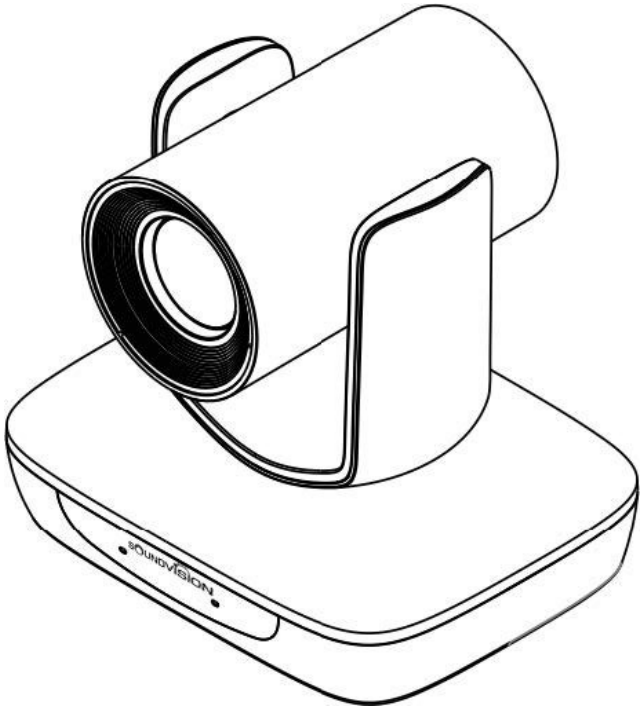
HD-400T

Ai TEACHING CAMERA



Auto Tracking, HD PTZ Camera

Optical Zoom 20X / Digital Zoom 12X

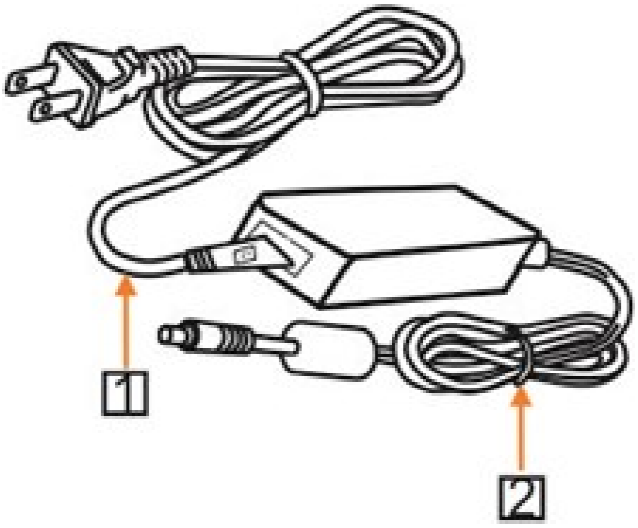
User Manual V1.1

SAFETY NOTES

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℃ ~ +40℃. The ambient humidity range is 10%RH ~ 90%RH.
- 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.
- 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 2 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!

CONTENTS

ABOUT THE PRODUCT

Quick Guide

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

- Client software CameraCMS: camera search and control, network setting;
- VLC: View two streams of the camera;
- IE: camera image preview, camera control, network setting;
- ONVIF: version 2.1 supported
  Name: admin
  Initial password: 123456
- Network pass-through: it is the recommended method when connecting with a Recording or Streaming hardware/software.

CameraCMS

Refer to detailed instructions in the page of 21.

RTSP

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

2 Two channel streams, url: rtsp://IP/chx, x=1, 2.

3 IP address can be acquired through CameraCMS software, default rtsp port is 554.

IE

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

2 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, except Windows XP.

Network Pass-Through

On the tracking parameters setting page, the IP address, port and connection protocol (TCP/UDP) of the recording or streaming device can be configured. After connected, the camera can be controlled by the standard VISCA protocol. Recording or streaming device can achieve audio & video of the camera through rtsp or rtmp.

ABOUT THE PRODUCT

Features

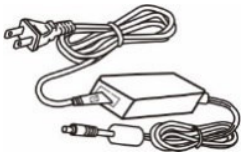
- Built-in industry-leading body detection and lock tracking image algorithm;
- 1/2.8 inch CMOS sensor, 2.14 megapixel;
- 20x optical zoom, Horizontal FOV: 59.5°;
- Support HDMI, 3G-SDI, Ethernet, USB, up to 1080P60 video output;
- 1 channel audio LINE IN, AAC Compression;
- Support two modes of power supply, POE (optional) power supply or adapter power supply;
- Support VISCA protocol;
- Dual stream.

List Of Parts & Accessories

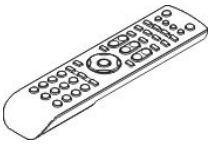
When you open the box, check all accessories according to the packing list.

Camera (1)

Power Adapter (1)



Remote Controller (1)

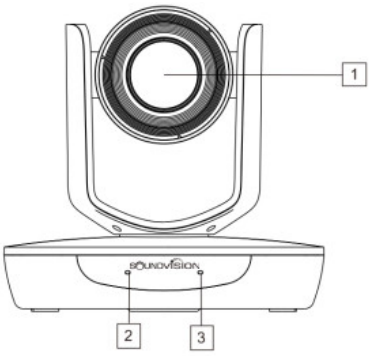


RS-232 Control Cable (1)

Main Parts & Interfaces

Camera

Front View

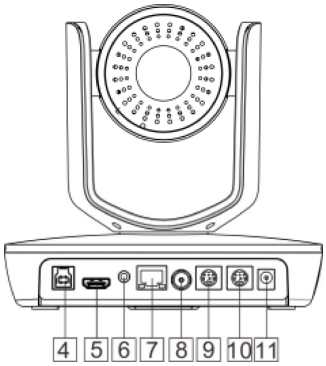


1 Camera Module

2 Communication Indicator

3 Power Indicator

Rear View



4 USB

5 HDMI Video Output

6 LINE IN

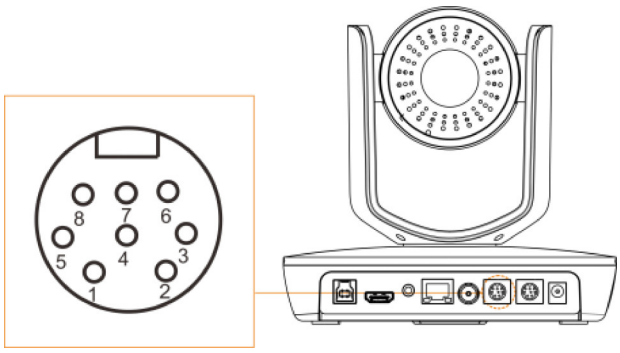
7 Network

8 SDI

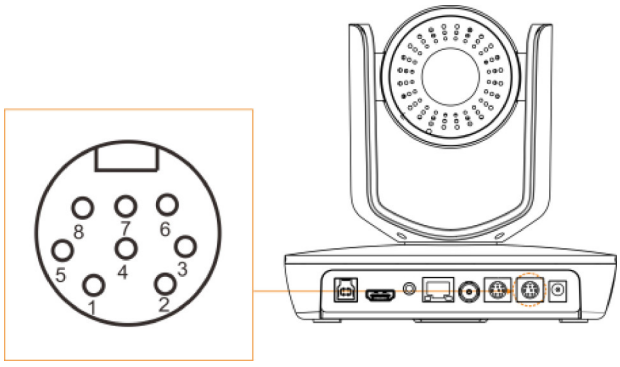
9 RS-232IN/IR

10 RS-232OUT/RS-485

11 DC12V

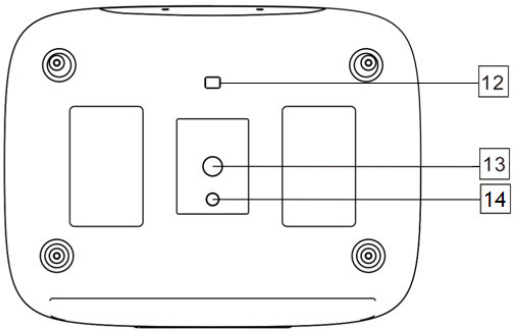


RS-232IN/IR Pin Definition	
Number	Definition
1	/
2	/
3	232-TX
4	GND
5	232-RX
6	GND
7	IR
8	/



RS-232OUT/RS-485 Pin Definition	
Number	Definition
1	/
2	/
3	232-TX
4	GND
5	232-RX
6	GND
7	485+
8	485-

Bottom View



12 DIP Switch

Set camera video format and menu.

13 Mounting Hole

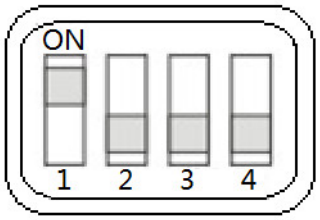
1/4”inch screw thread for fixing camera.

14 Locating Hole

To define installation direction of camera.

DIP Switches Settings

Before installing and operating the camera, set video output format and menu through DIP switches. The camera has two 4-digit DIP switches. SW as below:



SW Settings

No 1~4 is used to set video output format and menu. Refer to below chart for details:

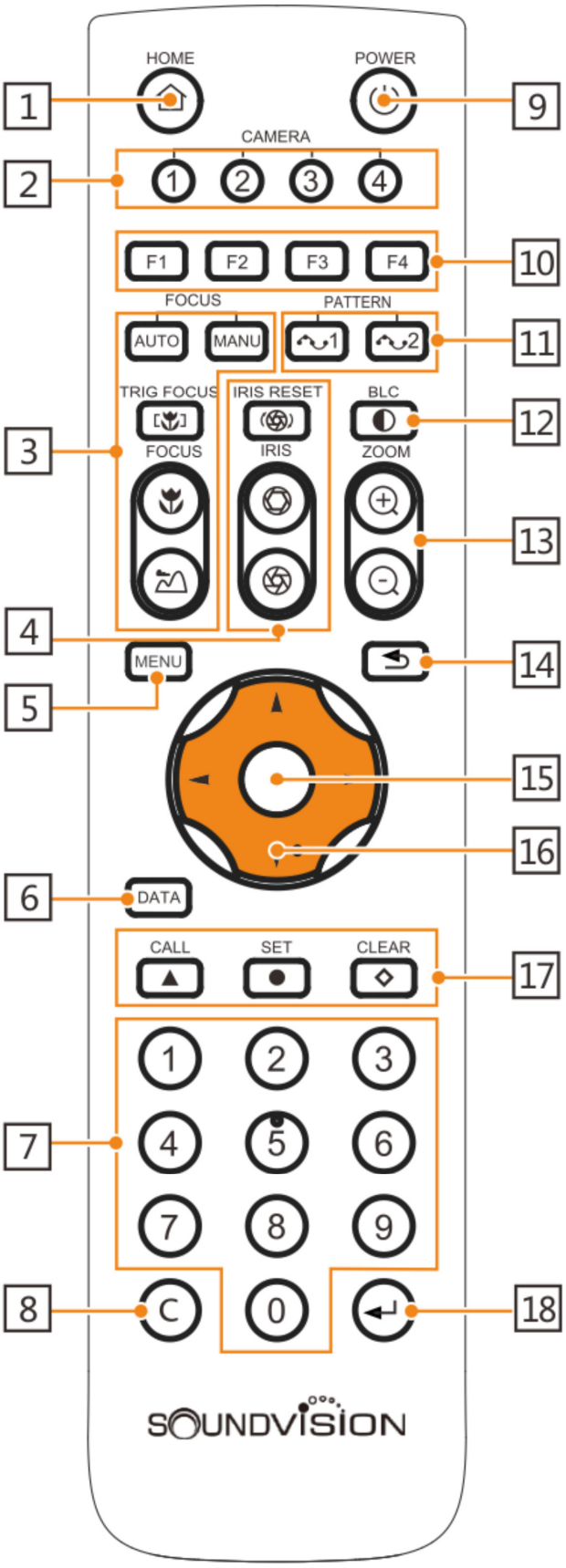
SW				
SWITCH NO.	1	2	3	4
1080P25	OFF	ON	ON	ON
1080P30	ON	OFF	ON	ON
720P50	OFF	OFF	ON	ON
720P60	ON	ON	OFF	ON
1080i50	OFF	ON	OFF	ON
1080i60	ON	OFF	OFF	ON
1080P50	OFF	OFF	OFF	ON
1080P60	ON	ON	ON	OFF
MENU	ON	ON	ON	ON

Please change video formats through special presets.

Note

PTZ reboot is necessary for the new setting to take effect.

Remote Controller



1 HOME

Press HOME button, camera moves to initial position.

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 (image brightness) value to default. “”button to Iris Open (brighter image)

“”button to Iris Close (darker image).

5 Menu

Press MENU button to enter / exit menu.

6 Data

Reserved.

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)

Reserved.

11 Pattern

Reserved.

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

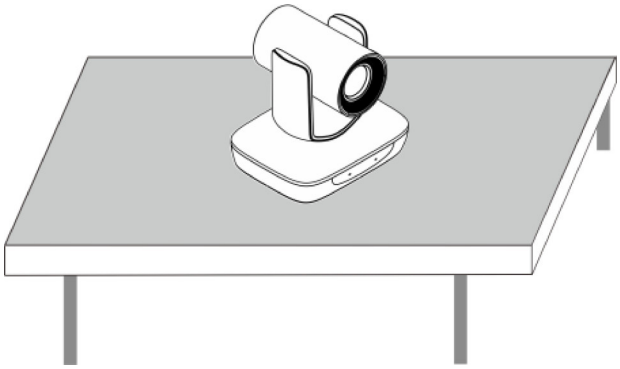
The camera has 2 installation types: desktop and wall mount installations (optional).

Note

Make sure that the installation place is strong and safe enough to withstand four times the weight of the camera and the assembly parts

Desktop Mount Installation

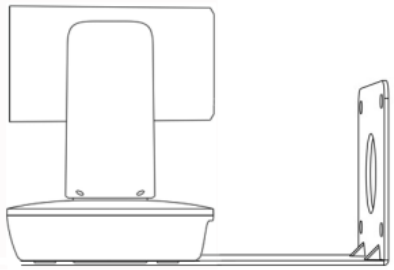
1. Put the camera on a flat surface. Make sure that the angle of inclination is less than 15 degrees if the camera needs to be installed on an inclined surface, otherwise, the pan/tilt movement can not work properly.



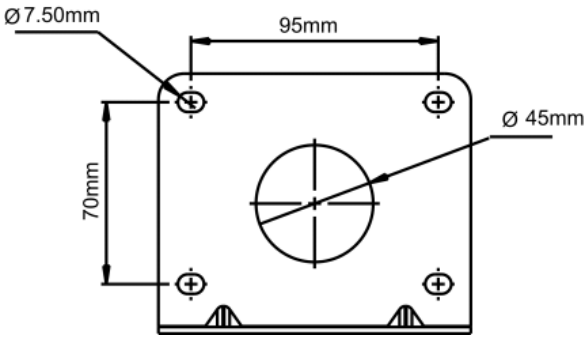
Note

- 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 (Optional)

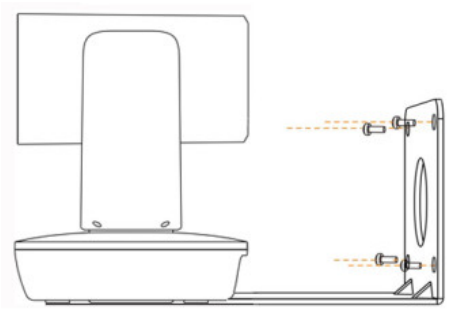


1. According to diameter and position of the 4 installation holes (As shown below) on the bracket, drill 4 holes on the wall and fix the bracket onto the wall by using 4 screws which should be prepared by you.

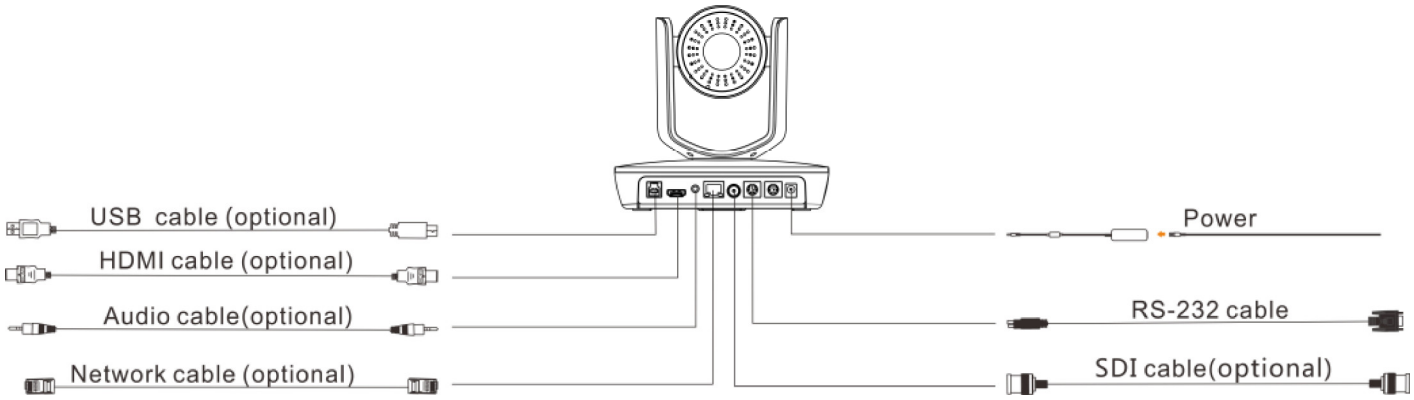


2. Before fixing the camera, set the DIP switches of the camera correctly.

3. Use inch screw 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.



CONNECTIONS

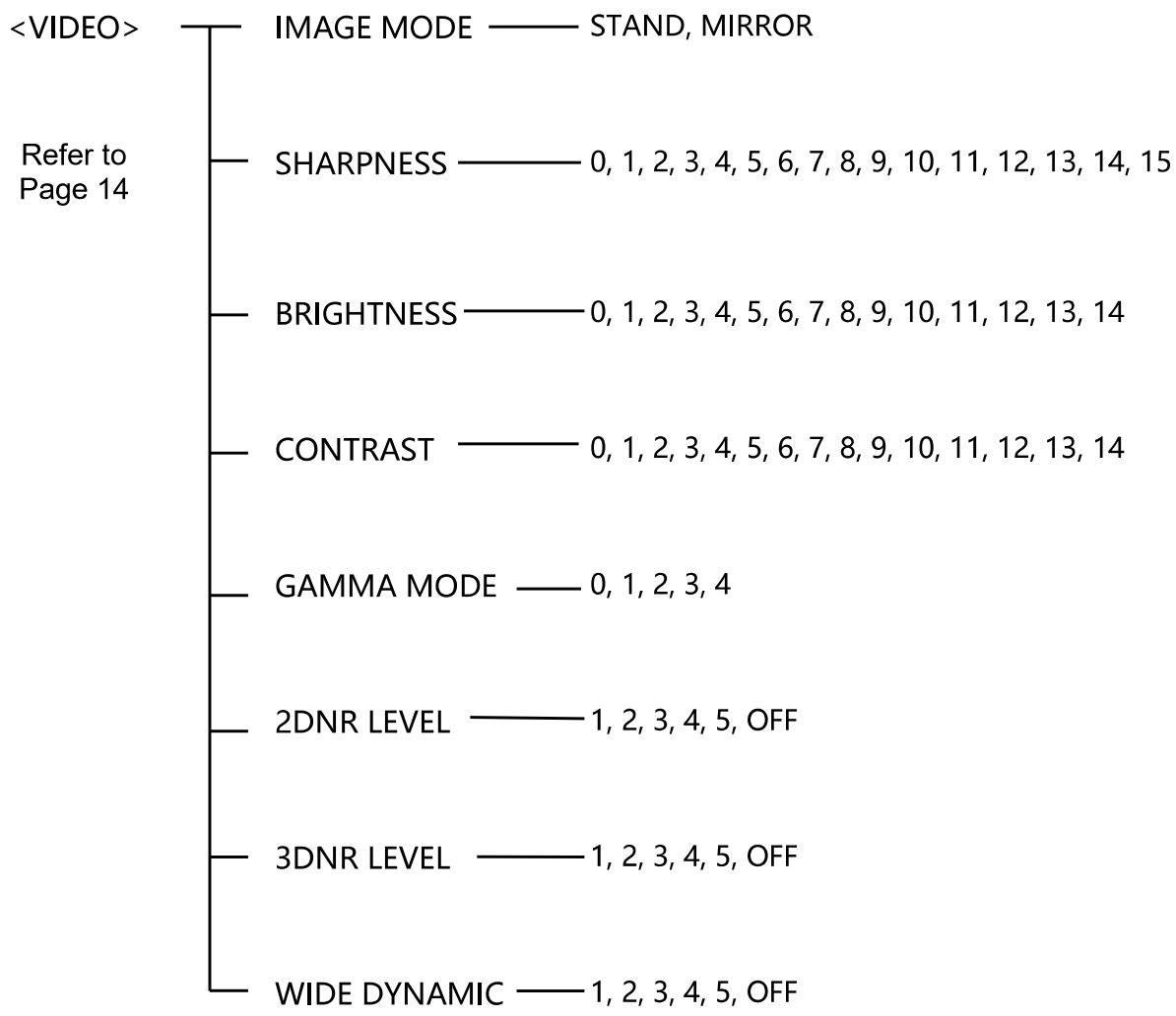


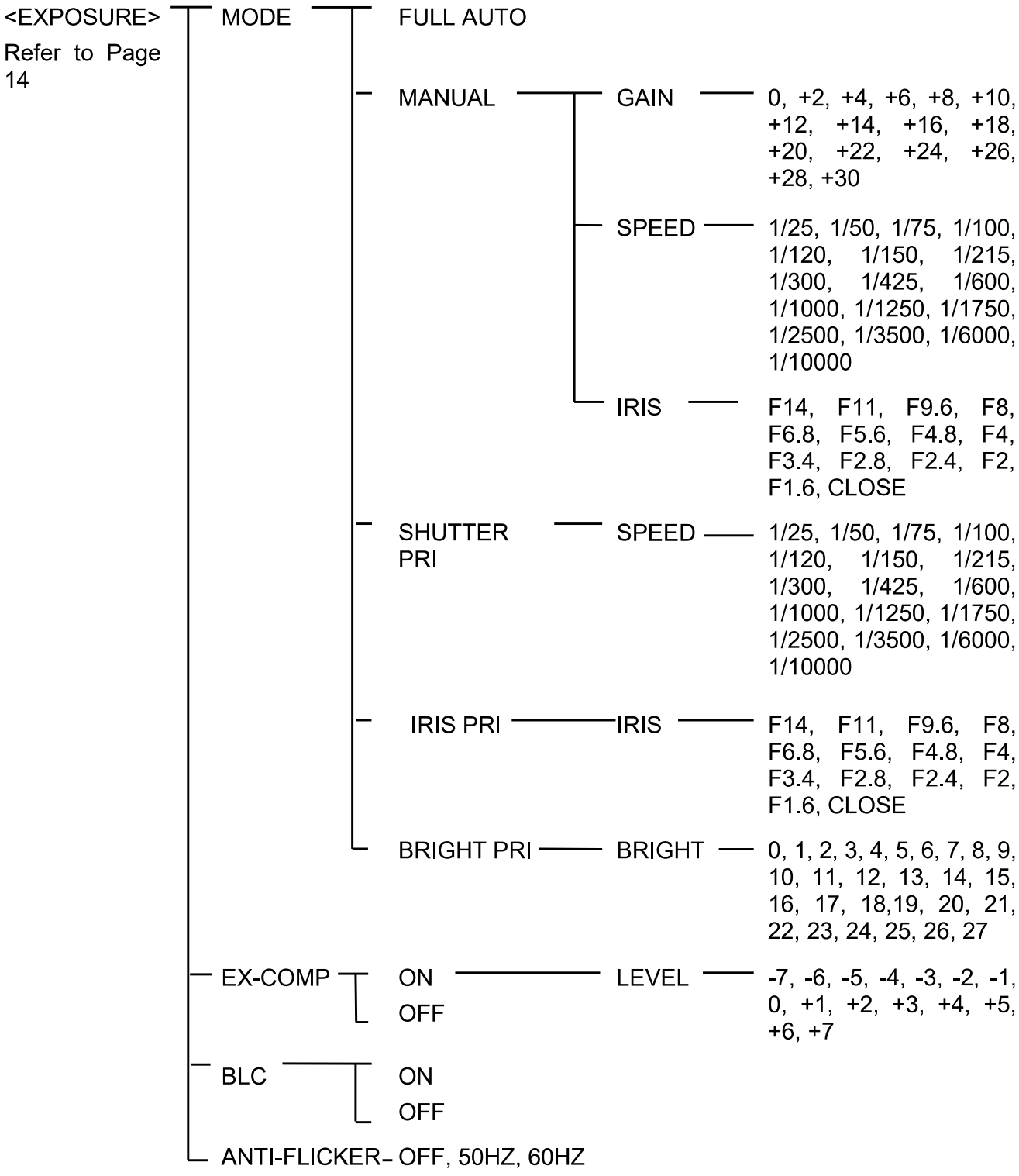
Note

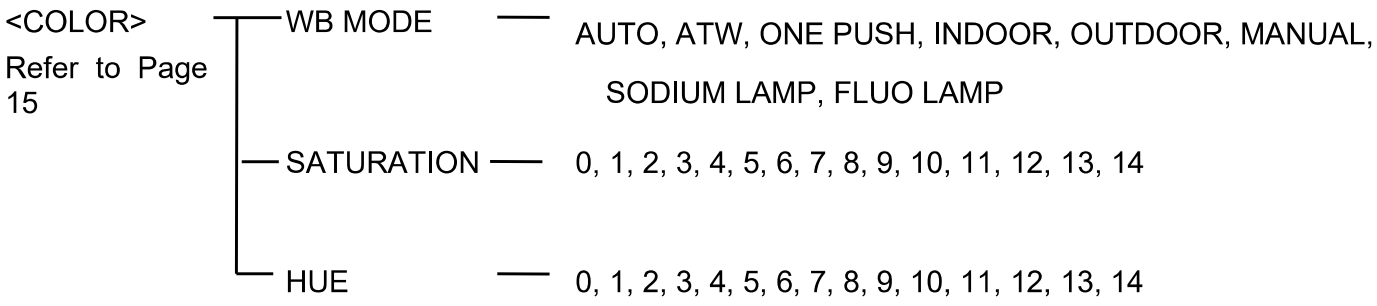
If preset 0 has been saved, after powered on, camera moves to preset 0 automatically; if preset 0 has not been saved, after powered on, camera moves to Home position, where both pan and tilt angle is zero and zooming time is 1x.

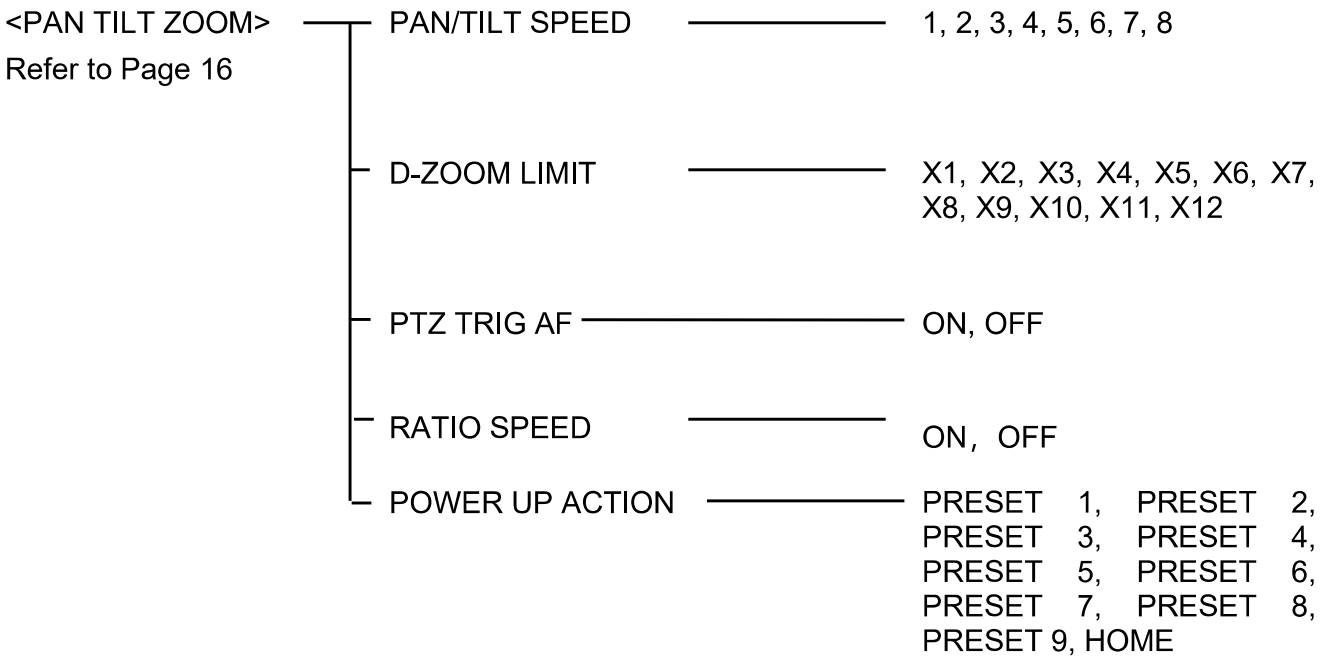
MENU SETTINGS

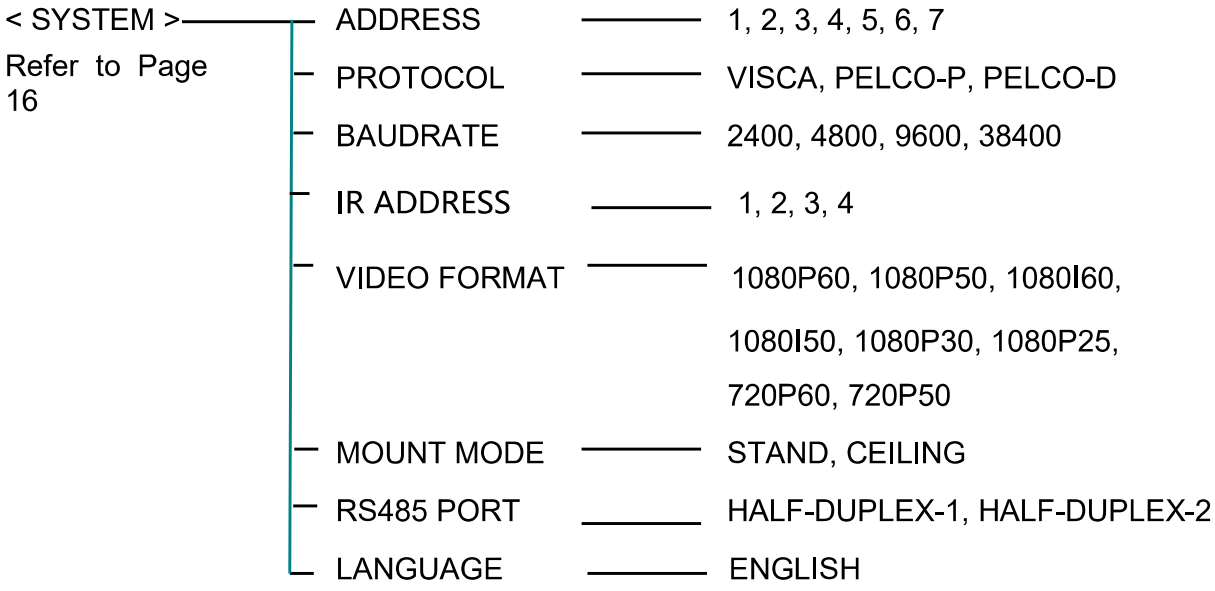
Menu Configuration

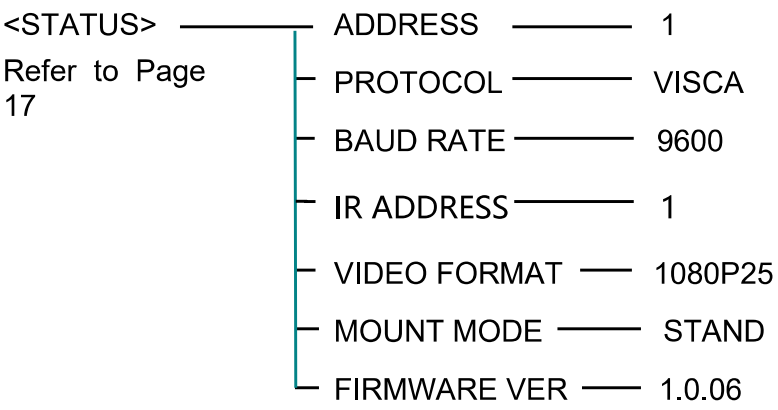



<EXPOSURE>
Refer to Page 14
MODE
FULL AUTO
MANUAL
GAIN
0, +2, +4, +6, +8, +10, +12, +14, +16, +18, +20, +22, +24, +26, +28, +30
SPEED
1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000
IRIS
F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE
SHUTTER PRI
SPEED
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, 1/10000
IRIS PRI
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
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
EX-COMP
ON
OFF
LEVEL
-7, -6, -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5, +6, +7
BLC
ON
OFF
ANTI-FLICKER
OFF, 50HZ, 60HZ


<COLOR>
Refer to Page 15
WB MODE
AUTO, ATW, ONE PUSH, INDOOR, OUTDOOR, MANUAL, SODIUM LAMP, FLUO LAMP
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>
Refer to Page 16
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 16
ADDRESS
1, 2, 3, 4, 5, 6, 7
PROTOCOL
VISCA, PELCO-P, PELCO-D
BAUDRATE
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

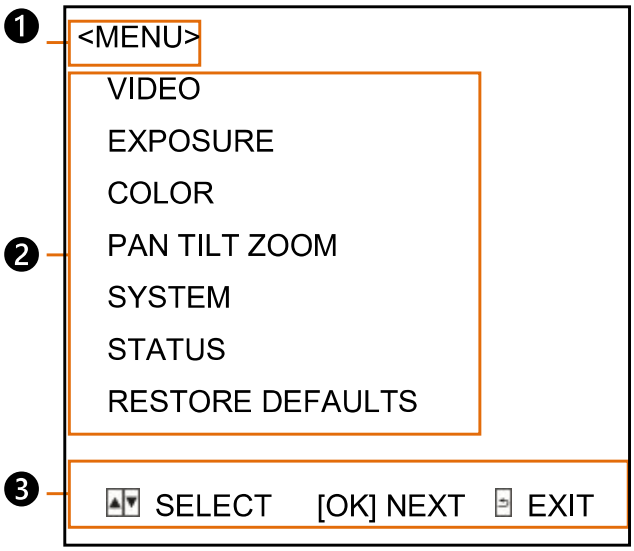


<RESTORE DEFAULTS> Refer to Page 17

Menu Explanation

Main Menu

Main Menu Call Preset #95 to enter menu.



❶ Menu Title

It displays currently selected menu option

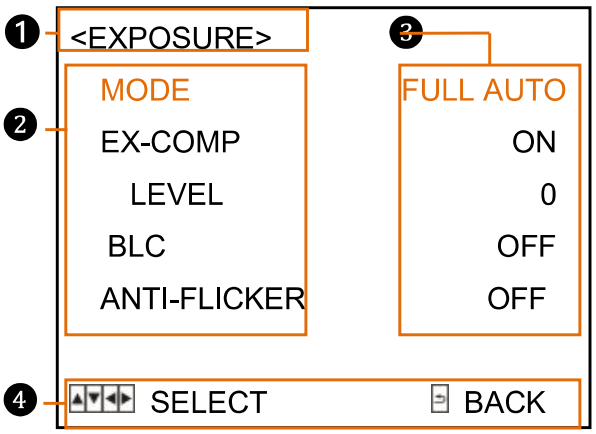
❷ Menu Options

It displays options under current menu title.

Click UP or DOWN button to select among menu options, once color of options turned to different color, it indicates the menu has been elected, click IRIS+ button to get into this menu.

Submenus

From main menu, navigate to select <EXPOSURE> menu, click IRIS + to enter. <EXPOSURE>Set menu.



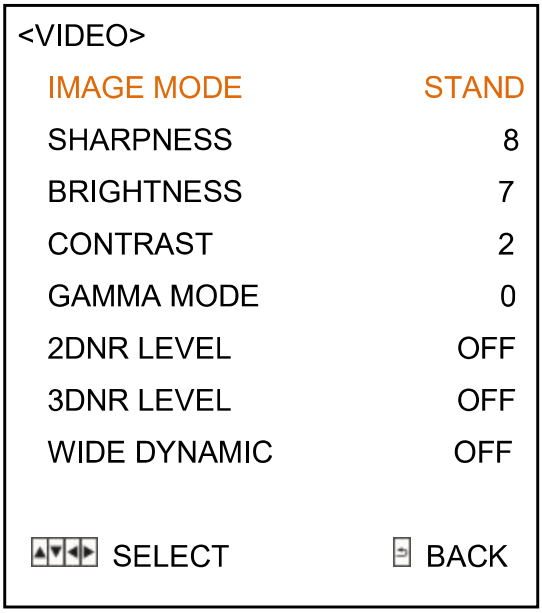
❶❷ Please refer to the same controls to the Main Menu

❸ Menu options

Click◄ or ► to change the values.

Video

VIDEO menu is used to change video value.



Available Options:

IMAGE MODE: STAND, MIRROR.

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

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

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

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

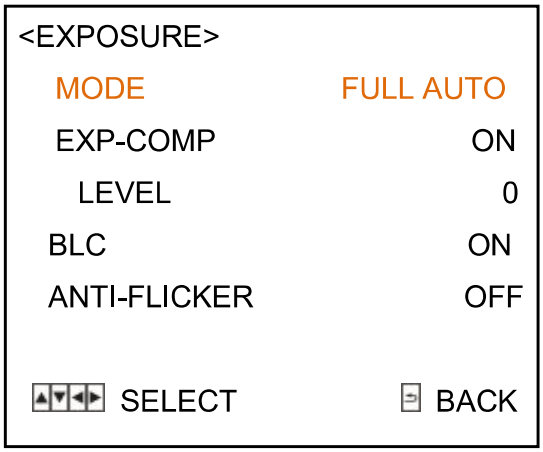
2DNR LEVEL: 1, 2, 3, 4, 5, OFF.

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

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

Exposure

EXPOSURE menu is used to adjust exposure value.



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: 1/25, 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, 1/10000.

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: 1/25, 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, 1/10000.

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.

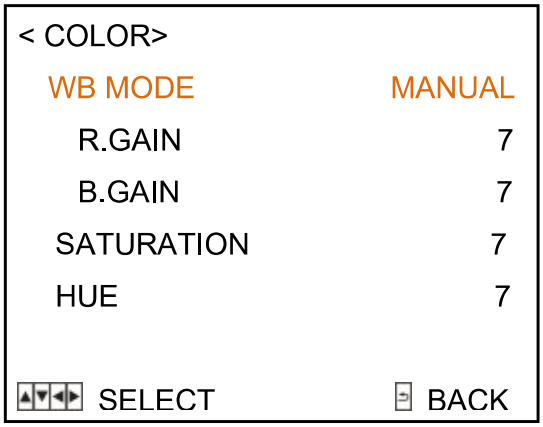
BLC: ON, OFF.

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:



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 button.

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

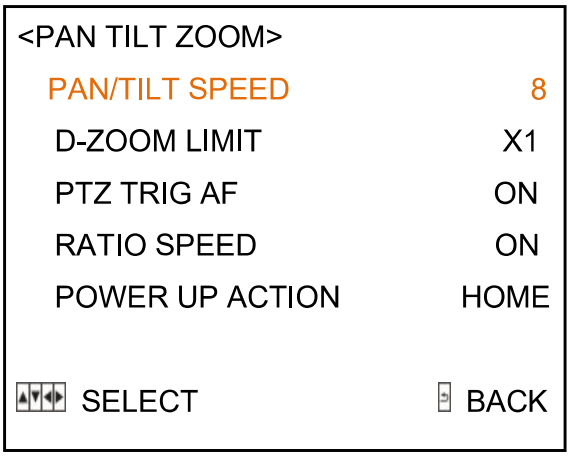
“MANUAL” mode: R.GAIN and B. GAIN value can be chosen from 0~255.

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

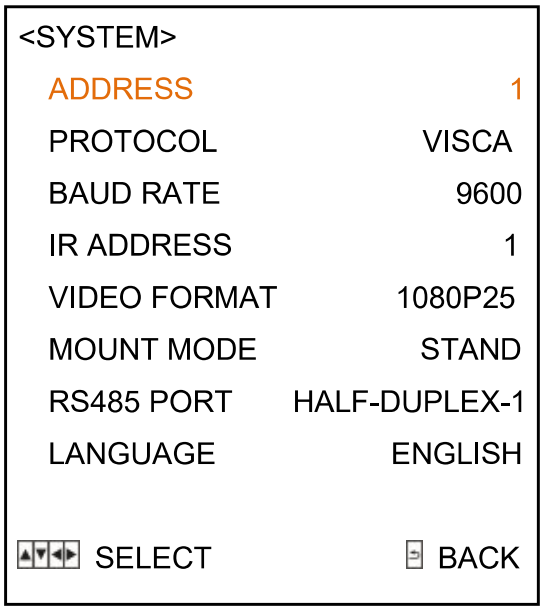
D-ZOOM LIMIT: X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12.

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



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;

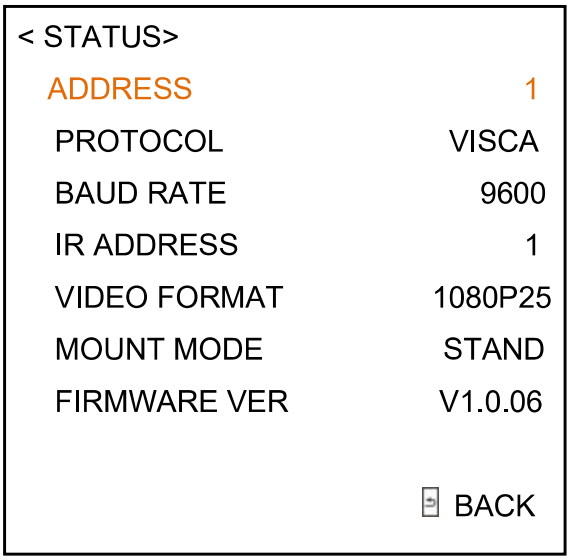
RS485 PORT:

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

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

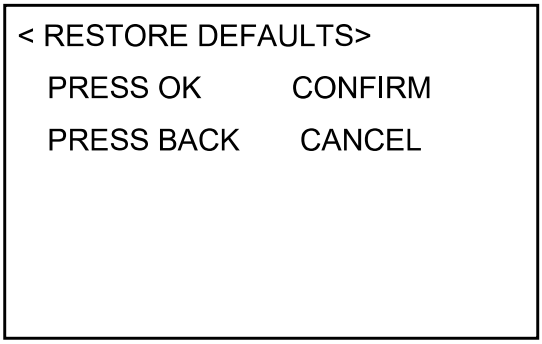
LANGUAGE: ENGLISH.

STATUS



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

Restore Defaults



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

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

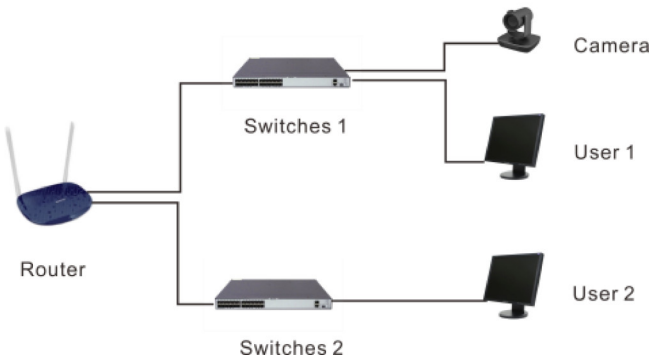
List Of Special Preset Commands

Preset No.	Function
0	Full-View
1	Tracking
8	Track the left-bound preset
9	Track the right -bound preset
80	Turn on tracing
81	Turn off tracing
93	Cruise, camera switches among saved 0~29 presets repeatedly and sequentially in fixed interval.
95	Get into menu
96	Delete all presets
99	Reboot the PTZ

Network Connection

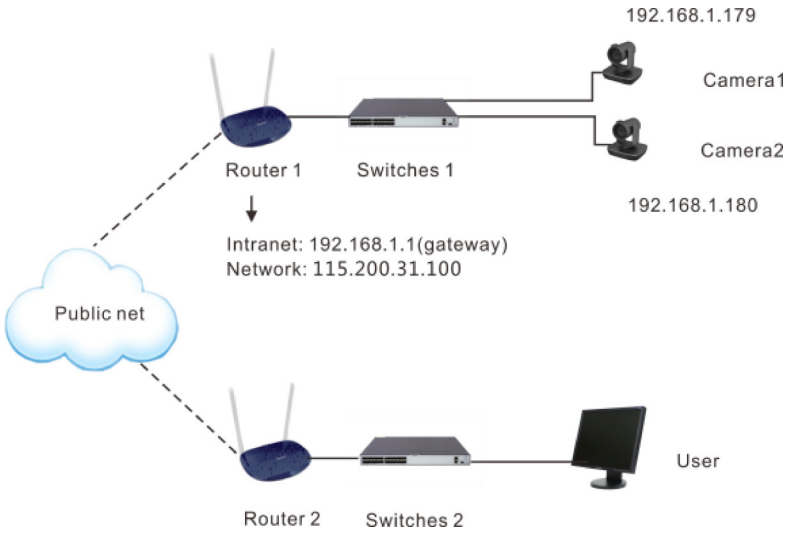
Connect the camera to network with an Ethernet cable, power on the camera.

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



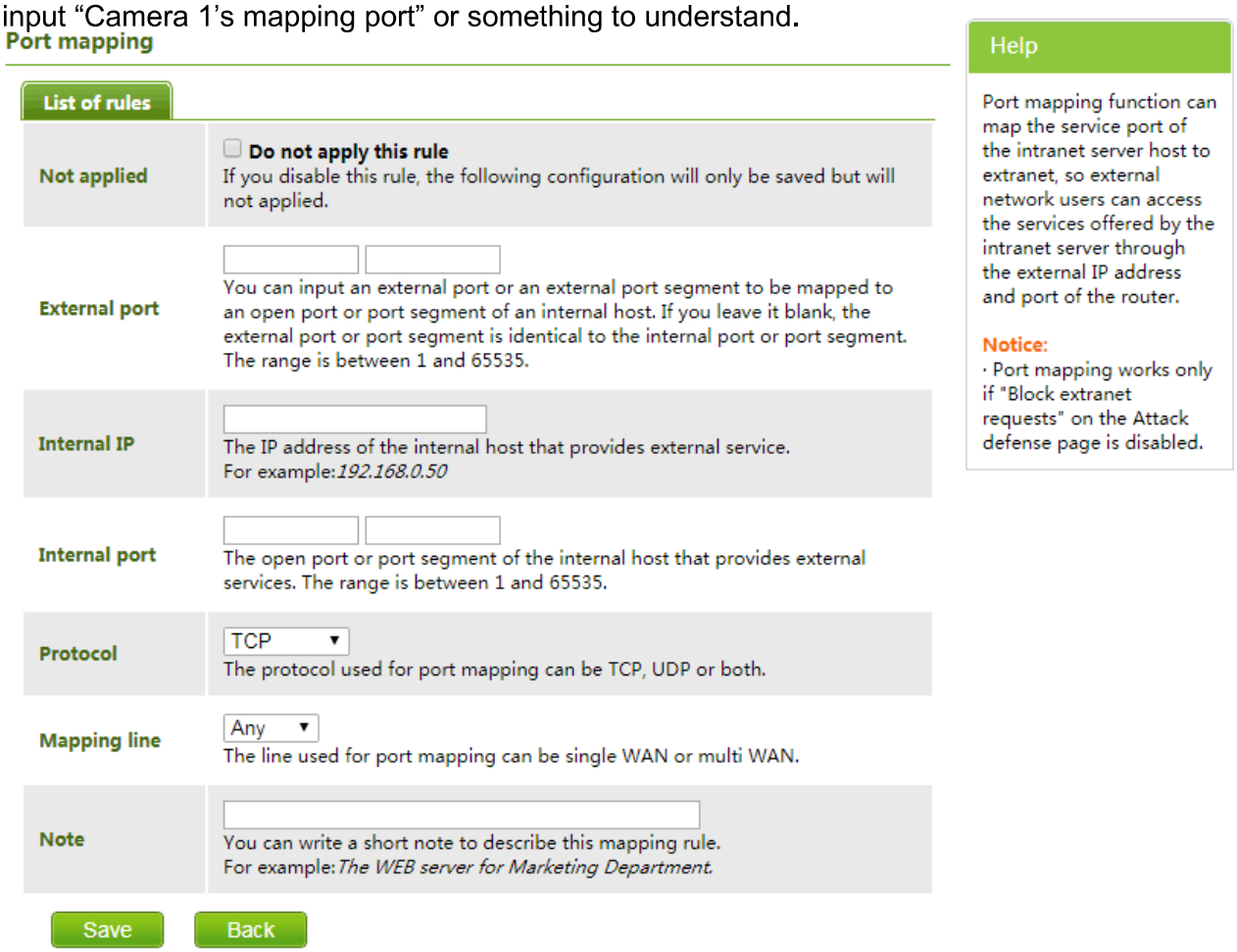
Please refer to the above diagram, user and the camera are in different routers, they are considered as in a WAN; in this condition, application software CameraCMS can not search and find the camera automatically. User can still connect after below conditions are satisfied.

(1) Set camera's IP address as static IP address.

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 CameraCMS 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.

(2) Router of the LAN where camera is connected supports Port Mapping.

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 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.



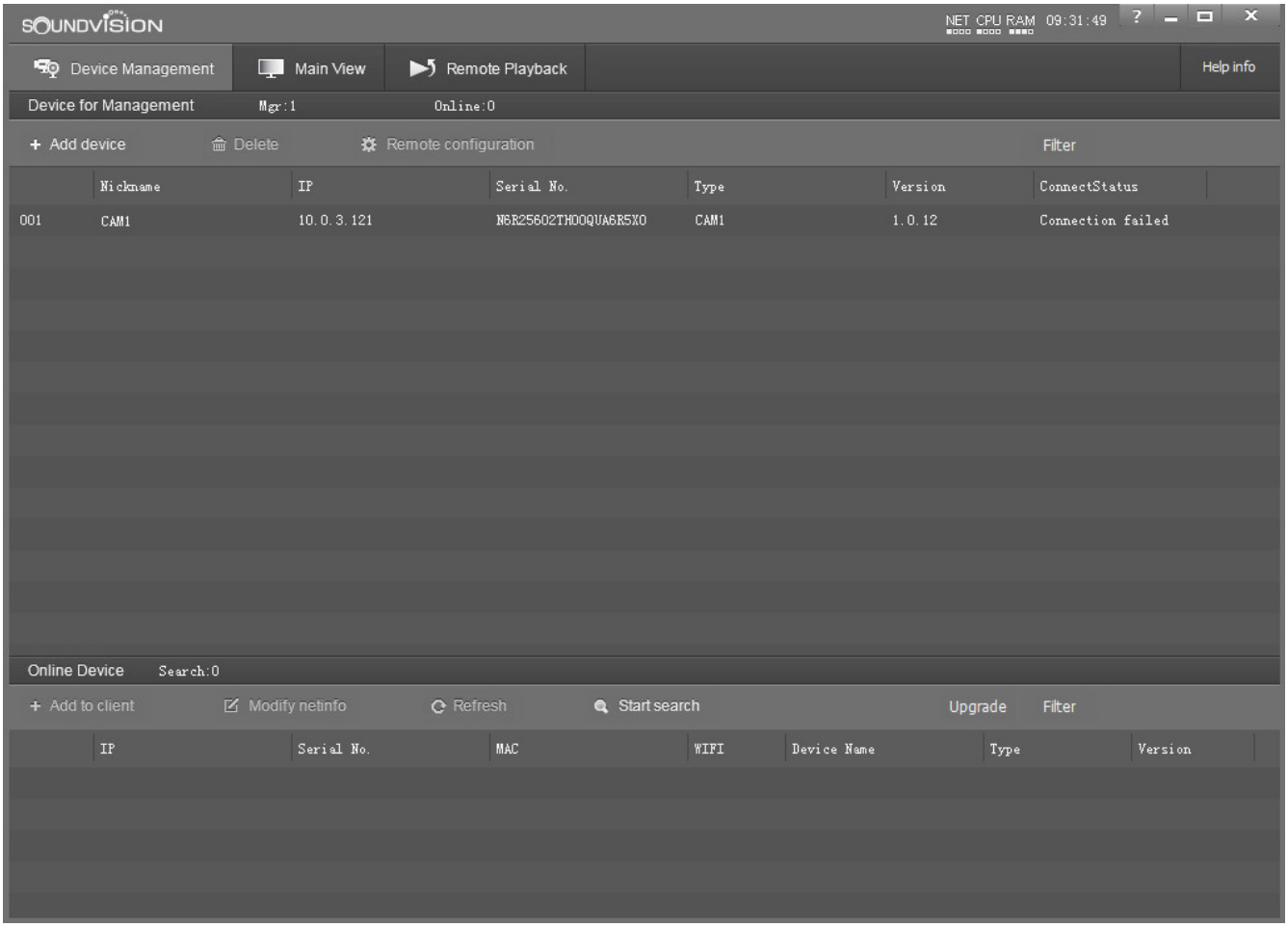
(3) Router of the LAN where camera is connected has fixed public IP address.

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 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.

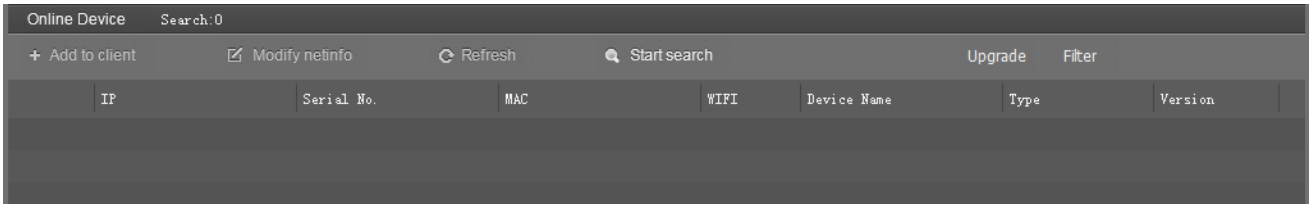
Client Software Instruction

Search And List The Camera

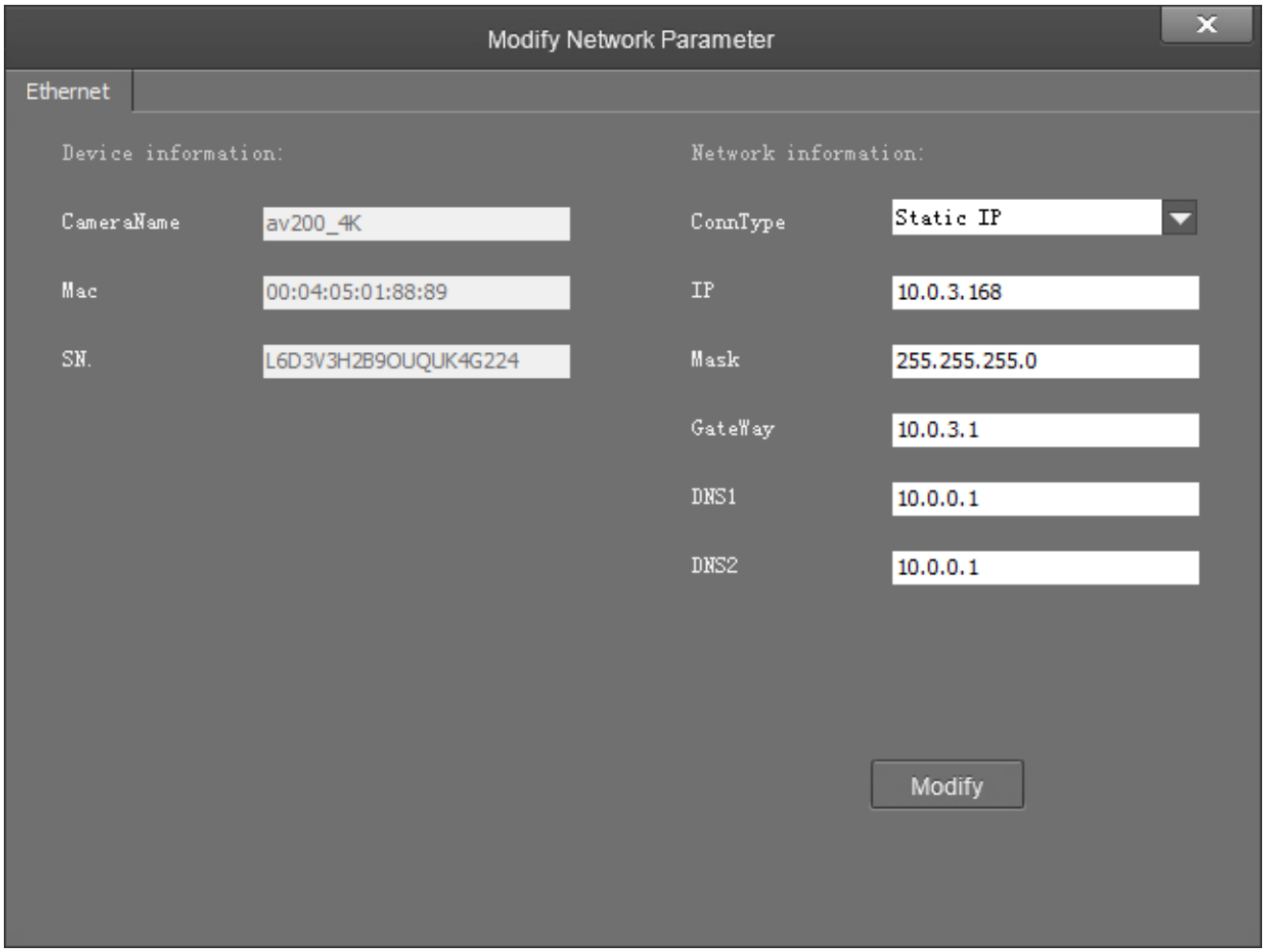
Install and open the client software in PC, enter the main interface:



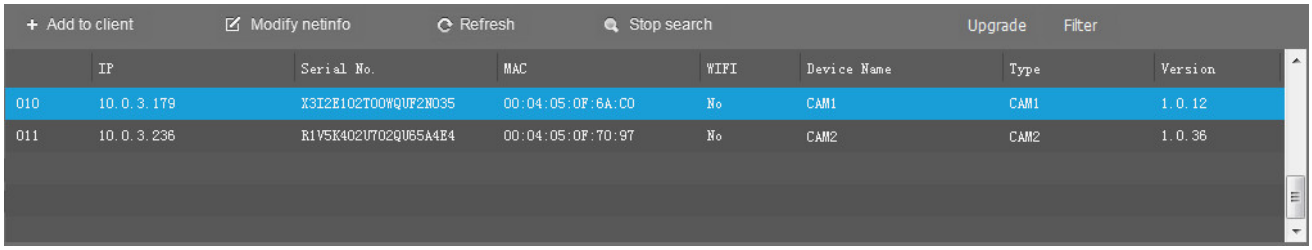
If the camera and PC are in the same LAN, click Start Search, then searching starts and all online devices will be listed, as the picture shown below:



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



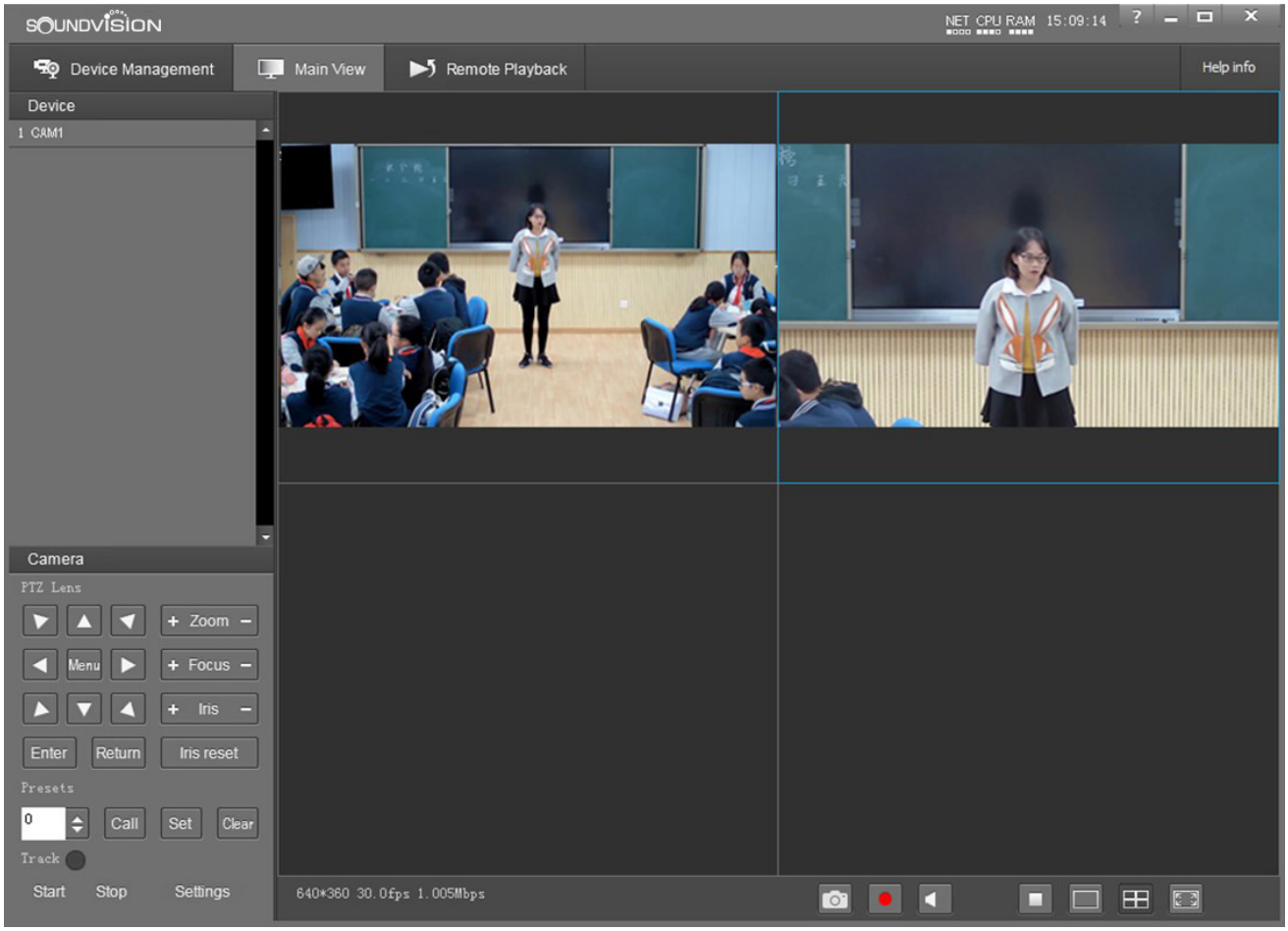
To control and preview a camera, first select the device, modify the IP address to the same with the LAN, then click Add to Client as the picture shown below.

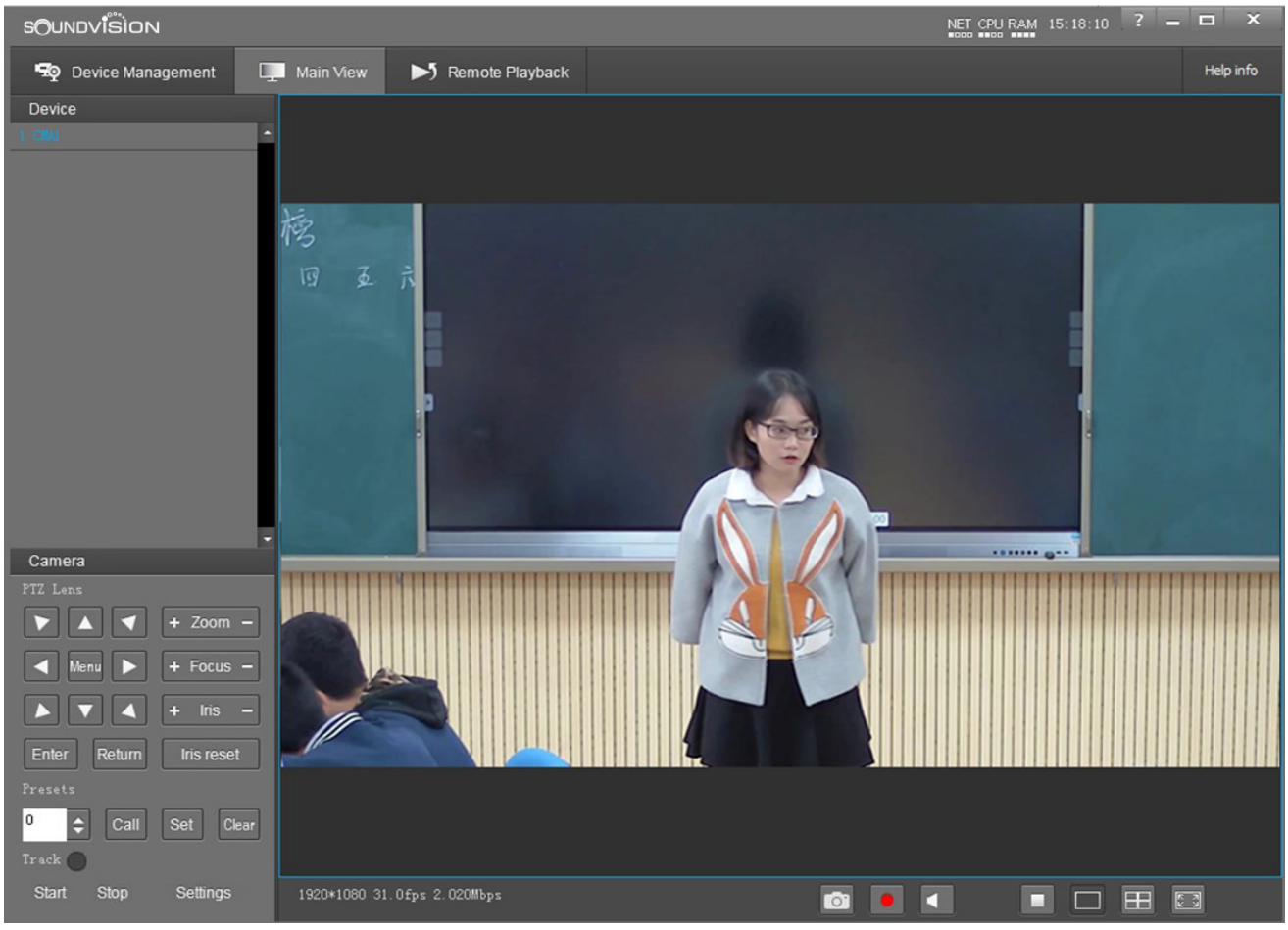


Please make sure that all of the IP addresses are in the same LAN.

Preview

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


SOUNDVISION
NET CPU RAM 15:09:14
Device Management
Main View
Remote Playback
Help info
Device
1 CAM1
Camera
PTZ Lens
Zoom
Menu
Focus
Iris
Enter
Return
Iris reset
Presets
0
Call
Set
Clear
Track
Start
Stop
Settings
640*360 30.0fps 1.005Mbps

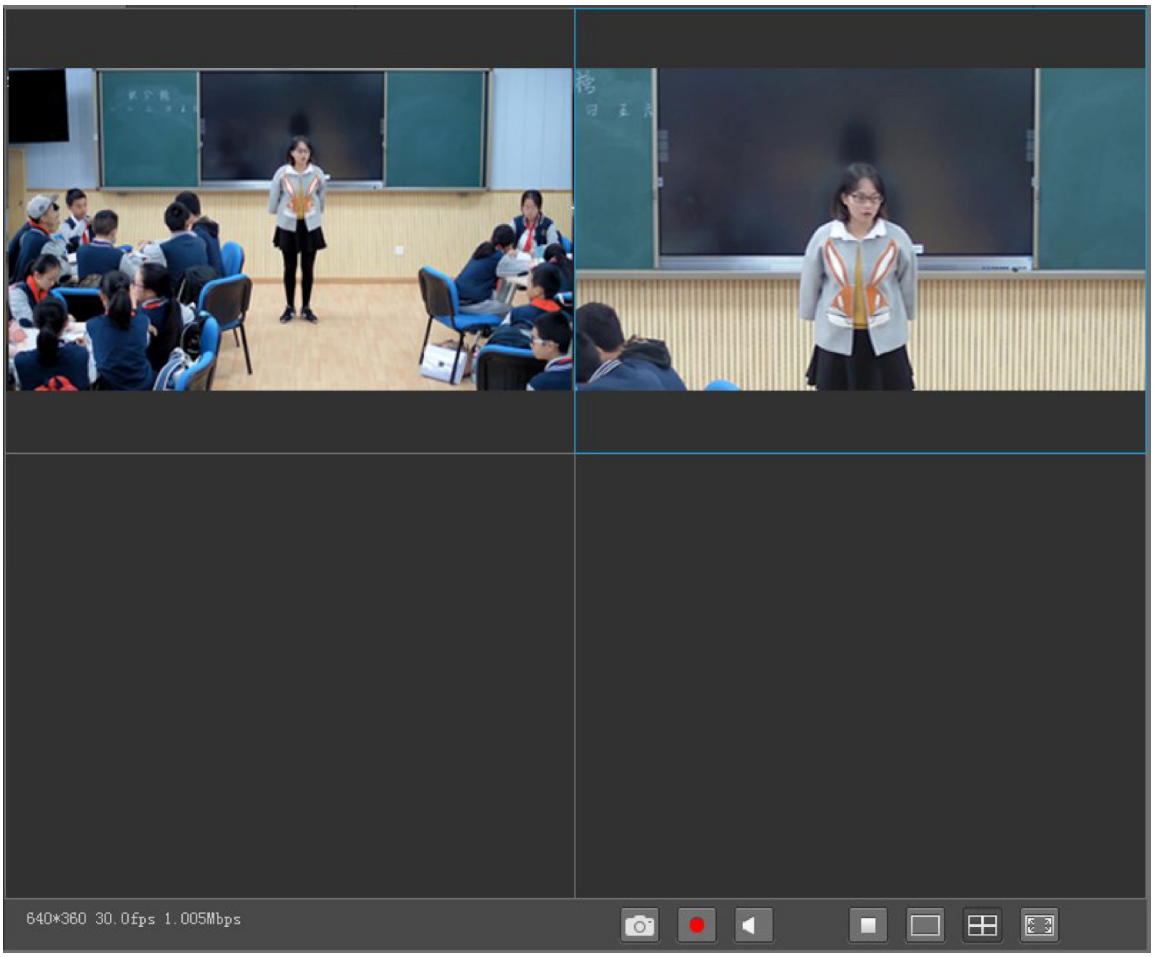

SOUNDVISION
NET CPU RAM 15:18:10
Device Management
Main View
Remote Playback
Help info
Device
Camera
PTZ Lens
Zoom
Menu
Focus
Iris
Enter
Return
Iris reset
Presets
0
Call
Set
Clear
Track
Start
Stop
Settings
1920*1080 31.0fps 2.020Mbps

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

●Device: it displays all online cameras which have been added to “Device Management”.

● Device Control: control the selected camera (camera name will be listed in blue).

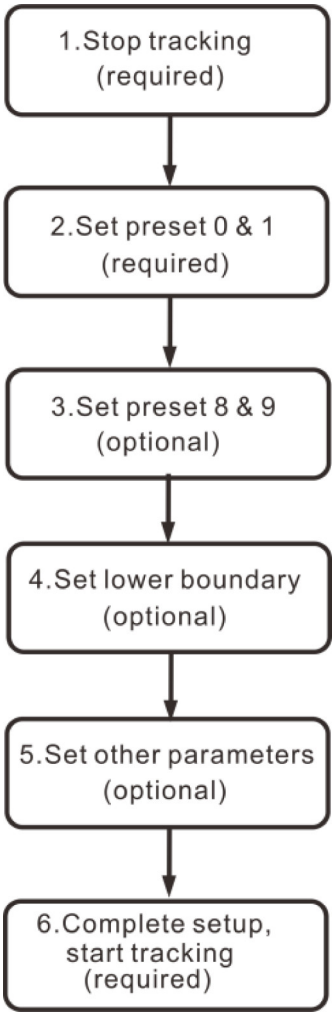
● Video Preview: double click the camera in the list, main camera stream will be displayed in the preview window; or right click the selected camera from the left column to get its main or sub-stream video. Video preview mode can be single video or four video’s, when in four video’s mode, select one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


640*360 30.0fps 1.005Mbps

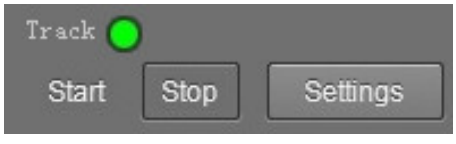
Setting

Software Connection

If you want to adjust the track settings, please install and run the “CameraCMS” software, click on Start Search / Add to client / Main View / Track / Settings.



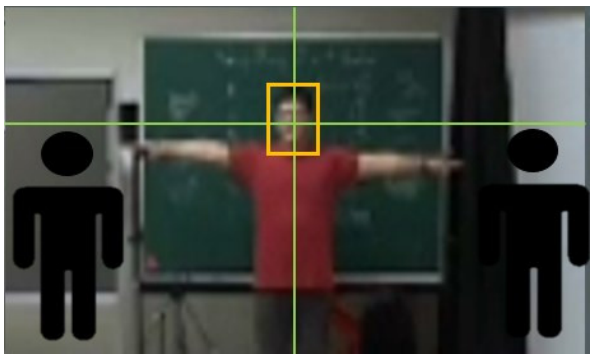
1. Stop tracking



Stop: turn off tracking. The tracking also can be turned off through call preset 81.

2.Set preset 0 and 1

Preset 1: preset 1 is the position where tracking starts, preferred to be set at Podium; to configure it, pan /tilt/ zoom the camera to ensure the lecturer in an appropriate size and position on the video, please refer to below photo, then set it as preset 1.



Preset 0: it is a position that can be configured to make the camera to arrive once the tracking target was lost, recommend to set it with a full view image of the lecturer area. See basic parameter settings for details.

3.Set preset 8 & 9

Tracking left and right limit: if set (not specified : you could set 8 as the limit on the left, 9 as the limit on the right; Or set 8 to the right limit and 9 to the left limit), and the camera horizontal tracking will be between these two preset positions. If the target exceeds the limit, it returns to the 0 position.

If not set (default is not set) the entire process is tracked.

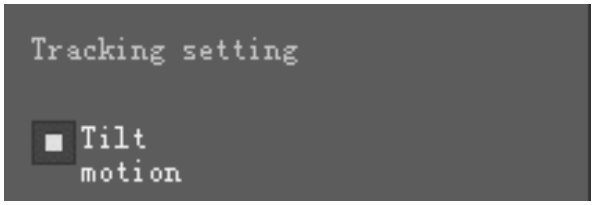
4. Set lower boundary, the default line is in the center of the image.

Start tracking the target height line:

When the camera has no target (at 0 position), the detected target head must be higher than the line to trigger camera tracking.

To avoid unidentified targets (such as sitting students) from triggering tracking by mistake.

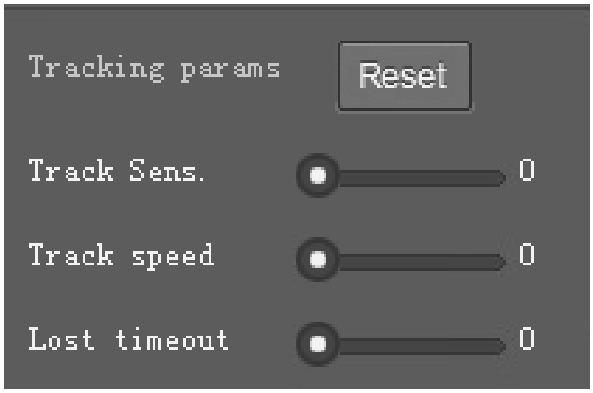
5.Set other parameters, default values are recommended.



Tilt Motion: when it was enabled, the camera will automatically adjust tilt angle when tracking. If it was 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.

Tracking Parameters



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

Track Speed: set pan speed for tracking;

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

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

6. complete setup, start tracking

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

Settings: click this button to get into detailed tracking parameters for configuration.

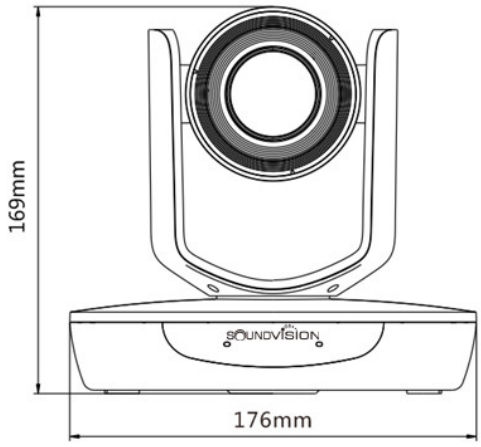
ANNEX 1 TECHNICAL SPECIFICATIONS

Items	Value
Image Sensor	1/2.8" CMOS, 2.14 megapixel
Focal Lens	f=4.7~94.0mm
Optical Zoom	20x
Digital Zoom	12x
Iris	F1.6~F3.5
Horizontal Viewing Angle	59.5° - 2.9°
Focus System	Auto, Manual, PTZ Trigger, One Push Trigger
Shutter Speed	1/1s to 1/10,000s
Gain	Auto, Manual
White Balance	Auto, Indoor, Outdoor, One Push, Manual, Auto Tracking
Exposure Control	Auto, Manual, Shutter Priority, Iris Priority
S/N	≥55dB
Menu	English
PTZ	
Pan Angle	-170°~+170°
Tilt Angle	-30°~+90°
Pan Speed	0.2°/S~100°/S
Tilt Speed	0.2°/S~60°/S
Preset Number	256
Video Output	
Video Format	1080P60, 1080P50, 1080P30, 1080P25, 1080I60, 1080I50, 720P60, 720P50
NETWORK	
Resolution	Max 1920*1080P60
Image Compression	H.265, H.264

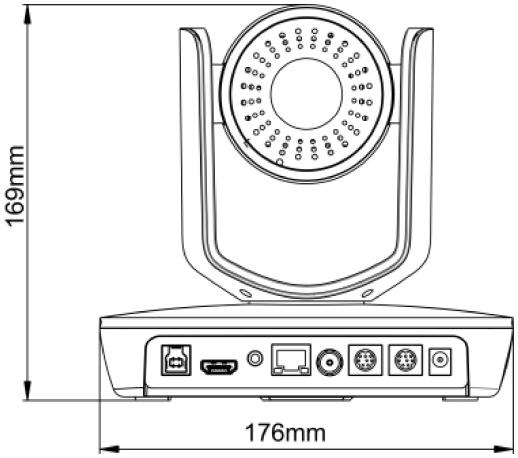
Audio Compression	AAC
Protocols	ONVIF, RTSP, RTMP, HTTP, TCP, UDP
Dual Stream	Support
USB	
USB Interface	USB3.0 Type-B
UVC, UAC	Support
Video Interface	H.264
Image Size	1920x1080, 1280x720, 640x360
Interface	
Video Interface	HDMI 1.4 / 3G-SDI
Network Interface	RJ45 (100M) interface, optional POE
Control Interface	RS-485 and RS-232
General	
Protocols	VISCA, PELCO-P, PELCO-D
Address	VISCA (1~7), PELCO-D/P (0~255)
Power	DC12V
Power Consumption	<15W
Operating Temperature	0°C~+40°C
Storage Temperature	-20°C~+60°C
Operating Humidity	10% RH~ 90% RH
Dimensions （W×H×D）	176mm×169mm×136mm
Weight	<1.1KG
Body color	Gray

ANNEX 2 SIZE AND DIMENSION

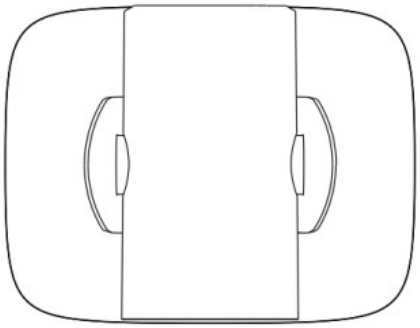
Front



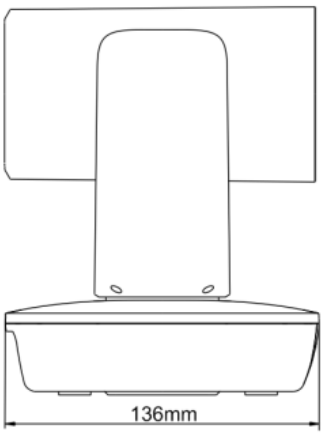
Rear



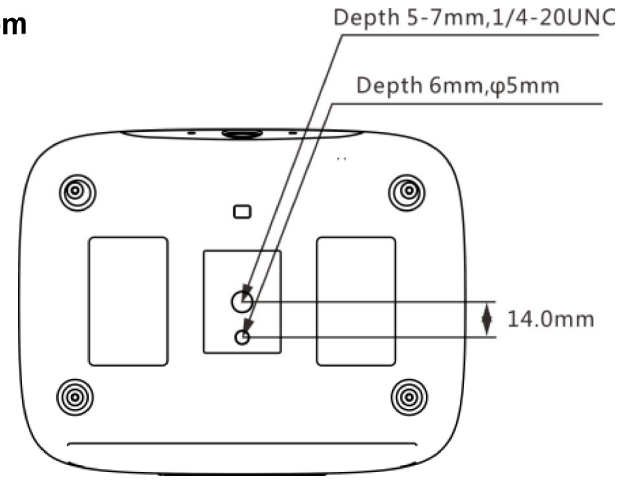
Top



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	Power cable is too long	Use a shorter cable
	Power adapter damaged	Replace power adapter
	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 open circuit of RS-485 or RS-232 cable	Check & reconnect
Video loss when pans / tilts / zooms	Power cable is too long	Use a shorter cable
	Power adapter damaged	Replace power adapter
	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

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