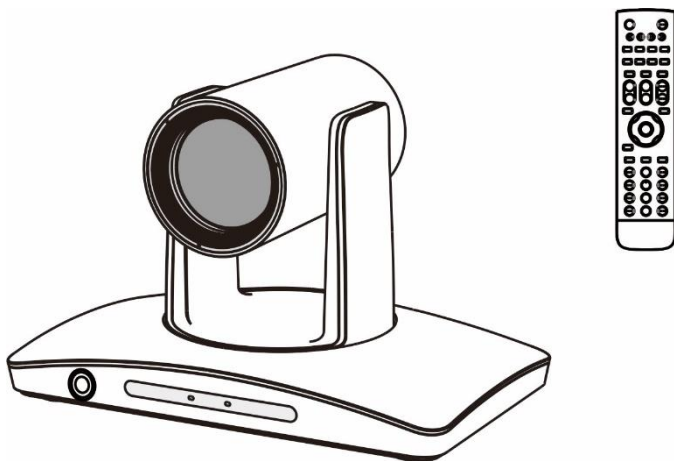


Lecturer Tracking Camera

User Manual V1.0



VCS-A200LT

SAFETY NOTICE-IMPORTANT

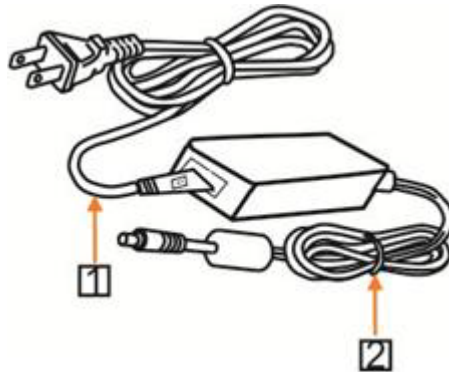
The following important notes must be followed carefully to run the camera and respective accessories in total safety. The camera and relative accessories are called video system in this section.

- Before installing the camera, please read this manual carefully. Please follow installation instructions indicated in this manual during installation. Please keep this manual for future use.
- The installation should be performed by qualified service personnel or system installers in accordance with all local rules.
- Before powering on the camera, please check the power voltage carefully. Make sure that you are using the correct power source.
- Please put the power cable, video cable and control cable in safe place.
- Do not operate the camera beyond the specified temperature and humidity. Working temperature range of the camera is between 0°C and +40°C. The ambient humidity range is less than 95 % .
- During transporting, avoid violent shake or force to the camera.
- To prevent electric shock, do not remove screws or housing of the camera. There are no self-serviceable parts inside. Refer to qualified service personnel for servicing.
- Video cable and RS485/RS232 cable should be kept far away from other cables. Shielded and independent wiring is necessary for video and control cables.
- Never aim the lens of the camera at the sun or other extremely bright objects. Otherwise, it may cause damage.
- When cleaning the camera, please use soft cloth. If the camera is very dirty, wipe it off gently with a soft cloth moistened with a weak solution of water and a neutral kitchen detergent. Wring all liquid from the cloth before wiping the camera, then wipe off all remaining dirt with a soft, dry cloth. Use lens cleaning paper to clean the lens.

Do not move the camera head manually. In doing so would result in malfunction of the camera.

Do not hold the camera head when carrying the video camera.

- This camera is for indoor use only. It is not designed for outdoor use.
- Make sure the camera is not directly exposed to rain and water.
- Make sure the camera is far away from area where radiation, X-rays, strong electric waves, or magnetism is generated.



⚠ Warnings

1. If you need to extend the power cable, please extend the power cable from the part on below picture (220V/110V), do not extend from part 1 on below picture (DC12V), otherwise it will cause unexpected damage to the device.
2. To prevent infringement of the rights of others, please confirm that it is installed and used within the scope permitted by local law!

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ABOUT THE PRODUCT

Quick Guide

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

- Client software iSmartCMS: tracking setting, camera search and control, network setting.
- VLC: watch the camera four streams;
- IE: camera image preview, camera control, network setting;
- SDK: provide secondary development kits for the connecting and controlling of camera;
- Onvif: version 2.1 supported

Name: admin
Initial password: 123456
- Network pass-through: recommended connection mode with lecture recording device.

iSmartCMS

Refer to detailed instructions in page 15 of this user manual.

rtsp

1 Make sure PC and the camera are in the same LAN.

2 Four channel stream url: rtsp://IP/chx, x=1, 2, 3, 4. 1 & 3 stream tracking camera image, 2 & 4 stream full view camera image.

3 IP address is acquirable through iSmartCMS, default rtsp port is 554.

IE

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

3 Input IP address+ port number 88 (port numbers fixed to 88) in the IE address bar:

http://IP:88, such as

http://192.168.18.229:88

3 Install plug-in;

4 Name: admin Initial password: Null;

5 Support Windows 7 or above operation system, whereas Windows XP is not supported.

SDK

Disk comes with camera includes:

SDK_Demo: SDK development sequence;

SDK_Doc: instruction of SDK connection;

SDK_Lib: SDK Library. SDK only provides

image acquiring, PTZ controlling and etc,

tracking configuration is not included.

Network pass-through

On the tracking parameters setting page, the IP address, port and connection protocol (TCP/UDP) of the lecturer recording device

can be configured. After connected, the camera can be controlled by the standard VISCA protocol. Lecture recording device can achieve audio & video of the camera through rtsp or rtmp.

FEATURES

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.

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.

Characteristics & Functions

Featured Advantages

- Advanced face and motion detection technology;
- Integrated Full HD full view camera and Full HD tracking camera;
- The camera can track lecturer all around the classroom, even if lecturer walks into students area;

- The camera can adjust automatically as per the height of lecturer;
- Excellent locking and anti-interference: 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;
- Precisely and stably track a specific target, free from any light & moving interference;
- Smart AE: keeps the same exposure with considerable lighting variability;

Intelligent Tracking

- Smooth tracking performance, free from interference of other moving objects, also even if the target turns around, stands still for a long time or his / her other small gestures will not affect the tracking effect;
- Auto zoom performance during tracking;
- Suits all kinds of classroom with different size, shape and type;

IP (Network)

- H.264/H.265 video compression;
- Support dual stream to output tracking image;

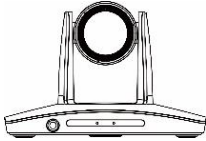
Simple Configuration

- 1 priority zone, and 8 blocking zones can be easily set through control software installed on PC;
- User-friendly interface, simple parameter settings, parameters can be set via network.

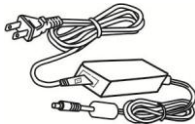
List Of Parts & Accessories

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

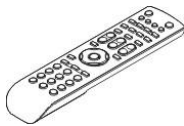
Camera (1)



Power Adapter (1)



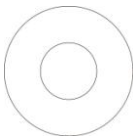
Remote Controller (1)



Cable Package (1)



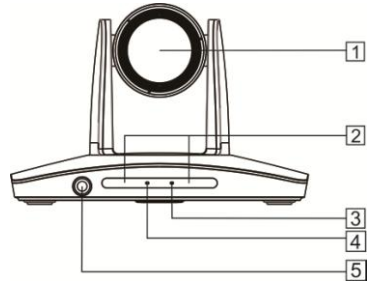
Software Disc (1)



Main Parts & Interfaces

Camera

Front View



1 Camera Module

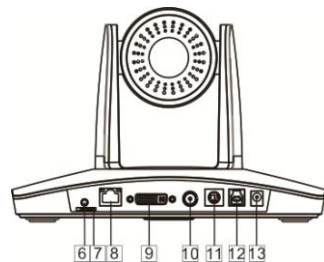
2 Remote Controller Indicator

3 Power Indicator

4 Communication Indicator

5 Full-view camera

Rear View



6 Audio

7 TF Card Slot

8 RJ45 (Network)

9 DVI Video Output

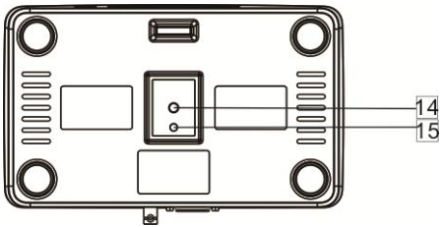
10 3G-SDI

11 RS-232 / RS-485

12 USB

13 Power(DC12V)

Bottom View



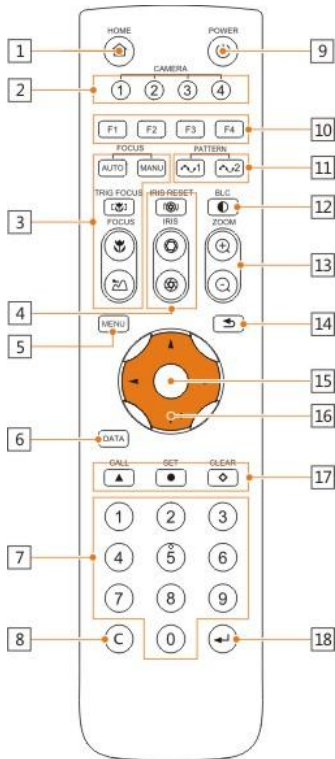
14 Mounting Hole

1/4"inch screw thread for fixing camera.

15 Locating Hole

To define installation direction of camera.

Remote Controller



1 HOME


Press **HOME** button, camera moves to initial position where both pan and tilt angle is zero.


2 Camera Selection Button


Used to switch among 4 cameras, press 1-4 number buttons to control cameras with 1-4 addresses respectively. For example, press button 1 to control the camera with address 1.

3 Focus



Press "AUTO" button to switch to Auto Focus, press "MANU" button to switch to Manual Focus mode.


"" button to Focus Near

"" button to Focus Far

"" button to Auto Focus once every time it is pressed, then switch back to Manual Focus mode.

4 Iris

Press "" button to reset iris value to default. "" button to Iris Open

"" button to Iris Close.

5 Menu

Press **MENU** button to enter / exit menu.

6 Data

Press **DATA** button to set on / off the display of pan tilt angle, zoom times and other prompt message.

7 Number Keys

Used to input numbers, for example, preset number.

8 Cancel

To cancel numbers input.

9 Power

After the camera has been connected to power source, in none-menu status, press this button to turn on / off the camera.

10 Reserved buttons (F1, F2, F3, F4)

These buttons are reserved for future use.

11 Pattern


Used to activate Pattern Scan 1 and Pattern Scan 2.


12 BLC

Used to open / close back light compensation.


13 Zoom

Used to adjust zooming times.

“” button to zoom in.

“” button to zoom out.

14 Back

Press “” button to go back to previous menu.





15 OK

In None-menu status: press this button to switch among pan / tilt control speeds.


In Menu status: get into relative menu option after it has been selected.

16 Direction / Menu Operation


In None-menu status, press these four buttons to pan left/right and tilt up/down.

In Menu status:  or  button to select among menu options,  or  to change option / value.


17 Preset Setting

“” button to call a preset.

Input number key(s), and then press this button to call a preset.

“” button to set a preset.

Move the camera to a specific position, adjust focus value and etc, and then press this button to set a preset.

“” button to clear a preset.

Input number key(s), and then press this button to clear a preset.

18 Enter

After inputting numbers, press this button to confirm.

INSTALLATION

INSTRUCTIONS

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

Note

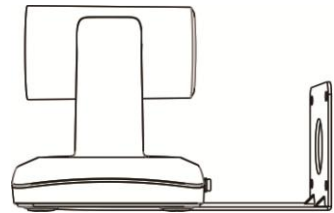
Before installing, make sure there is enough space to install the camera and its parts.

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.

Note

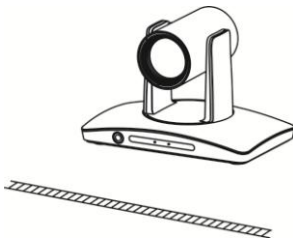
- Take effective measures to avoid camera from dropping.
- Do not grab the camera head when carrying.
- Do not rotate the camera head with hand. It may cause malfunction to the camera.

Wall Mount Installation

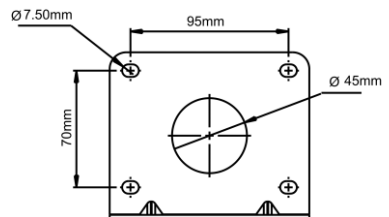


Desktop Mount Installation

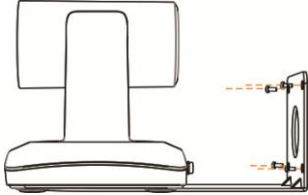
1. Put the camera on a flat surface. In case the camera has to be placed on an inclined surface, make sure the cline angle is less than 15 degrees to ensure proper pan /tilt operation.



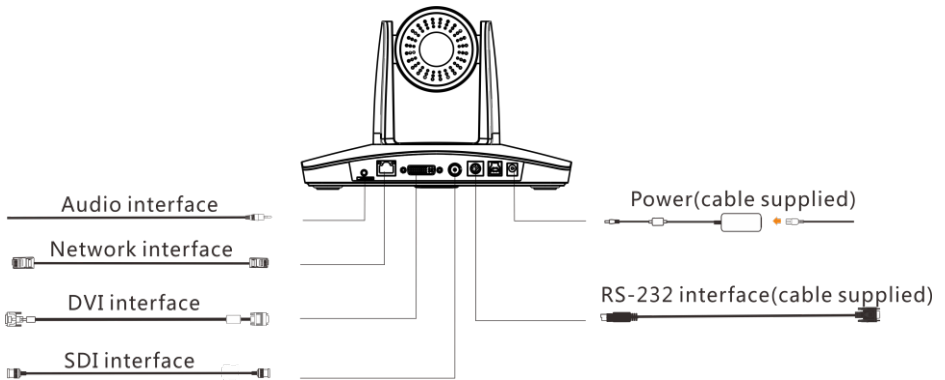
1. According to diameter and position of the 4 installation holes (As shown below) on the bracket, drill 4 holes on the wall and fix the bracket onto the wall by using 4 screws which should be prepared by you.



1. 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.



CONNECTION INSTRUCTION



Note

If preset 0 has been saved, after powered on, camera moves to preset 0 automatically; if preset 0 has not been saved, after powered on, camera moves to Home position, where both pan and tilt angle is zero and zooming time is 1x.

SETTING

Software Connection

Take out Disc from the camera package, install "iSmart CMS" from the disc on your PC, turn on "iSmart CMS", connect and add camera to the management device list, and enter into the main interface. Select one of a camera to do the following settings:

Tracking Settings



Start: turn on tracking, using controller or software to call preset 80 can also turn on tracking.

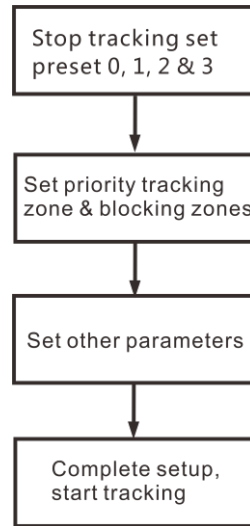
Stop: turn off tracking, using controller or software to call preset 81 can also turn off tracking.

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.

Lecturer Tracking Camera

Setting Process



Preset 1: preset 1 is the position where tracking starts, preferred to be set at Podium; 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. See basic parameter settings for details.

Preset 2: this is the position that camera moves to after blackboard writing sensor detects writing action. For the long case of the blackboard, you can set the left blackboard writing sensor tracking for the 2nd preset point, the right blackboard writing sensor tracking for the No. 3rd preset point. If the blackboard is short, a preset point can be overwritten, set to number 2nd preset point.

Tracking Setting

Basic1	Basic2	Senior1	Senior2
Basic params			
Video format	1080p25		
Baud rate	9600bps		
Protocols	VISCA		
Device addr	01		
Pos correct		▲	
Face hight		◀	▶
Debug		●	▼
Zone settings			
Lecturer			
Blocking zone			
<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8
Refresh		Save	Exit

Basic1 Basic2 Senior1 Senior2

Tracking setting

Tilt motion Permanent track

Auto zoom Outside platform

Tracking params

Track Sens. 4

Pan speed 4

Tilt speed 3

Zoom limit 3

Lost timeout 1

Target lost action

▼

Blackboard close-up

▼

Power On State

▼

Basic1 Basic2 Senior 1 Senior 2

Mode

▼

Connect protocol

▼

As

▼

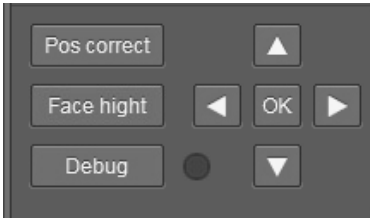
Director ip

Director port

Connect test

Basic Parameters Setting

The factory default setting of the camera is 1 (address), 9600bps, VISCA protocol, 1080p25 for tracking camera and full-view camera.



Position Calibration

Adjust the lecturer's position in the video when he/she is not in the center of image.

Warning: The position has been adjusted to the best value before leaving the factory, do not change it until it is necessary.

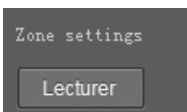
Face Hight

User can adjust the object's head height in the view.

Debug

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

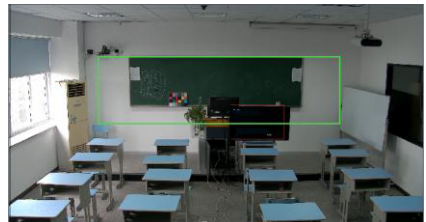
Zone Setting



Recommended to set the platform or podium as priority zone, the camera will detect object from this zone to start tracking accordingly. Set other interference sources (like projector, digital whiteboard, TV screen and etc) near the platform or podium as blocking zones so the camera will not track these sources. The blocking zones must be inside the priority zone; otherwise, they will not be blocked.

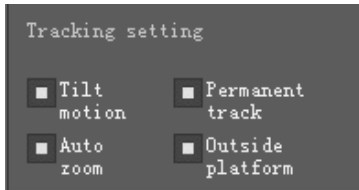
The camera's tracking range can cover the whole classroom, so the platform zone is defined as a priority tracking zone.

Usually set the top edge of the blackboard as the top boundary of the platform zone (at least higher than the lecturer's head), and the bottom boundary is higher than students' head sitting in the first row.



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.

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.

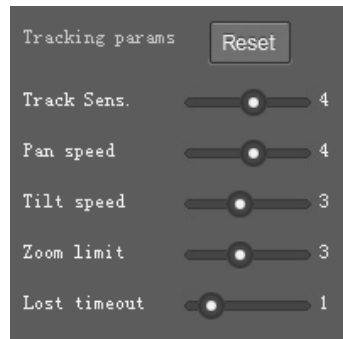
If the lecturer does not walk into the student area, it's suggested to disable auto zoom and tilt motion.

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.

Tracking Parameters



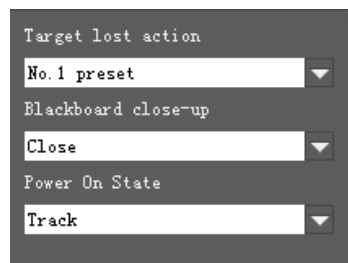
Track Sens: set sensitivity of tracking based on speed of movement. High sensitivity will track at small movement.

Pan Speed: set pan speed for tracking;

Tilt Speed: set tilt speed for tracking;

Zoom Limit: Higher value enables higher zoom times.

Lost Timeout: set the interval before Object Lost Action will be performed, (go to preset 1 or 0). Default is 5 seconds.



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

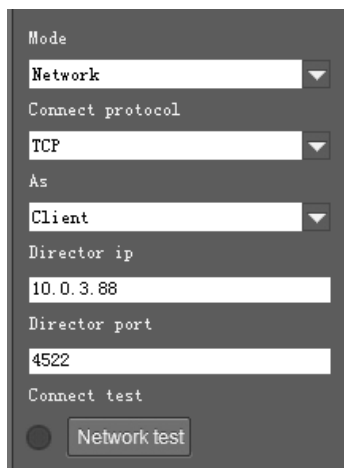
Blackboard Close-up: used to define the action to be performed when Blackboard writing sensor is triggered. When Preset 2 is selected, the camera will go to preset 2. When Lecturer Tracking is selected, the camera will move to preset 2 and starts tracking there.

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

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.

Senior Parameters Setting



The screenshot shows a configuration window with the following fields and controls:

- Mode: Network (dropdown menu)
- Connect protocol: TCP (dropdown menu)
- As: Client (dropdown menu)
- Director ip: 10.0.3.88 (text input)
- Director port: 4522 (text input)
- Connect test: A radio button is selected, and a button labeled "Network test" is visible.

(Code Send) Mode: choose to send codes via network or serial port;

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

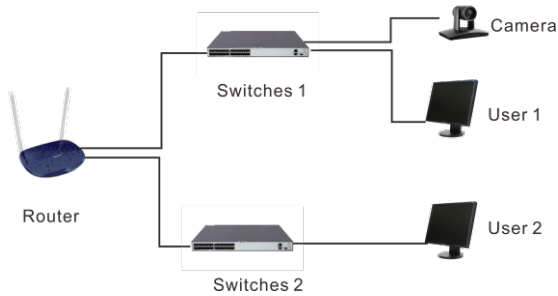
(Lecturer Tracking Camera) As: once “Network” is chosen as “Mode”, choose “Client” to actively communicate with

Smart CMS Application Software Guide

Network Connection

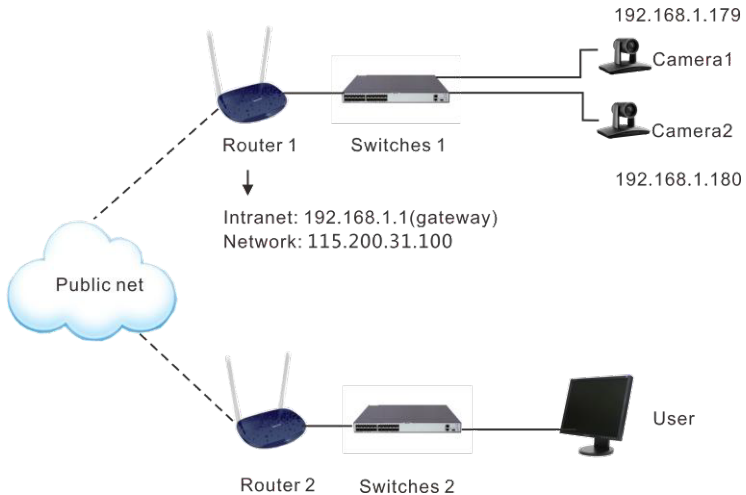
Connect the camera to network with an Ethernet cable, power on the camera.

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.

WAN Connection



Please refer to the above diagram, user and the camera are in different routers, they are considered as in a WAN; in this condition, application software iSmartCMS can not search and find the camera automatically. User can still connect after below conditions are satisfied: (1) Set camera's IP address as static IP address (2) Router of the LAN where camera is connected supports Port Mapping. (3) Router of the LAN where camera is connected has fixed public IP address. Follow below steps to connect:

Step One

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 iSmartCMS 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.

Steps Two

Route Mapping: User 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 camera'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.

Port mapping

List of rules

Not applied	<input type="checkbox"/> Do not apply this rule If you disable this rule, the following configuration will only be saved but will not applied.
External port	<input type="text"/> <input type="text"/> You can input an external port or an external port segment to be mapped to an open port or port segment of an internal host. If you leave it blank, the external port or port segment is identical to the internal port or port segment. The range is between 1 and 65535.
Internal IP	<input type="text"/> The IP address of the internal host that provides external service. For example: <i>192.168.0.50</i>
Internal port	<input type="text"/> <input type="text"/> The open port or port segment 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	<input type="text"/> You can write a short note to describe this mapping rule. For example: <i>The WEB server for Marketing Department.</i>

Save

Back

Help

Port mapping function can map the service port of the intranet server host to extranet, so external network users can access the services offered by the intranet server through the external IP address and port of the router.

Notice:

· Port mapping works only if "Block extranet requests" on the Attack defense page is disabled.

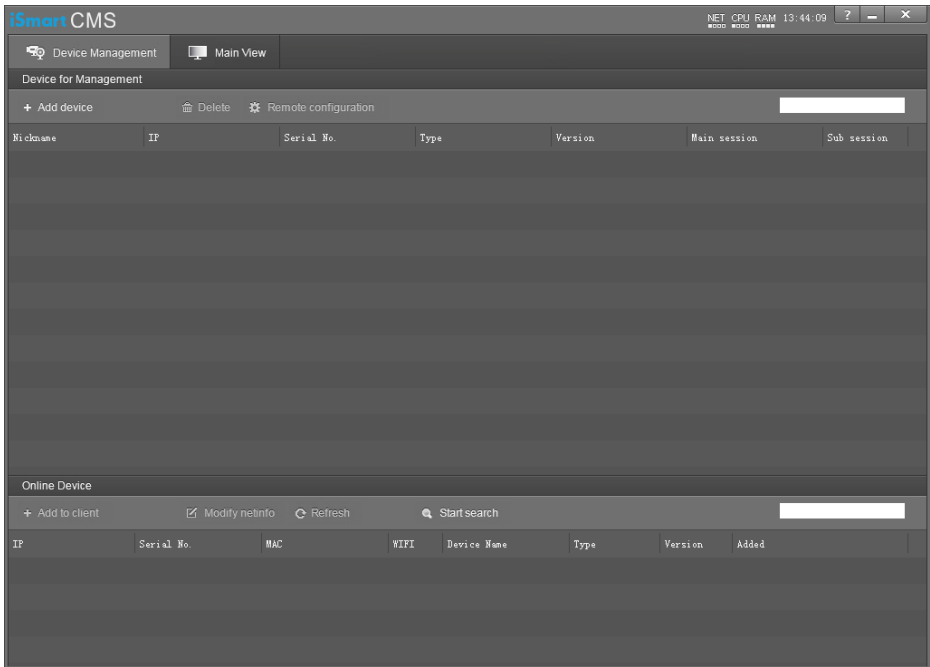
Step Three

Access from external network: 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 iSmart CMS, 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.

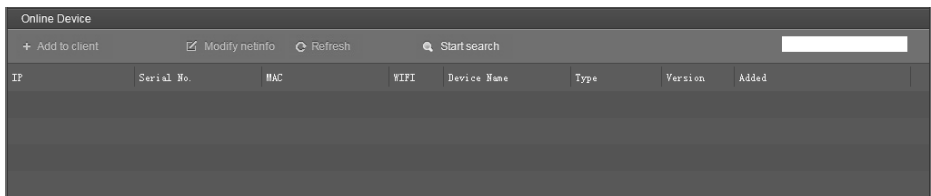
Client Software instruction

Search and list the camera

Install and open the client software in PC, enter the main interface:



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:



To modify the device IP address, input the IP address, mask, gateway in the “Modify Network” column.

Modify Network Parameter ✕

Ethernet

Device information:	Network information:
CameraName: av200_4K	ConnType: Static IP
Mac: 00:04:05:01:88:89	IP: 10.0.3.168
SN: L6D3V3H2B9OUQUK4G224	Mask: 255.255.255.0
	GateWay: 10.0.3.1
	DNS1: 10.0.0.1
	DNS2: 10.0.0.1

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.

Online Device

+ Add to client Modify netinfo ↻ Refresh 🔍 Stop search

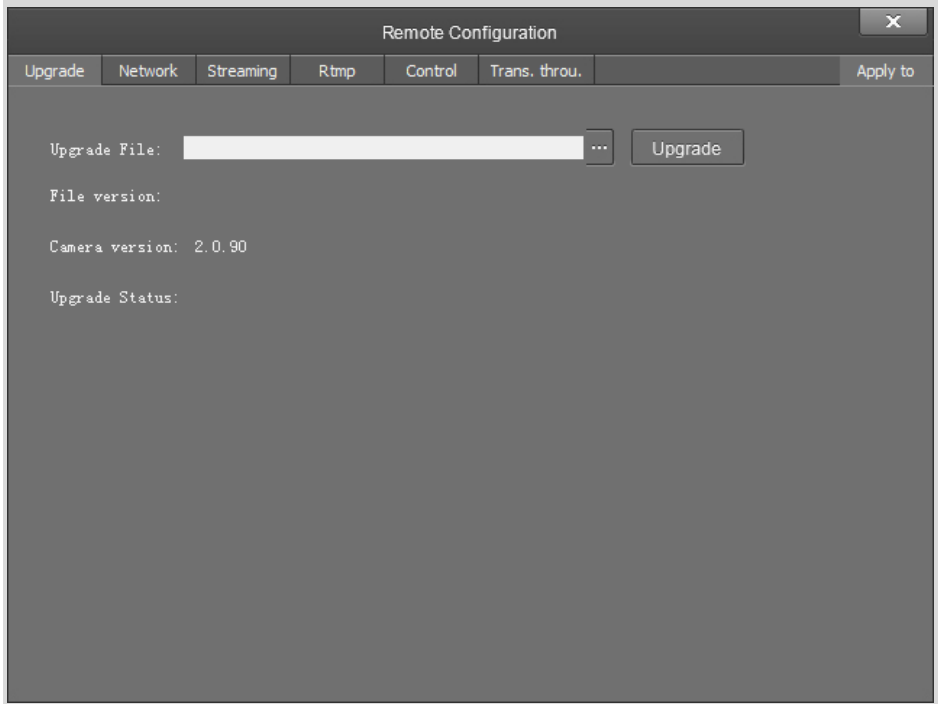
IP	Serial No.	MAC	WIFI	Device Name	Type	Version	Added
10.0.3.128	L6D3V3H2B9OUQUK4G224	00:04:05:01:88:89	No	av200_4K	LZC5-F79H	1.0.00	
10.0.3.212	8288653H2BYOUQV4515K2	00:04:05:01:88:7E	No	av200t-rdtst	E200T	2.0.00	
10.0.3.240	S00705R2BYOSQUR241W0	00:04:05:01:88:36	No	S00705R2BYOSQUR241W0	LTC	5.0.04	

Please check that all IP addresses are in the same LAN.

Remote Configuration

Choose the camera in the device list, click “Remote Configuration” in the column to upgrade or config the camera.

Upgrade



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.

Network

XRemote Configuration

UpgradeNetworkStreamingRtmpControlTrans. throu.Apply to

Connect with	<input type="text" value="Static IP"/>		rtsp port	<input type="text" value="554"/>
IP Address	<input type="text" value="10.0.3.146"/>		app port	<input type="text" value="5000"/>
Mask	<input type="text" value="255.255.255.0"/>			
Gateway	<input type="text" value="10.0.3.1"/>			
DNS 1	<input type="text" value="10.0.0.1"/>			
DNS 2	<input type="text" value="0.0.0.0"/>			

- Connect with: please choose from Static IP or dynamic IP address;
- IP address: input IP address for the camera;
- Mask: input mask address for the camera;
- Gateway: input gateway IP address;
- DNS 1: server-prior, input DNS address for the device;
- 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 5002;
- Click the “Save” button after setting is completed;
- Camera will connect to ethernet after above-mentioned operations;

Streaming

Remote Configuration ✕

Upgrade Network Streaming Rtmp Control Trans. throu. Apply to

Stream type	<input type="text" value="Main stream"/>		Channels		<input type="text" value="MORO"/>
Resolution	<input type="text" value="1080P"/>		Encode type		<input type="text" value="AAC"/>
Video rate type	<input type="text" value="CBR"/>		Sample rate		<input type="text" value="16KHz"/>
Max rate (Kbps)	<input type="text" value="4096"/>		Audio rate		<input type="text" value="64Kbps"/>
Frame rate	<input type="text" value="fullfps"/>		Input pin		<input type="text" value="LineIn"/>
Key frame interval	<input type="text" value="25"/>		Volume		<input type="text" value="50"/>
Video coding type	<input type="text" value="H264"/>				
Encode Level	<input type="text" value="High"/>				

- Stream type: set the parameters of main stream, sub stream, third stream, fourth stream.
- Resolution: set among 1080P (1920*1080), 720P (1280*720), D1 & QVGA (320*240), choose resolutions based on actual requirements and capability of device. The higher the resolution is, the better network requirements will be needed.
- Max rate: configure max stream rate or adjustable stream rate.
- Frame rate: choose from different frame per second
- Key frame 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.
- Video coding type: choose H.264 or H.265.
- Encode level: choose from Base, Main and High.

RTMP

Remote Configuration ✕

Upgrade Network Streaming **Rtmp** Control Trans. throu. Apply to

RTMP 1	<input type="checkbox"/>	Main stre:	<input type="text" value="rtmp://10.0.3.6:31935/live/lrc5"/>
RTMP 2	<input type="checkbox"/>	Sub strear	<input type="text" value="rtmp://10.0.3.6:31935/live/lrc6"/>
RTMP 3	<input type="checkbox"/>	Main stre:	<input type="text" value="qulubo://dev.opensight.cn:5000/?c=JG0001812120"/>
RTMP 4	<input type="checkbox"/>	Sub strear	<input type="text" value="rtmp://10.0.3.6:31935/live/lrc6"/>

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

Control

- Password setting: when a password is required, the camera can be accessed only after a correct password is input.
- Reboot: reboot the camera.

Remote Configuration ✕

Upgrade Network Streaming Rtmp **Control** Trans. throu. Apply to

Old password	<input type="password"/>	Local Time	2018-12-17 14:24:28	<input type="button" value="OK"/>
New password	<input type="password"/>	<input type="checkbox"/> Show Time		
Confirm	<input type="password"/>	Time Format	YYYY-MM-DD HH:mm:ss	<input type="button" value="OK"/>
	<input type="button" value="Save"/>	<input type="checkbox"/> Refresh NTP		
Reboot	<input type="button" value="Reboot"/>	TimeZone	-07:00	
Device name	LZC5-P79N	NTP Server	202.120.2.101	<input type="button" value="OK"/>
	<input type="button" value="Save"/>			

Transparent Transmission

Remote Configuration ✕

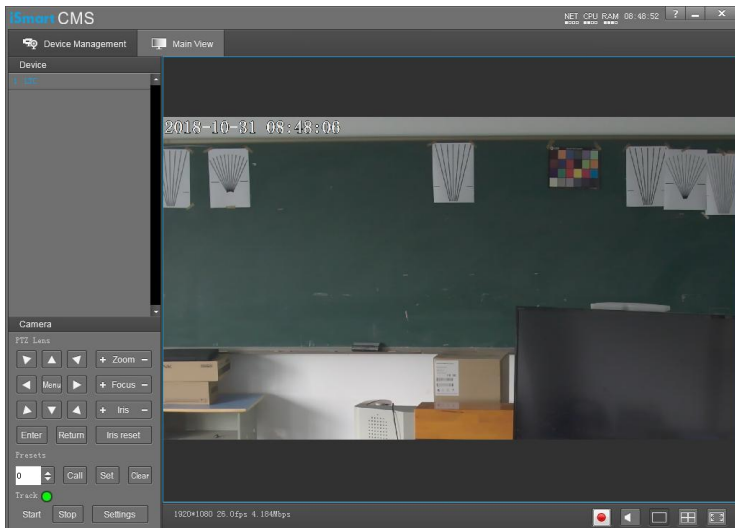
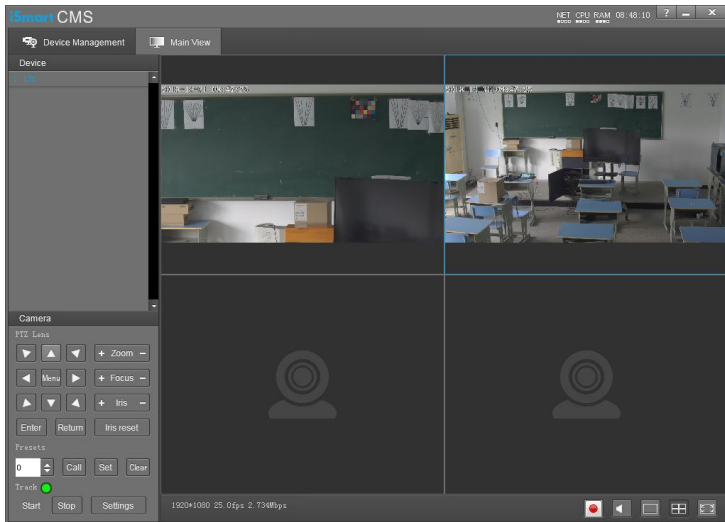
Upgrade Network Streaming Rtmp Control Trans. throu. Apply to

Enable	<input style="width: 80%;" type="text" value="Disable"/>
Protocol	<input style="width: 80%;" type="text" value="TCP"/>
Camera as	<input style="width: 80%;" type="text" value="Client"/>
IP	<input style="width: 80%;" type="text" value="0.0.0.0"/>
Port	<input style="width: 80%;" type="text" value="0"/>

- 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.

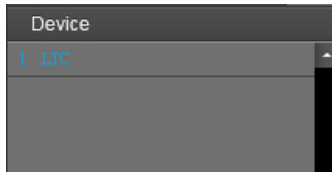
Preview

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

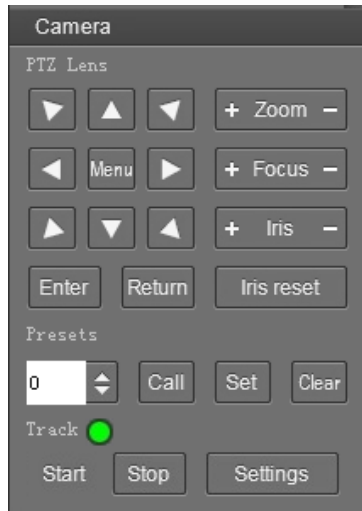


This interface includes three main parts: Device List, Device Control, Video Preview

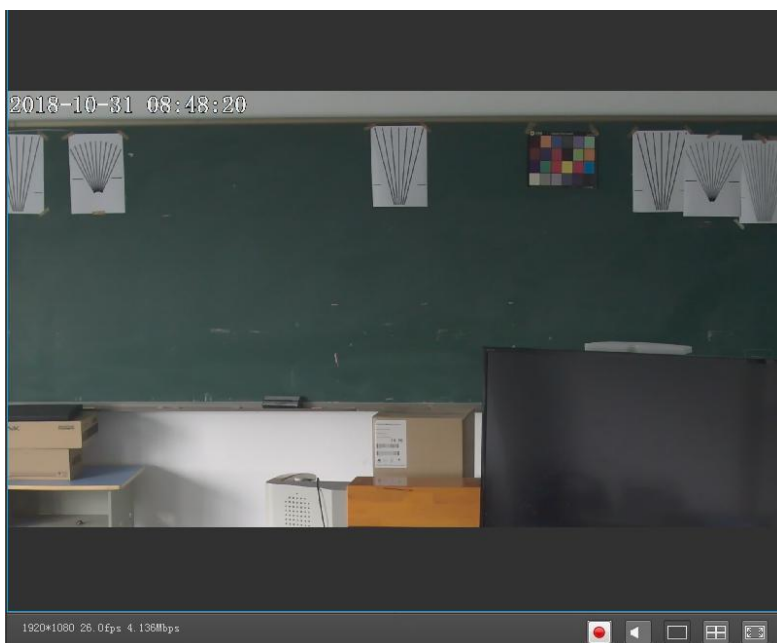
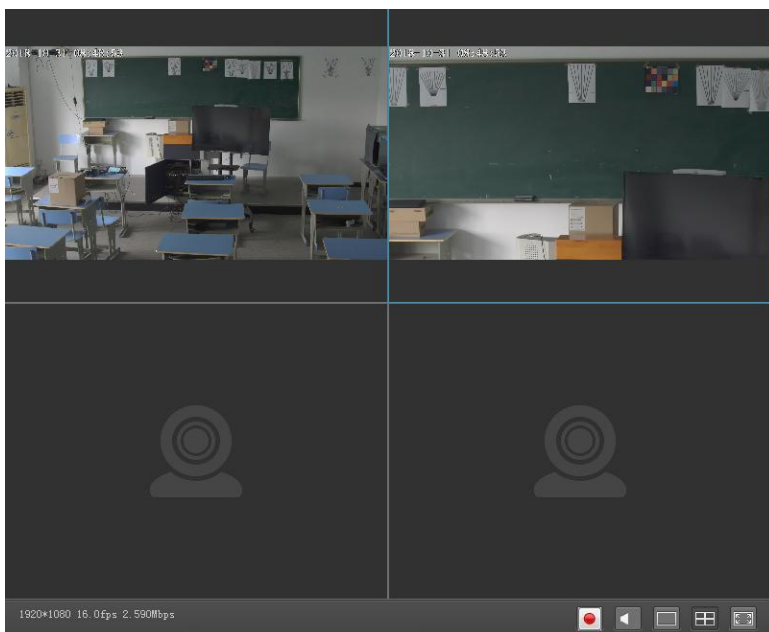
- Device: It displays all online cameras added to “Device Management”.



- 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.



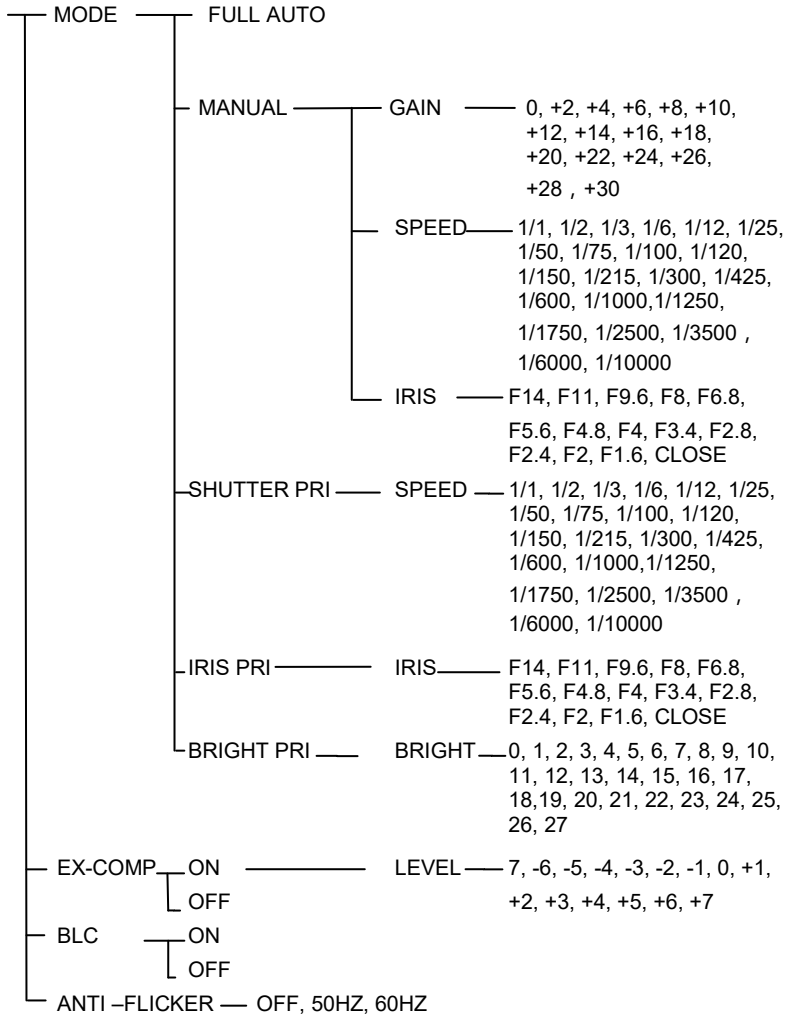
MENU SETTINGS

Menu Configuration

<VIDEO>	—	SHARPNESS _____	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Refer	—	BRIGHTNESS _____	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
Page33	—	CONTRAST _____	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
	—	GAMMA MODE ____	0, 1, 2, 3, 4,
	—	2DNR LEVEL _____	1, 2, 3, 4, 5, OFF
	—	3DNR LEVEL _____	1, 2, 3, 4, 5, OFF
	—	WIDE DYNAMIC ____	1, 2, 3, 4, 5, OFF
	—	FV BRIGHTNESS_____	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
	—	FV LDC LEVEL ____	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, OFF

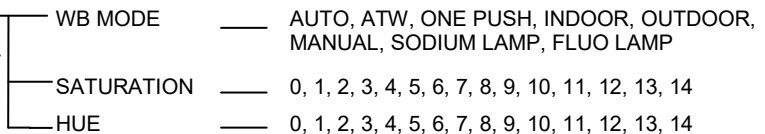
<EXPOSURE>

Refer to Page 33



< COLOR >

Refer to Page 34



<PAN TILT ZOOM> Refer to Page 35	PAN/TILT SPEED	_____	1, 2, 3, 4, 5, 6, 7, 8
	D-ZOOM LIMIT	_____	X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12
	PTZ TRIG AF	_____	ON, OFF
	RATIO SPEED	_____	ON, OFF
	POWER UP ACTION	_____	PRESET 1, PRESET 2, PRESET 3, PRESET 4, PRESET 5, PRESET 6, PRESET 7, PRESET 8, PRESET 9, HOME

<SYSTEM> Refer to Page 35	ADDRESS	_____	1, 2, 3, 4, 5, 6, 7
	PROTOCOL	_____	VISCA, PELCO-P, PELCO-D
	BAUD RATE	_____	2400, 4800, 9600, 38400
	IR ADDRESS	_____	1, 2, 3, 4
	VIDEO FORMAT	_____	1080P60, 1080P50, 1080I60, 1080I50, 1080P30, 1080P25, 720P60, 720P50
	MOUNT MODE	_____	STAND, CEILING
	RS485 PORT	_____	HALF-DUPLEX-1, HALF-DUPLEX-2
LANGUAGE	_____	ENGLISH, CHINESE	

<STATUS> Refer to Page 36	ADDRESS	_____	1
	PROTOCOL	_____	VISCA
	BAUD RATE	_____	9600
	IR ADDRESS	_____	1
	VIDEO FORMAT	_____	1080P25
	MOUNT MODE	_____	STAND
	FIRMWARE VER	_____	V2.0.00

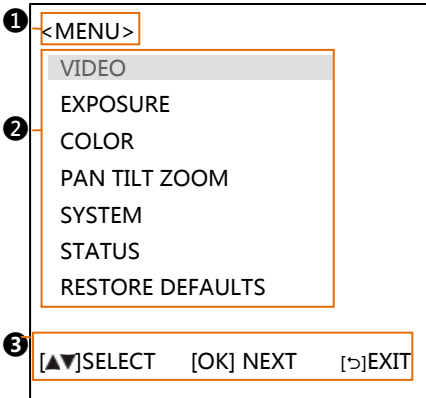
<RESTORE DEFAULTS>

Refer to Page 36

Menu Explanation

Main Menu

Press **[MENU]** button to enter / exit menu.



1 Menu Hint

It displays currently selected menu option.

2 Menu Options

It displays options under current menu hint.

Press ▲ or ▼ button to select among menu options, once font of options turned from white color to yellow color, it indicates the menu has been elected, press OK button to get into this menu.

3 Prompt Message

“[▲▼] SELECT” indicates it is possible to press ▲ or ▼ button to select menu options.

“[OK]NEXT” indicates it is possible to press **[OK]** button to enter next level menu.

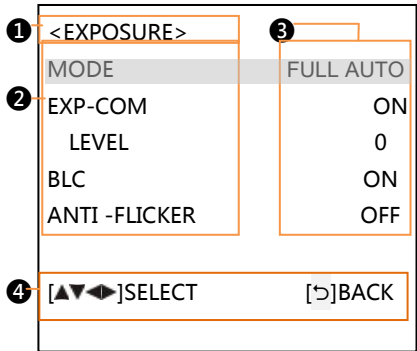
“[OK] EXIT” indicates it is possible to press

[OK] button to exit menu.

Submenus

From main menu, navigate to select

<EXPOSURE> menu, press **[OK]** to enter.



1 Menu Hint

It displays currently selected menu option.

2 Menu Options






It displays options under current menu hint.



Press ▲ or ▼ button to select among menu options, once font of options turned from white color to yellow color, it indicates the menu has been elected, press **[OK]** button to get into this menu.

3 Manual Exposure

Press◀ or ▶ button to change value.




4 Prompt Message

" SELECT" indicates it is possible to press  or  to select menu options, press  or  to change value

" BACK" indicates it is possible to press  to return to previous menu.

VIDEO

VIDEO menu is used to change video value.

<VIDEO>	
 SHARPNESS	8
BRIGHTNESS	7
CONTRAST	2
GAMMA MODE	0
2DNR LEVEL	OFF
3DNR LEVEL	OFF
WIDE DYNAMIC	OFF
FV BRIGHTNESS	0
FV LDC LEVEL	1
 SELECT	 BACK

SHARPNESS: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

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 MODE: 0, 1, 2, 3, 4.

2DNR LEVEL: 1, 2, 3, 4, 5, OFF.

3DNR LEVEL 1, 2, 3, 4, 5, OFF.




WIDE DYNAMIC: 1, 2, 3, 4, 5, OFF.

FV BRIGHTNESS: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

FV LDC LEVEL: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, OFF.

EXPOSURE

EXPOSURE menu is used to adjust exposure value.

<EXPOSURE>	
 MODE	FULL AUTO
EXP-COMP	ON
LEVEL	0
BLC	ON
ANTI-FLICKER	OFF
 SELECT	 BACK

MODE:

FULL AUTO: Gain, Shutter Speed and Iris value are adjusted automatically accordingly to working environment.

MANUAL: manually adjust Gain, Shutter Speed and Iris.

GAIN: 0, +2, +4, +6, +8, +10, +12, +14, +16, +18, +20, +22, +24, +26, +28, +29, +30.

SPEED: 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 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, 1/10000s.

IRIS: F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE.

SHUTTER PRI: Gain and Iris value are adjusted automatically according to working environment; shutter speed value is adjustable manually.

SPEED: 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 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, 1/10000s.

IRIS PRI: Gain and shutter speed value are adjusted automatically according to working environment; Iris value is adjustable manually.

IRIS: F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE.

BRIGHT PRI: Manually adjust the video brightness.

BRIGHT: 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.

EXP-COMP: Once EXP-COMP is set as On, below level options become available -7, -6, -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5, +6, +7 +7 is the maximum compensation value for bright, -7 is the maximum compensation value for dark.

BLC: ON, OFF

Backlight compensation (BLC) is video gain done automatically to correct the exposure of

subjects that are in front of a bright light source.

ANTI-FLICKER (OFF, 50Hz, 60Hz): To avoid video flicker at power systems of different frequency.

COLOR

COLOR menu is used to adjust color related values. Available options:

< COLOR >	
▶ WB MODE	MANUAL
R . GAIN	7
B . GAIN	7
SATURATION	7
HUE	7
[▲▼◀▶]SELECT	[↵]BACK

WB MODE: AUTO, ATW (auto tracking), ONE PUSH, INDOOR, OUTDOOR, MANUAL, SODIUM LAMP, FLUO LAMP.

“ONE PUSH”: In “ONE PUSH TRIGGER” mode, aim the camera at a pure white object (say a white paper), then press OK button.

“AUTO” mode: R.GAIN, G.GAIN and B.Gain can be chosen from -7~+7.

“MANUAL” mode: R.GAIN and B. GAIN value can be chosen from 0~255.

SATURATION: 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.

PAN/TILT/ZOOM

PAN/TILT/ZOOM is used to change pan/tilt/zoom value, available options:

<PAN TILT ZOOM>	
▶ PAN/TILT SPEED	8
D-ZOOM LIMIT	X4
PTZ TRIG AF	OFF
RATIO SPEED	ON
POWER UP ACTION	PRESET9
[▲▼◀▶]SELECT	[↵]BACK

PAN/TILT SPEED: 1, 2, 3, 4, 5, 6, 7, 8 the bigger the number is, the faster the speed is.

D-ZOOM LIMIT: X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12.

PTZ TRIG AF: Turn ON / OFF the auto focus when the camera pans / tilts / zooms.

RATIO SPEED (ON, OFF): Set the relation of PT speed as per zoom time. When it's on, PTZ speed will be faster when zoom time is bigger.

POWER UP ACTION: PRESET 1, PRESET 2, PRESET 3, PRESET 4, PRESET 5, PRESET 6, PRESET 7, PRESET 8, PRESET 9, HOME.

SYSTEM

<SYSTEM>	
▶ ADDRESS	1
PROTOCOL	VISCA
BAUD RATE	9600
IR ADDRESS	1
VIDEO FORMAT	1080P25
MOUNT MODE	STAND
RS485 PORT	HALF-DUPLEX-1
LANGUAGE	ENGLISH
[▲▼◀▶]SELECT	[↵]BACK

ADDRESS: 1, 2, 3, 4, 5, 6, 7.

PROTOCOL: VISCA, PELCO-D, PELCO-P;

BAUD RATE: 2400, 4800, 9600, 38400;

IR ADDRESS: 1,2,3,4, set camera address to be controlled by remote controller.

VIDEO FORMAT: 1080P60, 1080P50, 1080P30, 1080P25, 1080I60, 1080I50, 720P60, 720P50;

MOUNT MODE: STAND, CEILING;

RS485 PORT:

HALF-DUPLEX-1: the camera will not return ACK/FINISH/FAULT msg.

HALF-DUPLEX-2: the camera will return ACK/FINISH/FAULT msg.

LANGUAGE: ENGLISH.

STATUS

Display information (address, protocol, baud rate, IR address, video format, mount mode, image and firmware version) of the current camera.

< STATUS >	
ADDRESS	1
PROTOCOL	VISCA
BAUD RATE	9600
IR ADDRESS	1
VIDEO FORMAT	1080P25
MOUNT MODE	STAND
FIRMWARE VER	2.0.00

RESTORE DEFAULTS

< RESTORE DEFAULTS >	
PRESS	CONFIRM
PRESS	CANCEL

RESTORE DEFAULTS option is used to reset all menus to default value.

Press to confirm or press to cancel and return to previous menu.

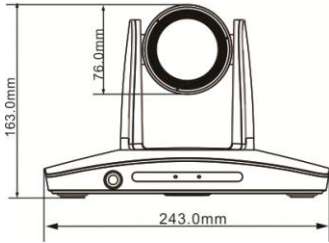
ANNEX 1 TECHNICAL SPECIFICATIONS

Items	Value
Tracking Camera	
Image Sensor	1/2.8" CMOS, 2.14 megapixel
Focal Lens	f=4.7~94.0mm
Iris	F1.6 – F3.5
Optical Zoom	20x
Digital Zoom	12x
Angle of view	59.5° - 2.9°
Focus	Auto, Manual, PTZ Trigger, One Push Trigger
Min. Illumination	0.5lux(color), 0.1lux(B/W)
Shutter	1/1 ~ 1/10,000 sec
Gain	Auto/Manual
White Balance	Auto, Indoor, Outdoor, One Push, Manual, Auto Tracking
Exposure	Auto, Manual, Iris Priority, Brightness Priority
S/N Ratio	≥50dB
Menu	English
Full-view Camera	
Image Sensor	1/2.8" CMOS
Effective Pixels	2.14MP
White Balance	Auto
Exposure	Auto
Focus	Manual
focal distance	2.4mm
Angle of view	Horizontal:68°, Vertical:41°(before geometric distortion correction)
PTZ	
Pan Range	-170°~+170°
Tilt Range	-30°~+90°
Pan Speed	0.1°~120°/s

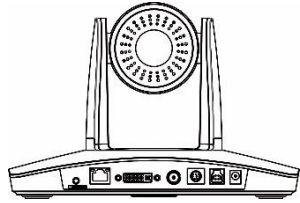
Tilt Speed	0.1°~90°/s
Preset Number	256
Comm. Port	RS-232/RS-485/USB2.0
Debug Interface	RJ45/100M,
Protocol	PELCO-D, VISCA, UVC1.1
SDI Video	
Video Output	3G-SDI, DVI-D, USB2.0
Video Format	1080P60, 1080P50, 1080P30, 1080P25, 1080I60, 1080I50, 720P60, 720P50
Network	
Resolution	Max Support 1920*1080@60fps
Video Compression	H.264/H.265
Audio Compression	AAC
Network Protocol	ONVIF, RTSP, HTTP, TCP, UDP, RTMP
Dual Stream	Yes
Video Compression	H.264
General	
Power Input	DC12V
Power Consumption	< 15W
Working Temp	0°C~+40°C
Storage Temp	-20°C~+60°C
Dimensions	243mm×145mm×163mm
Color	Grey

ANNEX 2 SIZE AND DIMENSION

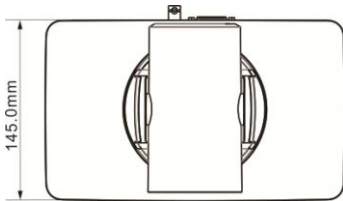
Front



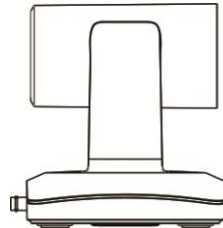
Rear



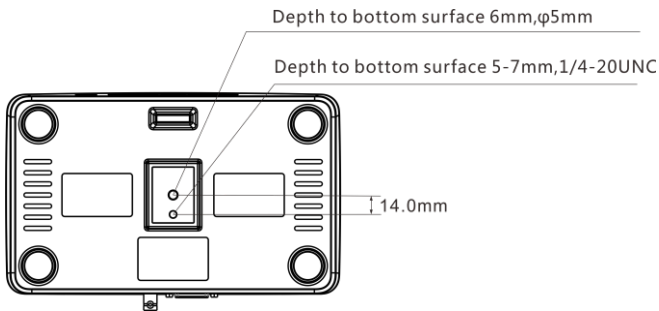
Top



Side



Bottom



TROUBLESHOOTING

Problem	Possible Cause	Solution
No action or image after powered on	Power supply failure	Check power supply
	Power adapter damaged	Replace power adapter
	Power cable connection got loosen	Check & reconnect
No self-testing after powered on, or with motor noise	Not enough power supply	Check & reconnect power cable connection
	Mechanical failure	Repair
Not controllable from remote controller	Low battery of remote controller	Change battery for remote controller
	Exceed remote control distance	Control within distance of 8M
After power on, self-test successfully, but not controllable	Wrong address / protocol / baud rate	Check & set again
	Wrong connection or short circuit of RS-485/RS-232 or RS-232 cable	Check & reconnect
Video loss when pans / tilts / zooms	Not enough power supply	Check & reconnect power cable
	Video cable not properly connected	Replace with a good video cable
Video captured after connected to digital video interface of a capture device is not good as the video captured after connected directly analog video interface of the capture device	Different video capture devices have different video capturing performance, image quality maybe worse after it has been converted from analog to digital	Consult video capture device supplier for more information

The user manual is only for a reference, if there are any changes or differences, please ask for the latest version from your supplier

CA/YF-LTC2V2-ZD-016

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