4K PTZ Camera

User Manual
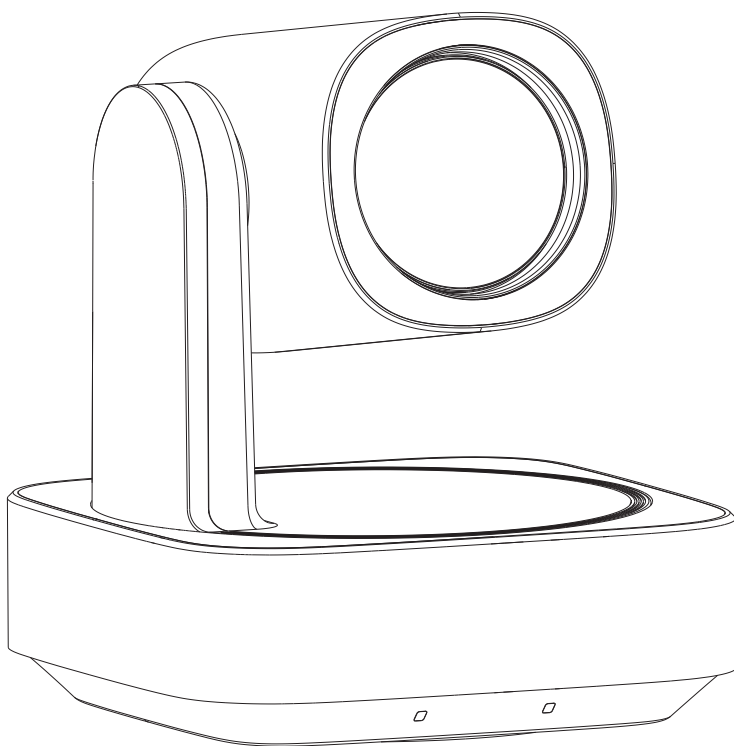
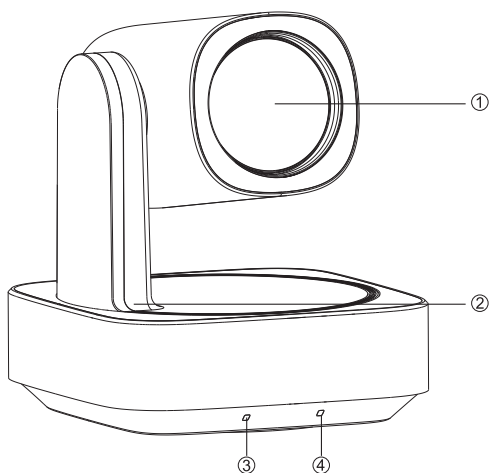Version V1.3

PTZ

Contents

1. Product Description

1.1 Front

① Lens
② Pan&Tilt
③ Standby
④ Power

1.2 Back

DC-12V
RS-485
RS-232
USB
HDMI
RJ45

TV
keyboard control
PC
Terminal

① DC 12V
② RS485
③ RS232
④ USB-C
⑤ HDMI
⑥ RJ45
(PoE+Support)

① ② ③ ④ ⑤ ⑥
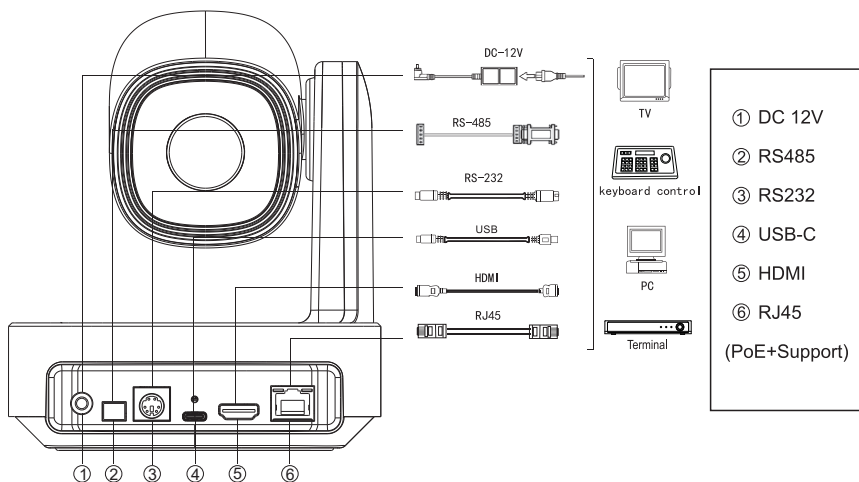
2. Packing List
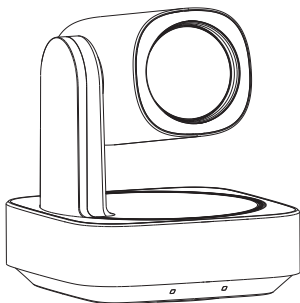
4K PTZ camera

DC 12V power supply

Wall mount

Mounting screws

User manual

Remote control

USB cable

2

3. Performance Characteristics

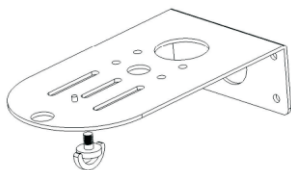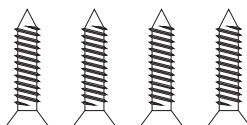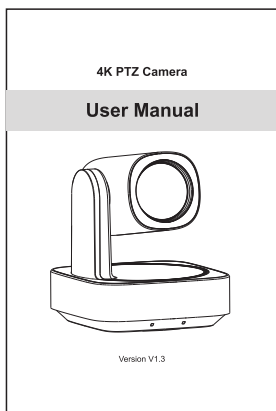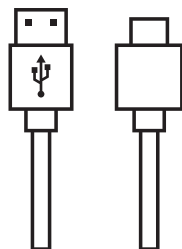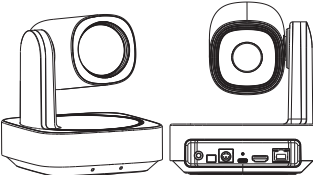| Item Name	USB3.0/HDMI PTZ Camera with 12x zoom		
Model No.	TEVO-VL12U		
Image Sensor	Sony IMX415 1/2.8" CMOS		
Effective Pixels	8.29MP, 16:9		
Lens	f=3.9-46.8mm		
Aperture	F1.6 ~ F9.6		
Video Format	HDMI(4KP@30/25fps, 1080P@60/50/30/25fps, 720P@60/50/30/25fps)		
	USB3.0(3840*2160P@30fps, 2560*1440P@30fps, 1920*1080P@30fps, 1280*720P@30fps, 640*480P@30fps, 320*240P@30fps		
	YUY2/NV12/H.264/H.265/MJPG		
Optical Zoom	12x zoom		
Horizontal Angle	70.82°(W)-6.48°(T)	SNR	＞50dB
Vertial Angle	42.72°(W)-3.66°(T)	Focus	Auto / Manual
Diagonal Angle	78.58°(W)-7.42°(T)	Digital Noise Reduction	2D & 3D Noise Reduction
Backlight Compensation	Support	Exposure	Auto / Manual
I / O Interface			
Video Interfaces	HDMI, TYPE-C, Ethernet		
Video Compression Format	H.264, H.265, MJPG, YUY2, NV12		
LAN	10M/100M adaptive Ethernet port, Support PoE IEEE802.3af		
Network Protocol	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 only, 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	1.0A(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	1.43kg/2.096kg		
Accessories	1xCamera; 1xUSB Cable; 1xPower Adapter; 1xWall Mount; 1xManual		
Mfg. Warranty	3 Years Parts & Labor		
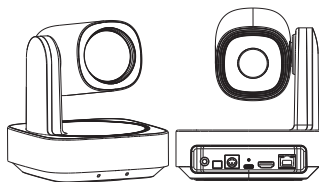
4. Remote Control Button Description
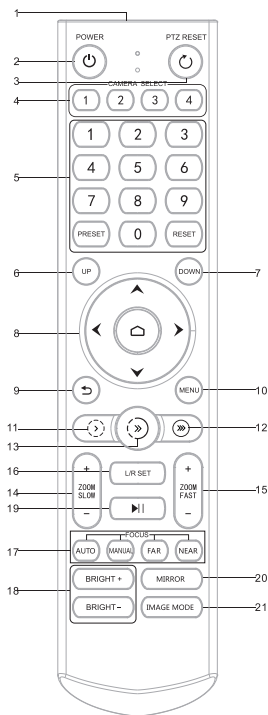
No	Name	Function
1	Launch Window	Remote Control Launch Window
2	Power	Enter into Standby mode by pressing
3	PTZ Reset	Reset the PTZ
4	Camera Select Key	Select the camera need to control
5	Position	Preset position setup keys, include 【PRESET】and【RESET】Set the preset position Reset the preset position
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 middle position
9	Return/Exit	Return to up level menu or exit menu
10	MENU	Enter or exit OSD Menu after pressed 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

```
                Main Menu
- - - - - - - - - - - - - - - - - - - - - - - -
   → Exposure
      Color
      Image
      Information
      Restore Default
      Language              English


      [Home]                Enter
      [Menu]                Back
```

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

```
                Exposure
- - - - - - - - - - - - - - - - - - - - - -
   → Mode                 Auto
      Backlight            On/Off
      ExpComp              0~15
      Flicker              50/60Hz
      [Return]
```

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

5

```
                    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

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 relateive 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 tuning, 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 followings value 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
      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-Information

```
                 Information
     _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
      Model               HD Camera
      Version             1.1.1.1
                          2022-11-04
    → [Return]
```

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.

```
              Restore Default
     _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
      Restore?            No/Yes
    → [Return]
```

```
                 Communication
  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
  → Protocol            Pelco-D
    Address             1~255
    Baudrate            9600
    RC address          All/1/2/3/4
    [Return]
```

```
                 Communication
  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
  → Protocol            Pelco-P
    Address             1~32
    Baud rate           9600
    RC address          All/1/2/3/4
    [Return]
```

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

```
                  Information
  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
     Model              4K Camera
     Version            1.1.1.0
                        2022-09-13
  → [Return]
```

Model: 4K Camera

Version: 1.1.1.0

Date: 2022-09-13

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

```
                Restore Default
  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
     Restore?           No/Yes
  → [Return]
```

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).

```
┌──────CAMERA SELECT──────┐
│   1      2      3      4   │
└────────────────────────┘
```

6.2 Camera Direction Control

▲   Turning up

▼   Turning down

◀   Turning left

❯   Turning right

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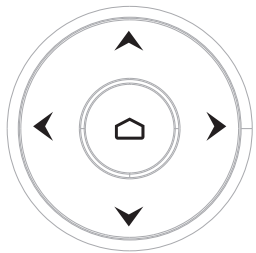
Note: Press the direction key when you need to adjust the angle. If you want to move the camera slowly, just click the direction key; If you want to move the camera fast at a large scale, just long-press the button.

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

```
┌──────FOCUS──────┐
AUTO   MANUAL   FAR   NEAR
```

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.

```
    +              +
  ZOOM           ZOOM
  SLOW           FAST
    −              −
```

6.5 Preset Setup, Call, Cancel

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

```
    1        2        3
    4        5        6
    7        8        9
  PRESET     0      RESET
```

6.10 RS-232 Interface Distribution
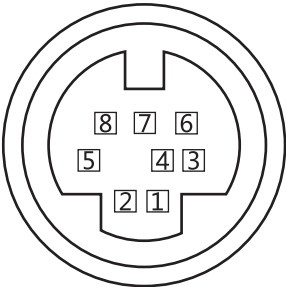
VISCA RS-232 IN

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)
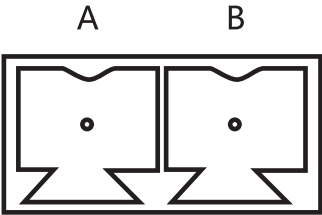
7. Network Function

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)

Windows Settings

| Find a setting | ⌕ |

Devices
Bluetooth,printers, mouse

Phone
Link your Andriod, iPhone

Network & Internet
Wi-Fi, airphone mode, VPN

Accounts
Your accounts email, sync,
work, family

Time & Language
Speech, region, date

Gaming
Xbox Game Bar, captures, Game
mode

Privacy
Location camera, microphone

Update & Security
Windows Updates recovery,
backup

⌂ Home

Find a setting 🔍

Network & Internet

⊕ Status

🖳 Ethernet

☎ Dial-up

∞ VPN

⊕ Proxy

Status

Network status

以太网
Public network
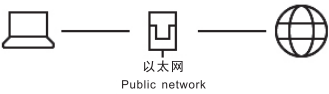
You're connected to the Internet

If you have a limited data plan, you can make this network a metered connection or change other properties.

🖳 以太网
From the last 30 days

32.64 GB

Properties

Data usage

⬤ Off

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

⌂ 网络

IP settings

IP assignment: Automatic (DHCP)

Edit

Properties

Link speed (Receive/Transmit):   1000/1000 (Mbps)
IPv4 address: 192.168.110.115
IPv4 DNS servers: 192.168.110.1
Primary DNS suffix: lan
Manufacturer: Realtek
Description: Realtek PCIe GBE Family Controller
Driver version: 10.13.1223.2016
Physical address (MAC):   F0-2F-74-DA-67-F2

Copy

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 192.168.1.115 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.The IP address cannot conflict
with the IP address of other computers or products. Before adding,
please verify whether the IP already exists.
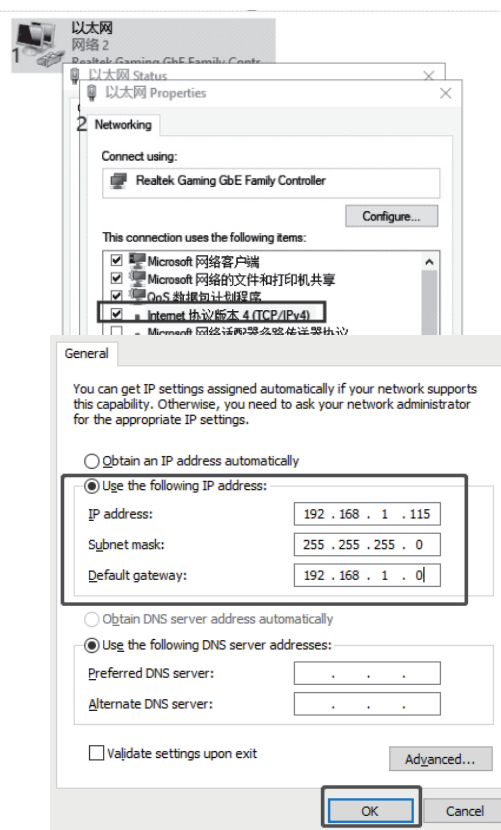
7.3 Input http:// 192.168.1.205 to IE(better with IE or Google web browser), a login window pop up, input user name: **admin**, password: **admin**, language : **English**, shown as below.

7.3.1 When Logging in for the first time, you need to download the Plug-in, input the user and password, log in.

IP CAMERA Web Service

7.3.2 When logging in, the preview image will be displayed.
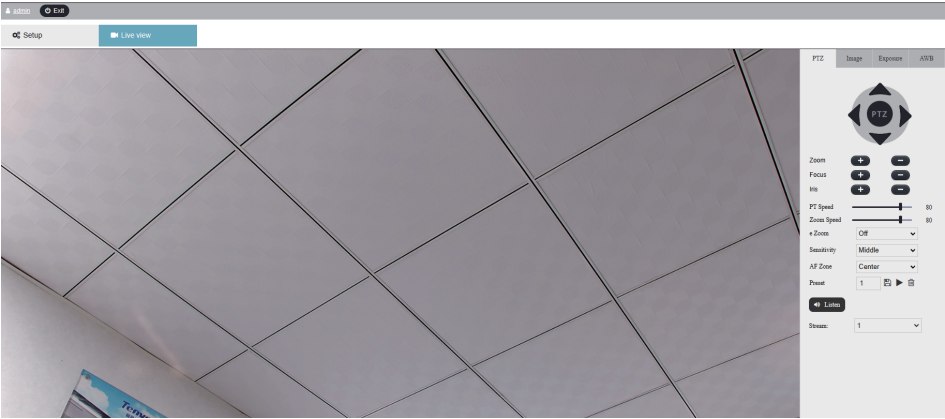
7.3.3 Users can set the PTZ, image parameter, Exposure and AWB after the preview image comes out.
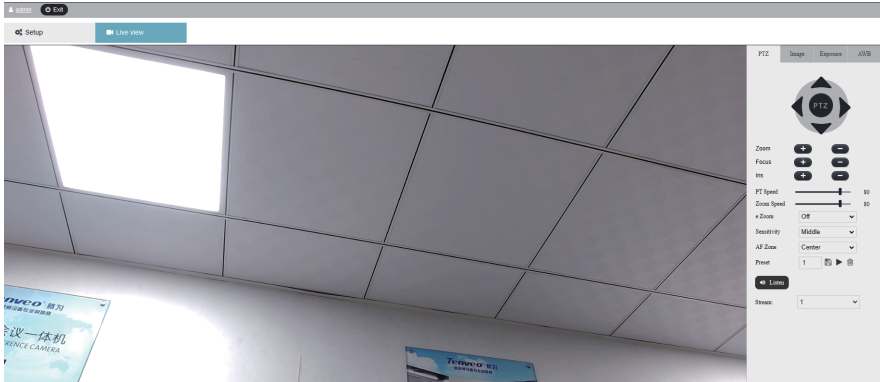
7.3.4 Users need to change the camera IP address to PC's original IP address. Return PC's IP to the original IP address, select obtain IP address automatically.
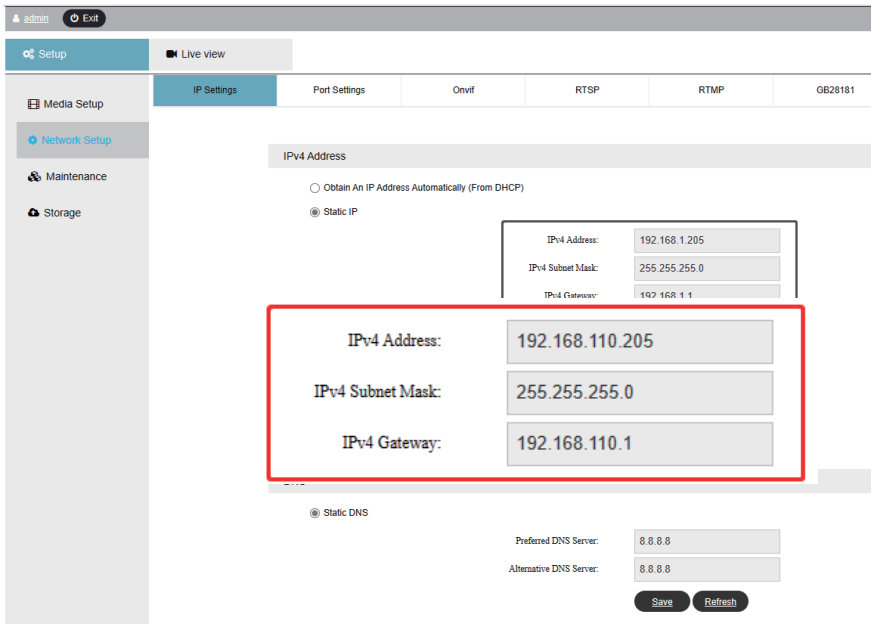
General | Alternate Configuration

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

◉ Obtain an IP address automatically
○ Use the following IP address:

IP address: . . .

Subnet mask: . . .

Default gateway: . . .

7.3.5 Users can also set the parameters of Ethernet, Port, RTMP, RTSP.

7.4 Video streaming

7.4.1 RTSP video streaming

For example: Use VLC media player.

Media--Open Network streaming--Enter Network URL:

rtsp://192.168.110.205:554/media/live/1/1

rtsp://192.168.110.205:554/media/live/1/1
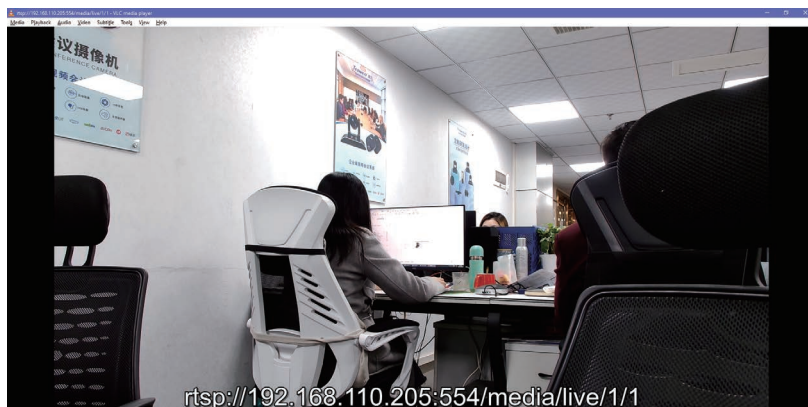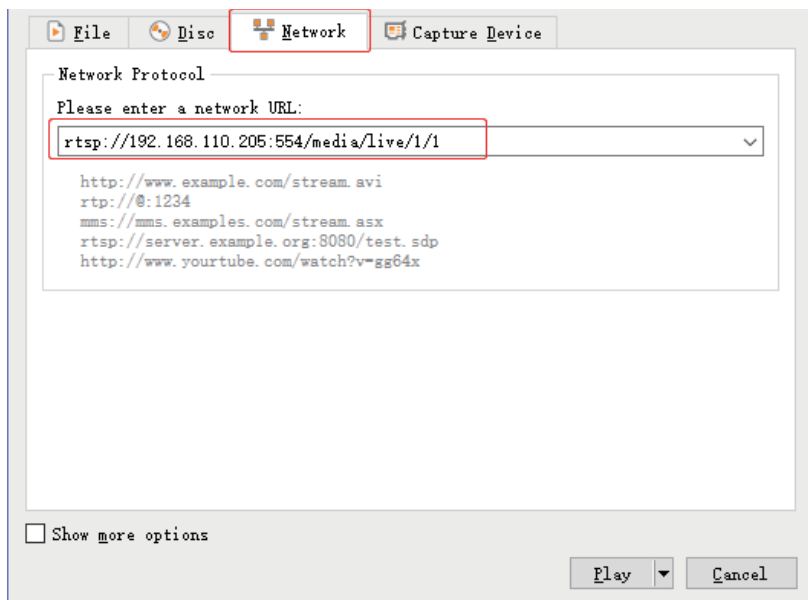
Configure parameters according to the network environment.
For example, if camera IP address is 192.168.110.205,then RTSP
main streaming address should be set as below:
rtsp://192.168.110.205:554/media/live/1/1

7.4.2 RTMP video streaming
"Network setup"--"RTMP"--Stream 1: URL; Stream 2: URL or stay to be
unfilled up

For example, if using YOUTUBE as the streaming platform, then firstly copy
Stream URL of YOUTUBE and paste it to the text box after Stream 1 with a
slash at the end of the Stream URL,secondly copy Stream key of YOUTUBE
and paste it right after the slash at Stream 1. When Stream 1 doesn't work
well, then go to copy Backup Server URL and Stream key of YOUTUBE, and
paste it to the text box after Stream 2 as done to Stream 1.

7.5 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: RJ45
IP Protocol: IPV4
Transmission Protocol: Sony VISCA; ONVIF
IP address: Setting through the web
Port address: Sony VISCA(52381）   ONVIF(80)
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.
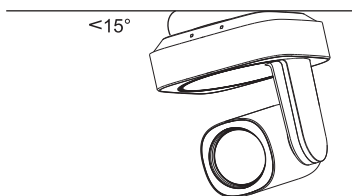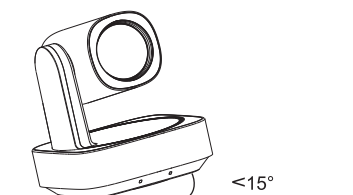
8.2 Wall Mount Installation
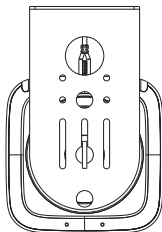

Step 1: Mounting the wall mount bracket
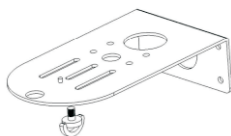
Wall mount

Wall mount bracket
(This side is to the wall.)

Mounting the bracket vertically to the wall with screws.

Step 2: Install the camera

Screw hole

Rotate the camera clockwise to install it.

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. (Reference to RS-485 and RS-232 Pins distribution on page 10).

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 have 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:_____

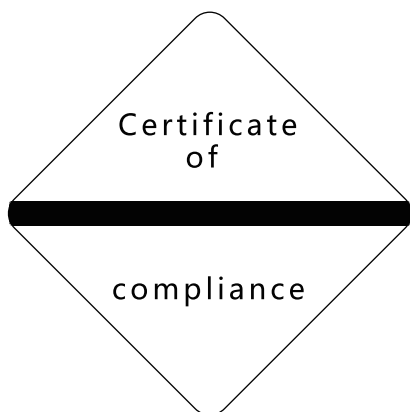Address:_____

_____

_____

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

Make every meeting better and easier!