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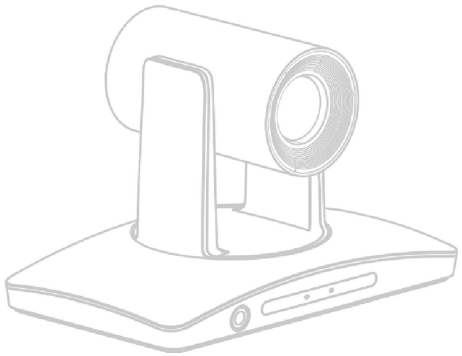
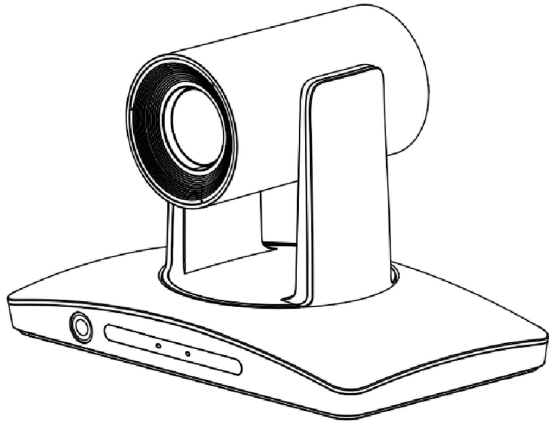


infobit

iCam P40

Lecturer Tracking Camera



Please read this manual carefully before using the device and keep it for future reference.

COPYRIGHT INFORMATION

SYMBOLS INSTRUCTION

Symbol	Instructions
🕮 **Explanation**	Explain in detail.
🕮 **Note**	Remind of some important operations or action need to be taken to prevent potential injury and damage.
⚠ **Warning**	Indicate a potential risk that, if not avoided, may result in injury, accidents and equipment damage.
⚠**Dangerous**	Indicate a high potential risk that, if not avoided, may result in a significant risk of damage or injury.

SAFETY NOTES

■ During the installation of this camera, please read this manual carefully and operate strictly in accordance with the installation instructions. Keep this manual for future reference.

■ Before powering on the camera, please check the power carefully. Make sure that you are using the right power source.

■ Place the power cable in a place that is not easily accessible. Do not stack any objects on the power cable, protect the cable, especially the connection must be fully and securely contacted.

■ Do not run the camera beyond the specified temperature and humidity. The working temperature range is between 0℃ ~ +40℃. The working humidity range is between 10%RH~90%RH.

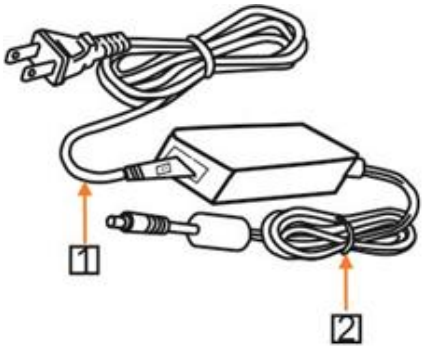
■ For safety, foreign matter is prevented from entering the device, do not splash the corrosive liquid onto the camera.

■ When transporting, avoid violent shake or strong force to the camera.

■ Do not disassemble the camera without authorization. If the camera is damaged, please contact professional maintenance personnel for repair.

■ Avoid pointing the camera at objects with strong light, such as the sun etc.

■ When cleaning the camera, please use soft cloth. If the camera is very dirty, wipe it off gently by a soft cloth moistened with a weak solution of water or a neutral kitchen detergent. Wring out all liquid from the cloth before wiping the camera, then wipe away all remaining dirt with a soft, dry cloth. Use lens cleaning paper to clean the lens.



Warning

If power cable needs to be extended, please extend the power cable from the part 1 on above picture (220V/110V), do not extend from part 2 on above picture (DC12V), otherwise it will cause unexpected damage to the device.

11. AFTER-SALES SERVICE

Dear users, in order to ensure that you fully enjoy our quality service, please read the following product service articles carefully.

Limited warranty and lifetime maintenance services are provided.

1. Limited warranty period is 12 months from the date products leaving factory. During the limited warranty period, you will enjoy free service of repair service expect caused by man-made malfunction.

2. Outside the limited warranty period of 12 months, damaged products need be paid for their repair service.

Maintenance response time

1. 24-hour response service will be provided from the day defective products been sent back.

2. To ensure timely response or repair service, before sending defective product(s) back, please contact relevant sales person in advance and then send the product(s) back according to returning instructions provided.

Interface	
HDMI	HDMI Output； Video resolution 1080P60/P59.94/P50/P30/29.97/P25 720P60/P59.94/P50
Network	RJ45 (10/100M) interface, optional POE; 1. Video resolution up to 1080P60 2. Video format: support H.264, H.265 3. Network protocols: ONVIF, RTSP, RTMP, NDI, SRT 4. Audio compression: AAC 5. Support multi-stream
USB	1XUSB3.0 1.UVC Protocol: UVC1.1; 2.UVC video compression support H.264/H.265/MJPEG; Video resolution 1080P30/P25, 720P30/P25, 360P30/P25 3.UAC Audio format: PCM
3G-SDI	1X3G-SDI； Video resolution: 1080P60/P50/P30/P25, 720P60/P50
Audio interface	1XLINE IN, 3.5mm
Control interface	1XRS-232 IN, 1XRS-232 OUT
TF card	TF card, Max 64G
Power supply	DC12V
General	
Control protocol	VISCA, PELCO-D, PELCO-P
Power Consumption	＜15W
Working Temp	0°C ~ + 40°C
Storage Temp	-20°C~+60°C
Working humidity	10%RH ~ 90 %RH
Storage humidity	10%RH ~ 95 %RH
Dimensions	243mm×157mm×163mm
Weight	N.W.＜2kg
Color	Gray

CONTENTS

10. TECHNICAL SPECIFICATIONS

Tracking Camera	
Image Sensor	1/2.8" CMOS, 2.14 megapixel
Focal Lens	f=4.7~94.0mm
Iris	F1.8 – F3.5
Optical Zoom	20x
Digital Zoom	8x
Angle of view	59.5° - 2.9°
Focus	Auto, Manual, PTZ Trigger, One Push Trigger
Min. Illumination	0.5lux
Shutter	1/60~ 1/10,000 sec
Gain	Auto/Manual
White Balance	Auto, One Push, Manual, Static color temperature
Exposure	Auto, Manual, Iris Priority, Shutter priority, Brightness Priority
S/N Ratio	≥50dB
Menu	English
Full-view Camera	
Image Sensor	1/2.8” CMOS, 2.14 megapixel
White Balance	Auto
Exposure	Auto
Lens	Fix-focus 2.4mm
Angle of view	Horizontal:88°, Vertical:54°
PTZ	
Pan Range	-170°~+170°
Tilt Range	-30°~+90°
Pan Speed	0.1°~120°/s
Tilt Speed	0.1°~90°/s
Flip	Support
Preset Number	64

		indistinguishable because of the darkness.
	Exposure Compensation	Display levels when exposure compensation Settings are on.
COLORTONE	White Balance	Switch the white balance mode.
	Saturation	Refer to the purity and brightness of the image color. The higher the saturation is, the brighter the color effect is. Vice versa, the lower the saturation is, the more the effect tends to be black and white.
	Tone	Used to adjust the overall tendency of the color of an image, causing the color to rotate.
CAMERA	RUM SCENE	Used to set the scene suitable for the best camera shooting effect.
PTZ	P/T SPEED	Set the camera speed level. The higher the level is, the faster the speed will be.
	PTZ TRIG AF	Focus automatically when the camera pans, tilts and zooms.
	POWER UP	The action performed before the camera receives a control command when it powers on.
System	PROTOCOL ADDR	Change the camera address by software without setting the camera address through dip switch.
	IR ADDR	Set the IR remote address of the camera.
	MOUNT MODE	The camera image flips 180° vertically.
	PROTOCOL	Set the current control protocol of the camera.
	BAUDRATE	View and set the current baud rate of the camera.
	VIDEO FORMAT	View and set the video format of the camera.
	TRACK TYPE	View and set the tracking mode of the camera.
	LANGUAGE	View and set the language of the camera.
	DEFAULTS	Used to restore all menu parameter settings to factory default settings.
	NETWORK	View and set the current network of the camera.
Device Information	FIRM VERSION	Displays the firmware version of the current camera.
	VIDEO FORMAT	View the video format of the current camera.

1. QUICK GUIDE

■ The camera can be accessed and controlled via the following ways:

■ Client software CameraCMS: tracking setting, camera search and control, network setting;

■ VLC: preview images of camera's streams;

■ ONVIF: version 2.1 supported;

■ Name: admin;

Initial password: 123456;

■ Network pass-through: recommended connection mode with lecture recording device.

1.1. CameraCMS

Refer to detailed instructions of this user manual.

1.2. Rtsp

■ Make sure PC and the camera are in the same LAN;

■ Three channels for streaming url: rtsp://IP/chx, x=1, 2, 3. 1 & 3 streams tracking camera image, 2 streams full view camera image;

■ IP address is acquirable through CameraCMS, default rtsp port is 554.

1.3. Network Pass-through

On the tracking parameters setting page, the IP address, port and connection protocol (TCP/UDP) of the lecture recording device can be configured. After connected, the camera can be controlled by standard VISCA protocol. The tracking status code of the camera is also returned to the lecture recording device if needed through the same connection as raw data. Lecture recording device can achieve audio & video of the camera through rtsp or rtmp.

2. PRODUCT LNTRODUCTION

The lecturer tracking camera adopts the most advanced face and motion detection technology, it can lock and track moving target; it can realize smooth tracking performance automatically; it can precisely lock the moving target in the center of the image.

Lecture recording device can set and control the camera through Ethernet and RS232 port. At the same time, it can obtain network video and digital video from the camera.

With its stability, easy-to-use and excellent performance, it is widely used in electronic classroom, distance learning, technical training and video conferencing room, etc.

2.1. Characteristics and Functions

2.1.1. Features

■ Built-in industry-leading human body detection and lock tracking image algorithm, no need to have external tracking device or auxiliary camera;

■ Integrated design, up to 1080P60 SDI video output of tracking camera;

■ The camera can adjust automatically as per the height of lecturer;

■ The camera can track lecturer all around the classroom, even if lecturer walks into student's area;

■ Excellent locking and anti-interference performance: the camera keeps tracking on the object even the object is still for a long period. Other moving objects and video from projectors do not interfere the tracking performance;

■ Support 3G-SDI, HDMI, Ethernet and USB3.0 video output interface;

■ Support UVC/UAC protocol;

■ Support remote and RS-232 control.

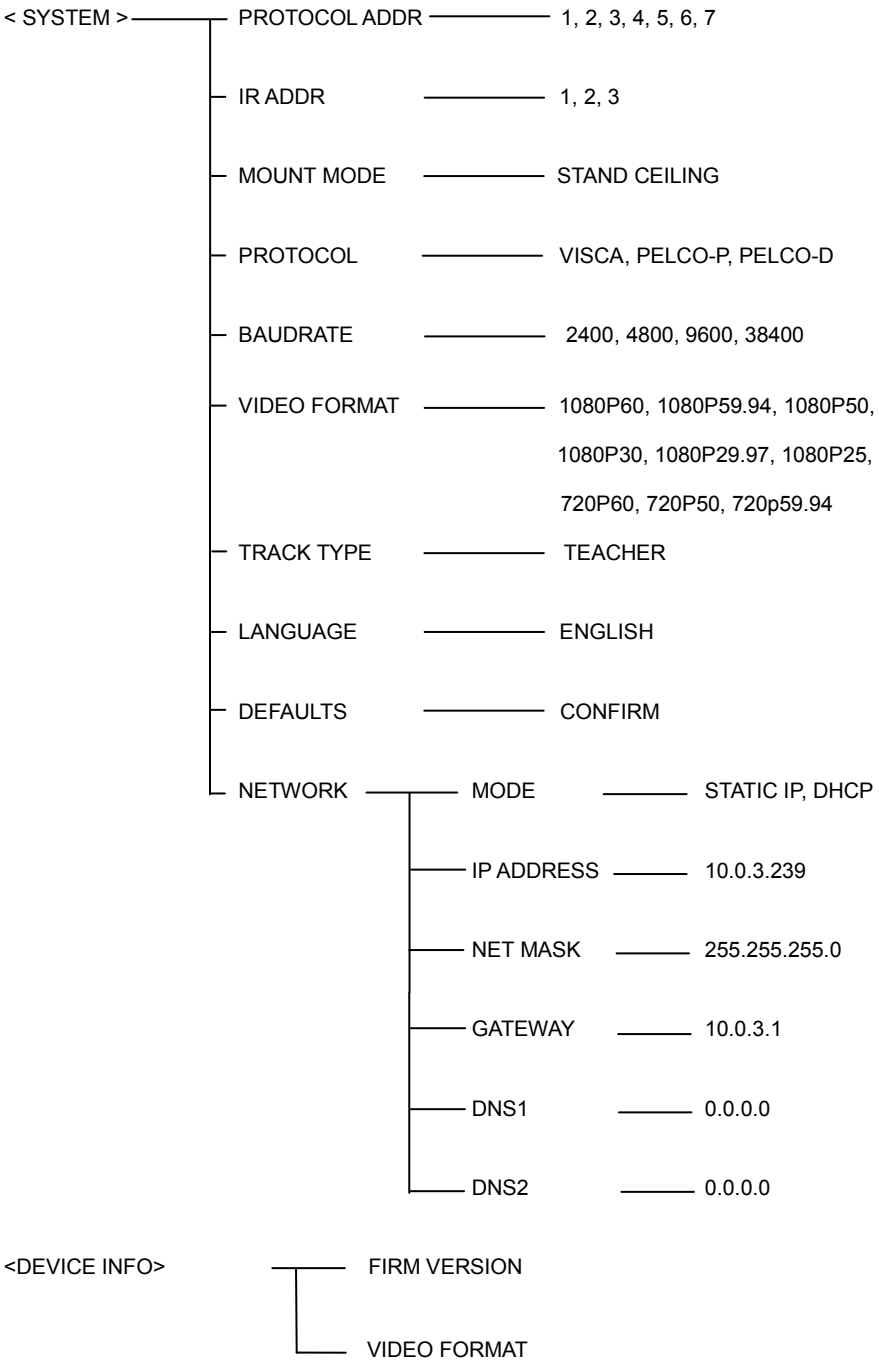
9.2 Menu Explanation

1.Press MENU button to enter / exit menu.

2. Press ▲ or ▼ button to select among menu options, when the font is enlarged, it indicates the menu has been selected, press **ENTER** button to get into this menu.

3. Press ◄ or ► to change value

Type	Options	Functional description
IMAGE	SHARPNESS	Used to adjust the sharpness of image and acutance of image edge. The sharpness is increased and the contrast of details in the image plane is higher, making it look clearer. If the sharpness value is too high, it may cause the image distortion.
	BRIGHTNESS	Used to adjust the brightness of the image.
	CONTRAST	Refers to the ratio between the lightest and darkest areas of the image. The larger the ratio is, the more gradation levels from black to white will be, resulting in richer colors, clearer and more eye-catching images, and brighter and more gorgeous colors. Low contrast, on the other hand, will make the whole picture gray.
	GAMMA	Used to adjust the brightness value of the image, the lower the gamma value is, the brighter the image will be, the higher the gamma value is, the darker the image will be.
	2DNR	When the camera shows color image, it is advised to disable the digital noise reduction function; otherwise, the image acutance will be affected.
	3DNR	By comparing several adjacent frames of images, the noise wave is automatically filtered out, so that the image noise is significantly reduced, the image is more thorough, the picture is more pure and delicate. The higher the level of noise reduction is, the more delicate the picture quality will be, the smaller the shaking feeling is. The lower the level of noise reduction is, the more blurred the picture quality will be, the greater the feeling of jitter is.
	DRC	It refers to the adaptability of the camera to strong light, specifically to the range of brightness (contrast) and color temperature (contrast).
	MIRROR	The camera image flips 180° horizontally.
	FLIP	The camera image flips 180° vertically.
EXPOSURE	EXPOSURE MODE	Switch from exposure modes.
	BLC	The camera lens can automatically compensate the brightness of darker targets under strong light background. Adjust the lighting of the bright background, so as to obtain a clear image, to avoid the background brightness caused by the whole picture a bright, but the target is



2.1.2. Intelligent Tracking

■ Smooth tracking performance, even if the target's small movement and hand movements will not affect the tracking effect, tracking sensitivity is adjustable;

■ The camera can track both horizontally and vertically, always keep the image clear;

■ Auto zoom performance during tracking according to the distance of target and gives appropriate image;

■ Perfect tracking performance, suitable for different classroom size, shape and lecture theatre;

■ Intelligent exposure function, completely avoid the issue of the tracked target being too dark when moving into projector area or other strong light background.

2.1.3. IP Capability

■ H.264/H.265 video compression;

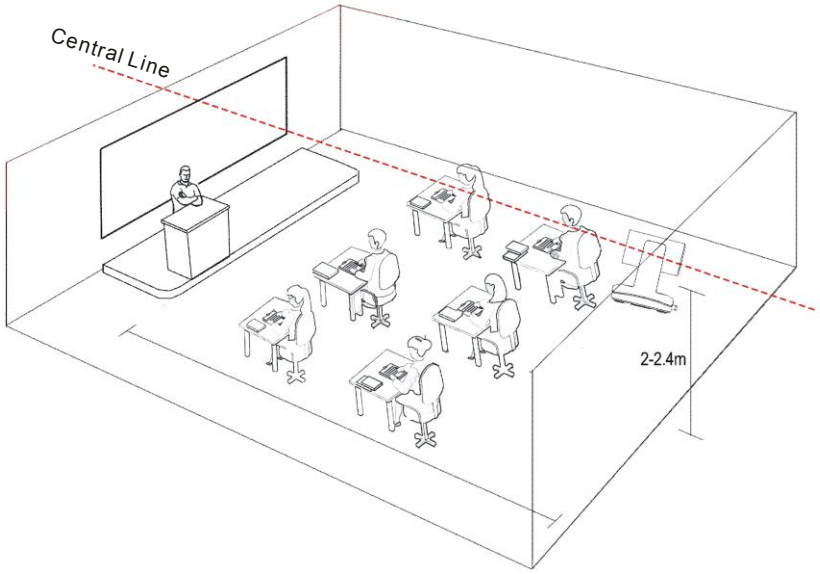
■ Support three streams of images.

2.1.4. Simple Configuration

■ Set tracking zone and blocking zones with the mouse box on the network video;

■ User-friendly interface and simple parameter settings, easy to install and use.

3. SUGGESTED INSTALLATION



<COLORTONE>
- WB
  - AUTO
    - R.GAIN — -7~+7
    - G.GAIN — -7~+7
    - B.GAIN — -7~+7
    - WB-SENSI — LOW / MIDDLE / HIGH
  - MANUAL
    - R.GAIN — 0~16
    - B.GAIN — 0~16
  - OPWB — OPT
  - STATIC — COLOR TEMP — 2800~6500
- SATURA — 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
- HUE — 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

<CAMERA>
- RUM SCENE — INDOOR
- DIGITAL ZOOM — CLOSE/OPEN
- ZOOM TIMES — ×1, ×2, ×3, ×4, ×5, ×6, ×7, ×8

<PTZ>
- P/T SPEED — 1, 2, 3, 4, 5, 6, 7
- PTZ TRIG AF — OPEN / OFF
- POWER UP — HOME, PRESET1, PRESET2, PRESET3

<EXPOSURE>
- AUTO
  - ANTI FLICKER — OFF, 50HZ, 60HZ
  - BLC — OPEN, OFF
  - EXP-COMP
    - ON — 7, -6, -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5, +6, +7
    - OFF
- MANUAL
  - GAIN — 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
  - SPEED — 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000
  - LEVEL — F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE
- SHUTTER
  - SPEED — 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000
- IRIS
  - LEVEL — F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE
- BRIGHT
  - BRIGHTNESS — 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
  - ANTI –FLICKER — OFF, 50HZ, 60HZ

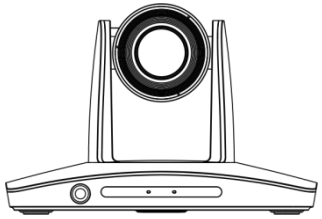
Notes

The shutter speed in this exposure parameter takes 25/50 FPS for reference.

4. PRODUCT COMPONENTS

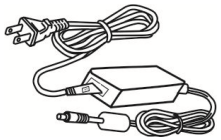
4.1. Lists of Parts & Accessories

When you open the box, check all accessories according to the packing list.



Camera x1

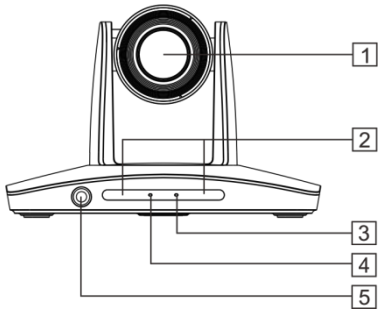
Remote Controller x1



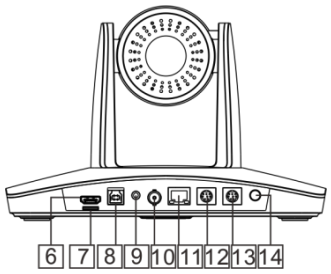
Power Adapter x1

RS-232 cable x1

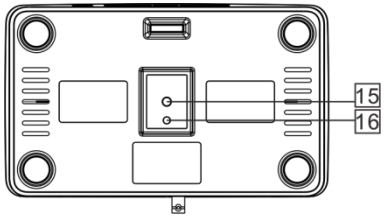
4.2 Main Parts & Interfaces



Front



Rear



Bottom

No.	Interface	No.	Interface
1	Camera Module	9	Audio
2	Remote Controller Indicator	10	3G-SDI
3	Power Indicator	11	Network
4	Communication Indicator	12	RS-232OUT
5	Full-view camera	13	RS-232IN
6	HDMI	14	Power（DC12V）
7	TF Card Slot	15	Mounting Hole, 1/4-20UNC
8	USB3.0	16	Locating Hole, Φ5mm

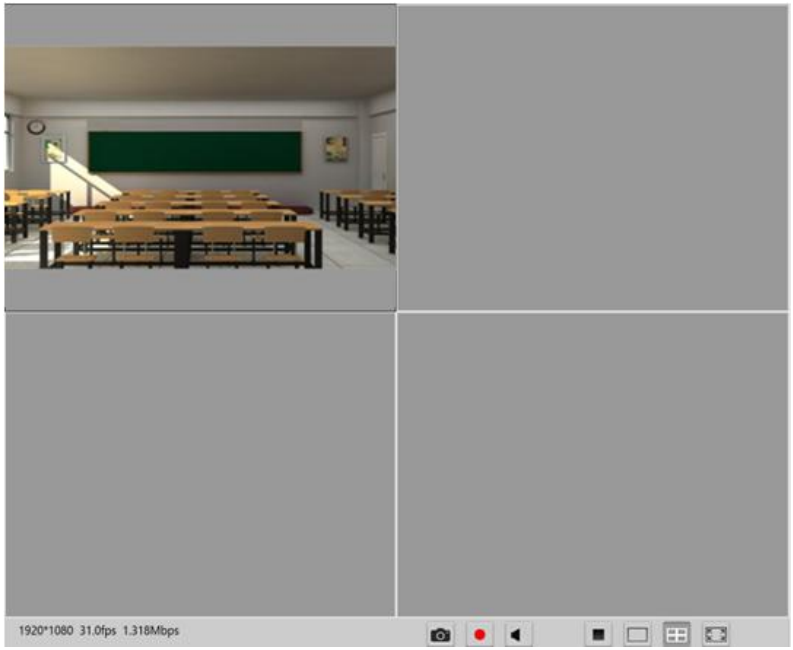
9. MENU SETTINGS

Press MENU button to enter / exit menu. Press the **Enter** button to get into the menu, press the back button to return to previous menu, and press the directional buttons to change menu options.

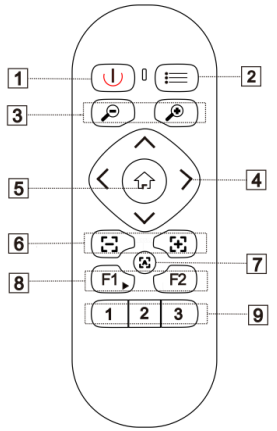
9.1. Menu Structure

<IMAGE>

- SHARPNESS — 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
- BRIGHTNESS — 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
- CONTRAST — 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
- GAMMA — 0, 1, 2, 3, 4
- 2DNR — 0, 1, 2, 3, 4, 5, 6, 7
- 3DNR — 0, 1, 2, 3, 4, 5, 6, 7
- DRC — 0, 1, 2, 3, 4, 5
- MIRROR — ON, OFF
- FLIP — ON, OFF



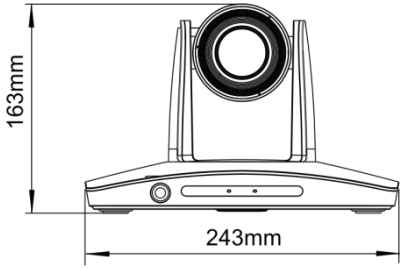
4.3. Remote Controller



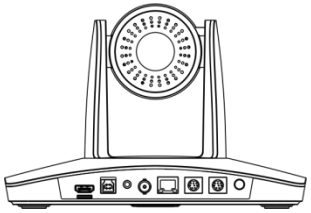
No.	Name	Description
1	**Power**	Turn on/off the camera
2	**Menu**	Turn on/off OSD menu
3	**Zoom**	+ button to zoom in - button to zoom out
4	**Direction / Menu Operation**	In Menu status: ▲ or ▼ button to select among menu options, ◄ or ► to change option / value. In None-menu status, press these four buttons to pan left/right and tilt up/down.
5	**HOME**	In Menu status: save menu operation. In None-menu status：Press HOME button, camera moves to initial position.
6	**Focus**	- button to Focus Near + button to Focus Far
7	**Auto Focus**	A–Auto focus, button to Auto Focus once every time it is pressed.
8	**F1/F2**	F1：Press for 5 seconds to set IR address of camera； short press to start tracking. F2：Short press to stop tracking.
9	**Number Keys**	Long press to save preset, short press to call a preset.

5. INSTALLATION & CONNECTION INSTRUCTION

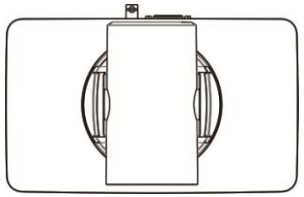
5.1. Overall Dimension



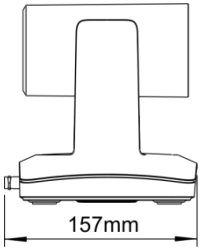
Front



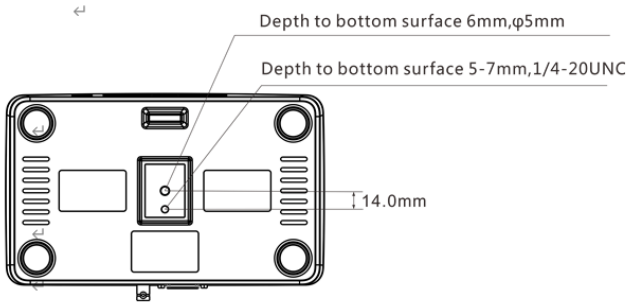
Rear



Top



Side



Bottom

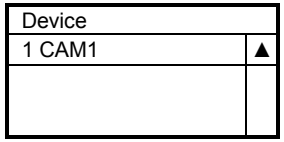
8. PREVIEW

8.1. Main View Introduction

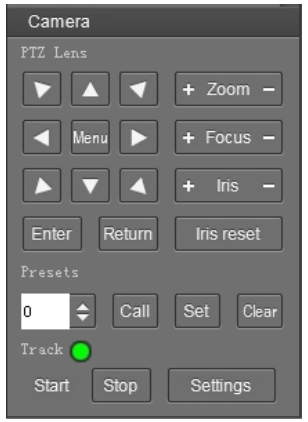
Click Main View to get into camera control and preview part as below.

The interface consists of the following three parts: Device List, Device cnotrol and Video preview.

■ Device List: Displays all online cameras added to Device Management.



■ Device Control: get control of the selected camera (camera name in blue)



■ Video Preview: double click the camera in the list, main camera stream will be displayed in the preview window; or right click the selected camera from the left column to get its main or substream video. Video preview mode can be single video or four video's, when in four video's mode, select one of the four video's then choose the bottom right icon to enlarge this selected video to a big single window.

■ Video: Default storage path: { APP } | save video file.

7.3.6. Setting

Configuration							
Streaming	Network	RTMP	Trans. throu.	Upgrade	System		
Old password				Local time		2021-10-28 18:23:18	OK
New password							
Confirm						■Show time	
		Save		Time format		YYYY-MM-DD HH:mm:ss	▼ OK
Device name		CAM1		NTP		Disable	▼
		Save		Timezone		+00:00	▼
				NTP Server			OK
Maintenance		Reboot	Recovery				

■ Password setting: when a password is required, the camera can be accessed only after a correct password is input;

■ Maintenance: Reboot or Recovery;

■ Device name: set the camera name, click “Save”;

■ Time setting:

■ a. Synchronize local time;

■ b. Show time or not on the CMS video and set the time format;

■ c. NTP Server setting.

5.2. INSTALLATION INSTRUCTIONS

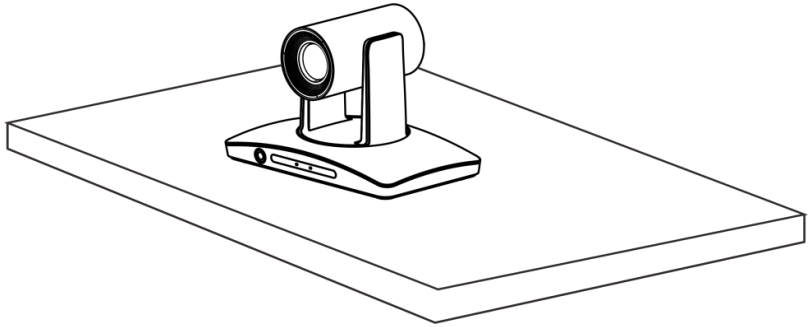
The camera has 2 installation types: desktop, wall (optional) installations.

🕮Note

- Before installing, make sure there is enough space to install the camera and its parts;
- Make sure the installed place is strong and safe enough to hold the camera and relative parts, it is suggested that the installed place can withstand 4 times the weight of the camera and its relative parts.

5.2.1 Desktop Mount Installation

1. Put the camera on a flat surface. In case the camera has to be placed on an inclined surface, make sure the cline angle is less than 15 degrees to ensure proper pan /tilt operation.

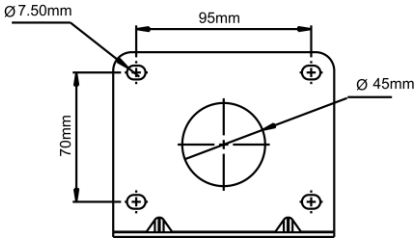


🕮Note

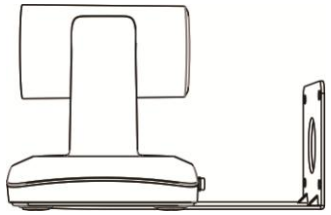
- Take effective measures to avoid camera from dropping;
- Do not grab the camera head when carrying;
- Do not rotate the camera head with hand. It may cause malfunction to the camera.

5.2.2. Wall Mount Installation（Supplied Separately）

1. According to diameter and position of the 4 installation holes (As shown below) on the bracket, drill 4 holes on the wall and fix the bracket onto the wall by using 4 screws （M6*60） which should be prepared separately.



2. Use inch screws to fix the camera on the bracket, fix the limit screw according to actual requirement, and make sure the camera is tightly fixed onto the bracket before your hands leave the camera.



6. SOFTWARE CONNECTION

6.1 Software Connection

Take out Disc from the camera package, install “CameraCMS” from the disc on your PC, turn on “CameraCMS” , connect and add camera to the management device list, and enter into the main interface. Select one of the cameras to proceed with following settings:

7.3.4. Transparent Transmission

Configuration						
Streaming	Network	RTMP	Trans. throu.	Upgrade	System	
Enable		Disable ▼				
Protocol		TCP ▼				
Camera as		Client ▼				
IP		0.0.0.0				
Port		1259				
		Save				

Functions:

1. Transparent transmission of VISCA PTZ control commands;

2.Transmit camera status code;

■ Enable / Disable: enable / disable transparent transmission;

■ Protocol: choose TCP or UDP protocols;

■ Camera as: choose Client or Server;

■ IP: when the camera is set as client, the IP address of the transmitted camera is needed. When the camera is set as server, the IP address can be left as black;

■ Port: choose from 1-65535 as transparent transmission port.

7.3.5. Upgrade

Configuration						
Streaming	Network	RTMP	Trans. throu.	Upgrade	System	
Upgrade File				...		Upgrade
File version						
Camera version		1.0.01				
Is version		AMBA V4.0.14				
Upgrade Status						

■ Camera Update

Click “Upgrade” menu to enter the main interface, as the picture shown above.

Click [...] to search and load the updating firmware, then click “Upgrade” to start upgrading. Do not power off the camera during upgrading. After upgrading is completed, camera will reboot.

7.3.2. Network

Configuration						
Streaming	Network	RTMP	Trans. throu.	Upgrade	System	
Connection with		Static IP ▼		Rtsp port		554
IP Address		10.0.3.210		App port		5000
Mask		255.255.255.0				
Gateway		10.0.3.1				
DNS 1		192.168.3.1				
DNS 2		114.114.114.114				
						Save

■ Connect with: please choose from Static IP or dynamic IP address;

■ IP address: input unused IP address on the network;

■ Mask: same as those used by other PC's on the network;

■ Gateway: input gateway IP address;

■ DNS 1: server-prior, same as other PC's on the LAN;

■ DNS 2: It will be used in case DNS1 server is not working;

■ Port: streaming port (RTSP) and application port (SDK connection) can be configured. The range of stream ports is 3479~7999 and 554, default is 554. The range of application ports is 3479~7999, default is 5000;

■ Click the "Save" button after setting is completed;

■ Camera will connect to Ethernet after above-mentioned operations.

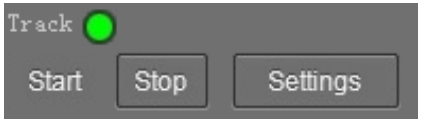
7.3.3. RTMP

Configuration						
Streaming	Network	RTMP	Trans. throu.	Upgrade	System	
RTMP 1 ■		Rtmp: //10.0.3.6:31935/live/g11				
Main stream ▼						
RTMP 2 ■		Rtmp: //10.0.3.6:31935/live/g11				
Sub stream ▼						
		Save				

In RTMP1 and RTMP2, main stream, sub stream can be chosen to stream.

Support common RTMP servers, such as red5, nginx, crtmpserver, fms, wowza.

6.1.1. Tracking Settings



Start: turn on tracking, use controller or call preset 80 from CMS software to turn on tracking;

Stop: turn off tracking, use controller or call preset 81 from CMS software to turn off tracking;

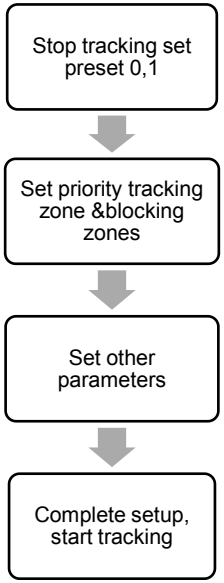
Settings: Click this button to get into detailed tracking parameters for configuration;

Once this button is clicked, main stream will automatically switch from tracking camera to full view camera. Once configuration is completed, main stream will return to tracking camera again.

6.2. Camera Settings

6.2.1. Lecturer Tracking Camera

6.2.1.1 Setting Process



Preset 1: preset 1 is the position where tracking starts, preferred to be set at lecturing area (where lecturer usually moves in front of the room); to configure it, move the camera's Pan/Tilt/Zoom to put the lecturer in the appropriate size and position in the image, then set it as preset 1. In some other cases, the preset 1 is also useful: after camera finishes calibration, it will sit at preset 1; once tracking object gets lost, the camera can be configured to move to preset 1; when the camera starts auto zooming, its zooming times is also based on preset 1's zooming times.

Preset 0: it is a position that can be configured to have the camera move to once tracked object gets lost, recommended to set at a full view image of the lecturing area.

6.2.1.2 Main Control Interface

Click **Settings** to enter the parameters setting interface

7.3. Configuration

Choose the camera in the device list, click "Configuration" in the menu to upgrade and configure other network parameters.

7.3.1. Streaming

Configuration						
Streaming	Network	RTMP	Trans. throu.	Upgrade	System	
Stream type		Main stream ▼		Channels		STEREO ▼
Resolution		1080P ▼		Encode type		AAC ▼
Video rate type		VBR ▼		Sampling rate		48KHz ▼
Stream rate (Kbps)		4000		Audio rate		48Kbps ▼
Video frame rate:		30 ▼		Input pin		Line In ▼
I interval		30		Volume		50
Video coding type		H264 ▼				Save
Encode level:		High ▼				
		Save				

■ Stream type: set the parameters of main stream and sub stream. Different devices support different streams;

■ Resolution: set among 1080P(1920*1080), HD720P(1280*720), 360P(640*360), choose resolutions based on actual requirements and capability of device. The higher the resolution is, the better network requirements will be needed;

■ Video rate type: set CBR or VBR;

■ Video frame rate: refers to the number of frames per second of video;

■ Interval: configure the number of frames between the two key frames. The larger the key frame interval is, the smaller the fluctuation of the byte will be, but the image quality is relatively poor. Vice versa, the larger the fluctuation of the byte will be, the higher the image quality will be. Default values are recommended;

■ Video coding type: choose H.264 or H.265;

■ Encode level: choose from Base, Main and High;

■ Channels: Support STEREO;

■ Encode type: Only support AAC, set sampling rate and Audio rate at the same time;

■ Sampling rate: 48KHz;

■ Audio rate: choose from 48Kbps, 64Kbps, 96Kbps, 128Kbps;

■ Audio input: choose the type of audio input;

■ Volume: pull the volume bar to set the volume, range is 0~100.

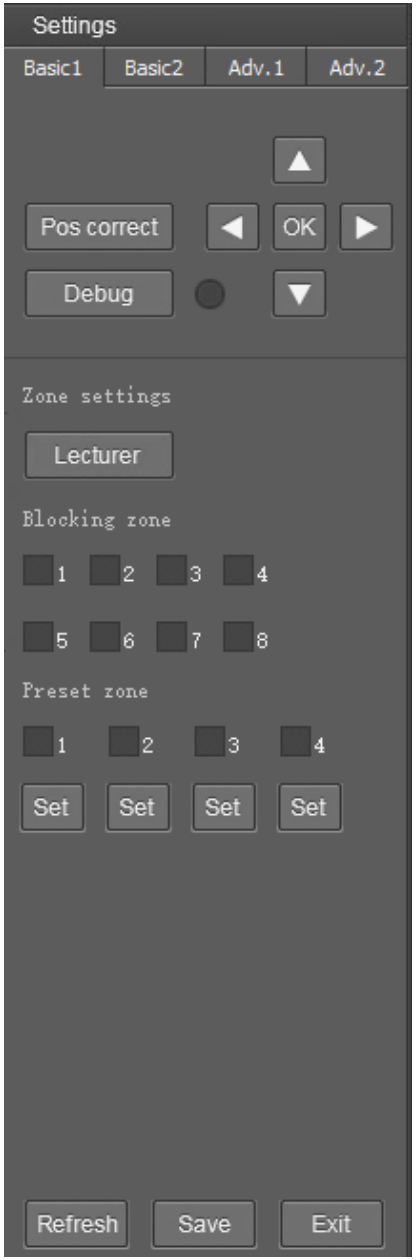
In Modify Network parameter, first choose the device and check information in “Modify Network”, input the IP address, Mask, Gateway, finally click “Modify”.

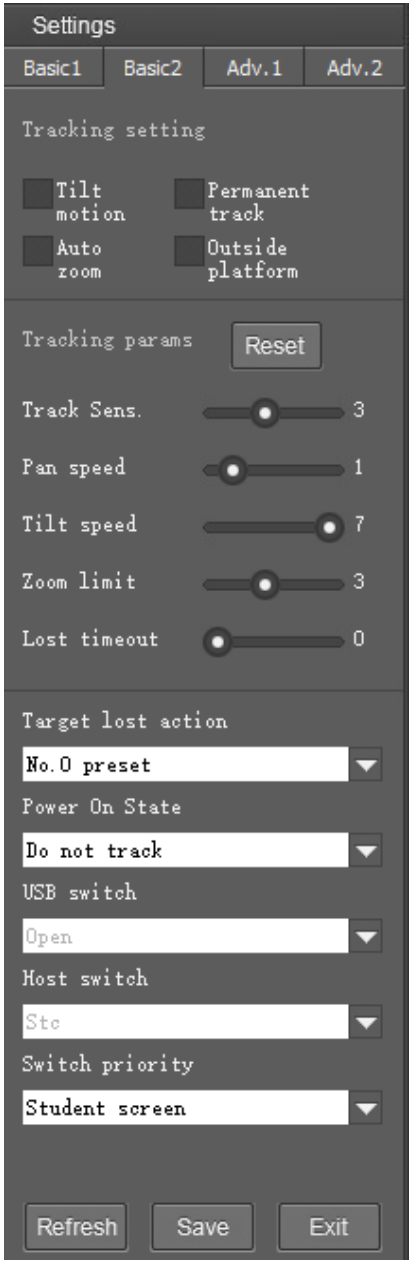
Modify Network Parameter			
LAN			
Device information:		Network information	
Name	CAM1	Connection	Static IP ▼
MAC	00:04:05:01:88:89	IP	10.0.3.179
Serial No.	L6D3V3H2B9OUQUK4G224	Mask	255.255.255.0
		Gateway	10.0.3.1
		DNS1	10.0.0.1
		DNS2	0.0.0.0
			Modify

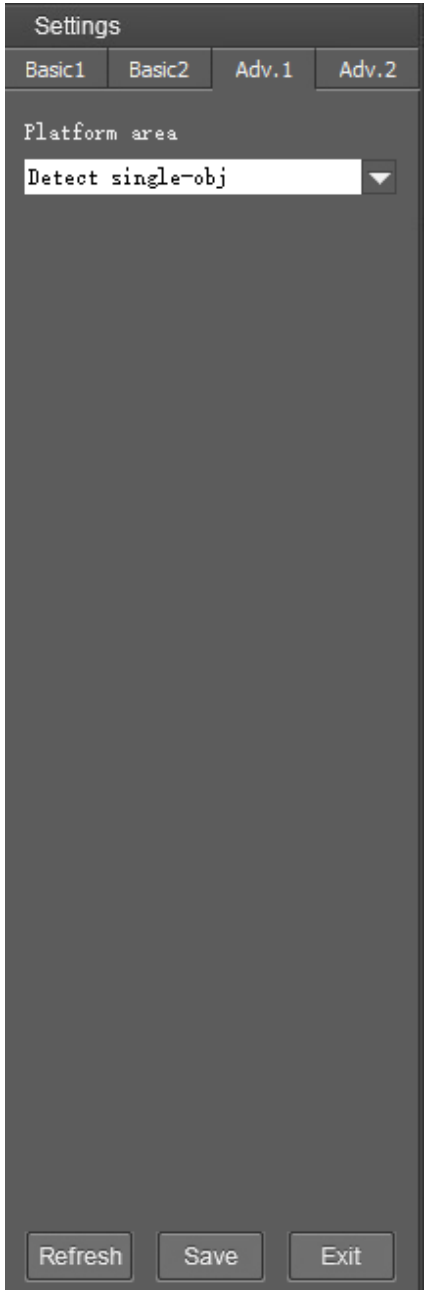
To control and preview a camera, first choose the device, modify its IP address as the IP address of the same LAN, then click “Add to Client” as the picture shown below:

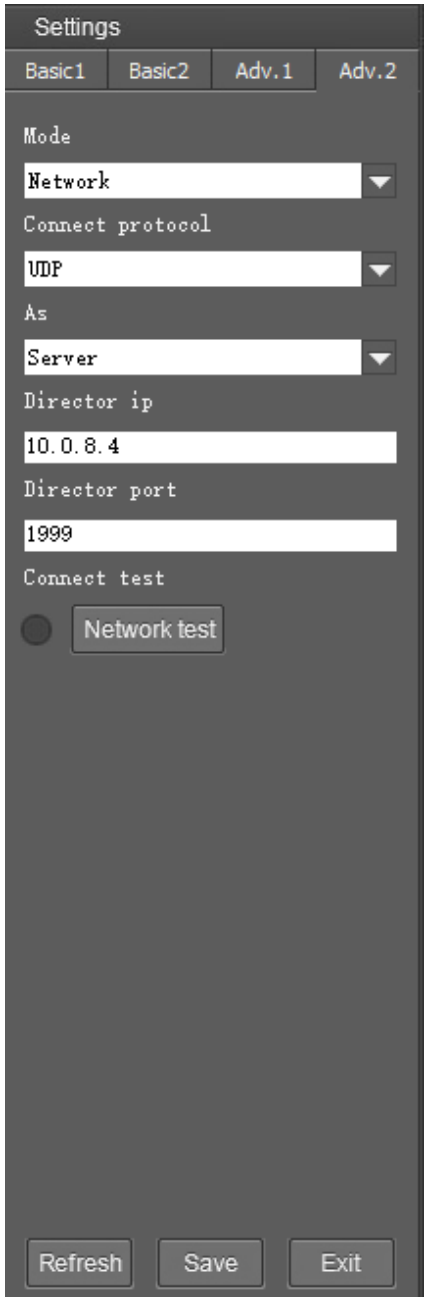
+ Add to client		Modify network		Refresh	Stop searching		Batch upgrade	Filtration	
No.IP	IP	Serial No.	MAC			WIFI	Device name	Type	Version
001	10.0.3.196	R1Z0A002TZ04QUM4N4Y5	00:04:05:0F:6B:C7			NO	CAM1	CAM1	1.0.10

Add the camera in the WAN according to the WAN Connection instructions.







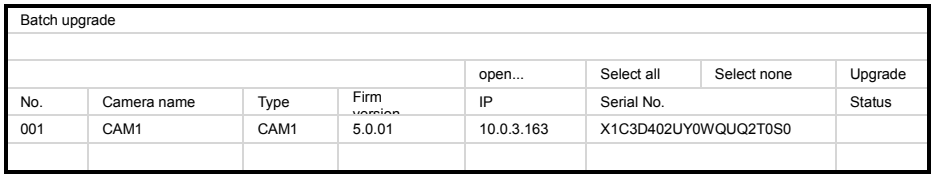


Install and open the client software in PC, enter the Device Management interface, as shown below:

If the camera and PC are in the same LAN, click “Start Search”, then searching starts and all online

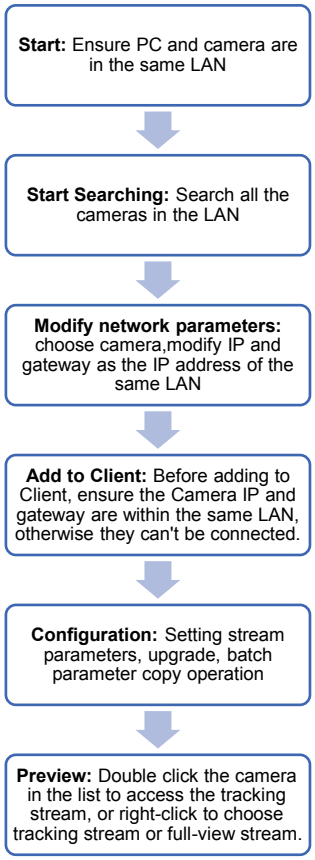
devices will be listed, as the picture shown below:

If batch upgrade is performed for multiple cameras, select multiple devices in the list first, then select the upgrade file in the camera program file path, click **Update** and then batch upgrade is completed.



7.2. Search and add the camera

CameraCMS setup process:

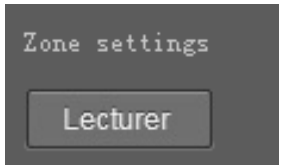


6.2.2. Basic Parameters Setting

6.2.2.1 Debug

Enable and disable display current status of face detection of full-view camera.

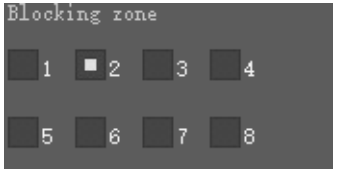
6.2.2.2. Zone Setting



Set tracking zone: to set blocking zones for interference sources (such as the projection screen, electronic whiteboard, and TV screen) in the lecturing area.

Lecturing area is recommended to set as tracking area because camera can continue tracking after target leaves the podium and walks around classroom, if there are other target moves into the lecturing area then, the tracking camera will return to the lecturing area and track the new target accordingly.

Upper edge of the blackboard (at least higher than the head of the teacher standing on the platform) is recommended to set as the upper boundary of the tracking zone, whereas the lower boundary of the tracking zone should be set as higher than the head of the first row of students, typical example of zone setting is shown in the green box below:



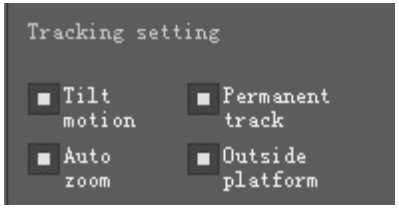
Blocking zones: there are 8 blocking zones shown in green rectangle, they can be configured independently. The moving objects inside the blocking zones of the full-view camera will not be detected and tracked while the tracking camera still tracks the lecturer.

Note

- Blocking zones should be configured inside the tracking zone to take effect.

Preset zone: configure presets for preset tracking, totally 4 presets could be configured. Every preset can be cancelled separately. After presets are configured, once target enters into every preset zone, the tracking camera moves to relative preset accordingly to realize zone tracking, this feature is especially useful when there are more than one target show up in the lecturing area.

6.2.2.3 Tracking Setting



Tilt Motion: when it's enabled, the camera will automatically adjust tilt angle during tracking. When it's disabled, the camera will track as per the tilt angle of preset 1.

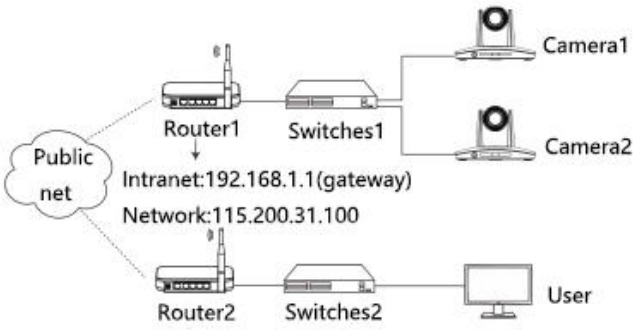
If the lecturer does not walk into the student area, it's suggested to disable auto zoom and tilt motion.

List of rules for port mapping	
Not applied	□Do not apply this rule If disabled, the following configuration will only be saved but will not applied.
External port	Input an external port to be mapped to an open port of an internal host. If left blank, the external port is identical to the internal port. The range is between 1 and 65535
Internal IP	The IP address of the internal host that provides external service. For example: 192.168.0.50
Internal port	The open port of the internal host that provides external services. The range is between 1 and 65535
Protocol	TCP The protocol used for port mapping can be TCP, UDP or both.
Mapping line	Any The line used for port mapping can be single WAN or multi WAN
Note	A short note to describe this mapping rule could be added. For example: The WEB server for marketing Department.

Condition3: Router of the LAN where camera is connected has fixed public IP address

Extranet access: Router 1's public IP address is 115.200.31.100, for example, go through the above steps one and two, WAN users under router 2 can access camera 1 through IP address 115.200.31.100 + port 10200. Then, in WAN, the mapping of camera 1 and (IP 115.200.31.100 + port 10200) is established. Camera 2 can use another external port such as 10320, so mapping of camera 2 with (IP 115.200.31.100 + port 10320) is established. In the "Managed Device" of the client software CameraCMS, click "+ Add", enter the IP address 115.200.31.100 and port 10200 and other information, then the camera 1 can be accessed and controlled.

7.1.2. WAN Connection



Please refer to the above diagram, user PC and the camera are in different routers, they are considered as in a WAN, in this condition, Client can't search and find the camera automatically. Client can still access the camera once below three conditions are satisfied.

Condition1: Set camera's IP address as static IP address

Set camera's IP address in LAN: connect user PC to the LAN (Router 1) where the camera is connected according to LAN connection instructions, use application software CamCMS to search and find the camera, then add it to manage; then set camera's IP address in the same network segment as the router 1. Camera's gateway is usually set at Router 1's LAN IP address, for example, 192.168.1.1, then camera's IP address can be set as for example 192.168.1.179 or 192.168.1.180 as long as they are in the same network segment.

Condition2: Router of the LAN where camera is connected supports Port Mapping

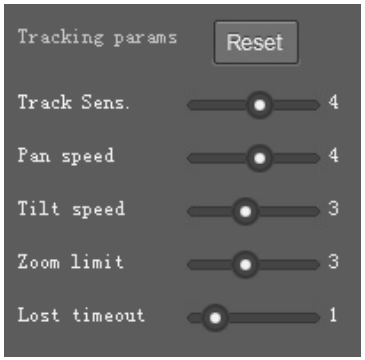
Router Port Mapping: User's PC logs into router configuration menu, gets into "Port Mapping" (router management authorization may be required); refer to below picture, DO NOT tick "Do not apply this rule", from first frame under "External port", input any number from 1~65535, but preferred to be set at more than 10000 like 10200 so there will be less port conflict possibility. From "Internal IP", input the camera1's IP address 192.168.1.179, from first frame of "Internal Port", input 3478, (all cameras use this same port number). "Protocol" and "Mapping Line" can be default, from "Note", input "Camera 1's mapping port" or something to understand.

Permanent Track: when it's enabled, tracking will be activated all the time even when the lecturer walks into the student area. To avoid an extreme low tilt angle, it's suggested to disable permanent tracking, and the camera will not track at an extreme low tilt angle.

Auto zoom: when it's enabled, during tracking, the camera will auto zoom in or out. When it's disabled, the zoom during tracking will be according to preset 1.

Outside platform: when it's enabled, the camera will still track if the object is outside the tracking zone.

6.2.2.4. Tracking Parameters



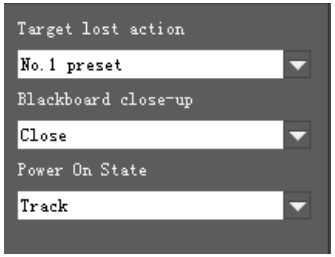
Track Sens: set sensitivity of tracking based on speed of movement, if value is big, camera tracks at minor movement.

Pan Speed: set pan speed for tracking;

Tilt Speed: set tilt speed for tracking;

Zoom Limit: Higher value enables higher zoom times;

Lost Timeout: Loss timeout refers to the waiting time for the camera to execute the target loss action after the target is lost (return to preset 1 or return to preset 0).

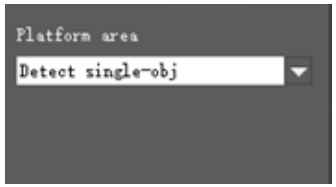


Target Lost Action: used to define the action to be performed if the camera loses the tracked object for a period of time.

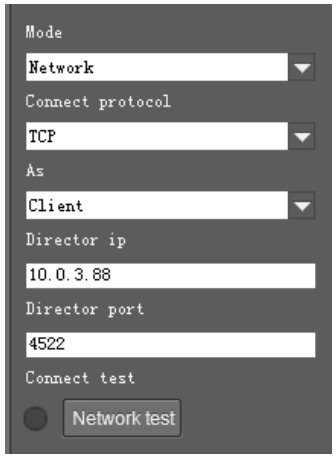
Power On State: the action to be performed when the camera is powered on.

6.2.3. Senior Parameters Setting

6.2.3.1 Senior Parameters Setting



Platform area: determine whether to detect only single target or multiple targets on the lecturing area.



(Code Send) Mode: choose to send returning codes via network or RS232 interface;

Connect Protocol: once “Network” is chosen as “Mode”, choose TCP or UDP as communication protocol;

(Lecturer Tracking Camera) As: once “Network” is chosen as “Mode”, choose “Client” to actively communicate with recorder, choose “Server” to await to be communicated from recorder;

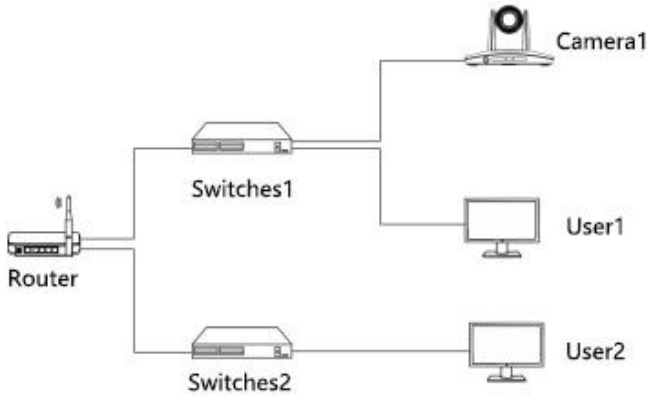
Director IP and Port: once “Network” is chosen as “Mode”, configure recorder’s IP address and Port at these two frames.

7. DEVICE MANAGEMENTS

7.1. Network Connection

Connect camera to network with an Ethernet cable, power on the camera.

7.1.1 LAN Connection



Please refer to the above diagram, user1 and user 2 are in the same router, they are considered as in the same LAN, connect the camera to the same LAN as where the PC is, and refer to below instructions as how to use the application software, then the camera can be found and connected from the online device list.