

# Color Video Conference Camera

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## USER MANUAL

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

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

This color video camera is high-quality and flexibility with a remote pan355° /tilt 120° operation and image flip, and DSP dealing integration module input. Support VISCA and PELCO P/D protocol. Allowing install on the ceiling /desk and a accurate remote control of RS232/485.

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, no 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.

● 1080p full HD PTZ camera

● Pan 355° , Tilt 120°

● With the latest developed digital signal processor (DSP) improve the image quality of digital zoom

● Multi function IR remote controller can control PTZ, Lens and other function conveniently.

● Using PC to control camera with Sony VISCA or Pelco command

● IR remote controller, RS422C, RS232C and other control method

● 9 preset positions by remote controller, 200 preset positions by PC or remote control unit, memory auto saved when power off

● The maximum speed of horizontal rotation: 80° /s, Tilt: 60° /s

● Providing multifunctional accurate remote control

# Packing list

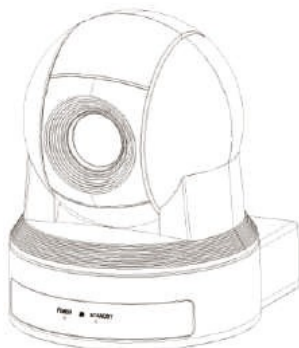
Please check up all devices inside while open package.

Video camera-----1  
 Power adapter-----1  
 Power cable -----1  
 Rs232 cable-----1  
 Remote controller -----1  
 HDMI wire-----1  
 USB wire-----1  
 Ceiling bracket -----1

Remotecontroller (1)



Video camera (1)



HDMI wire (1)



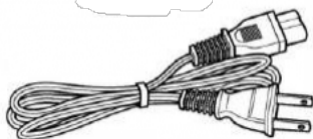
Power adapter (1)



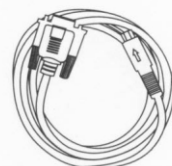
USB Wire (1)



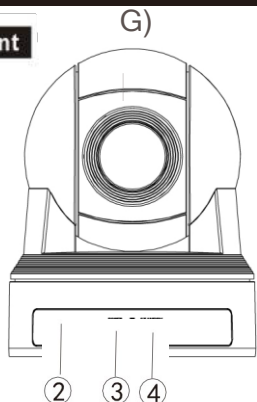
Power cable (1)



RS232 cable (1)



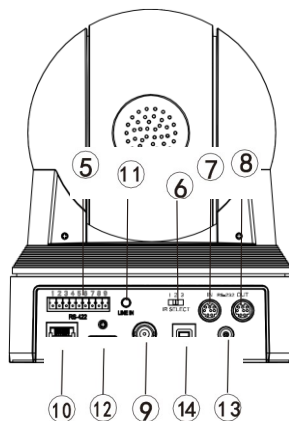
Front



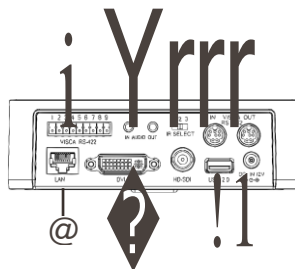
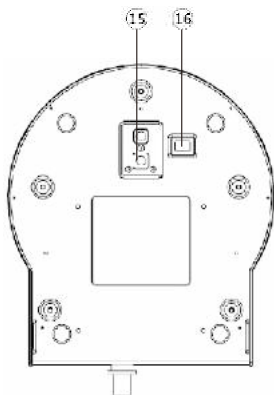
Lens

- 2 Sensor for the Remote Control
- 3 Power lamp
- 4 Standby lamp

- 5. RS-422C/485 VISCA/PELCO
- 6. IR select switch
- 7. VISCA RS-232C IN connector
- 8 VISCA RS-232C OUT connector
- 9 3G-SDI HD video output
- 10 RJ-45 Network video output
- 11 Line-in
- 12 HDMI video output
- DVI-I video output (transfer HDMI)
- 13 DC IN 12V input
- 14 USB video output



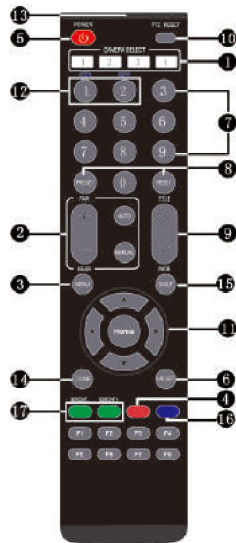
Bottom



- 15 British screw holes
- 16 VISCA RS-422/RS-232C BOTTOM switch  
(See page 9 for details)

# Remote Controller

- 0 CAMERA SELECT: (match to IR SELECT back)
- f) FOCUS: (auto or manual)
- 8 MANU
- 0 BACK LIGHT
- 0 POWER
- 0 STD, REV: (Press L/RDIRECTION SET, and then Press 1 or 2)
- f) POSITION: (Number area; PRESET: press PRESET then press 1-9 for set up preset position)
- 0 RESET: (Press RESET and then press1-9 for eliminate preset position)
- (i) ZOOM: (Telephoto or Wide Ang l e)
- ® PAN-TILT RESET
- 411 PAN-TILT ; HOME for return middle position
- @ L/R DIRECTION SET
- IR transmit
- 41) CLOSE THE MENU
- C@ S-OUT: SWITCH TO 720P50
- DATA-SCREEN: Switching color mode
- (f) Brightness adjustment: br i gh t - / bright+



## Install diagram

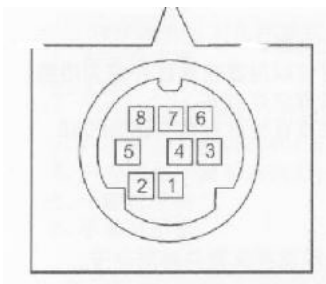
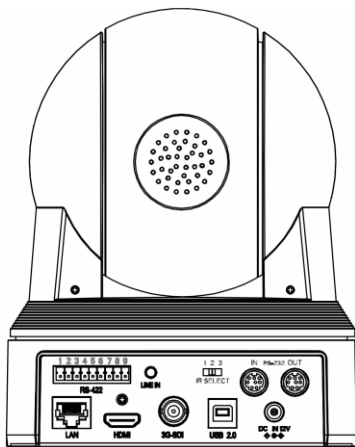
VISCA RS- 422.

| Pin 0 . | Function           |
|---------|--------------------|
|         | TXD rN+            |
| 2       | TXD IN-            |
| 3       | RXD JN+(RS 485 - ) |
| 4       | RXD IN- RS485+)    |
| 5       | GN D               |
| 6       | TXD OUT+           |
| 7       | TXD OUT-           |
| 8       | RXD OUT+           |
| 9       | RXD OUT-           |

1 2 3 4 5 6 7 8 9

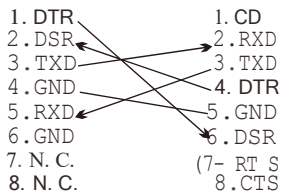


•RS-422 and RS-232 can not be used at the same time



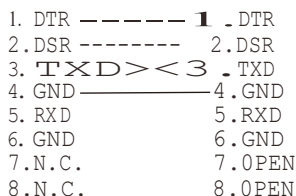
video camera

Windows D-Sub 9 pin



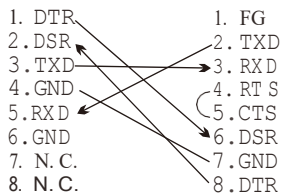
video camera

EVI Camara or  
Mini DIM 8 pin serial



video camera

Windows D-Sub 25 pin



| NO    | Pins   | Signal                           |
|-------|--------|----------------------------------|
| + 1 + | -TR-   | <Data Transmission Ready(OUTPUT) |
| 2     | DSR    | Data Set Ready (INPUT)           |
| + 3 - | TXD    | Transmit Data (OUTPUT)           |
| 4     | GND    | Ground                           |
| 5     | RXD    | Receive Data(INPUT)              |
| 6     | GND    | Ground                           |
| 7     | [[J;]N | o Connection                     |
| 8     | [[J;]N | o Connection                     |

## A. Pan/Tilt control

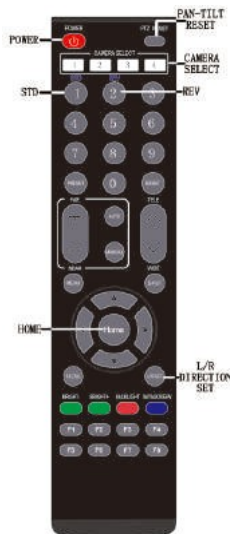
1. Power on, Pan/Tilt will be in initial position.

2. Press arrow for adjust direction, when you can watch video on screen, you can move direction by press arrow step by step or continuously for wild turning direction. If you want to fix direction, please press arrow (up or down) and arrow (left or right) at the same time.

3. Press HOME for front direction.

4. Press PAN-TILT RESET or turn off power and then turn on if direction is not you want, the direction will be change to initial position.

5. Press L/R DIRECTION SET and STD or REV at the same time, meanwhile, move right arrow, you can turn the direction to left or right.



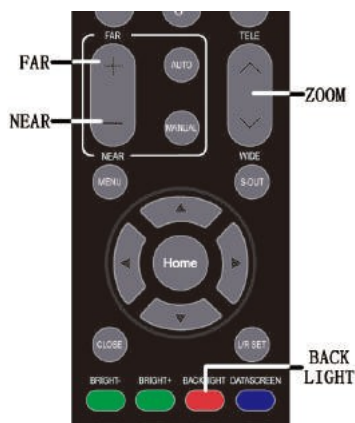
## ATTENTION:

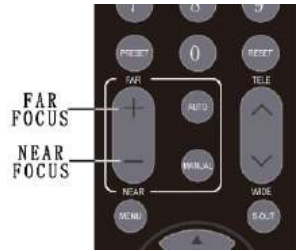
When you use more than one commander, please repeat operation accordingly.

## B. Adjust Camera

### FOCUS

- Press AUTO for focus auto
- Press MANUAL and then adjust far or near by switch FAR OR NEAR





## ATTENTION:

In the condition of far focus, it is natural for the image twitter slowly when operate pan/tilt.

## ZOOM

Adjust T and W for zoom far or near



## One Remote controller for operating few cameras

1. Maximum 3 cameras can be controlled by a remote controller through back switch 1, 2, 3.
2. Press CAMERA SELECT 1 or 2 or 3, you can control each of matching 1, 2, 3 camera, 1 or 2 or 3 button will be lighted.



## Use back light compensation

If there is lighting on the back of focusing object, the object will be looks black. So you can press BACK LIGHT for avoiding this happening, and turn off button for close.



## C, Preset Position Operation

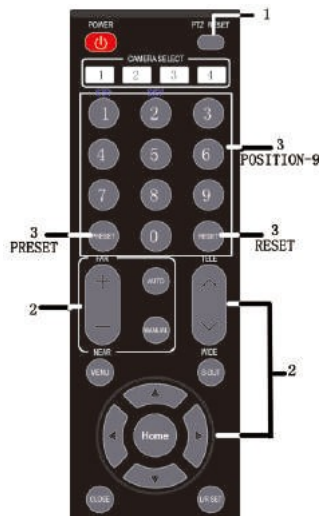
### Store camera settings-presets

Up to 200 presets can be set (location, zoom, focus, and the background light)

By remote controller only can set and calling 9 preset positions.

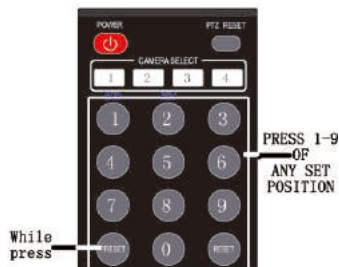
Through a user-defined protocol Over 200 presets that can be set.

- 1, Recognizes that the STANDBY led is not blinking.  
If the STANDBY indicator is flashing, press PAN-TILT RESET to restored
- 2, Adjust the camera position, zoom, focus, and the background light.
- 3, Press and hold the PRESET button, then press one of the POSITION1-9.



### Use preset position

Press any switch of 1-9 position



### Cancel preset position

Press RESET, then press 1-9 simultaneously



### Attention

If a POSITION is storing or deleting a new set, cannot be called in the channel, set or unset.

Normal set or ceiling set  
RS232 RS422/485 selection  
the remainder being reserved switch

## BOTTOM SWITCH



Note:  
The third bottom switch is for upgrade,  
do not keep it on while using.



### Communication

This option can set protocol, address, baud rate, speed scale, speed limit when the camera is communicating through serial port.

### PTZ settings

This option can set PTZ related functions, including digital zoom, focus mode, remote speed, pan direction, tilt direction, flip and mirror.

### Exposure settings

This option can set exposure mode including full auto exposure, manual exposure, shutter priority, iris priority, bright priority, etc.

### White balance settings

This option can set white balance mode including auto, manual, indoor, outdoor, one push, ATW, etc.

### Picture Settings

This option allows you to set image effects, including 2D/3D noise reduction, contrast, chroma, acutance, gamma, wide dynamic range, defog, anti flicker, etc.

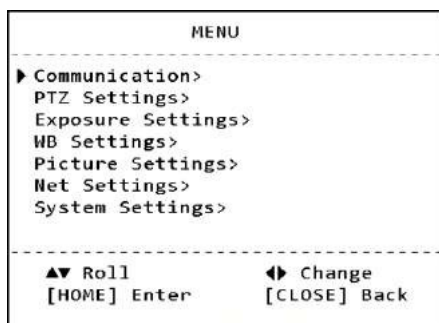
### Network information

This option can set network information of camera, including DHCP on/off. When the DHCP is off, we can edit camera IP address, mask, gateway by using "0-9" of the IR remote controller.

### System setting

This option can set camera resolution, reload preset 1, RS485 search function, language, check current version and back to factory setting.

| BottmoSwitch | ontrol Selection |
|--------------|------------------|
| 1            | NC               |
| ON           | NC               |
| OFF          | NC               |
| 2            | NC               |
| ON           | NC               |
| OFF          | NC               |
| 3            | Upgrade mode     |
| ON           | ON               |
| OFF          | OFF              |
| 4            | NC               |
| ON           | NC               |
| OFF          | NC               |
| 5            | Install method   |
| ON           | Ceiling install  |
| OFF          | Normal install   |
| 6            | NC               |
| ON           | NC               |
| OFF          | NC               |



## 1. Communication

| Communication> |              |
|----------------|--------------|
| ► Protocol:    | AUTO         |
| Address:       | 1            |
| Baud Rate:     | 9600         |
| Speed Scale:   | STD          |
| Speed Limit:   | OFF          |
| -----          |              |
| ▲▼ Roll        | ◀▶ Change    |
| [HOME] Enter   | [CLOSE] Back |

Communication Sub menu

Protocol: can set  
auto/visca/pelco-p/pelco-d

Address: can set camera serial  
communication address

Baud rate: can set serial  
communication baud rate,  
2400/4800/9600/19200/38400/115200

Speed scale: can set speed range  
of PTZ (only take effect when  
using serial communication),  
standard/expand

Speed limit: can set on/ off of pan  
tilt speed and lens magnification  
linkage

## 2. PTZ settings

| PTZ Settings>   |              |
|-----------------|--------------|
| ► DZoom:        | OFF          |
| Focus Mode:     | AUTO         |
| Remote Speed:   | 8            |
| Pan Direction:  | Normal       |
| Tilt Direction: | Normal       |
| Flip:           | OFF          |
| Mirror:         | OFF          |
| -----           |              |
| ▲▼ Roll         | ◀▶ Change    |
| [HOME] Enter    | [CLOSE] Back |

PTZ settings Submenu

DZoom: on / off

Focus mode: auto/manual

Remote speed: PTZ speed 1-16 (only  
take effect when using IR remote  
controller)

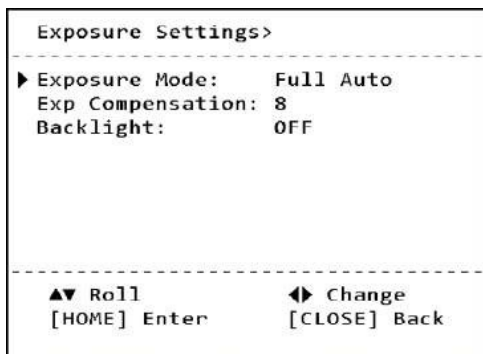
Pandirection: can set pan  
direction normal / reverse

Tilt direction: can set pan  
direction normal / reverse

Flip: can set image flip

Mirror: can set image mirroring

### 3.Exposure settings



#### Exposure settings Sub menu

Full auto: exposure compensation can be adjustable in auto mode, 0-15  
Backlight can be adjustable in auto mode, open/off

Iris pri: iris value can be adjustable in iris priority mode, Close-1/1.8

exposure compensation can be adjustable in auto mode, 0-15  
Backlight can be adjustable in auto mode, open/off

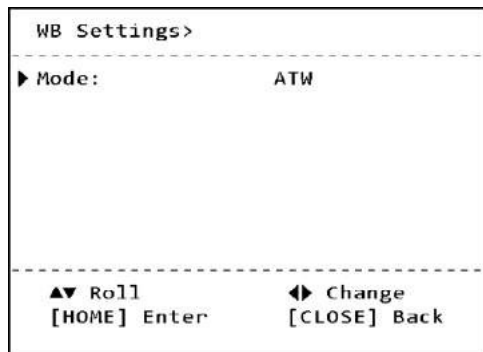
Shutter pri: shutter value can be adjustable in shutter priority mode, 1/1-1/10K

exposure compensation can be adjustable in auto mode, 0-15  
Backlight can be adjustable in auto mode, open/off

Bright pri: bright value can be adjustable in bright priority mode, 0-27

Manual: exposure compensation can be adjustable in manual mode, 0-15  
iris value can be adjustable in manual mode, Close-1/1.8  
shutter value can be adjustable in manual mode, 1/1- 1/10K

### 4.White balance settings



#### White balance settings Submenu

White balance mode: auto, manual, indoor, outdoor, one push,ATW

Manual mode:  
red gain is adjustable, 0- 255  
blue gain is adjustable, 0-255

## Settings

| Picture Settings> |              |
|-------------------|--------------|
| ▶ 2DNR:           | OFF          |
| 3DNR:             | 1            |
| Contrast:         | 8            |
| Chroma:           | 8            |
| Sharpness:        | 6            |
| Gamma:            | 0            |
| WDR:              | OFF          |
| Defog:            | OFF          |
| ▲▼ Roll           | ◀▶ Change    |
| [HOME] Enter      | [CLOSE] Back |

### Picture Settings Submenu

2DNR: 2D noise reduction, open/off

3DNR: 3D noise reduction, off / 1- 5

Contrast: can set image contrast, 0-15

Chroma: can set image color saturation, 0-15

Acutance: can set image sharpness value, 0-15

Gamma: can set image gamma, 0-4

WDR: can set wide dynamic range, off/1-6

Defog: can set defog level, off/1-15

Flicker: anti flicker frequency, off/50hz/60hz

## 6. Network information

| Net Settings> |                 |
|---------------|-----------------|
| ▶ DHCP:       | OFF             |
| IP Address:   | 192.168.001.118 |
| Mask:         | 255.255.255.000 |
| Gateway:      | 192.168.001.001 |
| ▲▼ Roll       | ◀▶ Change       |
| [HOME] Enter  | [CLOSE] Back    |

### Network information Sub menu

Can check network information of camera.

Can manually edit camera IP address, mask, gateway by using "0-9" of the IR remote controller when DHCP is off.

## 7. System setting

|                  |              |
|------------------|--------------|
| System Settings> |              |
| -----            |              |
| ► Resolution:    | 1920x1080p60 |
| Reload Preset 1: | ON           |
| RS485:           | OFF          |
| Language:        | English      |
| Version:         | V2010        |
| Factory Reset>   |              |
| -----            |              |
| ▲▼ Roll          | ◀▶ Change    |
| [HOME] Enter     | [CLOSE] Back |

|                 |              |
|-----------------|--------------|
| Factory Reset>  |              |
| -----           |              |
| ► Reset System> |              |
| Reset Picture>  |              |
| Reset Net>      |              |
| Reset All>      |              |
| -----           |              |
| ▲▼ Roll         | ◀▶ Change    |
| [HOME] Enter    | [CLOSE] Back |

### System setting Sub menu

Resolution: can set  
1080p50 / 60 / 59.94,  
1080i60 / 59.94 / 50,  
1080p30 / 29.97 / 25,  
720p60 / 50

Reload preset **1**: on/off, if preset position **1** is set for the camera, can set to call the preset position **1** function automatically after powering on,

Rs485: RS485 search function, on/off

Language: can set menu language, simplified Chinese / traditional Chinese / English

Version: current version of the camera, can be used for manufacturer to confirm the version information, without special functions

### Factory reset:

Reset system, restore only parameter values except image and network parameters to factory default values

Reset picture, restore image parameter value to the factory default value

Reset Net, restore network parameter value to the factory default value

Reset all, restore all parameter values to factory defaults

  
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:

First 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/IPv4. Set the IP address and subnet mask in the IP address field. After the addition is complete, click **OK** to complete the IP network segment addition. Users can add corresponding network segments according to their modified camera IP address.

  
2,

WEB login:

Enter the device IP address in the browser address bar to default to 192.168.1.118, and press Enter to enter the web client login interface. Enter admin in the [User Name] field, enter admin in the [Password] field, and pass the verification to enter the background preview interface.

Language selection: Select the language icon in the upper right corner of the login interface, click to select the web interface language type.

  
Image preview

After logging in successfully, enter the management interface. The default is to enter the video preview interface. On the left side of the preview interface, the image preview area, you can click to output the main stream, sub-stream, and the display ratio of the screen output (16:9 & 4:3) and full-screen display function.

PTZ control:

On the right side of the preview interface, the PTZ control area can specifically implement the following functions:  
The gimbal rotates upward, the gimbal rotates downward, the gimbal turns to the left, the gimbal rotates to the right, the gimbal restores the initial center position, the lens zooms out, the lens zooms in and the preset position number is set. Number 0 starts counting, which is preset position 1; saves the preset position currently set; deletes the corresponding preset position; calls the corresponding preset position.

  
Click "Settings" in the upper right corner to enter the software parameter configuration interface. There are mainly the following options: video configuration, network configuration, system configuration, etc.

## Video configuration

### 1), video coding

Encoding mode: Set the video compression format. The default primary/secondary stream compression format is H. 264/H. 265.

Stream: Set different video output modes and use different streams. Contains primary and secondary streams. The primary stream is optional 1920\*1080, 1280\*720, and the secondary stream is optional 1280\*720, 1024\*576, 640\*360.

### Configuration

Rate (Kb/s): Set the video bit rate (the default stream is 4096Kb/s; the default stream is 2048Kb/s; 0-15360Kb/s is optional)

Frame rate: set the video frame rate, the default frame rate is 30frames

Rate Control: Set the stream control mode, the primary/secondary stream default variable bit rate (CBR), support for selectable bit rate (VBR)

I frame interval: set the keyframe interval, the primary/secondary stream defaults to 30, 1-100 is optional.

### Image parameter

The image parameter interface allows you to make the following adjustments to the image effects:

Focus: You can set the focus mode, focus distance, digital zoom on and off

Exposure: Set exposure mode, shutter speed, anti-flicker, gain, aperture and brightness

White balance: white balance mode, red and blue gain effect can be set

Image: can set mirror, flip, backlight compensation, gamma curve, wide dynamic and other functions

Picture quality: can set the screen brightness, sharpness, contrast, saturation and other functions

Noise reduction: can be set to enable 2D noise reduction, 3D noise reduction

### Audio setting

The audio setting interface can adjust the following parameters on audio:

Audio encode: audio function can be set, on / off

Audio type: set audio format, AAC

Sampling: set audio sampling rate, 22050/32000/44100/48000

Coderate (Kbps): set the audio code rate, 32/48/96/128

Save: After the audio parameters are modified, click "Save" button to save the modified parameters, the web interface will prompt accordingly

### RTMP setting:

The RTMP setting interface can adjust the following parameters on RTMP:

RTMP state: control switch of main stream, on / off

control switch of sub-stream, on / off

Main RTMP address: fill in the live data upload address of the live platform in this column (e.g. fill in the Youtube RTMP address, rtmp://a.rtmp.youtube.com/live2/y4f7-rgmc-bzer-0vs2), which means the main stream is used to stream on Youtube live platform;

Sub stream RTMP address: fill in the live data upload address of the live platform in this column (e.g. fill in the Youtube RTMP address, rtmp://a.rtmp.youtube.com/live2/y4f7-rgmc-bzer-0vs2), which means the sub stream is used to stream on the Youtube live platform;

Save: „after the RTMP streaming parameters are modified, click "Save" button to save the modified parameters, the web interface will prompt accordingly



## Network Configuration

### Ethernet parameters

DHCP: Set whether to enable automatic IP acquisition. Close by default

IP address: Set the IP address. The default is 192.168.1.118, where IP is the address of the login web page.

Subnet mask: Set the subnet mask (default is 255.255.255.0)

Default Gateway: Set the default gateway (default is 192.168.1.1)

HTTP port: set the HTTP port, the default is 80

Web port: Set the web port, the default is 6087

Main stream port: Set the main stream video acquisition port. The default is 554.

Secondary stream port: Set the secondary stream video acquisition port. The default is 554.

### System Configuration

Version upgrade: The page displays version information, which can only be read by the user and cannot be modified.

File upgrade: Click the upgrade icon, in the pop-up window, select the upgrade file; click Upload upgrade, after the upgrade is successful, the device automatically restarts. Note: Ensure that the power and network of the device are properly connected during the upgrade process, otherwise the upgrade will fail.

Restore factory: You can select "Simple Recovery" to reset the image parameters, select "Full Recovery" to reset and restart all parameters, and select "Restart" to restart the device directly.

Account setting: You can modify the user name and password of the login management account. After modification, you need to restart and log in again.

## Technical parameter

|                       |                                                                                                         |                      |
|-----------------------|---------------------------------------------------------------------------------------------------------|----------------------|
| Image Sensor          | 1/2.8" Progressive CMOS                                                                                 |                      |
| Effective Pixels      | 3.1Megapixels                                                                                           | 3.5Megapixels        |
| Resolution HD         | 1080p60/50/59.94, 1080p30/25/29.97, 1080i60/50/59.94, 720p60/50                                         |                      |
| Signal                | PAL/NTSC                                                                                                |                      |
| Lens                  | 12X optical zoom                                                                                        | 20X optical zoom     |
| Foci                  | f=3.9mm(W)~46.8mm(T)                                                                                    | f=4.7mm(W)~94.0mm(T) |
| Horizontal View Angle | 72.5° (W)~23.9° (T)                                                                                     | 58.7° (W)~3.2° (T)   |
| Focus System          | Auto/Manual                                                                                             |                      |
| Minimum Illumination  | 0.1Lux                                                                                                  |                      |
| Exposure Control      | Auto/Manual                                                                                             |                      |
| Shutter               | 1/1~1/10000s                                                                                            |                      |
| Gain                  | Auto/Manual                                                                                             |                      |
| White Balance         | Auto/Indoor/Outdoor/Manual                                                                              |                      |
| Image Effect          | Full color/black and white/image flip                                                                   |                      |
| S/N Ratio             | ≥50db                                                                                                   |                      |
| Pan                   | 355° (max. speed:80° /s)                                                                                |                      |
| Tilt                  | -30° to +90° (max. speed:60° /s)                                                                        |                      |
| Video Output HD       | HDMI/3G-SDI/USB 2.0/RJ-45                                                                               |                      |
| Power                 | 12V DC(10.8~13.0V DC)                                                                                   |                      |
| Control protocol      | SONY VISCA、PELCO P/D                                                                                    |                      |
| Network protocol      | VISCA over IP、RTSP、RTMP、ONVIF; NDI (optional)                                                           |                      |
| Control Mode          | RS-232C、RS-422/485、USB Control                                                                          |                      |
| Accessories           | DC 12V power adapter, IR Remote, Operation manual, RS-232C Cable,HDMI cable, USB cable, Ceiling bracket |                      |

## Technical parameter

|                       |                                                                                                          |                       |
|-----------------------|----------------------------------------------------------------------------------------------------------|-----------------------|
| Image Sensor          | 1/2.5" Exmor CMOS                                                                                        | 1/2.8" Exmor CMOS     |
| Effective Pixels      | 4.0Megapixels                                                                                            | 2.14Megapixels        |
| Resolution HD         | 1080p60/50/59.94, 1080p30/25/29.97, 1080i60/50/59.94, 720p60/50                                          |                       |
| Signal                | PAL/NTSC                                                                                                 |                       |
| Lens                  | 20X optical zoom                                                                                         | 30X optical zoom      |
| Foci                  | f=4.7mm(W)~94.0mm(T)                                                                                     | f=4.3mm(W)~129.0mm(T) |
| Horizontal View Angle | 59.5° (W)~3.3° (T)                                                                                       | 63.7° (W)~2.3° (T)    |
| Focus System          | Auto/Manual                                                                                              |                       |
| Minimum Illumination  | 0.4Lux                                                                                                   | 0.35Lux               |
| Exposure Control      | Auto/Manual                                                                                              |                       |
| Shutter               | 1/1~1/10000s                                                                                             |                       |
| Gain                  | Auto/Manual                                                                                              |                       |
| White Balance         | Auto/Indoor/Outdoor/Manual                                                                               |                       |
| Image Effect          | Full color/black and white/image flip                                                                    |                       |
| S/N Ratio             | ≥50db                                                                                                    |                       |
| Pan                   | 355° (max. speed:80° /s)                                                                                 |                       |
| Tilt                  | -30° to +90° (max. speed:60° /s)                                                                         |                       |
| Video Output HD       | HDMI/3G-SDI                                                                                              |                       |
| Power                 | 12V DC(10.8~13.0V DC)                                                                                    |                       |
| Control protocol      | SONY VISCA、PELCO P/D                                                                                     |                       |
| Control Mode          | RS-232C、RS-422/485、USB Control                                                                           |                       |
| Accessories           | DC 12V power adapter, IR Remote, Operation manual, RS-232C Cable, HDMI cable, USB cable, Ceiling bracket |                       |