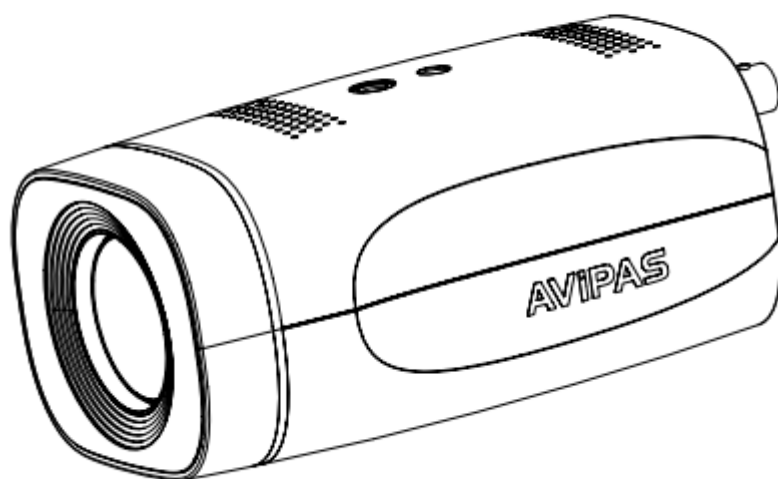




Model: AV-1180
HD Video Conferencing Camera



User Manual

V1.1

**Please read this user manual
thoroughly before using.**

www.avipas.com

Preface

Thanks for using this HD Video Conferencing Camera.

This manual introduces the functions, installation process and operation of the HD camera. Prior to installation and usage, please read the manual thoroughly.

Precautions

This product can only be used in the specified conditions in order to avoid any damage to the camera:

1. Do not subject the camera to rain or moisture.
2. Do not remove the cover. Otherwise, you may risk receiving an electric shock. In case of unintended equipment operation, contact an authorized engineer.
3. Never operate under unspecified temperature, humidity or power supply.
4. Please use soft dry cloth to clean the camera. If the camera is very dirty, clean it with diluted neuter detergent; do not use any type of solvents, which may damage the surface.

Note

This is a class A production. Electromagnetic radiation at certain frequencies may affect the image quality of TV in home environment.

Electrical Safety:

- Electric Safety

Installation and operation must accord with electric safety standard.

- Use caution to transport

Avoid stress, vibration or soakage in transport, storage and installation.

- Polarity of power supply

The power supply of this product is +12V, the max electrical current is 2A. Polarity of the power supply plug is shown in the drawing below.



- Installation precautions

Do not grasp the camera lens when carrying it. Do not touch camera lens by hand. Mechanical damage may result from doing so.

Do not use in corrosive liquid, gas or solid environment to avoid any cover (plastic material) damage.

Make sure there is no obstacle within rotation range.

Do not power on before installation is completed.

- Do not dismantle the camera

We are not responsible for any unauthorized modification or dismantling.

CAUTION!

Certain frequencies of electromagnetic field may affect the image of the camera.

Content

1. Introduction	1
1.1 Product Schematic	1
1.2 Product Overview	2
1.3 Rear Panel Diagram	3
1.4 Bracket Installation	4
1.5 Accessory	4
1.6 Product Feature	5
1.7 Technical Specification	5
2. IR Remote Control.....	8
2.1 IR Remote Control Key.....	8
2.2 OSD Menu Setting	9
3. Network Connection.....	133
3.1 Connection Method	13
3.2 Camera's Physical Address	13
3.3 Access Camera via IP	13
3.4 Web Interface	15
4. Serial Port Communication Control	23
4.1 Visca Protocol List	23
4.2 Pelco-D Protocol Command List.....	30
4.3 Pelco-P Protocol Command List	30
5. Maintenance and Troubleshooting	31
6.1 Camera Maintenance	31
6.2 Unqualified Application	31
6.3 Troubleshooting	31

1. Introduction

1.1 Product Schematic

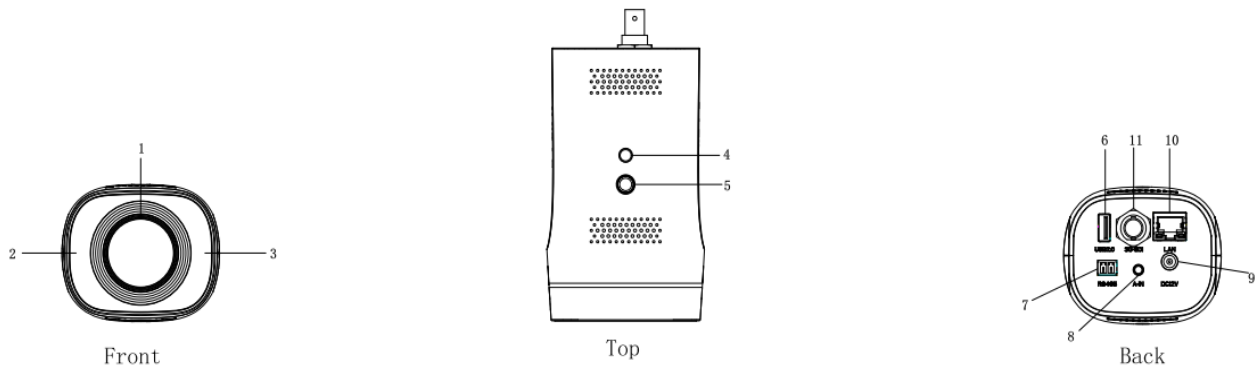
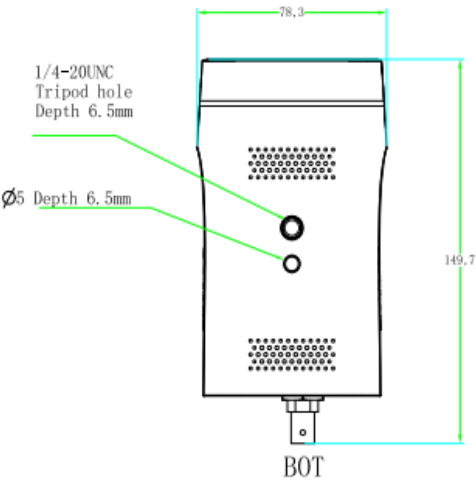
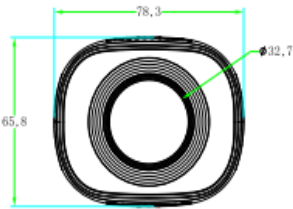


Fig 1.1 Product Schematic

Description :

- | | | |
|----------------------|--|----------------------------------|
| 1. Lens | 5. 1/4 -20 female thread Screw | 9. DC12V Power Input Socket |
| 2. Infrared Receiver | 6. USB2.0 Type-A Port | 10. RJ45 Network Connection Port |
| 3. Indicator Light | 7. RS485 Phoenix Connector half-duplex | 11. SDI Port |
| 4. Installation Hole | 8. 3.5 mm Audio Line-in Port | |

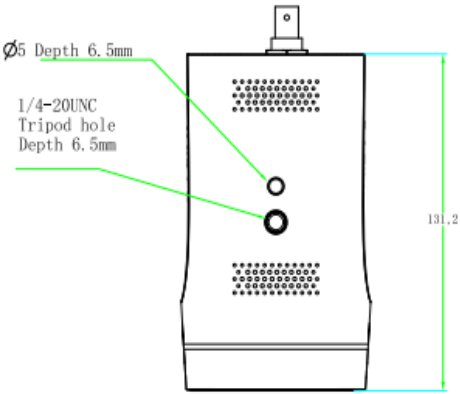
1.2 Product Overview



Front



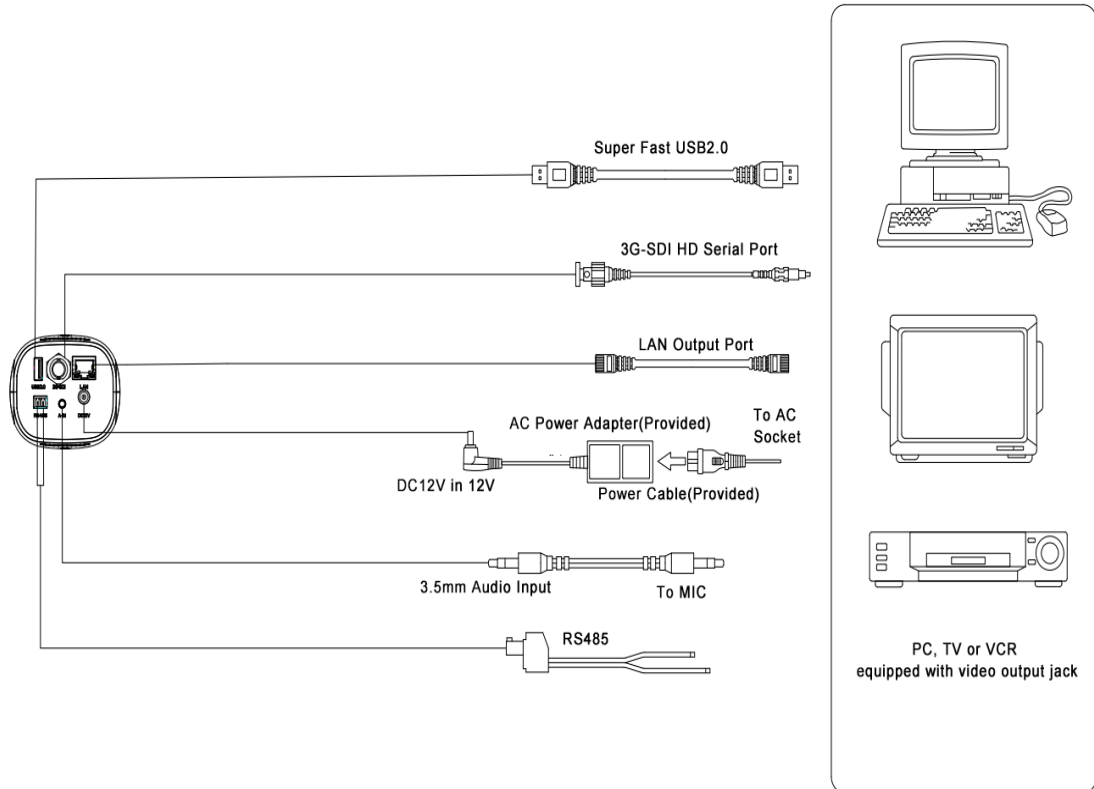
Right



Top

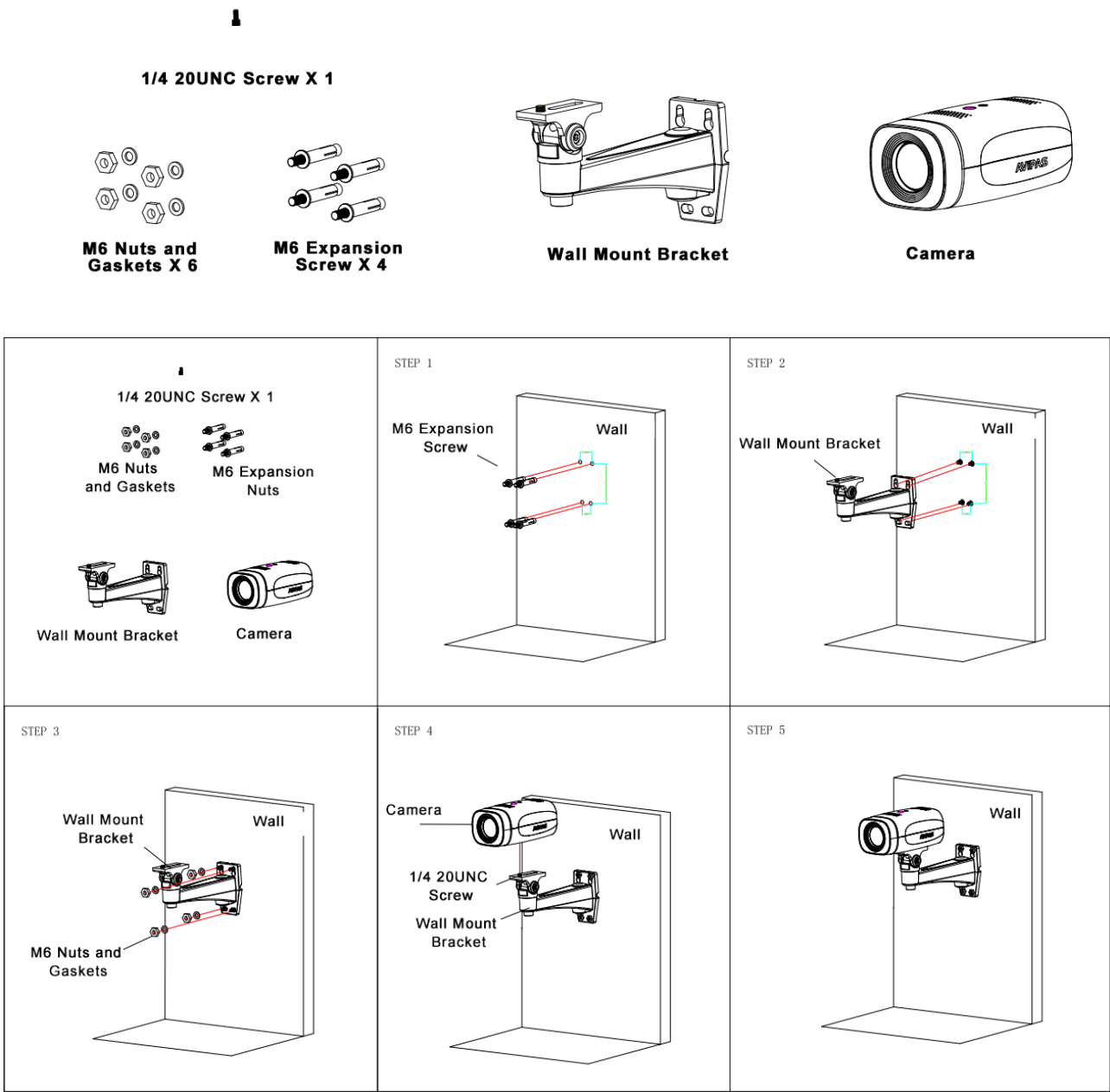
1.3 Rear Panel Diagram

The external interfaces of this product including: USB2.0, SDI, line-in, ethernet port, RS485, DC12V power supply, power switch. The rear panel diagram is shown in below:



1.4 Bracket Installation

Steps of Wall Mount Installation



1.5 Accessory

When unpacked, check if all supplied accessories are included:

Table 1.5 Included Accessories

	Power adapter
	USB2.0 Cable

Included Accessory	User manual
	IR Remote Controller
Optional	Wall Mount Bracket

1.6 Product Feature

- **Full HD Resolution:** 1/2.8" 2.07M effective pixel SONY CMOS sensor, delivery the image resolution at 1080P with frame rate up to 60fps.
- **Optical Zoom Lens:** 10x optical zoom, 5x digital zoom with 60.9° horizontal wide field of view.
- Video outputs: Supports simultaneously SDI, USB2.0 and IP streaming (LAN) outputs.
- **Dual Stream outputs:** Supports simultaneously main stream and sub stream output.
- **Video Compression:** Support H.264, H.265
- **Audio input and encoding:** 3.5mmAudio Line-in, embedded with IP streaming out with AAC, MP3, G.711A audio encoding
- **Network Protocol:** Support RTSP, RTMP, RTP multicast, ONVIF, GB/T28181 protocols
- **Control Protocol:** Supports VISCA, PELCO-D, PELCO-P, ONVIF, UVC1.1 & VISCA-over-IP protocols and automatic identified the protocols
- **Communication interface:** Half-Duplex RS485 Phoenix connector
- **PoE (Power Over Ethernet):** Supports PoE, IEEE standard 802.af. Ethernet cable can transmit Power, IP control signal and video streaming output
- **USB2.0 Type-A Port:** Able to connect with PC, Mac, or Chromebook computer easily. Compatible with any web conferencing or streaming software

1.7 Technical Specification

Table 1.7-1 Camera Lens Parameter

Camera Parameter	
Zoom	10x Optical, 5x Digital
Lens	F1.6 ~ F3.0, f=4.7 mm ~ 47 mm
Viewing Angle	Horizontal : 6.43° (N) ~ 60.9° (W) Vertical : 4.1° (N) ~ 40.1° (W)
Sensor	1/2.8-inch SONY CMOS sensor, Effective Pixel 2.07M
Video Format	SDI : 1080P60/50/30/25/59.94/29.97;1080I60/50/59.94; 720P60/50/30/25/59.94/29.97 USB2.0 MJPG : 1920*1080/1280*720 /1024*768 /1024*576/960*540/800*600/720*576/720*480/704*576/640*480 /640*360 /352*288/320*240/320*180/176*144P30;

	H.264 : 1920*1080/1280*720 /1024*768 /1024*576/960*540/800*600/720*576/720*480/704*576/640*480 /640*360 /352*288/320*240/320*180/176*144P30; H.265 : 1920*1080/1280*720 /1024*768 /1024*576/960*540/800*600/720*576/720*480/704*576/640*480 /640*360 /352*288/320*240/320*180/176*144P30; YUY2 : 800*448 P15; 640*480/640*360 /432*240/320*180/P30
Minimum Illumination	0.05Lux (F1.8, AGC ON)
Digital Noise Reduction	2D&3D Digital Noise Reduction
White Balance	Auto / Manual/ One Push
Focus	Auto/Manual/One Push
Exposure Mode	Auto/Manual/Shutter Priority/Aperture Priority/Brightness Priority
Aperture	Auto/Manual
Shutter Speed	1/25s ~ 1/10000s
Backlight Compensation	ON/OFF
WDR	OFF/ Dynamic level adjustment
Video Adjustment	Brightness, Color, Saturation, Contrast, Sharpness, B/W mode, Gamma Curve
SNR	≥55dB

Table 1.7-2 Interface Parameter

Interface Parameter	
Video Out	1xSDI (3GSDI) BNC female, 1x RJ45 IP streaming 10M/100M/1000M adaptive Ethernet port 1x USB2.0 type-A 1x LAN (RJ45)
IP Video Compression	LAN : H.264, H.265 USB 2.0 : MJPG、H.264、H.265、YUY2
Audio Input	1x Double track 3.5mm LINE-IN
Audio Output	SDI, IP Streaming
Audio Compression	AAC, MP3, G.711A
Network Interface	1x RJ45
Network Protocols	RTSP/RTMP, ONVIF, GBT28181, SRT, multicast mode
Control Port	RS485, USB (eCam), RJ45
Control Protocol Communication Protocol	VISCA/ Pelco-D/ Pelco-P Support Baudrate: 115200/38400/9600/4800/2400

USB Communication Protocol	UVC1.1 (Video Communication Protocol)
Power Supply	HEC3800 Outlet (DC12V)/ PoE (IEEE standard 802.3af)
Power Adapter	AC110V~AC220V to DC12V/ 2.5A
Input Voltage	DC12V
Input	<1A
Consumption	<12W

Table 1.7-3 Other Parameter

Other Parameter	
Storage Temperature	-10°C ~ +60°C
Storage Humidity	20% ~ 95%
Working Temperature	-10°C ~ +50°C
Working Humidity	20% ~ 80%
Dimension	149.7 (L) mm×78.3mm (W) ×65.9mm (D)
Environment	Indoors

2. IR Remote Control

2.1 IR Remote Control Key



1. Standby Key

Press and hold the key for 3 seconds to enter standby mode. Press and hold the key for 3 seconds to back to normal mode.

2. Camera Select Section

Select the camera address which wants to be controlled

(The camera will be set to address #1 in default.)

3. Number Key

Use for combination keys

4, *, # Key

Use for combination keys with [F1 – F4] to set camera IR controller address.

Example: [*] + [#] + [F1] : camera IR controller address No.1

5. Focus Control Key

Press [AUTO] to enter auto focus mode.

6. Zoom Control Key

[ZOOM +]: zoom in

[ZOOM -]: zoom out

7. Direction Control Keys

Directional arrow keys to control the OSD (on screen display) menu selections up, down, left and right.

8. BLC Control Keys

Press [BLC] button to enable/disable backlight compensation. (Note: Backlight is only effective under auto exposure mode)

9. Menu Setting

Press [MENU] to Open the OSD menu

Press [MENU] again to exit the OSD menu or return to the previous menu.

Press [HOME] to confirm the selection

10. Key Combination Functions

2.2 OSD Menu Setting

【*】 + 【#】 + Manual : IP/user name/password restore to default

【*】 + 【#】 + 【6】 : Restore factory default

【*】 + 【#】 + 【9】 : Vertically flip image

【#】 + 【#】 + 【0】 : Switch video format to 1080P60

【#】 + 【#】 + 【1】 : Switch video format to 1080P50

【#】 + 【#】 + 【2】 : Switch video format to 1080I60

【#】 + 【#】 + 【3】 : Switch video format to 1080I50

【#】 + 【#】 + 【4】 : Switch video format to 720P60

【#】 + 【#】 + 【5】 : Switch video format to 720P50

【#】 + 【#】 + 【6】 : Switch video format to 1080P30

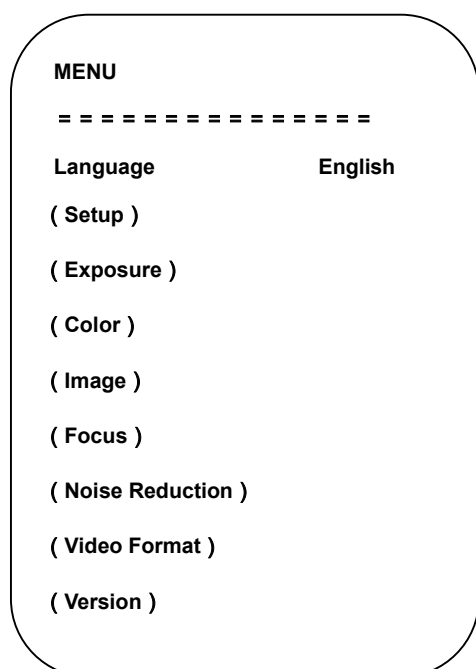
【#】 + 【#】 + 【7】 : Switch video format to 1080P25

【#】 + 【#】 + 【8】 : Switch video format to 720P30

【#】 + 【#】 + 【9】 : Switch video format to 720P25

Main Menu

In normal working mode, press 【MENU】 key to display the menu, using direction arrow keys to select different items.



Language: Language setting

Setup: System parameter setting

Exposure: Enter into Exposure setting

Color: Enter into color setting

Image: Enter into image setting

Focus: Enter into focus setting

Noise Reduction: Enter into noise reduction

Video Format: Enter into sub menu

Restore Default: Enter into reset setting, select YES or NO to confirm

【↑ ↓】 **Select:** For selecting menu

【← →】 **Change Value:** For modifying parameters

【MENU】 **Back:** Press [Menu] to return

【Home】 **OK:** Press [Home] to confirm

Set Up

Move the pointer to the [SETUP] in the Main Menu, press [HOME] key and enter into setup page as shown below:

SETUP

=====

Image Style	Default
Protocol	Auto
Visca Address	1
PELCO-P Address	1
PELCO-D Address	1
Baudrate	9600
Zoom speed	7

[↑↓]Select [←→]Change Value
[Menu]Back

Style: Default/Normal/Clear/Bright/Soft

Protocol: VISCA/Pelco-P/Pelco-D/Auto

Visca Address: VISCA=1~7/Pelco-P=1~255/ Pelco-D=1~255

Baudrate: 2400/4800/9600/38400/115200

Zoom Speed: Set the zoom speed for the remote control, 1~7

Exposure

Move the pointer to the [EXPOSURE] in the Main Menu, press [HOME] and enter the exposure setting page as below:

EXPOSURE

=====

(Mode)	Auto
(EV)	OFF
(BLC)	OFF
(Flicker)	50Hz
(G.Limit)	3
(DRC)	2

[↑↓]Select [←→]Change Value

Mode: Auto, Manual, Shutter priority, Iris priority and Brightness priority.

EV: On/Off (only available in auto mode)

BLC: ON/OFF for options (only available in auto mode)

Anti-Flicker: OFF/ 50Hz/ 60Hz for options (only available in Auto/ Iris priority/ Brightness priority modes)

Gain limit: 0~15 (only available in Auto/ Iris priority /Brightness priority mode)

DRC: 1~8, close

Color

Move the pointer to the [COLOR] in the Main Menu, press [HOME] and enter the color setting page as below:

COLOR

=====

WB Mode	Auto
RG Tuning	0
BG Tuning	0
Saturation	100%
Hue	7
AWB Sensitivity	High

[↑↓]Select [←→]Change Value
[Menu]Back

WB Mode: Auto, Manual, One Push, 2400K, 3000K, 3500K, 4000K, 4500K, 5000K, 5500K, 6000K, 6500K, 7000K, 7100K

Saturation: 60%,70%,80%,90%,100%,110%,120%,130%,140%,150%,160%,170%,180%,190%,200%

Red fine-tuning: -10~10 (only available in automatic mode)

Blue fine-tunable: -10~10 (only available in automatic mode)

RED GAIN: 0~255(only available in Manual mode)

BLUE GAIN: 0~255(only available in Manual mode)

AWB Sensitivity: high/middle/low

Image

Move the pointer to the [IMAGE] in the Menu, press the [HOME] and enter the image setting page as below:

IMAGE	
=====	
Brightness	7
Contrast	7
Sharpness	6
Flip-H	OFF
Flip-V	OFF
B&W-Mode	Color
Gamma	Default
DCI	Close
Electronic zoom	Close
Low-Light Mode	Close
[↑↓]Select [←→]Change Value	
[Menu]Back	

Brightness: 0~14

Contrast: 0~14

Sharpness: 0~15

Flip-H: On/Off

Flip-V: On/Off

B&W Mode: color, black/white

Gamma: Default/ 0.45/ 0.50/ 0.55/ 0.63

DCI: Dynamic Contrast: Off/ 1~8

Electronic zoom: On/ Off

Minimum Illumination: On/ Off

Focus

Move the pointer to the [FOCUS] in the Menu, press [HOME] and enter the focus setting page as below:

FOCUS	
=====	
Focus Mode	Auto
AF-Zone	ALL
AF-Sensitivity	Low
[↑↓]Select [←→]Change Value	
...	

Focus Mode: Auto/ Manual/ OnePush

AF-Zone: Up/ Middle/ Down

AF-Sensitivity: High/ Middle/ Low

Noise Reduction

Move the pointer to the [NOISE REDUCTION] in the Menu, press [HOME] and enter the noise reduction setting page as below:

NOISE REDUCTION	
=====	
NR-2D	3
NR-3D	3
Dynamic Hot Pixel	OFF
[↑↓]Select [←→]Change Value	
[Menu]Back	

2D Noise Reduction: Auto, close, 1~7

3D Noise Reduction: Close, 1~8

Dynamic Hot Pixel: Close, 1~5

Video Format

Move the pointer to the [VIDEO FORMAT] in the Menu, press [HOME] and enter the video format setting page as below:

VIDEO FORMAT	
=====	
1080P60	1080P50
1080I60	1080I50
1080P30	1080P25
720P60	720P50
720P30	720P25
1080P59.94	1080I59.94
1080P29.97	720P59.94
720P29.97	
[↑↓]Select	
[Menu]Return	[Home]OK

Note: After change the video format, please exit the menu to save the changes.

Version

Move the pointer to the [VERSION] in the Main Menu, press [HOME] and enter the version information page as below:

VERSION
=====

Camera Version 1.0.0 2022-8-12
AF Version 1.0.2 2022-7-21

[Menu]Back

Camera Version: Display camera version information

AF Version: Display AF version information

RESTORE DEFAULT
=====

Restore Default? NO

[↑ ↓]Select [← →]Change Value
[Menu]Back [Home]OK

Restore default: Yes/ No

Restore Default

Move the pointer to the [RESTORE DEFAULT] in the Main Menu, press [HOME] and enter the setting page as below:

3. NETWORK CONNECTION

3.1 Connection Method

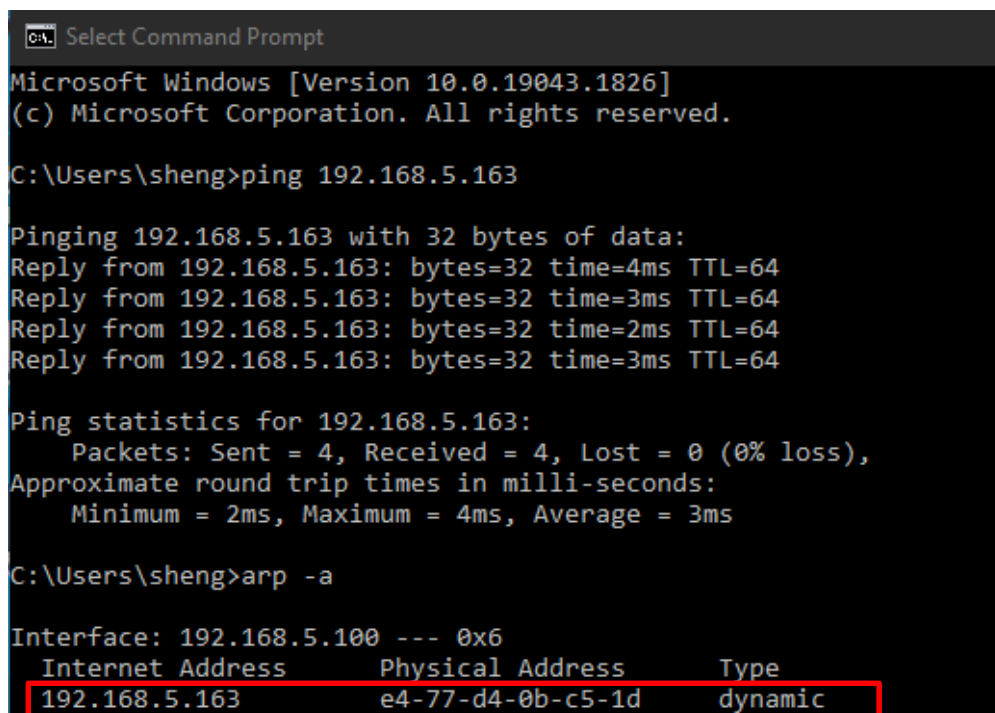
- Direct Connection: Connect the camera with computer via Cat5/Cat6 Ethernet cable.
- Connection to LAN : Connect camera and computer to the same local LAN (router or switcher) via Cat5/Cat6 Ethernet cables

3.2 Camera's Physical Address (MAC address)

User can also use the Command Prompt or Terminal to verify network connection and the device's physical address.

1. Make sure the camera is in the same local network with laptop. Open Command Prompt or Terminal, type in: ping 192.168.5.163; In order to check camera's physical address, type in: *arp -a*.

If network connection is correct, the camera's physical address will show up in screen as below:



```
Microsoft Windows [Version 10.0.19043.1826]
(c) Microsoft Corporation. All rights reserved.

C:\Users\sheng>ping 192.168.5.163

Pinging 192.168.5.163 with 32 bytes of data:
Reply from 192.168.5.163: bytes=32 time=4ms TTL=64
Reply from 192.168.5.163: bytes=32 time=3ms TTL=64
Reply from 192.168.5.163: bytes=32 time=2ms TTL=64
Reply from 192.168.5.163: bytes=32 time=3ms TTL=64

Ping statistics for 192.168.5.163:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 4ms, Average = 3ms

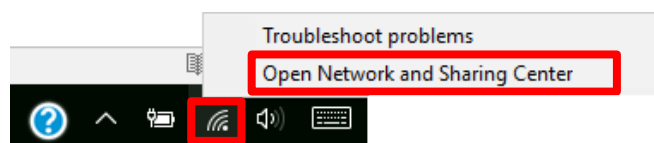
C:\Users\sheng>arp -a

Interface: 192.168.5.100 --- 0x6
Internet Address      Physical Address      Type
192.168.5.163         e4-77-d4-0b-c5-1d    dynamic
```

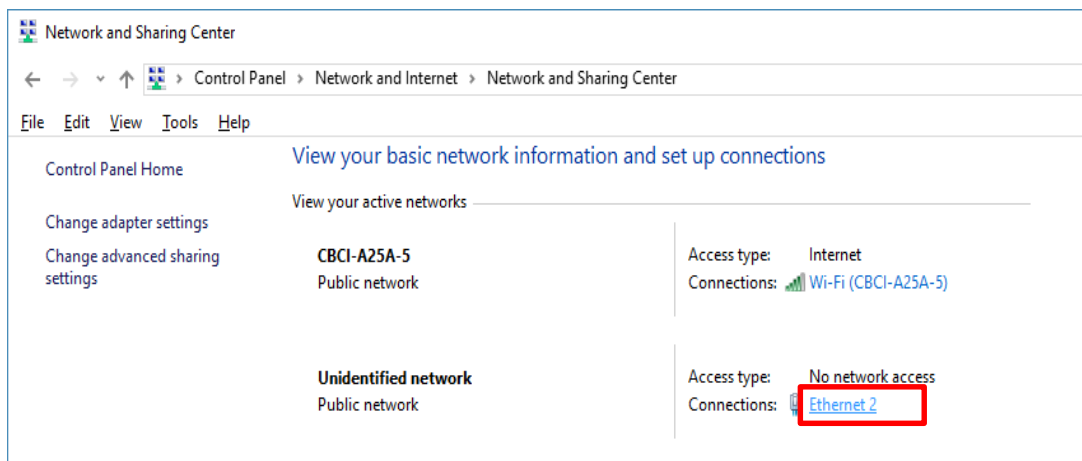
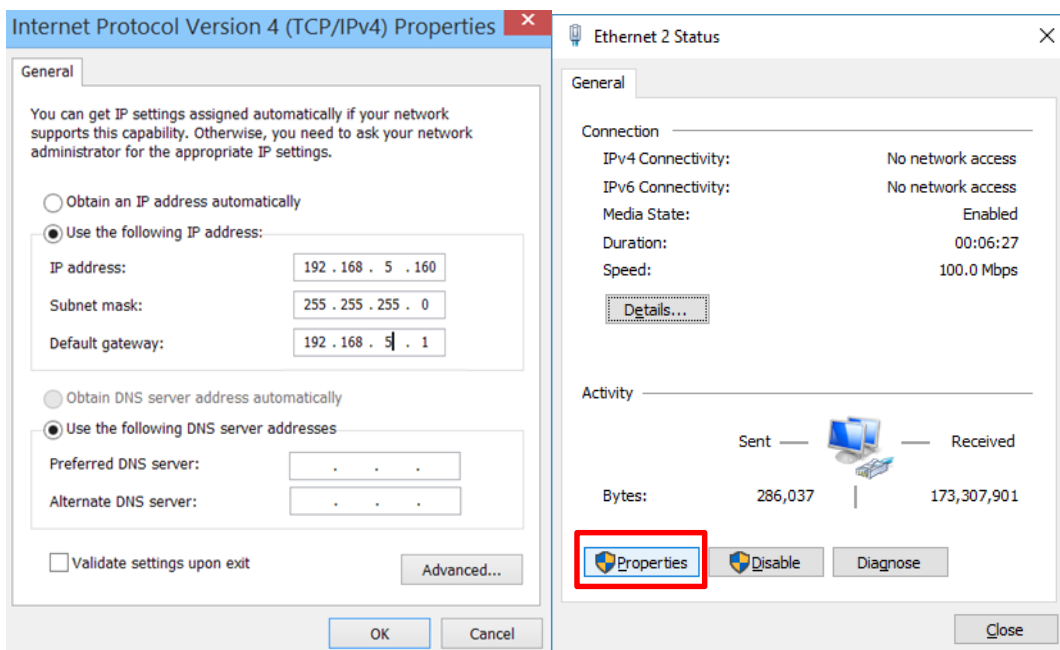
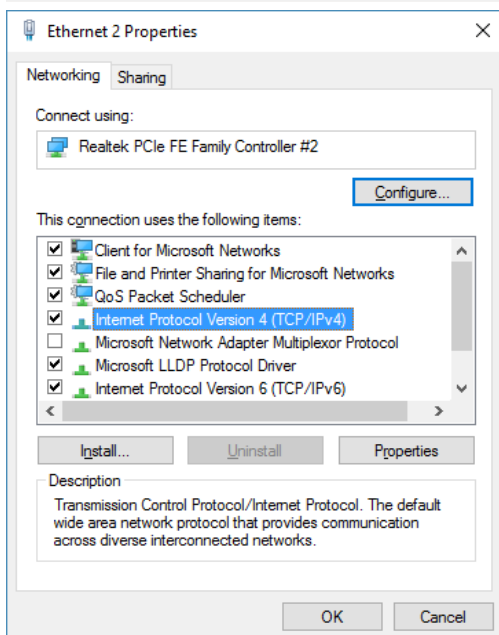
3.3 Access Camera via IP

Connect the camera to your computer directly via an Ethernet cable.

On the bottom-right corner of your desktop, right click on the Network icon, then click on the "Open Network and Sharing Center".



Click on "Ethernet2" -> "Properties" -> double click on "Internet Protocol Version 4(TCP/IPv4)" -> select "Use the following IP address" and enter the IP address.



Note: In order to access camera via IP, make sure that your computer is in the same network segment range as the camera IP address. The device will not be accessible if the segment is not consistent. For example: AV-1180 camera's IP address (default) is 192.168.5.163, then your computer IP address should be in this range 192.168.5.XXX (the first three section must be same, and the last one should be different).

3.4 Web Interface

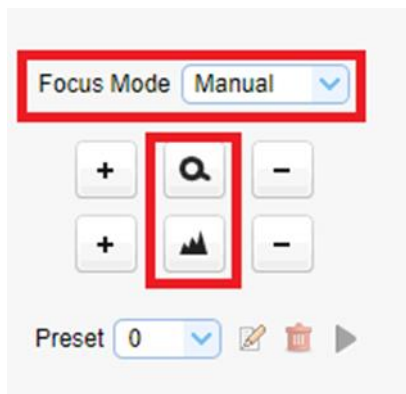
1) Web Login

Open a browser, type in **192.168.5.163** in the address bar, log in with user name: **admin**, password: **admin**.



2) Preview Page

In the preview page, user can control the camera's zoom, focus, video capture, sound, focus, and set the preset position.



Focus Mode: Auto(default), Manual, Onepush

Zoom +/- : Zoom in/out

Focus +/- : Adjust focus (please select the focus mode as manual)

3) Configuration Page

Click Configuration to enter into the setting page.

Audio Configure

Configurations

- Audio Configure
- Video Configure
 - Video Encode
 - Stream Publish
 - Multicast/Unicast
 - Video Parameters
 - Video OSD
 - OSD Font Size
 - Video Out
- Network Configure
 - Network Port
 - Ethernet
 - DNS
 - GB28181
- System Configure

Audio Configure

Enable ☒

Encode Type

Sample Rate

Sample Bits

Bit Rate

Channel

Input Volume 2

Enable option : Choose to enable the audio or disable.

Encode Type : AAC (default), MP3, G.711A

Sampling Rate : 16000, 32000, 44100(default), 48000

Sampling Bits: 16bits (default)

Bit Rate: 32K, 64K (default), 48K, 96K, 128K

Channel type: mono (default), stereo

Input Volume: Set the input volume (default 2, 1-10 optional)

Please click "Save" button after changes and reboot the camera to apply new settings.

Video Configure

Configurations

- Audio Configure
- Video Configure
 - Video Encode
 - Stream Publish
 - Multicast/Unicast
 - Video Parameters
 - Video OSD
 - OSD Font Size
 - Video Out
- Network Configure
 - Network Port
 - Ethernet
 - DNS
 - GB28181
- System Configure
 - SysAttr
 - SysTime
 - SysUser
 - Update
 - Default
 - Reboot

Video Encode

Stream	Main Stream	Sub Stream
Compressed Format	<input type="text" value="H.264"/>	<input type="text" value="H.264"/>
Profile	<input type="text" value="HP"/>	<input type="text" value="HP"/>
Image Size	<input type="text" value="1280*720"/>	<input type="text" value="320*180"/>
Rate Control	<input type="text" value="CBR"/>	<input type="text" value="CBR"/>
Image Quality	<input type="text" value="Best"/>	<input type="text" value="Good"/>
Bit Rate(Kb/s)	<input type="text" value="4096"/>	<input type="text" value="512"/>
Frame Rate(F/S)	<input type="text" value="25"/>	<input type="text" value="25"/>
I Frame Interval	<input type="text" value="75"/>	<input type="text" value="75"/>
I Frame Min QP	<input type="text" value="20"/>	<input type="text" value="20"/>
Stream Name	<input type="text" value="live/av0"/>	<input type="text" value="live/av1"/>

Stream : Main Stream & Sub Stream settings

Compression Format : Set the video compression format (H.264, H.265)

Profile : HP (high profile)/ BP (base profile)/ MP (main profile)

Video Size : Main stream: 1920x1080, 1280x720 (default), Sub stream: 320x180(default), 640*360, 320*240, 1280*720, 1920*1080

Rate control : VBR (variable bitrate)/ CBR (constant bitrate).

Image Quality : Only available under VBR. Image quality selections: best, better, good, bad, worse, worst.

Rate (Kb /s): Set the video bit rate (main stream default 4096b/s, 64-40960Kb/s optional; sub stream default 512Kb/s, 64-40960Kb/s optional).

Frame rate (F/S): Set the video frame rate (main/ sub stream default 25F/S; main stream 5-50F/S optional, sub stream 5-30F/S optional).

Key frame interval: Set the key frame interval (main / sub stream default 75; main stream 1-250F optional, sub stream 1-150F optional).

Key frame Min QP: Set the key frame Min QP (main / sub stream default 20; main stream 10-51F optional, sub stream 10-51F optional).

Stream Name: When streaming via RTSP or RTMP, user may modify stream name. Main Stream has default setting as "live/av0"; Sub stream has default setting as "live/av1".

Please click "Save" button after changes and reboot the camera to apply new settings.

Stream Publish

Switch : To enable or disable the main/ sub stream

Protocol type : primary / secondary stream applies RTMP protocol.

Host Port : server port number (default 1935, 0-65535 optional)

Host Address : server IP addresses (default 192.168.5.11)

Stream Name: choose a different stream name (live / av0, live / av1 optional).

User: Set the username

Password: Set the password.

Please click "Save" button after changes and reboot the camera to apply new settings.

For more information about live streaming, please refer to www.avipas.com -> Support -> "How-to Material".

Multicast/Unicast

Main/Sub Stream: On/off

Protocol: RTP multicast, TS multicast, UDP unicast, TCP unicast

Address: Default 224.1.2.3.

Port: Main Stream Default Port: 4000, Sub Stream Default Port: 4002

Visit: Address comes up after setting. For example: rtp: //224.1.2.3:4000; udp: [//@224.1.2.3:4000](http://@224.1.2.3:4000)

Video Parameters

A) Focus : Focus mode, focus range, focus sensitivity can be set.

Focus Mode: Auto(default), Manual and One Push

Focus range: Center(default), Top, Bottom and All

Focus Sensitivity: Low(default), High, Middle

B) Exposure : Exposure mode, exposure compensation, back light compensation, anti-flicker, gain limit, wide dynamic, shutter speed, aperture value and brightness can be set.

Exposure Mode : Set the exposure mode (the default automatic, manual, shutter priority, aperture priority, Brightness priority).

Exposure compensation : Exposure compensation setting is active when it is auto status (default is off).

Exposure compensation value : Set the exposure compensation value, valid when it is set for auto (default 0, -7 to 7 optional).

BLC : Set backlight compensation, Valid under auto exposure mode. Default: Off.

Anti-flicker : Anti-flicker, 50Hz and 60Hz options, default 50Hz. Valid under auto exposure, AAE and bright mode.

Gain limit : 0-15 under auto, AAE, and bright mode; 0-20 under manual and SAE mode.

Dynamic range : Set the dynamic range (default 4, 1-8 optional).

Shutter speed : Active when it is status of manual or shutter-priority (default 1/100, 1/25, 1/30, 1/50, 1/60, 1/90, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/1000, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 optional).

Aperture value : Set the aperture value, active when it is status of manual or aperture-priority (default F1.8, F11, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.8 optional).

Brightness : Set the brightness value, active when it is a state of brightness priority (default 7, 0-23 optional).

C) Color : White balance, saturation, color, white balance, sensitivity, color temperature, gain red and blue gain can be set.

White balance modes : Set the white balance mode Auto(default), Manual, One Push and VAR (2400K-7100K).

Note: Click the "Adjust" button when selected the One-push white balance mode.

Red fine-tuning : default -10~10 (only available under auto mode)

Blue fine-tunable : default -10~10 (only available under auto mode)

Saturation : Set the saturation (default 60%, 70%, 80%, 90%, 100%, 110%, 120%, 130%, 140%, 150%, 160%, 170%, 180%, 190%, 200% optional).

Chroma : Set the chroma (default 7, 0-14 optional)

Auto white balance Sensitivity : Sensitivity Auto white balance settings (default Low, Middle and high optional).

Red Gain : Set the red gain, effective when it is manual (default 145, 0-255 optional).

Blue Gain : Sets the Blue gain, effective when it is manual (default 56, 0-255 optional).

D) Image : Brightness, Contrast, Sharpness, Black and white mode, Gamma curve, Horizontal Flip and Vertical Flip can be set.

Brightness : Set the brightness (default 7, 0-14 optional).

Contrast : Set the contrast (default 7, 0-14 optional).

Sharpness : Set the sharpness value (default 6, 0-15 optional).

Gamma: Gamma value setting (default, 0.45, 0.50, 0.55, 0.63 optional).

Dynamic Contrast: Set the dynamic contrast (default off, 1~8 optional)

Black and white mode: Set black and white mode (default color, black/white optional).

Flip Horizontal: Set Flip Horizontal (default Off, On optional).

Flip Vertical: Set Auto flip (default Off, On optional).

Auto Flip: Set vertical flip (default Off, On optional).

Electronic zoom: set the electronic zoom (default Off, On optional)

E) Noise Reduction: 2D noise reduction, 3D noise reduction and dynamic dead pixel correction available.

2D Noise Reduction: Set 2D noise reduction level (default 3, Auto, 1-7 and Off optional).

3D Noise Reduction: Set 3D noise reduction level (default 5, 1-8 and Off optional).

Dynamic dead pixel correction: Set Dynamic dead pixel correction (default Off, 1-5 optional).

F) Style : select the picture style (default, normal, clarity, bright, soft optional)

Note: Click "Refresh" to make revision of any video parameters of a, b, c, d, e, f effective.

Video OSD

Display date and time: Enable/disable the display of time and date (default display).

Display Title: Enable/disable the display of the title (default display).

Font Color of Time: Set font color of time and date (default white, black, yellow, red, and blue optional).

Font Color of Title: Set font color of title (default white, black, yellow, red, and blue optional).

Time and title display: Set the display position of moving date, time and title, click on the "up, down, left, right" buttons to move the corresponding character position.

Please click "Save" button after changes and reboot the camera to apply new settings.

Font Size

Automatically adjust font size according to the resolution: selectable

Main stream character size: Set the character size of the display (default 48, 28-200 optional)

Sub stream character size: Set the character size of the display (default 48, 28-200 optional)

Please click "Save" button after changes and reboot the camera to apply new settings.

Video output

SDI Output format: default 1080P50 , 1080P60、1080P59、1080P50、1080I60 , 1080I59、1080I50、1080P30、1080P29、1080P25、720P60、720P59、720P50、720P30、720P29、720P25 optional

Network Configure

Network Port

Data port : set the data port, the device will restart automatically after changed (default 3000, 0-65535 optional)

Web port : Set Web port, the device will restart automatically after changed (default is 80, 0-65535 is optional)

Onvif port : Set Onvif port, the device will restart automatically after changed (default 2000, 0-65535 optional)

Soap port : Set Soap port (default 1936, 0-65535 optional)

Rtmp port : Set RTMP port (default 1935, 0-65535 optional)

Rtsp port : Set RTSP port, the device will restart automatically after changed (default 554, 0-65535 optional).

Visca port : Set Visca port, the device will restart automatically after changed (default 1259 , 0-65535 optional).

Click on the "Save" button, the setting will be updated after "Save successful" pop-up.

RTSP Obtaining method: rtsp: // device IP address: 554 / live / av0 (av0 main stream; av1 secondary stream)

RTMP Obtaining method: rtmp: // device IP address: 1935 / live / av0 (av0 main stream; av1 secondary stream)

Ethernet parameters

DHCP: Enable or disable obtain IP automatically can be set. Save changes and reboot the device to takes effect (default: OFF)

IP Address: Set the IP address, save changes and reboot the device to takes effect (default 192.168.5.163).

Note: This IP address is the current camera's IP address which used for login web page. User can set new IP address to the camera. Please save the changes and reboot the camera after editing.

Subnet Mask: Set the subnet mask (default 255.255.5.0).

Default Gateway: Set the default gateway (default 0.0.0.0).

Physical Address: Display the physical address of camera

Please click "Save" button after changes and reboot the camera to enable new settings.

DNS parameters

Preferred DNS server: set the preferred DNS server. (Default 0.0.0.0).

Alternate DNS server: Alternate DNS server settings. (Default 0.0.0.0).

Please click "Save" button after changes and reboot the camera to apply new settings.

GB28181

Switch : enable/disable GB28181

Time Synchronization: enable/disable synchronization time

Stream Type: stream type setting (the default main stream, sub stream optional)

Sign effective time (in seconds): 3600 Range 5-65535

Heartbeat time (seconds): 60 Range 1-65535

Register ID: 34020000001320000001

Register User name: IPC

Register Password: 12345678

Equipment ownership: Adjustable

Administrative regions: Adjustable

Alarm Zone: Adjustable

Equipment installation address: Adjustable

Local SIP Port: 5060 Range 0-65535

GB28181 Server Address: IP address of the computer

Server SIP Port: 5060 Range 0-65535

Server ID: 34020000002000000001

Please click "Save" button after changes and reboot the camera to apply new settings.

System Configuration

A) Device Properties

Device Name: Set the device name (Default Camera-1, user can add their own).

Device ID: Set the device ID (default 1, read-only).

System Language: Set the system language (default English)

B) System Time

Date Format: Set the date format (YYYY-MM-DD default year - month - day, MM-DD-YYYY namely Month - Day - Year, DD-MM-YYYY date - month - year Optional).

Date Separator: set the date separator (default '/', ' ', '-' Optional).

Time Zone: Set the time zone (default UTC+08:00, other time zones optional).

Time Type: Set the time types (default 24 hours, optional 12 hours).

Enable NTP: Enable/disable NTP

Update Interval: Set the NTP server automatic updated time interval. Valid after setting NTP server synchronization (default one day, 2-10 days Optional).

NTP Server Address or Domain Name: Set NTP server address or domain name (default time.nits.gov). Valid after setting NTP server synchronization.

NTP Server Port: Sets the NTP server port (default 123). Valid after setting NTP server synchronization.

Please click "Save" button after changes and reboot the camera to apply new settings.

User Management

Select Users: Set the user type (the default administrator, User 1, User 2 optional)

User Name: Set the username (Select User Administrator default admin; select a common user1 default user1; to select a common user 2 default user2; user can adjust the settings)

Password: Set a password (Select User Administrator default admin; select a common user1 default user1; to select a common user 2 default user2; user can adjust the settings).

Password Confirmation: Confirm the passwords.

Version Update

The version information displayed on the page is read-only version and cannot be modified by the user. The version information of different device models may vary.

Update File: Click "Browse" in the pop-up window and select the upgrade file; click the "Upgrade" button, the upgrade dialog box will pop up. After successfully update, device will automatically reboot.

Note: Please make sure that the device is powered on and network are stable. Otherwise, the upgrade process may interrupt or fail. For more firmware upgrade information, please check www.avipas.com or contact with service@avipas.com. After the version upgrade is completed, please restore the camera to factory default settings. In order to do that, user may:

- a, restore the factory default through web configuration;
- b, restore the factory default value through the OSD menu;
- c, press remote control shortcut key [*]+[#]+[6] to restore factory default;

Restore Factory Setting

Click "Restore Factory Defaults" button and choose "Yes" on pop-up window. The camera will restart automatically and restore factory setting.

Reboot

Click "Reboot" button and choose "Yes" on the pop-up window. The device will restart automatically.

Logout

Click "Logout"; and choose "Yes" on pop-up window. User will exit the current page and return to the user login interface.

4. Serial Port Communication Control

In normal working state, user can control the camera through RS485 (VISCA IN) cable. The parameter of RS485 is list as below:

Baud rate: 2400/4800/9600/115200/second

Start Bit : 1 bit ;

Data Bit : 8 bit ;

Stop Bit : 1 bit ;

Verification Bit : None.

4.1 VISCA Protocol List

VISCA Protocol List

Ack/Completion Message		
	Command packet	Remark
ACK	z0 41 FF	Returned when the command is accepted.
Completion	z0 51 FF	Returned when the command has been executed.

z = device address + 8

Error Messages		
	Command packet	Remark
Syntax Error	z0 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted
Command Not Executable	z0 61 41 FF	Returned when a command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus.

Camera Control Command

Command	Function	Command Package	Remark
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
CommandCancel		8x 21 FF	
CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF
	Off	8x 01 04 00 03 FF	
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele (Standard)	8x 01 04 07 02 FF	
	Wide (Standard)	8x 01 04 07 03 FF	
	Tele (Variable)	8x 01 04 07 2p FF	p = 0(low) - 7(high)
	Wide (Variable)	8x 01 04 07 3p FF	

Command	Function	Command Package	Remark
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far (Standard)	8x 01 04 08 02 FF	
	Near (Standard)	8x 01 04 08 03 FF	
	Far (Variable)	8x 01 04 08 2p FF	p = 0(low) - 7(high)
	Near (Variable)	8x 01 04 08 3p FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
	One Push mode	8x 01 04 38 04 FF	
	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position tuvw: Focus Position
CAM_Zoom Focus	Auto	8x 01 04 35 00 FF	
	3000K	8x 01 04 35 01 FF	
	4000k	8x 01 04 35 02 FF	
	One Push mode	8x 01 04 35 03 FF	
	5000k	8x 01 04 35 04 FF	
	Manual	8x 01 04 35 05 FF	
	6500k	8x 01 04 35 06 FF	
	3500K	8x 01 04 35 07 FF	
	4500K	8x 01 04 35 08 FF	
	5500K	8x 01 04 35 09 FF	
	6000K	8x 01 04 35 0A FF	
	7000K	8x 01 04 35 0B FF	
CAM_WB	Reset	8x 01 04 03 00 FF	Manual Control of R Gain
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain
CAM_Bgain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	

Command	Function	Command Package	Remark
	Direct	8x 01 04 44 00 00 0p 0q FF	pq: B Gain
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	8x 01 04 39 0D FF	Bright mode
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting
	Up	8x 01 04 0A 02 FF	
	Down	8x 01 04 0A 03 FF	
	Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting
	Up	8x 01 04 0B 02 FF	
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position
CAM_Gain Limit	Gain Limit	8x 01 04 2C 0p FF	p: Gain Positon
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	pq: Bright Positon
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation ON/OFF
	Off	8x 01 04 3E 03 FF	
	Reset	8x 01 04 0E 00 FF	Exposure Compensation Amount Setting
	Up	8x 01 04 0E 02 FF	
	Down	8x 01 04 0E 03 FF	
	Direct	8x 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position
CAM_Back Light	On	8x 01 04 33 02 FF	Back Light Compensation
	Off	8x 01 04 33 03 FF	
CAM_WDRStrength	Reset	8x 01 04 21 00 FF	WDR Level Setting
	Up	8x 01 04 21 02 FF	
	Down	8x 01 04 21 03 FF	
	Direct	8x 01 04 51 00 00 00 0p FF	p: WDR Level Positon
CAM_NR (2D)		8x 01 04 53 0p FF	P=0-7 0:OFF

Command	Function	Command Package	Remark
CAM_NR (3D)		8x 01 04 54 0p FF	P=0-8 0:OFF
CAM_Gamma		8x 01 04 5B 0p FF	p = 0 – 4 0 : Default 1 : 0.45 2 : 0.50 3 : 0.55 4 : 0.63
CAM_Flicker	OFF	8x 01 04 23 00 FF	OFF
	50HZ	8x 01 04 23 01 FF	50HZ
	60HZ	8x 01 04 23 02 FF	60HZ
CAM_Aperture	Reset	8x 01 04 02 00 FF	Aperture Control
	Up	8x 01 04 02 02 FF	
	Down	8x 01 04 02 03 FF	
	Direct	8x 01 04 42 00 00 0p 0q FF	pq: Aperture Gain
CAM_Memory	Reset	8x 01 04 3F 00 pq FF	pq: Memory Number(=0 to 254) Corresponds to 0 to 9 on the Remote Commander
	Set	8x 01 04 3F 01 pq FF	
	Recall	8x 01 04 3F 02 pq FF	
CAM_LR_Reverse	On	8x 01 04 61 02 FF	Image Flip Horizontal ON/OFF
	Off	8x 01 04 61 03 FF	
CAM_PictureFlip	On	8x 01 04 66 02 FF	Image Flip Vertical ON/OFF
	Off	8x 01 04 66 03 FF	
CAM_ColorSaturation	Direct	8x 01 04 49 00 00 00 0p FF	P=0-E 0:60% 1:70% 2:80% 3:90% 4:100% 5:110% 6:120% 7:130% 8:140% 9:150% 10:160% 11:160% 12:180% 13:190% 14:200%
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (=0000 to FFFF)
SYS_Menu	ON	8x 01 04 06 06 02 FF	Turn on the menu screen
	OFF	8x 01 04 06 06 03 FF	Turn off the menu screen
IR_Receive	ON	8x 01 06 08 02 FF	IR(remote commander)receive On/Off
	OFF	8x 01 06 08 03 FF	
IR_ReceiveReturn	On	8x 01 7D 01 03 00 00 FF	IR(remote commander)receive message via the VISCA communication ON/OFF
	Off	8x 01 7D 01 13 00 00 FF	
CAM_SettingReset	Reset	8x 01 04 A0 10 FF	Reset Factory Setting
CAM_Brightness	Direct	8x 01 04 A1 00 00 0p 0q FF	pq: Brightness Position
CAM_Contrast	Direct	8x 01 04 A2 00 00 0p 0q FF	pq: Contrast Position
	Direct	8x 0A 01 32 0p 0q FF	HDMI to SDI

Command	Function	Command Package	Remark
CAM_Flip	OFF	8x 01 04 A4 00 FF	Single Command For Video Flip
	Flip-H	8x 01 04 A4 01 FF	
	Flip-V	8x 01 04 A4 02 FF	
	Flip-HV	8x 01 04 A4 03 FF	
CAM_VideoSystem	Set Camera video system	8x 01 06 35 00 0p FF	P: 0~E Video format 0:1080P60 8:720P30 1:1080P50 9:720P25 2:1080i60 A:1080P59.94 3:1080i50 B:1080i59.94 4:720P60 C:720P59.94 5:720P50 D:1080P29.97 6:1080P30 E:720P29.97 7:1080P25

Inquiry Command

Command	Command Package	Return Package	Remark
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off(Standby)
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_FocusAFModelnq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
		y0 50 04 FF	One Push mode
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_WBModelnq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	3000K
		y0 50 02 FF	4000K
		y0 50 03 FF	One Push Mode
		y0 50 04 FF	5000K
		y0 50 05 FF	Manual
		y0 50 06 FF	6500K
		y0 50 06 FF	6500K
		y0 50 07 FF	3500K
		y0 50 08 FF	4500K
		y0 50 09 FF	5500K
		y0 50 0A FF	6000K

Command	Command Package	Return Package	Remark
CAM_RGainInq	8x 09 04 43 FF	y0 50 0B FF	7000K
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter priority
		y0 50 0B FF	Iris priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_Gain LimitInq	8x 09 04 2C FF	y0 50 0p FF	p: Gain Positon
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompMode Inq	8x 09 04 3E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_BacklightModel nq	8x 09 04 33 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_WDRStrengthInq	8x 09 04 51 FF	y0 50 00 00 00 0p FF	p: WDR Strength
CAM_NRLevel(2D) Inq	8x 09 04 53 FF	y0 50 0p FF	P: 2DNRLevel
CAM_NRLevel(3D) Inq	8x 09 04 54 FF	y0 50 0p FF	P:3D NRLevel
CAM_FlickerModelInq	8x 09 04 55 FF	y0 50 0p FF	p: Flicker Settings(0: OFF, 1: 50Hz, 2:60Hz)
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain
CAM_PictureEffectModelInq	8x 09 04 63 FF	y0 50 00 FF	Off
		y0 50 04 FF	B&W
CAM_MemoryInq	8x 09 04 3F FF	y0 50 0p FF	p: Memory number last operated.
SYS_MenuModelInq	8x 09 06 06 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_LR_ReverseInq	8x 09 04 61 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_PictureFlipInq	8x 09 04 66 FF	y0 50 02 FF	On

Command	Command Package	Return Package	Remark
		y0 50 03 FF	Off
CAM_ColorSaturationInq	8x 09 04 49 FF	y0 50 00 00 00 0p FF	p: Color Gain setting 0h (60%) to Eh (130%)
CAM_IDInq	8x 09 04 22 FF	y0 50 0p FF	p: Gamma ID
IR_ReceiveInq	8x 09 06 08 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
IR_ReceiveReturn		y0 07 7D 01 04 00 FF	Power ON/OFF
		y0 07 7D 01 04 07 FF	Zoom tele/wide
		y0 07 7D 01 04 38 FF	AF ON/OFF
		y0 07 7D 01 04 33 FF	Camera _Backlight
		y0 07 7D 01 04 3F FF	Camera _Memery
		y0 07 7D 01 06 01 FF	Pan_titleDriver
CAM_BrightnessInq	8x 09 04 A1 FF	y0 50 00 00 0p 0q FF	pq: Brightness Position
CAM_ContrastInq	8x 09 04 A2 FF	y0 50 00 00 0p 0q FF	pq: Contrast Position
CAM_FlipInq	8x 09 04 A4 FF	y0 50 00 FF	Off
		y0 50 01 FF	Flip-H
		y0 50 02 FF	Flip-V
		y0 50 03 FF	Flip-HV
CAM_GammaInq	8x 09 04 5B FF	y0 50 0p FF	p: Gamma setting
CAM_VersionInq	8x 09 00 02 FF	y0 50 ab cd mn pq rs tu vw FF	ab cd : vender ID (0220) mn pq : model ID ST (0510) , U2(0512),U3 (0513) rs tu : ARM Version vw : reserve
VideoSystemInq	8x 09 06 23 FF	y0 50 0p FF	P: 0~E Video format 0:1080P60 5:720P50 1:1080P50 6:1080P30 2:1080i60 7:1080P25 3:1080i50 8:720P30 4:720P60 9:720P25

Command	Command Package	Return Package	Remark
			A:1080P59.94 B:1080i59.94 C:720P59.94 D:1080P29.97 E : 720P29.97

Note: [x] in the above table represents the address of the device to be operated, [y]= [x + 8].

4.2 Pelco-D Protocol Command List

Function	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
Zoom In	0xFF	Address	0x00	0x20	0x00	0x00	SUM
Zoom Out	0xFF	Address	0x00	0x40	0x00	0x00	SUM
Focus Far	0xFF	Address	0x00	0x80	0x00	0x00	SUM
Focus Near	0xFF	Address	0x01	0x00	0x00	0x00	SUM
Stop	0xFF	Address	0x00	0x00	0x00	0x00	SUM
Query Tilt Position	0xFF	Address	0x00	0x53	0x00	0x00	SUM
Query Tilt Position Response	0xFF	Address	0x00	0x5B	Value High Byte	Value Low Byte	SUM
Query Zoom Position	0xFF	Address	0x00	0x55	0x00	0x00	SUM
Query Zoom Position Response	0xFF	Address	0x00	0x5D	Value High Byte	Value Low Byte	SUM

4.3 Pelco-P Protocol Command List

Function	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7	Byte8
Zoom In	0xA0	Address	0x00	0x20	0x00	0x00	0xAF	XOR
Zoom Out	0xA0	Address	0x00	0x40	0x00	0x00	0xAF	XOR
Stop	0xA0	Address	0x00	0x00	0x00	0x00	0xAF	XOR
Focus Far	0xA0	Address	0x01	0x00	0x00	0x00	0xAF	XOR
Focus Near	0xA0	Address	0x02	0x00	0x00	0x00	0xAF	XOR
Query Tilt Position	0xA0	Address	0x00	0x53	0x00	0x00	0xAF	XOR
Query Tilt Position Response	0xA0	Address	0x00	0x5B	Value High Byte	Value Low Byte	0xAF	XOR
Query Zoom Position	0xA0	Address	0x00	0x55	0x00	0x00	0xAF	XOR
Query Zoom Position Response	0xA0	Address	0x00	0x5D	Value High Byte	Value Low Byte	0xAF	XOR

5. Maintenance and Troubleshooting

5.1 Camera Maintenance

1. If the camera will not be used for a long time, please turn off the power.
2. Use soft cloth or lotion-free tissue to clean the camera body.
3. Use soft dry lint-free cloth to clean the lens. If the camera is very dirty, clean it with a diluted neutral detergent. Do not use any type of solvent or harsh detergent, which may damage the surface.

5.2 Unqualified Applications

1. Do not shoot extremely bright objects for a long period of time, including sunlight, ultra-bright light sources, etc.
2. Do not operate in unstable lighting conditions, otherwise the image may flicker.
3. Do not operate close to powerful electromagnetic radiation, including TV or radio transmitters, etc.

5.3 Troubleshooting

● No image

1. Check whether the power connection, voltage.
2. Check whether the camera can "self-test" after startup.
3. Check that the SDI/USB2.0 cable is connected correctly.

When using the SDI, please make sure that the destination device is accessing the SDI port.

● Abnormal display of image

Check setting of rotary dial on rear of camera. Be sure to use a resolution and refresh rate that is supported by your software.

● Image is shaky or vibrating.

1. Check whether camera is mounted solidly or sitting on a steady horizontal and level surface.
2. Check the building and any supporting furniture for vibration. Ceiling mounts are often affected by building vibration more than wall mounts.

3. Any external vibration that is affecting the camera will be more apparent when in tele zoom (zoomed in) setting.

● **Not response to the remote control**

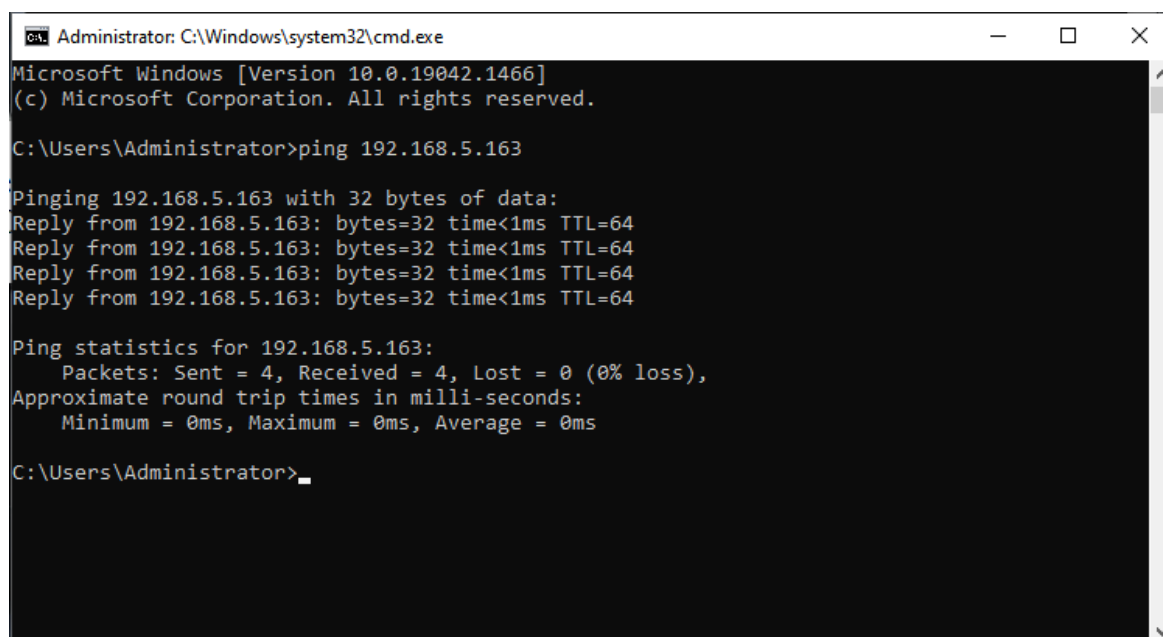
1. Check the remote-control address setting (if the camera is restored to the factory, the remote-control address will be set to #1)
2. Check whether the remote control has battery
3. Check whether the menu has not been exited. After exiting the menu, it can be controlled normally; if the web page outputs images, the menu will not be displayed, and no operation will be performed. After 30s, the menu will automatically exit and can control the camera.

● **The serial port cannot be controlled**

1. Check whether the serial port device protocol, baud rate, and address are consistent with the device
2. Check whether the control cable is connected normally
3. Check whether the camera is under working mode

● **The webpage cannot be logged in**

1. Use the monitor to check whether the camera has video output
2. Check whether the network cable is connected normally
3. Check whether the computer has added a network segment and the network segment is consistent with the IP address of the device
4. Open Command Prompt or Terminal, enter "ping 192.168.5.163" and press the Enter to display the connection information shown in Figure 6-1 below:



```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.19042.1466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ping 192.168.5.163

Pinging 192.168.5.163 with 32 bytes of data:
Reply from 192.168.5.163: bytes=32 time<1ms TTL=64
Reply from 192.168.5.163: bytes=32 time<1ms TTL=64
Reply from 192.168.5.163: bytes=32 time<1ms TTL=64
Reply from 192.168.5.163: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.5.163:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Administrator>
```

Warranty

Thank you for your interest in the products of AVIPAS Inc.

This Limited Warranty applies to HD Conference Camera purchased from AVIPAS Inc.

This Limited Warranty covers any defect in material and workmanship under normal use within the Warranty Period. AVIPAS Inc. will repair or replace the qualified products at no charge.

AVIPAS Inc. provides a two (2)-year warranty (from the date of purchase) for this HD Conference Camera.

This Limited Warranty does not cover problems including but not limited to: improper handling, malfunction or damage not resulting from defects in material.

To receive warranty service, please contact AVIPAS Inc. first. We will decide whether a repair or replacement is needed and will advise you of the cost of such repair or replacement.

Copyright Notice

All contents of this manual, whose copyright belongs to our corporation cannot be cloned, copied or translated without the permission of the company. Product specifications and information which were referred to in this document are for reference only. We may alter the content at any time and without prior notice.

Contact Details:

AViPAS Inc.

Address: 1700 Wyatt Drive, Suite #3
Santa Clara, CA 95054

Phone: 1-844-228-4727

Fax: (408) 228-8438

Email: info@avipas.com

Website: <http://www.avipas.com>