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 pan355°/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 a accurate remote control of RS232/485.

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, 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.

Features

- 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
```
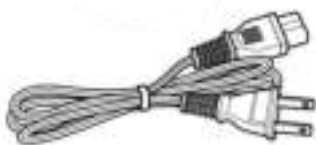
Remote controller（1）

Video camera（1）

HDMI wire（1）

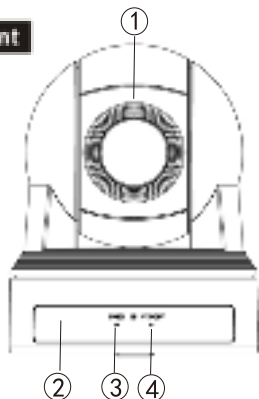### Power adapter（1）

USB Wire（1）

### Power cable（1）

RS232 cable（1）

Parts and Introduction

Front

1 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(trnasfer HDMI)
13 DC IN 12V input
14 USB video output
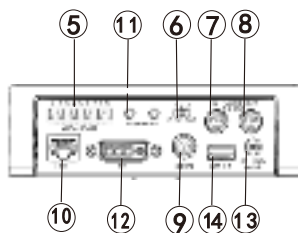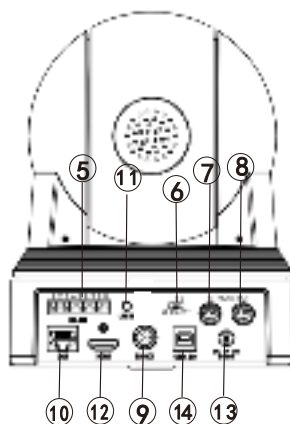
**Bottom**
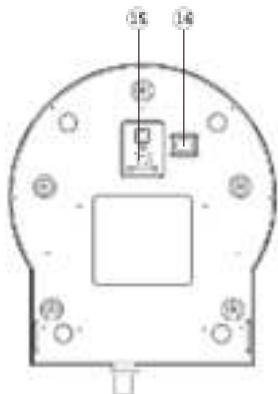
15 British screw holes
16 VISCA RS-422/RS-232C BOTTOM switch
　(See page 9 for details)

Remote Controller

❶ CAMERA SELECT：(match to IR SELECT back)
❷ FOCUS：(auto or manual)
❸ MANU
❹ BACK LIGHT
❺ POWER
❻ STD、REV：(Press L/R DIRECTION SET, and then Press 1 or 2)
❼ POSITION：(Number area; PRESET: press PRESET then press 1-9 for set up preset position)
❽ RESET: (Press RESET and then press1-9 for eliminate preset position)
❾ ZOOM:(Telephoto or Wide Angle)
❿ PAN-TILT RESET
⓫ PAN-TILT ；HOME for return middle position
⓬ L/R DIRECTION SET
⓭ IR transmit
⓮ CLOSE THE MENU
⓯ S-OUT:SWITCH TO 720P50
⓰ DATA-SCREEN: Switching color mode
⓱ Brightness adjustment: bright-/ bright+
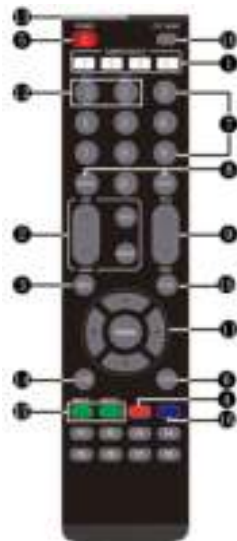
Install diagram

VISCA RS-422

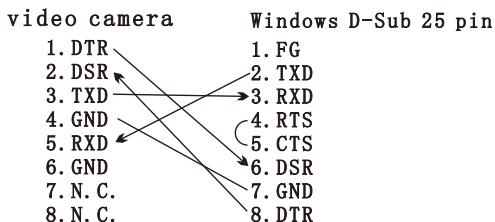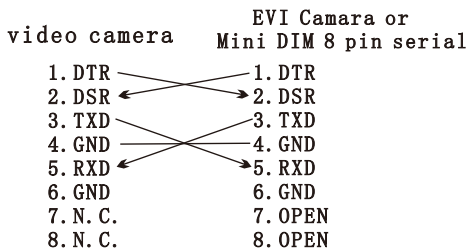| Pin No.	Function
1	TXD IN+
2	TXD IN-
3	RXD IN+(RS485-)
4	RXD IN-(RS485+)
5	GND
6	TXD OUT+
7	TXD OUT-
8	RXD OUT+
9	RXD OUT-

1 2 3 4 5 6 7 8 9

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

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VISCA RS-232C

video camera   Windows D-Sub 9 pin

```
1. DTR        1. CD
2. DSR        2. RXD
3. TXD        3. TXD
4. GND        4. DTR
5. RXD        5. GND
6. GND        6. DSR
7. N.C.       7. RTS
8. N.C.       8. CTS
```

video camera   EVI Camara or
   Mini DIM 8 pin serial

```
1. DTR        1. DTR
2. DSR        2. DSR
3. TXD        3. TXD
4. GND        4. GND
5. RXD        5. RXD
6. GND        6. GND
7. N.C.       7. OPEN
8. N.C.       8. OPEN
```

video camera   Windows D-Sub 25 pin

```
1. DTR        1. FG
2. DSR        2. TXD
3. TXD        3. RXD
4. GND        4. RTS
5. RXD        5. CTS
6. GND        6. DSR
7. N.C.       7. GND
8. N.C.       8. DTR
```
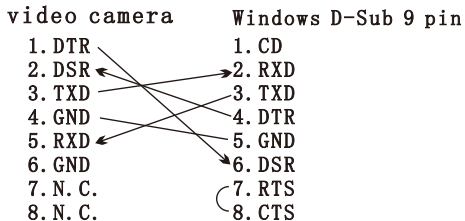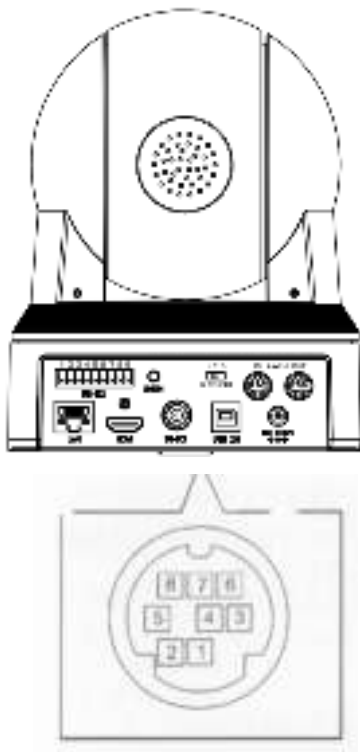
NO	Pins	Signal
1	DTR	Data Transmission Ready(OUTPUT)
2	DSR	Data Set Ready(INPUT)
3	TXD	Transmit Data(OUTPUT)
4	GND	Ground
5	RXD	Receive Data(INPUT)
6	GND	Ground
7	N.C.	No Connection
8	N.C.	No Connection

Remote Commander Operation

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.
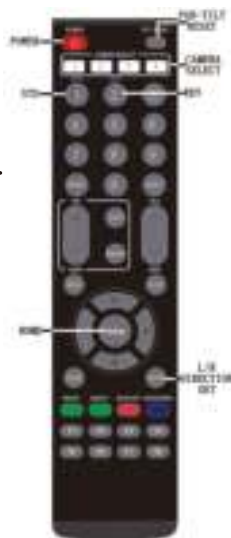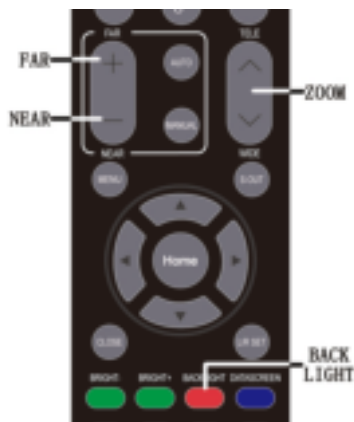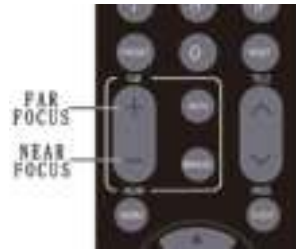
■ ATTENTION:

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
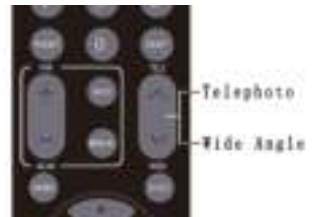
■ One Remote controller for operating few cameras

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 willbe 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.
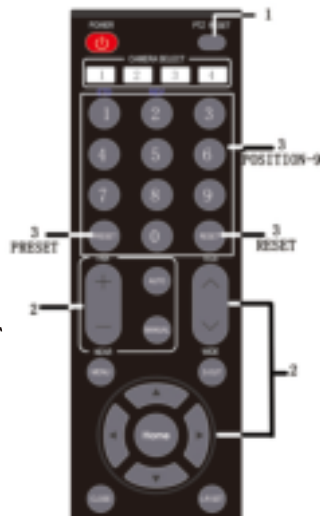
■ Use preset position
Press any switch of 1-9 position

■ Cancel preset position
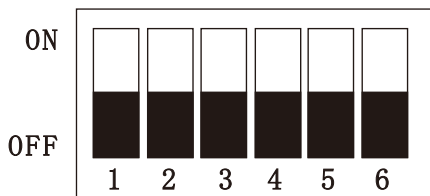Press RESET, then press 1-9 simultaneously

Attention
If a POSITION is storing or deleting a new set can not be called in the channel, set or unse†

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

BOTTOM SWITCH

ON

OFF

1 2 3 4 5 6

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

Bottmo Switch	Control 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

The Menu

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, filp and
mirror.

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

```
                    MENU
-------------------------------------
► Communication>
  PTZ Settings>
  Exposure Settings>
  WB Settings>
  Picture Settings>
  Net Settings>
  System Settings>
-------------------------------------
  ▲▼ Roll              ◄► Change
  [HOME] Enter         [CLOSE] Back
```

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,
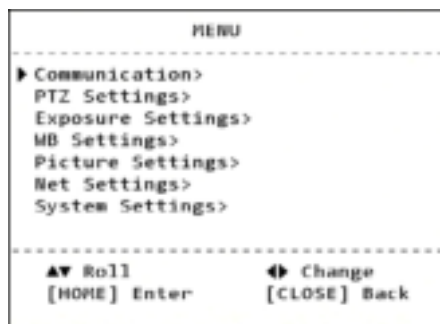defog, anti flicker, etc.

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.

1. Communication

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 Sub menu

DZoom:on/off

Focus mode: auto/manual

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

Pan direction: 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

```
Exposure Settings>
-------------------------------------
▶ Exposure Mode:      Full Auto
  Exp Compensation: 8
  Backlight:           OFF



-------------------------------------
  ▲▼ Roll             ◀▶ Change
  [HOME] Enter        [CLOSE] Back
```

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

```
WB Settings>
-------------------------------------
▶ Mode:              ATW





-------------------------------------
  ▲▼ Roll             ◀▶ Change
  [HOME] Enter        [CLOSE] Back
```

White balance settings Sub menu

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

Manual mode:
red gain is adjustable, 0-255
blue gain is adjustable, 0-255
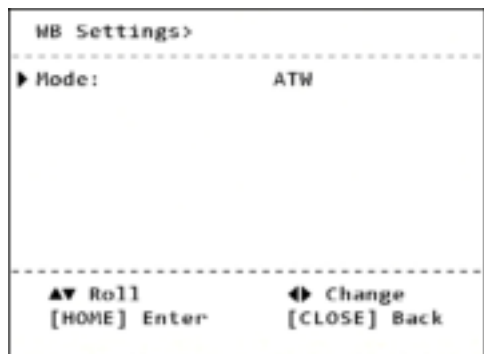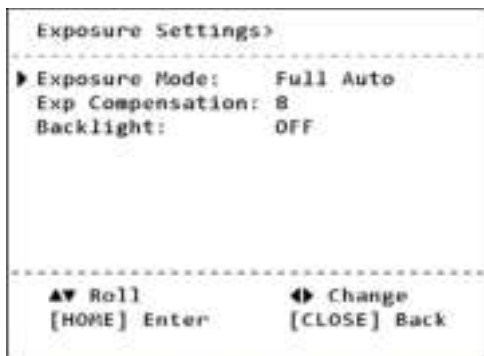
5. Picture Settings

Picture Settings Sub menu

2DNR: 2D noise reduction, open/off
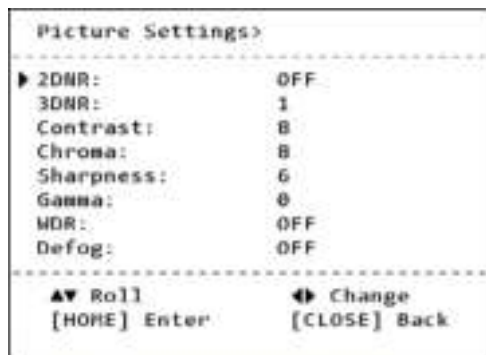
3DNR: 3D noise reduction, off/1-5

Contrast: can set image contrast, 0-15

Chroma: can set image color saturation, 0-15

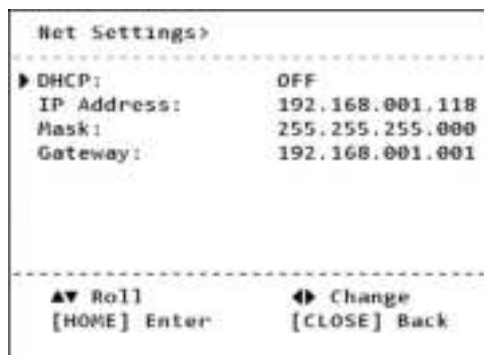Acutance: can set image sharpness value, 0-15

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
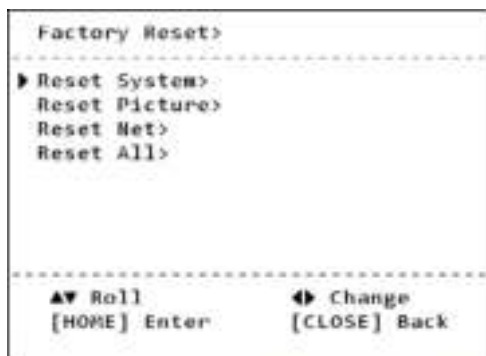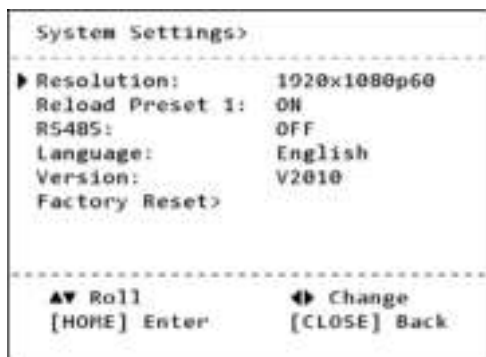
6. Network information

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 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

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:

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 / IP 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.

Network login

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.

Preview and pan/tilt

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.

Configuration

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.

Configuration

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 30 frames
    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 key frame 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

Configuration

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.

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)～46.8 mm(T)	f=4.7mm(W)～94.0 mm(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	

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	