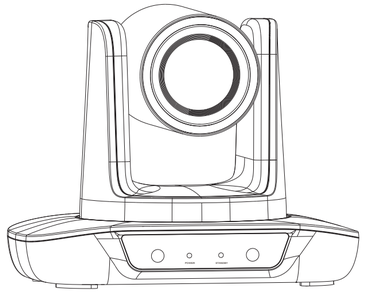
HD AI Auto Tracking Conference Camera

User Manual



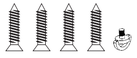
Version V1.0

2. Packing List

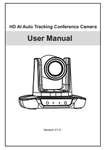
HD AI Auto Tracking Conference Camera

DC 12V Power Supply

Wall Mount

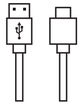


Mounting Screws



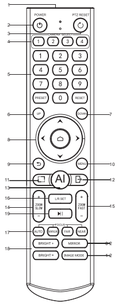
User Manual

Remote Control



USB Cable

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	Enter Single Object Tracking	When entering single object tracking mode, press the PTZ Control Keys to select the object. Press ⌂ to confirm.
12	Exit Single Object Tracking	Press to exit single object tracking mode, and return to auto-framing mode.
13	AI	Turn/off auto-framing mode
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.

EXPOSURE	
→Mode	Manual
Shutter	1/125
Iris	F1.8
Gain	2
DRC	2

Iris: Off/F11.0/F9.6/F8.0/F6.8/F5.6/F4.8/F4.0/F3.4/F2.8/F2.4/F2.0/F1.8
（Only effective under Manual/SAE mode)
Shutter：1/60-1/10000（Only effective under Manual/SAE mode）

EXPOSURE	
→Mode	SAE
Shutter	1/125
Gain Limit	3
Meter	Average
DRC	2

EXPOSURE	
→Mode	AAE
Iris	F1.8
Gain Limit	3
Meter	Average
DRC	2
Anti-Flicker	Off

EXPOSURE	
→Mode	Bright
Bright	8
Gain Limit	3
Meter	2
DRC	verage
Anti-Flicker	Off

Bright: 0-17（Only effective under Bright mode)

5.2 Color

Color	
WB Mode	Auto
→AWB Sens	Low
RG Tuning	3
BG Tuning	1
Saturation	100%
Hue	7

WB Mode：Auto/Indoor/Outdoor/OnePush/Manual/VAR
AWB Sens：Low/Normal/High
RG Tuning：-10-10
BG Tuning：-10-10
Saturation：60%-200%
Hue：0-14

5.4 PTZ

P/T/Z	
→D-Zoom Limit	Off
Speed By Zoom	On
L/R Set	STD
Display Info	On
Image Freeze	Off
Call Preset Speed	24
Pre zoom Speed	5
Pt By Speed	Slow

D-Zoom Limit：Off/x2/x4/x8
Speed by Zoom：On/Off
L/R Set：STD/REV
Display Info：On/Off
Image Freeze：On/Off
Call Preset Speed：1-24
Pre Zoom Speed：0-7
Pt By Speed：Slow/Medium/Fast

5.5 Noise Deduction

NOISE REDUCTION	
→2D NR	Auto
3DNR	Auto

2D NR：Off/Auto/1-5
3D NR：Off/Auto/1-8

5.6 Setup

SETUP	
→Language	English
Video Setting	
Audio Setting	
Focus Setting	
USB Setting	
Communication Setting	
Tracking Setting	
Other Setting	

Language：Chinese/English

5.6.5 Communication Setup

COMMUNICATION SETUP	
→Protocol	VISCA
VAddress	1
VAddrFix	Off
Net Mode	Serial
Baudrate	9600
IR Addr	General

Protocol：VISCA/PELCO-D/PELCO-P
V Address：1-7
V AddrFix：On/Off
Net Mode：Serial/Paral
Baudrate：9600/19200/38400/2400/4800
IR Addr：General/NO.1/NO.2/NO.4/NO.4

COMMUNICATION SETUP	
→Protocol	PELCO-D
P-DAddr	1
Baudrate	9600
IR Addr	General

P-D Addr：0-254

COMMUNICATION SETUP	
→Protocol	PELCO-P
P-PAddr	1
Baudrate	9600
IR Addr	General

P-P Addr：0-31

5.6.6 Tracking Setup

TRACKING SETUP	
→Tracking Enable	Off
Tracking Overlay	On
Delay Time	1

Tracking Enable：On/Off
Tracking Overlay：On/Off
Delay Time：1-60

5.6.7 Other Setup

OTHER SETUP	
Auto Inversion	On
Preset Tour	Off
OSD Flip	Off
OSD TimeOut	Off

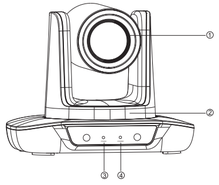
Auto Inversion：On/Off
Preset Tour：On/Off

OTHER SETUP	
Auto Inversion	On
Preset Tour	On
ResidenceTime	2
Call Preset Speed	12
OSD Flip	Off
OSD TimeOut	Off

Residence Time：1-60
Call Preset Speed：1-24
OSD Flip：On/Off
OSD TimeOut：Off, 2.5 minutes

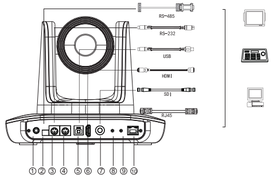
1. Product Description

1.1 Front



① Lens
② Pan&Tilt
③ Power
④ Standby

1.2 Back



① DC 12V
② RS-485
③ RS-232in
④ RS-232out
⑤ USB3.0
⑥ HDMI
⑦ SDI
⑧ Line-in
⑨ Line-out
⑩ LAN

3.Performance Characterics

Camera			
Sensor	1/2.8"		
Effective Pixels	2.07MP		
Video Signals	1080P60, 1080P59.94, 1080P50, 1080P30, 1080P29.97, 1080P25, 1080i60, 1080i59.94, 1080i50, 720P60, 720P59.94, 720P50		
Zoom	12x optical zoom	20x optical zoom	30x optical zoom
Lens	f=4.2mm ~ 50.4mm	f=4.6mm ~ 92mm	f=4.6mm ~ 138mm
Aperture	F1.8 ~ F2.8	F1.8 ~ F3.6	F1.8 ~ F3.6
Horizontal Angle	70.2° ~ 6.92°	62.3° ~ 3.46°	62.3° ~ 2.31°
Vertical Angle	42.6° ~ 3.76°	36.1° ~ 1.92°	36.1° ~ 1.29°
Diagonal Angle	77.5° ~ 7.53°	69.5° ~ 3.86°	69.5° ~ 2.63°
Digital Zoom	8X		
Video Output	USB 3.0, HDMI, RJ45, SDI		
Signal Standard	NTSC/PAL		
Control Interface	RS232, RS485, USB, NET		
Shutter	1/30s ~ 1/10000s		
White Balance	Auto; Indoor; Outdoor; One Push; Manual; VAR		
Backlight Compensation	Support		
Digital Noise Reduction	2D&3D Digital Noise Reduction		
Baud Rate	2400/4800/9600/19200/38400		
Control Protocol	VISCA, Pelco-D,Pelco-P		
USB Protocol	UVC 1.1		
Minimal Illumination	0.5 Lux @ (F1.8, AGC ON)		
SNR	>55dB		
Horizontal Rotation	350° (±175°)1.1°/s~100°/s		
Vertical Rotation	180° (±90°)0.1°/s~80°/s		
H & V Flip	Support		
Image Freeze	Support		
PoE	Support		
Number of Preset	255		
Preset Accuracy	0.1°		
IPC Features			
Video Encoding Format	H.264/H.265/MJPG		
Video Stream	Main Stream, Sub Stream		
Main Stream Resolution	1920x1080, 1280x720, 1024x576 , 960x540,etc.		
Sub Stream Resolution	1280x720, 1024x576, 720x480, 720x408,etc.		
Video Bit Rate	32Kbps ~ 16240Kbps		
Bit Rate Type	Variable Rate, Fixed Rate		
Frame Rate	50Hz: 1fps ~ 50fps, 60Hz: 1fps ~ 60fps		
Audio Compression	AAC		
Audio Bit Rate	96Kbps, 128Kbps, 256Kbps		
Network Protocol	NDI [HX2,SRT,TCP/IP, HTTP, RTSP, RTMP, Onvif, DHCP, Multicast, etc.		
Input/Output Interface			
HD Output	1xHDMI 1x3G-SDI: BNC type, 800mV(p-p), 75Ω, Along to SMPTE 424M standard		
LAN	1xRJ45 10M/100M Ethernet Interface,PoE（802.3af）		
Audio Interface	1-ch: 3.5mm Audio Interface, Line In 1-ch: 3.5mm Audio Interface, Line Out		
USB	1xUSB3.0 Type B female jack		
Communication Interface	1xRS232 In: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA/Pelco-D/Pelco-P 1xRS232 Out: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA network use only 1xRS485: 2pin Phoenix Port, Max Distance: 1200m, Protocol: VISCA/Pelco-D/Pelco-P		
Power Jack	JEITA type (DC IN 12V)		
Generic Specification			
Power Supply	DC 12V/3A		
Power Consumption	12W		
Work Temperature	0°C ~ 40°C		
Work Humidity	0~95% Rh		
Product Size	247.1*152*169.6mm(280*217*197mm(before / after packing)		
Product Weight	1.37kg/2.45kg (net / gross weight)		

5. Camera Menu Setup

5.1 Exposure

MAIN MENU	
→Exposure	
Color	
Image	
P/T/Z	
Noise Reduction	
Setup	
Information	
Restore Default	
[HOME]	Enter
[MENU]	Exit

Press the 【MENU】button on the Remote to enter/exit the main menu of the camera.
Press the ⌂ button to enter sub-menu.

EXPOSURE	
→Mode	Auto
ExpCompMode	On
ExpComp	-1
Gain Limit	3
Meter	Average
Backlight	Off
DRC	2
Anti-Flicker	Off

Mode: Auto/Manual/SAE/AAE/Bright
ExpComp Mode: On/Off (only effective under Auto/AAE mode)
ExpComp Range: -7~7(only effective under ExpComp mode)
Gain Limit: 0-15
Meter: Average/Center/Smart/Top
Backlight: On/Off (only effective under Auto/AAE mode)
DRC: 0-8
Anti-Flicker: Off/50HZ/60HZ

Color	
→WB Mode	Indoor
Saturation	100%
Hue	7

Color	
WB Mode	Outdoor
Saturation	100%
Hue	7

Color	
→WB Mode	OnePush
AWB Sens	Low
RG Tuning	3
BG Tuning	1
Saturation	100%
Hue	7

Color	
WB Mode	Manual
R Gain	120
B Gain	130
Saturation	100%
Hue	7

R Gain：0-255
B Gain：0-255

Color	
→WB Mode	VAR
Colortemp	6500K
RG Tuning	3
BG Tuning	1
Saturation	100%
Hue	7

Colortemp: 2500K-8000K

5.3 Image

IMAGE	
→Luminance	7
Contrast	7
Sharpness	4
B&W-Mode	Colorful
Flip-H	On
Flip-V	Off
Gamma	0.5
Image style	Default

Luminance：0-14 Contrast：0-14
Sharpness：Auto/0-15
B&W Mode：Colorful、B&W
Flip-H：On/Off Flip-V：On/Off
Gamma：Ext/Default/0.45/0.5/0.56/0.63
Image Style：Default/Clarity/Norm

5.6.1 Video Setup

VIDEO SETUP	
→DVI Mode	HDMI
Format Mode	OSD
HDMI Format	1080P60
SDI Mode	Level A

DVI Mode：DVI/HDMI
Format Mode：OSD/DIP/50HZ/60HZ
HDMI Format:1080P60/1080P59.94/1080P50/1080P30/1080P29.97/1080P25/1080I60/1080I59.94/1080I50/720P60/720P59.94/720P50
Only effective under the OSD Format Mode. When in DIP Format Mode, set with the DIP switches and corresponding table on the bottom of the camera)
SDI Mode：Level A/Level B

5.6.2 Audio Setup

AUDIO SETUP	
→AUDIO SOURCE	LINE
INPUT VOL	30
AUDIO OUT	HDMI/SDI

INPUT VOL：0-30
AUDIO OUT：HDMI/SDI,LINEOUT,Off

5.6.3 Focus Setup

FOCUS SETUP	
→AF-Sense	High
AF-Zone	Center

AF-Sense：High/Low/Normal
AF-Zone：Front/Top/Center/Bottom

5.6.4 USB Setup

FOCUS SETUP	
→H264Enable	Off
USB Mode	BULK
UVC Standby Mode	Off
Wakeup Pos	Preset 0

H264 Enable：On/Off
USB Mode: BULK/ISOC
UVC Standby Mode：On/Off
Wakeup Pos：Preset 0/Preset UVC

5.7 Information

INFORMATION	
→Version	9.0.01
Date	2024-01-12
AF Version	5.4.59
Video Format	1080P60

5.8 Restore Default

RESTORE DEFAULT
→Yes
No

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

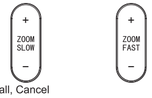
Note: Press the direction key when you need to adjust the angle.
If you want to move the camera slowly, just click the direction key;
If you want to move the camera fast at a large scale,just long-press the button;
If you want to adjust the Pan-Tilt direction, just press and hold the L/R button for 10S.

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 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.

6.6 AI Mode

1.Press 【AI】button to enter autoframing mode，and start Auto Tracking; Press【AI】button again to turn off autoframing.

2. When in autoframing mode，press ▭ to track single object.A red box will appear on the object tracked. Switch between different objects by pressing the PTZ Control Keys. Press ⌓ button to start Single Object Tracking, when the object is confirmed.

3.Press ⎘ to exit Single Object Tracking mode and return to general autoframing.

6.7 DIP Switch Setup

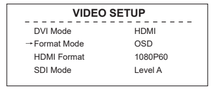
DIP	HDMI	SDI
0x00	1080p60	1080p60
0x01	1080P59.94	1080P59.94
0x02	1080p50	1080p50
0x03	1080p30	1080p30
0x04	1080p29.97	1080p29.97
0x05	1080p25	1080p25
0x06	1080I60	1080I60
0x07	1080I59.94	1080I59.94
0x08	1080I50	1080I50
0x09	720P60	720P60
0xA	720P59.94	720P59.94
0xB	720P50	720P50
0xC	RSVD	RSVD
0xD	RSVD	RSVD
0xE	RSVD	RSVD
0xF	RSVD	RSVD

(1)Default Format Mode: DIP. Setting path: MENU-SETUP-VIDEO SETU

(2)Two options for Format Mode: DIP and OSD

(3)When choosing DIP，the corresponding resolutions for the DIP values on the table above will be output. Default resolution is 1080P60, when DIP is between 0xC and 0xF.

(4)When choosing OSD,HDMI Format at the next line will display the video resolution, and the resolution is optional.



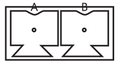
6.8 RS-232 Interface Distribution

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.

6.9 RS-485 Interface Distribution

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



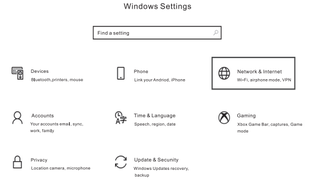
7. Network Function

7.1 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)



7.2 How to add networking:

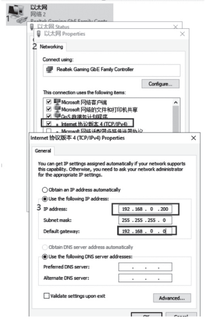
7.2.1 Open the computer network local connection attribute window select "Internet Protocol Version 4 :TCP/IPv4;

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

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

7.2.4 Change the computer's IP to 192.168.0.200 so that the computer IP and camera IP are on the same network segment.

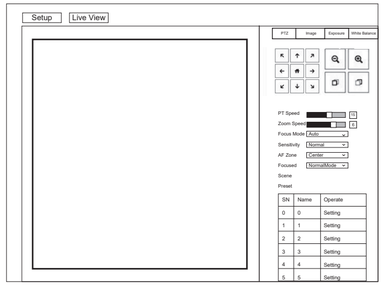
PS:If no network segment is added, You will fail to login. The default IP address of the product is 192.168.0.206. "0"network segment needs to be added to the computer. The IP address cannot conflict with the IP address of other computers or products. Before adding, please verify whether the IP already exists.



7.3 Input http:// 192.168.0.206 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.

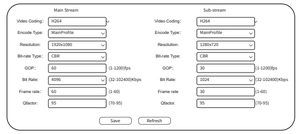
7.3.1 When logging in for the first time, will be prompted to change your password. Users can change the passwords and save it.

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 Video streaming

7.4.1Select "Setup"- "Video Settings"- "System Settings" to enter the following interface:



7.4.2 RTSP video streaming

Select "Setup"- "Network Settings"- "RTSP" to enter following interface:

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)

7.4.3 RTMP video streaming

Select "Setup"- "Network Settings"- "RTMP" to enter following interface:

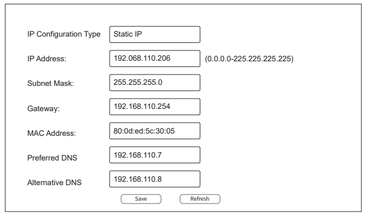
Enable and turn on the RTMP video stream to the server

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.

7.5.1Select "Setup"- "Network Settings"- "Local Network" to enter the following interface:



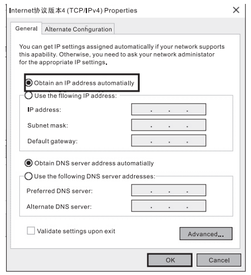
7.5.1.1 Change the camera IP address to: 192.168.110.206

7.5.1.2 Default Gateway: 192.168.110.254

7.5.1.3 Alternate DNS: 192.168.110.7

7.5.1.4 Preferred DNS: 192.168.110.8

7.5.2 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 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 192.168.0.206, 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: RJ45

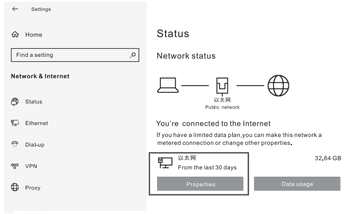
IP Protocol: IPV4

Transmission Protocol: Sony VISCA;

IP address: Setting through the web

Port address: Sony VISCA(52381）

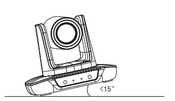
Application Range: Under the same network segment



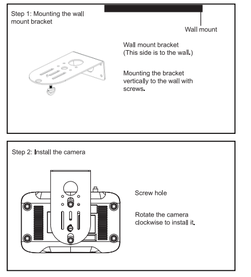
8. Installation Instructions

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



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 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.