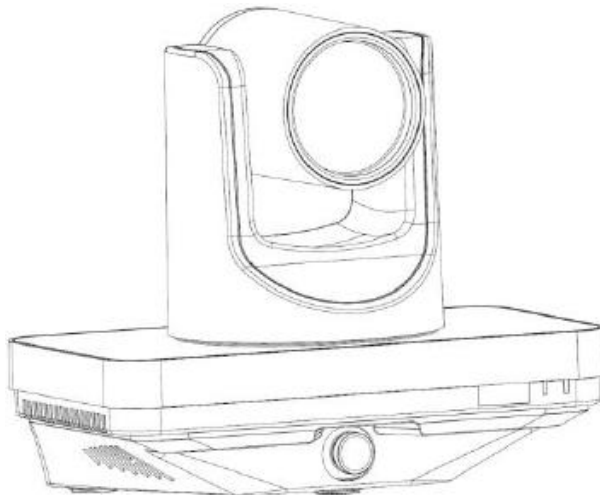




# VHD-V800

## User manual V1.2



### ValueHD Corporation

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## Preface :

Thank you for using the company's integrated high-definition intelligent teaching tracking camera.

This manual details the general principles and methods of the functions of the camera, the installation and operation of the camera. Before installing and using the user, please read in detail.

## important :

In order to prevent this product or any other product connected to it from being damaged, this product can only be used within the specified range:

**WARNING: To prevent fire or electric shock, do not subject the unit to rain or moisture**

To prevent electric shock

Do not open the case; only by qualified technical staff to perform the installation and maintenance

The temperature is right

Do not use it beyond the defined temperature, humidity, or power supply specifications

Carefully scrub

When cleaning the camera lens, wipe it with a dry soft cloth. If the dirt is severe, wipe it with a mild detergent.

Do not use a strong or corrosive cleaning agent, so as not to scratch the lens, affecting the image effect.



## Note

**This is a Class A product. In the home environment, this product may cause radio interference, in this case, the user needs to take appropriate measures.**

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## Precautions

- **Electrical safety**

The installation and use of this product must strictly comply with local electrical safety standards.

- **Carefully transport**

Transport, storage and installation process to prevent heavy pressure, severe vibration, soak damage to the product.

- **Power polarity**

This product uses DC +12 V power supply, the maximum current of 2.5A, power plug polarity as shown below.



- **Careful installation**

Do not catch the camera head to move the camera. Do not use the hand to rotate the camera's head, otherwise it may cause the machine

Mechanical failure.

This product should be placed on a smooth desktop or other level, the product can not be tilted to install;

The product is made of organic material, is strictly prohibited and may cause corrosion of the shell of a variety of liquid, gas or solid material contact;

The installation should ensure that there is no obstacle in the scope of rotation.

Do not power on until you have completed all installation.

- **Do not disassemble**

This product does not have the user to repair the parts, due to user damage caused by demolition does not belong to the scope of warranty.

### **Attention**

**Electromagnetic fields at specific frequencies may affect the image of the unit!**

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## Product Feature

- **Integrated design**

Integrated design, can also output 5 high-definition 1080P (close-up machine 3, panoramic machine 2) video. Students track with

- **Lens can be replaced**

Panorama lens can be replaced, compatible with C / CS interface lens, easy to cope with different sizes of classroom needs.

- **Lens angle adjustable**

Panorama machine lens angle can be adjusted up and down ( $-25^{\circ} \sim +15^{\circ}$ ), greatly facilitate the installation and commissioning.

- **Efficient tracking**

Built-in leading image recognition and tracking algorithm, without any auxiliary positioning camera or tracking the host can be achieved with a smooth natural Track effect.

- **Video style consistent**

Panorama machine and close-up machine using the same image processing program to ensure that the two image output brightness, color, style, etc. consistent.

- **Configuration is simple**

Simple tracking configuration, directly through the network port configuration, only need to configure the general parameters to complete, substantial savings in engineering debugging time with cost.

- **72.5° wide-angle lens + 32x digital zoom**

The close-up camera features a 72.5° high-quality ultra-wide focus lens with an optical zoom of 12x and supports 32x digital zoom (optional).

- **H.265 encoding**

Support H.265 encoding video conferencing camera, can achieve full HD 1080p ultra-low bandwidth transmission.

- **1080P Full HD**

Using a new generation of Panasonic 1 / 2.7 inch, 2.07 million effective pixels of high-quality HD CMOS sensor, can achieve the largest

1920x1080 high-resolution high-quality images.

Ultra frame rate

1080P output frame rate up to 60fps

- **Ultra frame rate**

1080P output frame rate up to 60fps

- **AAC audio coding**

Features AAC audio encoding, better sound quality, less bandwidth.

- **Local storage**

Close-up machine to support the local storage function, no NVR can be realized U disk local direct recording tracking video.

- **Low illumination**

Ultra-high noise ratio of the new CMOS image sensor can effectively reduce the low noise in the case of image noise, while the application of 2D

And 3D noise reduction algorithm, significantly reducing the image noise, even ultra-low light conditions, still keep the screen clean and clear, the image signal to noise ratio up to 55dB or more.

## Product Spec

<b>Product Model</b>	VHD-V800
<b>Product Name</b>	Integration of high - definition intelligent teaching tracking camera
<b>Auto Tracking Camera</b>	
Video System	HD: 1080p/60, 1080p/50, 1080i/60, 1080i/50, 1080p/30, 1080p/25, 720p/60, 720p/50, 720p/30, 720p/25
Senser	1/2.7 inch, CMOS, Effective Pixels: 2.07 Million
Scanning	Progressive
Lens	12x, f3.5mm ~ 42.3mm, F1.8 ~ F2.8
Digital Zoom	32x (Optional)
Low Light	0.5Lux @ (F1.8, AGC ON)
Shutter	1/30s ~ 1/10000s
White Balance	Automatic, indoor, outdoor, one-button, manual
Backlight	Support
Digital noise reduction	2D&3DDigital noise reduction
Video S/N	≥55dB
Horizontal Angle View	72.5° ~ 6.9°
Vertical Angle 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
Preset Number	255

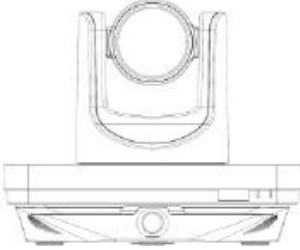
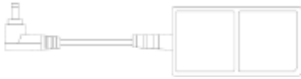



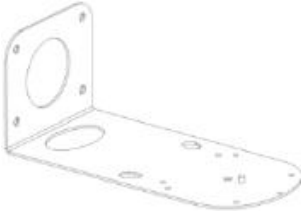



Preset Accuray	0.1°
<b>Panorama camera</b>	
Video System	1080p/60, 1080p/50, 1080i/60, 1080i/50, 1080p/30, 1080p/25, 720p/60, 720p/50
Senser	1/2.7 inch, CMOS, Effective Pixels: 2.07 Million
Scanning	Scanning
Lens	12x, f3.5mm ~ 42.3mm, F1.8 ~ F2.8
Automatic iris	DC
Low Light	0.05 Lux @ (F1.8, AGC ON)
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	ICR
Digital noise reduction	2D, 3D Digital noise reduction
BLC	Support
Image Freeze	Support
Ceiling Installation	Support
<b>Nework Feature</b>	
Video Compression	H.265 / H.264 / MJPEG
Video Stream	Main Stream, Sub Stream
Main Stream Resolution	1920x1080,1280x720,1024x576,960x540,640x480,640x360
Sub Stream Resolution	1280x720,1024x576,720x576(50Hz support), 720x480 (60Hz support),720x408, 640x360,480x270,320x240,320x180
Video Bit Rate	32Kbps ~20480Kbps
Bit Rate Control	Variable bit rate, fixed bit rate
Frame Rate	50Hz: 1fps ~ 50fps, 60Hz: 1fps ~ 60fps
Audio Compression	AAC



Audio Bit Rate	96Kbps, 128Kbps, 256Kbps
Support Protocols	TCP/IP, HTTP, RTSP, RTMP, Onvif, DHCP, 组播等
<b>Input/Output Interface</b>	
HD Output	1xHDMI: Version 1.3
	2x3G-SDI: BNC type, 800mVp-p, 75Ω, Along to SMPTE 424M standard
Network Interface	2xRJ45: 10M/100M Ethernet Interface
Audio Interface	1-ch: 3.5mm Audio Interface, Line In
USB	1xUSB2.0: Type A female jack
Communication Interface	1xRS232 In: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA/Pelco-D/Pelco-P (for close-up camera)
	1xRS232 Out: 8pin Min DIN, Max Distance: 30m, VISCA network use only(for close-up camera)
	1xRS232 Out: 8pin Min DIN, Max Distance: 30m, use for control close-up camera(for panorama camera)
	1xRS485: 2pin Phoenix Port, Max Distance: 1200m, Protocol: VISCA/Pelco-D/Pelco-P(for close-up camera)
Power Jack	JEITA type (DC IN 12V)
<b>Generic Specification</b>	
Input Voltage	DC 12V
Current Consumption	1.5A (Max)
Operating Temperature	-10°C ~ 40°C (14°F ~ 104°F)
Storage Temperature	-40°C ~ 60°C (-40°F ~ 140°F)
Power Consumption	18W (Max)
MTBF	>30000h
Size	240mm x 144mm x 200mm
Net Weight	2.0Kg

## Standard accessories

**When opening the package, check and confirm all attachments that should be provided**

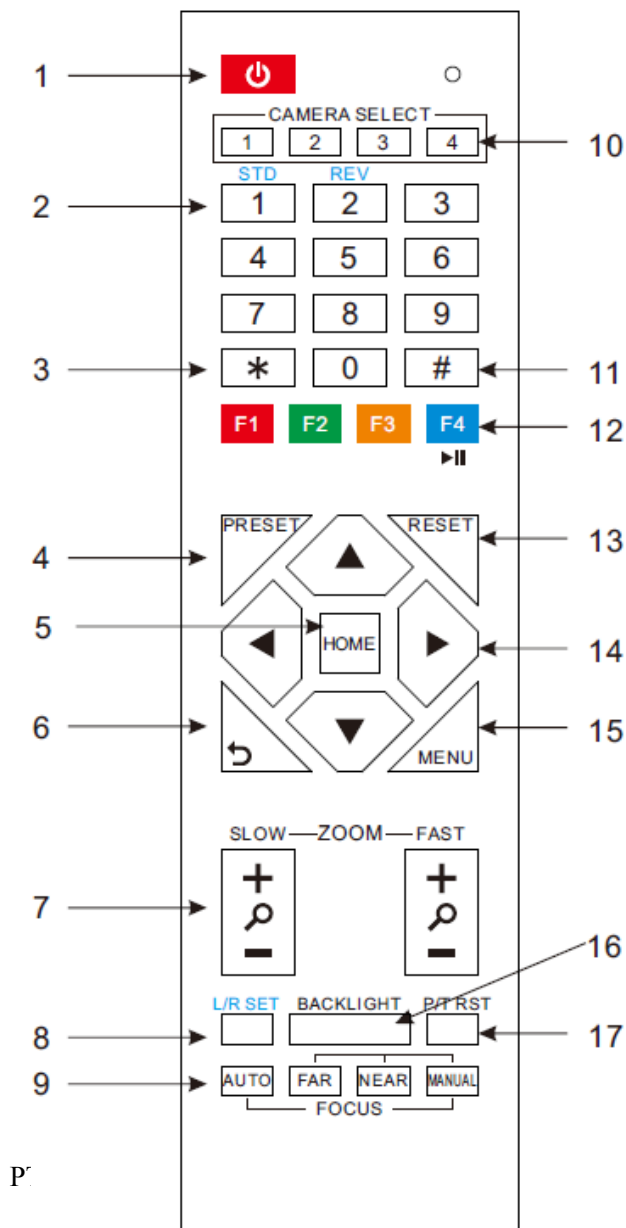
 <p>V800 integrated HD intelligent teaching tracking camera x1</p>	 <p>Power adapter, camera power supply x1</p>	 <p>Remote control, control camera x1</p>
 <p>AC power extension cord, camera power supply x1</p>	 <p>RS232 serial cable, connecting the camera and computer x1</p>	 <p>Wall mount, fixed tracking machine x1</p>
 <p>1/4 inch screw, fixed tracking machine x1</p>	 <p>Allen wrench, adjust the panoramic lens x1</p>	 <p>User Manual, Quick Installation Guide x1</p>

### Cable description

1, this product does not contain cable, 3.5mm audio cable, RS-485 cable, HD-SDI cable, HDMI cable, USB cable, please buy it, please refer to the description of the type of cable.

2, the power cord can only extend the 220V end, can not extend 12v DC side.

## Remote Control



### 1. Standby button

Press the camera to enter standby mode and press the camera again to turn it on again.

### 2. Number button

Set Preset or Call Preset

### 3. \* button

Use with other buttons

### 4. set the preset position

Set Preset: Save a preset bit

Set Preset + Numeric Keys (0-9): Set a preset corresponding to the number keys

### 5. PTZ control keys 【HOME】

Press the head back to the middle Position

### 6. return button

Press the OSD menu to return to the previous menu.

### 7. zoom key

Zoom slow: slow the lens wide angle [+] or pull the narrow angle [-]

### 8. set the left and right keys

Press the left and right keys with the set PTZ direction according to the requirements of the PTZ system to the left or right.

Left and right keys +1 (standard): set the PTZ steering and PTZ control in the same direction

Left and right set key +2 (reverse): Set the pan / tilt and pan / tilt control keys in the opposite direction

### 9. focus button

Focusing on the use

【Auto】 button to switch the camera focus mode to auto focus

【Manual】 key to switch the camera focus mode to manual focus

In manual focus mode, you can focus on close objects by pressing [far] to focus on distant objects or [proximal].

### 10, the camera selection key

Select the camera you want to control

#### 11、 # button

Use with other button

### 12. infrared remote control address selection key

【\*】 + 【#】 + 【F1】 : Address 1

【\*】 + 【#】 + 【F2】 : Address 2

【\*】 + 【#】 + 【F3】 : Address 3

【\*】 + 【#】 + 【F4】 : Address 4

### 13, clear the preset button

#### Preset Cancel: Clears a preset bit

Clear Preset + Numeric Key (0-9): Cancel the corresponding Preset or: [\*] + [#] + [Clear Preset] key: Cancel all presets

### 14, PTZ control keys

Press the PTZ to move in the direction indicated by the arrow. Press the [HOME] key to return to the middle position.

### 15, The menu button

Press to enter or exit the OSD menu.

### 16, Backlight compensation key

Backlight ON / OFF: On / Off backlight compensation (cyclic)

(Note: only in the exposure mode is automatically under the effective)

Note: If the subject has a light source behind it, the subject will become dark. In this case, press the

backlight ON / OFF button. To cancel this function, press the backlight ON / OFF key again.

### 17, PTZ reset button

Press the head after the start of self-test

### 18, image freeze function

**Manual freeze:** Press the remote control [F4] button after the image freeze function is turned on, the upper left corner of the image shows "image freeze" characters, characters appear automatically disappear after 5 seconds. If you want to release the freeze again press the 【F4】 key to return to normal, the upper left corner of the image shows "release image freeze" characters, characters appear automatically disappear after 5 seconds.

### Image is frozen when the preset bit is called:

When the Preset bit is set by the OSD menu, when the function is turned on and the preset bit is called, the screen will stay before the preset position until the camera points to the preset After the preset position, the screen can be switched to the preset screen

### 19, shortcut keys set

[\*] + [#] + [1]: Display OSD menu in English

[\*] + [#] + [3]: Display OSD menu in Chinese

[\*] + [#] + [4]: Show IP address

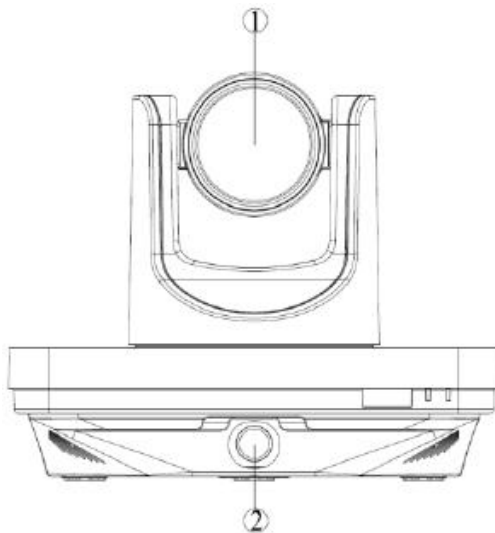
[\*] + [#] + [6]: Quickly restore the default settings

[\*] + [#] + [8]: Show the camera version

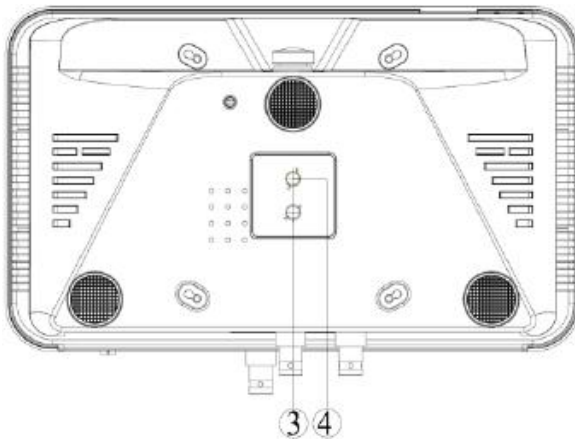
[\*] + [#] + [9]: Quickly set mount mode (flip / normal)

**HOST**

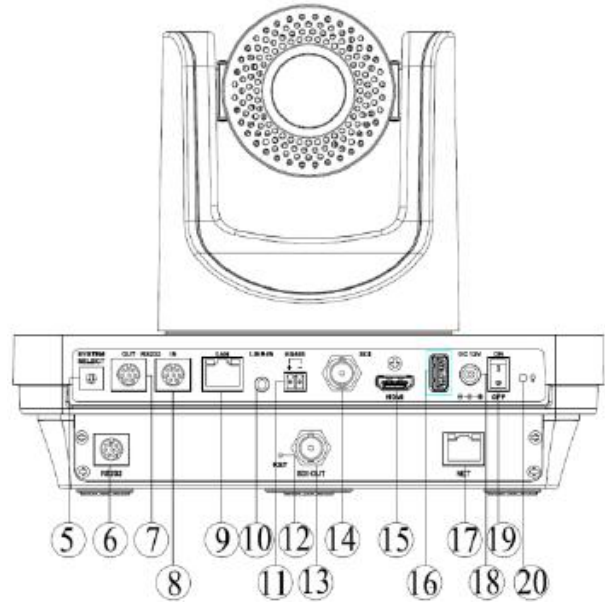
**Introduction to Host Interface**



- 1、Close-up machine
- 2、Panorama machine



- 3、Install the positioning hole
- 4、Install screw holes



- 5、The video system selects the rotary switch
- 6、RS232 OUT interface
- 7、RS232 OUT interface
- 8、RS232 IN interface
- 9、LAN Network interface
- 10、LINE-IN interface
- 11、RS485 interface
- 12、Reset
- 13、SDI OUT interface
- 14、SDI interface
- 15、HDMI interface
- 16、USB2.0 interface
- 17、NET network interface
- 18、power interface
- 19、power switch
- 20、power indicator

**Introduction to host interface function**

<b>Interface NO.</b>	<b>Interface name</b>	<b>Function</b>
5	SYSTEM SELECT	Camera video output system selection
6	RS232 OUT	Use RS232 cable for communication between the camera and the recording and broadcasting host, the camera can output the director command, but also can receive the control command from the recording and broadcasting host
7	RS232 OUT	Use an RS232 cable to connect your camcorder to a camcorder or computer for cascading
8	RS232 IN	Use an RS232 cable to connect your camcorder to a camcorder or computer for cascading
9	LAN	Connect the camera to the network using the network cable to connect the camera to the network
10	LINE-IN	3.5mm audio input interface, used to connect the computer, mobile phones and other voice input source, to receive sound
11	RS485	Not supported (customize)
12	RST	Reset button for resetting the panorama
13	SDI OUT	Use the SDI cable to connect the HD TV to the camera SDI output connector
14	SDI	Use the SDI cable to connect the HD TV to the camera SDI output connector
15	HDMI	Use an HDMI cable to connect the HD TV to the HDMI output connector of your camcorder
16	USB2.0	For external USB devices

17	NET	Network interface, providing a network connection for the camera
18	DC 12V	Connect the power adapter to provide a 12V power supply for the camera

## The setting of video system

The sixteen rotary switches are used to set the format of the output video for the video port (video format). VIDEO SYSTEM			
Switch position	Video format	Switch position	Video format
0	1080p60	8	720p30
1	1080p50	9	720p25
2	1080i60	A	-
3	1080i50	B	-
4	720p60	C	-
5	720p50	D	-
6	1080p30	E	-
7	1080p25	F	-

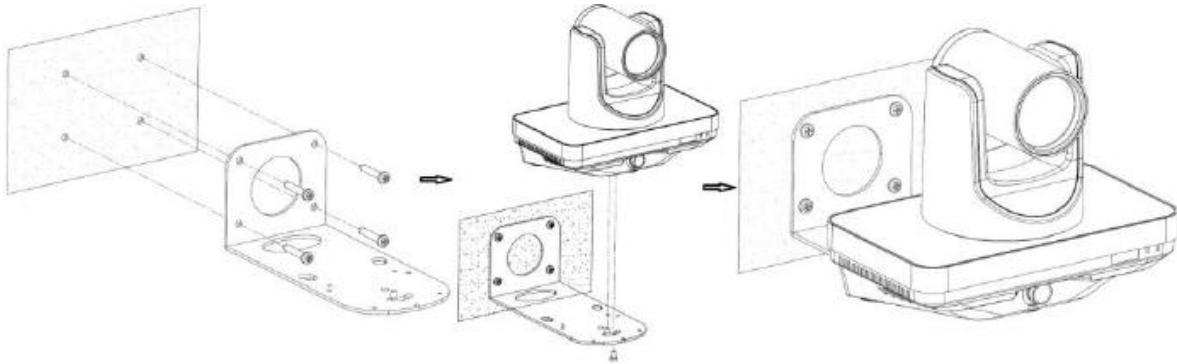
## Note:

- a. After switching the standard dialing, need to restart the camera to take effect.
- b. 720 p30 and 720 p25 only valid when HDMI output.



## Quick installation

### Wall installation



Step 1: Four holes on the wall that correspond to the size and position of the wall mounts, and the wall mounts are fixed to the walls

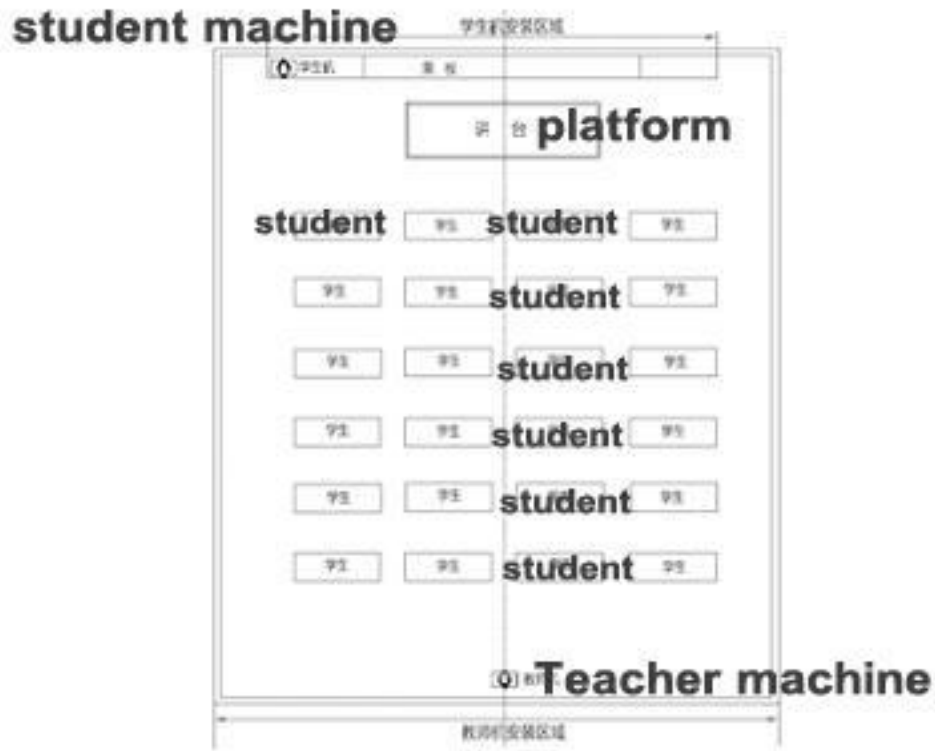
Step 2: Place the alignment holes of the camera at the mounting brackets on the wall mounts

Step 3: Rotate the camera at the appropriate angle and fasten the camera's fastening screws to secure the camera

#### **Note!**

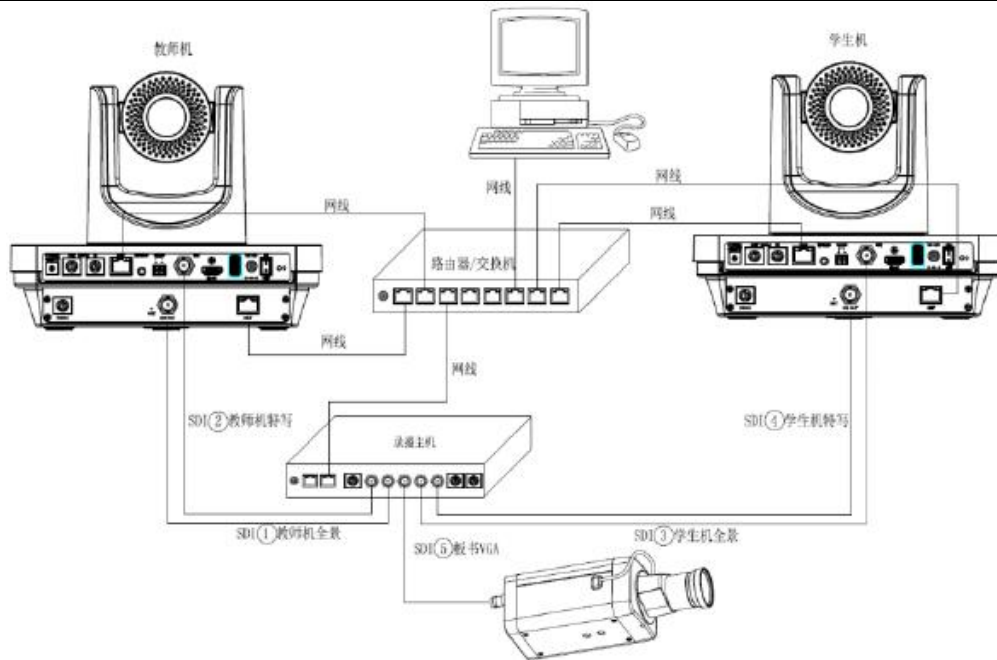
- ✧ **Be sure to install it firmly to ensure that the wall mount and the camera will not fall off;**
- ✧ **wall support and wall bearing capacity to reach more than 5Kg**

### ■ Live camera installation location

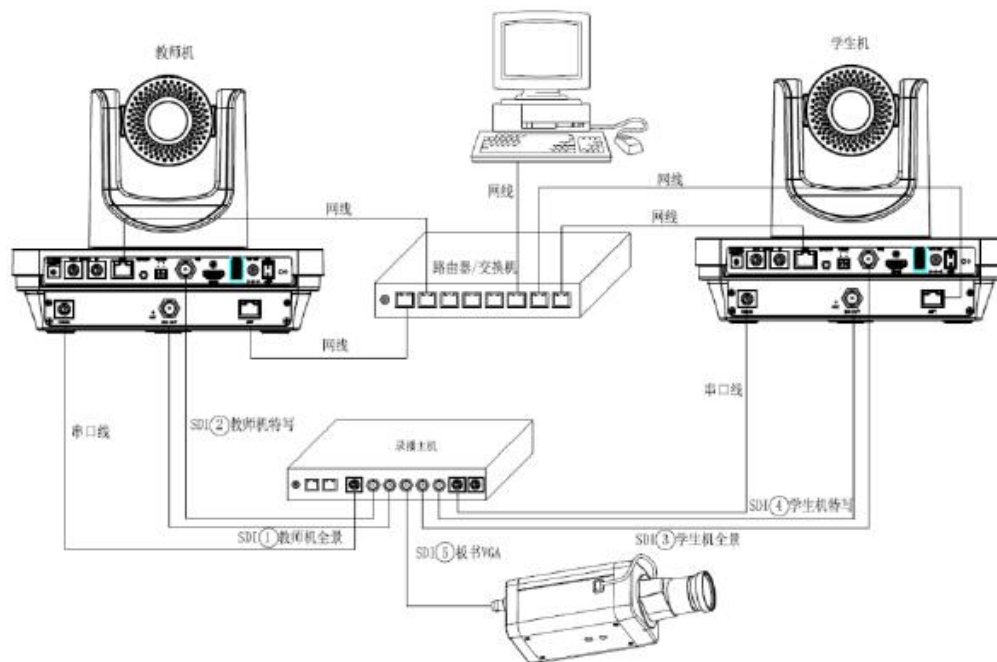


#### Description:

- Teacher installed close to the classroom axis, height of 2.2 meters;
- student machine installed in the classroom before any position, height of 2.2 meters, installed in the recommended location.
- Camera system connection



Network mode system connection diagram



Serial port system connection diagram

**Description:**

- Teacher mode, student machine, board computer, video recorder between the network mode and serial mode support, network mode support protocol: UDP, TCP; serial mode baud rate: 9600
- Teacher machine panorama / teacher tracking, student machine panorama / student machine tracking, blackboard tracking, a total of 5 SDI video signal and video recording host connection

- Teacher machine / student machine / board computer can be sent to track the process of the state code or switch code to the recording and broadcasting host, recording and broadcasting host according to the instructions received video switching action
- teacher machine / student machine / board computer, guide parameters are tracked through the configuration tool configuration

- camera software tracking tool**

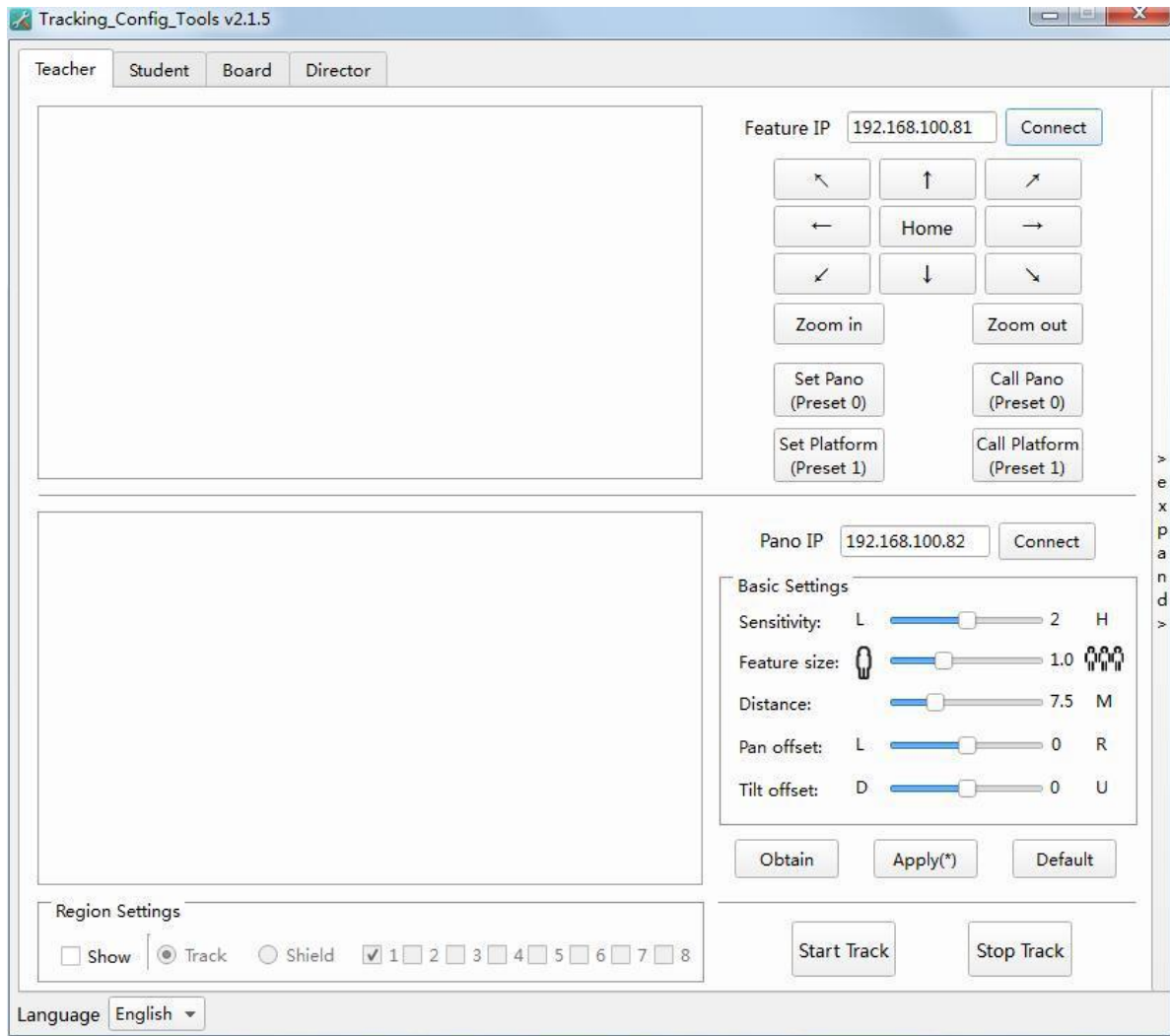
The tracking tool interface is as follows:

**Description::**

- Teacher mode, student machine, board computer, video recorder between the network mode and serial mode support, network mode support protocol: UDP, TCP; serial mode baud rate: 9600
- Teacher machine panorama / teacher tracking, student machine panorama / student machine tracking, blackboard tracking, a total of 5 SDI video signal and video recording host connection
- Teacher machine / student machine / board computer can be sent to track the process of the state code or switch code to the recording and broadcasting host, recording and broadcasting host according to the instructions received video switching action
- Teacher machine / student machine / board computer, guide parameters are tracked through the configuration tool configuration

- **Camera software tracking tool**

The tracking tool interface is as follows:



## Tracking Function

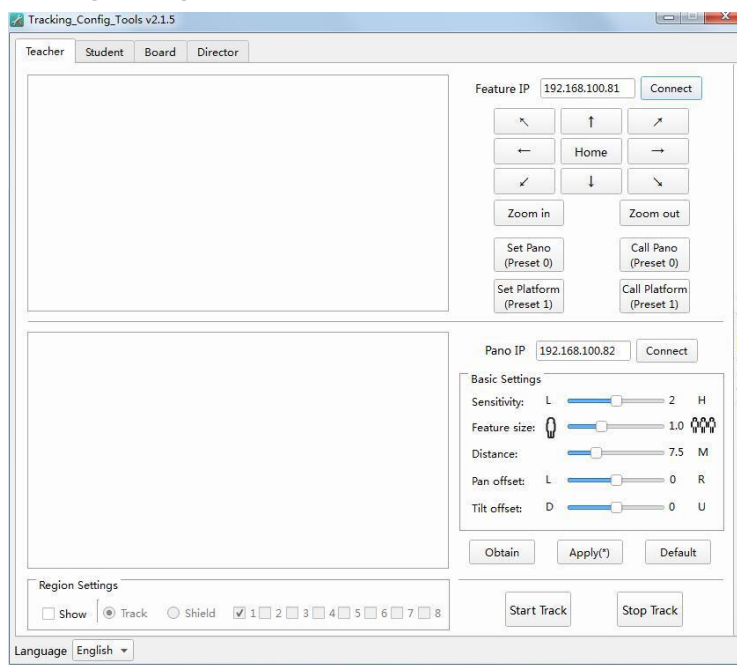
### 1 Tracking Configuration

#### 1.1 Tracking Configuration Tool:



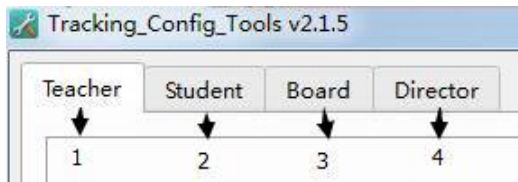
Free installation, mouse double click, you can open the tracking configuration tool.

#### 1.2 Tracking Configuration Interface:



### 2 Tracking parameter configuration

#### 2.1 Tracking parameter configuration selection



##### 1) Teacher-side tracking interface selection

Enter the teacher-side tracking configuration interface

##### 2) Student side tracking interface selection

Go to the student side tracking configuration interface

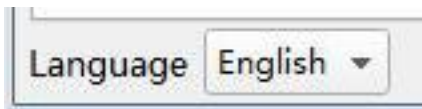
### 3) Board-side tracking interface selection

Go to the board-edge tracking configuration interface Targeting interface selection

### 4) Targeting interface selection

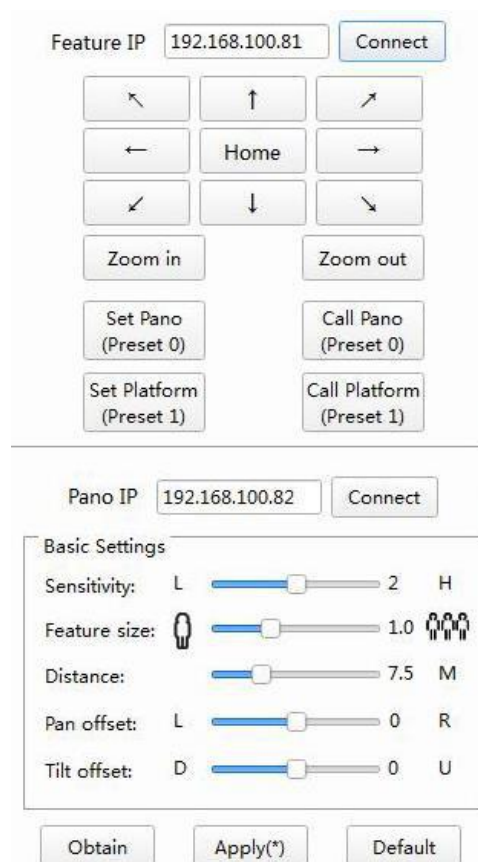
Go to the director-side configuration interface

### 2.2 Language selection



Choice of Chinese or English

### 2.3 Teacher-side tracking parameter configuration



#### 1) Teacher side close-up machine IP address

Enter the IP address of the teacher's special machine and click [Connect] to preview the image

#### 2) Teacher side special set

(Top, bottom, left, right, top left, top right, bottom left, bottom right, home position rotation).

Pull closer to the camera lens

Pull away the camera lens away

Set the panorama bit: Trim pan, that is, preset 0, set the preset 0 with the remote control.

Call the panorama: Call the Trim Scene.

Set the station bit: close-up station, that is, preset 1, the remote control can be used to set the preset 1.

Call the station bit: call the special machine station.

### **3) Teacher side panorama machine IP address**

Enter the IP address of the teacher's panorama machine and click [Connect] to preview the image

### **4) Teacher-side basic parameter configuration**

Tracking sensitivity: set the trigger to trigger the action range and tracking response speed, optional range 0 to 4, the default value of 2;

Tracking Screen Size: Sets the viewing angle range of the close-up tracking screen. The setting range is 0.5 ~ 2.0, the default value is 1.0;

Distance from the podium: the distance between the teacher's camera and the podium, the range: 3.0 ~ 20.0, the default value of 6 meters;

Horizontal calibration: optional range: -200 ~ +200, negative left to calibration, positive alignment to the right, default: 0;

Vertical calibration: optional range: -200 ~ +200, negative down calibration, positive up alignment, default: 0;

### **5) Teacher-side advanced parameter configuration**

Click the sidebar, and click "Expand" to enter the advanced parameter configuration options



The screenshot displays a vertical stack of configuration panels for a camera system:

- Pano Lens Pos Calibration:** Includes a checkbox for "Show calibration cross", "Reset", and "Calibration" buttons.
- Navigate Key Action:** Features radio buttons for "PTZ mode" (selected) and "Menu mode", along with "Feature" and "Menu" buttons.
- Target Lost Action:** Contains radio buttons for "None action", "Pano(Preset 0)" (selected), and "Platform(Preset 1)", plus a "Timeout" slider set to 3.
- Track Settings:** Lists checkboxes for "Tracking on starting up", "Auto zoom", "Disable AF when tracking", "Vertical tracking", and "All-process tracking".
- Param Backup:** Includes "Export", "Open" (with a file input field), and "Import" buttons.
- Version Info:** Shows "Feature Info: SOC" and "Pano Info: SOC".

**Panorama lens position calibration:** Check the "Show Verification Cross", the Close-up / Panorama preview image display the check icon, and control it up and down by the PTZ to ensure that the center of the image is coincident with the center of the panorama image, and then click [Check] To achieve the panorama lens calibration; click [reset], can return to the current calibration location. .

**Navigation key function:** You can select PTZ mode or menu mode. In the menu mode, select [Close] or [Panorama], and click the [Menu] button, you can set the special machine's OSD menu; in PTZ mode, you can manually control the PTZ.

**Target lost action:** Set the action of the special feature after the loss of the target, you can choose: no action, the panorama (preset 0), station bit (preset 1);

Timeout time range: 0-15s, default: 3s.

**Tracking settings:** Set the teacher side of the special machine's work mode, you can choose: boot tracking, auto zoom, tracking, non-focus, vertical movement, tracking five working mode.

**Parameter backup:** Used to import and export the configuration parameters of the writer, simplifying the configuration tasks for the same scene.

**Version Information:** Displays the version information of the writer and panorama.

#### 6) Set the shield area



Click [Display] to display the current configuration tracking area and mask area in the preview image.

Select the [tracking area], the left mouse button click on the preview image, drag any direction, set the tracking area;

Select the "shield area", check the "√" open the mask to enable, to complete the mask settings; cancel "√" close the mask to enable, and hide the shield area; shield area support 8;

#### 7) Turn on tracking



Click **【Application (\*)】**, display as **【Application】**, the configuration parameters take effect!

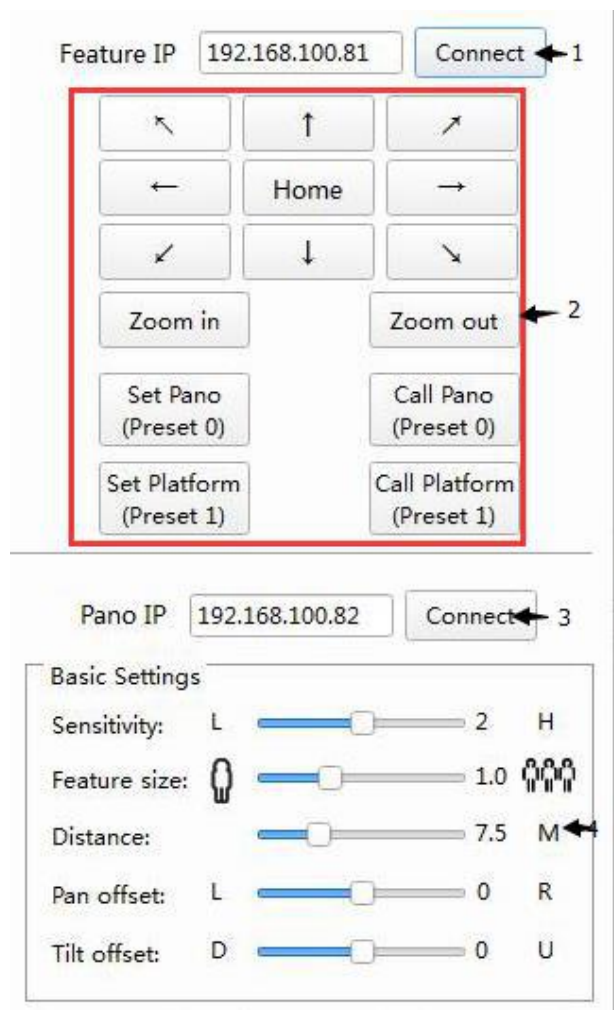
Click **【Get】** to get the current camera configuration parameters;

Click [Default] to restore the default configuration parameters;

Click **【Open Tracking】**, the camera enters the automatic tracking state, you can turn off the tracking configuration tool;

Click [stop tracking], the camera enters the stop tracking state, you can configure the tracking parameters;

### 2.4 Student side tracking parameter configuration



#### 1) Student side tracking parameter configuration

Refer to the teacher side configuration

#### 2) Student side close-up settings

Refer to the teacher side configuration

#### 3) Student end panorama IP address

Refer to the teacher side configuration

#### 4) Student side basic parameter configuration

**Camera mounting height:** Student camera distance from the ground vertical height, set the range: 1.0 ~ 5.0, the default value of 2.2 meters;

For other parameters please refer to the teacher side configuration;

#### 5) Student advanced parameter configuration

Click the sidebar, and click "Expand" to enter the advanced parameter configuration options

The screenshot displays a settings menu with the following sections:

- Pano Lens Pos Calibration:** Includes a checkbox for "Show calibration cross", "Reset" and "Calibration" buttons.
- Navigate Key Action:** Features radio buttons for "PTZ mode" (selected) and "Menu mode", along with "Feature" and "Menu" buttons.
- Target Lost Action:** Includes radio buttons for "None action", "Pano(Preset 0)" (selected), and "Platform(Preset 1)", plus a "Timeout" slider set to 3 and a "Multi Object" button.
- Track Settings:** Contains checkboxes for "Tracking on starting up" (checked), "Auto zoom" (checked), "Disable AF when tracking", "Vertical tracking", and "All-process tracking".
- Param Backup:** Includes "Export", "Open" (with an input field), and "Import" buttons.
- Version Info:** Shows "Feature Info: SOC" and "Pano Info: SOC".

**Tracking settings:** Set the student side of the camera's work mode, select: boot tracking

For other parameters please refer to the teacher side configuration

#### 6) Set the shield area

The screenshot shows the "Region Settings" window with the following options:

- Checkbox for "Show" (unchecked).
- Radio buttons for "Track" (selected), "Shield", and "Shield" (disabled).
- Eight numbered checkboxes (1-8) for mask area selection, with checkbox 1 checked.

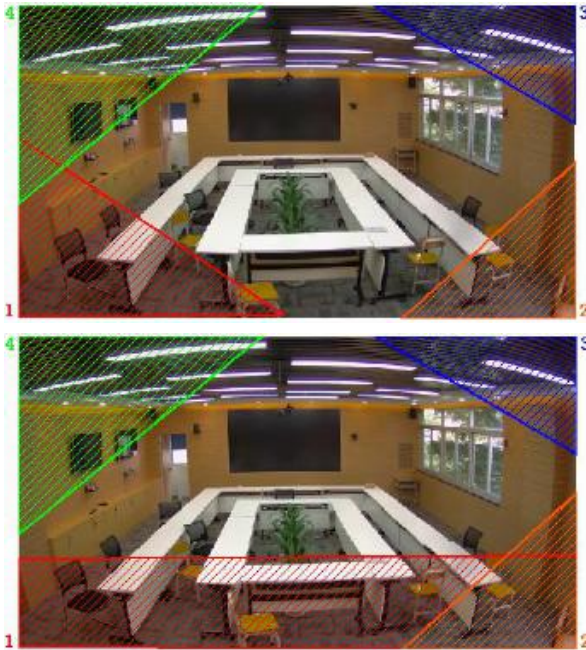
Student cameras do not need to set the tracking area, outside the shield area belongs to the tracking area.

Click [Display] to display the currently configured tracking area and mask area in the preview image.

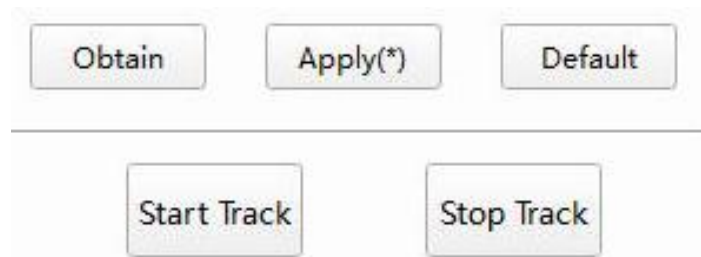
Select the "masked area", check the "✓" open mask area enable, select the mask area to be set; cancel "✓" close the mask to enable, and hide the shield area location; shield area support 4.

**Student side shield area setting method:** The shield area is used to shield the edge of the screen interference source, four shield area number fixed. For example, the starting point of the masked area 1 is located at the left margin of the mask number 1, and the end point is located in the counter-clockwise

neighborhood or on the boundary, as shown in the following figure:



#### 7) Turn on tracking



Click **【Application (\*)】**, display as **【Application】**, the configuration parameters take effect!

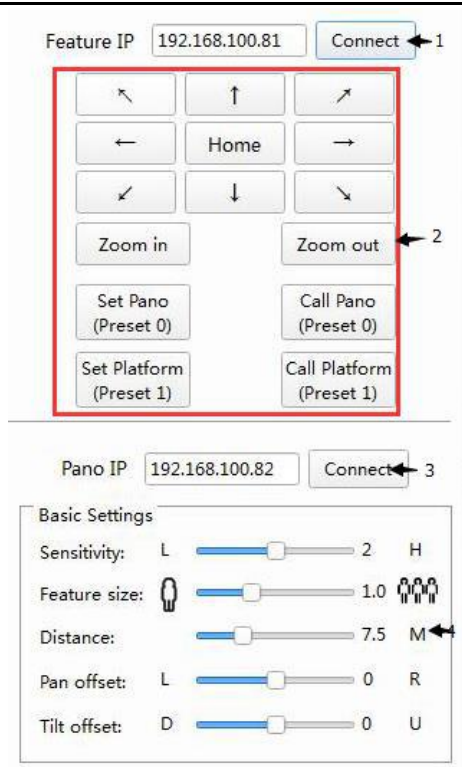
Click **【Get】** to get the current camera configuration parameters;

Click [Default] to restore the default configuration parameters;

Click **【Open Tracking】**, the camera enters the automatic tracking state, you can turn off the tracking configuration tool;

Click [stop tracking], the camera enters the stop tracking state, you can configure the tracking parameters;

#### 2.5 Board-side tracking parameter settings



### 1) Board-side close-up machine IP address

Board-side close-up machine IP address

### 2) Board-side close-up machine settings

Refer to the teacher side configuration

### 3) Panorama Panorama IP address

Panorama IP address

### 4) the basic parameters of the board configuration

**Tracking sensitivity:** Detection of the sensitivity of the blackboard action, set the range: 0 ~ 4, the default value of 0;

**Timeout:** Loss of blackboard action, the delay time after the response;

### 5) Bookboard advanced parameter configuration

Click the sidebar, and click "Expand" to enter the advanced parameter configuration options

The screenshot displays a vertical stack of configuration panels:

- Pano Lens Pos Calibration:** Includes a checkbox for "Show calibration cross", a "Reset" button, and a "Calibration" button.
- Navigate Key Action:** Features radio buttons for "PTZ mode" (selected) and "Menu mode", a "Feature" dropdown menu, and a "Menu" button.
- Target Lost Action:** Includes a "Multi Object" button with left and right arrows, radio buttons for "None action", "Pano(Preset 0)" (selected), and "Platform(Preset 1)", and a "Timeout" slider set to 3.
- Track Settings:** Contains checkboxes for "Tracking on starting up" (checked), "Auto zoom" (checked), "Disable AF when tracking", "Vertical tracking", and "All-process tracking".
- Param Backup:** Includes "Export", "Import", and "Open" buttons, along with an empty text input field.
- Version Info:** Shows "Feature Info: SOC" and "Pano Info: SOC".

**Board-side enable:** Check the "√", open the panel to enable;

Other parameters please refer to the teacher side configuration;

#### 6) Set the shield area

Refer to the teacher side configuration

#### 7) Turn on tracking

The screenshot shows a set of control buttons for tracking:

- Top row: "Obtain", "Apply(\*)", and "Default" buttons.
- Bottom row: "Start Track" and "Stop Track" buttons.

Click **【Application (\*)】**, display as **【Application】**, the configuration parameters take effect!

Click **【Get】** to get the current camera configuration parameters;

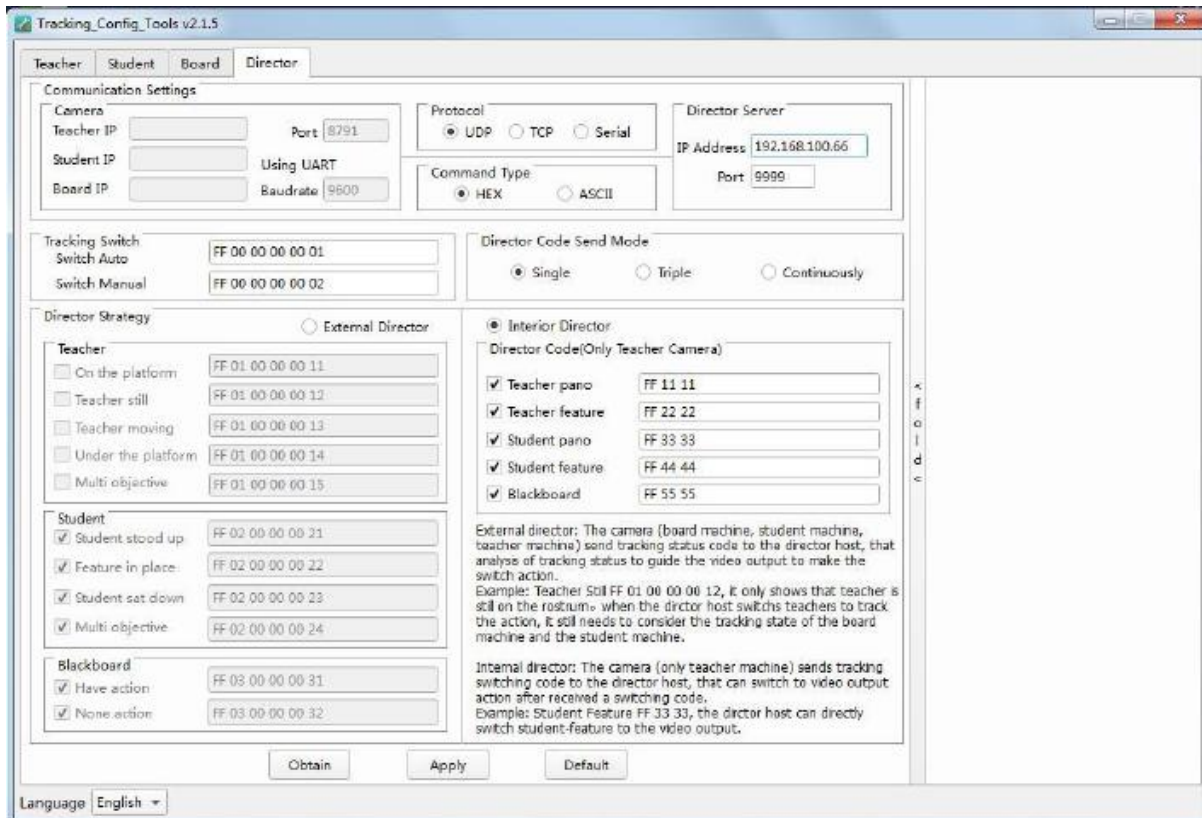


Click [Default] to restore the default configuration parameters;

Click **【Open Tracking】**, the camera enters the automatic tracking state, you can turn off the tracking configuration tool;

Click [stop tracking], the camera enters the stop tracking state, you can configure the tracking parameters;

## 8) Director-side tracking parameter settings



The communication terminal is used to configure the communication parameters between the teacher and the host computer, Command and so on.

### 1) Communication settings

#### ■ Camera communication address setting

**Teacher address:** Show the IP address of the teacher-side panorama machine, can not be modified.

**Student address:** Show the IP address of the student side panorama machine, can not be modified.

**Bookboard address:** The IP address of the Panorama machine can not be modified.

**Port:** When the communication protocol chooses UDP, it receives the port number of the master control command. The default value is 8791, which can not be changed.



**Baud rate:** Communication protocol Select the serial port, the serial port baud rate is 9600K bps, can not be modified.

**Protocol:** Camera and recording and broadcasting host communication between the serial port or network, need to select UDP, TCP and a serial port, the default selection: UDP.

**Instruction format:** The communication command format between the camera and the master station supports the choice of hexadecimal or string format, and all status codes are set freely. The default format is hexadecimal.

**Broadcasting server:** Used to configure the IP address of the master host and the port number of the receiving command. Address Default: 192.168.100.200, port default: 3456.

#### ■ Tracking switch

Switch automatically: the camera receives the [Switch Auto] command, the tracking mode switches to automatic, default: ff 00 00 00 00 01, can be modified.

Switch manual: the camera receives the [switch manual] command, the tracking mode is switched to manual, the default value: ff 00 00 00 00 02, can be modified.

#### ■ Broadcasting code send mode

Select the number of times to send the guide code, selectable: only send once, repeat three times, continue to send.

#### ■ Broadcasting strategy

You can choose [external broadcasting] and [internal broadcasting] one of them, the default is [internal broadcasting].

**Outside Broadcasting:** There are two states (there is action, no action), student machine has four states (students standing, close-up in place, the students have three kinds of status, Students sit down, multi-target), the teacher machine has five states (on the podium, still, move, the next podium, multi-target), recording and broadcasting host needs to receive the status of the three cameras to guide, for example, when the teacher on the rostrum When switching to the teacher close-up picture, the teacher when the platform to switch to the student panorama picture; when the student close-up when the switch to the student close-up screen, when the student multi-target switch to the student panorama picture.

**Internal broadcasting:** Teacher camera will receive the current state of the blackboard, students, teachers, and from high to low priority to the recording and broadcasting host to send the switch code, recording and broadcasting host to receive the switch code directly after the instructions can be directed to the screen, The recording and broadcasting host does not need to judge the current status. That is, the

first blackboard when there is action, send a blackboard to switch code, blackboard no action, to determine whether there is action in the student area, and finally judge the teacher action. For example, when the teacher is not in the platform area or is moving, send the teacher panorama switch code, the teacher in the podium area and still, send the teacher special code, if the student stands up, first send students panoramic switch code, students close the machine in place, send students Close-up of the code, the students sit down or stand out (30s-60s) and return to the teacher's picture.

## 2) Apply configuration parameters



Click **【Application (\*)】**, display as **【Application】**, the configuration parameters take effect!

Click **【Get】** to get the current configuration parameters

Click [Default] to restore the default configuration parameters;



Set the parameters of the pilot side, select [Get] to obtain the current parameters, [Application] to make the settings take effect, [default] to restore the default value.

## Network Function

This description mainly introduces the special machine network, panoramic machine network description is not introduced.

1. Go to the web interface

- View the camera IP:

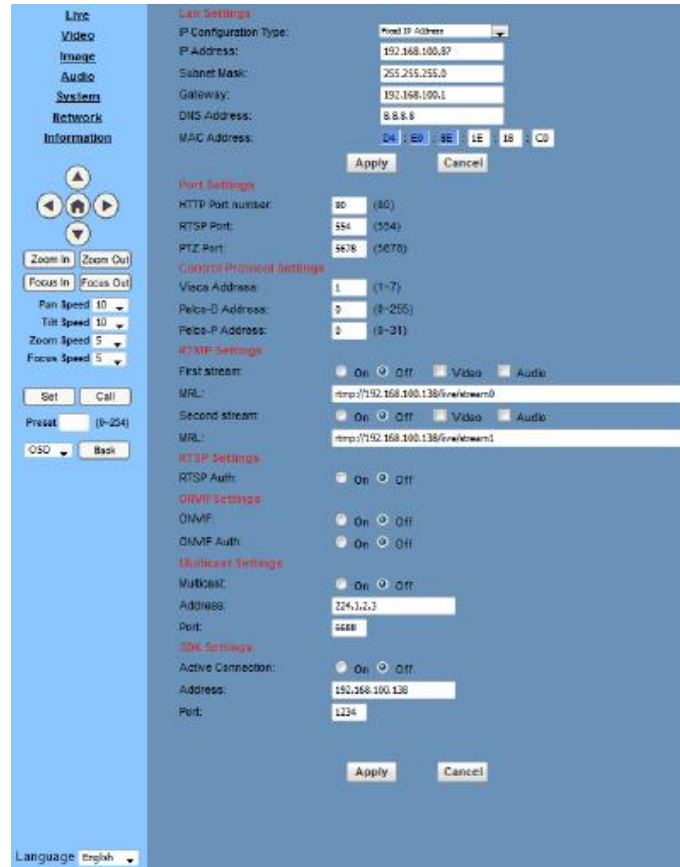
Cable and computer connection, I can use the camera to upgrade the software to find the machine IP.

(For software, please contact the manufacturer to obtain)

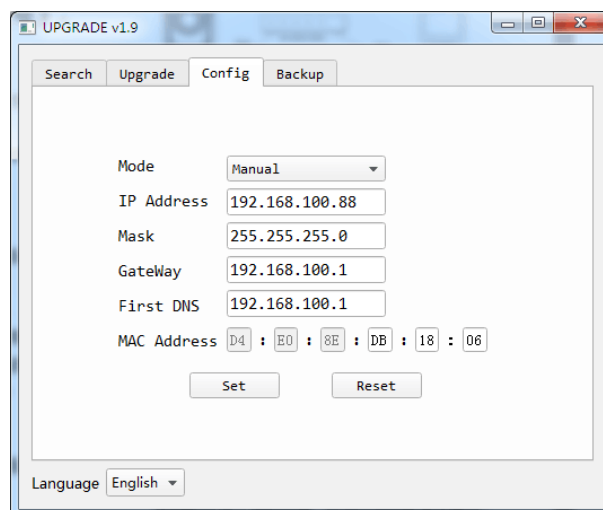
- In the browser input camera IP, fill in the user name and password, you can enter the network interface.

2. To change the camera IP, there are two ways:

Method 1: Change the web page configuration item, click Apply, and then restart the camera



Method 2: In the Division I camera upgrade software configuration items to modify, and then click Settings:

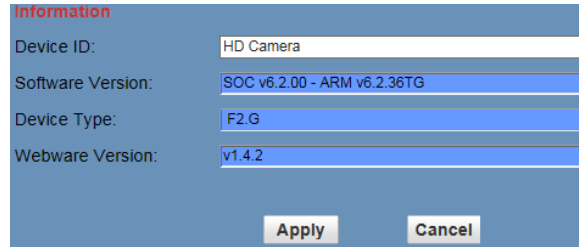


3. After changing the camera IP need to restart the camera,

There are two ways:

Method 1: Manual power off

Method 2: Click on the page system configuration item to restart (for remote)



The image shows a blue information dialog box with the following fields:

Information	
Device ID:	HD Camera
Software Version:	SOC v6.2.00 - ARM v6.2.36TG
Device Type:	F2.G
Webware Version:	v1.4.2

At the bottom of the dialog are two buttons: "Apply" and "Cancel".



### Operation tips

Teacher machine factory default IP:

- 1、Close-up machine 192.168.100.81
- 2、Panorama machine 192.168.100.82

Student machine factory default IP:

- 1、Close-up machine 192.168.100.91
- 2、Panorama machine 192.168.100.92

Network upgrade program download instructions.

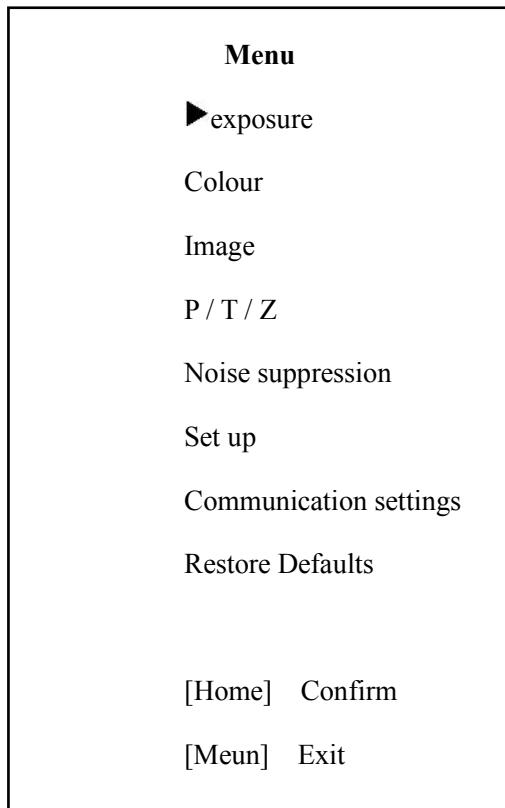
For camera upgrade procedures, please contact the manufacturer.

## Menu settings

This description mainly describes the special machine menu, panoramic machine menu only to explain the difference.

### 1. Main menu

Press the {MENU} key in the normal image to display the menu contents, and use the scroll arrow cursor (hereinafter referred to as the cursor) to point to the selected item. Press the [HOME] key to enter the corresponding submenu.



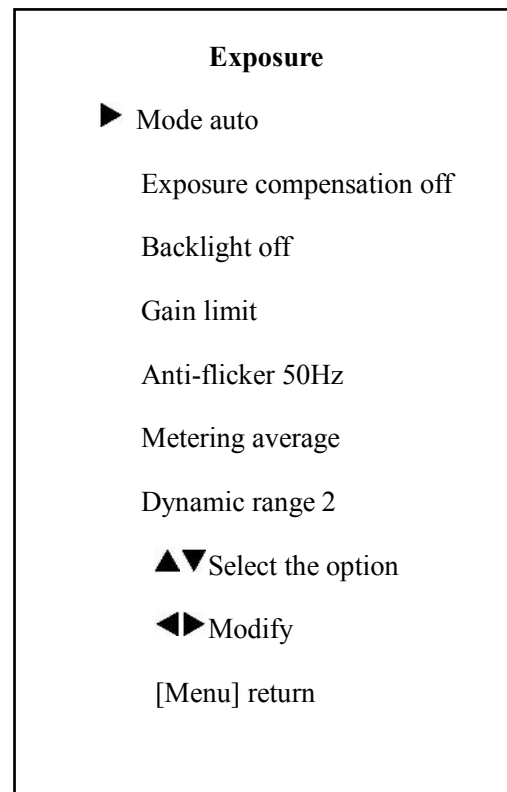
**Attention:**

Communication settings, P / T / Z: Panorama machine without this menu

Message: The writer has no such menu

### 2. EXPOSURE

Move the cursor to the Exposure item in the main menu and press [home] button, EXPOSURE menu appears, as shown in the following figure.



Exposure Mode: Can be set: Auto, Manual, Shutter Priority, Aperture Priority, Brightness Priority

Exposure Compensation: Can be set: On, Off. (Valid only in automatic mode)

Compensation level: can be set items: -7 ~ 7. (Valid only when exposure compensation is on)

Backlight: Can be set: On, Off. (Valid only in automatic mode)

Brightness: Can be set: 0 ~ 17 (only valid in brightness priority mode)

Gain Limit: Can be set: 0 ~ 15. (Valid only in auto, aperture and brightness modes)

Anti-flicker: can be set items: off, 50Hz, 60Hz. (Valid only for automatic and brightness priority)

Aperture: Can be set: F1.8, F2.0, F2.4, F2.8, F3.4, F4.0, F4.8, F5.6, F6.8, F8.0, F9.6, F11.0, off. (Valid only for manual and aperture priority)

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. (Valid only for manual and shutter priority)

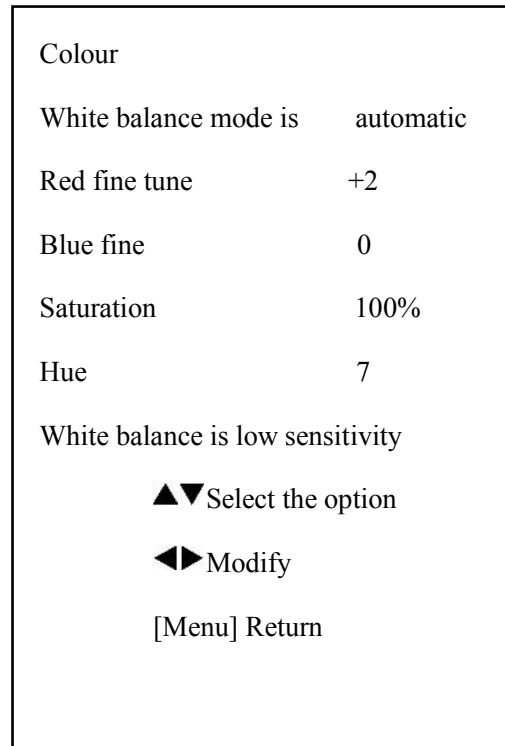
Metering: can be set items: average, center, bottom, top (panoramic machine without this)

Dynamic range: dynamic range strength, can be set items: 0 ~ 8.

Lens aperture: can be set items: manual, DC (close-up machine without this menu)

### 3. Colour

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



White balance mode (close-up machine): can be set items: automatic, indoor, outdoor, one-button, manual

White balance mode (panoramic machine): can be set: automatic, 3000K / indoor, 4000K, 5000K / outdoor, 6500K-1, 6500k-2, 6500K-3, one-button, manual

Red Gain: Can be set: 0 ~ 255. (Valid only in manual mode)

Blue Gain: Can be set: 0 ~ 255. (Valid only in manual mode)

Red fine: Can be set: -10 ~ 10 (valid only in white balance sensitivity low mode)

Blue Trim: Can be set: -10 ~ 10 (valid only in white balance sensitivity low mode)

Saturation: can be set: 60% to 200%.

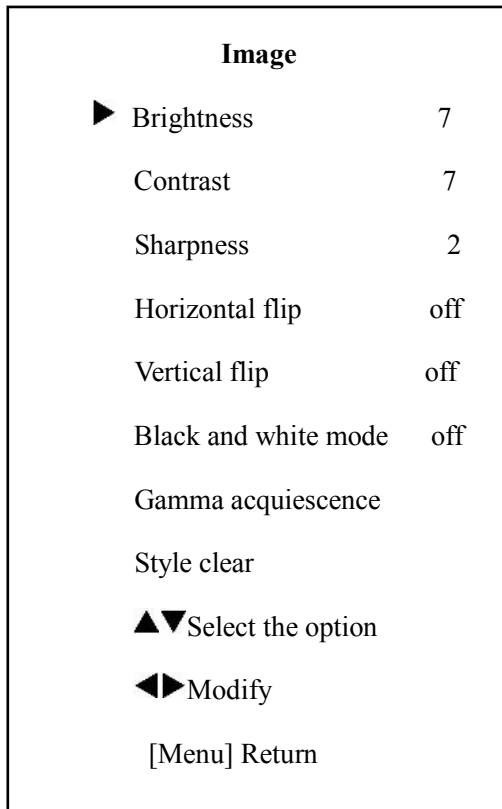
Hue: Can be set: 0 ~ 14

White Balance Sensitivity: Can be set: High, soft, 5S  
Medium, Low

Distortion correction: can be set items: open, off (close-up machine without this menu)

#### 4. Image

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



Brightness: Can be set: 0 ~ 14

Contrast: Can be set: 0 ~ 14

Sharpness: Can be set: Auto, 0 ~ 15

Horizontal Flip: Can be set: On, Off

Vertical Flip: Can be set: On, Off

Black and white mode: can be set: open, off

Gamma: Can be set: Default, 0.45,0.5,0.56,0.63

Style: Can be set items: standard, clear, bright, High.

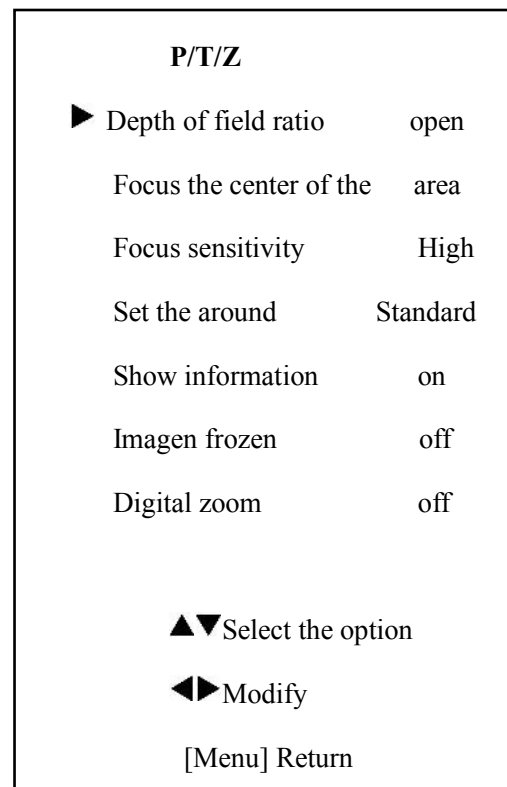


#### Note:

1080p60 and 1080p50 do not support distortion correction.

#### 5.P/T/Z (Only have a special machine)

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



Depth of field ratio: can be set items: open, off.

Focus area: Can be set: Top, center, bottom.

Focus Sensitivity: Can be set: Low, Normal,

Left and right settings: can be set items: standard, reverse.

Adjust the image when the setting is frozen:

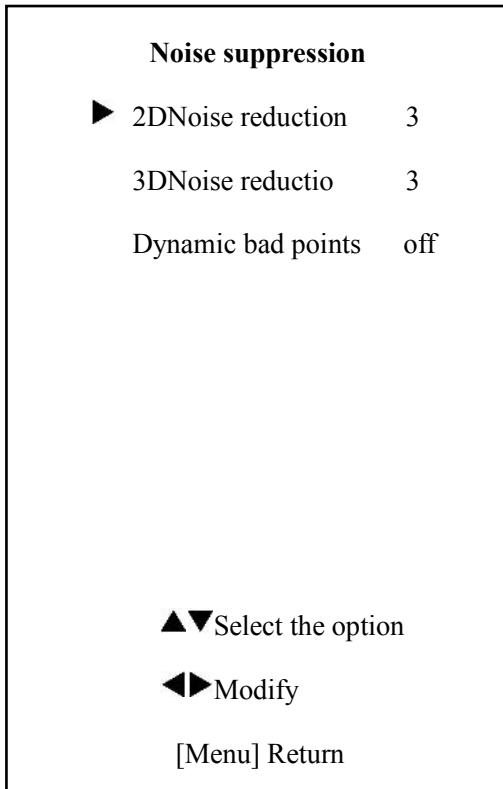
Can be set: On, off.

Display information: Can be set: On, Off.

Digital zoom: settable items: off, 2x, 4x, 8x, 16x.

### 6. Noise suppression

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



NR2D-Level: 2D noise reduction. Optional items: Off, Auto, 1 ~ 5

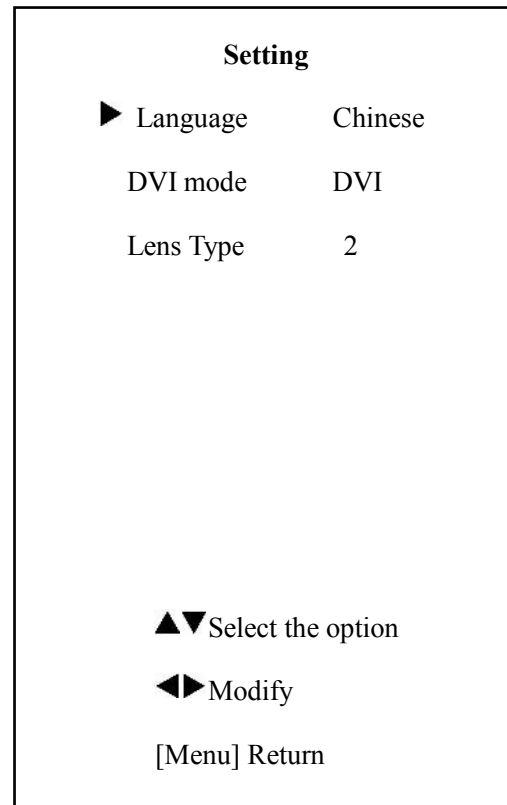
NR3D-Level: 3D noise reduction. Optional items: Off, 1 ~ 8

D-HotPixel: Dynamic bad points, Optional

items: Off, 1 ~ 5 (Close-up machine has no that option)

### 7. SETUP

Move the cursor to the Setup item in the main menu and press [home] button, SETUP menu appears, as shown in the following figure.



Language: Can be set: Chinese, English, Russian.

DVI mode: Can be set: DVI, HDMI (Panorama machine without this menu)

Lens: Can be set: Type 1, Type 2

**The Panorama Setup page is shown in the following figure:**



Setting	
▶ Language	Chinese
Protocol	VISCA
VISCA address	1
Baud rate	9600
Video format	1080P30
Tracking model	teacher
Return	

Protocol: Can be set: Auto, VISCA, PELCO-D, PELCO-P.

VISCA Address: Can be set: 1 ~ 7 (close-up machine without this menu)

Video format: Can be set: 1080P25, 1080P30, 1080P50, 1080P60, 1080I50, 1080I60, 720P50, 720P60 (close-up machine without this menu)

Electronic head: can be set items: open, off (close-up machine without this menu)

V address fixed: can be set items: off, open. When the "On" is selected, the 88 30 01 FF command does not work (Panorama does not have this menu)

Networking mode: Set the serial control mode of the serial port control. You can set items: series, parallel (no panorama machine)

Tracking mode: can be set items: teachers, students (close-up machine without this menu)

## 8. Communication settings (only Zoon)

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

Communication settings	
▶ Protocol	VISCA
V address	1
V address fixed	off
Networking mode	Series
Baud rate	9600
▲▼ Select the option ◀▶ Modify [Menu] Return	

Protocol: Can be set: Auto, VISCA, PELCO-D, PELCO-P.

V address: according to the agreement to set, automatic, VISCA under  
Can be set items: 1 ~ 7.

P\_D Address: PELCO-D can be set under the items: 0 ~ 254.

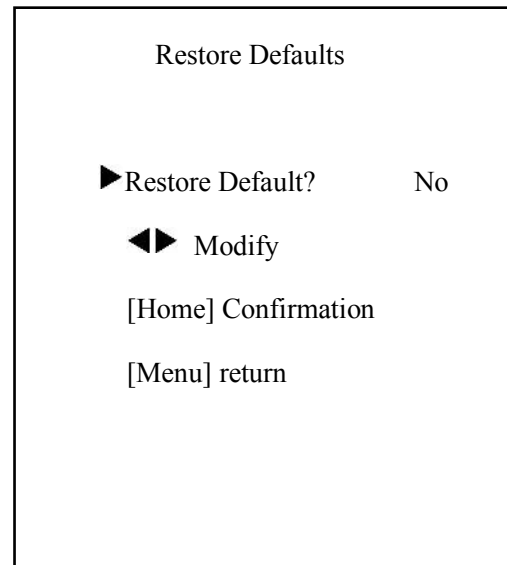
P\_P Address: PELCO-P can be set under the items: 0 ~ 31.

Baud rate: can be set items: 2400, 4800, 9600

### 9. Information (Only the panorama has)

In the main menu, move the cursor to "Info" and press the [HOME] key to enter the information page, as shown in the following.

Information	
Version	6.2.11
Model	H2.V
Date	2016-12-29
IP	192.168.100.51
Gateway	192.168.100.1
Subnet mask	255.255.255.0
▶ Return	



Restore Default: Confirm Restore factory settings, set items: Yes, No, Note: Press **【HOME】** key to confirm.

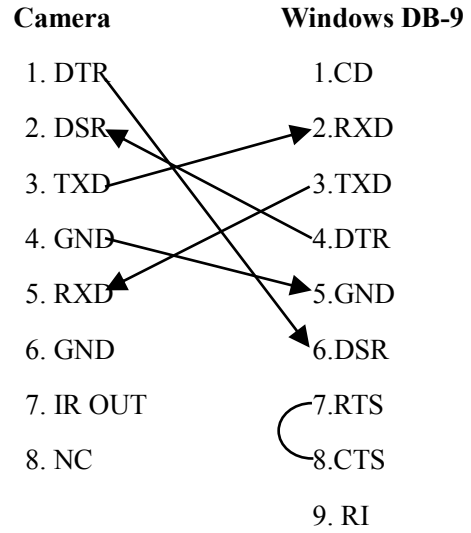
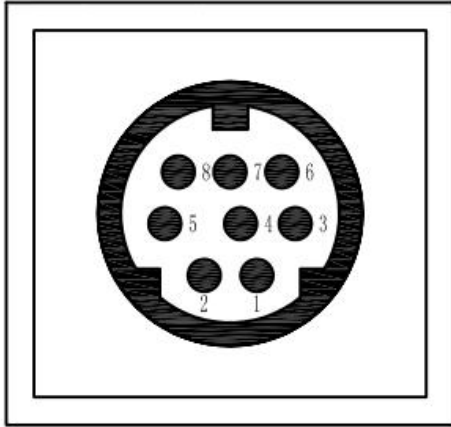
Note:

Restore factory settings will restore all parameters, including remote control address and serial port address

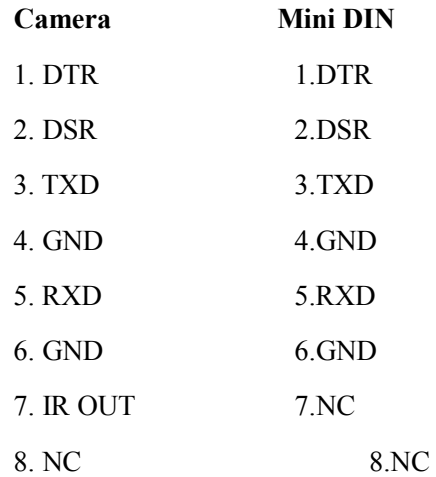
### 10. Reset

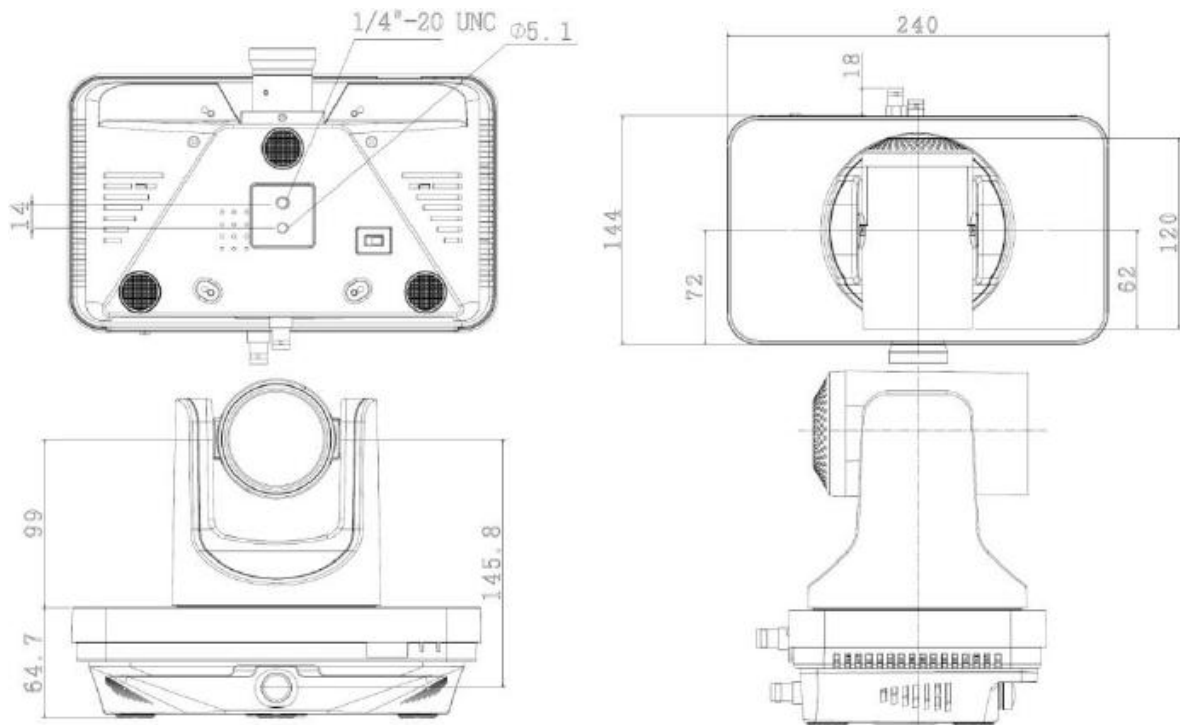
In the main menu, move the cursor to "Restore Default" and press the [HOME] key to enter the Restore Default page, as shown in the following figure

## RS-232 Interface



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



**Size****Protocol list**

Note: The serial port of the camera follows the standard VISCA / Pelco-D / Pelco-P protocol. For secondary development, the camera can be controlled according to the standard protocol. To provide a detailed list of VISCA / Pelco-D / Pelco-P protocol, Please contact the manufacturer to obtain.

## Maintenance and Troubleshooting

### The maintenance of the camera

If the camcorder is not used for a long time, disconnect the power switch after use and disconnect the AC adapter from the AC outlet

- When removing dust from the camera case, use a soft cloth or tissue

When cleaning the camera lens, please use a dry soft cloth to wipe, such as dirt is serious, please use a mild detergent gently wipe.

Do not use strong or corrosive cleaning agents to avoid lens scratches, affect image effects

### Avoid using in the following environments

- The camera should avoid shooting particularly bright objects such as sunshine, light and so on
- Do not operate the camera in an unstable lighting environment, otherwise the image will flash
- Do not use around radio facilities that can transmit large amounts of power, such as: TV stations or radio transmitters, etc.

### Fault phenomena and treatment

#### Image failure

- The display shows no image
  - 1、 The display shows no image;
  - 2、 Closed power switch camera is a normal self-test;
  - 3、 Check the video platform, the TV cable is connected to normal;
- When the camera lens has a maximum magnification, the image is jittery
  - 1、 Is the camera mounting position secure
  - 2、 Whether there is a vibrating machine or object next to the camera。
- [tracking configuration tool] no video image display
  - 1、 Use the PC to access the network to test whether the network access to work properly, first remove the cable failure, PC virus caused by network failure, until you can ping with each other through the PC;
  - 2、 Disconnect the camera from the network, connect the camera and the PC separately, and reset the IP address according to the appropriate recommended operation.
  - 3、 Check the server's IP address and subnet mask address and gateway settings;
  - 4、 MAC address conflict;
  - 5、 The Web port is occupied by other devices。

### **Sound failure**

- No sound
  - 1、 Please check the host's audio connection
  - 2、 Please check the IP Camera audio parameter settings, whether the monitoring function is enabled

### **Tracking fault**

#### **Teacher Side**

Tracking location is not accurate, always biased in one direction

- 1, to repeat the panoramic lens position calibration;
  - 2, set the level of calibration, vertical calibration;
  - 3, set the station position;
- Tracking instability, when not with the time
    1. Re-check the tracking area, shielding area, to ensure that the teacher's head is located in the tracking area;
  - Small range of mobile tracking
    1. May be appropriate to reduce the tracking sensitivity;
  - Tracking screen is not ideal
    - 1、 Change the tracking screen size;
  - No track, video output in the menu parameters
    - 1、 Make sure to exit the menu mode of the tracking camera;

#### **Student side**

- Tracking location is not accurate, always biased in one direction
  - 1、 Repeat the panorama position calibration;
  - 2、 Set the horizontal calibration, vertical calibration;
- Raising hands and other actions prone to misjudgment
  - 1、 May be appropriate to reduce the tracking sensitivity;
- Track to interference sources, such as curtains
  - 1、 Set the mask area;
- No track, video output in the menu parameters
  - 1、 Make sure to exit the menu mode of the tracking camera;

### **Control failure**

- Remote control cannot control
  - 1、 Replace the new remote control battery;
  - 2、 Is the camera connected correctly?。
- Serial port cannot control and communication
  - 1、 Is the camera connected correctly?;
  - 2、 Check that the control cable is well connected。
- Network fluent, but cannot control
  - 1、 Check whether the network is on the same network segment;
  - 2、 Check if the IP camera has been duplicated;

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