Color Video Conference Camera

USER MANUAL



Video conference camera overview

Preface

Thank you very much for using our color video conference camera. Please read this manual in detail and use accordingly.

This manual introduce the function of video camera, opening and operation principle in detail.

This color video camera is high-quality and flexibility with a remote pan336° /tilt 120° operation and image flip, and a DSP dealing integration module input. Support VISCA and PELCO P/D protocol.

Allowing install on the ceiling /desk and an accurate remote control of RS232/ 422.

Safety requirement

In order to avoid camera and other connecting equipment damaged and lead to potential danger, please follow the rules as below:

- Only professional technician can install and maintenance;
- Prohibit setting on the places which raining or dampness, using unit under stated temperature, humidity and power;
- Using accessories from original factory or allowed;
- Once exchange product or repair happen please use universal meter test before using;
- Please use soft and dry rag for cleaning, not strongly corrosive cleanser for avoiding mangled for outside of camera or lens;
- Take care using and no squeeze crust avoiding camera broken;
- Bracket must be endures 3 times weight of camera at least.

Features

- 4K Ultra HD PTZ camera;
- Pan 336°,Tilt 120°:
- The features include advanced ISP processing algorithms to provide vivid images with a strong sense of depth, high resolution, and fantastic color rendition;
- Multi function IR remote controller can control PTZ, lens and other function conveniently:
- Using PC to control camera with VISCA,PELCO,VISCA over IP,ONVIF command;
- IR remote controller,RS232, RS422 and other control method;
- 10 preset positions by remote controller, 255 preset positions by PC or remote control unit,memory auto saved when power off;
- The maximum speed of horizontal rotation: 90° /s, tilt: 90° /s;
- Providing multifunctional accurate remote control.
- Supports single-person tracking, multi-person tracking, zone tracking, hybrid tracking

Packing list

Please check up all devices inside while open package.

Video camera	1	
Remote controller	1	
USB cable	1	
HDMI cable	1	(Optional)
Power adapter	1	
Serial port adapter cable	1	
RS232 cable	1	(Optional)
Bracket	1	
User manual	1	

Remote controller (1)



Video camera (1)



Power adapter (1)



USB cable (1)



HDMI cable (1) (Optional)



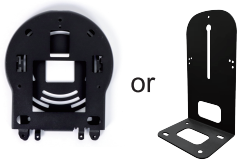
Serial port adapter cable(1)



RS232 cable(1) (Optional)



Bracket

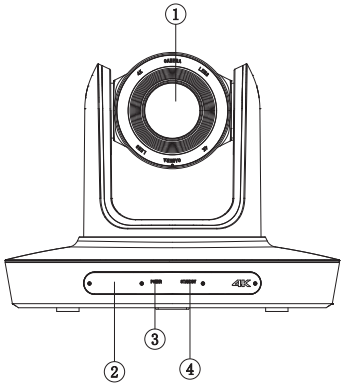


User manual (1)

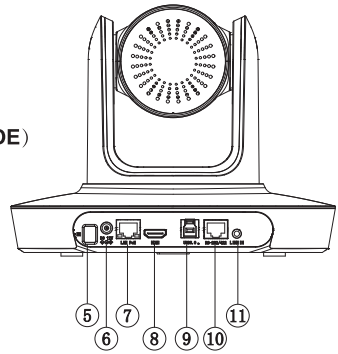


Parts and Introduction

Front

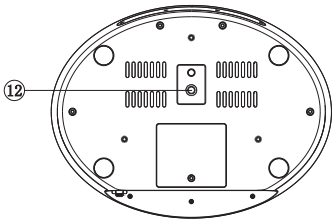


1.Lens
2.Sensor for the remote control
3.Power lamp
4.Standby lamp



5.Sensor for the remote control
6.DC IN 12V input
7.RJ-45 network video output（Supports POE）
8.HDMI video output
9.USB3.0 video output
10.RS-232/422
11.Line in

Bottom



12.British screw holes

Remote Controller

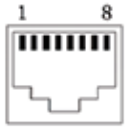


❶ IR transmit
❷ POWER
❸ PAN-TILT RESET
❹ CAMERA SELECT
❺ POSITION:(Number area)
❻ PRESET: (press PRESET then press 0-9 for set up preset position)
RESET: (press RESET then press 0-9 for remove preset position)
❼ MENU
❽ S-OUT: Press and hold for 5 seconds to switch to 720P50 resolution
❾ PAN-TILT ;HOME for return middle position
❿ CLOSE THE MENU
⓫ INFO:Screen information display
⓬ Mute on/off
⓭ Auto framing on/off
⓮ Reserved Key, currently no function
⓯ FOCUS:(auto or manual)
⓰ ZOOM: (Telephoto or Wide Angle)
⓱ F1-F4: Tracking mode quick switch,corresponding to Single person tracking, Multi person tracking, Zone tracking, Hybrid tracking
⓲ Brightness adjustment: Camera Exposure Compensation Adjustment
⓳ BACK LIGHT

*The F1-F4 mode switching only takes effect when AI is enabled.

*Infrared address modifying operation (combination buttons):
Press the button ⓾ over 5 seconds,then press F1/F2/F3/F4 to switch infrared address 1/2/3/4 respectively.

Install Diagram

Schematic Diagram	Function
 RS422/232 IN	1.RS422 TX+ IN Orango/White 2.RS422 TX- IN Orange 3.RS422 RX+ IN Green/White 4.RS232 TX IN Blue 5.IR OUT Blue/White 6.RS422 RX- IN Green 7.RS232 RX Brown/White 8.GND Brown

Note: It is recommended to use the standard serial port adapter cable, but not to connect directly with a network cable

Basic Operation

Remote Control Operation

A、PTZ control



1. The camera is powered on, and the pan/tilt reset action will be performed automatically.

2. Press the arrow keys to change the direction of the camera.

While checking the image on the screen, press the desired arrow key.To move the camera slowly, press the button only once; To move the camera widely, keep pressing the button;

- **Return the camera to face forward and press the “HOME” button.**
- **If the camera is in the wrong direction, the angle of the gimbal will be different from the angle of the camera in the normal position, press the “PTZ PRESET” button, or press the “POWER” button to turn off the device, then turn it on again.**
- **Whenever the front (right) key is pressed, the camera is preset to the right. You may want to orient the camera opposite the direction of the key you pressed, so that you can change the orientation of the camera while checking the image on the screen. To do this, turn on the PAN reverse switch in the PTZ option in the menu.**

■ Notice

If using multiple remotes, repeat the above steps for each remote. This is because the settings are made by changing the signal from each remote control, not by changing the settings of the camera itself.

B、Adjust the camera



■ Focus

- **Using the camera autofocus**
  Press the "AUTO" key.
- **Using the camera manual focus**
  After pressing the "Manual" key, press the "FAR" or "NEAR" key to focus the camera.

■ Notice

When the camera is in the telephoto mode, the image movement speed on the screen may be a little jerky if you perform a pan/tilt operation.

■ Zoom

Press the zoom “TELE/WIDE” button to zoom in/out the screen.

■ Operate multiple cameras with the remote control

1. Set different options in the camera menu system through the remote control.
Remote control address.
2. Switch cameras with different remote control addresses by pressing the "camera selection" button.
Through step 2, select the camera you want to control.
Use the remote control every time.
When making a camera, the "camera select" key pressed in step 2 will light up.



■ Shoot with background light

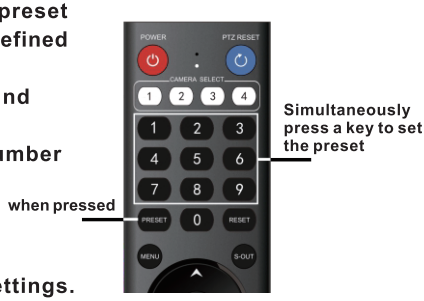
If there is a light source behind the subject, the subject will become dark. Press the "Backlight" key in this case. To cancel this function, press the "Backlight" key again.



C、Preset operation

■ The camera stores a preset position

Up to 255 preset positions (position, zoom, focus and backlight) can be set. Only 10 preset positions can be set and recalled through the remote control. 255 preset positions can be set and called through the user-defined agreement.
1. Adjust the position, zoom, focus and background light of the camera.
2. While holding down the "Preset" key, press (number keys) at the same time any of 0-9.



■ Recall stored settings

Press any of the (numeric keys) 0-9 to save the settings.

■ Cancel preset storage

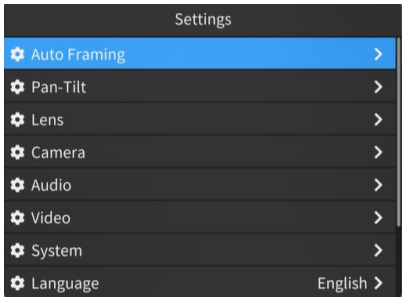
While holding down the "Preset" key, press the number key whose setting is to be canceled.

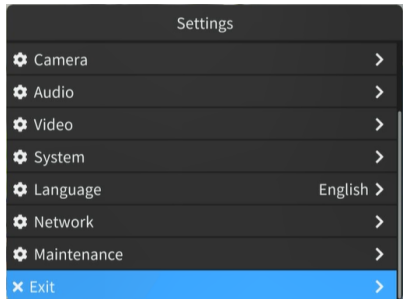


Note: If a location channel is storing or deleting a new setting, it cannot be recalled, set or unset on the channel.

The Menu

Due to product iteration, the product menu is subject to change without prior notice, subject to the actual object .





Auto Framing

This option allows you to configure intelligent application functions, including single-person tracking, multi-person tracking, zone tracking, hybrid tracking

Pan & Tilt

This option allows you to configure PTZ acceleration curves and horizontal/vertical reverse functions.

Lens

This option allows you to configure digital zoom and focus-related parameters.

Camera

This option allows you to configure picture-related parameters, including exposure, white balance, sharpness, brightness, contrast, etc.

Audio

This option allows you to configure audio output on/off.

Video

This option allows you to configure video resolution.

System

This option allows you to configure presets, serial port, remote control, installation method, etc.

Language

This option allows you to configure menu language.

Network

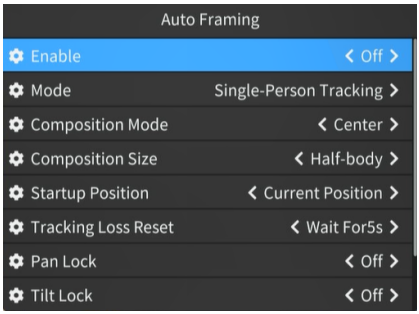
This option allows you to view current network information and set IP to auto/manual.

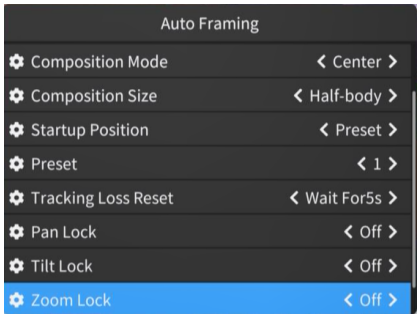
Maintenance

This option allows you to view current version information, and restore factory settings.

Submenu Description

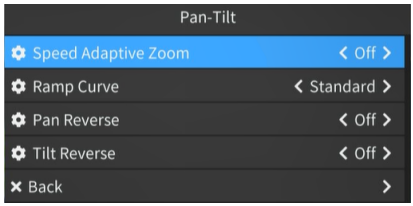
1. Auto Framing





Enable: Turn AI on/off.
Mode: Choose single-person tracking, multi-person tracking, zone tracking, hybrid tracking
Composition Mode: Tracking target position in image can be set.
Composition Size: Choose half body, or full body.
Target Size: Fine-tune based on shot size.
Startup Position: Define the PTZ position when AI enabled.
Preset: When start position is set to "Preset," define which preset number to recall.
Tracking Loss Reset: When the tracking target disappears, the camera will return to the home position after the set waiting time (5–60 seconds). [No Reset] means it will keep waiting indefinitely.
Pan Lock: Effective in single-person tracking. When enabled, horizontal movement is locked.
Tilt Lock: Effective in single person tracking modes. When enabled, vertical movement is locked.
Zoom Lock:Effective in single person tracking modes. When enabled, zoom level is locked.
Zones Count: Displays the number of currently defined zones.
Startup Zone: Defines the start zone when enabling zone tracking.
Switch Delay: Allows setting the waiting time between switching areas, range 0–5 seconds.

2. Pan & Tilt



Speed Adaptive Zoom: Allows enabling/disabling linkage between PTZ speed and zoom ratio (only effective under serial control).
Ramp Curve: Allows setting PTZ acceleration to Standard / Gentle / Swift.
Pan Reverse: Adjusts horizontal pan direction.
Tilt Reverse: Adjusts vertical tilt direction.

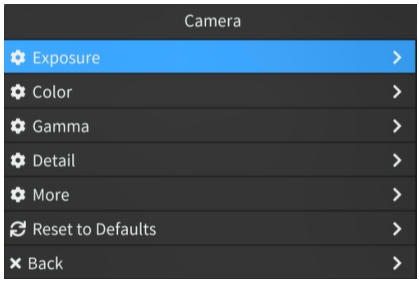
3. Lens



D-Zoom: Can be set to On/Off.
Focus Mode: Can be set to Manual/Auto. Press [0] on the remote control to check if the camera is calibrated.
AF mode: Valid when focus mode is Auto, You can set the autofocus focus to default or person.
AF Sensitivity: Valid when focus mode is Auto; sets the sensitivity level for triggering auto focus, options: Normal/Low.
PTZ triggers AF: effective when the focus mode is manual, the camera will autofocus when moving the gimbal after it is turned on

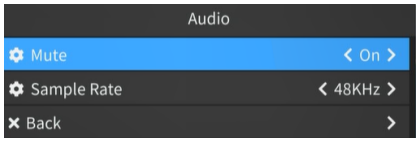
Submenu Description

4. Camera



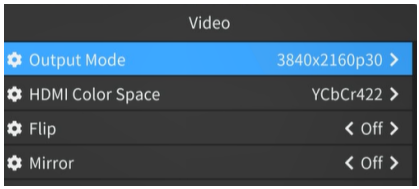
Exposure: Allows configuring parameters such as exposure mode, gain limit, exposure compensation, anti-flicker, metering area, and response speed.
Color: Allows configuring parameters such as white balance mode, gain, phase, matrix, brightness, contrast, saturation, and hue.
Gamma: Allows setting the gamma level.
Detail: Allows configuring 2D/3D noise reduction and image sharpness.
More: Allows setting the defog on/off
Restore Default: Restores image-related parameters to factory settings.

5. Audio



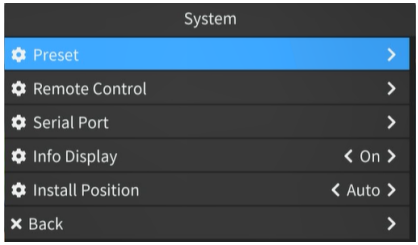
Mute: Can be set to On/Off. When enabled, the audio output volume of all interfaces is minimized.
Sample Rate: Currently fixed at 48KHz.

6. Video



Output Mode: Allows setting the resolution of the video output signal.
HDMI Color Space: Allows selecting RGB, YCbCr422, or YCbCr444.
Flip: Allows enabling/disabling vertical image flip.
Mirror: Allows enabling/disabling horizontal image mirror.

7. System



Preset: Allows configuring preset freeze, preset recall speed, and power-on preset recall.
Remote Control: Allows configuring the infrared remote control address channel and remote speed.
Serial Port: Allows configuring serial control protocol, address, baud rate, and speed level.
Info Display :Turn on/off screen infomation display
Install Position: Allows configuring image flip to adapt to different mounting methods.

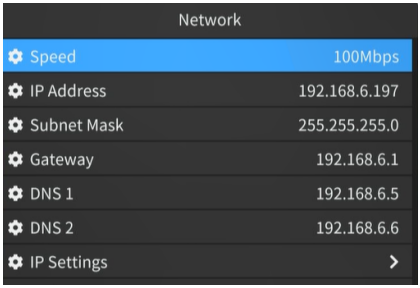
Submenu Description

8. Language



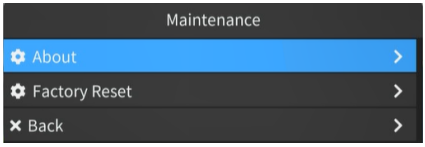
Language: Allows setting the camera menu operation language.

9. Network



Speed: Displays the current network transmission speed.
IP Address: Displays the current IP address.
Subnet Mask: Displays the current subnet mask.
Gateway: Displays the current gateway.
DNS1/2: Displays the current DNS addresses.
IP Settings: Allows enabling/disabling DHCP and manually configuring IP, subnet, gateway, and DNS information.

10. Maintenance





About: Allows viewing firmware version and related information.

Factory Reset: There are two options,Reset Settings and Reset Settings & Data. Choosing Reset Settings you will be restoring to default settings, but some data will be retained. Reset Settings & Data you will be restoring to default settings and erasing all data.

Intelligent Application Description

To use the intelligent tracking function, you must first turn on the [Auto Framing] switch, then select the desired tracking mode.
You can toggle the switch either through the menu or the remote control 【♘】button, and use the menu to select the tracking mode.

Description of Tracking Modes

Single-Person Tracking:

Single-Person tracking will perform precise recognition of a single subject in the scene, and continuously provide real-time, stable tracking as the target moves.

Multi-Person Tracking:

Multi-Person Tracking will automatically adjust the camera composition based on the number and position changes of participants, covering all attendees.

Zone Tracking:

Through the web interface, define consecutive zones on the image. When a target enters any of the zones, the camera will switch to the fixed preset position corresponding to that zone. Once the target leaves the zone, tracking will stop.

Hybrid Tracking:

Combines Single person tracking and zone tracking. When the target is within a specified zone, zone tracking is active. When the target exits the zone, it switches to Single person tracking.

Note:

Once tracking is enabled, it will affect manual pan/tilt control. If you need to switch to manual control, simply turn off the [Auto Framing] switch via the menu or the 【♘】button on the remote control.

Network Connections

Connection mode

Direct connection mode: connect the camera directly to the computer with a network cable.

Network connection mode: connect the camera to the Internet network, and access the network through a router or switch. Users can log in to the device through the browser.

The computer must have the network segment where the camera IP is located. If the network segment is not added, you will not be able to log in. If the default IP address of the camera is 192.168.1.118, you need to add 1 network segment to the computer. The specific method is as follows :

Firstly open the computer network local connection properties window, select “Internet Protocol Version 4 (TCP/IPv4)” double click or click the property “Internet Protocol Version 4 (TCP/IPv4)” enter the properties window, click “Advanced” to enter advanced TCP/IP Set the IP address and subnet mask in the IP address field. After the addition is completed, click OK to complete the IP network segment addition. Users can add corresponding network segments according to the modified camera IP address.

Network login

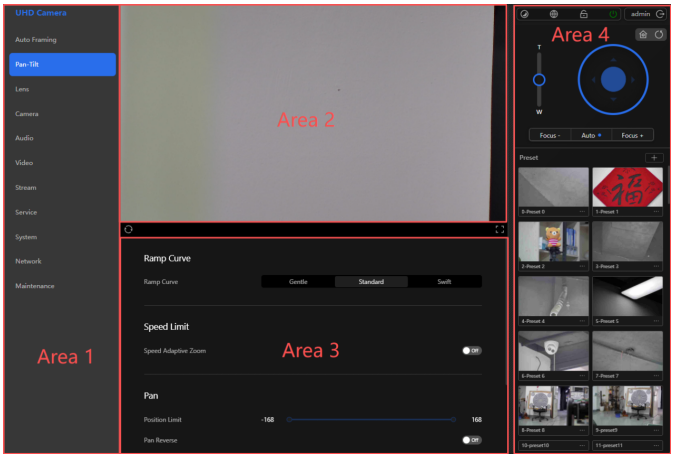
WEB login:

Enter the device IP address in the browser address bar to (default: automatically obtained IP address; if acquisition fails, the default IP is 192.168.1.118). and press Enter to enter the web client login interface. Enter “admin" in the [Username] field. “admin” in the [Password] field, and pass the verification to enter the background preview interface.

Language selection: The selected language can be displayed at the up-right of the login interface

WEB Backstage Management

The below is WEB Backstage Management interface after login in.



Area 1: The left area corresponds to the function options in the OSD menu, where each function can be modified and configured in detail.

Area 2: The upper middle area is the video preview window.

Area 3: The lower middle area is the detailed parameter configuration section. Specific parameter functions can be referenced in the OSD menu description.

Area 4: The right area is the PTZ control panel, which can control pan/tilt direction, zoom, focus, presets, and other common functions.

Technical parameter

Due to the continuous iteration of the product, if there is any parameter change, it is subject to the actual product.

Image Sensor	SONY 1/2.8" CMOS
Effective Pixels	8.29 Megapixels
Resolution	HDMI: 3840*2160 p30/29.97/25; 1920*1080 p60/59.94/50/30/29.97/25; 1280*720 p60/59.94/50 USB MJPEG: 3840*2160, 2560*1440, 1920*1080, 1280*720, 960*540, 640*360, 480*270, 384*216, 320*180, 256*144 USB YUY2: 1920*1080, 1280*720 USB NV12: 1920*1080, 1280*720 When the USB signal is set to 2560*1440 or 3840*2160, the network stream will have no image out. (Please lower the USB video output resolution.)
Signal	PAL/NTSC
Lens	10X/12X/20X optical zoom
Focal Length	10X:f=4.2mm(Wide)~42mm(Tele),F1.76~F3.0 12X:f=4.1mm(Wide)~49.2mm(Tele),F1.8~F2.68 20X:f=5.2mm(Wide)~104mm(Tele),F1.55~F3.13
Horizontal View Angle	10X:f=67.5(W)~7.6mm(T) 12X:f=72.5(W)~6.57mm(T) 20X:f=58.7(W)~3.2mm(T)
Focus System	Auto/Manual
Minimum Illumination	0.1Lux
Exposure Control	Auto/Manual/Shutter Priority/ Iris Priority
Shutter	1/30～1/10000s
Gain	Auto/Manual
White Balance	Auto/Manual/Indoor/OutDoor/OnePush/ATW/Temp
Image Effect	Full color/image flip/mirror
Pan	-168°~+168°（0.01°/s~90°/s）
Tilt	-30°~+90°（0.01°/s~90°/s）
Video Output	HDMI/USB3.0/IP
Power	12V DC(10.8～13.0V DC)
Operating Temperature	0°C~40°C
Storage Temperature	-10°C~60°C
Color	Black
Protocol	SONY VISCA、PELCO P/D、VISCA over IP、ONVIF、NDI(optional)
Control Mode	RS-232、RS-422、IP、UVC
Size	(W)224*(D)170*(H)174mm
Weight	1.3KG
Accessories	DC 12V power adapter, IR Remote, User manual, RS-232 cable(optional),Serial port adapter cable, HDMI cable(optional), USB3.0 cable, Bracket(Ceiling Or Wall Mounting)