info.**
It displays the basic information of the camera.
2. Select **Setup > Common > Local Settings.**



3. Modify the settings as required. The following table describes some major parameters.

A. Video Param

- a. Processing Mode
 - i. Real Time Prior: Recommended if the network is in good condition.
 - ii. Fluent Prior: Recommended if you want short time lag for live video.
 - iii. Ultra-low Delay: Recommended if you want the minimum time lag for live video.
- b. Video Pixel Format
 - i. Set the video format for images on the PC client.
It is recommended to choose **YUV420** if the graphic card of your PC supports it. **RGB32** is only supported by some low-version graphic cards.
- c. Protocol
 - i. Set the protocol used to transmit media streams to be decoded by the PC.

B. Record and Snapshot

- a. Recording
 - i. Subsection By Time: Duration of recorded video for each recording file on the computer. For example, 2 minutes.
 - ii. Subsection By Size: Size of each recording file stored on the computer. For example, 5M.
- b. When Storage Full
 - i. Overwrite Recording: When the assigned storage space on the computer is used up, the camera deletes the existing recording files to make room for the new recording file.
 - ii. Stop Recording: When the assigned storage space on the computer is full, recording stops automatically.

4. Click **Save**.

Network Configuration

TCP/IP

Modify communication settings such as the IP address for the camera so that the camera can communicate with other devices.

NOTE:

- After you have changed the IP address, you need to use the new IP address to log in.
- The configurations of DNS (Domain Name System) server are applicable when the device is accessed by domain name.

1. Click **Setup > Network > TCP/IP**.
2. Select **Static IP** from the **IP Obtain Mode** drop-down list.
3. Enter the IP address, subnet mask, and default gateway address. Make sure that the IP address of the camera is unique in the network.
4. Click **Save**.

Common	TCP/IP
Network	
▶ TCP/IP	
Port	
DDNS	
FTP	
E-mail	
Port Mapping	
SNMP	
802.1x	
Video & Audio	
PTZ	
Image	
Events	
Storage	
System	

IPv4
IP Obtain Mode: Static IP
IPv4 Address: 192.168.1.13
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.1.1

IPv6
IPv6 Mode: Manual
IPv6 Address:
Prefix Length: 64
Default Gateway:

DNS
Preferred DNS Server: 114.114.114.114
Alternate DNS Server: 114.114.115.115

MTU: 1500
Port Type: FE Port
Operating Mode: Auto-negotiation
Save

If a gatekeeper or firewall is used in the network, Universal Network Passport (UNP) can be used to interconnect the network, and the UNP server will assign an IP address to the connected cameras.

1. Select Enable for UNP Service.
2. In the **UNP Server IP** text box, enter an IP address for the UNP server. Select **Yes** to enable authentication, and then set the username and password for UNP authentication.
3. Click **Save**.

UNP
UNP Service: <input checked="" type="checkbox"/> Enable
UNP Server IP: 0.0.0.0
Authentication: <input checked="" type="radio"/> Yes <input type="radio"/> No
Username:
Password:

NOTE:

- This function is not supported by some models, please see the actual model for details.

PPPoE

If the camera is connected to the network through Point to Point Over Ethernet (PPPoE), you need to select PPPoE as the IP obtainment mode.

1. Click **Setup > Network > TCP/IP**.
2. Select **PPPoE** from the **IP Obtain Mode** drop-down list.
3. Enter the username and password provided by your internet Service Provider (ISP).
4. Click **Save**.

NOTE:

- This function is not supported by some models, please see the actual model for details.

DHCP

The Dynamic Host Configuration Protocol (DHCP) is enabled by default when the camera is delivered. If a DHCP server is deployed in the network, the camera can automatically obtain an IP address from the DHCP server. To manually configure DHCP, follow the steps below:

IPv4
IP Obtain Mode: PPPoE
Username: user
Password:

IPv6
IPv6 Mode: Manual
IPv6 Address:
Prefix Length: 64
Default Gateway:

DNS
Preferred DNS Server: 114.114.114.114
Alternate DNS Server: 114.114.115.115

MTU: 1500
Port Type: FE Port
Operating Mode: Auto-negotiation
Save

1. Click **Setup > Network > TCP/IP**.
2. Select **DHCP** from the **IP Obtain Mode** drop-down list.
3. Click **Save**.

Port

1. Click **Setup > Network > Port**.
2. Configure relevant port numbers.
3. Click **Save**.

NOTE:

- *This function is not supported by some models, please see the actual model for details.*
- *If the entered HTTP port number has been occupied, a prompt message will be displayed as Port conflicts. Please try again. 23, 81, 82, 85, 3260 and 49152 are occupied by default. And other occupied ports will be detected automatically.*

FTP

After the configuration of FTP, you will be able to upload snapshots from network cameras to the specified FTP server.

1. Click **Setup > Network > FTP**.
2. Configure the IP address, port number of the FTP server, the username and password of the upload account, enable **Upload Images** and **Overwrite Storage**, and then set the overwrite image threshold.
3. Click **Save**.

ail

After the configuration of E-mail, when alarms are triggered, you will be able to send messages to the specified E-mail address.

1. Click **Setup > Network > E-mail**.
2. Configure relevant parameters of the sender and the recipient.

The following table describes some major parameters.

- A. SSL
 - a. When enabled, the e-mail will be sent through SSL encryption.
 - B. Attach Image
 - a. When enabled, the e-mail will contain 3 instant snapshots as attachment according to the Capture Interval.
3. Click **Save**.

Port Mapping

1. Click **Setup > Network > Port Mapping**.
2. Enable **Port Mapping** and select mapping type. If **Manual** is selected, then external ports must be configured (external IP is obtained automatically by the camera). If the configured port is occupied, then the **Status** will show Inactive.
3. Click **Save**.

Port Mapping

Port Mapping Enable Disable

Mapping Type

Port Type	External Port	External IP	Status
HTTP	50080	0.0.0.0	Inactive
RTSP	50554	0.0.0.0	Inactive
Server	50081	0.0.0.0	Inactive

Save

DDNS

1. Click **Setup > Network > DDNS**.
2. Enable **DDNS Service**.
3. Click **Save**.

NOTE:

- *This function is not supported by some models, please see the actual model for details.*

DDNS

DDNS Service Enable

DDNS Type

Server Address

Domain Name

Username

Password

Confirm Password

Save

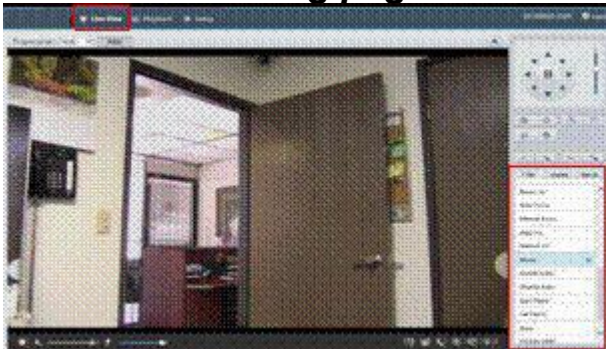
Image Configuration

Image Adjustment

NOTE:

- The image parameters displayed and value ranges allowed may vary with camera model. For the actual parameters and value ranges of your camera, see the Web interface. You may move the sliders to adjust settings or enter values in the text boxes directly.
- Clicking **Default** will restore all the default image settings.

Obtain the setting page



1. Go to “Live View” window, you will have the live image of the camera.
2. You will see the CMD section for the direct commands to make image adjustments quickly. Click the ► to activate the command.

Camera and Image setting



1. Click the “Menu” in CMD section to bring out the On-Screen-Menu.
2. Use the Direction Control Buttons to navigate the menu.
3. For the camera and image setting, please refer to Camera Menu setting page 15-23.

NOTE:

- The displayed live view interface, parameters displayed and value ranges may vary with models. Please see the actual Web interface for details.

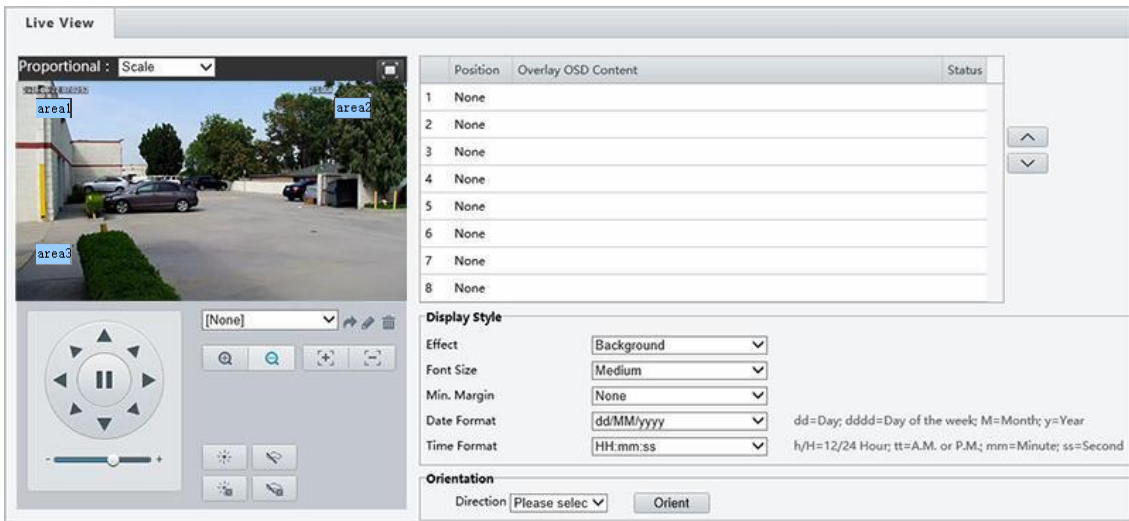
OSD Settings

On Screen Display (OSD) is the text displayed on the screen with video images and may include time and other customized contents.

NOTE:

- This function may vary with models, please see the actual Web interface for details.

1. Click **Setup > Image > OSD**. See the OSD page as follow:



2. Select the check box, the content of the OSD and then set the position to display it.

- **Position:** Click the desired box in the **Live View** area. After the cursor shape is changed, click and hold the button to move the box to the desired position. To set the position precisely, use the X and Y coordinates under **Overlay Area**.
- **Overlay OSD Content:** The drop-down list provides **Time**, **Preset** and **Serial Info**. You may also select **Custom** and enter the content you want.
- After you have set the position and OSD content, the ✓ symbol appears in the **Status** column, which means that the OSD is set successfully. You may set multiple lines of contents for each area and use ^ and v to adjust the sequence of display.



3. After you have completed the settings, a message appears to indicate the successful settings.

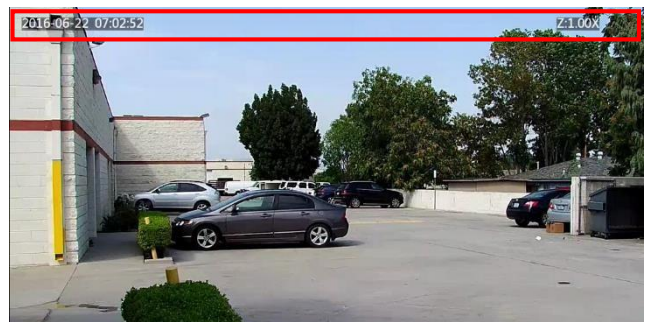
You may right-click in the preview window and then choose to view in full screen mode or at an aspect ratio.

You may also double-click the preview window to enter or exit full screen mode.

To cancel OSD for an area, clear the OSD content in the **Overlay OSD Content** column or select **None** in the

Position column.

The right picture shows an example of Data & Time / Zoom OSD.



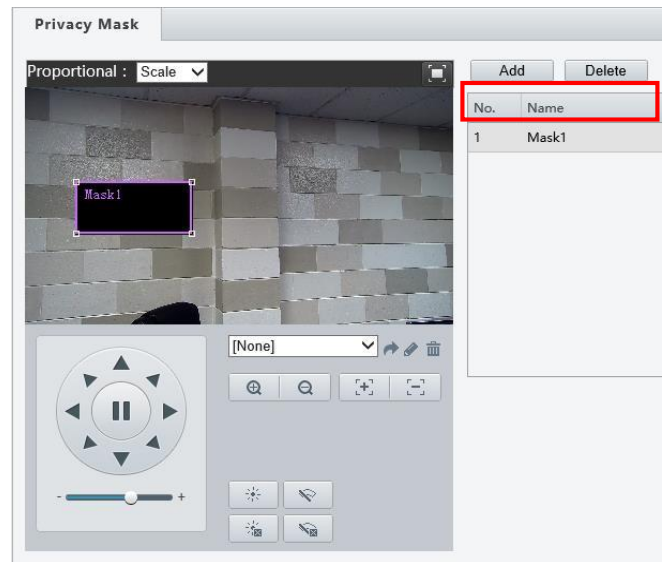
Privacy Mask

On certain occasions, you may need to set a mask area on the camera image to protect privacy, for example, the keyboard of an ATM machine. When PTZ changes its position or zooms, the Privacy Mask will be adjusted accordingly to protect the area all along.

NOTE:

- This function may vary with models, please see the actual Web interface for details.

1. Click **Setup > Image > Privacy Mask**.
2. Click **Add** to add a privacy mask, and click **Delete** to delete a mask.
 - To mask a position: Click the box (with **Mask** displayed on it) to activate the mask. After the cursor shape has changed, drag the box to the intended position.
 - To mask an area: Use the mouse to draw a box on the area you want to mask.
 - When privacy mask is configured, the intended area is blocked. The following shows an example.



Audio and Video Configuration

Video Configuration

You can set video parameters that your camera supports and view the current status of BNC output. If available, you may also enable sub-stream and third stream as required.

NOTE:

- This function may vary with models. Only some camera models support the third stream. To determine if your camera supports this function, see the Web interface.
- After enabling the sub or third stream, modify the parameters as required. The parameters for the sub and third stream have the same meanings as that for the mainstream.

1. Click **Setup > Video & Audio > Video**.
2. Modify the settings as required. The following table describes some major parameters.

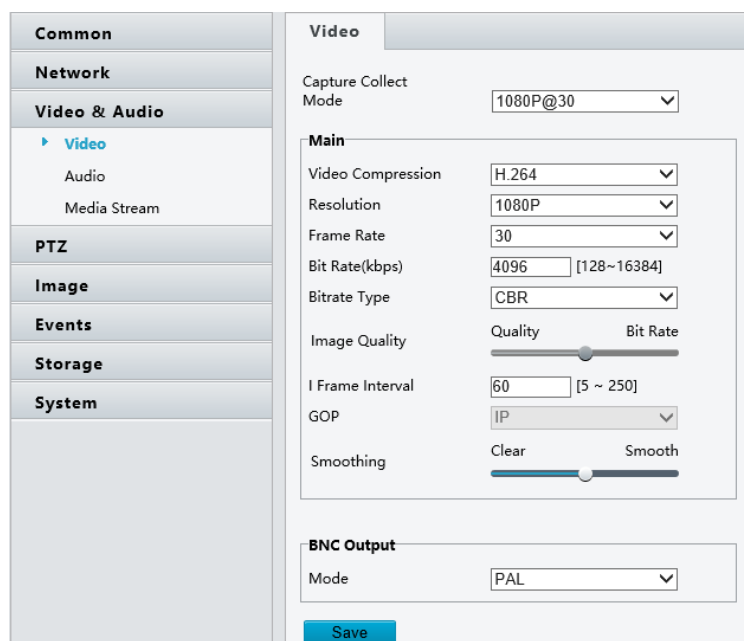
A. Bitrate Type

- a. CBR: Constant Bit Rate, which means that the camera transmits data at a constant data rate.
- b. VBR: Variable Bit Rate, which means that the camera adjusts the bit rate dynamically according to image quality.

B. Frame Rate

- a. Frame rate for encoding images. Unit: FPS (frame per second).

- i. To ensure image quality, note that the frame rate should not be greater than the reciprocal of shutter speed.



C. Image Quality

- a. When **Encoding Mode** is **VBR**, you can move the slider to adjust quality level for images. Moving the slider toward **Bit Rate** decreases the bit rate and may affect image quality. Moving the slider toward **Quality** increases the bit rate and improves image quality.

D. Smoothing

- a. Set the extent of smoothing. Choosing **Clear** means disabling **Smoothing**. Moving the slider toward **Smooth** increases the level of smoothing but will affect image quality.
 - i. In a poor network environment, you can enable smoothing to get more fluent video.

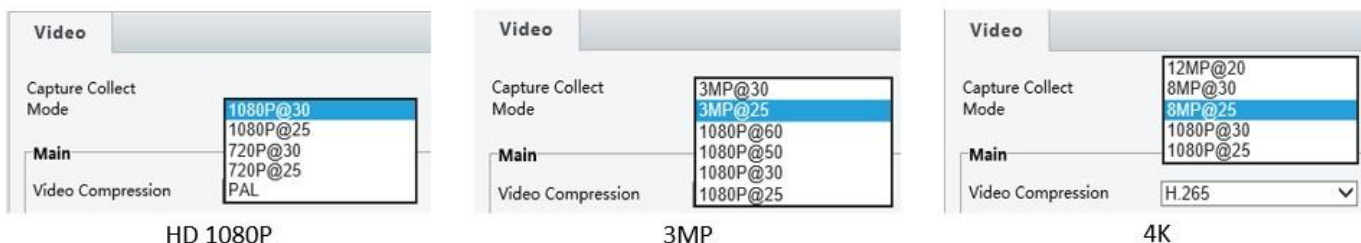
E. BNC Output

- a. BNC output supports NTSC and PAL.

3. Click **Save**.

Video Format

1. You can select the video format from **Capture Collect Mode** dropdown menu.
2. The selection of the video format is different on HD, 3MP, 4K resolution models.



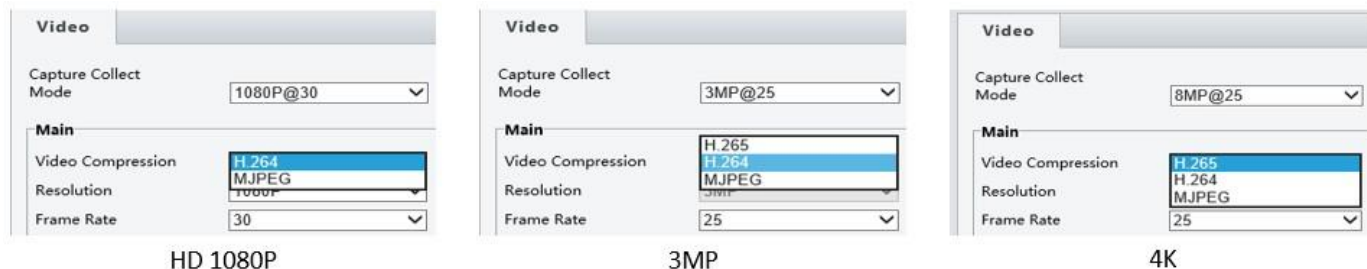
3. Click **Save** after you make the selection.

NOTE:

- Changing the video format/capture mode will restore the default encoding setting and causes the device to restart. It takes a little while for the camera to finish the rebooting.
- The screen will be frozen during the camera rebooting. The camera image or setting page will come back automatically or you may need to click **Video** or **Live View** again to retrieve the page and video.

Video Compression

1. You can select the video format from **Video Compression** dropdown menu.
2. The selection of the Video compression is different on HD, 3MP, 4K resolution models.



3. Click **Save** after you make the selection.

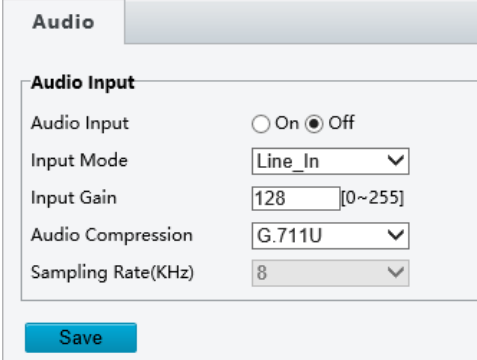
Audio Configuration

Audio configuration means setting audio encoding parameters for your camera.

NOTE:

- This function may vary with models, please see the actual Web interface for details.

1. Click **Setup > Video & Audio > Audio**.
2. Modify the settings as required. The following table describes some major parameters.
 - F. Audio Input
 - a. No audio data will be encoded when Off is selected.
 - i. It is recommended to select Off if you do not need audio. This can improve device performance to some extent.
 - G. Input Gain
 - a. Audio signal amplification for sampling. The greater the gain, the greater amplification.
3. Click **Save**.



ROI

When Region of Interest (ROI) is enabled, the system ensures image quality for ROI first if the bit rate is insufficient.

NOTE:

- *This function may vary with models, please see the actual Web interface for details.*

1. Click **Setup > Video & Audio > ROI**.
2. To enable ROI, select the check box, and then use the mouse to draw an area that covers the object you want to mask.


Media Stream Configuration

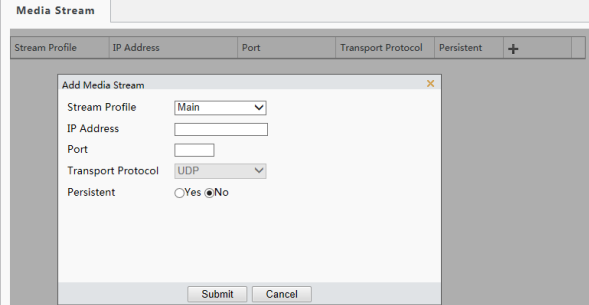
NOTE:

- *This function may vary with models, please see the actual Web interface for details.*

Media Stream

You can display the established media streams from a camera. You may also set the camera so it transmits code streams by the UDP or TCP protocol to a specified IP address and port number. The settings can be saved and take effect after the camera is restarted.

1. Click **Setup > Video & Audio > Media Stream**.
2. Click +, select a stream type, and then set the IP address and port number of the unicast or multicast group for the decoding device that receives audio and video streams from the camera. If you want the device to establish the media stream that has been configured before automatically after the restart, select **Yes** for **Persistent**.
3. To delete a stream, click .
4. Click **Submit** to complete the operations.



RTSP Multicast Address

After an RTSP multicast address is configured, the third-party player can request the RTSP multicast media stream from the camera through the RTP protocol.

1. Click **Setup > Video & Audio > Media Stream > RTSP Multicast Address**.
2. Set the multicast address (224.0.0.0 to 239.255.255.255) and port number (0 to 65535).
3. Click **Save**.

Media Stream	RTSP Multicast Address
Main	
Multicast Address	<input type="text" value="0.0.0.0"/>
Port	<input type="text" value="0"/>
Sub	
Multicast Address	<input type="text" value="0.0.0.0"/>
Port	<input type="text" value="0"/>
Third	
Multicast Address	<input type="text" value="0.0.0.0"/>
Port	<input type="text" value="0"/>
<input type="button" value="Save"/>	

Alarm Configuration

NOTE:

- *This function may vary with models, please see the actual Web interface for details.*
- *The alarm triggered actions supported by the camera may vary with models, please see the actual Web interface for details.*

You can schedule alarm reporting and set actions that can be triggered by other devices so that alarms and the triggered actions can be handled in time.

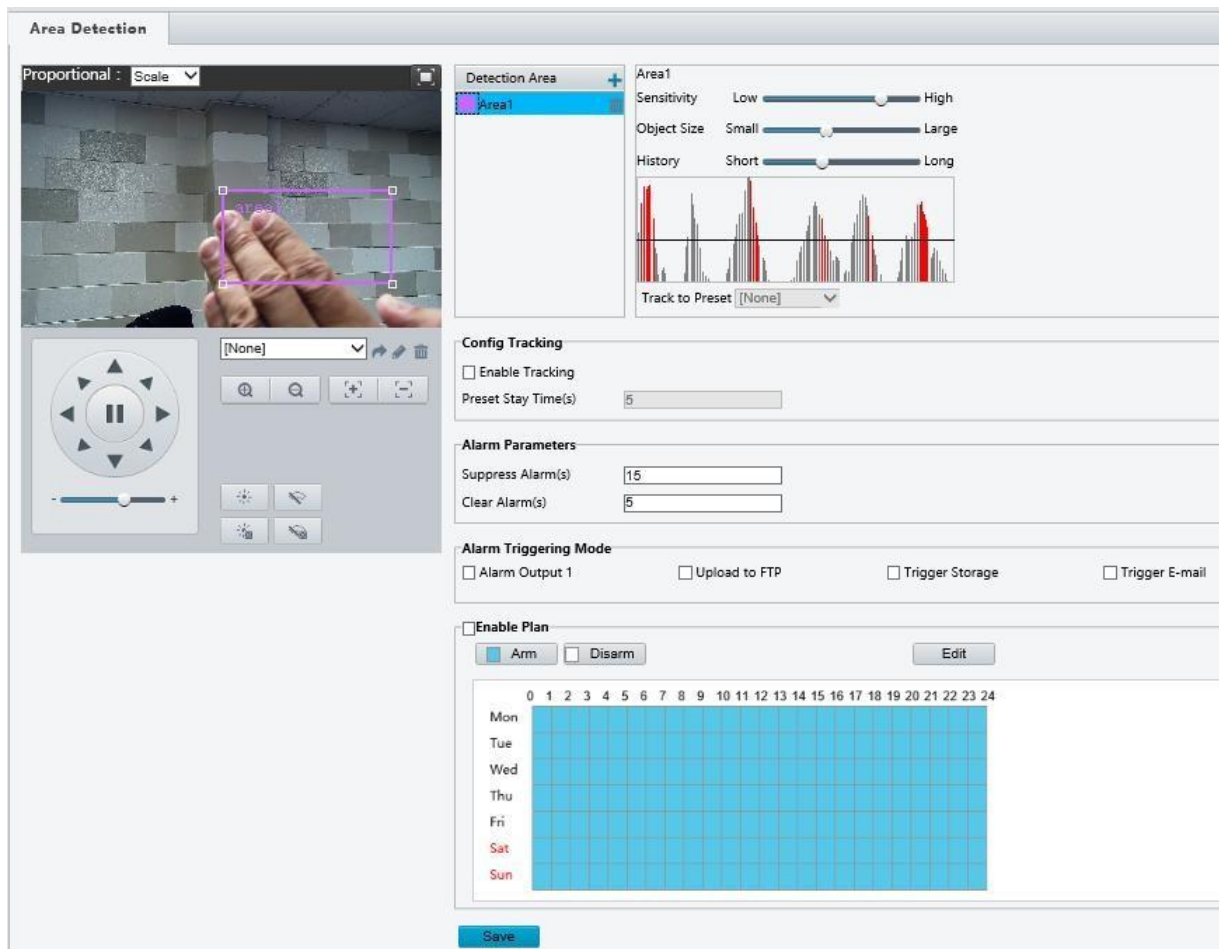
Alarm reporting can be scheduled for motion detection alarm, alarm input, alarm output, tampering detection alarm, and audio detection alarm. The supported alarms may vary with device model. For the alarm types that your camera supports, see the Web interface.



Configuring Motion Detection Alarm

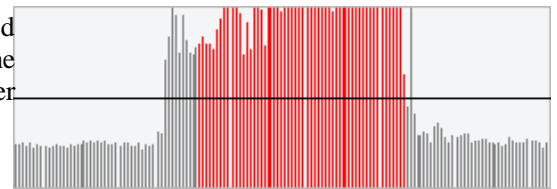
Motion Detection

Motion detection detects the object motion in a specified rectangular area during a period. You need to set a detection area, sensitivity of detection, object size, and history for the camera to decide whether to report a motion detection alarm when it detects motion.

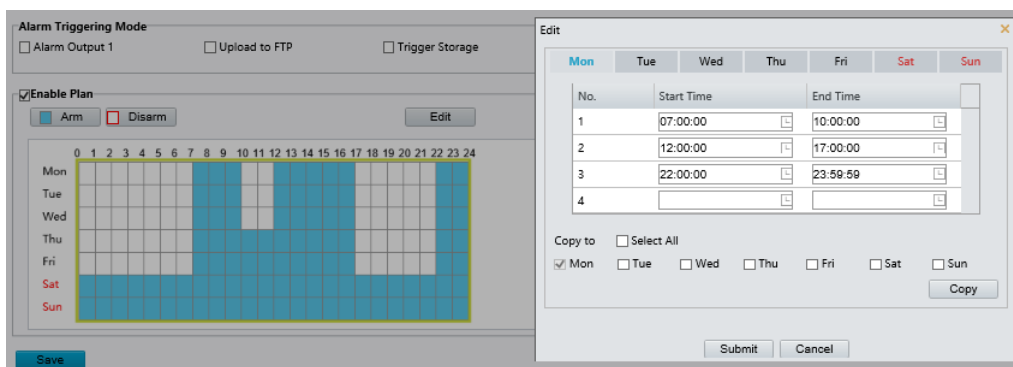
1. Click **Setup > Events > Common Alarm > Motion Detection**.



2. In the Detection Area, click  to add a new detection area. To delete a detection area, click .
3. Click and drag the mouse to set a detection area.
4. Set the detection sensitivity, object size, and history for the camera to decide whether to report a motion detection alarm.
 - a. Moving the slider to the right increases detection sensitivity. When the extent of motion within the detection area exceeds the set object size, and if the duration of motion exceeds the set duration, the camera reports an alarm.
 - b. Motion detection results are shown in real time. The red lines represent the raised motion detection alarms. The longer a line, the greater the extent of motion. The denser the lines, the greater the frequency of motion.
5. Set the alarm parameters.
 - a. Suppress Alarm(s): After an alarm is triggered, the same alarm will not be reported within the set time.
 - b. Clear Alarm(s): After an alarm is triggered,
 - i. If the same alarm is not triggered within the set time, the alarm will be cleared and the same alarm can be reported again.
 - ii. If the same alarm is triggered within the set time, the alarm will not be cleared until the suppress alarm time expires. Then the same alarm can be reported again.
6. Set actions to be triggered by motion detection alarm and the plan.
 - a. The following table describes the major alarm-triggered actions and how to set a plan.
 - b. Alarm Output 1
 - i. Select the check box. This setting is the alarm output interface linked to motion detection alarm.
 1. When an alarm is reported, the camera triggers alarm output so as to trigger actions by a third-party device.
 - c. PTZ to Preset
 - i. Select the check box and set the preset linked to motion detection alarm.



1. Make sure you have set presets. Otherwise, you cannot set this parameter. For details about how to set a preset, [see SettingPresets.](#)
 2. When an alarm is reported, the PTZ camera automatically goes to the preset to capture video in the correct scene.
- d. Upload to FTP
- i. With **Upload to FTP** selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered.
 1. Make sure you have completed [FTP](#) and [Configuring Capture](#) before using this function.
- e. Trigger E-mail
- i. With **Trigger E-mail** selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered.
 1. Make sure you have completed [E-Mail](#) and [Configuring Capture](#) before using this function.
- f. Trigger Storage
- i. With **Trigger Storage** enabled, the camera automatically starts recording after an alarm is triggered.
 1. Make sure you have completed the post-recording time settings before using this function.
- g. Enable Plan
- i. Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click **Edit** to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
 - ii. You can select from Monday to Sunday and set four periods for each day.
 - iii. Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking **Copy** and **Paste**.



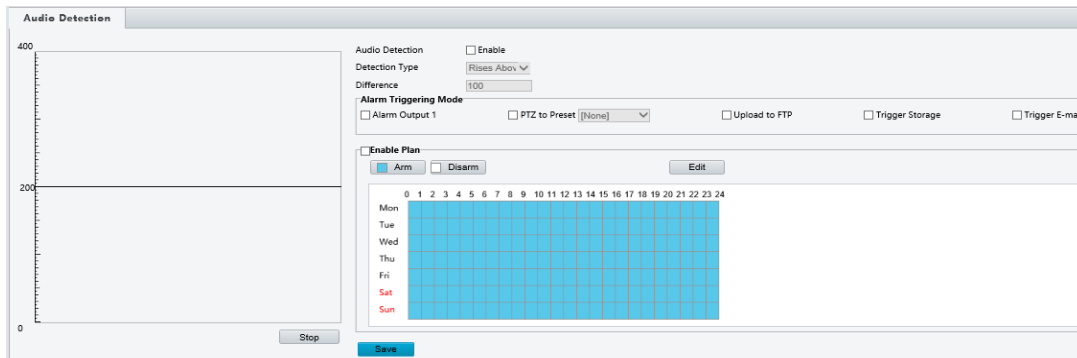
- iv. Drag the mouse to draw a plan and Edit time periods in the table.

7. Click **Save**.

Configuring Audio Detection Alarm

The camera can detect input audio signals for exceptions. When the rise or fall of volume exceeds the set limit, or when the input volume reaches the threshold, the camera reports an alarm and triggers the set actions. Make sure that an audio input device is correctly connected to the camera and audio input is turned on in [Configuring Alarm Input](#).

1. Click **Setup > Events > Common Alarm > Audio Detection**.



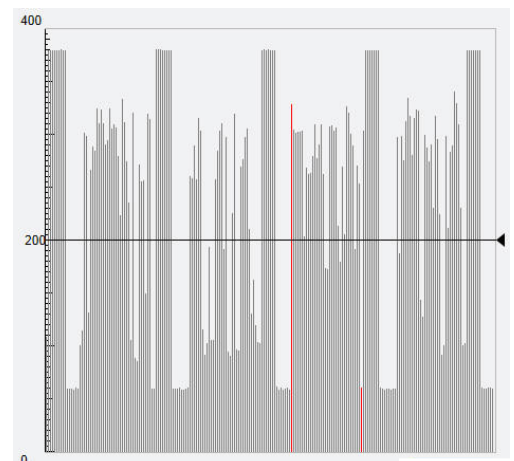
2. Select **Enable** for **Audio Detection**, select a detection type and set the difference or threshold. To disable audio detection, clear the **Enable** checkbox. The following table describes some major parameters.

- a. Detection Type

- i. Rise Above: An alarm is reported when the rise of volume exceeds the difference.
- ii. Falls Below: An alarm is reported when the fall of volume exceeds the difference.
- iii. Passes: An alarm is reported when the rise or fall of volume exceeds the difference.
- iv. Threshold: An alarm is reported when the volume exceeds a threshold.

- b. Threshold/ Difference

- i. Threshold: After a volume is set as the threshold, an alarm is reported when the threshold is exceeded.
- ii. Difference: the difference between two volumes. When the rise or fall of volume exceeds the difference, an alarm is reported.



1. The scale in the audio detection area is used to measure soundvolume.
2. Audio detection results are shown in real time. The red part indicates that the volume of the audio alarm has reached the threshold and the alarm does not necessarily report.

3. Set the alarm-triggered actions and arming schedule as required. For the detailed steps, see the descriptions of alarm-triggered actions in [Configuring Motion Detection Alarm](#).

4. Click **Save**.

Configuring Alarm Input

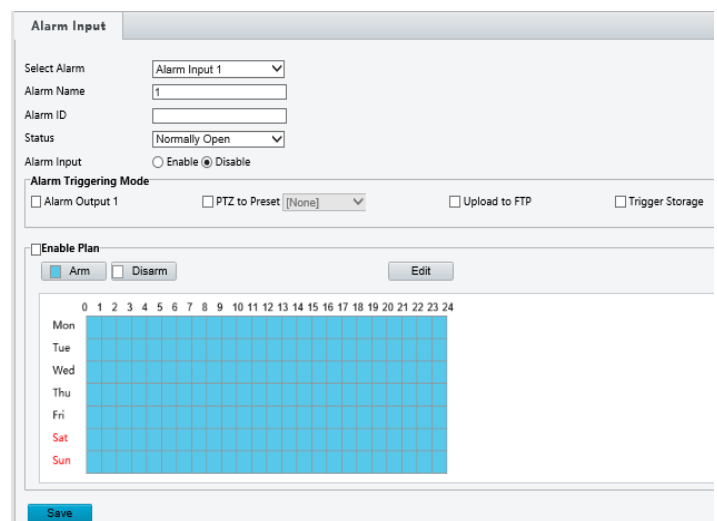
The camera can receive alarm information from a third-party device. To use this function, you need to configure the following information for alarm input first: port, alarm name, alarm type (normally open or normally closed) and alarm reporting time.

1. Click **Setup > Events > Alarm Input**.

2. Select the Boolean and set the Boolean name.

3. Select **Normally Open** or **Normally Closed** according to the type of the third-party alarm input device. For example, if the third-party alarm input device is normally open, you need to select **Normally Open** here, so that the camera can receive alarm information from the third-party alarm input device.

4. Set actions to be triggered by an input alarm and the plan. For the detailed steps, see the descriptions of alarm-triggered actions in [Configuring Motion Detection Alarm](#).



5. Click **Save**.

Configuring Alarm Output

After alarm output is triggered by a motion detection alarm, temperature alarm or Boolean alarm, the camera can output alarm information to the third-party device if alarm output is set correctly to Normally Open or Normally Closed. The alarm output duration is configurable.

1. Click **Setup > Events > Alarm Output**.
2. Select the alarm and set the alarm name. Set the status to **Normally Open** (default setting) and set the alarm duration.
3. Click **Save**.

Select Alarm	Alarm Output 1
Alarm Name	2
Status	Normally Open
Delay(s)	5

CAUTION:

Strictly follow the sequence when powering on the devices to avoid damaging camera components:

- Check that the alarm type is set to *Normally Open* (default setting), and that the camera and the alarm output device are powered off.
- After completing the connection, power on the alarm output device first and then power on the camera.

Configuring Capture

With the function of capture configured, when an alarm is triggered, the camera will automatically upload the captured snapshots to the FTP server or send snapshots the specified email address.

1. Click **Setup > Events > Capture**.
2. Enable **Capture**, and configure relevant parameters.
3. Click **Save**.

Capture	<input type="checkbox"/> Enable
Resolution	1920*1080
Image Quality	Medium
Capture Interval(s)	1
Number to Capture	1
Scheduled Snapshot	
Mode	<input type="radio"/> Timed <input checked="" type="radio"/> Continued
Interval(s)	60

Memory Card Storage (Not available to this camera)

NOTE:

- This function is not supported by some models, and may vary with models, please see the actual model for details.
- Memory storage is recommended when the camera operates in stand-alone mode.

Memory card storage is used to save videos and snapshots to the memory card directly.

Manual storage

The camera records live video repeatedly if manual storage is enabled.

1. Click Setup > Storage > Storage.
2. Enable memory card storage and modify the settings as required. The following table describes some major parameters.
 - a. Storage Medium
 - i. Storage resource type.
 1. To format the memory card, disable the storage function for the card first. Then Click **Format** and then click **OK** to confirm the operation. The system will restart when the format is completed.
 2. Information about the total and free space is displayed.
 - b. When Storage Full
 - i. Overwrite: If there is no free space in the memory card, new data will overwrite the existing data repeatedly.
 - ii. Stop: If there is no free space in the memory card, new data will not be saved to the memory card.
 - c. Post-Record(s)
 - i. When an alarm is raised, the camera is triggered to record live video and continues recording for a set post-record time after the alarm is cleared.

Storage

Storage Medium: Memory Card

Total Capacity 0 MB, Free Space 0 MB.

Video Storage Info

Storage Policy: Manual Storage Planned Storage Off

Stream: Main

When Storage Full: Overwrite Stop

Post-Record(s): 1800

1. Click **Save**.

Planned storage

If planned storage is enabled, the camera records video to the memory card during the specified periods.

1. Click **Setup > Storage > Storage**.
2. Select **Planned Storage**, and then set the periods during which the camera records video to the memory card.
3. Click **Save**.

NOTE:

- To play recordings in the memory card, see *Video Playback and Download with Edge Storage*.

Storage Medium: Memory Card

Total Capacity 3668 MB, Free Space 3339 MB.

Video Storage Info

Storage Policy: Manual Storage Planned Storage Off

Video Capacity(MB): 1000

When Storage Full: Overwrite Stop

Post-Record(s): 1800

Image Storage Info

When Storage Full: Overwrite Stop

Plan

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mon																									
Tue																									
Wed																									
Thu																									
Fri																									
Sat																									
Sun																									

System Maintenance

NOTE:

- This function is not supported by some models, and may vary with models, please see the actual model for details.

Security

User Management

There are two types of users in the system:

- Administrator: referred to as “admin” in this manual. The default name of the administrator is admin, which cannot be modified. Admin has full permission and can manage all users and devices. Only one admin user is allowed in the system.
- Common user: referred to as “user” in this manual. User only has permission to play live and recorded video. Up to 31 common users are allowed in the system.

You can add a user on the user management interface (under **Setup > System > Security**).

After the user is added successfully, you can change the password by entering the new password or delete the user by clearing the username.

NOTE:

- Only admin can change passwords. Changing the username or password for a user when the user is still logged in will force the user to log out. The user must use the new username or password to log in.
- Only admin can add and delete users. Deleting a user when the user is still logged in will force the user to log out. A deleted user cannot login.

Setting Secure Data Transmission

Set a secure channel for data transmission to ensure security.

1. Click **Setup > Network > Port**.
2. Enter the port number in the **HTTPS Port** text box and then click **Save**.
3. Click **Setup > System > Security**. Under **HTTPS**, select **Enable**. Uploading a custom SSL certificate is also supported to ensure security.
4. Click **Save**.

The screenshot shows the 'Port' configuration page. It has three input fields: 'HTTP Port' with the value '80', 'HTTPS Port' with the value '443', and 'RTSP Port' with the value '554'. Below these is a section for 'HTTPS' with a checked 'Enable' checkbox and an 'SSL Certificate' field with 'Browse...' and 'Upload' buttons.

Next time you log in, enter the address in `https://IP:HTTPS port number` format, for example, `https://192.168.0.13:443`, to enter secure channel mode. If HTTPS uses a default port number, enter the address in `https://IP` directly.

RTSP Authentication

RTSP (Real Time Streaming Protocol) is an application layer protocol. To transmit and control the audio and video, set RTSP authentication on the Web interface.

1. Click **Setup > System > Security > RTSP Authentication**.
2. Select an authentication mode (basic/digest) and then click **Save**.

The screenshot shows the 'RTSP Authentication' configuration page. It features a dropdown menu with 'None', 'basic', and 'digest' options. Below the menu is a blue 'Save' button.

Hide Vendor Information

You can set to hide the vendor information of the network camera on the Web interface.

1. Click **Setup > System > Security**.
2. Under **Registration Info**, select **Enable**.

ARP Binding

This function can protect the camera from ARP attacks. When the camera visits an IP of another network segment

via a gateway, it can communicate only with the MAC address binding to the gateway address in the same segment.

1. Click **Setup > System > Security > ARP Binding**.
2. Select the check box to enable the ARP binding function and set the MAC address.
3. Click **Save**.

IP Address Filtering

You can allow or deny the access from the specified IP address to your camera.

1. Click **Setup > System > Security > IP Address Filtering**.
2. Select **Enable**. Select the filtering mode and then enter the desired IP addresses.
3. Click **Save**.

NOTE:

- If the filtering mode is set to **Allow Access**, only the specified IP addresses are allowed to access the camera. If the filtering mode is set to **Deny Access**, the specified IP addresses are denied for the access.
- Up to 32 IP addresses are allowed. And the added IP addresses cannot duplicate.
- The first byte of the IP address can only be a number ranging from 1 to 223 and the fourth byte cannot be 0. For example, 0.0.0.0, 127.0.0.1, 255.255.255.255 and 224.0.0.1 all are invalid IP addresses.

Video Watermark

You can set the video watermark for the camera to encrypt the video and protect it from being deleted or modified.

1. Click **Setup > System > Security > Video Watermark**.
2. Select **Enable** and set the watermark content.
3. Click **Save**.

Setting the System Time

You can use the following methods to adjust the system time of your device.

Manually Setting or Synchronizing the System Time

1. Click **Setup > Common > Time**, and then click the **Time** tab.
2. Select **Enable** for **Client Time Synchronization**.
3. Set the correct time zone and system time. You may also click **Sync with Computer Time** to synchronize the time settings of your camera with that of your PC.
4. Click **Save**.

Synchronizing with the NTP Server

1. Click **Setup > Common > Time**, and then click the **Time** tab.
2. Select **Enable** for **NTP**, and then enter the IP address of the NTP server and the camera's sync interval with the NTP server.
3. Click **Save**. The camera will periodically synchronize time with the NTP server.

Setting Servers

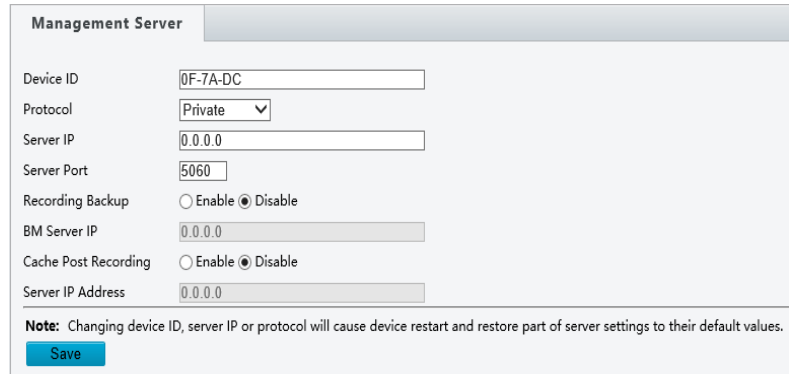
If the camera is managed by a central server, you need to configure the server related parameters.

CAUTION:

- *This function is not supported by some models, please see the actual model for details.*
- *If the device ID, protocol or server IP is changed, the camera will restart, and the login password for admin and the system time will be updated as the settings on the central management server. In addition, all settings, except the following, will be restored to factory defaults: network interface card, server, image, OSD, privacy mask, custom information, and ROI.*
- *Registration will fail if the device ID is different from that stored on the central management server. You need to restart the camera in order for the registration to succeed.*
- *If the camera operates independently, select **None** for **Protocol**.*

Connect via the Private protocol

1. Click **Setup > Common > Server**, and then click the **Management Server** tab.
2. In the **Device ID** text box, enter an ID that is unique in the network.
3. Select **Private** from the **Protocol** drop-down list.
4. Enter the correct IP address and port number for the central management server.
5. Click **Save**.



Management Server	
Device ID	0F-7A-DC
Protocol	Private
Server IP	0.0.0.0
Server Port	5060
Recording Backup	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
BM Server IP	0.0.0.0
Cache Post Recording	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Server IP Address	0.0.0.0

Note: Changing device ID, server IP or protocol will cause device restart and restore part of server settings to their default values.

Save

Serial Port Mode Configuration

The RS485 serial port is used for data exchange with the third-party device. Serial port settings on the camera should be consistent with that of the connected third-party device.

NOTE:

- *This function is not supported by some models, please see the actual model for details.*
- *The actual displayed Web interface may vary with the device model.*

PTZ control

To control a PTZ camera through a third-party device, you need to set **Port Mode** to **PTZ Control**.

By sending PELCO-D compliant PTZ control commands through the RS485 port, you can control the PTZ camera without using the PTZ control panel.

1. Click Setup > System > Ports & Devices, and then click the Serial Port tab.
2. Select PTZ Control from the Port Mode drop-down list. The following table describes some major parameters.
 - a. PTZ Protocol
 - i. Set the PTZ protocol that the channel supports.
 1. You can set this parameter only when **Port Mode** is set to **PTZ Control**.
 2. When **PTZ Protocol** is set to **INTERNAL-PTZ**, the camera can connect to the external PTZ without using the serial port (serial port parameters are grayed out). In this case, you only need to connect the zoom and focus interfaces of the camera to the lens, and then you can operate the PTZ like an internal PTZ.
 - b. PTZ Mode
 - i. Built-in PTZ Priority: When this option is selected, the camera first tries to control the PTZ (for example, to zoom or focus) by itself instead of through the external PTZ. For operations that the camera cannot accomplish by itself, the camera uses the external PTZ.
 - ii. External PTZ Priority: The camera first tries to control the PTZ through the PTZ connected through the serial port.
 1. You can set this parameter only when **Port Mode** is set to **PTZ Control**.
 2. When **INTERNAL-PTZ** is selected, this parameter is always set to **Built-in PTZ Priority**, and it is unnecessary to connect the camera to an external PTZ through the serial port. Control through the external PTZ is not effective even when the camera has been connected to an external PTZ.
 3. Set this parameter as required. Make sure PTZ control related interfaces are correctly connected.
 - c. Address Code
 - i. Set the address code for the PTZ.
 1. You can set this parameter only when **Port Mode** is set to **PTZ Control** and **PTZ Protocol** is not set to **INTERNAL-PTZ**.
 - d. Click **Save**.

The screenshot shows the configuration interface for RS485_1. The Port Mode is set to PTZ Control. The Baud Rate is 9600, Data Bits is 8, Stop Bits is 1, Parity is None, and Flow Control is None. The PTZ Protocol is set to INTERNAL-PTZ, and the PTZ Mode is set to Built-in PTZ Priority. The Address Code is 1. There is an unchecked checkbox for Enable Trans-Channel.

Transparent channel

Use the RS485 serial port to achieve transparent data transmission with the third-party device.

1. Click Setup > System > Ports & Devices, and then click the Serial Port tab.
2. Select Trans-Channel from the Port Mode drop-down list.
3. Click Save.

The screenshot shows the configuration interface for RS485_1. The Port Mode is set to Trans-Channel. The Baud Rate is 9600, Data Bits is 8, Stop Bits is 1, Parity is None, and Flow Control is None. There is an unchecked checkbox for Enable Trans-Channel.

OSD

To display information from the third-party device on the OSD, you need to select OSD as the port mode. The

camera receives information from the third-party device through the RS485 serial port, translates the received information, and then displays it on the OSD.

NOTE:

To enable the camera to correctly translate information received from the third-party device, make sure that the information sent by the third-party device through the serial port complies with the data format specified by our company. For more details, contact your dealer.

1. Click **Setup > System > Ports & Devices**, and then click the **Serial Port** tab.
2. Select **OSD** from the **Port Mode** drop-down list and select **Enable OSD Report**. Then OSD data will be reported to the management platform.
3. Click **Save**.

RS485_1	
Port Mode	OSD
	<input checked="" type="checkbox"/> Enable OSD Report
Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None
	<input type="checkbox"/> Enable Trans-Channel

Transparent Channel Configuration

Transparent channel is mainly used to achieve transparent data transmission between two devices.

NOTE:

- This function is not supported by some models, please see the actual model for details.
- Make sure that you have set **Port Mode** to **Trans-Channel** for your camera.
- The actual displayed Web interface may vary with the device model.

1. Click **Setup > System > Ports & Devices**, and then click the **Trans-Channel** tab.
2. Select **Enable** for **Trans-Channel**.
3. Enter the destination IP address and port number (IP address and port number that the transparent channel connects to).
4. Click **Save**.

RS485_1	
Port Mode	Trans-Channel
Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None
	<input checked="" type="checkbox"/> Enable Trans-Channel
Destination IP	192.168.0.30
Destination Port	17081
Source IP	204.4.1.234
Source Port	1025

Wiper Control

You can set the wiper parameters to control the housing and the PTZ wiper operation.

1. Click **Setup > System > Ports & Devices**, and then click the **External Device** tab.
2. Set the wiper control mode and the parameters to enable wiper.

Wiper	
Control Mode	Serial Port
Enable Wiper	Normally Open

NOTE:

- *Serial Port:* The wiper is controlled through PELCO-D instructions. Please set the PTZ protocol to PELCO-D.
- *Normally Open/Closed:* The wiper is controlled through alarm input/output settings, including normally open and normally closed.
- *Enable Wiper:* This function is available only in alarm input/output mode.

Viewing Device Status

You can view the current status of your camera.

1. Click **Setup > Common > Navigation**.
2. Click **Refresh** for the latest status information.
3. View the device information.

Maintenance

Upgrading the Device

If the device is managed by the central management server and you want to upgrade the devices in batch mode, it is recommended to perform the upgrade operation on the central server. For detailed steps, see the user manual for the central management server.

1. Click **Setup > System > Maintenance**.

2. Under **Firmware Upgrade**, click **Browse** and select the correct upgrade file.
3. (Optional) Select the check box to enable **Upgrade Boot Program**.
4. Click **Upgrade** and then confirm to start. The camera will restart automatically after the upgrade is completed.

NOTE:

- You must use the correct upgrade file for your camera. Otherwise, unexpected results may occur.
- The upgrade file is a ZIP file and must include all the necessary files.
- The boot program loads the operating system and then the system starts running. The upgrade boot program function is disabled by default, and only the camera will be upgraded to the latest version. If enabled, both the camera and the boot program are upgraded, and the operating system of the following new versions can be booted properly and the camera can be upgraded conveniently.
- Ensure that the power supply is normal during upgrade. The device will restart after the upgrade is completed.

Restarting the System

1. Click **Setup > System > Maintenance**.

2. Under **Device Restart**, click **Restart**. The device will restart after you confirm the operation. You may also enable auto-restart by selecting **Enable Auto Restart** and setting a time for auto-start. The device will restart at the set time.
3. Perform this operation with caution because restarting the system interrupts the ongoing service.

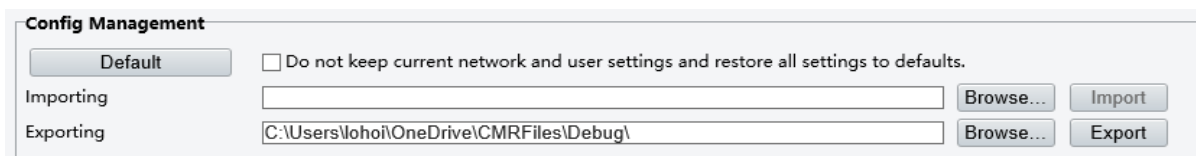
Importing and Exporting System Configuration File

Export the current configurations of the camera and save them to the PC or an external storage medium. You can also quickly restore configurations by importing backup configurations stored on the PC or an external storage medium back to the camera.

CAUTION:

- After you perform the Default operation, all settings are restored to factory defaults, except the following: login password of the system administrator, network settings, and system time.
- Make sure you import the correct configuration file for your camera. Otherwise, unexpected results may occur.
- The camera will restart when the configuration file is imported successfully.

1. Click **Setup > System > Maintenance**.

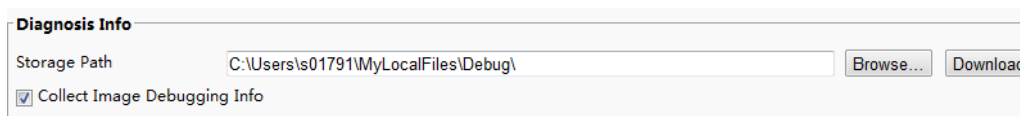


2. To import configurations that you have backed up, click **Browse** next to the **Import** button and select the configurations you want to import, and then click **Import**. The result will be displayed.
3. To export configurations, click **Browse** next to the **Export** button, select the destination folder, and then click **Export**.
4. To restore default configurations, click **Default** and then confirm the operation. The device will restart and restore the default configurations.

Collecting Diagnostic Information

Diagnostic information includes logs and system configurations. You can export diagnostic information to your PC.

1. Click **Setup > System > Maintenance**.



2. Under **Diagnosis Info**, click **Browse** to select the destination folder, and then click **Download** to save the diagnostic information to the specified folder.

NOTE:

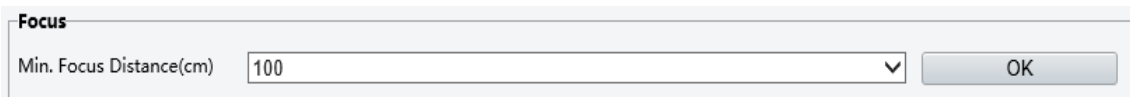
- Diagnostic information is exported to the local folder in form of a compressed file. You need to decompress the file using a tool such as Win RAR and then open the file using a text editor.
- Select **Collect Image Debugging Info**. Then the recording and the debugging information can be displayed synchronously for convenient troubleshooting.

Digital Zoom & Focus Configuration

Min. Focus Distance

The device can adjust the speed of auto-focus according to the minimum focus distance. In order to shoot clear objects, it is recommended that the minimum focus distance is set shorter than the distance between the objects and lens, for example, if the minimum focus distance is 3m, then the objects within 3m from lens will be out of focus.

1. Click **Setup > System > Maintenance**.



2. Configure **Minimum Focus Distance** under **Focus**.
3. Click **OK**.

Max. Zoom Ratio

This section provides the zoom capabilities, which is digital zoom capabilities.

1. Click **Setup > System > Maintenance**.

Focus

Min. Focus Distance(cm) 10

Max. Zoom Ratio 22

44

88

176

352

Note: 1. Software upgrade, sys 176
2. Restarting the device 352

um focus distance will cause

2. Configure zoom ratio in dropdown menu. The smallest number is the camera optical zoom range.
3. Click **OK**.

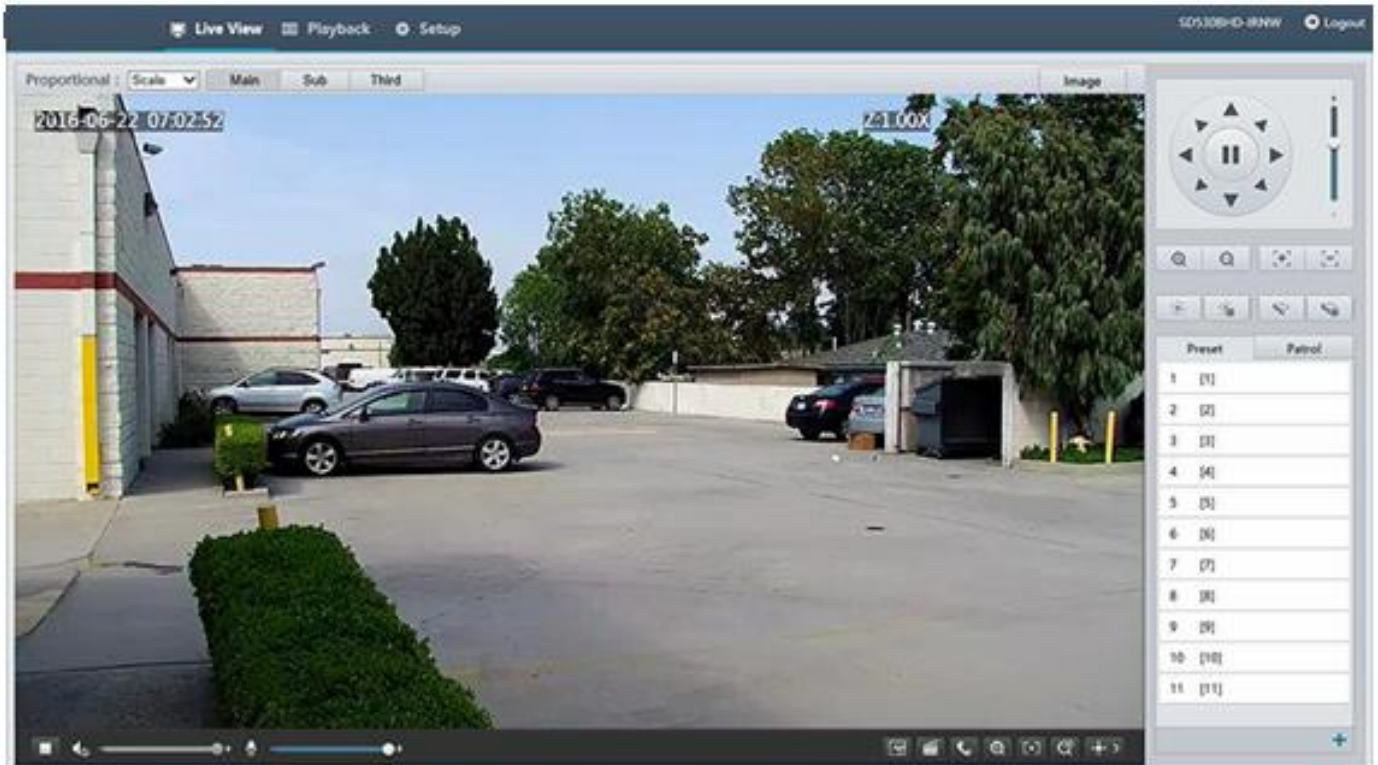
NOTE:

- This digital zoom functionality is **ONLY** available in 3MP, 4K H.265 models.

Live View

Live view means playing live video (real-time audio and video) received from a camera in a window through the Web interface.

If you log in with the **Live View** check box selected, live video appears by default when you are logged in. You may double-click the window to enter or exit full screen mode.



Live View Toolbar

NOTE:

The supported live view operations may vary with camera model. For the operations that your camera supports, see the Web interface.



1. Play/stop live video.
2. Turn On/Off speaker.
3. Adjust the output volume for the media player on the PC.
4. Turn On/Off mic.
5. Adjust the microphone volume on the PC during audio communication between the PC and the camera.
6. Take a snapshot of the current image displayed on the PC. The path for saving snapshots is set in **System Configuration**.
7. Start/stop local recording. The path for saving local recordings is set in **System Configuration**.
8. Start/stop audio communication between the PC and the camera.
9. Start/stop digital zoom. For more details, see [Using Digital Zoom](#).
10. Start/stop Area Focus.
11. Start/stop 3D positioning. For more details, see [Using 3D Positioning](#).
12. Show/hide the PTZ control panel.
13. Reset the packet loss rate to zero. After you move the mouse cursor on a live view window, this button appears on the floating toolbar.
14. Collect/Expend Tool Bar.
15. Display packet loss rate and bit rate information in the bottom.
 - a. After you move the mouse cursor on a live view window, this button appears on the floating toolbar. Click this icon to display the bottom information.
 - b. Click this icon again, the bottom information is displayed if the mouse cursor is moved on a live view window or on the bottom information, and it hides automatically if the mouse cursor remains on a live view window for 3 seconds or leaves the window.
16. Set the display ratio of the image.
 - a. Scale: display images by 16:9
 - b. Stretch: display images by window size
 - c. Original: display images in its original size
17. Select a live video stream that the camera supports: main stream, sub stream or third stream.
18. Click this button to open the image setting page.
19. Display in full screen mode.

Viewing Certain Area of Images


Digital zoom and 3D positioning allow you to get more details of certain part of images. Digital zoom enlarges an image with loss in image quality, while 3D positioning enlarges an image without.

Using 3D Positioning


NOTE:

- *This function is available only for network PTZ cameras and network box cameras equipped with motorized zoom lens and PTZ. Please see actual models for details.*

3D Positioning provides an easy way to target an object, to which you can move PTZ quickly.

1. On the **Live View** page, click  on the toolbar.
2. Click and hold the mouse button, and then drag from up to down to specify an area that you want to watch. PTZ will move and zoom in to the target automatically.
3. Click and hold the mouse button, and then drag from down to up to zoom out.



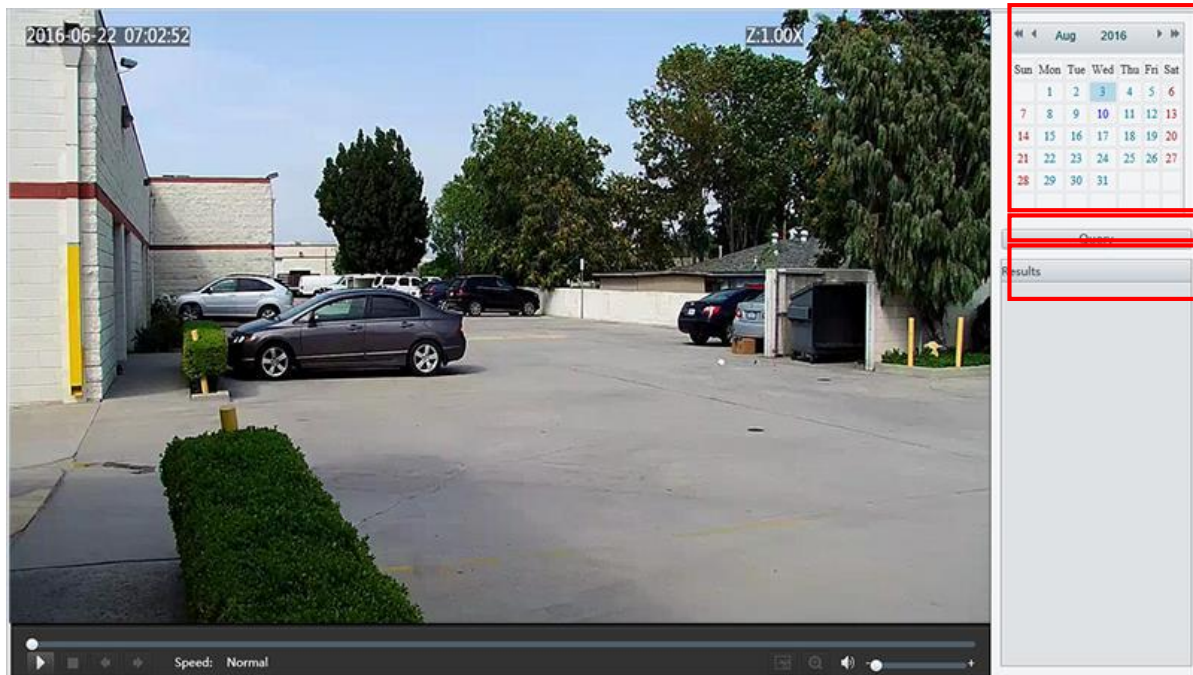
- To exit, click .

Video Playback and Download with Edge Storage

NOTE:

- Edge storage refers to recording video to the memory card of a frontend device (mostly a camera). Local recording refers to recording video to a local PC client.
- Before you play back video with edge storage, check that the camera has been installed with a memory card and storage has been configured.

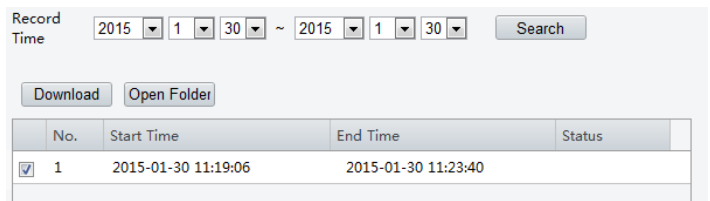
- This function is not supported by some models, please see actual models for details. Click **Playback** on the home page.



- Select the date from the calendar.
- Click **Query**.
- Under **Results**, double-click the time period to start playing there cording.

Download

- Click **Setup > Storage > RecordDownload**.
- Search for video within a specified period. The results will be shown in a list.
- Select your video and click **Download**. The video will be downloaded to your local path from the memory card (local path can be changed in **System Configuration**).
- Click **Open Folder** to show the folder where the downloaded video issaved.



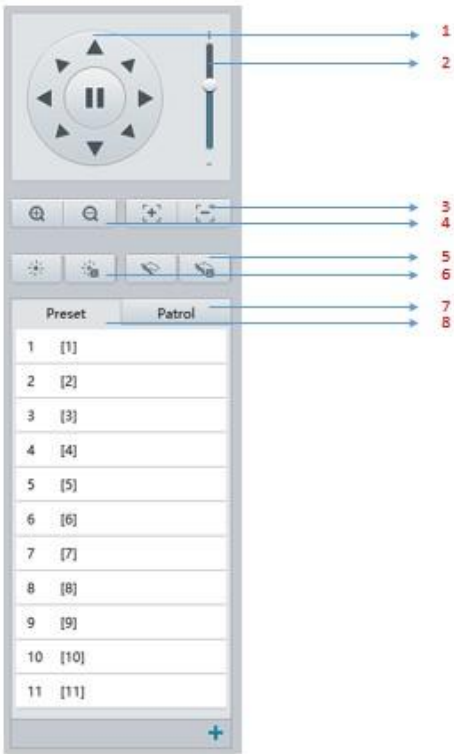
PTZ Control

This function is available only for the PTZ dome cameras or a box camera installed on a Pan/Tilt motor.

NOTE:

- Some of the lens control functions are applicable to cameras equipped with motorized lens.
- The PTZ control buttons may vary with camera model. For the PTZ control buttons that your camera supports, see the Web interface.

PTZ Control Toolbar



1. Control the direction of the PTZ camera and release the control.
2. Adjust the moving speed of the PTZ camera.
3. Adjust camera focus.
4. Adjust camera zoom.
5. Turn on or off the wiper.
6. Turn on or off the heater.
7. Select a patrol route and then click to start patrol.
 - To edit a patrol route, click .
 - To add a patrol route, click .
 - To delete a patrol route, click .
8. Select a preset and then click . The PTZ camera goes to the selected preset. To add a preset, click . To delete a preset, click .

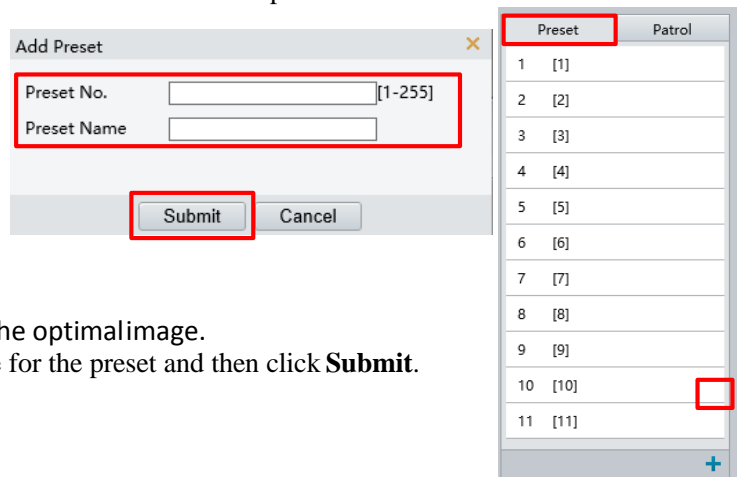
Setting Patrol by Presets

Setting Presets


On the **Preset** tab, you can manage presets or perform certain control operations to the PTZ camera. For more details, see [PTZ Control Toolbar](#).

Add a preset


1. On the **Live View** page, click **Preset** on the control panel.
2. Adjust the camera till it points toward the desired direction.
3. Adjust zoom and focus as needed to obtain the optimal image. Click to add it as a preset. Enter a number and name for the preset and then click **Submit**.





Go to a preset

1. On the **Live View** page, click **Preset** on the control panel.
2. Click  for a preset. The PTZ camera goes to the selected preset.

Delete a preset


1. On the Live View page, click Preset on the control panel.
2. Click  for a preset and then confirm the delete.

Preset	Patrol
1 [TV]	 
2 [2]	
3 [3]	
4 [4]	
5 [5]	
6 [6]	
7 [7]	
8 [8]	
9 [9]	
10 [10]	
11 [11]	

Setting Patrol

A patrol route is the track by which a PTZ camera follows when moving from a preset to the next. The length of time that a PTZ camera stays at each preset is configurable. Multiple patrol routes are allowed for a PTZ camera. Patrol actions include going to a preset and staying at the preset for a certain amount of time before going to the next. You can set the rotation direction, zoom, rotation speed, patrol time, and stay time. The system records the route and adds it to the action list. You may select **Keep Rotating** so the PTZ camera follows the same route and patrols repeatedly.

Add a patrol route

1. On the **Live View** page, click **Patrol** on the control panel.
2. Click .
3. On the **Add Patrol** page, enter the route ID and name, and then click **Add** to add a patrol action. Use the buttons to adjust the sequence of the actions.

Add Patrol

Route ID

Route Name

Action Type	Speed	Keep Rotating	Duration(ms)/Ratio	Preset	Stay Time(ms)





Preset	Patrol
1 [1]	

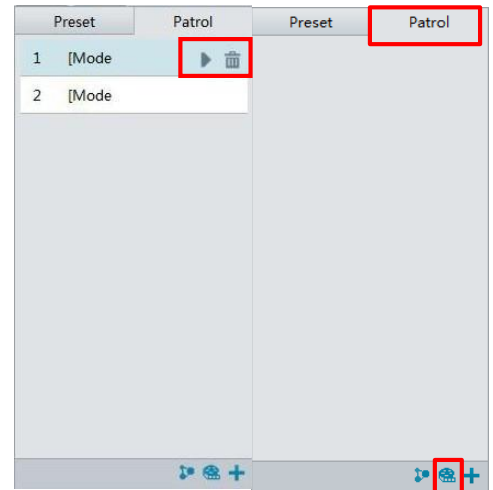
Patrol actions include:

- Go to a preset and stay for a certain amount of time before going to the next preset.
- Rotate at the set speed in the set direction for a certain amount of time, zoom, stay at a set position for a certain amount of time, or patrol repeatedly if **Keep Rotating** is selected.


It is recommended that the first action type is **Go to Preset**.

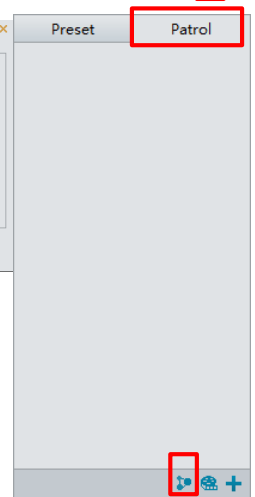
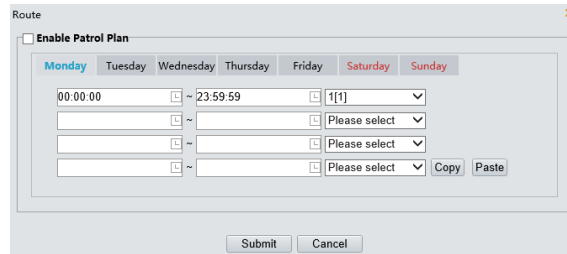
Click Submit. Record a patrol route

1. On the **Live View** page, click **Patrol** on the controlpanel.
2. Click  to start recording the patrol route. You can adjust the direction and zoom of the camera during the recording. The system records the motion and track of the camera and adds them to the action list.
3. Click  to finish recording. Then the patrol route is saved as a mode route automatically. You can click  to start patrol or  to delete the mode route.




Make a patrol plan

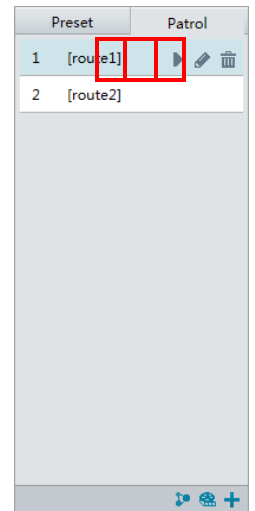
1. On the **Live View** page, click **Patrol** on the control panel.
2. Click . The page for setting patrol plans is displayed.
3. Set the correct patrol time and route.
4. Select **Enable Patrol Plan**.




Click Submit. Start a patrol route

After you have added a patrol route, select the patrol route to start patrol.


1. On the **Live View** page, click **Patrol** on the controlpanel.
2. Click  for the patrol route you want to start.



Edit a patrol route

1. On the Live View page, click Patrol on the control panel.
2. Click  for the patrol route you want to edit and modify the settings as required.

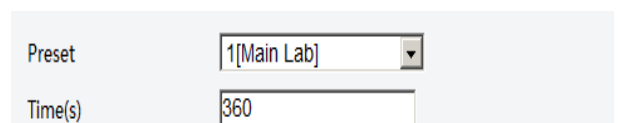
Delete a patrol route

1. On the Live View page, click Patrol on the control panel.
2. Click  for the patrol route you want to delete and then confirm the delete.

Setting Home Position

PTZ camera will return to home position if no operation is made within a specified period.

1. Click **Setup > PTZ > Home Position**.
2. Select the desired preset as the home position and set the time. To add a preset, [see Add a preset](#).
3. Click **Save**.



Remote Control PTZ

When the third-party platform is used and the PTZ protocol does not match that, you can set the remote control function to control the PTZ.

1. Click **Setup > PTZ > Remote Control**.
2. Under **Remote Control**, select **Enable** and set the listener port and address code.
3. Click **Save**.

Remote Control	<input checked="" type="checkbox"/> Enable
Listener Port	<input type="text" value="10008"/>
Address Code	<input type="text" value="1"/>

NOTE:

- *The listener port is the local port number of the camera and cannot be set as an occupied port. Please keep the default port number for general conditions.*
- *The camera can read the address code in the instruction. If it is the same as the address code on the Web, the camera can parse the instruction.*

Preset Snapshot

When an alarm is triggered to the preset, the camera can snapshot and upload images to the FTP server. Please complete FTP settings and snapshot alarm settings before you enable this function.

1. Click **Setup > PTZ > Patrol**.
2. Select **Enable**.
3. Click **Save**.

Preset Snapshot	<input checked="" type="checkbox"/> Enable
<input type="button" value="Save"/>	

Appendix A Glossary

Acronym	Description
ARP	Address Resolution Protocol
CBR	Constant Bit Rate
DNS	Domain Name Service
DDNS	Dynamic Domain Name Service
DHCP	Dynamic Host Configuration Protocol
DST	Daylight Saving Time
FTP	File Transfer Protocol
GOP	Group Of Pictures
GUI	Graphical User Interface
HTTPS	Hyper Text Transfer Protocol over SSL
IE	Internet Explorer
IMOS	IP Multimedia Operation System
IP	Internet Protocol
IPC	IP Camera
MTU	Maximum Transmission Unit
NTP	Network Time Protocol
OSD	On Screen Display
PoE	Power over Ethernet
PPPoE	Point-to-Point Protocol over Ethernet
PTZ	Pan, Tilt, Zoom
ROI	Region of Interest
SMTP	Simple Mail Transfer Protocol
SSL	Secure Socket Layer
UNP	Universal Network Passport
USB	Universal Serial Bus
VBR	Variable Bit Rate
WDR	Wide Dynamic Range