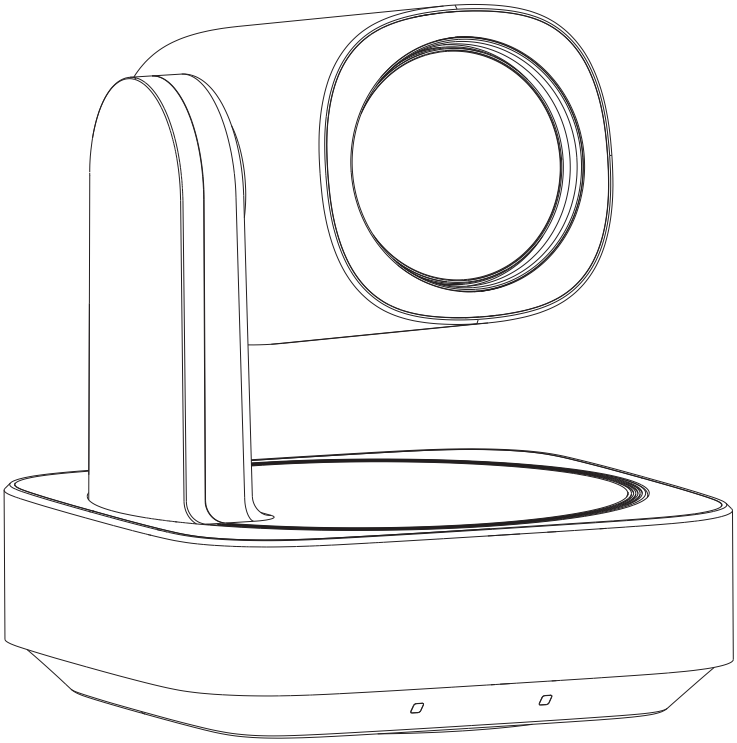
HD PTZ Camera

User Manual



Version V1.4

Contents

Product Description----------1

Packing List----------2

Performance Characteristics----------3

Remote Control Button Description ---------- 4

Camera Menu Set ---------- 5

Common Operation Instructions ---------- 9

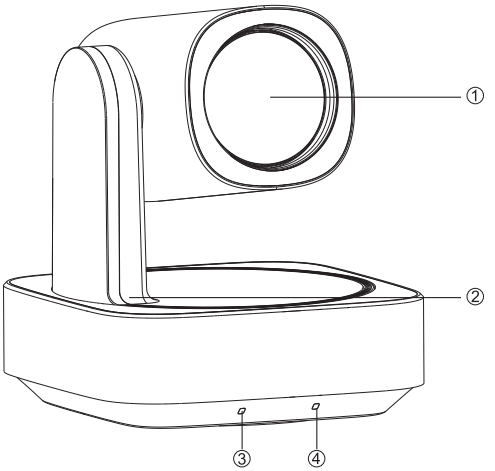
Network Function---------- 12

Trouble Shooting ---------- 21

Maintenance Services ---------- 23

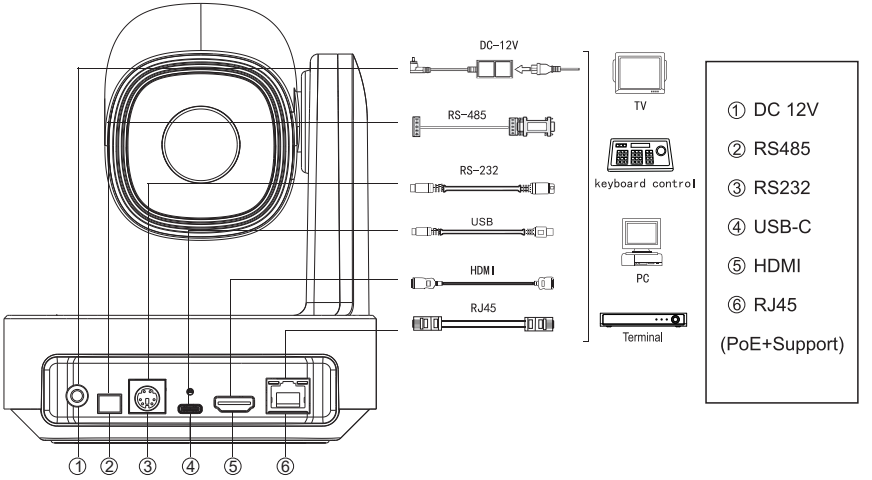
1. Product Description

1.1 Front

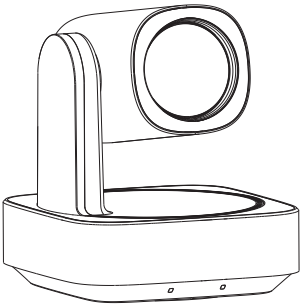


①Lens
②Pan&Tilt
③Standby
④Power

1.2 Back

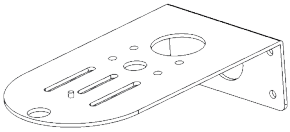


2. Packing List

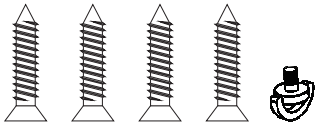


HD PTZ Camera

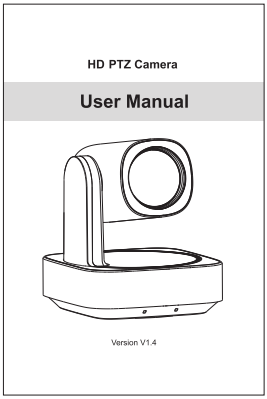
DC 12V power supply



Wall mount

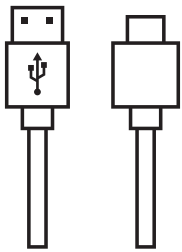


Mounting screws



User manual

Remote control

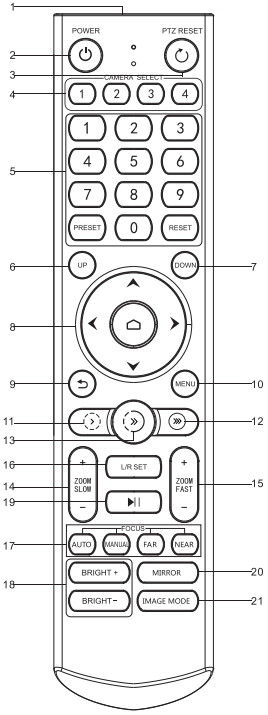


USB cable

3. Performance Characteristics

Model No.	VL5N	VL10N	VL20N
Image Sensor	Sony IMX307 1/2.8" CMOS	Sony IMX307 1/2.8" CMOS	Sony IMX307 1/2.8" CMOS
Effective Pixels	2.38 MP		
Lens	f=3.2-13.2mm	f=4.34mm～35.17mm	f=5.5mm～110mm
Aperture	F1.8～F2.8	F1.85～2.63	F1.6～3.5
Video Format	1080P@60/50/30/25fps, 720P@60/50/30/25fps		
Optical Zoom	5x zoom	10x zoom	20x zoom
Horizontal Angle	85°(W)-22°(T)	68.8°(W)-8.8°(T)	55.8°(W)-3.2°(T)
Vertial Angle	53°(W)-12.8°(T)	39.5°(W)-5.1°(T)	32.2°(W)-1.8°(T)
Diagonal Angle	95°(W)-27.4°(T)	77.2°(W)-10.1°(T)	61°(W)-3.64°(T)
Backlight Compensation	Support		
SNR	>50dB		
Focus	Auto / Manual		
Digital Noise Reduction	2D & 3D Noise Reduction		
Exposure	Auto / Manual		
I / O Interface			
Video Interfaces	HDMI, TYPE-C, RJ45		
Video Compression Format	H.264, H.265, MJPG, YUY2		
LAN	10M/100M adaptive Ethernet port; Support POE IEEE802.3af		
Network Protocol	NDI|HX2, RTSP, RTMP, ONVIF, GB28181; Support VISCA Over IP		
Control Protocol	VISCA/Pelco-D/Pelco-P; Baud Rate: 9600/4800/38400/2400		
Control Interface	RS232 (input & output), RS485, TYPE-C(UVC1.1)		
PTZ Parameter			
Pan/Tilt Rotation	±175°, -90°～+90°		
Pan Control Speed	0.1 -80°/sec		
Tilt Control Speed	0.1 -60°/sec		
Preset Number	255 presets by Pelco-D, 32 presets by Pelco-P, 7 presets by Visca (10 presets by remote controller)		
General Parameter			
Operation Systems	Windows 7, Windows 8.1, Windows 10, Windows 11; Android, , Mac OS™ 10.10 or higher, Linux (Require to support UVC.)		
Input Voltage	DC 12V		
Input Current	2.0A (Max.)		
Power Consumption	13W (Max.)		
Store Temperature	-10℃～+60℃		
Store Humidity	20%～90%		
Working Temperature	-10℃～+50℃		
Working Humidity	20%～80%		
Dimension(W*H*D)	171.6*192.6*171.6mm/ 260*217*197mm (before/ after packing)		
N.W. / G.W	1.35kg/ 2.05kg (Net/ Gross weight)		
Accessories	1 x Camera; 1 x USB Cable; 1 x Power Adapter; 1 x Wall Mount; 1 x Manual		
Mfg. Warranty	3 Years Parts & Labor		

4. Remote Control Button Description



No	Name	Function
1	Launch Window	Remote Control Launch Window
2	Power	Enter into Standby mode by pressing
3	PTZ Reset	Reset the PTZ
4	Camera Select Key	Select the camera need to control
5	Position	Preset position setup keys, include 【PRESET】and【RESET】 Set the preset position Reset the preset position
6	UP	The camera rotates horizontally in regular installed direction
7	DOWN	The camera rotates horizontally in reversed installed direction
8	PTZ Control Key	PTZ move according to the arrow indicates. Press【 】PTZ will back to the default position
9	Return/Exit	Return to up level menu or exit menu
10	MENU	Enter or exit OSD Menu after pressing it
11		PTZ rotates speed-
12		PTZ rotates speed
13		PTZ rotates speed+
14	ZOOM Slow Key	Zoom in + or out - slowly
15	ZOOM Fast Key	Zoom in + or out - quickly
16	L/R Set	Support, press this key for 10 seconds
17	Focus Key	Auto/Manual/Far/Near Focus Default: Auto Focus
18	Bright Adjustment	Adjust the brightness of the image
19	⏯	Reserved
20	Mirror	Enable the picture left/right flip
21	Image Mode	Switch between three image modes Normal, PC, Bright

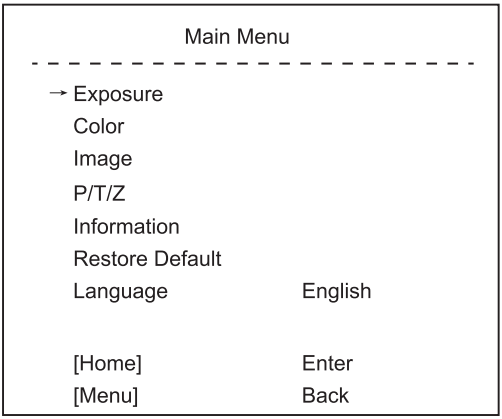
★Attentions for Remote Control

1. Please check whether the indicator corresponding to the camera selection area is on or not.
2. If the remote control doesn't work, please replace batteries.
3. Make sure the Number keys on the camera selection area are consistent with the remote control address in the menu.

5. Camera Menu Setup

When operating remote control, press 【MENU】 to enter main menu of the video camera.

5.1 Level 1 Menu - Main Menu

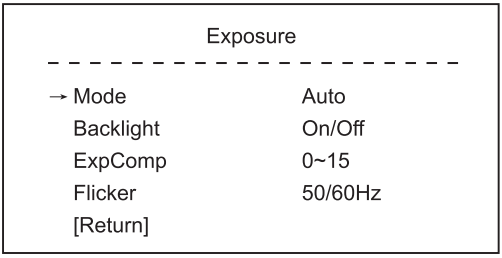


Language: Support Chinese/English

Click the Home button on the Remote to enter level 2 sub-menu

Click the Menu button on the Remote to exit menu

5.2 Level 2 Menu - Exposure



Mode: Auto/Manual

Backlight: On/Off the backlight

ExpComp: Exposure compensation, optional item is 0 to 15

Flicker: Support 50Hz/60Hz

When changing the exposure mode to Manual, the sub-menu is the following,

Exposure	
→ Mode	Manual
Iris	F1.6
Shutter	1/100000~1/25
Gain	50
Flicker	50Hz/60Hz
[Return]	

Iris: FNo. Setting, the value should be F1.6/F2.0/F2.4/F2.8/F3.4/F4.0/F4.8/F5.6/F6.8/F8.0/F9.6

Shutter: Shutter value setting, the value is between 1/100000 and 1/25

Gain: Exposure Gain Setting, optional item is 0 to 99

5.3 Level 2 Menu - Color

Color	
→ Brightness	50
Contrast	50
Hue	50
Saturation	50
Sharpness	50
WB Mode	Auto
Rtuning	50
Btuning	50
[Return]	

Brightness: Set image brightness Dynamically. Default 50, optional item 0-99

Contrast: Set image contrast Dynamically. Default 50, optional item 0-99

Hue: Set the relative brightness of the image. Default 50, optional item 0-99

Saturation: Set image color effect. Default 50, optional item 0-99

Sharpness: Set sharpness level. Default 50, optional item 0-99

WB mode: Auto/Manual/VAR

When the WB mode is Auto, the Rtuning and Btuning value can be turned, the range is 0 to 99

When the WB mode is Manual, the sub menu will be the following,

Color	
→ Brightness	50
Contrast	50
Hue	50
Saturation	50
Sharpness	50
WB Mode	Manual
Rtuning	50
Btuning	50
Rgain	50
Bgain	50
[Return]	

In manual WB mode, the above values can be adjusted. The Rgain and Bgain value can be tuning, the range is 0 to 99

When the WB mode is VAR, the sub menu will be the following,

Color	
→ Brightness	50
Contrast	50
Hue	50
Saturation	50
Sharpness	50
WB Mode	VAR
Color Temp	2500K~9000K
Rtuning	50
Btuning	50
[Return]	

The range for the color temp can be adjusted between 2500K to 9000K

5.4 Level 2 Menu - Image

Image	
→ Flip	Off/On
Mirror	Off/On
Video Format	1080P60
Menu Mirror	On/Off
USB Mode	ISOC/BULK
Style	Normal/PC/Bright
[Return]	

Flip: Enable/disable the picture up/down flip

Mirror: Enable/disable the picture left/right flip

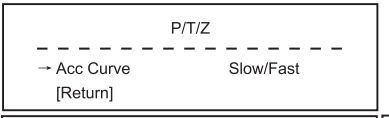
Video Format: 1080P60/1080P50/1080P30/1080P25/720P/60/720P/50

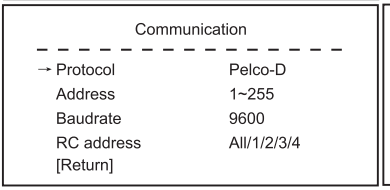
USB Mode: ISOC/BULK

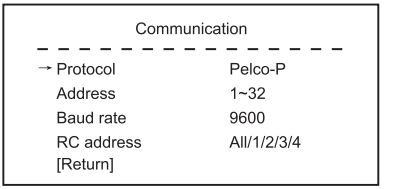
USB mode: Adjust between Isochronous transfers mode and Bulk transfers mode

Style Mode: Normal, PC, Bright

5.5 Level 2 Menu - P/T/Z





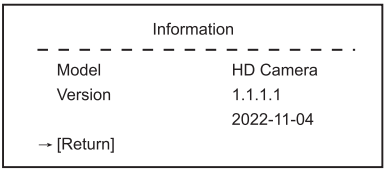


Procotol: Auto/Visca/Pelco-D/Pelco-P

Baudrate: 2400/4800/9600/38400

RC Address: All/1/2/3/4

5.6 Level 2 Menu - Information

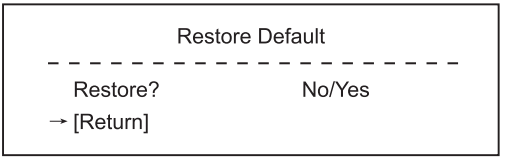


Model: HD Camera

Version: 1.1.1.1

Date: 2022-11-04

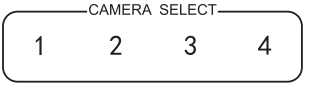
Notice：The version number here is just an example, the actual parameters shall prevail.



6. Common Operation Instructions

6.1 Camera Select

Refer to the dial-up at the bottom of the camera and choose camera address number that you want to control (1-4).



6.2 Camera Direction Control

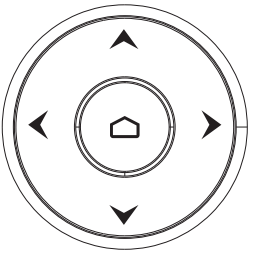
Turning up

Turning down

Turning left

Turning right

Turning to default



Note: Press the direction key when you need to adjust the angle. If you want to move the camera slowly, just click the direction key; If you want to move the camera fast at a large scale, just long-press the button.

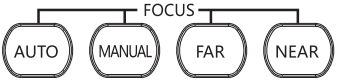
6.3 Camera Focusing Mode Control

【AUTO FOCUS】Switch the focus mode to AUTO

【MANUAL FOCUS】Switch the focus mode to MANUAL

【FAR】Far focus manually

【NEAR】Near focus manually



6.4 Camera Zoom Control

Press any one of the 4【ZOOM】to make the zoom functioning. These 4 keys are not applicable for fixed focus cameras.

6.5 Preset Setup, Call, Cancel

(1) Reserve Preset: Press【PRESET】, then press one of the numbers (0-9) to reserve a preset that corresponds to the NUMBER.

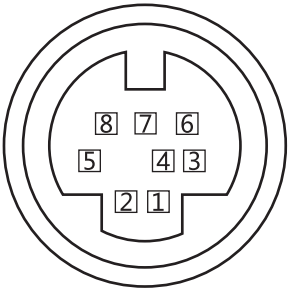
Note: You can setup 10 presets at most by the remote control.

(2) Call Preset: Press the NUMBER (0-9) directly to call the reserved preset.

Note: It won't work if there's no preset reserved in the corresponded number.

(3) Remove Preset: Press【RESET】, then press one of the number (0-9) to remove a preset that corresponds to the NUMBER.

6.10 RS-232 Interface Distribution

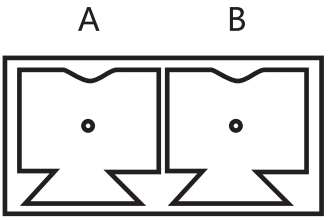


VISCA RS-232 IN

1.N.C.
2.N.C.
3.TXD
4.GND
5.RXD
6.N.C.
7.N.C.
8.N.C.

6.11 RS-485 Interface Distribution

PIN NUM	FUNCTION
A	DTR IN+ (connect to RS-485)
B	DSR IN- (connect to RS-485)



7. Network Function

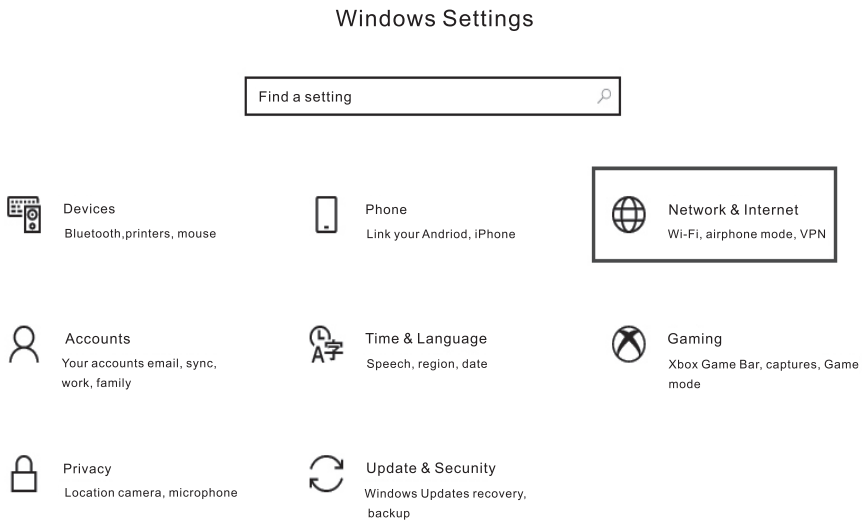
7.1 Operating System: Windows 7/8/10, Mac OS X, Linux, Android Network Protocol: TCP/IP Client PC: P4/128M RAM/40G HDD/ support scaled graphics card, support DirectX 8.0 or more advanced versions.

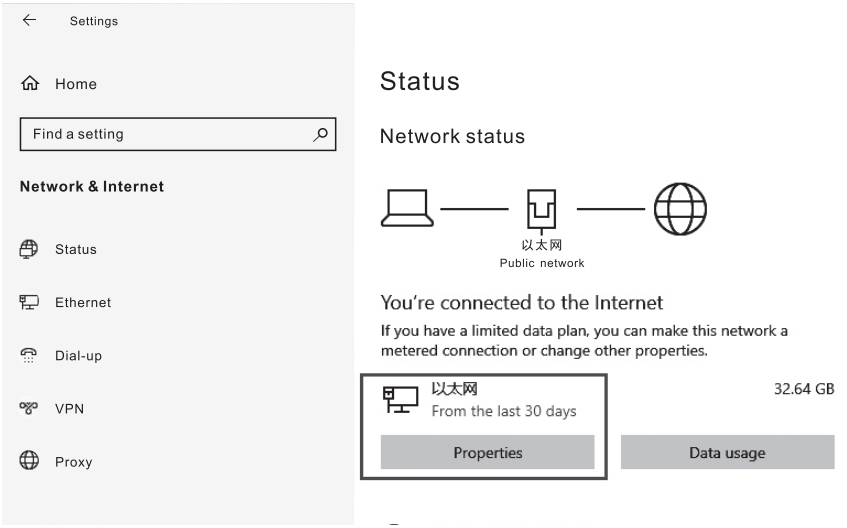
7.2 Equipment installation

Connect HD video camera to your internet or your PC via network cable, or connect by Switch/Router.

You can log into the camera's web interface with the default or modified IP. (Different models have different IP, please check the default IP at the bottom of the camera.)

7.2.1 How to query the IP address of your PC (Note the text in the box below)





Off

If you set a data limit, Windows will set the metered connection setting for you to help you stay under your limit.

Set a data limit to help control data usage on this network

IP settings

IP assignment:	Automatic (DHCP)

Edit

Properties

Link speed (Receive/Transmit):	1000/1000 (Mbps)
Link-local IPv6 address:	fe80::b1b8:1f9a:3e4d:4899%3
IPv4 address:	192.168.110.210
IPv4 DNS servers:	192.168.110.1
Primary DNS suffix:	lan
Manufacturer:	Realtek

7.2.2 How to add networking:

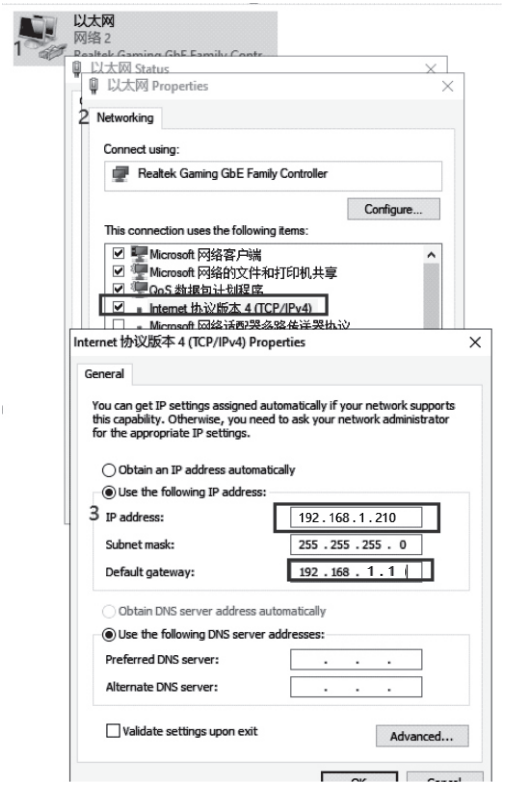
7.2.21 Open the computer network local connection attribute window, select "Internet Protocol Version 4 :TCP/IPv4;

7.2.22 Double-or-right-click " Internet Protocol Version 4 (TCP/IPv4) ;

7.2.23 Enter the Internet Protocol Version 4 (TCP/IPv4) window.

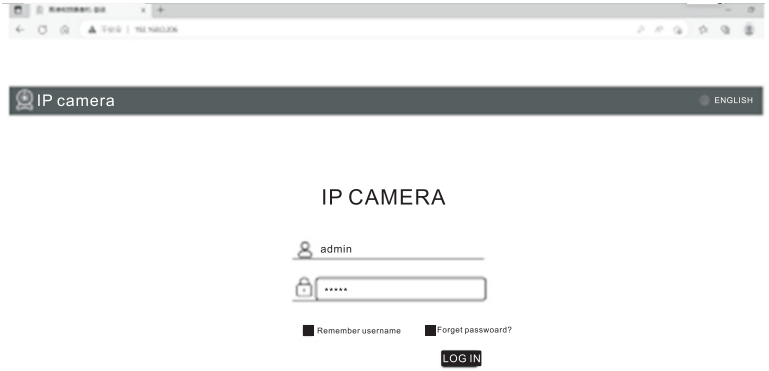
7.2.24 Change the computer's IP to 192.168.1.210 so that the computer IP and camera IP are on the same network segment.

PS:If no network segment is added, You will fail to log in. The default IP address of the product is 192.168.1.205． "0"network segment needs to be added to the computer. The IP address cannot conflict with the IP address of other computers or products. Before adding, please verify whether the IP already exists.

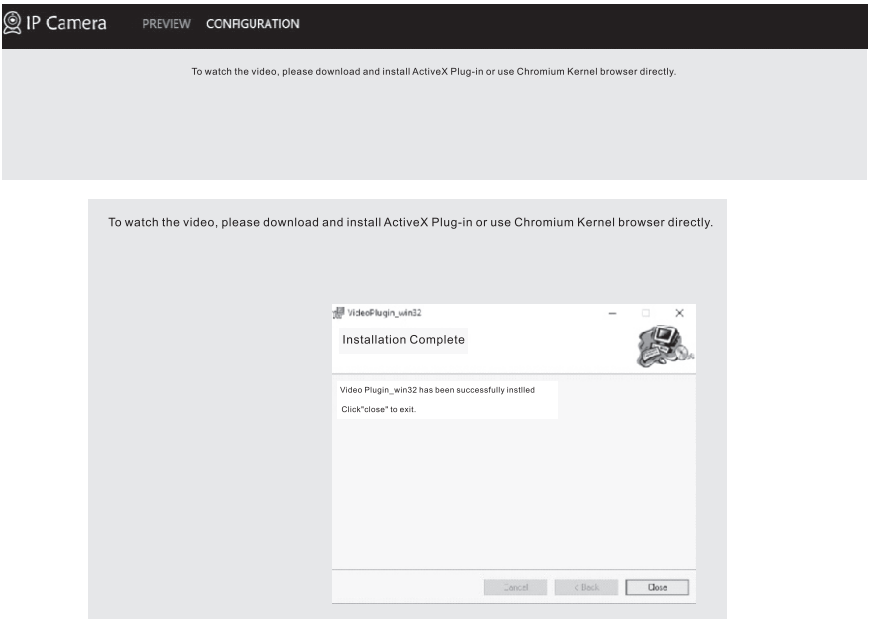


7.3 Input http:// 192.168.1.205 to IE(better with IE or Google web browser), a login window pop up, input user name: **admin**, password: **admin**, language,**English**, shown as below,whether the IP already exists.

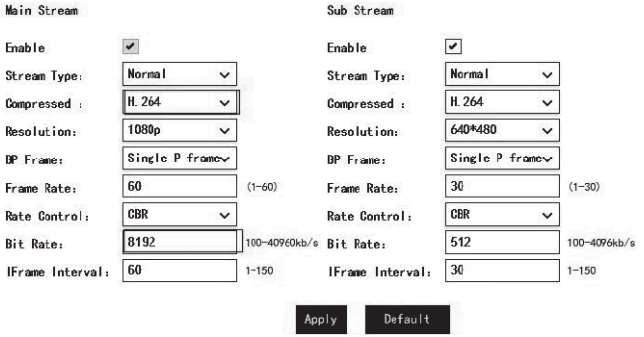
7.3.1 When logging in for the first time, you will be prompted to change your password. Users can change the password and save it.



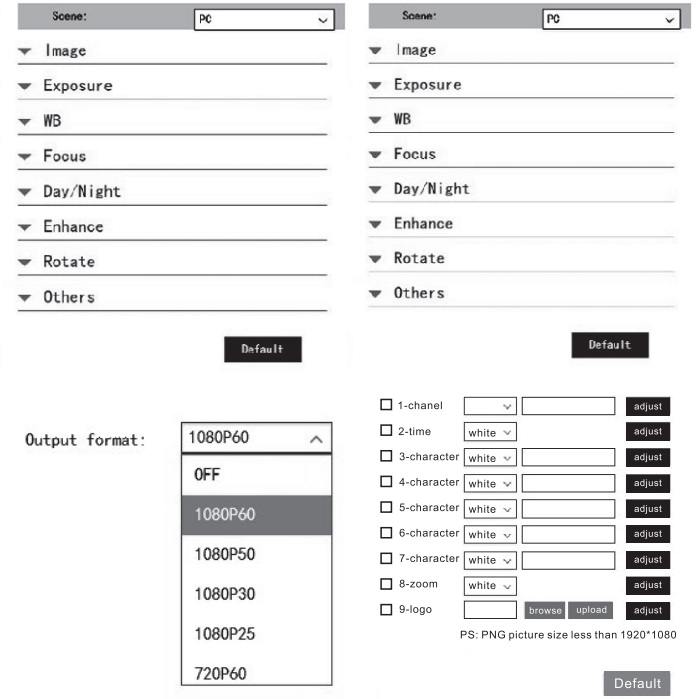
7.3.2 To watch the video, please download and install ActiveX Plug-in or use Chromium Kernel browser directly.



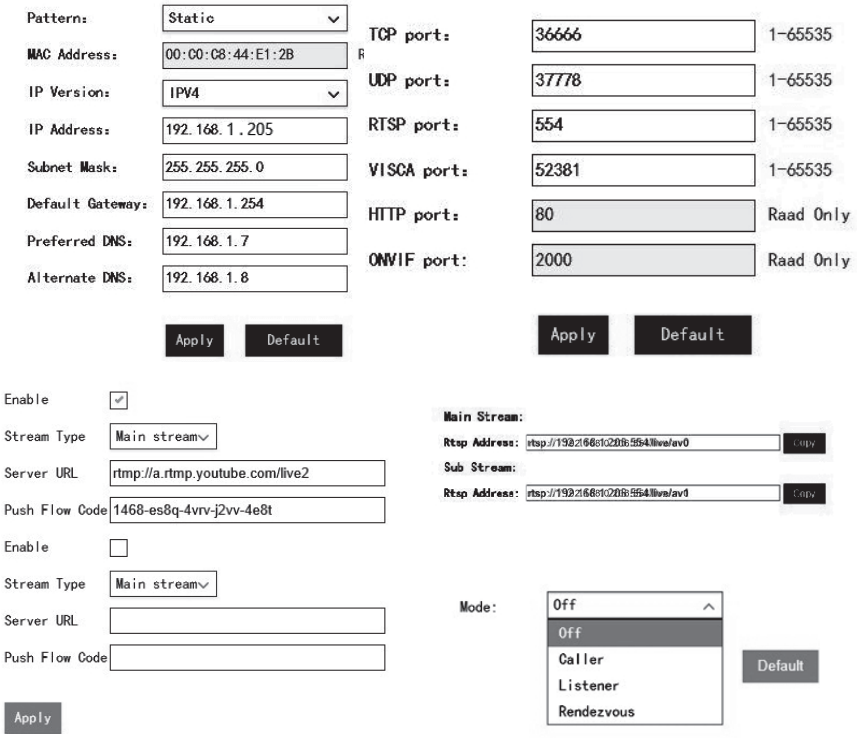
7.3.3 When logging in for the first time, you need to select encode compression format H264. Users can set the code stream or other parameters and save. The preview image will be displayed.



7.3.4 Users can set the image parameter, Encode, Video Output and OSD after the preview image comes out.



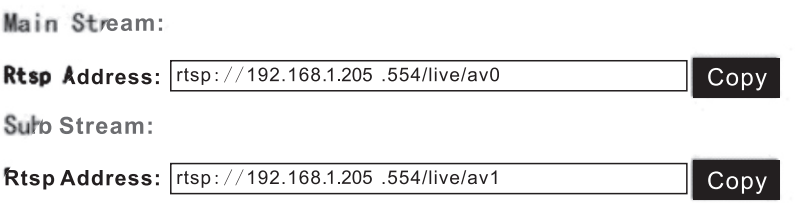
7.3.5 Users can sent the network such as Ethernet, Port, RTMP, RTSP and SRT, too.



7.4 Video streaming

7.4.1 RTSP video streaming

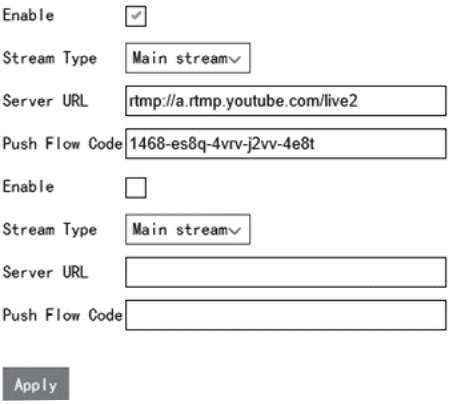
“System setting”－→“Network setting” →“RTSP” enter following interface,



Configure parameters according to the network environment.
For example, Camera default IP Address: 192.168.1.205 here is the way to get RTSP video streaming,
Default RTSP main streaming address:
rtsp://192.168.1.205:554/live/av0(av0 Main)
Default RTSP sub streaming address:
rtsp://192.168.1.205:554/live/av1(av1 Sub)

7.4.2 RTMP video streaming

"System setting"—→"Network setting" →"RTMP" enter following interface.

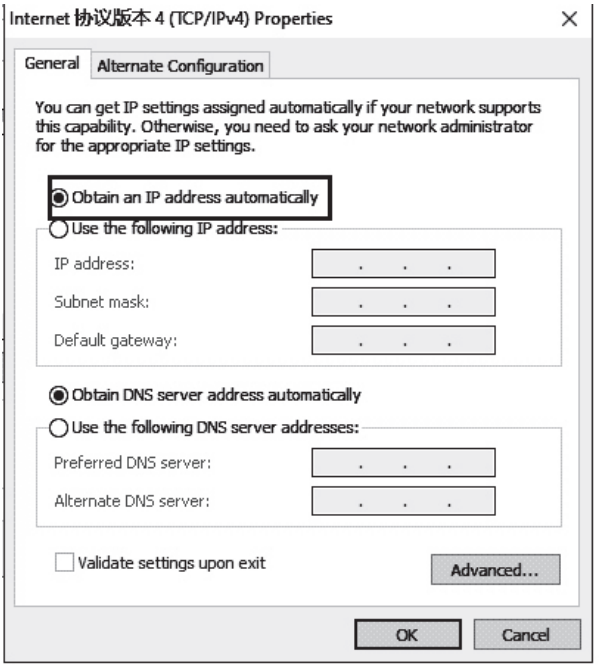


Enable and turn on the RTMP video stream to the server
Server URL: server address, which can be domain name or IP address
Streaming code: Persistent Stream Key/Name

7.5 Modify the camera IP and computer IP on to the same network segment, so that the computer network is not affected.

7.5.1 Change the camera IP address to: 192.168.110.206,
7.5.2 Default Gateway: 192.168.110.254
7.5.3 Alternate DNS: 192.168.110.7
7.5.4 Preferred DNS: 192.168.110.8

7.5.5 Return PC's IP to the original IP address, and select Obtain an IP address automatically



7.6 Software upgrade (upgrade if there is a new version)

7.6.1 After successfully login, you will enter the Video viewing interface. In the setting interface, you can set Pan and tilt control, Zoom, Focus, and set call, clear of preset positions, etc.

7.6.2 Select "System Settings" - → "System Management" - → "Maintenance Settings" to enter the following interface

7.6.2.1 Open upgrade file ". dat" to Upgrade automatically if needed.

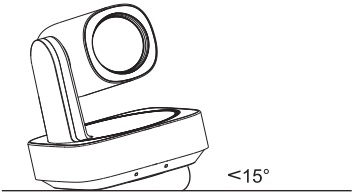
7.6.2.2 Restart the camera and prompt "Upgrade succeeded". Log in to the network and check whether the software version is consistent with the upgrade file to ensure that the upgrade is successful. Then click "Restore factory default" to restart and restore the parameters to the factory default setting. (IP default 192.168.1.205, User default: admin, password default: admin)

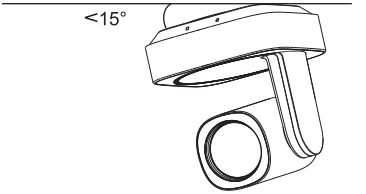
7.7 VISCA over IP
VISCA Protocol is transmitted through IP to reduce RS232/RS485 cabling (the controller must support IP communication)
Communication Port specification:
Control Port: RJ 45
IP Protocol: IPv4
Transmission Protocol: UDP
IP address: Setting through the web
Port address: 52381
Application Range: Under the same network segment

8. Trouble Shooting

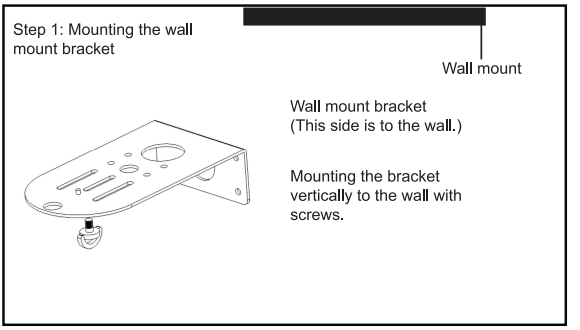
8.1 Surface Installation

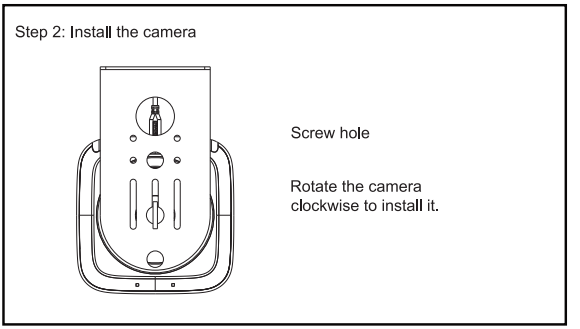
Put the camera on the desk flatly, and make sure the camera is in a horizontal position. If you want to put the camera on an oblique surface, please make sure the angle of inclination is less than 15 degrees to ensure the camera pan and tilt work in normal operation.





8.2 Wall Mount Installation





Before requesting service to service engineer, please refer to the following methods to remove failures. If the failures still can't be solved, please contact us for assistance.

Q: The video of the camera cannot be displayed on the screen.

A: Please check the connection between power cable, video cable, camera and monitor, fix the connector on each end.

Q: It's unable to Pan, Tilt and Zoom camera.

A: Because the menu was displayed on monitor. Please re-operate after exiting the menu.

Q: Why the camera rotates for about 10 seconds after power on?

A: This is the normal self-test of the camera.

Q: Poor Image quality while using in church or other low-light conditions.

A: Press menu (ON/OFF) to adjust backlight effect to suit the church lighting properly.

Q: Remote control is not working or insensitive.

A: ①Not work, please replace batteries.

②Not sensitive: Choose the correct "IR select" number to corrspond to the camera. Control the camera within 10m (32.8ft). Remove the obstacles. Aim at the sensor which is in front of the camera when controlling it.

Q: USB interface is not identifiable.

A: Please check if the USB cable and extension cable are well connected or not. If yes, change to another USB interface and try to connect again.

Q: It won't be controlled via RS-232/RS-485 when camera connect to PC.

A: Make sure it is a correct connection between the camera and PC. (Refer to RS-485 and RS-232 Pins distribution on page 12).

Q: Why no ceiling mount bracket?

A: Camera comes with wall mount ceiling mount or tripod brackets need to buy separately.

Q: Does this camera has built-in mic?

A: No, this camera comes with no built-in mic.

Q: Can we control the camera only by the remote control?

A: You can control the camera by remote control, keyboard controller (joystick), and software.

9. Maintenance Services

All products purchased from our company are guaranteed to keep in good repair for 36 months. If there are any quality problems during the guarantee period, we will maintain them for free.

Under any of the following warranties, related maintenance costs will be collected:

1. Product was not normally used.
2. Fire, electric shock, outside object collapse or other natural disasters causing the equipment damaged.
3. Unauthorized repair, misuse, abuse or change.

Warranty Card

Thank you so much for choosing our products.

User's Info

Name:_____ Tel: _____

Email:_____ Post Code:_____

Address:_____

_____

_____

Product's Info

Product Name:_____

Factory Serial Number:_____

Fault Description

_____

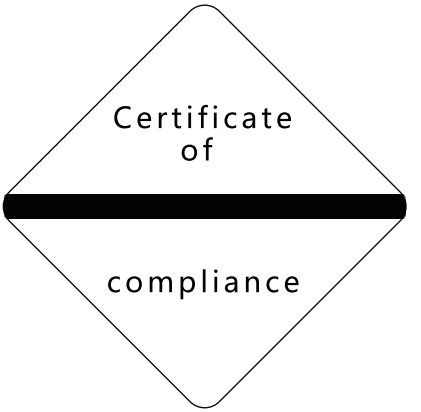
_____

_____

_____

Attention

1. This card is considered as the protection to fix warranty, so please reserve it carefully. Please fill in truthfully.
2. Please indicate the model number, factory serial number and the detailed description of the fault information.


Certificate
of
compliance

Q.A.
QC PASSED