VIS-TCAMH-B Auto tracking Camera

User Manual

V1.0

VISSONIC ELECTRONICS LIMITED

The meaning of symbols

■ Safety instructions

For your safe and correct use of equipments, we use a lot of symbols on the equipments and in the manuals, demonstrating the risk of body hurt or possible damage to property for the user or others. Indications and their meanings are as follow. Please make sure to correctly understand these instructions before reading the manual.

	This is A level product, which may cause radio interference in the living environment. In this case, users may need to take the feasible measures to get around the interference.
	Remind users that the dangerous voltage without insulation occurring within the equipment may cause people suffer from shock.
	CE certification means that the product has reached the directive safety requirements defined by the European Union. Users can be assured about the use of it.
	SGS certification means that the product has reached the quality inspection standards proposed by the world's largest SGS.
	This product passed the ISO9001 international quality certification (certification body: TUV Rheinland, Germany).
	Warning: in order to avoid electrical shock, do not open the machine cover, nor is the useless part allowed to be placed in the box. Please contact the qualified service personnel.

■ General information instructions

	It lists the factors leading to the unsuccessful operation or set and the relevant information to pay attention.

Important note

Warning

In order to ensure the reliable performance of the equipment and the safety of the user, please observe the following matters during the process of installation, use and maintenance:

The matters needing attention of installation

- Please do not use this product in the following places: the place of dust, soot and electric conductivity dust, corrosive gas, combustible gas; the place exposed to high temperature, condensation, wind and rain; the occasion of vibration and impact . Electric shock, fire, wrong operation can lead to damage and deterioration to the product, either;
- In processing the screw holes and wiring, make sure that metal scraps and wire head will not fall into the shaft of controller, as it could cause a fire, fault, or incorrect operation;
- When the installation work is over, it should be assured there is nothing on the ventilated face, including packaging items like dust paper. Otherwise this may cause a fire, fault, incorrect operation for the cooling is not free;
- Should avoid wiring and inserting cable plug in charged state, otherwise it is easy to cause the shock, or electrical damage;
- The installation and wiring should be strong and reliable, contact undesirable may lead to false action;
- For a serious interference in applications, should choose shield cable as the high frequency signal input or output cable, so as to improve the anti-jamming ability of the system.

Attention in the wiring

- Only after cutting down all external power source, can install, wiring operation begin, or it may cause electric shock or equipment damage;
- This product grounds by the grounding wires .To avoid electric shocks, grounding wires and the earth must be linked together. Before the connection of input or output terminal, please make sure this product is correctly grounded;
- Immediately remove all other things after the wiring installation. Please cover the terminals of the products cover before electrification so as to avoid cause electric shock.

Matters needing attention during operation and maintenance

- Please do not touch terminals in a current state, or it may cause a shock, incorrect operation;
- Please do cleaning and terminal tighten work after turning off the power supply. These operations can lead to electric shock in a current state;
- Please do the connection or dismantle work of the communication signal cable , the expansion module cable or control unit cable after turning off the power supply, or it may cause damage to the equipment, incorrect operation;
- Please do not dismantle the equipment, avoid damaging the internal electrical component;
- Should be sure to read the manual, fully confirm the safety, only after that can do program changes, commissioning, start and stop operation.

Matters needing attention in discarding product

- Electrolytic explosion: the burning of electrolytic capacitor on circuit boards may lead to explosion;
- Please collect and process according to the classification, do not put into life garbage;
- Please process it as industrial waste, or according to the local environmental protection regulations.

Preface

This manual mainly describes the use, performance parameters and troubleshooting of VISSONIC VIS-TCAMH-B Auto-tracking Camera.

If the technical parameters and system usage in this manual are changed, the manufacturer will update the version of the manual. Please use the latest user manual.

Version	Update	Date
1.0		2024.3.19

Contents

1. Overview

1.1. Features

- Integrated design for teacher and student
- Adjustable Viewing Angle in vertical (-25° ~ +15°)
- High Efficient tracking-by built-in image recognition and tracking algorithms
- Easy Configuration to make a configuration for tracking by Ethernet
- 72.5° Wide-angle Lens + 16x Digital Zoom
- H.265 Support
- 1080P Full HD
- Apply Panasonic's HD CMOS sensor 1/2.7 inch, 2.07 million pixels
- Ultra-high Frame Rate up to 60fps in 1080P.
- AAC Audio Encoding
- Low-light-High SNR of CMOS sensor combined with 2D and 3D noise reduction algorithm

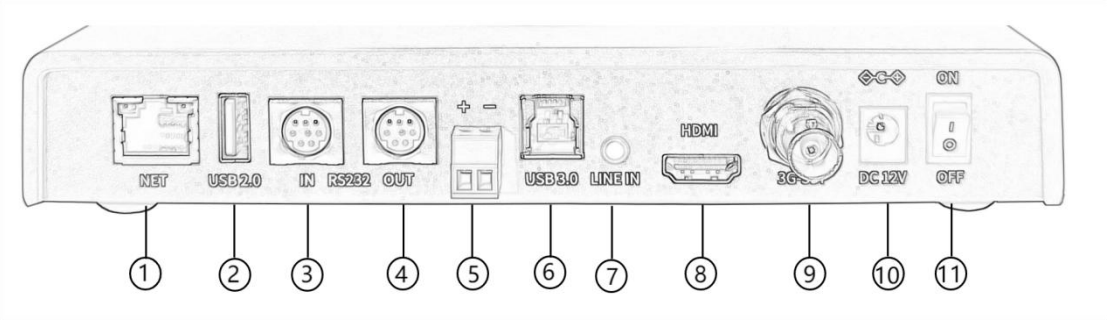
1.2. Specification

Name	**Auto Tracking Camera**
Close-up Camera	
Video System	HD: 4K/30, 4K/25, 4K/29.97, 1080p/60, 1080p/50, 1080i/60, 1080i/50, 1080p/30, 1080p/25, 720p/60, 720p/50, 720p/30, 720p/25, 640x480p/240
Sensor	1/2.7", CMOS, Effective Pixel: 2.07M
Scanning Mode	Progressive
Lens	12x, f3.5mm ~ 42.3mm, F1.8 ~ F2.8
Digital Zoom	16x (optional)
Minimal Illumination	0.5 Lux @ (F1.8, AGC ON)
Shutter	1/30s ~ 1/10000s
White Balance	Auto, 3000K/Indoor, 4000K, 5000K/Outdoor, 6500K_1, 6500K_2, 6500K_3, One Push, Manual
Backlight Compensation	Support
Digital Noise Reduction	2D&3D Digital Noise Reduction
Video S/N	≥ 55dB
Horizontal Angle of View	72.5° ~ 6.9°

Vertical Angle of View	44.8° ~ 3.9°
Horizontal Rotation Range	±170°
Vertical Rotation Range	-30° ~ +90°
Pan Speed Range	1.7° ~ 100°/s
Tilt Speed Range	1.7° ~ 69.9°/s
H & V Flip	Support
Image Freeze	Support
Local Storage	Support
Number of Preset	255
Preset Accuracy	0.1°
Panorama camera	
Video System	4096 × 2160@30， 1080p/60, 1080p/50, 1080i/60, 1080i/50, 1080p/30, 1080p/25, 720p/60, 720p/50, 720p/30, 720p/25
Sensor	1/2.7", CMOS, Effective Pixel: 2.07M
Scanning Mode	Progressive
Lens Mount	C/CS Mount
Auto Iris	DC Driver
Minimal Illumination	0.05 Lux @ (F1.8, AGC ON)
Shutter	1/30s ~ 1/10000s
White Balance	Auto, 3000K/Indoor, 4000K, 5000K/Outdoor, 6500K_1, 6500K_2, 6500K_3, One Push, Manual
Day-night Mode	IR cut filter with auto switch
Digital Noise Reduction	2D, 3D digital noise reduction
Backlight Compensation	Support
Image Freeze	Support
Ceiling Installation	Support
Network Features	
Video Compression	H.265 / H.264 / MJEPG
Video Stream	First Stream, Second Stream
First Stream Resolution	3840x2160, 1920x1080, 1280x720, 1024x576
Second Stream Resolution	720x576, 720x480, 320x240

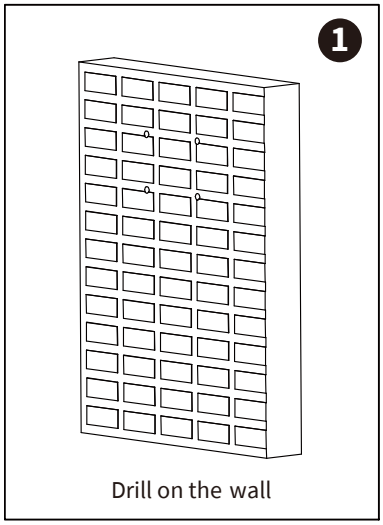
Video Bit Rate	128Kbps ~ 8192Kbps
Bit Rate Type	Variable Rate, Fixed Rate
Frame Rate	50Hz: 1fps ~ 50fps, 60Hz: 1fps ~ 60fps
Audio Compression	AAC
Audio Bit Rate	96Kbps, 128Kbps, 256Kbps
Support protocols	TCP/IP, HTTP, Onvif, DHCP,RTSP, RTMP, etc.
Input/Output Interface	
HD Output	1xHDMI: Version 1.3 1x3G-SDI
Network Interface	1xRJ45: 10M/100M Ethernet Interface
Audio Interface	1-ch: 3.5mm Audio Interface, Line In
Communication Interface	1xRS232 In for close-up camera 1xRS232 Out for close-up camera
Power Jack	JEITA type (DC IN 12V)
Generic Specification	
Input Voltage	DC 12V
Current Consumption	1.5A (Max)
Operating Temperature	-10°C ~ 40°C
Storage Temperature	-40°C ~ 60°C
Power Consumption	18W (Max)
MTBF	>30000h
Size	TBD
Net Weight	TBD

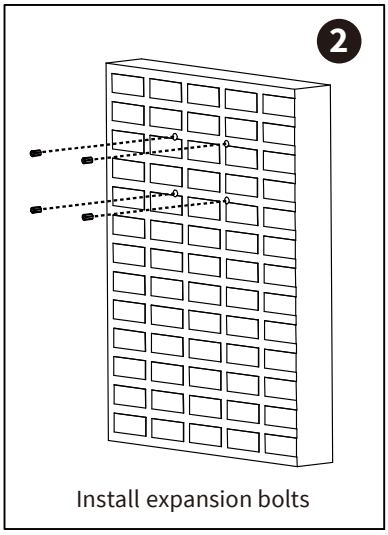
2. Interface and Switch

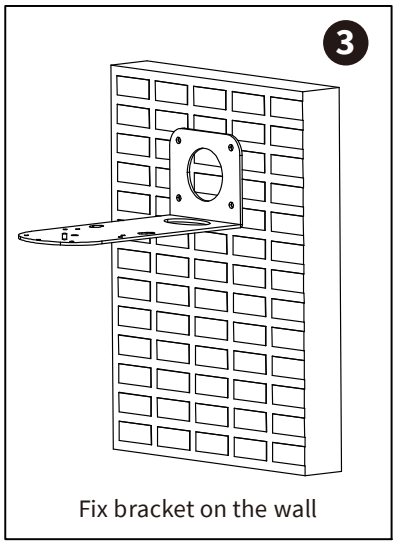


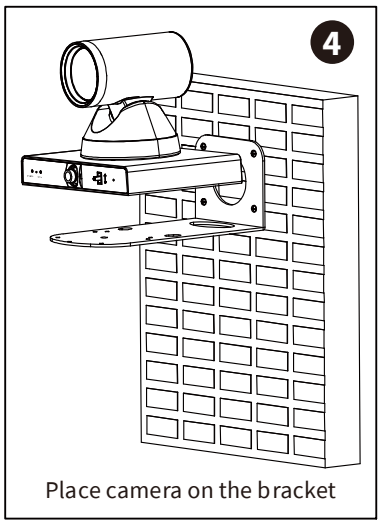
No.	Interface/Switch
1	NET Interface
2	USB 2.0 Interface
3	RS232 IN Interface
4	RS232 OUT Interface
5	RS485 Interface
6	USB 3.0 Interface
7	LINE IN Interface
8	HDMI Interface
9	3G-SDI Interface
10	DC 12V Interface
11	Power Switch

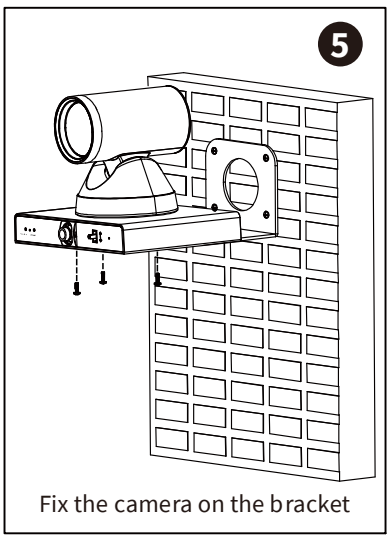
3. Installation

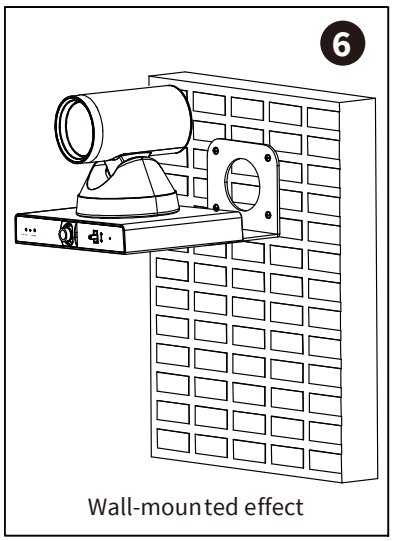




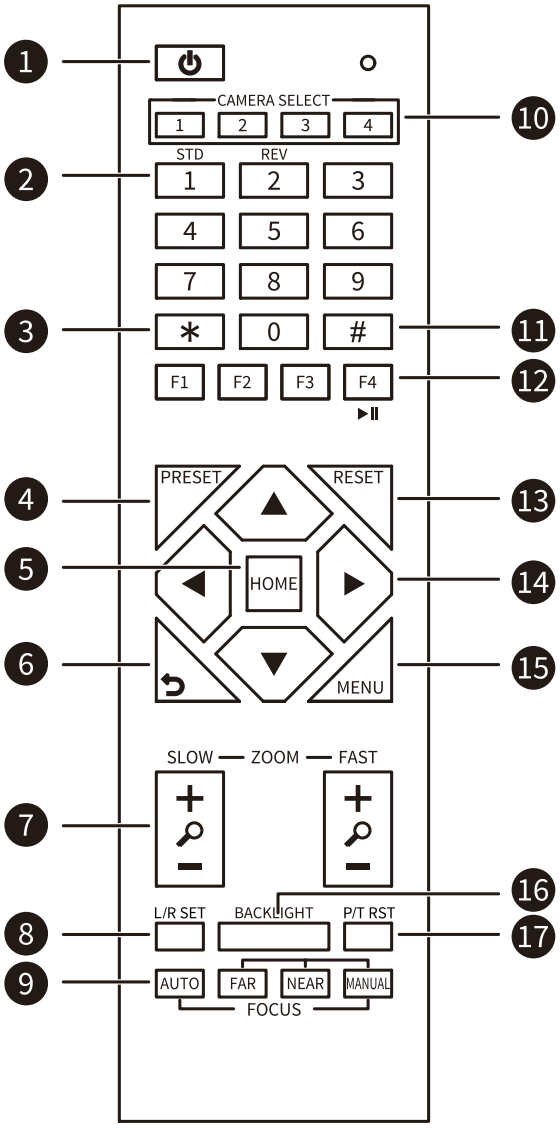








4. Remote Control



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: [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. IR Remote Control Keys
[*] + [#] + [F1]: Address 1 [*] + [#] + [F2]: Address 2 [*] + [#] + [F3]: Address 3 [*] + [#] + [F4]: Address 4
13. RESET Key
Clear the preset position: [RESET] + Number key (0-9)
14. PTZ Control Keys
PTZ moved according to the arrow indicates
15. MENU Key
Enter or exit OSD menu
16. BACKLIGHT Key
Backlight ON/OFF: Press repeatedly to enable or disable the backlight compensation NOTE: ●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
[*] + [#] + [1]: OSD menu default English [*] + [#] + [3]: OSD menu default Chinese [*] + [#] + [4]: Display current IP address [*] + [#] + [6]: Quickly recover the default [*] + [#] + [8]: Display the camera version [*] + [#] + [9]: Quickly set up inversion [*] + [#] + [MANUAL]: Restore to default IP address

5. GUI Settings

5.1. Menu

To access the feature menu on the screen, simply press the [MENU] key. Navigate through the options using the arrow keys until you find the desired item. Once selected, press the [HOME] key to confirm and enter the corresponding sub-menu.

FEATURE MENU	
▶	Exposure
	Color
	Image
	P/T/Z
	Noise Reduction
	Setup
	Communication
	Setup
	Restore Default
	[HOME] Enter
	[Return] Exit

5.2. Exposure

Go to the feature menu, choose [Exposure], and press [HOME] to access the exposure settings.

FEATURE EXPOSURE		
▶	Mode	Auto
	ExpCompMode	Off
	Backlight	Off
	Gain Limit	10
	Anti-Flicker	50Hz
	Meter	Average
	DRC	1
	▲▼Select Item	
	◄►Change Value	
	[Return] Back	

Mode options: Auto, Manual, SAE, AAE, Bright.
Exposure Compensation Mode: On, Off (Only in Auto mode).
Exposure Compensation: -7~7
Backlight: On, Off (Only in Auto mode).

Bright: 0~17 (Only in Bright mode).
Gain Limit: 0~15 (Only in Auto, SAE, AAE, Bright mode).
Anti-Flicker: Off, 50Hz, 60Hz (Effective 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 (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: 0~15 (Effective only in Manual mode).
DRC: 0~8.

5.3. Color

To access the color feature page from the menu, simply navigate to [Color] using the cursor, then press [HOME] to confirm your selection and enter the color settings page.

FEATURE COLOR		
▶	WB Mode	Auto
	RG Tuning	0
	BG Tuning	+1
	Saturation	100%
	Hue	7
	▲▼Select Item	
	◄►Change Value	
	[Return] Back	

WB Mode: Auto, Indoor, Outdoor, One Push, Manual, VAR.
RG: 0~255 (Only in Manual mode).
BG: 0~255 (Only in Manual mode).
RG Tuning: -10~+10 (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 (Only in VAR mode).

5.4. Image

When on the feature menu page, select [Image] using the cursor, then press [HOME] to confirm and enter the image settings page as depicted below.

FEATURE IMAGE		
▶	Luminance	7
	Contrast	7
	Sharpness	6
	Flip-H	Off
	Flip-V	Off
	B&W-Mode	Off
	Style	Default
	▲▼Select Item	
	◄►Change Value	
	[Return] 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.

5.5. Feature P/T/Z

On the feature menu page, navigate the cursor to [P/T/Z] and press [HOME] to enter the P/T/Z feature page, as demonstrated below.

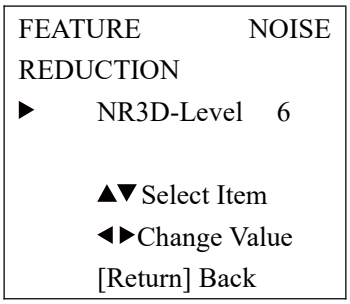
FEATURE P/T/Z		
▶	SpeedByZoom	On
	AF-Zone	Center
	AF-Sense	Normal
	L/R Set	STD
	Display Info	On
	Image Freeze	Off
	Digital Zoom	Off
	Call Preset	18
	Speed	
	Pre Zoom Speed	5
	▲▼Select Item	
	◄►Change Value	
	[Return] Back	

SpeedByZoom: On, Off.

Auto Focus Zone: Front, Top, Center, Bottom.
Auto Focus Sensitivity: Low, Normal, High.
Left/Right Set: Standard, Reverse.
Display Information: On, Off.
Image Freeze: On, Off.
Digital Zoom: Off, 2x, 4x, 8x, 16x.
Call Preset Speed: 1~24.
Pre Zoom Speed: 0~7.

5.6. Noise Reduction

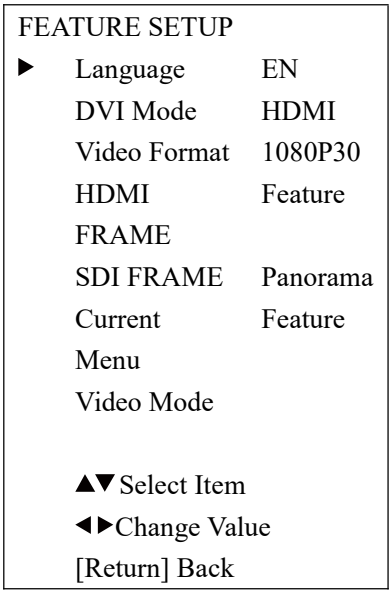
Navigate to [Noise Reduction] in the feature menu, then press [HOME] to enter the noise reduction settings page.



NR3D-Level: Off, 1~9.

5.7. Setup

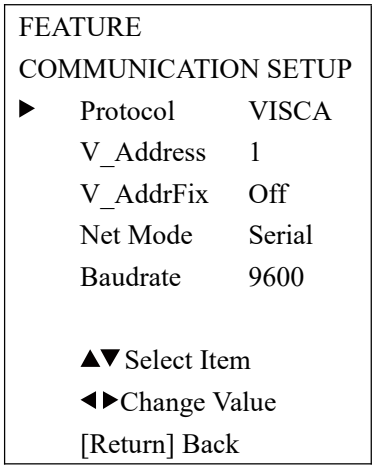
To access the setup feature page from the menu, simply move the cursor to [Setup] and press [HOME] to confirm, as demonstrated below.



Language: EN, Chinese, Russian.
DVI Mode: HDMI, DVI.
Video Format: 1080P30, 4KP29.97, 4KP25, 4KP30, 1080P25.
HDMI FRAME: Feature, Panorama.
SDI FRAME: Feature, Panorama.
Current Menu: Feature, Panorama.
Video Mode: SDI-3G Mode (LEVEL-A, LEVEL-B).

5.8. Communication Setup

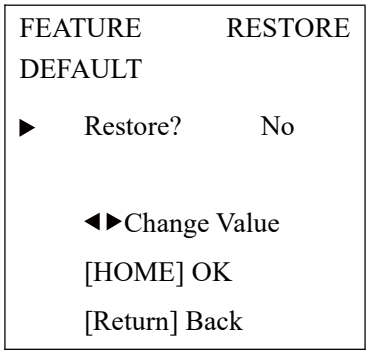
To access the communication setup feature page from the menu, navigate the cursor to [Communication Setup], then press [HOME] to confirm and enter the communication setup page as displayed below.



Protocol: Auto, VISCA, PELCO-D, PELCO-P.
V_Address: 1~7 (Effective only in Auto, VISCA protocol).
P_D_Address: 0~254 (Effective only in Auto, PELCO-D protocol).
P_P_Address: 0~31 (Effective only in Auto, PELCO-P protocol).
V_AddrFix: On, Off (Effective only in Auto, VISCA protocol).
Net Mode: Serial, Paral.
Baudrate: 2400, 4800, 9600, 38400.

5.9. Restore Default

To enter the restore default page from the feature menu, simply move the cursor to [Restore Default] and press [HOME] to confirm, as illustrated below.



Restore: Yes, No.

Note

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

6. WEB Settings

6.1. Access Camera

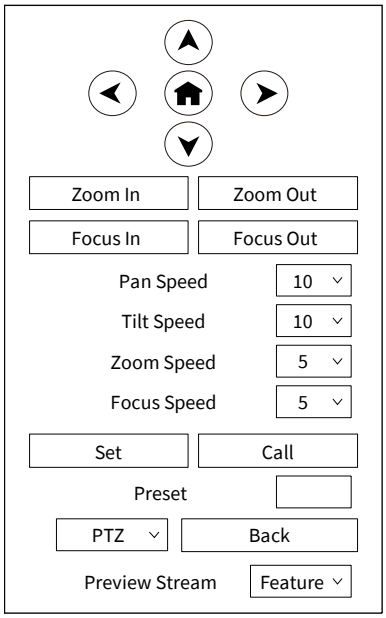
Access the camera's IP address through your browser. For the teacher's camera, type in 192.168.100.82; for the student's camera, use 192.168.100.92. This will prompt a login window where you need to input the default username ("admin") and password ("admin"). Once logged in, you'll gain access to the camera's interface. Remember to change the default credentials for security purposes after your initial login.it will show as below:

6.2. Control Camera

All pages include two menu bars:
Real Time Monitoring: Video image displaying with function buttons.
Parameter Setup: Parameter configurating.
Video Viewing Window
The video viewing window size matches the video resolution. Bigger resolutions mean larger playing areas. Double-click to toggle full-screen mode and double-click again to return to the original size, offering convenient flexibility.
Status bar in viewing window shown as below:

 Full screen switch button.

6.3. PTZ Setup



1) Pan and Tilt Control

The directional arrows and HOME button enable manual control of the camera's movement, allowing you to navigate it to your desired position.

2) Zoom

Zoom buttons adjust camera view: widen or narrow space perspective.

3) Focus

Focus In and Focus Out buttons fine-tune camera focus, helpful if auto focus encounters challenges with objects.

4) PTZ Speeds

Pan speed rate ranges from 1 to 24, Tilt speed rate ranges from 1 to 20, and Zoom and Focus speed rate ranges from 1 to 7.

5) PTZ Presets

Set presets for quick recall by saving positions when the PTZ turns to desired locations.

Type a number (0~254) into the preset box and click “Set” button to save.

To return the PTZ to a preset position, input the preset number and click the "Call" button after the PTZ has moved to another position.

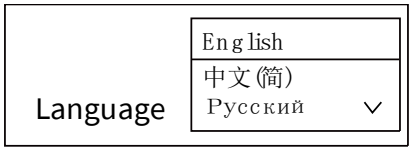
6) PTZ/OSD

Hover over the dropdown menu, choose "OSD," and click to open the on-screen menu for interface adjustments. Note that in follow mode, the OSD menu won't display on the web page, and direction keys are disabled.

7) Preview Stream

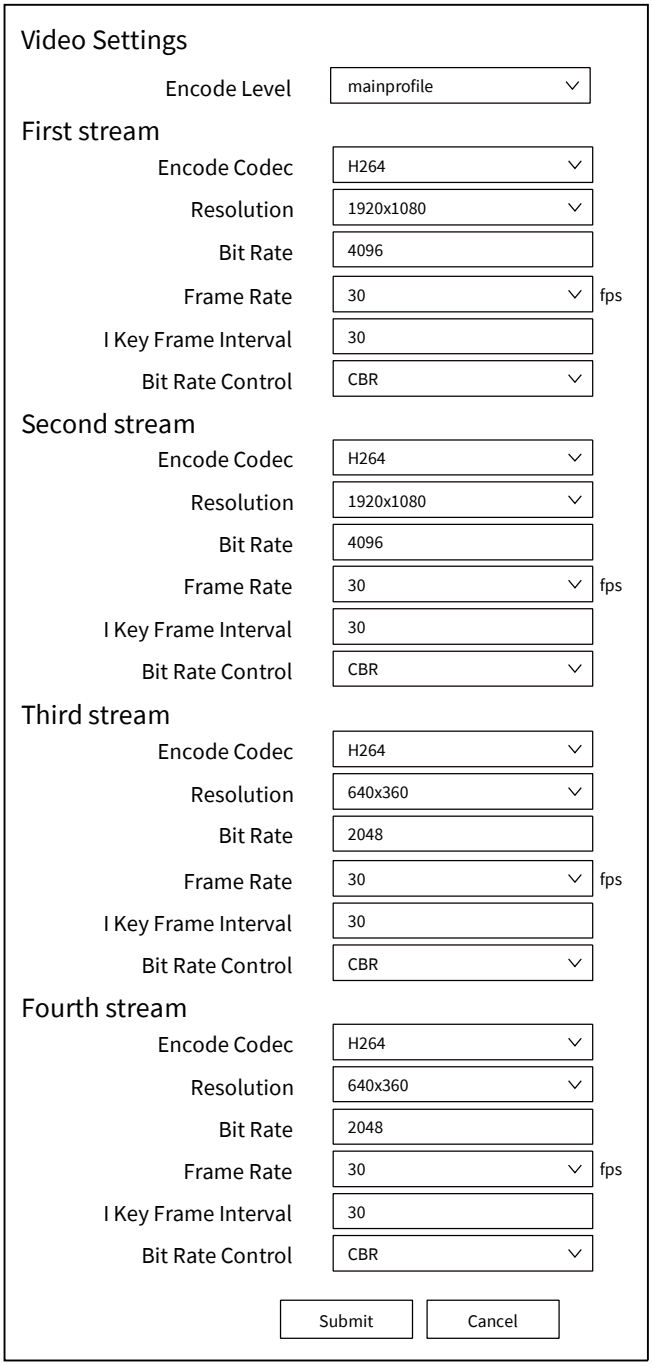
Choose "Feature" or "Panorama" to preview the corresponding camera mode.

Language Selection



Click to select your preferred language: "English," "Simplified Chinese," or "Russian" to change the language of the webpage.

6.4. Video Settings



1) Encode Level

Support main profile and high profile.

2) Encode Codec

Support H264, H265 and MJPEG.

3) Resolution

The first and second streams support resolutions including 3840x2160, 1920x1080, 1280x720, 1024x576, 720x480, 720x408, 640x480, and 640x360. For the third and fourth streams, resolutions are limited to 720x480, 720x408, 640x360, 480x320, and 320x240. Higher resolutions yield clearer images but require more network bandwidth due to larger code streams.

4) Bit Rate

You can customize the bit rate, with higher rates resulting in clearer images. However, it's crucial to consider network bandwidth. If the bandwidth is limited and the bit rate is set too high, the video stream may not transmit properly, leading to a worsened visual experience. Balancing bit rate and network bandwidth is essential for optimal video transmission.

5) Frame Rate

You can adjust the frame rate, where higher rates result in smoother images. However, lower frame rates may introduce a sense of stuttering or flickering in the video.

6) I Key Frame Interval

Setting the interval between two I frames impacts the responsiveness when initially opening an image. A larger interval may lead to slower response times.

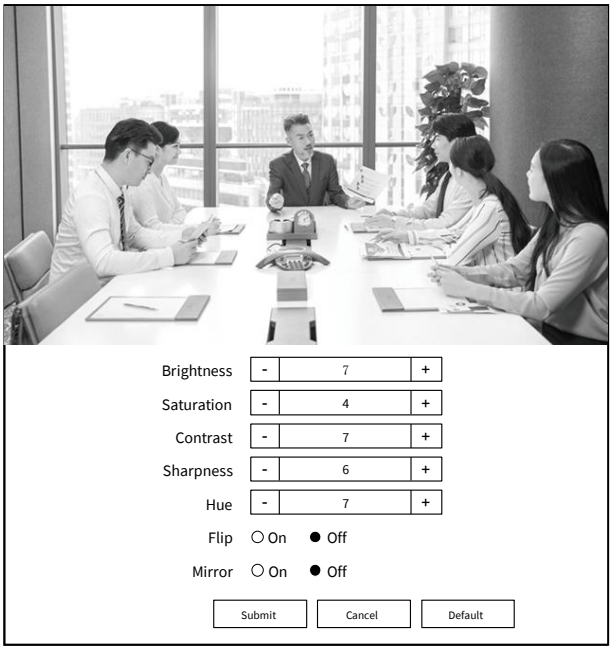
7) Bit Rate Control

Two modes for bit rate control:

CBR (Constant Bit Rate) means the video coder maintains a steady encoding speed.

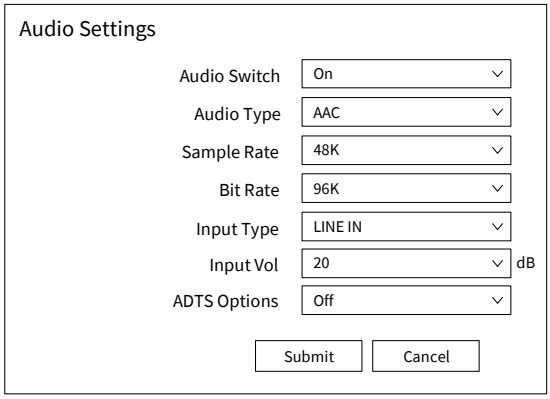
VBR (Variable Bit Rate) adjusts encoding speed to optimize image quality based on preset parameters.

6.5. Image Settings



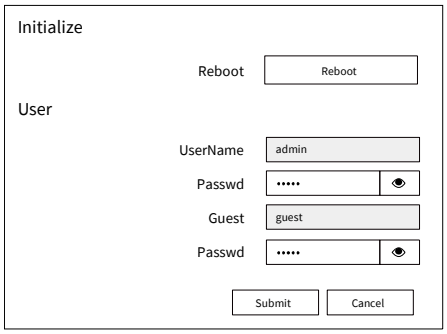
1)Brightness Brightness of image: 0~14 (Default value is 7).
2)Saturation Saturation of image: 0~14 (Default value is 4).
3)Contrast Contrast of image: 0~14 (Default value is 7).
4)Sharpness Sharpness of image: 0~11 (Default value is 6).
5)Hue Hue of image: 0~14 (Default value is 7).
6)Flip & Mirror Turn On/Off the Flip function.Turn On/Off the Mirror function.

6.6. Audio Settings



1)Audio Switch
Turn On/Off the audio switch.
2)Audio Type
Audio type AAC.
3)Sample Rate
Sample rate 44.1K or 48K.
4)Bit Rate
Bit rate 48K, 64K, 96K or 128K.
5)Input Type
Input type LINE IN or MIC IN.
6)Input Vol
Select the volume value to control the channel volume.
7)ADTS Options
Options: On/Off.

6.7. System Settings



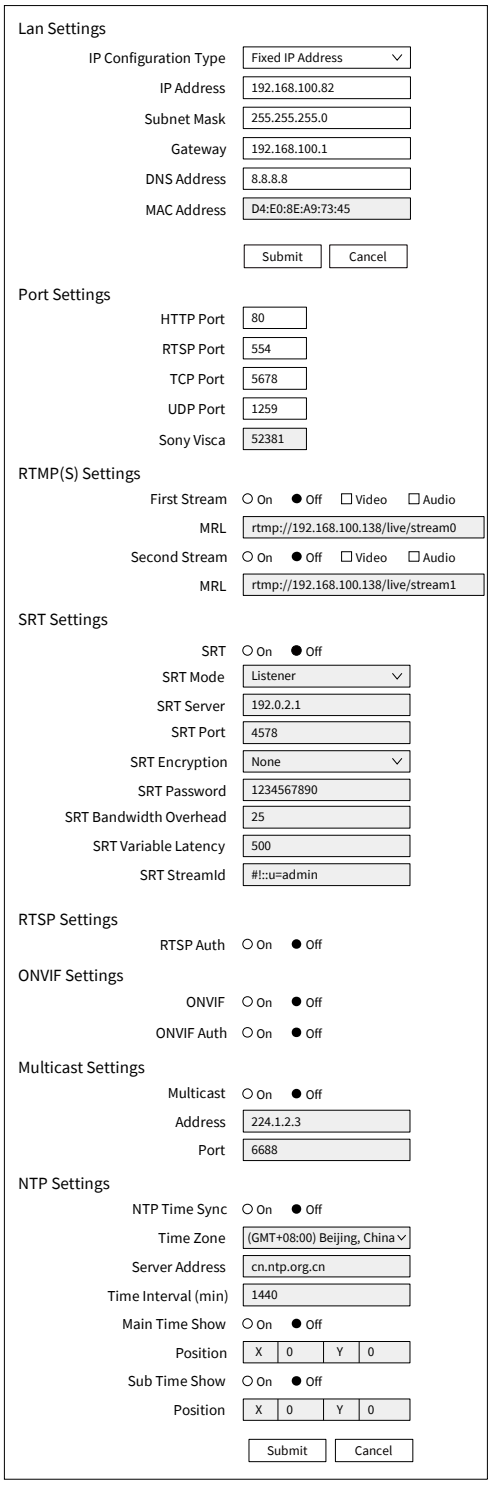
1) Reboot

Click “Reboot” to restart system.

2) Username and Password

Change the password for both the username and guest accounts using only letters and numbers, with a maximum length of 32 characters.

6.8. Network Settings



1) Lan Settings

Default teacher camera IP: 192.168.100.82.Default student camera IP: 192.168.100.92.

The MAC address cannot be modified.

2) Port Settings

HTTP Port

The IP address identifies a network device, and various network programs use specific network ports for data transmission. Here, you can set the port for the WEB SERVER program, ensuring it matches the port number during port mapping (default is 80).RTSP Port Set up the RTSP port, default is 554.TCP Port Set up the TCP port, default is 5678.UDP Port Set up the UDP port, default is 1259.Sony Visca Sony Visca 52381.

3) RTMP(S) Settings

Configure 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" to apply changes without restarting.

4) SRT Settings

Turn On/Off and configure the following settings: SRT Mode, SRT Server, SRT Port, SRT Encryption, SRT Password, SRT Bandwidth Overhead, SRT Variable Latency, and SRT StreamID.

5) RTSP Settings

Turn On/Off the RTSP Auth.

6) ONVIF Settings

Turn On/Off the ONVIF and ONVIF Auth.

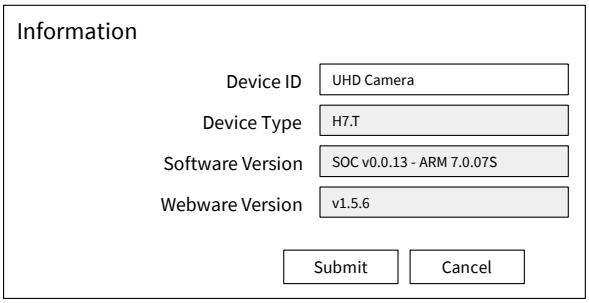
7) Multicast Settings

Enable or disable Multicast and configure the Multicast Address (default is 224.1.2.3) and Port (default is 6688 for the first stream and 6690 for the second stream).

8) NTP Settings

Turn On/Off NTP time sync and select Main time show and Sub time show options. Choose the Time Zone and configure the Server address, Time interval, and Time Show Position for the two streams.

6.9. Device Information



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

Note

WEB interface and device information may change without prior notice.

7. Troubleshooting

Image

●The monitor displays no image.

1) Confirm the camera power supply is connected and the voltage is stable, indicated by the power light being consistently on.

2) Power off the switch to initiate the camera self-test.

3) Verify the correct connection of the video platform and TV cables.

●Image jitters occur after the camera is correctly connected.

1) Ensure the camera installation is stable.

2) Check for any vibrating machinery or objects near the camera.

●No video image appears in the browser.

The camera does not support IE browser or IE core browser. It's recommended to use Google Chrome, Firefox, or Microsoft Edge browsers for normal display of the video image.Unable to access through the browser

1) Use a PC to test network access, ensuring network connectivity between the PC and camera by pinging each other.

2) Disconnect the network, connect the camera directly to the PC, and reset the PC's IP address if needed.

3) Verify correct IP address, subnet mask, and gateway settings.

4) Check for MAC address conflicts.

5) Confirm if the web port is modified; default setting is 80.

●Forget the IP address or login password

Default teacher camera IP: 192.168.100.82.

Default student camera IP: 192.168.100.92.

Default username: admin.

Default password: admin.

Control

●Remote control does not work

1) Check and replace batteries with new ones.

2) Ensure the camera's working mode is correct.

3) Verify that the address key of the remote control matches the camera.

●Serial port cannot control

1) Confirm consistency of the camera's protocol, address, and bit rate.

2) Ensure the control cable is securely connected.