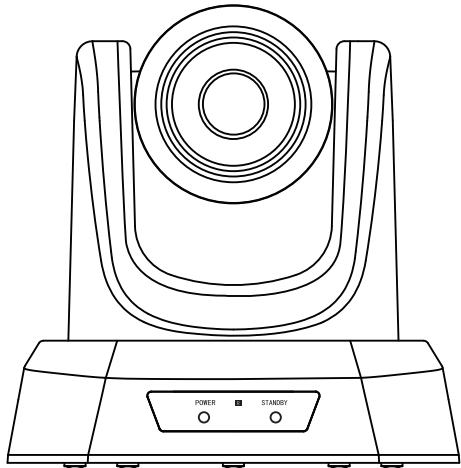


# AI Auto Tracking PTZ Camera

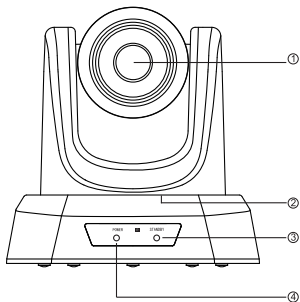
## User Manual



Version V1.0-05.02.0272

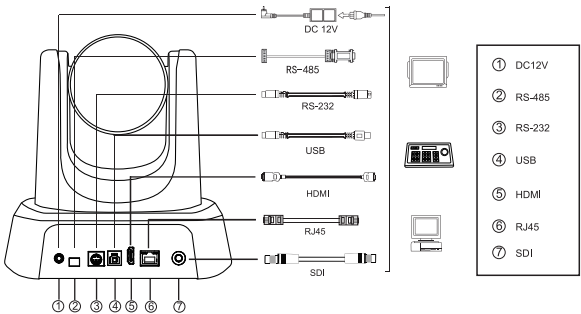
### 1. Product Description

#### 1.1 Front



- ① Lens
- ② Pan & Tilt
- ③ Standby
- ④ Power

#### 1.2 Back



## Warranty Certificate

(Please keep this for warranty claims)

### User Information

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Address: \_\_\_\_\_

### Product Information

Model: \_\_\_\_\_

Barcode: \_\_\_\_\_

### Fault Description

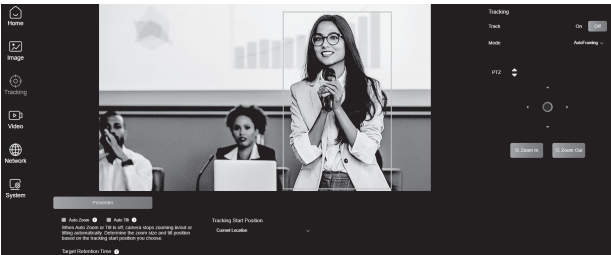
### Notes

- Please fill in your user information accurately and completely to ensure the repaired device can be returned to you promptly.
- Specify the model, barcode, and provide a detailed description of the malfunction.

### 3. Performance Characteristics

Model No.	4K 20X Zoom	1080P 20X Zoom
Image Sensor	Sony 1/2.8" CMOS	Sony IMX327 1/2.8" CMOS
Effective Pixels	8.29MP	2.09MP
Optical Zoom	20x optical zoom	20x zoom
Lens	f=4.95mm~98mm	f=5.5-110mm
Aperture	F1.7-F3.7	F1.6-3.5
Horizontal Angle	51.9°~3.0°	55.8°(W)~3.2°(T)
Vertical Angle	38.7°~2.2°	32.2°(W)~1.8°(T)
Diagonal Angle	63.1°~3.7°	61°(W)~3.6°(T)
Video Format	4KP@30/25ps, 2KP@60/59.94/50/30/29.97/25ps, 720P@60/59.94/50/30/29.97/25ps, 480P@30/29.97/25ps, 240P@30/29.97/25ps	1080P@60/59.94/50/30/29.97/25ps, 720P@60/59.94/50/30/29.97/25ps, 480P@30/29.97/25ps, 240P@30/29.97/25ps
Video Encoding Format	H.264, H.265, MJPG, YUV2	
Backlight Compensation	Support	
SNR	>50dB	
Focus	Auto / Manual	
Digital Noise Reduction	2D & 3D Noise Reduction	
Exposure	Auto / Manual	
Input/Output Interface		
Video Interfaces	HDMI, USB3.0, RJ45, SDI	
Video Compression Format	H.264, H.265, MJPG, YUV2	
LAN	10M/100M/1000M adaptive Ethernet port, Support PoE IEEE802.3at	
Network Protocol	NDMPv2, RTSP, RTMP, VISCA over IP, ONVIF, SRT, NDI/HX2	
Control Protocol	VISCA/Pelco-D/Pelco-P, Baud Rate: 2400/4800/9600/38400	
Control Interface	RS232(input only), RS485, USB3.0 (UVC1.1), RJ45	
PTZ Parameter		
Horizontal Rotation	350° (±175°) 0.1°/s ~ 100°/s	
Vertical Rotation	180° (±90°) 0.1°/s ~ 80°/s	
Preset Number	User can set up to 255 presets (10 presets by IR remote)	
General Parameter		
Operation Systems	Windows 10, Windows 11 or higher; Android, Mac OS™ 10.10 or higher; Linux (Required to support UVC.)	
Input Voltage	DC 12V	
Input Current	2.0A (Max.)	
Power Consumption	24W (Max.)	
Store Temperature	-20°C to 60°C	
Store Humidity	20% ~ 80% RH	
Working Temperature	0°C to 40°C	
Working Humidity	20% ~ 80% RH	
Dimension (W*H*D)	166*165*170mm/ 285*217*197mm (before/ after packing)	
N.W./G.W.	1.6kg/ 2.8kg (Net/ Gross weight)/ 1.5kg/ 2.5kg (Net/ Gross weight)	

### 5.AI Tracking Setting from WebUI



#### 5.1 Tracking Settings

(1)Tracking: Switch to enable/disable AI tracking.

(2)Mode: Drop-down selection between Autoframing mode or Presenter tracking mode.

#### 5.2 PTZ Control

PTZ control serves two purposes:

(1)Before entering a mode: Adjust the camera's orientation to align with the target.

(2)In Presenter tracking mode:

Use left/right clicks to switch between detectable targets.

Press the [Home] button to confirm the selected tracking target.

#### 5.3 PresenterTracking Settings

(1)Auto Zoom & Auto Tilt (Enabled by default, recommended):

When Auto Zoom is disabled, the camera stops automatic zooming in/out.

When Auto Tilt is disabled, the camera stops vertical movement.

(2)Timeout Duration:

Sets how many minutes the camera waits before exiting AI tracking after losing the target.

Default: 5 minutes.

(3)Tracking Starting Position:

Options: Current position /Preset position X/Home position.

Default: Current position.

Note: In AI tracking mode, the camera cannot be panned or tilted manually.

#### 6.6 AI Mode

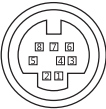
1)Press **[AI]** button to enter Multi-Person tracking mode and start auto-tracking.

Press **[AI]** button again to exit Multi-Person tracking mode.

2)While in Multi-Person tracking mode, press **[□]** button to enter Single-Person tracking mode.In Single-Person tracking mode, a green frame will appear when there are two or more people present.Use the left and right buttons to select the person you want to track, then press **[↔]** button to confirm and begin tracking.

3)Press **[⌂]** button to exit Single-Person tracking mode and return to Multi-Person tracking mode.

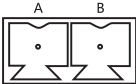
#### 6.7 RS-232 Interface Distribution



No.	Function	No.	Function
1	DTR	6	RSD
2	DSR	6	GND
3	YSD	7	RYSDT
4	GND	8	NC

#### 6.8 RS-485 Interface Distribution

PIN NUM	FUNCTION
A	DTR Rx (connected to RS-485)
B	DSR Rx (connected to RS-485)



## 7. Camera Menu Setup

When operating remote control, press **[MENU]** to enter main menu of the video camera.

#### 7.1 Level 1 Menu - Main Menu

Main Menu	
-----	
-- Exposure	
Color	
Image	
P/T/Z	
Communication	
Tracking	Off
Information	
Restore Default	
Language	English
[Home]	Enter
[Menu]	Back

Tracking: off/Presenter/Autoframing

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

#### 7.2 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

### 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 needs to control
5	Position	Preset position setup keys, include [PRESET1] 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 <b>[↔]</b> 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 pressing it
11	Enter Single-person Tracking	When entering Single-Person tracking mode, press <b>[K]</b> or <b>[X]</b> to select the person.Press <b>[↔]</b> to confirm.
12	Exit Single-Person Tracking	Press to exit Single-Person tracking mode, and return to Multi-Person tracking mode.
13	Multi-Person Tracking	Turn on/off Multi-Person tracking mode.
14	ZOOM Slow Key	Zoom in (+) or out (-) slowly
15	ZOOM Fast Key	Zoom in (+) or out (-) rapidly
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	Freeze/Unfreeze the image	
20	Mirror	Enable the picture left/right flip
21	Image Mode	Switch between three image modes Normal, PC, Bright

#### ★ Attention for Remote Control

- Ensure the remote light to the selected camera is on.
- If the remote control doesn't work, please replace batteries.
- The camera number on the remote must match the camera's address.
- In the **[AI]** mode, manual zooming is not available. Therefore, when you need to zoom, please make sure the auto tracking is turned off.

### 6. Common Operation Instructions

#### 6.1 Camera Select

Set the IR remote control's address to control the corresponding camera, option item 1/2/3/4

CAMERA SELECT

1234

#### 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;

If you want to adjust left and right direction, just press and hold the L/R button for 10S.

#### 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.



7.3 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:

7.4 Level 2 Menu-Image

Image

→ Flip

Off/On

Mirror

Off/On

Video Format

1080P60

Menu Mirror

Off

USB Mode

ISOC/BULK

UVC Format

YUY2

Style

Normal/PC/Bright

HDMI Mode

Force

[Return]

Flip: Enable/disable the picture up/down flip  
Mirror: Enable/disable the picture left/right flip  
Video Format: 4K30(Only available for 4K 12x Zoom)/1080P60/1080P50/  
1080P30/1080P25/720P60/720P50  
Menu Mirror:Off/On  
USB Mode: ISOC/BULK  
USB mode: Adjust between Isochronous transfers mode and Bulk

transfers mode  
UVC Format:YUY2  
Style Mode: Normal, PC, Bright  
HDMI Mode:Force

7.5 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

7.6 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.

7.7 Level 2 Menu -Information

Information

Model

UHD Camera

PTZ Version

1.0.1.1

SOC Version

1.1.134

→ AF Version

1.22

IQ Version

3.02.001

HW Version

1.2

IP

192.168.0.206

[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  
IQ Version: 3.02.001  
HW Version: 1.2  
Notice: The version number here is just an example. The actual parameters shall prevail.

7.8 Level 2 Menu - Restore Default

Restore Default

→ Yes

No

[Return]

8. Network Function

- 8.1 Equipment Installation
- Connect the camera to either a PC's external network port via Ethernet cable, or an Internet network through a router/switch. Access the camera's web interface by entering its IP address in a web browser (default IP varies by model - refer to the label on the camera's bottom).
- 8.2 Configure Computer IP to Match Camera's Network
- Purpose: Ensure computer and camera are on the same subnet for communication.
- 1) Open Network Adapter Settings
- Navigate to:  
Control Panel > Network and Sharing Center > Change adapter settings  
Right-click your active connection → Select Properties
- 2) Configure IPv4 Settings
- From the list, double-click:  
\*Internet Protocol Version 4 (TCP/IPv4)\*  
(or select it and click Properties)
- 3) Add IP Address Manually
- Select:  
Use the following IP address  
Enter:  
IP Address: 192.168.0.xxx (e.g., 192.168.0.245)  
Subnet Mask: 255.255.255.0  
Default Gateway: 192.168.0.xxx  
(typically your router's IP, e.g., 192.168.0.1 or 192.168.0.254)
- 4) Finalize Changes
- Click OK to close all configuration windows  
Changes take effect immediately

- 8.3 Modify Camera's IP to Match Local Network
- Purpose: Integrate camera into your existing network.

Internet Protocol Version 4 (TCP/IPv4) Properties

General

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:

192 . 168 . 0 . 100

Subnet mask:

255 . 255 . 255 . 0

Default gateway:

192 . 168 . 0 . 1

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server:

.

Alternate DNS server:

.

☐ Validate settings upon exit

Advanced

OK Cancel

Advanced TCP/IP Settings

General

IP addresses

IP address

Subnet mask

192.168.0.100

255.255.255.0

Add... Edit... Remove

Default gateways

Gateway

Metric

192.168.0.1

Automatic

Add... Edit... Remove

☒ Automatic metric

Interface metric:

OK Cancel

- Steps:
- 1)Access camera's web interface.  
2)Enter http://192.168.0.206 in a browser.  
3)Navigate to: Setup > Network Settings > Local Network.
- Update settings:  
IP Address: 192.168.x.206 (match your subnet, e.g., 192.168.1.206)  
Subnet Mask: 255.255.255.0  
Default Gateway: 192.168.x.xxx (typically your router's IP, e.g., 192.168.1.1 or 192.168.1.254 )

- 8.4 IE Login
- Input http://192.168.0.206 to IE (better with IE or Google web browser), a login window will pop up, input user name: admin, password: admin, language: English. After successfully login, you can do preview, configurations, etc.

WELCOME

IP CAMERA

Web Service

LOGIN

ⓧ

Ⓐ

🌐

English

Login

- 8.5 Video streaming
- 1)Select "Setup"->"Video Settings"->"System Settings" to enter the following interface:

Main Stream

Video Coding: H264

Encode Type: H264/265

Resolution: 1920/1080

Bit-rate Type: CBR

Bit-rate: 31.100Kbps

Bit-Plan: IBB

Frame rate: 30

Checker: 15 (75-Hz)

Sub-stream

Video Coding: H264

Encode Type: H264/265

Resolution: 1280/720

Bit-rate Type: CBR

Bit-rate: 10.100Kbps

Bit-Plan: IBB

Frame rate: 30

Checker: 15 (75-Hz)

Start

Exit

- 2)RTSP video streaming
- Select "Setup"->"Network Settings"->"RTSP" to enter following interface:

RTSP Auth: ☐ On ☒ Off

Main Stream

http://192.168.0.206/On/Video1

Sub Stream

http://192.168.0.206/Off/Video1

Submit

Cancel

Configure parameters according to the network environment.  
For example, Camera default IP Address: 192.168.0.206  
Here is the way to get RTSP video streaming.  
Default RTSP main streaming address: rtsp://192.168.0.206:554/live/av0(av0 Main)  
Default RTSP sub streaming address: rtsp://192.168.0.206:554/live/av1(av1 Sub)

- 3) RTMP video streaming
- Select "Setup"->"Network Settings"->"RTMP" to enter following interface:

First Stream: ☒ On ☐ Off ☐ Video ☒ Audio

MRL: http://192.168.0.206/live/av0

Second Stream: ☐ On ☒ Off ☐ Video ☐ Audio

MRL: http://192.168.0.206/live/av1

Submit

Cancel

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

- 8.6 Software upgrade (upgrade if there is a new version)
- Select "Setup"->"Maintenance"->"System Upgrade" to enter the following interface:

Select the upgrade file

Submit

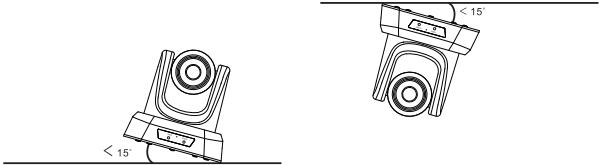
- 1)Open the upgrade file to Upgrade automatically if needed.  
2)Restart the camera and prompts "Upgrade succeeded", Log in to the network and check whether the software version is consistent with the upgrade file to ensure that the upgrading is successful. Then click "Restore factory default" to restart and restore the parameters to the factory default setting. (IP default 192.168.0.206, User default: admin, password default: admin)

8.7 VISCA over IP

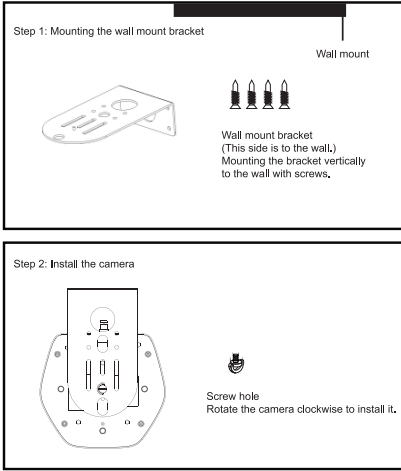
VISCA Protocol is transmitted through IP to reduce RS232/RS485 cabling(the controller must support IP communication)  
Communication Port Specification:  
Control Port: RJ45  
IP Protocol: IPv4  
Transmission Protocol: Sony VISCA;  
IP address: Setting through the web  
Port address: Sony VISCA(52381)  
Application Range: Under the same network segment

9.Installation Instructions

- 9.1 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.



9.2 Wall Mount Installation



10. 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 correspond 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 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.

