DRIGER®

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USER MANUAL

VC-12AT
4K PTZ Camera



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Notice

Product speci cations 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 NOTCE (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.

Note

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. f thisequipment does cause harmful interference to radio or television reception, which can be determinedbyturning the equipment o and on, the user is encouraged to try to correct the interference by one or moreofthe following measures:

- Reorient orrelocate the receiving antenna.
- ncrease theseparation between the equipment and receiver.
- Connect theequipment into an outlet on a circuit di erent from that to which the receiver is connected.
- Consult thedealer or an experienced radio/television technician for help.

Class A TE

Class A TE is a category of all other TE which satis es the class A TE limits but not the class B TE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructionsfor use:

Warning

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

European Community Compliance Statement (Class A)

This product is herewith con rmed 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.

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 re).
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 o 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

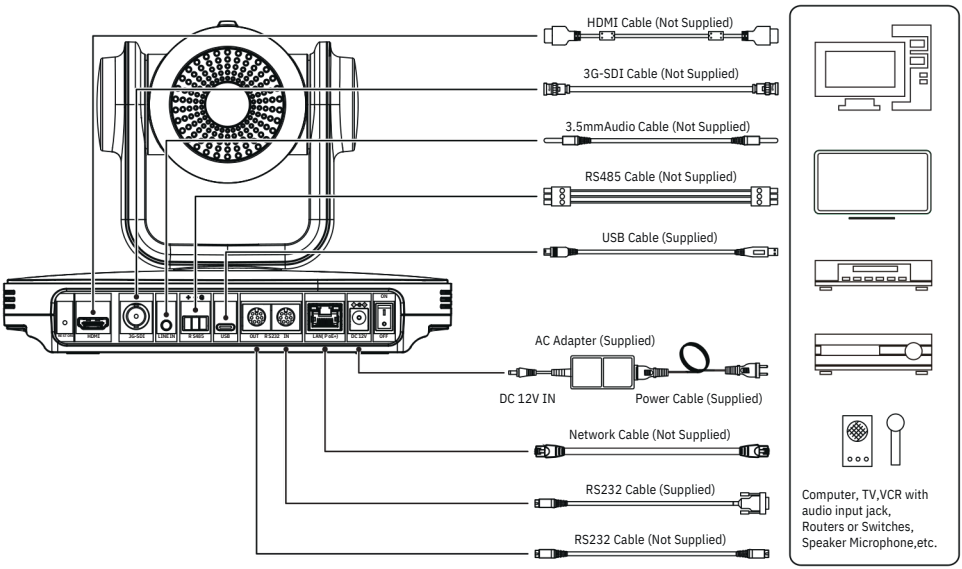
Speci c frequencies of electromagnetic eld may a ect the image of the camera!

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 Quick Start

1) Please check connections are correct before starting.


HDMI Cable (Not Supplied)
3G-SDI Cable (Not Supplied)
3.5mmAudio Cable (Not Supplied)
RS485 Cable (Not Supplied)
USB Cable (Supplied)
AC Adapter (Supplied)
DC 12V IN
Power Cable (Supplied)
Network Cable (Not Supplied)
RS232 Cable (Supplied)
RS232 Cable (Not Supplied)
Computer, TV,VCR with audio input jack, Routers or Switches, Speaker Microphone,etc.

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 About Product

4.1 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 1/2.8-inch high-quality UHD CMOS sensor with a maximum of 8.40 million pixels can realize 4K (3840x2160) ultra-high-resolution high-quality images. And downward compatible with 1080p, 720p and other resolutions.

12x Optical Zoom

It adopts 4K ultra long focal lens with high quality and 8 million ultra-high resolution, 12x optical zoom, and the maximum eld angle is 80.8°.

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, e ective transmission distance of 3G-SDI is up to 150 meters (1080P30). HDMI or 3G-SDI, USB, LAN can output three HD digital signals at the same time.

Remote Control

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

Gravity Sensor

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

4.2 Specification

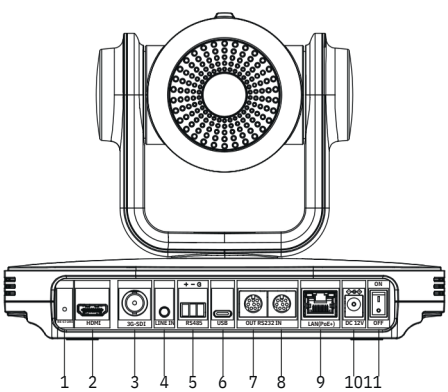
Camera	
Signal System	**HDMI:** 4KP25, 4KP30, 4KP50, 4KP60, 4KP59.94, 4KP29.97, 1080P25, 1080P30, 1080P50, 1080P60, 1080P59.94, 1080P29.97, 1080I50, 1080I60, 1080I59.94, 720P50, 720P59.94, 720P60 **3G-SDI:** 1080P25, 1080P30, 1080P50, 1080P60, 1080P59.94, 1080P29.97, 1080I50, 1080I60, 1080I59.94, 720P50, 720P59.94, 720P60
Sensor	1/2.8 inch, CMOS, E ective pixels: 8.40M
Scanning Mode	Progressive
Lens	12x, f = 3.4mm ~ 41.6mm, F1.8 ~ F3.7
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
Signal Noise Ratio	≥55dB
Horizontal Angle of View	80.8° ~ 7.5°
Vertical Angle of View	49.9° ~ 4.3°
Horizontal Rotation Range	±170°
Vertical Rotation Range	-30° ~ +90°
Pan Speed Range	1.8°/s ~ 80°/s
Tilt Speed Range	1.5°/s ~ 49°/s
H & V Flip	Support
Image Freeze	Support
PoE+	Support
Number of Preset	255
Preset Accuracy	0.1°
USB Features	
Operate System	Windows 7/8/10, Mac OS X, Linux, Android
Color System/ Compression	▯ USB 3.0 (Optional): YUY2/H.264/H.265/MJPEG ▯ USB 2.0: H.264/H.265/MJPEG ▯ YUY2: (USB 3.0 support)
Video Format	max to 1080P@30fps USB 3.0/2.0 support: ▯ H.264 AVC: max to 2160P@30fps ▯ H.265 HEVC: max to 2160P@30fps ▯ MJPEG: max to 2160P@30fps
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, Second Stream
First Stream Resolution	3840x2160, 1920x1080, 1280x720, 1024x576, 720x480, 720x408, 640x480, 640x360
Second Stream Resolution	720x480, 720x408, 640x480,
Bit Rate Control	640x360, 480x320, 320x240 CBR, VBR
Frame Rate	50Hz: 1fps ~ 50fps 60Hz: 1fps ~ 60fps
Audio Compression	AAC
Audio Bit Rate	96Kbps, 128Kbps
Protocols	NDI®|HX2, TCP/IP, HTTP, RTSP, RTMP/RTMPS, ONVIF, DHCP, SRT, Multicast
Input/Output Interface	
HDMI Interface	1 x HDMI: Version 2.0
3G-SDI Interface	1 x 3G-SDI: BNC type, 800mVp-p, 75Ω. Along to SMPTE 424M standard
LINE IN Interface	1 x LINE IN: 3.5mm Audio Interface
Communication Interface	1 x RS485: 3pin 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 1 x USB: Type-C
USB Interface	1 x LAN: 10M/100M/1000M Adaptive Ethernet Port, support PoE+
LAN(PoE+) Interface	

Power Jack	JEITA type (DC IN 12V)
Physical Parameter	
Tally Indicator	1
Power Indicator	1
Status Indicator	1
Restore Key	1
Power Switch	1
Input Voltage	DC 12V/PoE+
Input Current	(802.3at) Max. 2A
Operating Temperature	0°C ~ 40°C
Storage Temperature	-40°C ~ 60°C
Power Consumption	Max. 18W
Dimension	223mm x 163mm x 166mm
Net Weight	About 1.8Kg

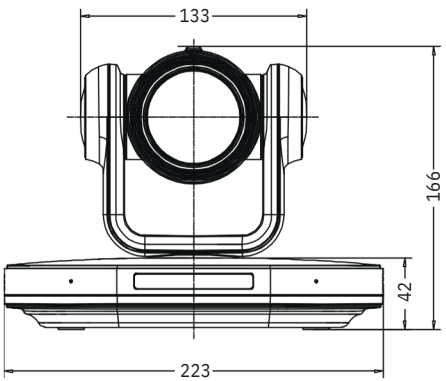
Note Product speci cations and parameters are subject to change without notice.

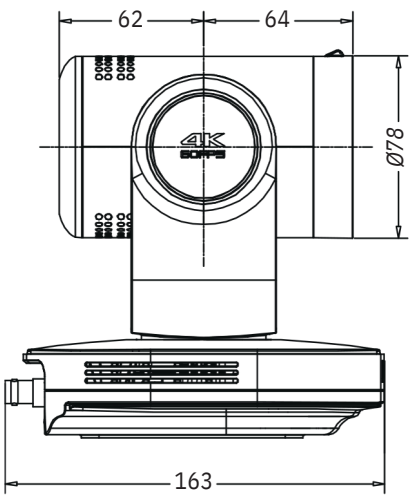
4.3 Interface and Switch

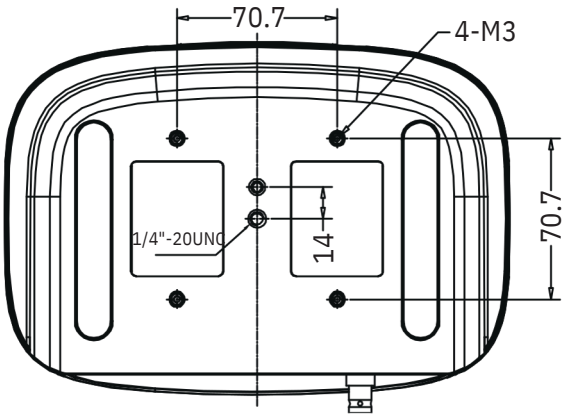


Item	Name
1	RESTORE Key
2	HDMI Interface
3	3G-SDI Interface
4	LINE IN Interface
5	RS485 Interface
6	USB Interface
7	RS232 OUT Interface
8	RS232 IN Interface
9	LAN(PoE+) Interface
10	DC 12V Interface
11	Power Switch

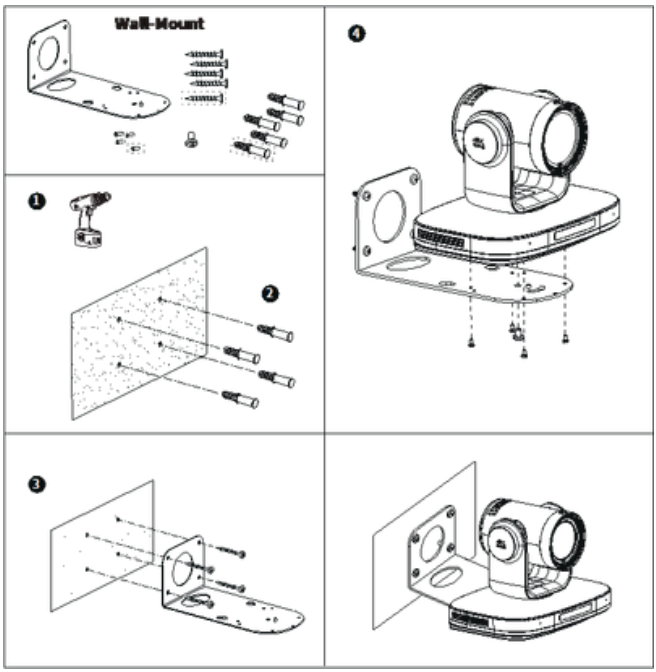
4.4 Dimension

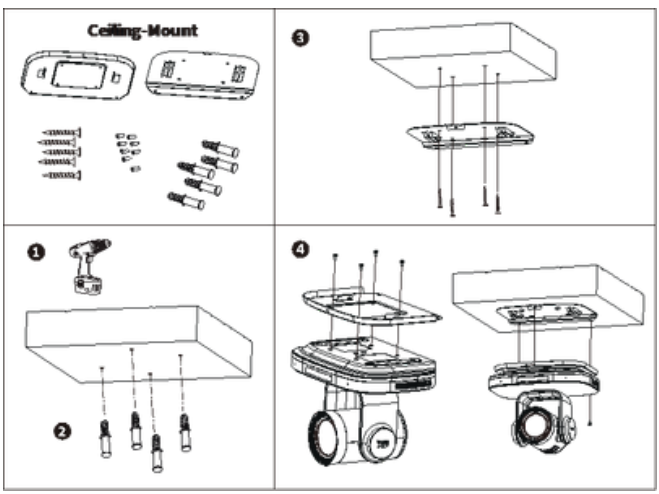





70.7
4-M3
1/4"-20UNC
14
70.7

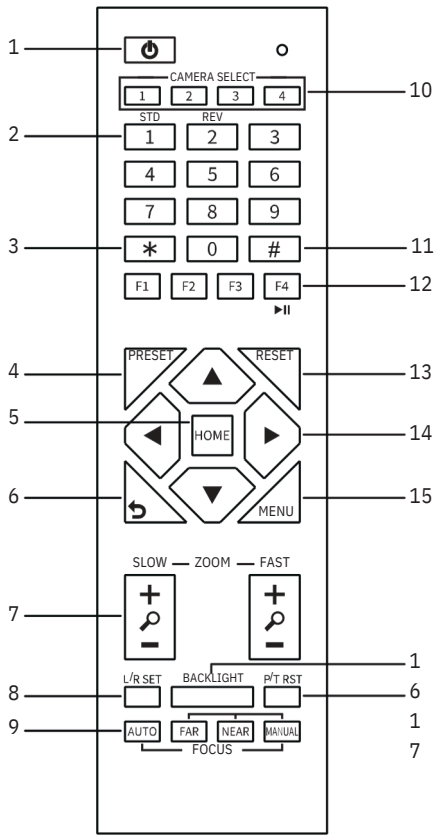
4.5 Installation





Note The installation diagram is for reference only. The brackets and screws are not standard. For packing accessories, please refer to the actual product.

4.6 Remote Control

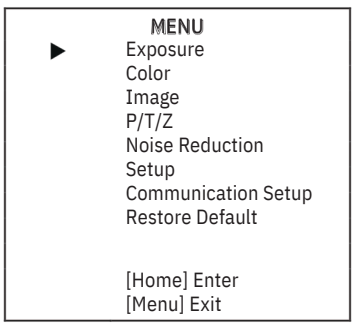


Key Description
1. Standby Key
Press to enter standby mode
2. Number Key
Press to set preset or call preset
3. *Key
Use with other keys
4. PRESET Key
Set preset: [PRESET] + Number key (0-9)
5. HOME Key
Confirm selection or press to turn PTZ back to the middle position
6. Return Key
Press to return to the previous menu
7. ZOOM Key
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 Key
Auto/Manual/Far/Near focus
10. CAMERA SELECT Key
Press to select and control the camera
11. # Key
Use with other keys
12. IR Remote Control Key
[*]+[#]+[F1]: Address 1 [*]+[#]+[F2]: Address 2 [*]+[#]+[F3]: Address 3 [*]+[#]+[F4]: Address 4
13. RESET Key
Clear preset position: [RESET] + Number key (0-9)
14. PTZ Control Key
PTZ moved according to the arrow indicates
15. MENU Key
Press to enter or exit OSD Menu
16. BACKLIGHT Key
Backlight ON/OFF: Press repeatedly to enable or disable the backlight compensation. NOTE: E ective 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
PTZ starts to self-test after pressed it
Shortcut Set
[*]+[#]+[1]: OSD menu default English [*]+[#]+[3]: OSD menu default Chinese [*]+[#]+[4]: Display current IP address [*]+[#]+[6]: Quickly recover the default [*]+[#]+[8]: View the camera version [*]+[#]+[9]: Quickly set up inversion [*]+[#]+[MANUAL]: Restore default IP address

5 GUI Settings

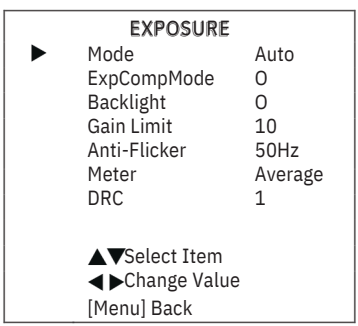
5.1 MENU

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.



5.2 EXPOSURE

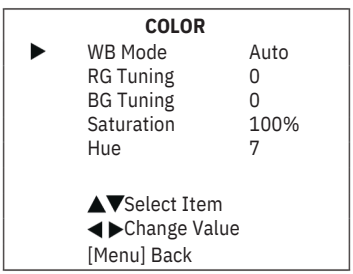
Movethe mainmenu cursor to [Exposure], and press [HOME] key enter the exposure page, as shown in the following gure.



Mode: Auto, Manual, SAE, AAE, Bright.
ExpCompMode: On, O (E ective only in Auto mode).
ExpComp: -7 ~ 7 (Effective only in ExpCompMode item to On).
Backlight: On, O (E ective only in Auto mode).
Bright: 0 ~ 17 (E ective only in Bright mode).
Gain Limit: 0 ~ 15 (E ective only in Auto, SAE, AAE, Bright mode).
Anti-Flicker: O , 50Hz, 60Hz (E ective only in Auto, AAE, Bright mode).
Meter: Average, Center, Smart, Top.
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 (E ective 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 (E ective only in Manual, SAE mode).
Gain: 0 ~ 7 (E ective only in Manual mode).
DRC: 0 ~ 8.

5.3 COLOR

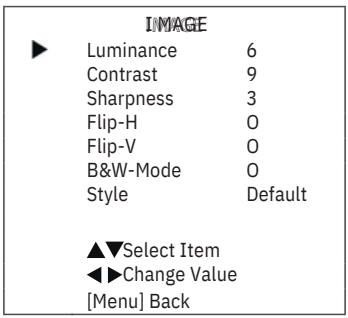
Movethemain menu cursor to [Color], and press [HOME] key enter the color page, as shown in the following gure.



WB Mode: Auto, Indoor, Outdoor, One Push, Manual, VAR.
RG: 0 ~ 255 (E ective only in Manual mode).
BG: 0 ~ 255 (E ective only in Manual mode).
RG Tuning: -10 ~ +10 (E ective only in Auto, One Push, VAR Mode).
BG Tuning: -10 ~ +10 (E ective only in Auto, One Push, VAR Mode).
Saturation: 60% ~ 200%.
Hue: 0 ~ 14.
Color Temp: 2500K ~ 8000K (E ective only in VAR mode).

5.4 IMAGE

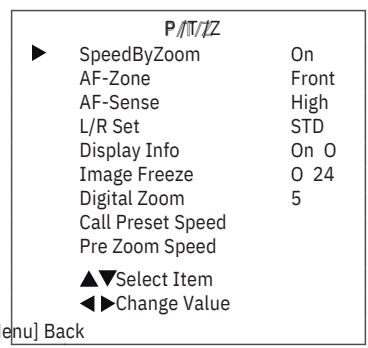
Movethemain menu cursor to [Image], and press [HOME] key enter the image page, as shown in the following gure.



Luminance: 0 ~ 14.
Contrast: 0 ~ 14.
Sharpness: 0 ~ 15, auto.
Flip-H: On, O .
Flip-V: On, O .
B&W-Mode: On, O .
Style: Default, Norm, Bright, PC.

5.5 P/T/Z

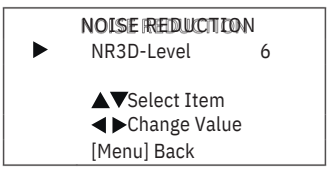
Movethemain menu cursor to [P/T/Z], and press [HOME] key enter the P/T/Z page, as shown in the following gure.



SpeedByZoom: On, O .
AF-Zone: Front, Top, Center, Bottom.
AF-Sense: Low, Normal, High.
L/R Set: STD, REV.
Display Info: On, O .
Image Freeze: On, O .
Digital Zoom: O , 2x, 4x, 8x, 16x.
Call Preset Speed: 1 ~ 24.
Pre Zoom Speed: 0 ~ 7.

5.6 NOISE REDUCTION

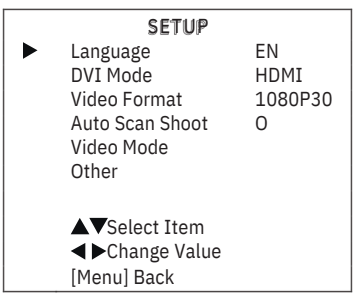
Move themainmenucursor to [Noise Reduction], and press [HOME] key enter the noise reduction page, as shown in the following gure.



NR3D Level: O , 1 ~ 9.

5.7 SETUP

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

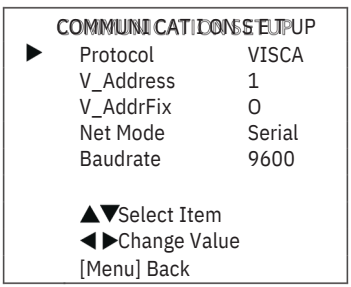


Language: EN, Chinese, Russian.
DVI Mode: HDMI, DVI.
Video Format: 4KP25, 4KP29.97, 4KP30, 4KP50, 4KP59.94, 4KP60, 1080P30, 1080P25, 1080P50, 1080P60, 1080P59.94, 1080P29.97, 1080I50, 1080I60, 1080I59.94, 720P60, 720P59.94, 720P50.
Auto Scan Shoot: On, O .
Video Mode: SDI-3G Mode, Video Output.

SDI-3G Mode: LEVEL-A, LEVEL-B.
Video Output: HDMI, SDI.
Other: Auto Inversion, Tally Mode, USB2.0 Audio.
Auto Inversion: On, O .
Tally Mode: On, O .
USB2.0 Audio: On, O (Only for USB2.0).

5.8 COMMUNICATION SETUP

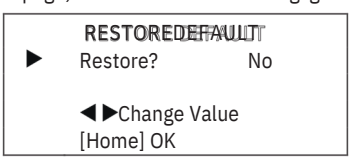
Move the main menu cursor to [Communication Setup], and press [HOME] key enter the communication setup page, as shown in the following gure.



Protocol: Auto, VISCA, PELCO-D, PELCO-P.
V_Address: 1 ~ 7 (E ective only in Auto, VISCA protocol).
V_AddrFix: On, O (When set to On, useless in 88 30 01 FF Command).
P_D_Address: 0 ~ 254 (E ective only in Auto, PELCO-D protocol).
P_P_Address: 0 ~ 31 (E ective only in Auto, PELCO-P protocol).
Net Mode: Serial, Paral.
Baudrate: 2400, 4800, 9600, 38400.

5.9 RESTORE DEFAULT

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





Restore: Yes, No.

Note GUI menu and parameters are subject to change without notice.

6 WEB Settings

6.1 Access Camera

Accesshttp://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:

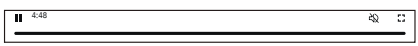


6.2 Control Camera

Allpages includetwo menu bars:
Real time monitoring: displaying video image
Parameter setup: with function buttons.

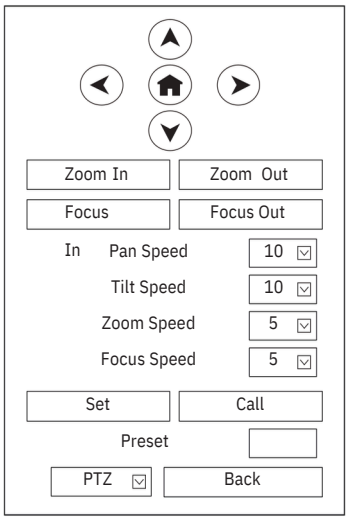
A. Video Viewing Window

Video viewing window must be same as video resolution, the bigger the resolution is, the bigger the playing area is. Double click viewing window, will show full-screen, double click again, will return to initialized size.
Status bar in viewing window shown as below:



1) Video playback pause button: control real-time video pause, stop the last picture, click recoverable video again.
2) Audio control buttons: can adjust the volume or set silent mode.
3) Full screen switch button.

B. PTZ Setup



1) Pan and Tilt Control

Up, Down, Left and Right arrows and the home button allow you to manually drive the camera to the 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 buttons allow for ne manual focus adjustment if the camera has any problems auto focusing on the di cult object.

4) PTZ Speeds

Pan speed can be set at any rate between 1 ~ 24, Tilt speed can be set at any rate between 1 ~ 20. Zoom and Focus speeds can be set at any rate between 1 ~ 7.

5) PTZ Presets

After manually setting up a shot that you would like to return to later, you can save presets for quick recall of these positions. Type a number between 0 and 254 into the Preset box.

Click the “Set” button to save the current location with that preset number. Click the “Call” button to cause the camera to return to that position. This enables smooth, quick and convenient control without the need to manually drive the camera.
You can set up preset that user want as below.
Method: Type preset number into the Preset box.

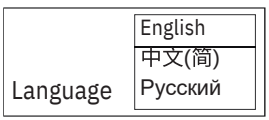


Preset: Optional items: 0 ~ 254.

6) PTZ/OSD Dropdown

From the dropdown menu, clicking the OSD option will open the on-screen display menu of the camera giving you control from within the IP interface.

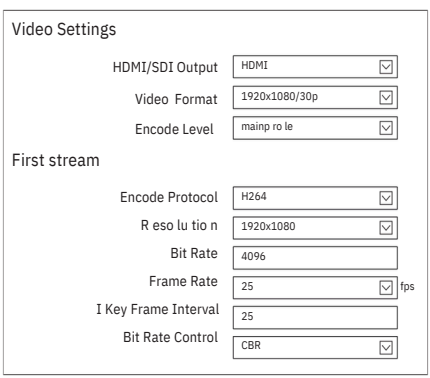
C. Language Selection

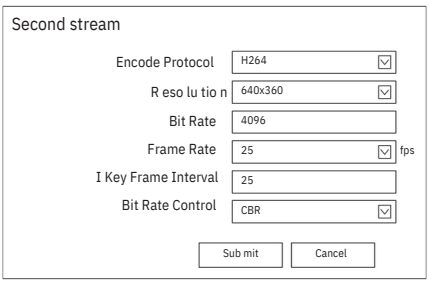


Click either “Chinese”, “English” or “Russian” to change the language of the webpage.

6.3 Video Settings

6.3 Video Settings





1) HDMI/SDI Output

Support HDMI and SDI Output.

2) Video Format

HDMI output support 3840x2160/60p, 3840x2160/59.94p, 3840x2160/50p, 3840x2160/30p, 3840x2160/29.97p, 3840x2160/25p. Both HDMI and SDI output support 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.

3) Encode Level

Support mainpro le and highpro le two levels.

4) Encode Protocol

Support H.264, H.265 and MJPEG protocols.

5) 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.

6) Bit Rate

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

7) 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.

8) I Key Frame Interval

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

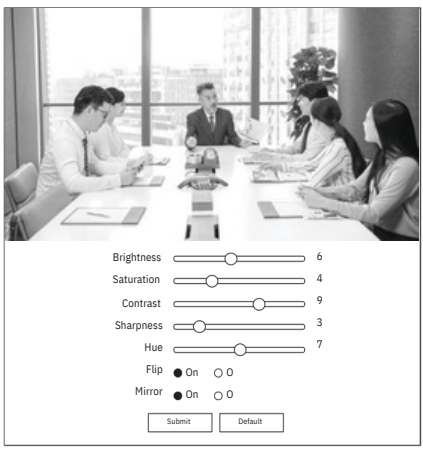
9) Bit Rate Control

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.

6.4 Image Settings



1) Brightness

Brightness of image: 0~14 (Default value is 6).

2) Saturation

Saturation of image: 0~14 (Default value is 4).

3) Contrast

Contrast of image: 0~14 (Default value is 9).

4) Sharpness

Sharpness of image: 0~16 (Default value is 3).

5) Hue

Hue of image: 0~14 (Default value is 7).

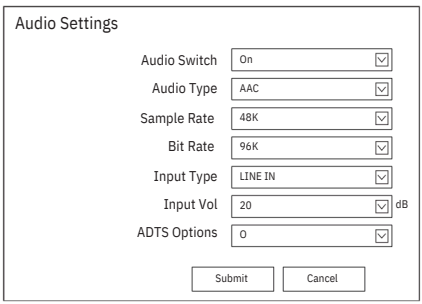
6) Flip

Turn On/O the Flip function.

7) Mirror

Turn On/O the Mirror function.

6.5 Audio Settings



1) Audio Switch

Enable or disable audio switch.

2) Audio Type

Optional items: AAC.

3) Sample Rate

Optional items: 44.1K, 48K.

4) Bit Rate

Optional items: 96K, 128K.

5) Input Type

Optional items: LINE IN, MIC.

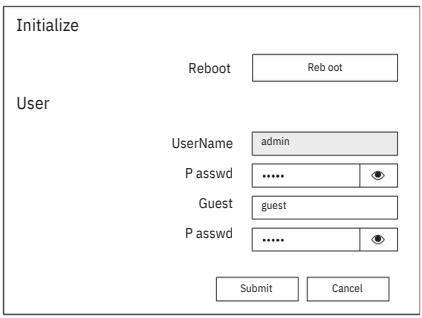
6) Input Vol

The volume of the channel.

7) ADTS Options

Optional items: On, O .

6.6 System Settings



1) Reboot

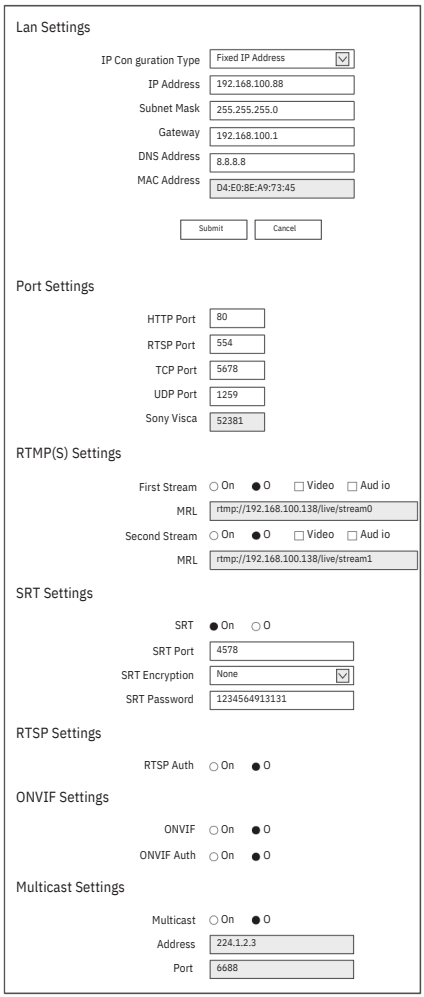
Click the “Reboot” button, system restart.

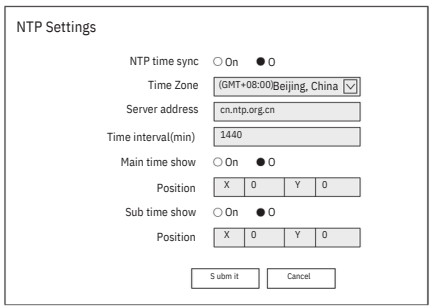
2) Username and Password

The user can modify the password (letters and Numbers only).

6.7 Network Settings

6.7 Network Settings





1) Lan Settings

Default the IP address is 192.168.100.88, the MAC address cannot be modi ed.

2) Port Settings

A. HTTP Port

IP address identi es the network device, the device can run multiple web applications, each network program using network port to transmit data, so data transmission to be carried out between the port and port. Port setting is to set up web server program using which port to transmit. When port mapping, need to be consistent with the port number (default port: 80).

B. RTSP Port

The 4K PTZ camera support RTSP protocol, use the VLC tools broadcast, default port: 554.

C. TCP Port

Support TCP connection then control camera, default port: 5678.

D. UDP Port

Support UDP protocol, default port: 1259.

E. Sony Visca

Support Sony Visca, default value: 52381.

3) RTMP(S) Settings

Setting the MRL of RTMP, select enable or disable video and audio. You can select control code stream of “On”, “O ”, “Video”, “Audio” between in the two streams.

4) SRT Settings

Turn On/O SRT, Setting the SRT Port, SRT Encry and SRT Password.

5) RTSP Settings

Turn On/O RTSP Auth.

6) ONVIF Settings

Turn On/O ONVIF and ONVIF Auth.

7) Multicast Settings

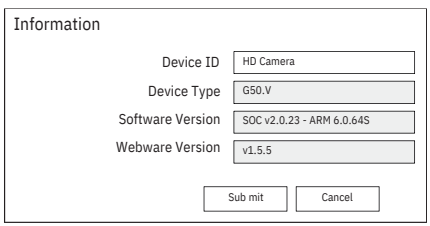
Turn On/O multicast. Setting the multicast address (default value is 224.1.2.3) and port (default value is 6688, then 6688 is the multicast port of the rst stream; 6690 is the multicast port of the second stream).

8) NTP Settings

Turn On/O NTP time sync, main time show and sub time show. Setting NTP server address, time interval, main stream position and sub stream position.

6.8 Device Information

6.8 Device Information



6.9 Download Upgrade Program

6.9 Download Upgrade Program

If you need the camera upgrade program, please contact the manufacturer.

Note

WEB interface and parameters are subject to change without notice.