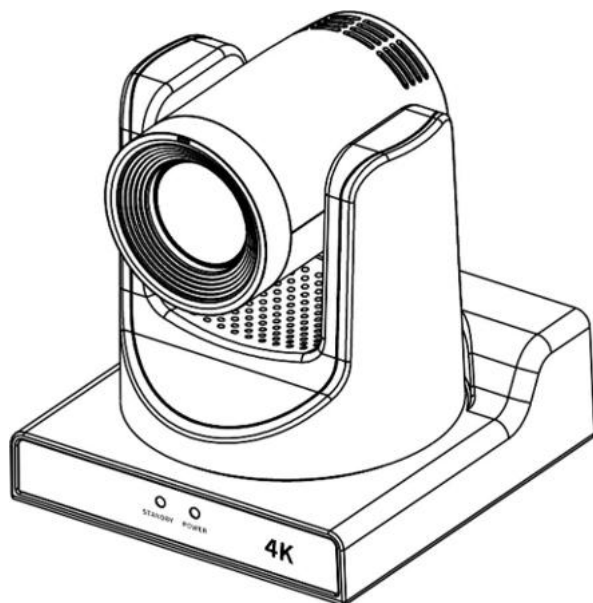




# 4K PTZ Camera



## User Manual

English (V3.0)

# Copyright

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## Notice

Product specifications and information which were referred to in this document are for reference only. We may change, delete, or update any content at any time and without prior notice.

## FCC NOTICE (Class A)



This product complies with Part 15 of the FCC Rules. The operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



This product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

## Class A ITE

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:



Operating this equipment in a residential environment may cause radio interference.

## European Community Compliance Statement (Class A)



This product is herewith confirmed to comply with the requirements set out in the Council Directives on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive 2014/30/EU.

# Catalogue

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## 1 Note

- During the installation and use of the equipment, all electrical safety regulations of the country and region of use must be strictly observed.
- Please use the power adapter that comes standard with this product.
- Please do not connect multiple devices to the same power adapter (exceeding the capacity of the adapter may generate excessive heat or cause a fire).
- Do not rotate head of the camera by hand, otherwise it may cause mechanical failure.
- When installing this product on a wall or ceiling, secure the device securely. When installing, make sure that there are no obstacles within the rotation range of the gimbal; do not turn on the power until all installations are completed.
- To avoid heat build-up, keep ventilation around the device smooth.

- If the device emits smoke, smells, or makes noises, please turn off the power immediately and unplug the power cord, and contact the dealer in time.
- This device is not waterproof, please keep the device dry.
- This product has no user serviceable parts, damage caused by disassembly by the user is not covered by the warranty.



## Notice

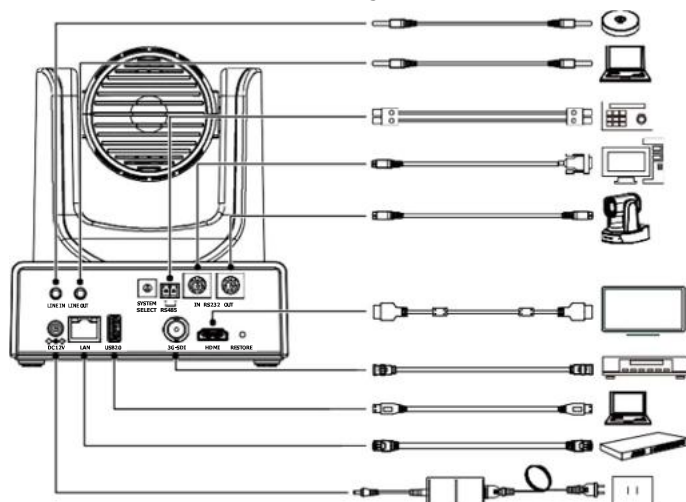
Specific frequencies of electromagnetic field may affect the image of the camera!

## 2 Packing List

| Name           | Quantity |
|----------------|----------|
| Camera         | 1        |
| Power Adapter  | 1        |
| Power Cable    | 1        |
| RS232 Cable    | 1        |
| USB Cable      | 1        |
| Remote Control | 1        |
| User Manual    | 1        |

### 3 Product Connection

- 1) Please check connections are correct before starting.





The schematic diagram is for reference only. Please refer to the actual application scenario for product connection.

- 2) Connect the power adapter to the power connector on the rear panel of the camera. The power indicator on the front panel of the camera is on.
- 3) After the camera is powered on, it starts to initialize, right up to the limit position, and then both horizontal and vertical go to the middle position, the motor stops running, and the initialization is completed.  
(Note: If preset 0 is saved, PTZ will be move to preset 0)

## 4 Video Format

| HDMI |            | SDI |            |
|------|------------|-----|------------|
| 0    | 1080P60    | 0   | 1080P60    |
| 1    | 1080P50    | 1   | 1080P50    |
| 2    | 1080I60    | 2   | 1080I60    |
| 3    | 1080I50    | 3   | 1080I50    |
| 4    | 1080P30    | 4   | 1080P30    |
| 5    | 720P60     | 5   | 720P60     |
| 6    | 1080P29.97 | 6   | 1080P29.97 |
| 7    | 1080I59.94 | 7   | 1080I59.94 |
| 8    | 1080P59.94 | 8   | 1080P59.94 |
| 9    | 720P59.94  | 9   | 720P59.94  |
| A    | 4KP29.97   | A   | 1080P29.97 |
| B    | 4KP59.94   | B   | 1080P59.94 |
| C    | 4KP25      | C   | 1080P25    |
| D    | 4KP30      | D   | 1080P30    |
| E    | 4KP50      | E   | 1080P50    |
| F    | 4KP60      | F   | 1080P60    |

## 5 About Product

### 5.1 Feature

#### ● AI Tracking

With the help of the AI computing power of the chip, the camera is equipped with advanced AI algorithms to realize monocular humanoid tracking, which can realize automatic tracking of scenes such as education, conferences and live broadcasts.

#### ● NDI|HX2 (Optional)

NDI|HX2 has the characteristics of low delay and plug and play, which is convenient for project implementation and deployment. It has good ecology and supports the simultaneous transmission of audio, video and control commands. It is a new generation of network video transmission mode.

#### ● 4K UHD

Use 1/1.8-inch high-quality UHD CMOS sensor with a maximum of 8.42 million pixels can realize 4K (3840x2160) ultra-high-resolution high-quality images. And downward compatible with 1080p, 720p and other resolutions.

#### ● 20x Optical Zoom

It adopts 4K ultra long focal lens with high quality and 8 million ultra-high resolution, 20x optical zoom, and the maximum field angle is 60°.

#### ● HDMI 2.0

Support HDMI 2.0 interface, which can directly output 4KP60 uncompressed digital video.

#### ● Low Light

The application of 3D noise reduction algorithm greatly reduces image noise. Even under the condition of ultra-low illumination, it still keep the picture clean and clear, and the SNR of image is as high as 55dB.

#### ● Multiple Interfaces

Support HDMI and 3G-SDI interface, effective transmission distance of 3G-SDI is up to 150 meters (1080P30). HDMI, 3G-SDI, USB, LAN can output four HD digital signals at the same time.

#### ● Remote Control

Through the RS232 and RS485 serial ports, the camera can be controlled remotely.

#### ● Gravity Sensor (Optional)

It supports automatic image flipping function, which is convenient for engineering installation and use.

## 5.2 Specification

| Camera                  |                                                                                                                                                                                                                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signal System           | <b>HDMI:</b> 4KP60, 4KP50, 4KP30, 4KP25, 4KP59.94, 4KP29.97, 1080P60, 1080P50, 1080P59.94, 1080P30, 1080P29.97, 1080I60, 1080I50, 1080I59.94, 720P60, 720P59.94<br><b>3G-SDI:</b> 1080P60, 1080P50, 1080P30, 1080P29.97, 1080P59.94, 1080P25, 1080I60, 1080I50, 1080I59.94, 720P60, 720P59.94 |
| Sensor                  | 1/1.8 inch, CMOS, Effective pixels: 8.42M                                                                                                                                                                                                                                                     |
| Scanning Mode           | Progressive                                                                                                                                                                                                                                                                                   |
| Lens                    | 20x, f=6.25mm~125mm, F1.58~F3.95                                                                                                                                                                                                                                                              |
| Digital Zoom            | 16x                                                                                                                                                                                                                                                                                           |
| Minimum Illumination    | 0.5 Lux @ (F1.8, AGC ON)                                                                                                                                                                                                                                                                      |
| Shutter                 | 1/30s~1/10000s                                                                                                                                                                                                                                                                                |
| White Balance           | Auto, Indoor, Outdoor, One Push, Manual, VAR                                                                                                                                                                                                                                                  |
| Backlight Compensation  | Support                                                                                                                                                                                                                                                                                       |
| Digital Noise Reduction | 3D Digital Noise Reduction                                                                                                                                                                                                                                                                    |
| SNR                     | ≥55dB                                                                                                                                                                                                                                                                                         |
| Horizontal FOV          | 60°~3.5°                                                                                                                                                                                                                                                                                      |
| Vertical FOV            | 35.7°~2.0°                                                                                                                                                                                                                                                                                    |
| Pan Angle               | ±170°                                                                                                                                                                                                                                                                                         |
| Tilt Angle              | -30°~+90°                                                                                                                                                                                                                                                                                     |
| Pan Speed               | 1.7°~100°/s                                                                                                                                                                                                                                                                                   |
| Tilt Speed              | 1.7°~69.9°/s                                                                                                                                                                                                                                                                                  |
| Image Flip              | Support                                                                                                                                                                                                                                                                                       |
| Image Freeze            | Support                                                                                                                                                                                                                                                                                       |
| PoE                     | Support                                                                                                                                                                                                                                                                                       |

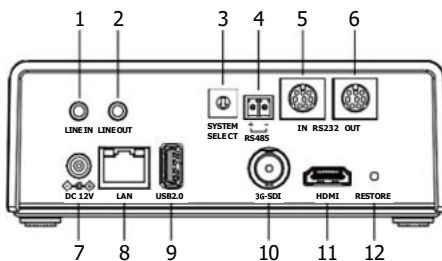
| Preset Position          | 255                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Preset Accuracy          | 0.1°                                                                                                                      |
| USB Features             |                                                                                                                           |
| Operate System           | Windows 7/8/10, Mac OS X, Linux, Android                                                                                  |
| Color System/Compression | YUY2/H.264/MJPEG/H.265                                                                                                    |
| Video Format             | YUY2: 1080P5 (max.)<br>H.264 AVC: 2160P30 (max.)<br>H.265 HEVC: 2160P30 (max.)<br>MJPEG: 2160P30 (max.)                   |
| USB Audio                | Support                                                                                                                   |
| USB Video Protocol       | UVC 1.1~1.5                                                                                                               |
| UVC PTZ                  | Support                                                                                                                   |
| Network Features         |                                                                                                                           |
| Video Compression        | H.264/H.265/MJPEG                                                                                                         |
| Video Stream             | First Stream,<br>Second Stream                                                                                            |
| First Stream Resolution  | 3840x2160, 1920x1080, 1280x720, 1024x576, 720x480, 720x408, 640x480, 640x360                                              |
| Second Stream Resolution | 720x480, 720x408, 640x480, 640x360, 480x320, 320x240                                                                      |
| Video Bit Rate           | <ul style="list-style-type: none"> <li>First Stream: 32kbps~51200kbps</li> <li>Second Stream: 32kbps~20480kbps</li> </ul> |
| Bit Rate Control         | CBR, VBR                                                                                                                  |
| Frame Rate               | 50Hz: 1fps~50fps,<br>60Hz: 1fps~60fps                                                                                     |
| Audio Compression        | AAC                                                                                                                       |
| Audio Bit Rate           | 96K, 128K                                                                                                                 |
| Protocols                | NDI® HX2, TCP/IP, HTTP, RTSP, RTMP/RTMPS, ONVIF, DHCP, SRT, Multicast                                                     |
| Interfaces               |                                                                                                                           |
| LINE IN Interface        | 1 x LINE IN: 3.5mm Audio Interface                                                                                        |
| LINE OUT Interface       | 1 x LINE OUT: 3.5mm Audio Interface                                                                                       |

|                               |                                                                                    |
|-------------------------------|------------------------------------------------------------------------------------|
| Communication Interface       | 1 x RS485: 2pin phoenix port, Max Distance: 1200m, Protocol: VISCA/Pelco-D/Pelco-P |
|                               | 1 x RS232 IN: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA/Pelco-D/Pelco-P     |
|                               | 1 x RS232 OUT: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA network use only   |
| Network Interface             | 1 x LAN: 10M/100M/1000M Adaptive Ethernet Port                                     |
| USB Interface                 | 1 x USB2.0: Type A                                                                 |
| 3G-SDI Interface              | 1 x 3G-SDI: BNC type, 800mVp-p, 75Ω. Along to SMPTE 424M standard                  |
| HDMI Interface                | 1 x HDMI: Version 2.0                                                              |
| Power Interface               | JEITA type (DC IN 12V)                                                             |
| <b>General Specifications</b> |                                                                                    |
| Tally Indicator               | 1                                                                                  |
| Power Indicator               | 1                                                                                  |
| Status Indicator              | 1                                                                                  |
| Restore Key                   | 1                                                                                  |
| Input Voltage                 | DC 12V/PoE+ (802.3at)                                                              |
| Input Current                 | 2A (max.)                                                                          |
| Operating Temperature         | 0°C~40°C                                                                           |
| Storage Temperature           | -40°C~60°C                                                                         |
| Power Consumption             | 18W (max.)                                                                         |
| Dimension                     | 169mm x 146mm x 168mm                                                              |
| Net Weight                    | About 1.6Kg                                                                        |



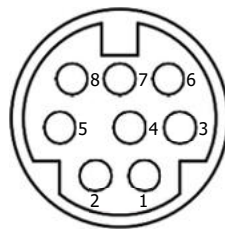
Note Product specifications and parameters are subject to change without notice.

### 5.3 Interface and Switch



| No. | Name                 |
|-----|----------------------|
| 1   | LINE IN Interface    |
| 2   | LINE OUT Interface   |
| 3   | System Select Switch |
| 4   | RS485 Interface      |
| 5   | RS232 IN Interface   |
| 6   | RS232 OUT Interface  |
| 7   | DC 12V Interface     |
| 8   | LAN Interface        |
| 9   | USB2.0 Interface     |
| 10  | 3G-SDI Interface     |
| 11  | HDMI Interface       |
| 12  | RESTORE Key          |

### 5.4 RS232 Interface



| No. | Function | No. | Function |
|-----|----------|-----|----------|
| 1   | DTR      | 5   | RXD      |
| 2   | DSR      | 6   | GND      |
| 3   | TXD      | 7   | IR OUT   |
| 4   | GND      | 8   | NC       |

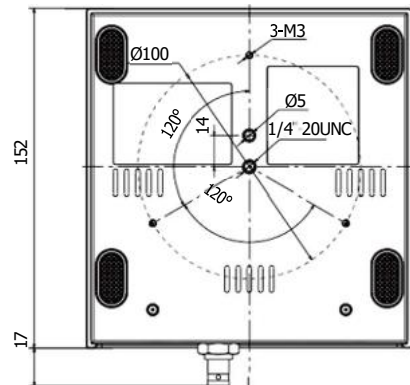
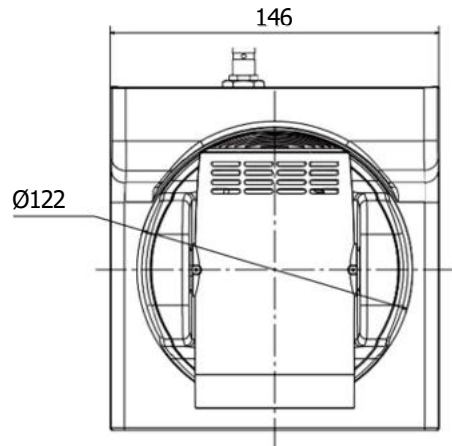
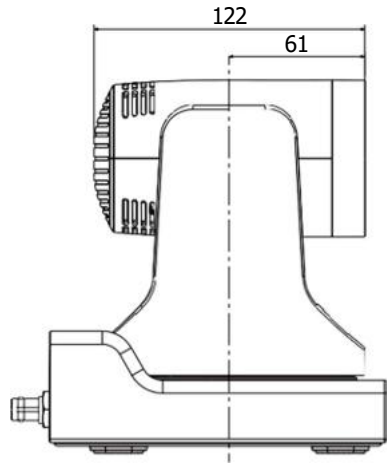
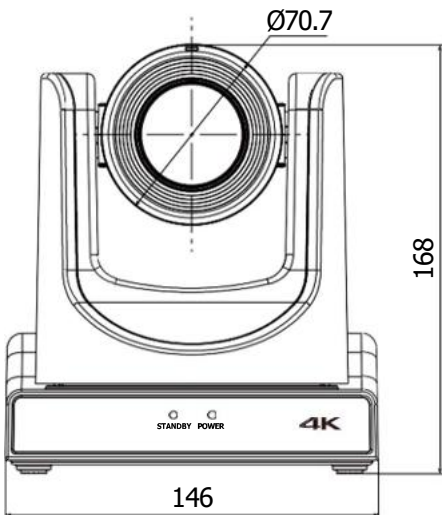
The correspondence between RS232 and DB-9:

| RS232     | DB-9   |
|-----------|--------|
| 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. IR OUT | 7. RTS |
| 8. NC     | 8. CTS |
| -         | 9. RI  |

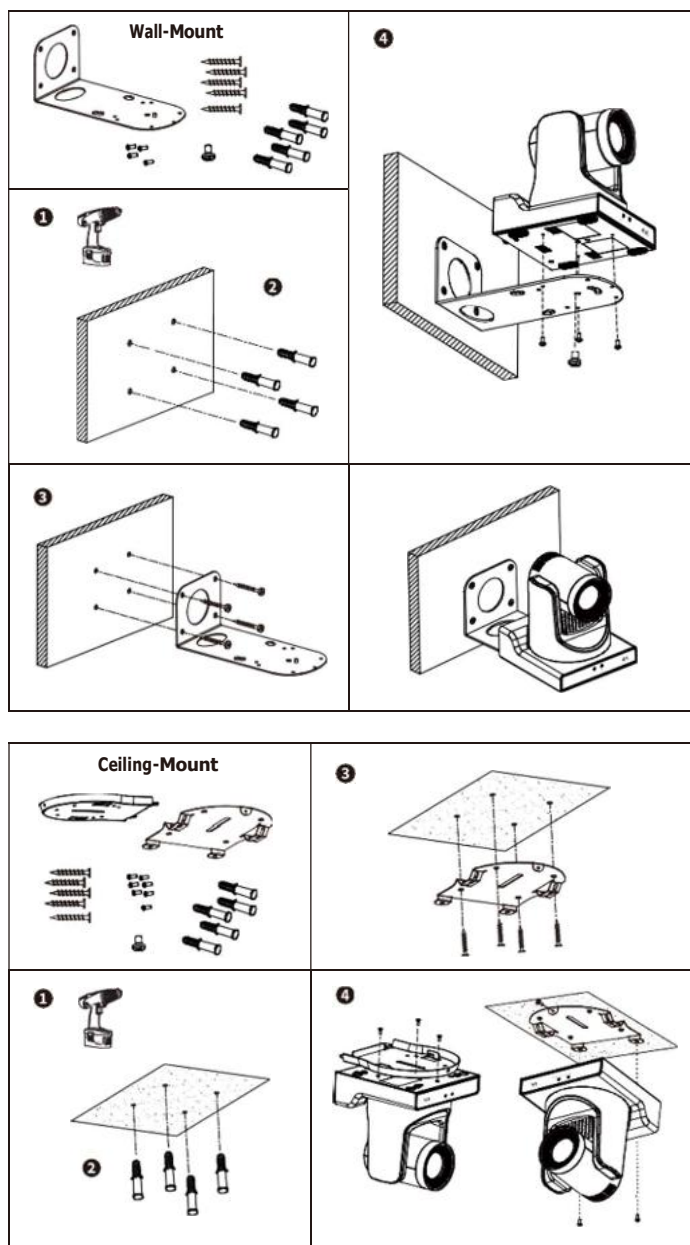
The correspondence between RS232 and Mini DIN:

| RS232     | Mini DIN |
|-----------|----------|
| 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. IR OUT | 7. NC    |
| 8. NC     | 8. NC    |

## 5.5 Dimension



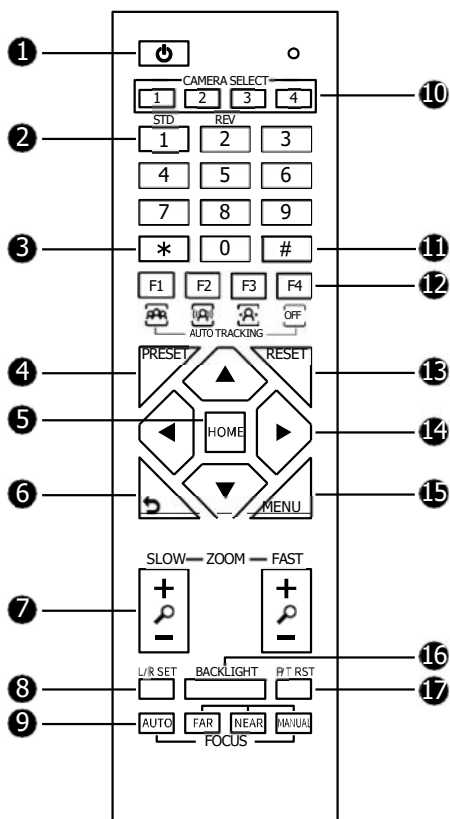
## 5.6 Installation



Note The installation diagram is for reference only. The brackets and screws are not standard.

For packing accessories, please refer to the actual product.

## 5.7 Remote Control



### Key Description

#### 1. ⏻ (Standby) Key

Press to enter standby mode

#### 2. Number Keys

To set preset or call preset

#### 3. \* Key

Use with other keys

#### 4. PRESET Key

Set preset: Successively press [PRESET] + Number key (0-9)

#### 5. HOME Key

Confirm selection or press to turn PTZ back to the middle position

#### 6. ↶ (Return) Key

Press to return to the previous menu

### 7. ZOOM Keys

- SLOW: Zoom In [+] or Zoom Out [-] slowly
- FAST: Zoom In [+] or Zoom Out [-] fast

### 8. L/R SET Key

- Standard: Simultaneously press [L/R SET] + [1]
- Reverse: Simultaneously press [L/R SET] + [2]

### 9. FOCUS Keys

Auto/Manual/Far-end/Near-end focus

### 10. CAMERA SELECT Keys

Press to select and control the camera

### 11. # Key

Use with other keys

### 12. Auto Tracking Keys

- [F1]: Disable [F2]: Disable
- [F3]: Enable AI Tracking
- [F4]: Disable AI Tracking

### 13. RESET Key

Clear preset position: Successively press [RESET] + Number key (0-9)

### 14. PTZ Control Keys

PTZ moved according to the arrow indicates

### 15. MENU Key

Enter OSD menu or back to the previous menu

### 16. BACKLIGHT Key

Backlight ON/OFF: Press repeatedly to enable or disable the backlight compensation

- Effective only in auto exposure mode
- If there is a light behind the subject, the subject will become dark, press the backlight key to enable the backlight compensation. Press again to disable this function.

### 17. P/T RST (PTZ Reset) Key

Press to preset Pan/Tilt self-test

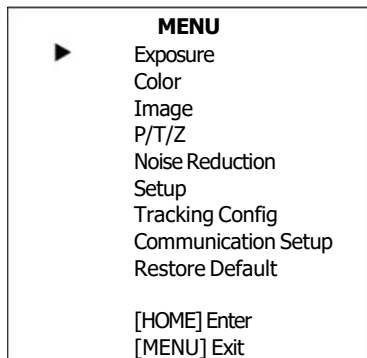
### Shortcut Set

Successively press [#] + [\*] + [F4]:  
 Enable or disable the Image Freeze  
 Successively press [\*] + [#] + [1]:  
 OSD menu default English  
 Successively press [\*] + [#] + [3]:  
 OSD menu default Chinese  
 Successively press [\*] + [#] + [4]:  
 Display current IP address  
 Successively press [\*] + [#] + [6]:  
 Quickly recover the default  
 Successively press [\*] + [#] + [8]:  
 Check the camera version  
 Successively press [\*] + [#] + [9]:  
 Quickly set up inversion  
 Successively press [\*] + [#] + [MANUAL]:  
 Restore to default IP address

## 6 GUI Settings

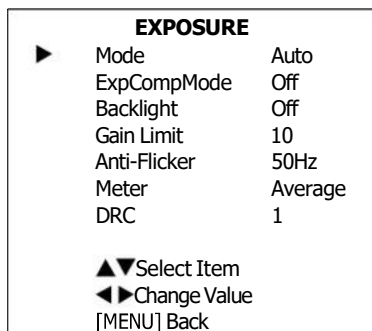
### 6.1 MENU

Press [MENU] key to display the main menu on the normal screen, using arrow key to move the cursor to the item to be set. Press the [HOME] key to enter the corresponding sub-menu.



### 6.2 EXPOSURE

Move the main menu cursor to [Exposure], and press [HOME] key enter the exposure page, as shown in the following figure.



**Mode:** Auto, Manual, SAE, AAE, Bright.

**ExpCompMode:** On, Off (Effective only in Auto mode).

**ExpComp:** -7~7 (Effective only in ExpCompMode item to On).

**Backlight:** On, Off (Effective only in Auto mode).

**Bright:** 0~17 (Effective only in Bright mode).

**Gain Limit:** 0~15 (Effective only in Auto, SAE, AAE, Bright mode).

**Anti-Flicker:** Off, 50Hz, 60Hz (Effective only in Auto, AAE, Bright mode).

**Meter:** Average, Center, Smart, Top (Effective only in Auto, SAE, AAE, Bright mode).

**Iris:** F1.8, F2.0, F2.4, F2.8, F3.4, F4.0, F4.8, F5.6, F6.8, F8.0, F9.6, F11.0, Close (Effective only in Manual, AAE mode).

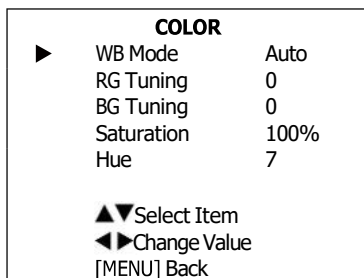
**Shutter:** 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 (Effective only in Manual, SAE mode).

**Gain:** 0~7 (Effective only in Manual mode).

**DRC:** 0~8.

### 6.3 COLOR

Move the main menu cursor to [Color], and press [HOME] key enter the color page, as shown in the following figure.



**WB Mode:** Auto, Indoor, Outdoor, One Push, Manual, VAR.

**RG:** 0~255 (Effective only in Manual mode).

**BG:** 0~255 (Effective only in Manual mode).

**RG Tuning:** -10~+10 (Effective only in Auto, One Push, VAR mode).

**BG Tuning:** -10~+10 (Effective only in Auto, One Push, VAR mode).

**Saturation:** 60%~200%.

**Hue:** 0~14.

**Color Temp:** 2500K~8000K (Effective only in VAR mode).

## 6.4 IMAGE

Move the main menu cursor to [Image], and press [HOME] key enter the image page, as shown in the following figure.

| IMAGE          |         |
|----------------|---------|
| ► Luminance    | 7       |
| Contrast       | 7       |
| Sharpness      | 6       |
| Flip-H         | Off     |
| Flip-V         | Off     |
| B&W-Mode       | Off     |
| Style          | Default |
| ▲▼Select Item  |         |
| ◀▶Change Value |         |
| [MENU] Back    |         |

**Luminance:** 0~14.

**Contrast:** 0~14.

**Sharpness:** 0~11.

**Flip-H:** On, Off.

**Flip-V:** On, Off.

**B&W-Mode:** On, Off.

**Style:** Default, Norm, Bright, PC.

## 6.5 P/T/Z

Move the main menu cursor to [P/T/Z], and press [HOME] key enter the P/T/Z page, as shown in the following figure.

| P/T/Z             |       |
|-------------------|-------|
| ► SpeedByZoom     | On    |
| AF-Zone           | Front |
| AF-Sense          | High  |
| L/R Set           | STD   |
| Display Info      | On    |
| Image Freeze      | Off   |
| Digital Zoom      | Off   |
| Call Preset Speed | 24    |
| Pre Zoom Speed    | 5     |
| ▲▼Select Item     |       |
| ◀▶Change Value    |       |
| [MENU] Back       |       |

**SpeedByZoom:** On, Off.

**AF-Zone:** Front, Top, Center, Bottom.

**AF-Sense:** High, Low, Normal.

**L/R Set:** STD, REV.

**Image Freeze:** On, Off.

**Digital Zoom:** Off, 2x, 4x, 8x, 16x.

**Call Preset Speed:** 1~24.

**Pre Zoom Speed:** 0~7.

## 6.6 NOISE REDUCTION

Move the main menu cursor to [Noise Reduction], and press [HOME] key enter the noise reduction page, as shown in the following figure.

| NOISE REDUCTION |   |
|-----------------|---|
| ► NR3D-Level    | 6 |
| ▲▼Select Item   |   |
| ◀▶Change Value  |   |
| [MENU] Back     |   |

**NR3D Level:** Off, 1~9.

## 6.7 SETUP

Move the main menu cursor to [Setup], and press [HOME] key enter the setup page, as shown in the following figure.

| SETUP          |         |
|----------------|---------|
| ► Language     | EN      |
| DVI Mode       | HDMI    |
| Video Format   | 1080P60 |
| Auto Patrol    | Off     |
| Other          |         |
| ▲▼Select Item  |         |
| ◀▶Change Value |         |
| [MENU] Back    |         |

**Display Info:** On, Off.

**Language:** EN, Chinese, Russian.

**DVI Mode:** HDMI, DVI.

**Video Format:** 4KP25, 4KP29.97,  
4KP30, 4KP50, 4KP59.94, 4KP60,  
1080P30, 1080P25, 1080P50,  
1080P60, 1080P59.94, 1080P29.97,  
1080I50,  
1080I60, 1080I59.94, 720P60,  
720P59.94, 720P50.

**Auto Patrol:** On, Off.

**Residence Time:** 1~60 (Effective  
only in Auto Patrol item to On).

**Call Preset Speed:** 1~24  
(Effective only in Auto Patrol item  
to On).

**Other:** Press the [HOME] key to  
confirm enter the "Other" page and  
set Auto Inversion, Tally Mode, and  
USB2.0 Audio.

**Auto Inversion:** On, Off.

**Tally Mode:** On, Off.

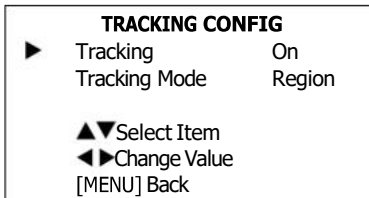
**USB2.0 Audio:** On, Off.



After changing the DVI mode and video format, it will take effect after press the [HOME] key to confirm to restart the device.

## 6.8 TRACKING CONFIG

Move the main menu cursor to [Tracking Config], and press [HOME] key enter the tracking config page, as shown in the following figure.



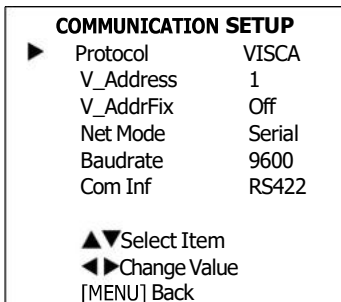
**Tracking:** On, Off.

**Tracking Mode:** Region, Presenter.

## 6.9 COMMUNICATION SETUP

Move the main menu cursor to

[Communication Setup], and press [HOME] key enter the communication setup page, as shown in the following figure.



**Protocol:** Auto, VISCA, PELCO-D, PELCO-P.

**V\_Address:** 1~7 (Effective only in Auto, VISCA protocol).

**V\_AddrFix:** On, Off (When set to On, useless in 88 30 01 FF Command).

**P\_P\_Address:** 0~31 (Effective only in Auto, PELCO-P protocol).

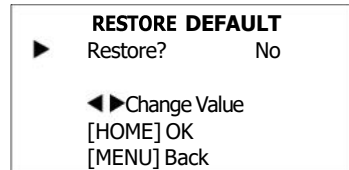
**Net Mode:** Serial, Paral (Effective only in Auto, VISCA protocol).

**Baudrate:** 2400, 4800, 9600, 38400.

**Com Inf:** RS422, RS485.

## 6.10 RESTORE DEFAULT

Move the main menu cursor to [Restore Default], press [HOME] key enter restore default page, as shown in the following figure.



**Restore:** Yes, No.



GUI menu and device information are subject to change without notice.

# 7 WEB Settings

**P\_D\_Address:** 0~254 (Effective only in Auto, PELCO-D protocol).

## 7.1 Access Camera

Access <http://192.168.100.88> to pop up the login window, then input username (default: admin) and password (default: admin). After login, it will show as below:

## 7.2 Control Camera

All pages include two menu bars:

Real Time Monitoring: Video image displaying with function buttons.

Parameter Setup: Parameter configuring.



## A. Video Viewing Window

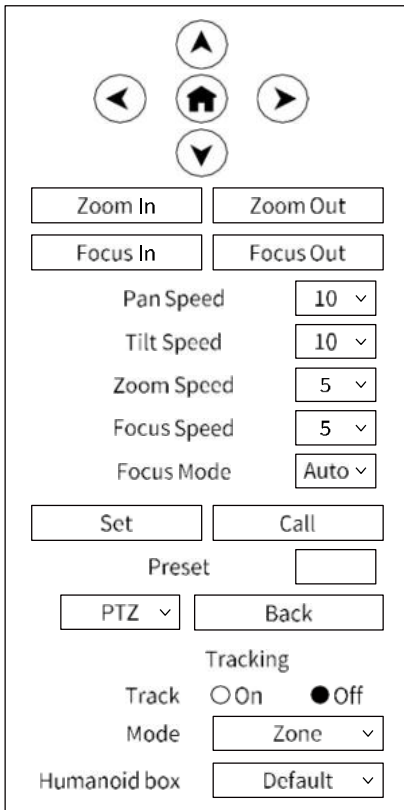
The video viewing window is same as video resolution, the bigger the resolution, the bigger the playing area. Double click the viewing window to show full screen, double click again, to return to initialized size.

Status bar in viewing window shown as below:



 Full screen switch button.

## B. PTZ Setup



PTZ Setup interface controls:

- Directional arrows: Up, Down, Left, Right, and Home (center).
- Zoom In, Zoom Out buttons.
- Focus In, Focus Out buttons.
- Pan Speed: 10 (dropdown)
- Tilt Speed: 10 (dropdown)
- Zoom Speed: 5 (dropdown)
- Focus Speed: 5 (dropdown)
- Focus Mode: Auto (dropdown)
- Set, Call buttons.
- Preset: [ ]
- PTZ (dropdown), Back button.
- Tracking:
  - On (radio button), Off (radio button)
  - Mode: Zone (dropdown)
  - Humanoid box: Default (dropdown)

## 1) Pan and Tilt Control

The direction arrows and HOME button allow you to manually drive the camera to desired position.

## 2) Zoom

Zoom In and Zoom Out buttons allow for wide or narrow view of the space.

## 3) Focus

Focus In and Focus Out button allow for fine manual focus adjustment if the camera has any auto focusing problems on difficult object.

## 4) Focus Mode

Focus Mode can be selected Auto/Manual. When you select "Manual", Focus In and Focus Out will to take effect.

## 5) PTZ Speeds

Pan speed rate can be set to 1~24, Tilt speed rate can be set to 1~20. Zoom and Focus speed rate can be set to 1~7.

## 6) PTZ Presets

When the PTZ turns to the position that you would like to return to later, you can set presets for quick recall. Type a number (0~254) into the preset box and click "Set" button to save.

When the PTZ turn to other position, input the preset number and click "Call" button to turn the PTZ back to the preset position.

## 7) PTZ/OSD

Move the cursor to dropdown menu, select and click "OSD" to open the on-screen menu and do menu settings on the interface.

## 8) Tracking

Turn On/Off the Track function. Set Mode (Zone, Presenter) and Humanoid box.

## C. Language Selection



Language Selection interface:

- Language dropdown menu with options: English, 简体中文 (Simplified Chinese), Русский (Russian).

Click either "Chinese", "English" or "Russian" to change the language of the webpage.

### 7.3 Video Settings

Video Settings

Video Format

1920x1080/60p

Encode Level

mainprofile

First Stream

Encode Protocol

H264

Resolution

1920x1080

Bit Rate

4096

Frame Rate

30

fps

I Key Frame Interval

30

Bit Rate Control

CBR

Second Stream

Encode Protocol

H264

Resolution

640x360

Bit Rate

2048

Frame Rate

30

fps

I Key Frame Interval

30

Bit Rate Control

CBR

Submit

Cancel

#### 1) Video Format

Video Format: 3840x2160/60p, 3840x2160/59.94p, 3840x2160/50p, 3840x2160/30p, 3840x2160/29.97p, 3840x2160/25p, 1920x1080/60p, 1920x1080/59.94p, 1920x1080/50p, 1920x1080/60i, 1920x1080/59.94i, 1920x1080/50i, 1920x1080/30p, 1920x1080/29.97p, 1920x1080/25p, 1280x720/60p, 1280x720/59.94p, 1280x720/50p.

#### 2) Encode Level

Support mainprofile and highprofile two levels.

#### 3) Encode Protocol

Support H264, H265 and MJPEG protocols.

#### 4) Resolution

First stream support 3840x2160, 1920x1080, 1280x720, 1024x576, 720x480, 720x408, 640x480, 640x360. Second stream support 720x480, 720x408, 640x480, 640x360, 480x320, 320x240; The bigger resolution is, the clearer the image will be, more network bandwidth will be taken.

#### 5) Bit Rate

The user can specify the bit rate. Generally speaking, the larger of the bit rate, the clearer of the image. However, the configuration of the bit rate needs to be combined with the network bandwidth. When the network bandwidth is narrow and the bit rate is configured larger, the video stream cannot be transmitted normally, and the visual effect is worse.

#### 6) Frame Rate

User can specify the size of the frame rate, generally, the frame rate greater, the image more smooth; Frame rate is smaller, the more sense of beating.

#### 7) I Key Frame Interval

Set interval between 2 I frame, the bigger interval is the response will be lower from view window.

#### 8) Bit Rate Control

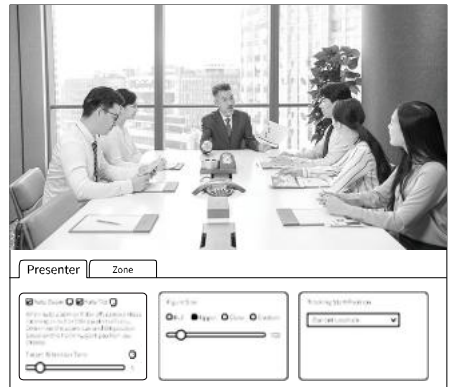
Code stream control way:

CBR (Constant Bit Rate): Video coder will be coding according to preset speed.

VBR (Variable Bit Rate): Video coder will adjust the speed based on preset speed to gain the best image quality.

### 7.4 Tracking Settings

#### 7.4.1 Presenter



#### 1) Auto Zoom/Auto Tilt

When Auto Zoom or Tilt is off, camera stops zooming in/out or tilting automatically.

Determine the zoom size and tilt position based

on the tracking start position you choose. When auto zoom is off, camera stops zooming In/Out automatically. When auto tilt is off, camera only move horizontally.

### 2) Target Retention Time

Set Target Retention Time, the time to return to the starting point after losing the target.

### 3) Figure Size

Figure Size: Full, Upper, Close, Custom.

### 4) Tracking Start Position

Tracking Start Position: Current Location, Preset 1.

## 7.4.2 Zone



### 1) Zone Setting

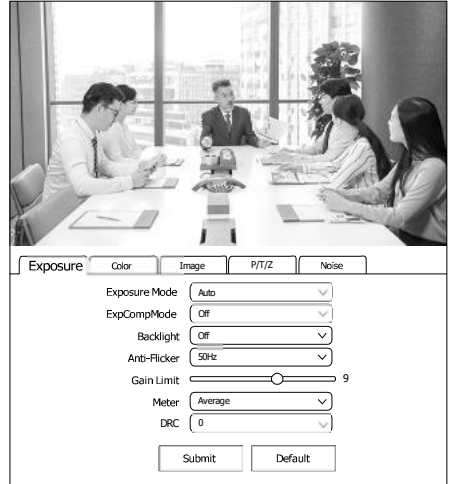
Zone Setting: Zone A, Zone B, Zone C, Zone D. Set area tracking must be set "from left to right", and each area must have overlap.

### 2) Tracking Start Area

Tracking Start Area: Zone A, Zone B, Zone C, Zone D.

## 7.5 Image Settings

### 7.5.1 Exposure



### 1) Exposure Mode

Exposure Mode: Auto, Manual, SAE, AAE, Bright.

### 2) ExpCompMode

ExpCompMode: On, Off.

### 3) Backlight

Backlight: On, Off.

### 4) Anti-Flicker

Anti-Flicker: Off, 50Hz, 60Hz.

### 5) Gain Limit

Gain Limit: 0~15.

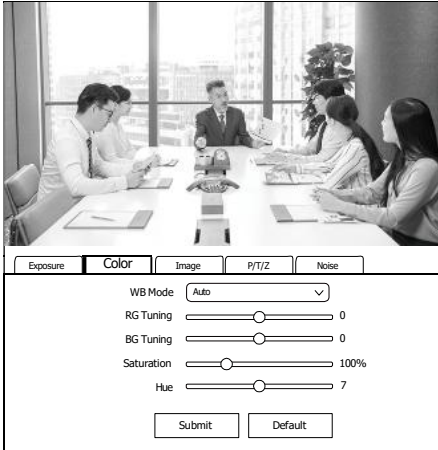
### 6) Meter

Meter: Average, Center, Smart, Top.

### 7) DRC

DRC: 0~8.

## 7.5.2 Color



### 1) WB Mode

WB Mode: Auto, Indoor, Outdoor, Manual, One Push, VAR.

### 2) RG Tuning

RG Tuning: -10~10.

### 3) BG Tuning

BG Tuning: -10~10.

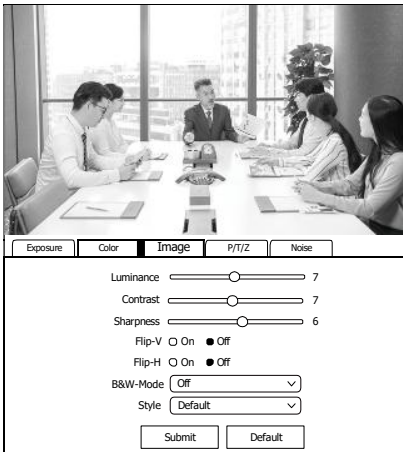
### 4) Saturation

Saturation: 60%~200%.

### 5) Hue

Hue: 0~14.

## 7.5.3 Image



### 1) Luminance

Luminance: 0~14.

### 2) Contrast

Contrast: 0~14.

### 3) Sharpness

Sharpness: 0~11.

### 4) Flip-V

Turn On/Off the Flip-V function.

### 5) Flip-H

Turn On/Off the Flip-H function.

### 6) B&W-Mode

B&W-Mode: On, Off.

### 7) Style

Style: Default, Norm, Bright, PC.

## 7.5.4 PTZ



### 1) AF-Zone

AF-Zone: Top, Center, Bottom, Front.

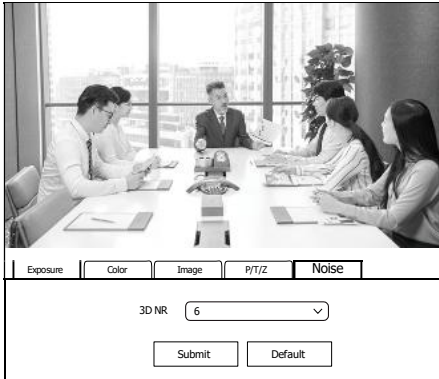
### 2) AF-Sense

AF-Sense: High, Normal, Low.

### 3) Image Freeze

Image Freeze: On, Off.

## 7.5.5 Noise



**3D NR:** Off, 1~9.

## 7.6 Audio Settings

Audio Settings

|              |         |      |
|--------------|---------|------|
| Audio Switch | On      | ▼    |
| Audio Type   | AAC     | ▼    |
| Sample Rate  | 48K     | ▼    |
| Bit Rate     | 96K     | ▼    |
| Input Type   | LINE IN | ▼    |
| Input Vol    | 20      | ▼ dB |
| ADTS Options | Off     | ▼    |

Submit Cancel

### 1) Audio Switch

Turn On/Off the audio switch.

### 2) Audio Type

Audio Type: AAC.

### 3) Sample Rate

Sample Rate: 44.1K, 48K.

### 4) Bit Rate

Bit Rate: 96K, 128K.

### 5) Input Type

Input Type: LINE IN, MIC.

### 6) Input Vol

Select the volume value to control the channel volume.

### 7) ADTS Options

Options: On/Off.

## 7.7 System Settings

### 7.7.1 Initialize

Initialize User Online Upgrade

Reboot Reboot

Factory Default Factory Default

#### 1) Reboot

Click "Reboot" to restart system.

#### 2) Factory Default

Click the "Factory Default", and the "Please press OK to reset the camera." dialog box pops up. Select "OK" to restore the factory default.

### 7.7.2 User

Initialize User Online Upgrade

UserName admin

Password \*\*\*\*\*

Guest guest

Password \*\*\*\*\*

Submit Cancel

#### Username and Password

Modify the password of username and guest (only use letters and numbers).

### 7.7.3 Online Upgrade

Initialize User Online Upgrade

Please Add Or Drag Files To This Area. Or Click Upload

Only Upload \*.img Files Update

The device supports online upgrade. If you need to upgrade the camera program, please refer to the upgrade interface instructions (as shown in the above figure), select the upgrade file package, and click the "Update" to upgrade the program.

## 7.8 Network Settings

### 7.8.1 Lan

| Lan                                                                                                                                                                                     | Port | RTMP(S) | SRT Settings | RTSP | ONVIF | Multicast | NTP |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|--------------|------|-------|-----------|-----|
| IP Configuration Type: Fixed IP Address<br>IP Address: 192.168.100.88<br>Subnet Mask: 255.255.255.0<br>Gateway: 192.168.100.1<br>DNS Address: 8.8.8.8<br>MAC Address: D4:ED:8E:EE:0F:EE |      |         |              |      |       |           |     |
| <input type="button" value="Submit"/> <input type="button" value="Cancel"/>                                                                                                             |      |         |              |      |       |           |     |

The default camera IP: 192.168.100.88.

The MAC address cannot be modified.

### 7.8.2 Port

| Lan                                                                                      | Port | RTMP(S) | SRT Settings | RTSP | ONVIF | Multicast | NTP |
|------------------------------------------------------------------------------------------|------|---------|--------------|------|-------|-----------|-----|
| HTTP Port: 80<br>RTSP Port: 554<br>TCP Port: 5678<br>UDP Port: 1259<br>Sony Visca: 52381 |      |         |              |      |       |           |     |
| <input type="button" value="Submit"/> <input type="button" value="Cancel"/>              |      |         |              |      |       |           |     |

Set the HTTP Port, RTSP Port, TCP Port, UDP Port and Sony Visca of the camera.

#### A. HTTP Port

The IP address identifies a network device and multiple network programs can run on the device, each network program uses the network port for data transmission. The port setting on this page is to set up which port the WEB SERVER program uses to transmit. During port mapping, it needs to be consistent with port number (default is 80).

#### B. RTSP Port

Set up the RTSP Port, default is 554.

#### C. TCP Port

Set up the TCP Port, default is 5678.

#### D. UDP Port

Set up the UDP Port, default is 1259.

#### E. Sony Visca

Set up the Sony Visca, default is 52381.

### 7.8.3 RTMP(S)

| Lan                                                                                                                                                                                                                                                                                                                                                                                                   | Port | RTMP(S) | SRT Settings | RTSP | ONVIF | Multicast | NTP |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|--------------|------|-------|-----------|-----|
| First Stream: <input type="radio"/> On <input checked="" type="radio"/> Off <input type="checkbox"/> Video <input checked="" type="checkbox"/> Audio<br>MRL: rtmp://192.168.100.138/live/stream0<br>Second Stream: <input type="radio"/> On <input checked="" type="radio"/> Off <input type="checkbox"/> Video <input checked="" type="checkbox"/> Audio<br>MRL: rtmp://192.168.100.138/live/stream1 |      |         |              |      |       |           |     |
| <input type="button" value="Submit"/> <input type="button" value="Cancel"/>                                                                                                                                                                                                                                                                                                                           |      |         |              |      |       |           |     |

Set the MRL of RTMP(S) and select "On", "Off", "Video" and "Audio" functions to enable or disable video and audio in the two streams. Click "Submit" and restart to take effect.

### 7.8.4 SRT Settings

| Lan                                                                                                                                                                                                                                                                                    | Port | RTMP(S) | SRT Settings | RTSP | ONVIF | Multicast | NTP |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|--------------|------|-------|-----------|-----|
| SRT: <input checked="" type="radio"/> On <input type="radio"/> Off<br>SRT Mode: Listener<br>SRT Server: 192.168.100.1<br>SRT Port: 4578<br>SRT Encryption: None<br>SRT Password: 1234564913131<br>SRT Bandwidth Overhead: 25<br>SRT Variable Latency: 500<br>SRT StreamID: #!sum-admin |      |         |              |      |       |           |     |
| <input type="button" value="Submit"/> <input type="button" value="Cancel"/>                                                                                                                                                                                                            |      |         |              |      |       |           |     |

Turn On/Off SRT and set up the SRT Mode, SRT Server, SRT Port, SRT Encryption, SRT Password, SRT Bandwidth Overhead, SRT Variable Latency and SRT StreamID.

### 7.8.5 RTSP

| Lan                                                                         | Port | RTMP(S) | SRT Settings | RTSP | ONVIF | Multicast | NTP |
|-----------------------------------------------------------------------------|------|---------|--------------|------|-------|-----------|-----|
| RTSP Auth: <input type="radio"/> On <input checked="" type="radio"/> Off    |      |         |              |      |       |           |     |
| <input type="button" value="Submit"/> <input type="button" value="Cancel"/> |      |         |              |      |       |           |     |

Turn On/Off the RTSP Auth.

### 7.8.6 ONVIF

| Lan                                                                                                                                               | Port | RTMP(S) | SRT Settings | RTSP | ONVIF | Multicast | NTP |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|--------------|------|-------|-----------|-----|
| ONVIF: <input type="radio"/> On <input checked="" type="radio"/> Off<br>ONVIF Auth: <input type="radio"/> On <input checked="" type="radio"/> Off |      |         |              |      |       |           |     |
| <input type="button" value="Submit"/> <input type="button" value="Cancel"/>                                                                       |      |         |              |      |       |           |     |

Turn On/Off the ONVIF and ONVIF Auth.

### 7.8.7 Multicast

| Tab                                                                                                                                                                                                                                                                   | Port | RTMP(S) | SRT Settings | RTSP | ONVIF | Multicast | NTP |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|--------------|------|-------|-----------|-----|
| <p>Multicast <input type="radio"/> On <input checked="" type="radio"/> Off</p> <p>Address <input type="text" value="224.1.2.3"/></p> <p>Port <input type="text" value="6688"/></p> <p><input type="button" value="Submit"/> <input type="button" value="Cancel"/></p> |      |         |              |      |       |           |     |

Turn On/Off Multicast, set up Multicast Address (default is 224.1.2.3) and Port (default is 6688; 6688 is the multicast port of the first stream and 6690 is the multicast port of the second stream).

### 7.8.8 NTP

| Tab                                                                                                                                                                                                                                                                                                                                                                         | Port | RTMP(S) | SRT Settings | RTSP | ONVIF | Multicast | NTP |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|--------------|------|-------|-----------|-----|
| <p>NTP Time Sync <input type="radio"/> On <input checked="" type="radio"/> Off</p> <p>Time Zone <input type="text" value="(GMT+08:00) Beijing, China"/></p> <p>Server Address <input type="text" value="cn.ntp.org.cn"/></p> <p>Time Interval(min) <input type="text" value="1440"/></p> <p><input type="button" value="Submit"/> <input type="button" value="Cancel"/></p> |      |         |              |      |       |           |     |

Turn On/Off NTP Time Sync, set up the Time Zone, Server Address (default is cn.ntp.org.cn) and Time Interval (default is 1440 min).

## 7.9 Overlay



|                                                                             |                                           |                                  |
|-----------------------------------------------------------------------------|-------------------------------------------|----------------------------------|
| Stream                                                                      | <input type="text" value="First Stream"/> |                                  |
| Time Enable                                                                 | <input type="checkbox"/>                  |                                  |
| Title Enable                                                                | <input type="checkbox"/>                  |                                  |
| Title                                                                       | <input type="text" value="IP Camera"/>    |                                  |
| Title Horizontal Position                                                   | <input type="text" value="0"/>            | <input type="button" value="↔"/> |
| Title Vertical Position                                                     | <input type="text" value="0"/>            | <input type="button" value="↕"/> |
| Time Horizontal Position                                                    | <input type="text" value="0"/>            | <input type="button" value="↔"/> |
| Time Vertical Position                                                      | <input type="text" value="0"/>            | <input type="button" value="↕"/> |
| <input type="button" value="Submit"/> <input type="button" value="Cancel"/> |                                           |                                  |

#### 1) Stream

Stream: First Stream, Second Stream.

#### 2) Time Enable

Enable or disable the Time.

#### 3) Title Enable

Enable or disable the Title.

#### 4) Title

Set up the Title of the display screen.

#### 5) Title Horizontal Position

Set up the Title Horizontal Position.

#### 6) Title Vertical Position

Set up the Title Vertical Position.

#### 7) Time Horizontal Position

Set up the Time Horizontal Position.

#### 8) Time Vertical Position

Set up the Time Vertical Position.

## 7.10 Device Information

| Information                                                                 |                                                        |
|-----------------------------------------------------------------------------|--------------------------------------------------------|
| Device ID                                                                   | <input type="text" value="UHD Camera"/>                |
| Device Type                                                                 | <input type="text" value="G68_V"/>                     |
| Software Version                                                            | <input type="text" value="SOC v2.0.14 - ARM 6.0.97S"/> |
| Webware Version                                                             | <input type="text" value="v1.5.6"/>                    |
| <input type="button" value="Submit"/> <input type="button" value="Cancel"/> |                                                        |



WEB interface and device information are subject to change without notice.

## 8 Troubleshooting

---

### Image

- The monitor shows no image
  - 1) Ensure that the camera power supply is connected, the voltage is normal, and the power indicator is always on.
  - 2) Turn off the power switch to check that the camera is self-testing.
  - 3) Ensure the cable of video platform and TV that in correct connection.
- Image jitters after the camera is properly connected
  - 1) Ensure that the camera installation is in stable position.
  - 2) Check that any vibrating machinery or object near the camera.
- There is no video image in browser  
That do not support IE browser and IE core browser, it is recommended to use Google, Firefox and Edge browsers. The camera video image will be displayed normally.
- Unable to access camera through the browser
  - 1) Using PC to access the network to test that the network access can work properly to eliminate the network fault caused by cable and PC virus until the PC and camera can ping each other.
  - 2) Disconnect the network, connect camera with PC separately and reset the IP address of PC if necessary.
  - 3) Ensure that the IP address, subnet mask and gateway settings is correct.
  - 4) Check that the MAC address is conflicts.
  - 5) Check that the web port is modified, the default setting is 80.

- Forget the IP address or login password

The default IP address is: 192.168.100.88; the

default username and password are: admin.

### Control

- Remote control does not work
  - 1) Check and replace with new batteries.
  - 2) Ensure that the camera working mode is correct.
  - 3) Ensure that the address key of remote control can match the camera.
- Serial port cannot control
  - 1) Ensure that the protocol, address and bit rate of the camera are consistent.
  - 2) Ensure that the control cable is properly connected.

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