HD PTZ Camera

User Manual

Version V2.0

1. Product Description

1.1 Front

①Lens
②Pan&Tilt
③Standby
④Power

1.2 Back

①DC 12V
②RS485
③RS232
④USB3.0 C
⑤HDMI
⑥RJ45 (PoE+Support)

2. Packing List

HD PTZ camera

DC 12V power supply

Wall mount

Mounting screws

HDPTZCamera User Manual Version V2.0

User manual

Remote control

USB cable

3. Performance Characteristics

Model No.	4K 12x Zoom	1080P 12x Zoom	1080P 10x Zoom	1080P 20x Zoom
Image Sensor	Sony IMX415 1/2.8" CMOS	Sony IMX327 1/2.8" CMOS		
Effective Pixels	8.29MP, 16:9	2.07MP		
Optical Zoom	12x optical zoom	12x optical zoom	10x optical zoom	20x optical zoom
Lens	f=4.1-49.2mm	f=4.1-49.2mm	f=4.32-40.9mm	f=5.5-110mm
Aperture	F1.8-2.68	F1.8-2.68	F1.76-F3.0	F1.6-3.5
Horizontal Angle	70.28°(W)-6.57°(T)	70.28°(W)-6.57°(T)	67.5°(W)-8.8°(T)	55.8°(W)-3.2°(T)
Vertical Angle	42.06°(W)-3.76°(T)	42.06°(W)-3.76°(T)	40.2°(W)-4.3°(T)	32.2°(W)-1.8°(T)
Diagonal Angle	78.36°(W)-7.5°(T)	78.36°(W)-7.5°(T)	75.4°(W)-8.8°(T)	61°(W)-3.64°(T)
Video Format	HDMI/4K@30/25fps, 1080P@60/50/30/25fps, 720P@60/50/30/25fps; USB3.0/4K@30/25fps; 2560*1440P@30fps, 1920*1080P@30fps, 1280*720P@30fps,640*480P@30fps, 320*240P@30fps); YUY2/NV12/H.264/H.265/MJPG	1080p@60/50/30/25fps, 720p@60/50/30/25fps, 640*480P@30fps,320*240P@30fps; YUY2/NV12/H.264/H.265/MJPG		
Backlight Compensation	Support			
SNR	>50dB			
Focus	Auto / Manual			
Digital Noise Reduction	2D & 3D Noise Reduction			
Exposure	Auto / Manual			
I / O Interface				
Video Interfaces	HDMI, USB3.0 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: 38400/9600/4800/2400			
Control Interface	RS232 (input only), RS485, USB3.0 C, RJ45			
PTZ Parameter				
Pan/Tilt Rotation	±175°, -90° ~ +90°			
Pan Control Speed	0.1 -80°/sec			
Tilt Control Speed	0.1 -60°/sec			
Preset Number	User can set up to 255 presets (10 presets by IR remote)			
General Parameter				
Operation Systems	Windows 7, Windows 8.1, Windows 10, Windows 11; Android, Mac OS™ 10.10 or higher, Linux (Required 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)			
Accessory	1 x Camera; 1 x USB Cable; 1 x Power Adapter; 1 x IR Remote Control; 1 x Wall Mount; 1 x Manual			
Mfg. Warranty	3 Years standard Parts & Labor warranty			

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	▶I	Turn on/off screen freeze
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
  P/T/Z
  Communication
  Information
  Restore Default
  Language          English

  [Home]            Enter
  [Menu]            Back
```

Language: Support Chinese/English
Press the 【□】 button on the Remote to enter level 2 sub-menu
Press the 【Menu】 button on the Remote to exit menu

5.2 Level 2 Menu - Exposure

```
             Exposure
-----------------------------------
→ Mode            Auto
  Backlight       Off
  ExpComp         00
  Flicker         50Hz
  [Return]
```

Mode: Auto/Manual/SAE/AAE/Bright
Backlight: On/Off(only effective under Auto mode)
ExpComp: Optional item is -7~+7 (only effective under Auto mode)
Flicker: Support 50HZ/60HZ
When changing the exposure mode to Manual, the sub-menu is as shown below.

```
             Exposure
-----------------------------------
→ Mode            Manual
  Iris            F2.2
  Shutter         1/30
  Gain            00
  Flicker         50Hz
```

Iris: F1.6、F1.85、F2.0、F2.2、F2.63、F3.0、F3.4、F4.0、F6.0、F8.0、F10.0、F16.0、F32.0. O ff(Only effective under Manual/AAE mode)
Shutter: 1/25、1/30、1/60、1/90、1/100、1/125、1/180、1/250、1/350、1/500、1/750、1/1000、1/1500、1/2000、1/3000、1/4000、1/6000、1/10000 (Only effective under Manual/SAE mode)
Gain: Optional item is 0 to 99 (Only effective under AAE/SAE mode)

```
        Exposure                    Exposure
---------------------      ---------------------
→ Mode       SAE           → Mode        AAE
  Shutter    1/30            Iris        F2.2
  Gain       00              Gain        00
  Flicker    50Hz            Flicker     50Hz
  [Return]                   [Return]
```

```
             Exposure
-----------------------------------
→ Mode            Bright
  Flicker         07
  Bright          50Hz
  [Return]
```

Bright: Optional item is 0-17 (Only effective under Bright mode)

5.3 Level 2 Menu - Color

```
              Color
-----------------------------------
→ Brightness       50
  Contrast         50
  Hue              50
  Saturation       50
  Sharpness        50
  WB Mode          Auto
  Rtuning          00
  Btuning          00
  [Return]
```

Brightness: Optional item is 0-99
Contrast: Optional item is 0-99
Hue: Optional item is 0-99
Saturation: Optional item is 0-99
Sharpness: Optional item is 0-99
WB mode: Auto/Manual/VAR/Indoor/Outdoor/Onepush
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 as shown below:

```
              Color
-----------------------------------
  Brightness       50
  Contrast         50
  Hue              50
  Saturation       50
  Sharpness        50
→ WB Mode          Manual
  Rgain            00
  Bgain            00
  [Return]
```

When the WB mode is VAR, the sub-menu will be as shown below:

```
              Color
-----------------------------------
  Brightness       50
  Contrast         50
  Hue              50
  Saturation       50
  Sharpness        50
→ WB Mode          VAR
  Color Mode       5600
  [Return]
```

The Color Temp value is adjustable. The range is from 2500 to 9000.
When the WB mode is Indoor/Outdoor/Onepush, the sub-menu will be as shown below:

```
        Color                       Color
---------------------      ---------------------
→ Brightness   50          → Brightness   50
  Contrast     50            Contrast     50
  Hue          50            Hue          50
  Saturation   50            Saturation   50
  Sharpness    50            Sharpness    50
  WB Mode      Indoor        WB Mode      Outdoor
  [Return]                   [Return]
```

```
              Color
-----------------------------------
  Brightness       50
  Contrast         50
  Hue              50
  Saturation       50
  Sharpness        50
→ WB Mode          OnePush
  [Return]
```

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: 1080P60/1080P50/1080P30/1080P25/720P60/720P50
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

```
              P/T/Z
-----------------------------------
→ Acc Curve       Fast/Middle/Slow
  L/R SET         On/off
  ZOOM Speed      6
  AF Zone         Bottom
  AF Sense        Low
  AF Scene        Normal
  [Return]
```

Acc Curve: Fast/Middle/Slow
L/R SET: On/Off
Zoom Speed: Optional items are 0-7
AF Zone: Bottom/Left/Right/Front/Top/Middle
AF Sense: Normal/High/Low
AF Scene: Normal/Macro/Live

5.6 Level 2 Menu - Communication

```
          Communication
-----------------------------------
→ Protocol        Auto
  Baudrate        9600
  RC Address      All
  [Return]
```

Protocol: Option items are Auto/Visca/PELCO-D/PELCO-P
Baudrate: Option items are 2400/4800/9600/38400
RC Address: Set the IR remote control's address to control the corresponding camera. Option items are ALL/1/2/3/4.
Address: Set the camera's address. Option items are 1-7 in Visca, 0-255 in PELCO-D, 0-31 in PELCO-P.

5.7 Level 2 Menu -Information

```
          Communication
-----------------------------------
  Model           UHD Camera
  PTZ Version     1.0.1.1
  SOC Version     1.1.32
→ AF Version      1.0.1
  [Return]
```

Model: UHD Camera (FHD for 1080P Camera and UHD for 4K Camera)
PTZ Version:1.0.1.1
SOC Version: 1.1.32
AF Version:1.0.1
Notice: The version number here is just an example. The actual parameters shall prevail.

5.8 Level 2 Menu - Restore Default

```
          Restore Default
-----------------------------------
→ Restore         No
  [Return]
```

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 SLOW / ZOOM 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
```

6.6 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.

6.7 RS-485 Interface Distribution

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

A   B

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
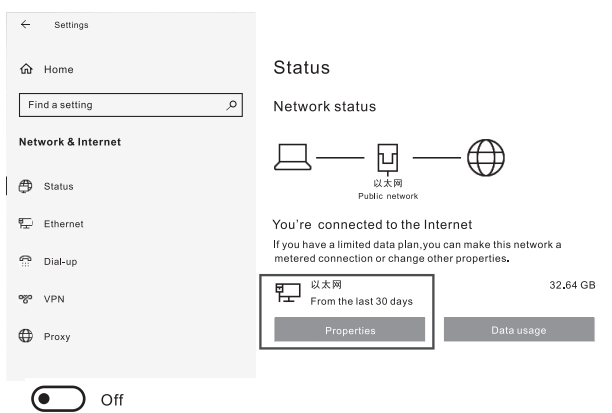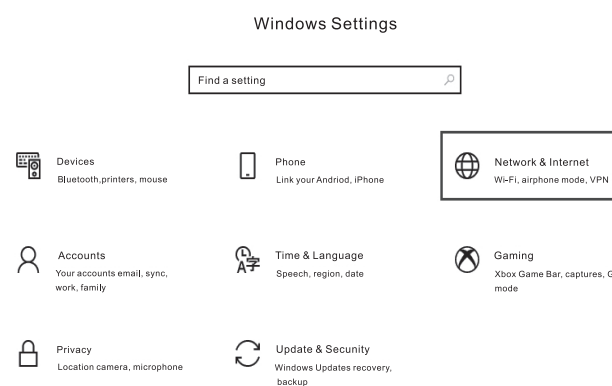◀ Turning left
▶ Turning right
⌂ Turning to default

7. Network Function

7.1 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.)
7.1.1 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

← Settings

⌂ Home

Find a setting

Network & Internet
- Status
- Ethernet
- Dial-up
- VPN
- Proxy

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: 192.168.110.73
IPv4 DNS servers: 192.168.110.1
Primary DNS suffix: lan
Manufacturer: Realtek

Status

Network status

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

7.2 How to add networking:
7.2.1 Open the computer network local connection attribute window select "internet Protocol Version 4 :(TCP/Pv4)";
7.2.2 Double-or-right-click "Internet Protocol Version 4 (TCP/Pv4)";
7.2.3 Enter the "internet Protocol Version 4 (TCP/IPv4) "window.
7.2.4 Change the computer's IP to 192.168.1.73 so that the computer IP and camera IP are on the same network segment.
P.S. Failure to add the correct network segment may result in login failure. The default IP address of the camera is 192.168.1.205. It's necessary to add the "1" network segment to the computer. Ensure the assigned IP address does not conflict with other devices on the network. Verify the IP address's availability before assigning it.
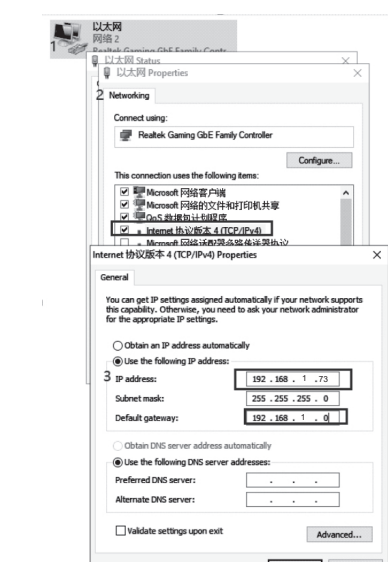
7.3 Input http:// 192.168.1.205 to IE (better with IE or Google web browser), then a login window will pop up; Input user name: admin, password: admin; and choose language: English, shown as below, whether the IP already exists.

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

WELCOME
IPCAMERA
WebService

LOGIN

English
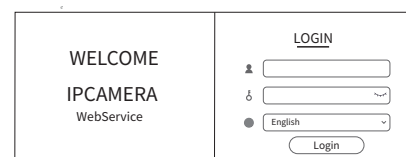
Login

7.3.2 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.
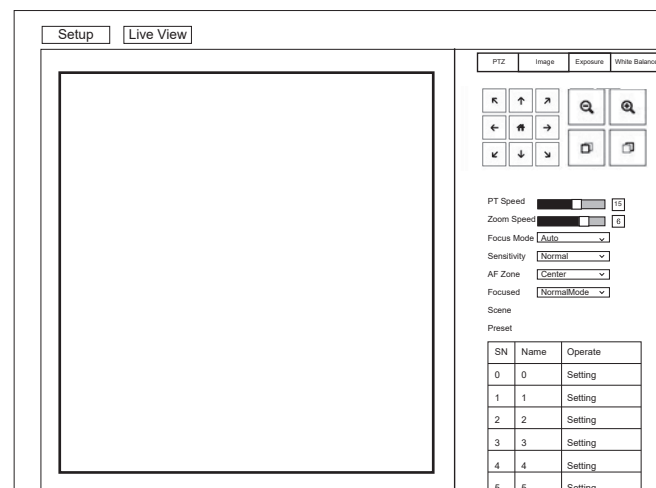
7.4 Modify the camera IP and computer IP on to the same network segment, so that the computer network is not affected.

7.4.1 Select "Setup"- "Network Settings"- "Local Network" to enter the following interface:

IP Configuration Type	Static IP
IP Address:	192.068.110.205 (0.0.0.0-225.225.225.225)
Subnet Mask:	255.255.255.0
Gateway:	192.168.110.254
MAC Address:	80:0d:ed:5c:30:05
Preferred DNS	192.168.110.7
Alternative DNS	192.168.110.8

Save   Refresh
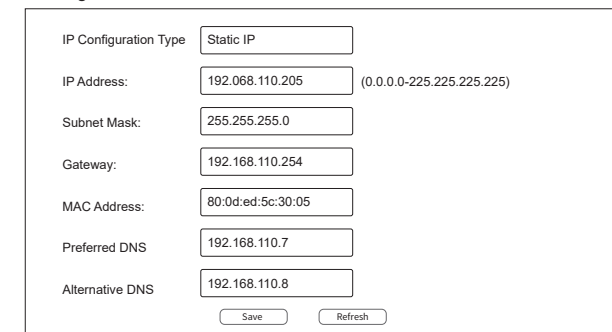
7.4.1.1 Change the camera IP address to: 192.168.110.205
7.4.1.2 Default Gateway: 192.168.110.254
7.4.1.3 Alternate DNS: 192.168.110.7
7.4.1.4 Preferred DNS: 192.168.110.8

7.4.2 Return PC's IP to the original IP address, and select Obtain an IP address automatically
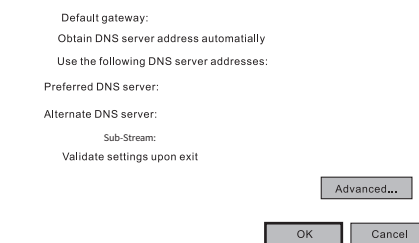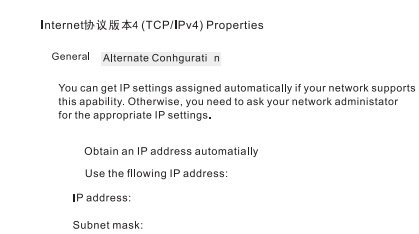
7.5 Video streaming

7.5.1 Select "Setup"- "Video Settings"- "System Settings" to enter the following interface:
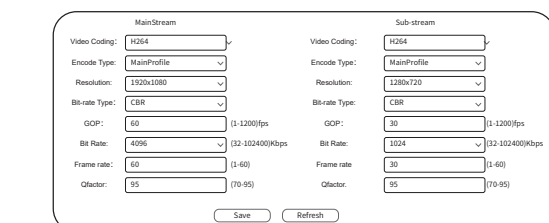
7.5.2 RTSP video streaming

Select "Setup"- "Network Settings"- "RTSP" to enter following interface:
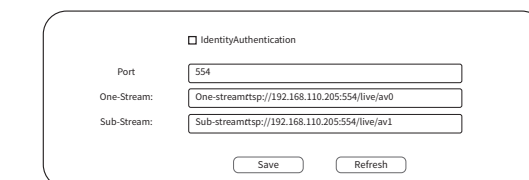
Configure parameters according to the network environment.
If the camera modified IP address is 192.168.110.205, then the way to get RTSP video streaming as below:
Default RTSP main streaming address:
rtsp://192.168.110.205:554/live/av0 (av0 Main)
Default RTSP sub streaming address:
rtsp://192.168.110.205:554/live/av1(av1 Sub)

7.5.3 RTMP video streaming

Select "Setup" - "Network Settings" - "RTMP" to enter follwing 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

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

7.6.1 Select "Setup"--"Maintenance" --"System Upgrade" to enter the following interface:

7.6.1.1 Open upgrade file to Upgrade automatically if needed.
7.6.1.2 Restart the camera and prompts"Upgrade succeeded". Log in to the network and check whether the software version is consistent with the upgrade file to ensure that the upgrading 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 over IP to reduce the trouble of RS232/RS485 wiring(controller must support IP communication function)
Communication port specifications:
Control port: RJ45
IP protocol: IPv4
Transport protocol: UDP
IP address: set through the web
Port address: 52381
Scope of application: the same network segment

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8. Installation Instructions

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

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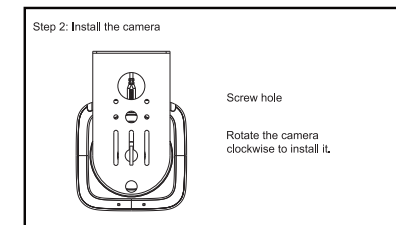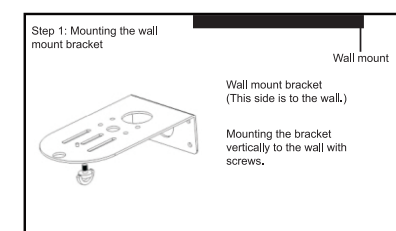
9. Trouble Shooting

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.

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10. 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.