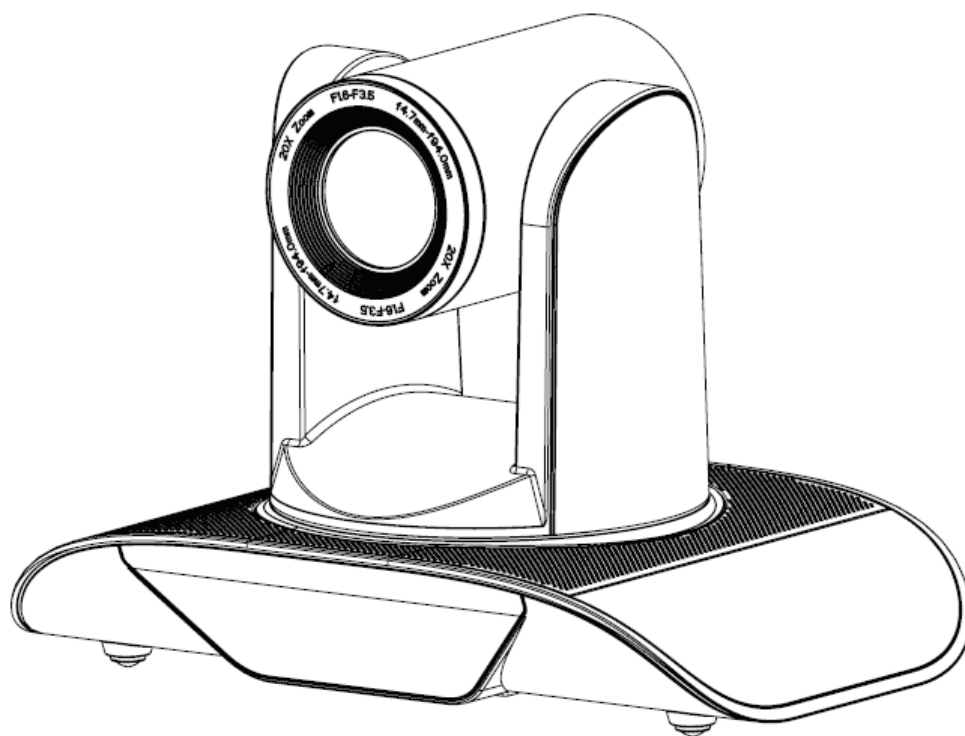




Model: AV-1362U

DVI, USB3.0 HD Video Conferencing Camera



User Manual

V1.2

(English)

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

Preface

Thank you 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 should only be used under the specified conditions in order to avoid any damage to the camera:

- Do not subject the camera to rain or moisture.
- Do not remove the cover. Otherwise, you may risk receiving an electric shock. In case of unintended equipment operation, contact an authorized engineer.
- Never operate under unspecified temperature, humidity or power supply.
- 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.

Attentions

- **Electric Safety**

Installation and operation must be in accord with electric safety standard.

- **Caution to transport**

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

- **Polarity of power supply**

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



- **Careful of installation**

Do not grasp the camera lens when carrying it. Don't rotate camera lens by hand. Mechanical damage may result from doing so.

This series product must be placed on a smooth platform or surface. It cannot be installed slantwise.

If the camera is used with TV or computer, the base can be fixed by four double-sided adhesive trays.

Don't apply in corrosive liquid, gas or solid environment to avoid any cover (organic material) damage.

Make sure no obstacle is in the rotation range.

Never power on before installation is completed.

- **Don't disassemble discretionarily.**

We are not responsible for any unauthorized modification or dismantling.

- **Attention!**

Specific frequencies of electromagnetic field may affect camera image!

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1. Fast Installation

1.1 Camera Interface Illustration

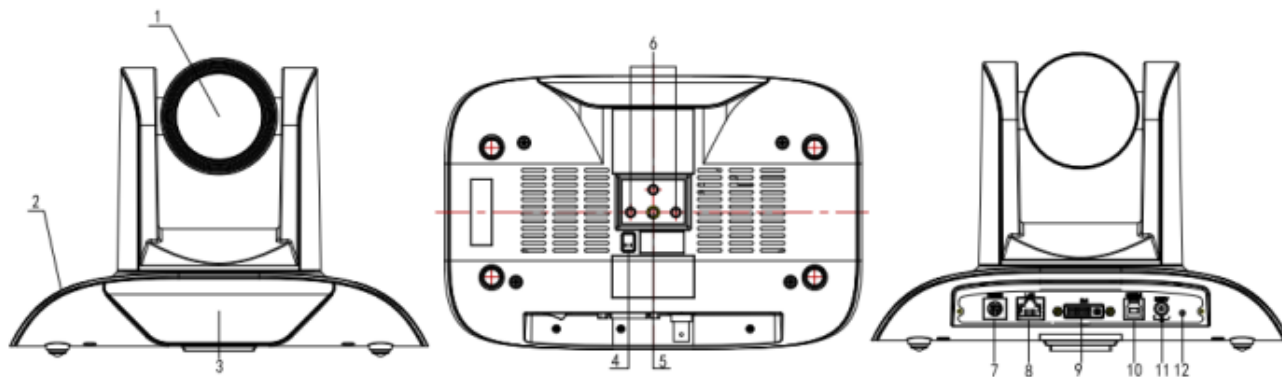


Figure 1.1 AV-1362U

- | | |
|-------------------------------------|--|
| 1. Camera lens | 7. RS232 control interface (input) |
| 2. Camera base | 8. 10/100M Network interface |
| 3. Remote Controller Receiver light | 9. DVI-I interface (including HDMI signal) |
| 4. Bottom DIP switch | 10. USB3.0 interface |
| 5. Tripod screw hole | 11. DC12V Input Power Supply Socket |
| 6. Installation Orientation Hole | 12. Power indicator |

1.2 Power On

- 1) Power on: connect DC12V power supply adapter with NO.15 showed in Figure1.1.
- 2) Initialization: power on with power indicator light on and remote control receiver light blinking. Camera head moves from bottom left to the central bottom, and then go to HOME position (intermediate position of both horizontal and vertical), while the camera module initializes. When remote control receiver light stops blinking, self-check is finished.
- 3)**Note:** If preset 0 is set, the camera automatically moves to the preset 0 position upon powering on.

1.3 Video output

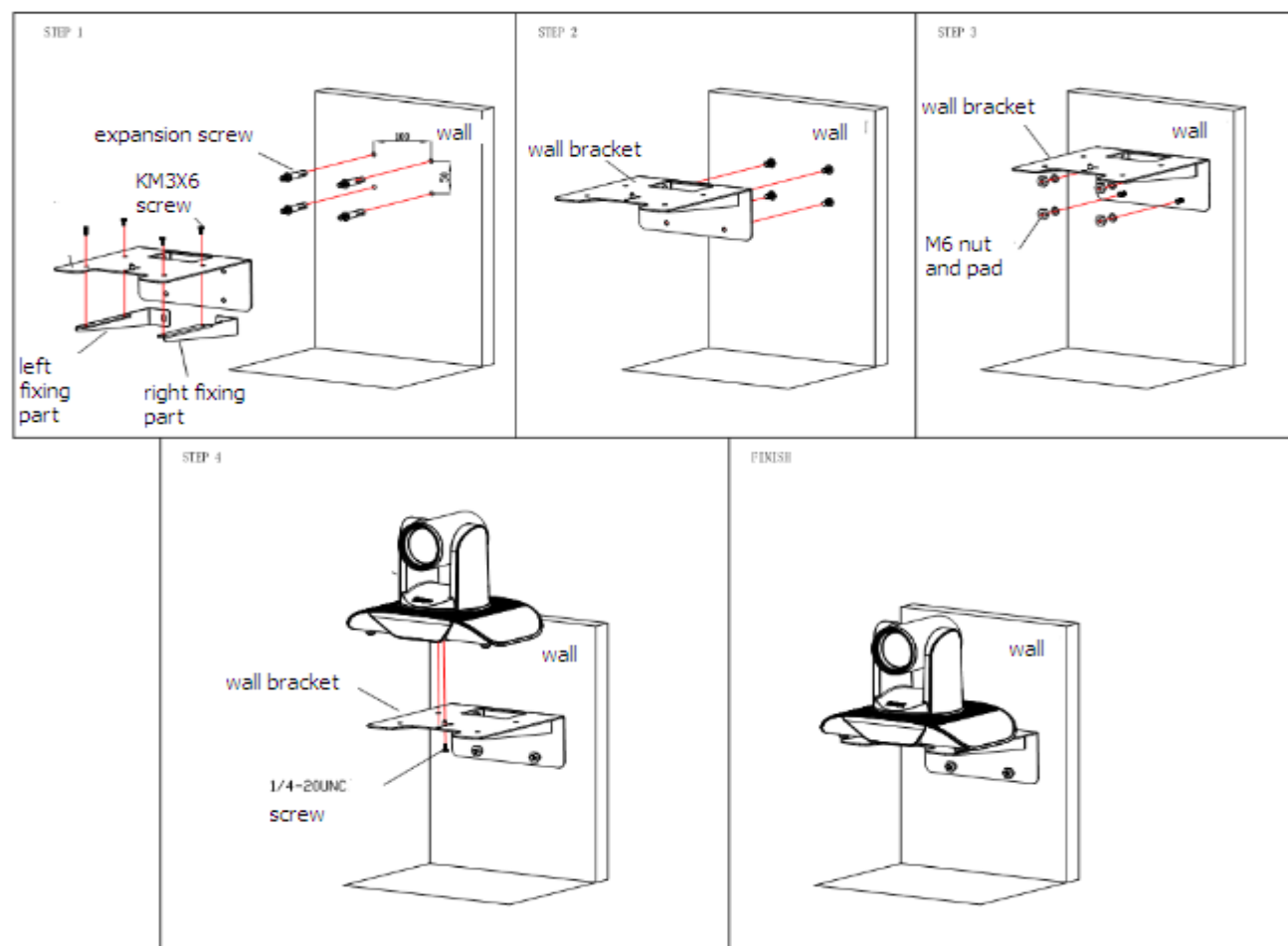
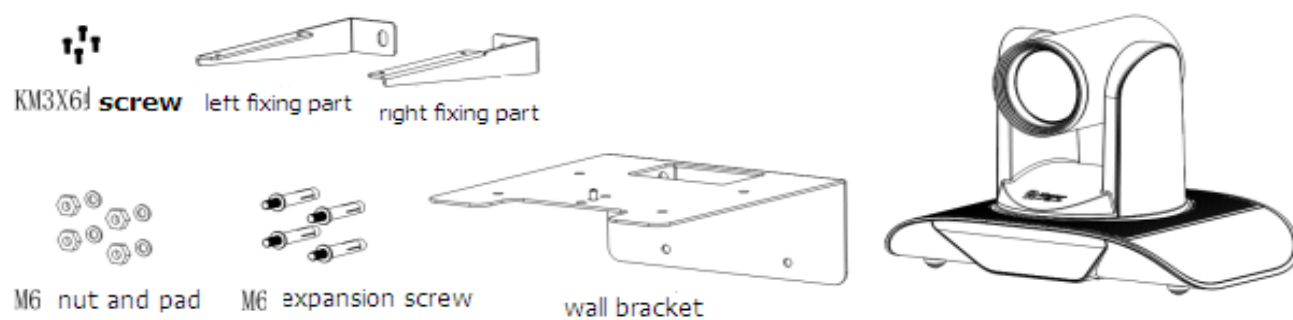
AV-1362U has 3 options for video output: LAN, DVI, and USB3.0.

- 1) Video output from LAN.
 - a. Network cable connection port: AV-1362U- No.8 in Figure1.1.
 - b. Webpage Login: open your browser and enter 192.168.5.163 in the address bar (factory default); press Enter to enter the login page; click on the “player is not installed, please download and install!” and follow the installation instructions for installation. Then enter the user name *admin* and password *admin* (factory default); press Enter to enter the preview page. Users can perform PTZ control, video recording, playback, configuration and other operations.
- 2) DVI (HDMI) video output
 - a. DVI (HDMI) video cable connection: AV-1362U- No.9 in Figure1.1.

- b. Connect the camera and the monitor via DVI (HDMI) cable; video output is available after camera initialization.
- 3) USB3.0 video output
- a. USB3.0 cable connection: AV-1362U- No.10 in Figure1.1.
- b. Connect the camera and the PC via USB cable; video output is available after camera initialization. Note: using USB2.0 or USB3.0 port on the PC has different video format options.

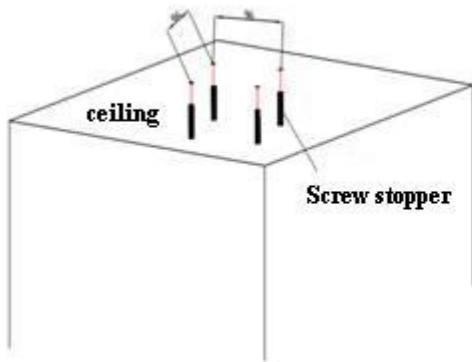
1.4 Bracket Mounting

1) Bracket installation steps

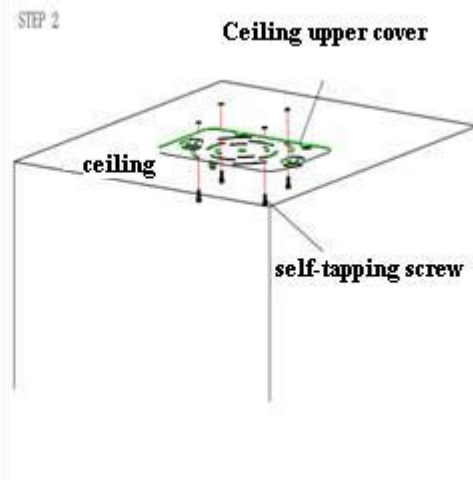


2) Upside-down installation steps

STEP 1



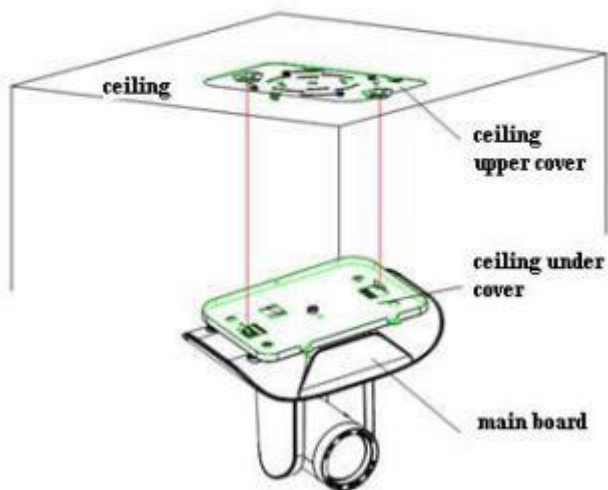
STEP 2



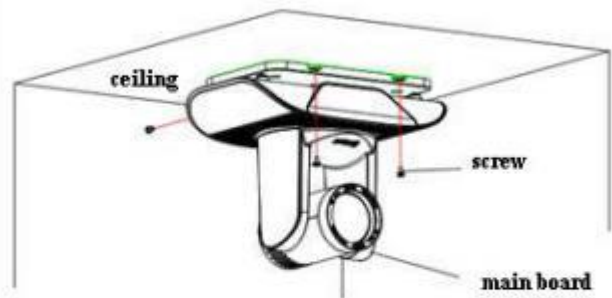
STEP 3



STEP 4



STEP 5



2. Product overview

2.1 Product introduction

2.1.1 Dimensions

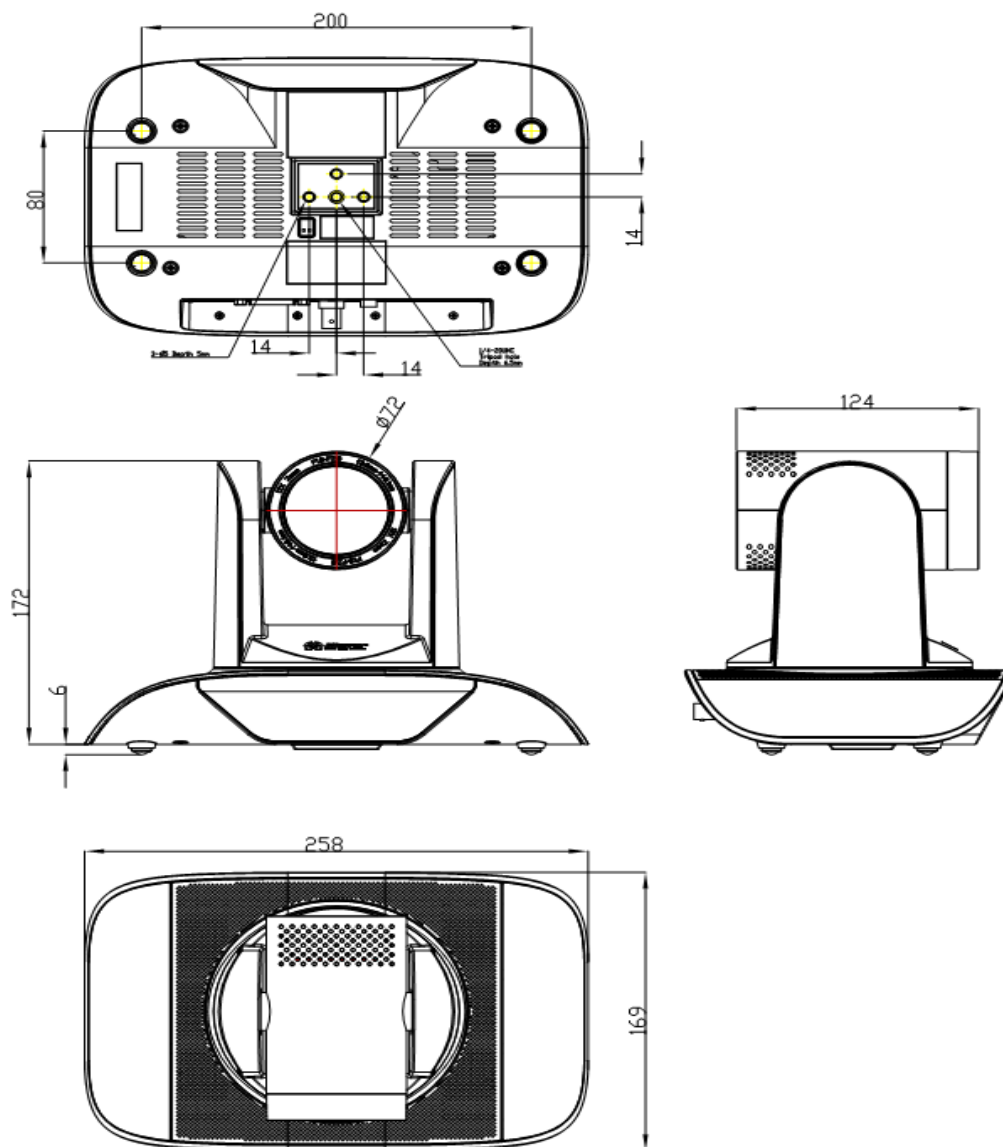


Figure 2.2 AV 1362U camera dimensions

2.1.2 Accessories

When unpack, check if all the supplied accessories are included:

| Model NO. | | AV-1362U |
|-----------|----------|--------------------------|
| Accessory | Standard | Power adapter 1pc |
| | | RS232 cable 1pc |
| | | USB3.0 cable 1pc |
| | | User manual 1pc |
| | | Warranty card 1pc |
| | Optional | IR Remote controller 1pc |

2.2 Main Features

2.2.1 Camera performance

This series camera offers multiple functions, high performance and various interfaces. The features include advanced ISP processing algorithms to provide vivid images with a strong sense of depth, high resolution and fantastic color rendition. It supports H.264/H.264+ encoding which makes motion video fluent and clear even with less than ideal bandwidth conditions.

- 1) **Superb high-definition image:** it employs 1/2.8-inch high-quality CMOS sensor. Resolution is up to 1920x1080 with frame rate up to 60 fps.
- 2) **Leading auto-focus technology:** leading auto focus algorithm contributes to fast, accurate and stable auto-focusing.
- 3) **Low noise and high SNR:** low-noise CMOS effectively ensures a high SNR of camera video. Advanced 2D/3D noise reduction technology is also used to further reduce the noise, while ensuring image sharpness.
- 4) **Quiet PTZ:** adopts high-accuracy step driving motor mechanism, it works quietly and moves fast and smoothly to the designated position.
- 5) **Multi-format video outputs:** support DVI (HDMI), USB3.0, and wired LAN interfaces.
- 6) **Low-power sleep function:** supports low-power sleep/wake up. Consumption is lower than 500mW in sleep mode.
- 7) **Support multiple control protocols:** supports VISCA, PELCO-D, PELCO-P protocols which can also be automatically recognized. Supports VISCA control protocol through IP port.
- 8) **RS-232 cascade function:** AV-1362 series supports RS-232 control which is convenient for installation.
- 9) **255 presets positions:** up to 255 presets (10 presets by remote).
- 10) **Wide application:** Tele-education, Lecture capture, Webcasting, Videoconferencing, Tele-training, Tele-medicine, Interrogation and emergency command systems.

2.2.2 Network performance

- 1) **Audio input interface:** supports 16000,32000,44100,48000 sampling frequency and AAC, MP3, PCM audio coding.
- 2) **Multiple audio/video compression:** supports H.264/H.265 video compression; AAC, MP3 and PCM audio compression; supports compression of resolution up to 1920x1080 with frame rate up to 60 fps and 2-channel 1920x1080p with 30 fps compression.
- 3) **Multiple network protocol:** supports ONVIF, RTSP, RTMP protocols and RTMP push mode; easy to connect to streaming media server (Wowza, FMS).

2.3 Technical Specifications

| Model | AV-1362 |
|------------------|--|
| Camera Parameter | |
| Optical Zoom | 20X, f = 4.7~94mm |
| Sensor | 1/2.8" high quality HD CMOS sensor |
| Effective Pixels | 16: 9 2.07 megapixel |
| Video Format | DVI (HDMI) video 1080P60/50/30/25/59.94/29.97; 1080I60/50/59.94; 720P60/50/30/25/59.94/29.97 |

| | |
|-------------------------------|---|
| | U3 video 1080P60/50/30/25; 720P60/50/30/25; 960*540P30; 640*360P30; 640*480P30; 352*288P30; 960*540P30 |
| | U3 compatible with U2 1280*720P10/15; 720*576P50; 720*480P60; 960*540P30; 640*480P30; 640*360P30; 352*288P30. |
| View Angle | 2.9°(tele)--55.4°(wide) |
| Digital Zoom | 10X |
| Minimum Illumination | 0.5Lux (F1.8, AGC ON) |
| DNR | 2D & 3D DNR |
| White Balance | Auto / Manual/ One Push/ 3000K/ 4000K/5000K/6500K |
| Focus | Auto/Manual |
| Aperture | Auto/Manual |
| Electronic Shutter | Auto/Manual |
| BLC | ON/OFF |
| WDR | OFF/ Dynamic level adjustment |
| Video Adjustment | Brightness, Color, Saturation, Contrast, Sharpness, B/W mode, Gamma curve |
| SNR | >55dB |
| Input/Output Interface | |
| Video Interfaces | DVI (HDMI), USB3.0, LAN |
| Image Code Stream | Dual stream output |
| Video Compression Format | H.264, H.265 |
| Stream format | Main stream: 1920x1080, 1280x720 Sub stream: 1920x1080, 1280x720, 640x360, 320x240, 320x180 |
| Control Signal Interface | RS-232 in |
| Control Protocol | VISCA/ Pelco-D/ Pelco-P; Baud Rate: 115200/9600/4800/2400bps |
| Audio Input Interface | NA |
| Audio Compression Format | NA |
| HD IP Interface | 100M IP port(100BASE-TX), support Visca protocol control through IP port |
| Network Protocol | RTSP/RTMP, ONVIF |
| Power Interface | HEC3800 outlet (DC12V) |
| PTZ Parameter | |
| Pan Rotation | ±170° |
| Tilt Rotation | -30°~+90° |
| Pan Control Speed | 0.1 -100°/sec |
| Tilt Control Speed | 0.1-40°/sec |
| Preset Speed | Pan: 100°/sec, Tilt: 40°/sec |
| Preset Number | 255 presets (10 presets by remote controller) |
| Other Parameter | |
| Supply Adapter | AC110V-AC220V to DC12V/1.5A |
| Input Voltage | DC12V±10% |
| Input Current | 1A(Max) |
| Consumption | 12W (Max) |
| Store Temperature | -10°C~+60°C |
| Store Humidity | 20% - 95% |

| | |
|-----------------------|--|
| Working Temperature | -10°C~+50°C |
| Dimension | 258mmX172mmX168mm |
| Weight | 1.54KG |
| Remote Operation (IP) | Remote Upgrade, Reboot and Reset |
| Accessory | Power supply, RS232 control cable, USB cable, Remoter, Manual, Warranty card |

2.4.3 Rotary DIP Switch

Sixteen rotary DIP (0-F) interface diagram shows as below in Figure 2.5.

Sixteen video formats corresponding to the rotary DIP (0-F) shows as below in Table 2.3.

Note: AV-1362U does NOT have rotary DIP.

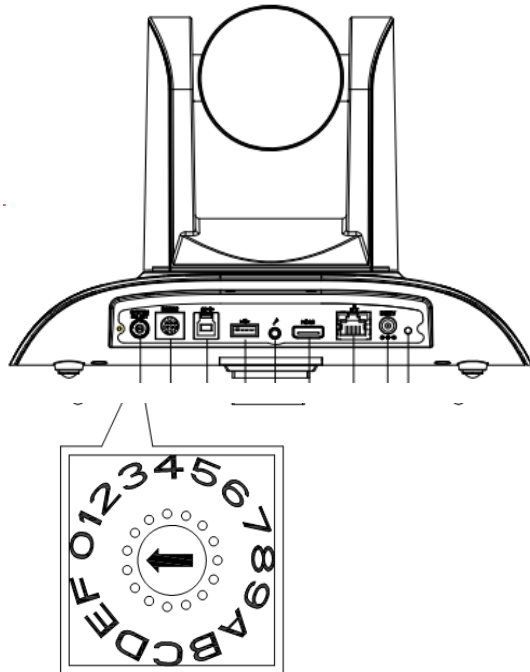


Figure 2.5 Rotary Dial diagram

Table 2.3 Rotary dial corresponding to the video formats

| Dial-up | video format | Dial-up | 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 | F | Display the video format set on the menu |

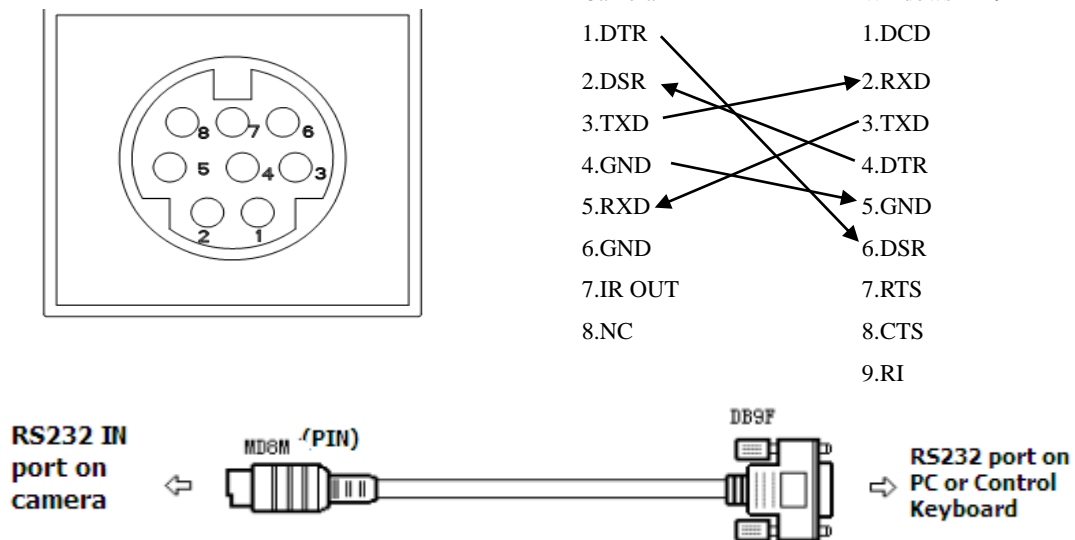
Note:

- 1) After switching DIP, the user needs to restart the camera for the changes to take effect.
- 2) Only when the rotary dial code is turned to F is the video format displayed on the menu item.
- 3) If the rotary switch is set to 0-E, the video format is determined by rotary switch setting.

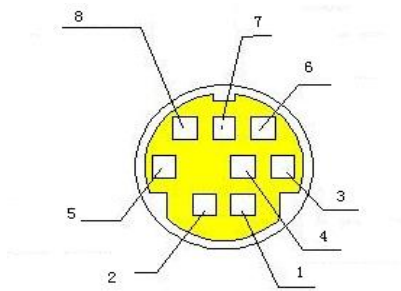
2.4.4 RS-232 interface

- 1) RS-232 interface specifications for AV-1362 model is shown as below:

Computer or keyboard to camera connections

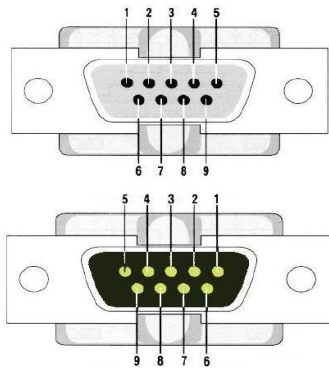


2) RS-232 mini-DIN 8-pin port definition



| NO. | Port | Definition |
|-----|--------|---------------------|
| 1 | DTR | Data Terminal Ready |
| 2 | DSR | Data Set Ready |
| 3 | TXD | Transmit Data |
| 4 | GND | System Ground |
| 5 | RXD | Receive Data |
| 6 | GND | System Ground |
| 7 | IR OUT | IR Commander Signal |
| 8 | NC | No Connection |

3) RS232 (DB9) port definition



| NO. | Port | Definition |
|-----|------|---------------------|
| 1 | DCD | Data Carrier Detect |
| 2 | RXD | Receive Data |
| 3 | TXD | Transmit Data |
| 4 | DTR | Data Terminal Ready |
| 5 | GND | System Ground |
| 6 | DSR | Data Set Ready |
| 7 | RTS | Request to Send |
| 8 | CTS | Clear to Send |
| 9 | RI | Ring Indicator |

3. Application Instruction

3.1 Video Output

3.1.1 Power-On Initialization Configuration

Upon connecting to the power, camera will enter initialization configuration. IR indicator light will be flashing. When the camera returns to the HOME position (center position for P/T), and lens finish zooming in/out, the auto-testing is complete. IR indicator light will also stop flashing. If the preset 0 is set, camera will rotate to the preset position (No. 0) after initialization.

3.1.2 Video output

Connect the video output cable: the user can select output mode accordingly.

- 1) Network output: connect AV-1362U to a computer via Ethernet cable. Open the browser, and enter the camera IP address (factory default 192.168.5.163) in the address bar. On the login page, input user name and password (factory defaults are “admin”). It will enter the preview page, and the captured image will show.

Note: If the user forgets your user name, password, or IP address, he can manually restore the default using the remote-control key combination * #.

- 2) DVI(HDMI) output: connect the monitor with the corresponding video output port, the image will show on the monitor.
- 3) USB3.0 output: connect the monitor with the corresponding video output port to your PC, use the software that recognizes a webcam, choose the right device: Cyt-FX4 for USB3.0; FHD Camera for USD2.0.

3.2 Remote Control

3.2.1 Key Illustrations

1. Standby key

After 3-sec long press, the camera will enter the standby mode. Long press the key again for 3 sec, the camera will initialize again and return back to HOME position (Note: when power-on mode is turned on and Preset 0 is set, if there is no operation after 12 sec, the camera will automatically rotate to the specified preset position).

2. Camera address selection

Select the specific camera which the user wants control.

3. Number key

Set or run one of the preset positions (0~9).

4.* and # key

Key combination is used to restore the default settings.

5. Focus control key

Auto focus: enter auto focus mode.

Manual focus: manually adjust the camera focus by pressing [focus +] or [focus -].

6. Zoom control key

zoom+: near lens

zoom-: far lens

7. Set or clear preset key:

Set preset: set preset key + number key (0~9).

Clear preset key: clear preset key + number key (0~9).

8. Pan/tilt control key

Press ▲ key : up

Press ▼ key : down

Press ◀ key : left

Press ▶ key: right

“HOME” key: return to the center position or enter the submenu.

9.BLC control key

Back light ON/OFF: turn on or off the back light.

10. Menu settings

Open or close the OSD menu.

Enter/exit the OSD menu or return to the previous menu.

11. Camera IR remote control address settings

【*】+【#】+【F1】: Camera Address No.1

【*】+【#】+【F2】: Camera Address No. 2

【*】+【#】+【F3】: Camera Address No. 3

【*】+【#】+【F4】: Camera Address No. 4

12. Key combination functions

1) 【#】+【#】+【#】: Clear all presets

3) 【*】+【#】+【9】: Flip switch

5) 【*】+【#】+【3】: Set menu language to Chinese

7) 【*】+【#】+Manual: Restore the default user name, password, and IP address

9) 【#】+【#】+【1】: Switch the video format to 1080P50

11) 【#】+【#】+【3】: Switch the video format to 1080I50

2) 【*】+【#】+【6】: Restore factory defaults

4) 【*】+【#】+Auto: Enter the aging mode

6) 【*】+【#】+【4】: Set menu language to English

8) 【#】+【#】+【0】: Switch the video format to 1080P60

10) 【#】+【#】+【2】: Switch the video format to 1080I60

12) 【#】+【#】+【4】: Switch the video format to 720P60



- 13) **【#】+【#】+【5】**: Switch the video format to 720P50 14) **【#】+【#】+【6】**: Switch the video format to 1080P30
- 15) **【#】+【#】+【7】**: Switch the video format to 1080P25 16) **【#】+【#】+【8】**: Switch the video format to 720P30
- 17) **【#】+【#】+【9】**: Switch the video format to 720P25

3.2.2 Applications

When initialization is complete, the camera can receive and execute IR commands. Press the ON/OFF button on the remote control, the indicator light will be flashing; release the button, the indicator light stops flashing. The user can control the pan/tilt/zoom settings and run preset positions via IR remote control.

Key instructions:

1. In the instructions below, “press the key” means a click rather than a long-press. A special note will be given if a long-press for more than 1 sec is required.
2. When a key-combination is required, do it in sequence. For example, “**【*】+【#】+【F1】**” means press “**【*】**” first and then “**【#】**” and lastly press “**【F1】**”.

1) Camera Selection



Select the camera address which the use wants to control.

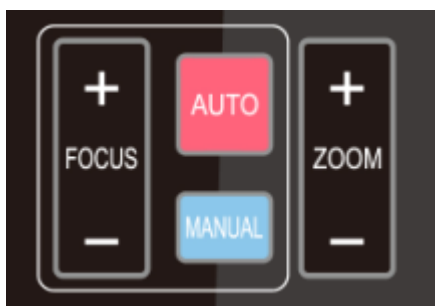
2) Pan/Tilt Control



Up: press Down: press
 Left: press Right: press
 Back to center position: press “**【HOME】**”

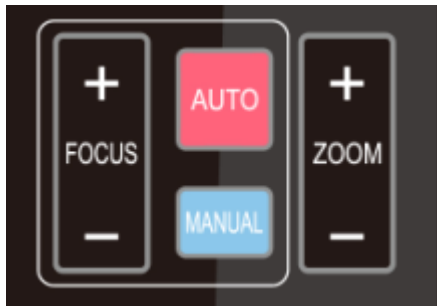
Press and hold the up/down/left/right key, the pan/tilt will keep running, from slow to fast, until it runs to the endpoint. The pan/tilt running stops as soon as the key is released.

3) Zoom Control



Zoom-in: press “**ZOOM** ” key
 Zoom-out: press “**ZOOM** ” key
 Press and hold the key, the camera will keep zooming in or zooming out. It stops as soon as the key is released.

4) Focus Control



Focus (near): press “ 【focus+】 ” key (valid only in manual focus mode)

Focus (far): press “ 【focus-】 key (valid only in manual focus mode)

Auto focus: support

Manual focus: support

Press and hold the key, the action of focus will keep adjusting. It stops as soon as the key is released.

5) BLC Settings



BLC ON/OFF: support

6) Presets Setting, Running and Clearing



1. Preset setting: to set a preset position, the user should press “ 【SET PRESET】 ” key first and then press the number key 0~9 to set the corresponding preset.

Note: 10 preset positions are available in total by using the remote control.

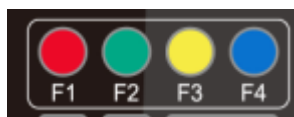
2. Preset running: press a number key 0~9 directly to run the corresponding preset position.

Note: action in vain if the selected preset position does not exist.

3. Preset clearing: the user can press “ 【 CLEAR PRESET】 ” key first and then press the number key 0~9 to clear the corresponding preset.

Note: press the “ 【#】 ” key three times in succession to clear all the presets.

7) Camera Remote Controller Address Settings



【*】 + 【#】 + 【F1】 : Camera Address No.1

【*】 + 【#】 + 【F2】 : Camera Address No. 2

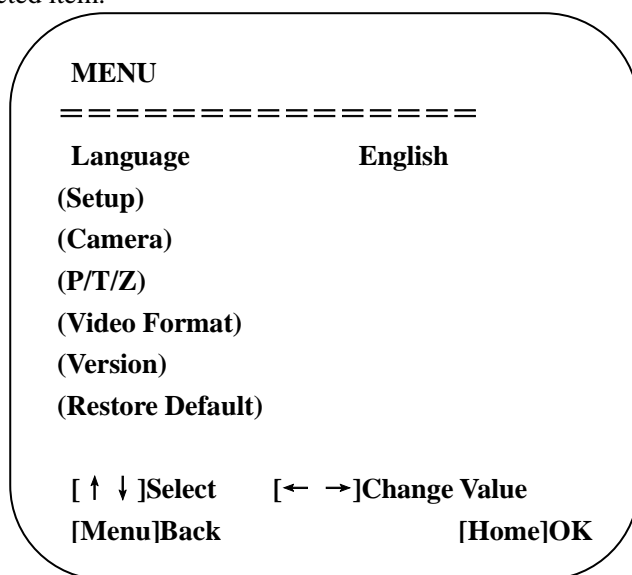
【*】 + 【#】 + 【F3】 : Camera Address No. 3

【*】 + 【#】 + 【F4】 : Camera Address No. 4

3.3 Menu Settings

3.3.1 Main menu

In normal working mode, press “ **【MENU】** ” key to display the menu. The user can scroll the arrow to point at or highlight the selected item.



LANGUAGE: language setting, Chinese / English

SETUP: system setting

CAMERA OPTION: camera setting

PTZ OPTION: pan/tilt setting

VERSION: camera version setting

Restore Default: reset setting

[↑↓] Select: to select menu

[← →] Change Value: to modify parameters

[MENU] Back: press [MENU] to return

[Home] OK: press [Home] to confirm

3.3.2 System settings

Move the pointer to (Setup) in the Main Menu, click **【HOME】** to enter the (System Setting) as shown below.

SETUP

=====

| | |
|-------------------|------|
| Protocol | Auto |
| Visca Address | 1 |
| Visca Address Fix | OFF |
| PELCO-P Address | 1 |
| PELCO-D Address | 1 |
| Baud rate | 9600 |

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

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

Visca ADDR: VISCA=1~7; Pelco-P=1~255; Pelco-D =1~255

Baud rate: 2400/4800/9600/115200

Visca Address Fix: On/Off

3.3.3 Camera settings

Move the pointer to the (CAMERA) in the Main Menu, click **【HOME】** to enter the CAMERA menu as shown below.

CAMERA

=====

(Exposure)

(Color)

(Image)

(Focus)

(Noise Reduction)

| | |
|-------|---------|
| Style | default |
|-------|---------|

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

EXPOSURE: enter exposure setting

COLOR: enter color setting

Image: enter image setting

Focus: enter focus setting

Noise Reduction: enter noise reduction

Style: default, standard, clear, bright and soft

1) EXPOSURE SETTINGS

Move the pointer to the (EXPOSURE) in the Main Menu, click **【HOME】** and enter the EXPOSURE menu as shown below.

EXPOSURE
=====

| | |
|----------------|-------------|
| Mode | Auto |
| EV | OFF |
| BLC | OFF |
| Flicker | 50Hz |
| G.Limit | 3 |
| DRC | 2 |

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

MODE: auto, manual, shutter priority, iris priority and brightness priority.

EV: exposure compensation setting, ON/OFF (only available in AUTO exposure mode)

Compensation Level: -7~7 (only available when EV is ON)

BLC: ON/OFF (only available in AUTO mode)

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

Gain Limit: 0~15 (only available in Auto/ Iris priority/ Brightness priority modes)

Shutter Priority: 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 (only available in Manual and Shutter priority modes)

IRIS Priority: OFF, F11.0, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.8 (only available in Manual and Iris priority modes)

BRIGHTNESS: 0~23 (only available in Brightness priority mode)

DRC: Dynamic range, 1~8 and OFF.

2) COLOR SETTINGS

Move the pointer to the (COLOR) in the Main Menu, click **【HOME】** and enter the COLOR menu as shown below.

| COLOR | |
|--------------------------------------|------|
| ===== | |
| WB Mode | Auto |
| RG Tuning | 0 |
| BG Tuning | 0 |
| Saturation | 100% |
| Hue | 7 |
| AWB Sensitivity | Low |
| [↑ ↓]Select [← →]Change Value | |
| [Menu]Back | |

MODE: Auto, Manual, Shutter priority, Iris priority and Brightness priority

RG Tuning: red gain tuning, -10~10 (only available when white balance mode is AUTO)

BG Tuning: blue gain tuning, -10~10 (only available when white balance mode is AUTO)

RG: red gain, 0~255 (only available when white balance mode is MANUAL)

BG: blue gain, 0~255 (only available when white balance mode is MANUAL)

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

Hue: 0~15

AWB Sensitivity: high, middle, low (only available when white balance mode is AUTO)

3) IMAGE

Move the pointer to the (IMAGE) in the Menu, click **【HOME】** and enter the IMAGE menu as shown below.

Brightness: 0~14

Contrast: 0~14

Sharpness: 0~15

Flip-H: horizontal flip, On/Off

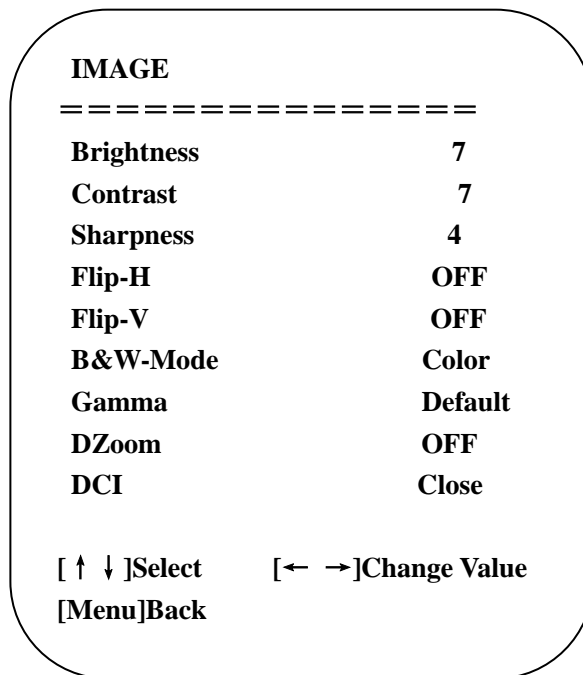
Flip-V: vertical flip, On/Off

B&W mode: color, B/W

Gamma: default, 0.45, 0.50, 0.55, 0.63

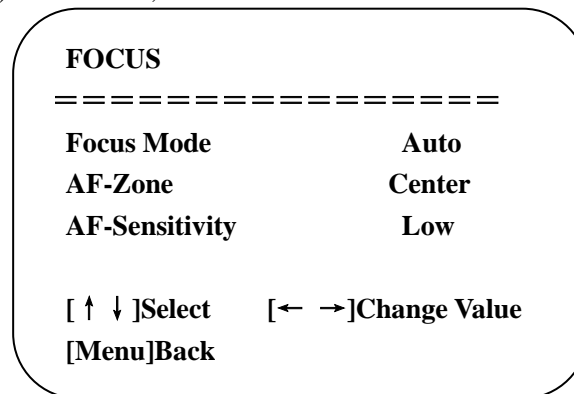
DZoom: digital zoom. On/Off

DCI: dynamic contrast: Off, 1~8



4) FOCUS

Move the pointer to the (FOCUS) in the Menu, click **【HOME】** and enter the FOCUS menu as shown below.



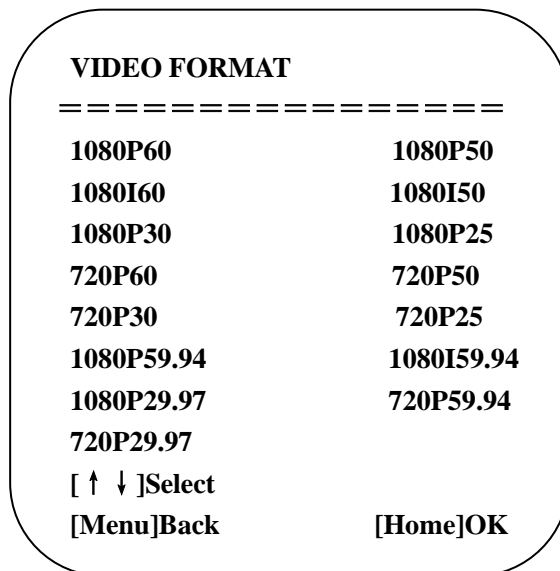
Focus mode: auto, manual

AF-Zone: up, middle, down

AF-Sensitivity: high, middle, low

5) NOISE REDUCTION

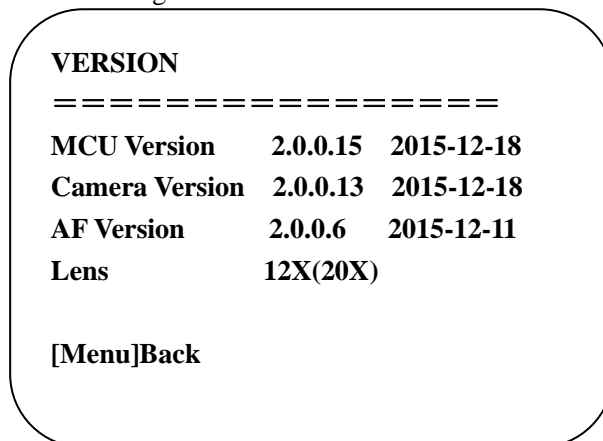
Move the pointer to the (NOISE REDUCTION) in the Menu, click **【HOME】** and enter the NOISE REDUCTION menu as shown below.



3.3.6 VERSION

Move the pointer to the (VERSION) in the Main Menu, click **【HOME】** and enter the VERSION menu as shown below.

Note: version information is different according to different models and manufacture date.



MCU Version: display MCU version information

Camera Version: display camera version information

AF Version: display the focus version information

Lens: display the lens zoom

3.3.7 RESTORE DEFAULT

Move the pointer to the (RESTORE DEFAULT) in the Main Menu, click **【HOME】** and enter the RESTORE DEFAULT menu as shown below.

RESTORE DEFAULT

=====

Restore Default? NO

[↑ ↓]Select

[← →]Change Value

[Menu]Back

[Home]OK

Restore Default: YES/NO (color style and video format cannot be restored to default settings)

Note: if the address of former remoter is not 1 but another one among 2, 3, or 4, the corresponding camera address will be restored to 1 when all parameters or system parameters are restored. User should change the remoter address to 1 (press No.1 according to the camera to perform normal operations).

4. Network Connection

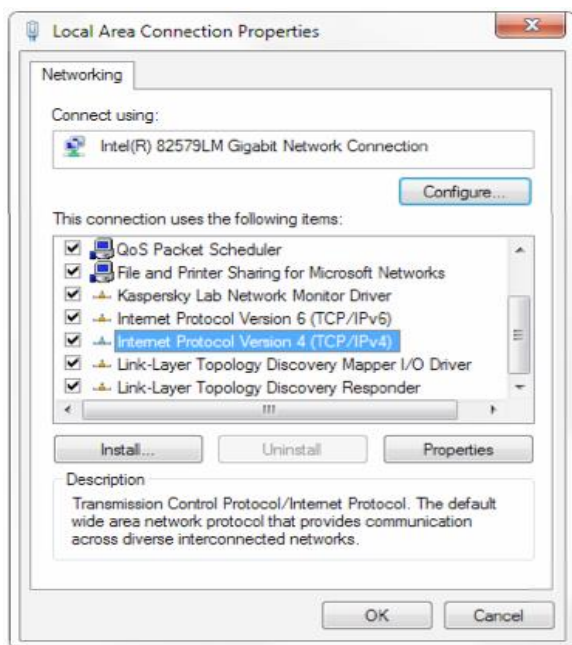
4.1 Connecting Mode

Direct connection: Connect the camera and computer directly via Ethernet cable.

IP connection mode: Connect the camera to a Router or Switcher. The user can log in to access the device using browser.

Note: Please do not put the power cable and Ethernet cable in places where can be easily touched to prevent video quality loss caused by unstable signal transmission.

Please make sure that your computer is in the same network segment as the camera IP address. The device will not be accessible if the segment is not consistent. For example, AV-1082's default IP address is 192.168.5.163, then segment 5 must be added to your computer. Specific steps are as below:

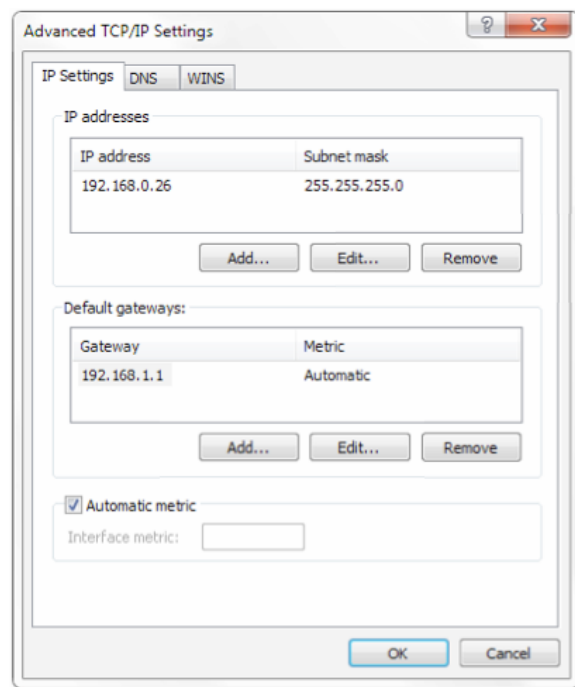
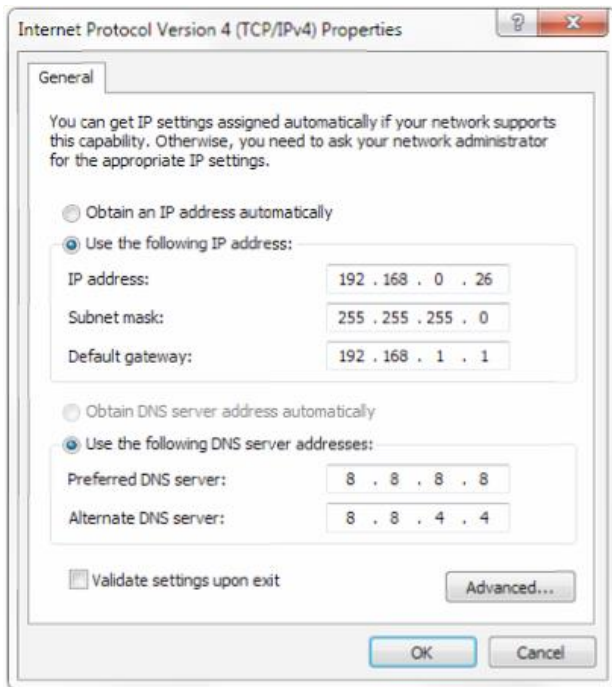


- Open “Local Area Connection Properties” on computer, select the “Internet protocol version 4(TCP/IPv4)” as shown in the picture on the left.

- Double click or click the property of Internet protocol version 4 (TCP/IPv4) to enter the Internet Protocol Version 4(TCP/IPv4) Properties window.

- Select “Advanced” to enter the Advanced TCP/IP Setting. Add IP and subnet mask in the IP browser as shown in the picture below. Click “Confirm” to finish the adding IP segment.

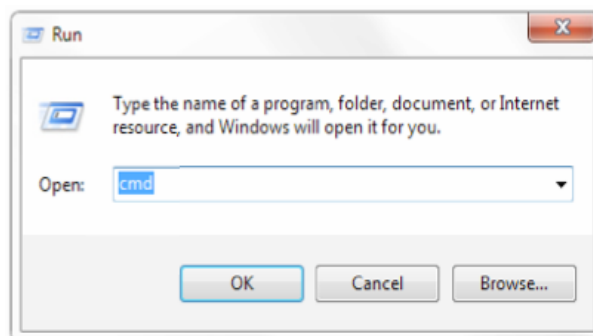
- User can add the corresponding network segment according to the revised IP address of the camera.



Note: The IP address to be added cannot be same as that of other computers or devices. The existence of this IP address needs to be verified before adding.

2. Confirm Access

Click “Start” and select “Operation”. Input “cmd” as shown in the picture below to verify whether the network segment has been successfully added.



Click “OK” and open the DOS command window. Input ping: 192.168.5.26, and press “Enter”. If the message below shows, it means that network segment is added successfully.

```
Command Prompt
Microsoft Windows [Version 10.0.16299.19]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\sheng>ping 192.168.5.26

Pinging 192.168.5.26 with 32 bytes of data:
Reply from 192.168.5.26: bytes=32 time<1ms TTL=128
Reply from 192.168.5.26: bytes=32 time<1ms TTL=128
Reply from 192.168.5.26: bytes=32 time<1ms TTL=128
Reply from 192.168.5.26: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.5.26:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\sheng>
```

User can also verify network connection as steps above mentioned after the finish of camera self-check. If IP is default, open DOS command window and input 192.168.5.163, then press Enter key. It will show message as below: which means network connection is normal.

```
Command Prompt
(c) 2017 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=1ms TTL=64
Reply from 192.168.5.163: bytes=32 time<1ms TTL=64
Reply from 192.168.5.163: bytes=32 time=4ms 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 = 4ms, Average = 1ms

C:\Users\sheng>
```

4.2 IE Log In

4.2.1 Web client

1) Web Client Log In

Input the IP address 192.168.5.163 of the device in the address field of browser, and click Enter to enter Web Client Login page as shown in the picture below. The user can login as administrator or normal user. If login as administrator (Default User Name/ Password: admin), users can preview, playback, cancel and modify configuration on the web page. If login as normal user (Default User name/ Password: user1 or user2), users can only preview, playback or cancel the video on the web page, no access to configuration.

Note: web access supported browsers: IE, 360 browser and other conventional browser.

Language options: upper right corner of the login screen displays "中文 | English", click to select the language.

2) Download/Install Plug-in

When first use IE browser to access the web conferencing camera, the login page will display "Playback plug-in is not installed, please download and install!". Click on this message, download and install MRWebXinstall.exe according to information prompts.

After installing the plug-in, enter user name and password. Click and sign in to the Web client management interface (default user name and password: "admin". Users can change the user name and password on their own after login).

4.2.2 Preview

After successfully logging into the management interface, it enters the video preview interface. In this preview screen, the user can control PTZ zoom, focus, video capture, sound, and full screen, and set the preset position, run, delete and other operations.

1) Login as administrator

User name, password default: admin.

PTZ control can be carried out: zoom, focus, video capture, sound, full screen and preset position settings, run, and delete. User can perform preview, playback, configuration, and log off.

2) Login as normal user

Default User name/ password: user1 or user2

PTZ control can be carried out: zoom, focus, video capture, sound, full screen and preset position setting, run, and delete. User can perform preview, playback, and log off.

NOTE: There is no configuration for normal user login.

4.2.3 Playback

1) Playback video files

Firstly, please record, snapshot and save the file when previewing. Click "Playback" to enter recording file and picture playback page. Select "Video File" and click Search. Click "Play" to play the video file.

2) Playback picture files

Firstly, please record, snapshot and save the video/image when previewing. Click "Playback" to enter recording file and picture playback page. Select "Image File" and click Search. Click "Play" to display the image file.

**Local recording/snapshot file default storage directory D: \ IPCam **

4.2.4 Configuration

Click **Configuration** to enter the device parameter setting page.

There are options as listed below: local configuration, audio configuration, video configuration, network configuration, PTZ configuration, internet access configuration, system configuration. For detailed description, see the following table.

| Menu | Explanation |
|-------------------|---|
| Local configure | Including video preview mode, record video packing time, record video storage route settings etc. |
| Audio configure | Including audio compressing format, sampling frequency, sampling precision, compressing code rate settings etc. |
| Video configure | Including video encoding, video parameters, character-overlapping, character size, video output setting etc. |
| Network configure | Including basic parameters, Ethernet, DNS, wireless network setting etc. |
| System configure | Including equipment property, system time, user management, version update, Reset, Reboot device settings etc. |

1) Local configuration

Video Preview Mode: user can choose real-time priority or fluency priority. The delay will be smaller when under real time priority mode, and fluency will be better when under fluency priority mode. Setting based on user's need (default value: real time best (1), real time normal (2), fluency normal (3), fluency good (4) and fluency best (5)).

Recording Packing Time (minute): set recording video packing time (default is 3, range from 1~120 minutes).

Recording/Snapshot File Storage Route: set local recording video/snapshot file storage route (default: D:\MyIPCam\).

Click “**Save**” button to let setting changes take effects.

2) Audio configuration

Switch: choose to enable/disable the audio.

Compressing Format: set audio compressing format, and the device will reboot automatically after changing (default: MP3, other options: PCM, AAC).

Sampling Frequency: set sampling frequency, and the device will reboot automatically after changing (default: 44100, other options: 16000, 32000 and 48000).

Sampling Precision: set sampling precision (default: 16bits).

Compressing Code Rate: set audio compressing code rate (default: 64bits, other options: 32, 48, 96, 128bits).

Note: click “**Save**”, and it will show the message “Enable has changed. Restart the device to take effect after the success of the save.”. Please reboot the camera for the changes to take effects.

4.2.5 Video configuration

1) Video Encoding

Code Stream: for different video output mode settings, use different streams (main stream, secondary stream) accordingly.

Compression Format: set the video compression format, save and reboot to take effect (main/secondary stream default: H.264, other options: H.265).

Video Size: set video image resolution, save and reboot to take effect (main stream default 1920 * 1080, other options: 1280 * 720; secondary stream default 640*320, other options: 320*180, 1280*720).

Stream Rate Control: set rate control mode, save and reboot to take effect (main/secondary stream default: variable bit rate, other options: fixed rate).

Image Quality: set image quality. Image quality can be changed only when rate control is set to variable bit rate (main stream default: better; secondary stream default: good; other options: best, better, good, bad, worse, worst).

Rate (Kb/s): set the video bit rate (main stream default: 8192Kb/s, other options: 64-20480Kb/s; secondary stream default: 2048Kb/s, other options: 64-8192Kb/s).

Frame Rate (F/S): set the video frame rate (main/secondary stream default: 25F/S; other options for main stream: 5-60F/S; other options for secondary stream: 5-30F/S).

Key Frame Interval: set the key frame interval (main/secondary stream default: 75F, other options for main stream: -300F; other options for secondary stream: 1-150F).

Key Frame Minimum QP: default: 10, other options: 10~51.

Click "Save". Settings will take effect after the message "saved successfully" shows.

2) Stream Release

Switch: to turn on/off the main/secondary stream.

Protocol: main/secondary stream applies RTMP protocol.

Host Port: server port number (default 1935, other options: 0-65535).

Host Address: server IP addresses (default 192.168.5.11).

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

User: set the user name.

Password: set the password.

Click "Save". Settings will take effect after the message "saved successfully" shows.

RTSP obtaining path: rtsp:// device IP address: 554 / live / av0 (av0 main stream; av1 secondary stream).

3) Video Parameters

a. Focus: focus mode, focus range, focus sensitivity can be set.

Focus Mode: set the focus mode (default: auto, other options: manual).

Focus Range: set the focus range (default: middle, other options: upper, lower).

Focus Sensitivity: set the focus sensitivity (default: low, other options: high, medium).

b. Exposure: exposure mode, exposure compensation, back light compensation, anti-flicker, gain limit, DRC, shutter speed, aperture value and brightness can be set.

Exposure Mode: set the exposure mode (default: automatic, other options: manual, shutter priority, aperture priority, brightness priority).

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

Exposure Compensation Value: set the exposure compensation value. Valid when it is set for auto (default: -7, other options: -7 ~7).

BLC: set back light compensation, valid when it is under auto mode (default: off).

Anti-flicker: set anti-flicker mode, valid when under automatic, aperture or brightness priority mode (default: 50Hz, other options: closed, 60Hz).

Gain Limit: set the gain limits. Auto, active when it is under aperture or brightness priority mode (default: 7, other options: 0-15).

Dynamic Range: set the dynamic range (default: 2, other options: 1-8 and OFF).

Shutter Speed: active when it is under manual or shutter-priority mode (default: 1/90, other options: 1/90, 1/100, 1/1120/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000).

Aperture Value: set the aperture value. Active when it is under manual or aperture-priority mode (default: F1.8, other options: closed, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.8).

Brightness: set the brightness value. Active when it is under brightness priority mode (default: 7, other options: 0-23).

c. Color: white balance, saturation, hue, white balance sensitivity, red tuning, blue tuning, red gain and blue gain can be set.

White Balance Mode: set the white balance mode (default: automatic, other options: 3000K, 4000K, 5000K, 6500K, manual, One-push).

Note: click “Correction” button when one-push white balance mode is selected.

Red Tuning: red trimming, only effective when white balance is set AUTO (default: 0, other options: -10~10).

Blue Tuning: blue trimming, only effective when white balance is set AUTO (default: 0, other options: -10~10).

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

Auto White Balance Sensitivity: sensitivity for auto white balance settings (default: low, other options: high, medium).

Hue: set the chrome (default: 7, other options: 0-14).

White Balance Sensitivity: default: low, other options: middle, high.

Red Gain: set the red gain, effective when it is under manual mode (default: 145, other options: 0-255).

Blue Gain: sets the blue gain, effective when it is under manual mode (default: 56, other options: 0-255).

d. Image: brightness, contrast, sharpness, black and white mode, gamma, DCI, horizontal flip, vertical flip and digital zoom can be set.

Brightness: set the brightness value (default: 7, other options: 0-14).

Contrast: set the contrast value (default: 7, other options: 0-14).

Sharpness: set the sharpness value (default: 4, other options: 0-15).

Black and White Mode: set black and white mode (default: color, other options: black/white).

Gamma: gamma value setting (default: 0.45, other options: 0.50, 0.52, 0.55).

Dynamic Contrast: dynamic contrast setting (default: close, other options: 1~8).

Flip Horizontal: set flip horizontal (default: Off, other options: On).

Flip Vertical: set vertical flip (default: Off, other options: On).

Digital Zoom: digital zoom setting (default: Off, other options: On).

e. Noise Reduction: 2D noise reduction, 3D noise reduction and dynamic dead pixel correction can be set.

2D Noise Reduction: set 2D noise reduction level (default: 3, other options: 1-7 and Off).

3D Noise Reduction: set 3D noise reduction level (default: 3, other options: 1-8 and Off).

Dynamic Dead Pixel Correction: set dynamic dead pixel correction level (default: Off, other options: 1-5).

Note: click “Refresh” for any change of video parameters to take effect.

f. Style: default, standard, clear, bright and soft can be set.

Note: if the above a, b, c, d, e value changes, click “Refresh” to take effect.

4) Character-overlapping

Display Date and Time: set whether or not to display the time and date (default: display).

Display Title: set whether or not to display the title (default: display).

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

Font Color of Title: set font color of title (default: white, other options: black, yellow, red and blue).

Moving Characters: set the display position of moving date, time and title. Click "**up, down, left, right**" buttons to move to the proper character position.

Title Content: set title content (default: CAMERA1).

Time Content: set time content (default: 1970/01/10 05:36:00).

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

5) Character Size

Main Stream Character Size: set the character size for main stream display. Device will restart automatically after character size being changed and saved (default: 24, other options: 16).

Secondary Stream Character Size: set the character size for secondary stream display. Device will restart automatically after character size being changed and saved (default: 16, other options: 24).

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

6) Video Output

Output Format: set the video output format (default: 1080P60, other options: 1080P50, 1080P30, 1080P25, 1080I60, 1080I50, 720P60, 720P50, 720P30, 720P25, 1080P59.94, 1080I59.94, 1080P29.97, 720P59.94, 720P29.97).

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

4.2.6 Network configuration

1) Network Port

Data Port: set the data port. Device will restart automatically after the port setting being changed (default: 3000, other options: 0-65535).

Web Port: set the web port. Device will restart automatically after the port setting being changed (default: 80, other options: 0-65535).

Onvif Port: set the Onvif port. Device will restart automatically after the port setting being changed (default: 2000, other options: 0-65535).

Soap Port: set the soap port (default: 1936, other options: 0-65535).

RTMP Port: set the RTMP port (default: 1935, other options: 0-65535).

RTSP Port: set the RTSP port. Device will restart automatically after the port setting being changed (default: 554, other options: 0-65535).

Visca Port: set the Visca port. Device will restart automatically after the port setting being changed (default: 3001, other options: 0-65535).

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

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

2) Ethernet Parameters

DHCP: enable/disable obtaining IP automatically. Save changes and reboot the device for the changes to takes effect (default: OFF).

IP Address: set IP address. Save changes and reboot the device for the changes to takes effect (default: 192.168.5.163). **Note:** this IP address is the same as the one used for login Web page.

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

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

Physical Address: set the physical address (the parameter is read-only and cannot be modified).

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

Note: need to prevent IP conflicts when modify.

3) 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).

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

4) GB28181

Switch: set whether or not open GB28181.

Time Synchronization: set whether or not synchronize time.

Stream Type: stream type setting (default: main stream, other options: secondary stream).

Sign Effective Time (seconds): default: 3600, other options: range: 5-65535.

Heartbeat Time (seconds): default: 60, other options: range: 1-65535.

Register ID: 34020000001320000001

Register User Name: IPC

Register Password: 12345678

Equipment Ownership: users can add their own.

Administrative Regions: users can add their own.

Alarm Zone: users can add their own.

Equipment Installation Address: users can add their own.

Local SIP Port: default: 5060, other options: range: 0-65535.

GB28181 Server Address: IP address of the computer.

Server SIP Port: default: 5060, other options: range: 0-65535.

Server ID: 34020000002000000001

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

4.2.7 System configuration

1) Device Properties

Device Name: set the device name (default: Camera1, user can add their own).

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

System Language: set the system language (default: Simplified Chinese, other options: English). Need to re-login after modifying and saving the setting.

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

2) System Time

Date Format: set the date format (default: YYYY-MM-DD, other options: MM-DD-YYYY, DD-MM-YYYY).

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

Time Zone: set the time zone (default: east eight districts, other options: other time zones).

Time Type: set the time types (default: 24 hours, other options: 12 hours).

NTP Enable: click it to set NTP time.

Update Interval: set the automatic update time interval for NTP server. Valid after changes synchronized with NTP server (default: 1 day, other options: 2-10 days).

NTP Server Address or Domain Name: set NTP server address or domain name (default: time.nits.gov, users can modify on their own).

NTP Server Port: set the NTP server port (effective when NTP Enabled, default 123, users can modify on their own)

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

Time Setting: set time mode (options: computer time synchronization, NTP server time synchronization, set manually).

Computer Time: set the computer synchronization.

Set the Time Manually: click "**Calendar**" on the right to set time manually (only effective when time setting is MANUAL).

3) User Management

Select Users: set user type (default: administrator, other options: Common User 1, Common User 2).

User Name: set user name (User Administrator default: admin; Common User1 default: user1; Common User 2 default: user2; user can modify on their own).

Password: set a password (User Administrator default: admin; Common User1 default: user1; Common User 2 default: user2; user can modify on their own).

Password Confirmation: confirm the passwords are input correctly.

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

Note: please note the case-sensitivity of the user name and password.

If login using a common user's user name and password, then the user does not have configuration privileges, and can only operate preview, playback, or logoff.

4) Version Upgrade

MCU version V2.0.0.16 2015-12-18

Camera version V2.0.0.16 2015-12-18

Focus version V2.0.0.6 2015-12-11

Version information above is read-only for users. It is consistent with the menu version and cannot be modified.

Different type of the machine has different information.

Update file:

Click "**Browse ...**" for installation. Select the upgrade file in the pop-up window.

Click "**Upgrade**", and the upgrade dialog window will appear. Device will reboot automatically after being updated successfully.

Note: make sure the power and network is connected during the process. Or the upgrade will fail.

Note: after version upgrade, please restore default settings according to the following options:

a, Restore default settings through web configuration.

b, Restore default settings through camera menu.

c, Restore default settings using shortcut key combination* # 6 on remote control.

If use option a, the account and passwords will also be restored to default.

5) Restore Factory Settings

Click "**Restore Factory Defaults**" on the pop-up, and choose "yes". Device will restart automatically and restore factory settings.

6) Reboot

Click "**Reboot**" on the pop-up, and choose "**Yes**". Device will restart automatically.

4.2.8 Logout

Click "**Logout**" on the "**Confirmation**" pop-up dialog window. Select "**Yes**" or "**No**". Choose "Yes" to exit the

current page and return to the user login interface.

4.2.9 Wireless Network

If user's equipment has a wireless network module, then "Network Configuration" page will have "Wireless Network" configuration option. Specific configuration is shown as below:

1) Network Settings

Wireless network configuration:

Network Interface Enable: check to set the following items.

DHCP: obtain IP automatically if checked.

IP Address: set wireless WIFI IP (default: 192.168.1.250). If DHCP is checked, IP should be assigned automatically). **Note:** wireless IP address cannot be in the same segment with wired IP address.

Subnet Mask: set the wireless IP subnet mask (default 255.255.255.0).

Default Gateway: set the wireless IP default gateway (default 192.168.1.1).

SSID: user can modify on their own (default: test).

Encryption: password can be set if checked.

Password: password can be changed if checked.

Click "**Save**". Settings will take effect after the message "saved successfully" shows.

Note: SSID and password should be filled correctly, otherwise the wireless WiFi connection will not be available after restart.

2) WiFi Hot Link

Click "**search**" to search for the WIFI hotspot.

Double-click the dialog box after searching WIFI hotspot, then input the WIFI password. It is connected successfully after "successful connect" window shows.

3) Wireless WiFi Login Page

If DHCP is not checked on the configuration page (automatically obtain IP), then open the browser, enter the wireless network IP address in the address bar (default 192.168.1.250), press **Enter** to login to the construction page; If DHCP is checked, then IP will be obtained automatically. Log in to the specific router or switch's user interface settings to view the allocation of IP address.

5. Serial Communication Control

Under common working conditions, the camera could be controlled through RS232 interface (VISCA). RS232C serial parameters are as below:

Baud rate: 2400/4800/9600/115200 bits/sec; Start bit: 1; Data bits: 8; Stop bit: 1; Parity: None.

After powering on, camera first goes to the left, then back to the center position. Initial configuration is complete after the zoom moves to the farthest and then back to the nearest position. If the camera's preset 0 position exists, it will be at 0 preset position after initialization. At this point, user can control the camera by the serial commands.

5.1 VISCA Protocol List

5.1.1 Camera return commands

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

z = camera address + 8

| Error Messages | | |
|------------------------|----------------|--|
| | Command packet | Note |
| Syntax Error | z0 60 02 FF | Returned when the command format is different or when a command with illegal 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 indicating controlling focus manually are received during auto focus. |

5.1.2 Camera control commands

| Command | Function | Command packet | Note |
|----------------|-----------------|---|---|
| AddressSet | Broadcast | 88 30 0p FF | p:VISCA Address |
| 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) - F(high) |
| | Wide(Variable) | 8x 01 04 07 3p FF | |
| | 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) - F(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 | |
| CAM_Zoom Focus | Direct | 8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF | pqrs: Zoom Position tuvw: Focus Position |
| CAM_WB | 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 | |
| CAM_RGain | 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 | |
| | 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_ExpCopl | 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_WDRStrengt h | 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 |
| 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(=0~254) 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 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 |
| 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 1:1080P50 2:1080i60 3:1080i50 4:720P60 5:720P50 6:1080P30 7:1080P25 8:720P30 9:720P25 |

| | | | |
|------------------|------------------|---|--|
| | | | A: 1080P59.94 B: 1080i59.94 C: 720P59.94 D: 1080P29.97 E: 720P29.97 |
| Pan_tiltDrive | Up | 8x 01 06 01 VV WW 03 01 FF | VV: Pan speed 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed 0x01 (low speed) to 0x14 (high speed) YYYY: Pan Position ZZZZ: Tilt Position |
| | Down | 8x 01 06 01 VV WW 03 02 FF | |
| | Left | 8x 01 06 01 VV WW 01 03 FF | |
| | Right | 8x 01 06 01 VV WW 02 03 FF | |
| | Upleft | 8x 01 06 01 VV WW 01 01 FF | |
| | Upright | 8x 01 06 01 VV WW 02 01 FF | |
| | DownLeft | 8x 01 06 01 VV WW 01 02 FF | |
| | DownRight | 8x 01 06 01 VV WW 02 02 FF | |
| | Stop | 8x 01 06 01 VV WW 03 03 FF | |
| | AbsolutePosition | 8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF | |
| | RelativePosition | 8x 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF | |
| | Home | 8x 01 06 04 FF | |
| | Reset | 8x 01 06 05 FF | |
| Pan-tiltLimitSet | Set | 8x 01 06 07 00 0W 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF | W:1 UpRight 0:DownLeft YYYY: Pan Limit Position(TBD) ZZZZ: Tilt Limit Position(TBD) |
| | Clear | 8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF | |

5.1.3 Inquiry command

| Command | Function | Command packet | Note |
|--------------------|----------------|----------------------|----------------------|
| 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_FocusAFModeInq | 8x 09 04 38 FF | y0 50 02 FF | Auto Focus |
| | | y0 50 03 FF | Manual Focus |
| CAM_FocusPosInq | 8x 09 04 48 FF | y0 50 0p 0q 0r 0s FF | pqrs: Focus Position |
| CAM_WBModeInq | 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 00 FF | 6500K |
| CAM_RGainInq | 8x 09 04 43 FF | y0 50 00 00 0p 0q FF | pq: R Gain |
| 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_GainLimitInq | 8x 09 04 2C FF | y0 50 0p FF | p: Gain Position |
| CAM_BrightPosInq | 8x 09 04 4D FF | y0 50 00 00 0p 0q FF | pq: Bright Position |
| CAM_ExpCompMo | 8x 09 04 3E FF | y0 50 02 FF | On |

| | | | |
|--------------------------|----------------|----------------------------------|--|
| deInq | | y0 50 03 FF | Off |
| CAM_ExpCompPosInq | 8x 09 04 4E FF | y0 50 00 00 0p 0q FF | pq: ExpComp Position |
| CAM_BacklightModeInq | 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: 2DNRLLevel |
| CAM_NRLevel(3D)Inq | 8x 09 04 54 FF | y0 50 0p FF | P: 3DNRLLevel |
| 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_PictureEffectModeInq | 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_MenuModeInq | 8x 09 06 06 FF | y0 50 02 FF | On |
| | | y0 50 03 FF | Off |
| CAM_LR_ReverselInq | 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 |
| | | 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 (200%) |
| CAM_IDInq | 8x 09 04 22 FF | y0 50 0p 0q 0r 0s FF | pqrs: 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 (0951) U3 (3950) rs tu : ARM Version vw : reserve |
| VideoSystemInq | 8x 09 06 23 FF | y0 50 0p FF | P: 0~E Video format 0:1080P60 1:1080P50 2:1080i60 3:1080i50 4:720P60 5:720P50 6:1080P30 7:1080P25 8:720P30 9:720P25 A: 1080P59.94 |

| | | | |
|---------------------|----------------|-------------------------------------|--|
| | | | B: 1080i59.94 C: 720P59.94 D: 1080P29.97 E: 720P29.97 |
| Pan-tiltMaxSpeedInq | 8x 09 06 11 FF | y0 50 ww zz FF | ww: Pan Max Speed zz: Tilt Max Speed |
| Pan-tiltPosInq | 8x 09 06 12 FF | y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF | www: Pan Position zzzz: Tilt Position |

Note: [X] in the above table indicates the camera address to be operated, **【y】 = 【x + 8】** .

5.2 Pelco-D Protocol Command List

| Function | Byte1 | Byte2 | Byte3 | Byte4 | Byte5 | Byte6 | Byte7 |
|------------------------------|-------|---------|-------|-------|-----------------|----------------|-------|
| Up | 0xFF | Address | 0x00 | 0x08 | Pan Speed | Tilt Speed | SUM |
| Down | 0xFF | Address | 0x00 | 0x10 | Pan Speed | Tilt Speed | SUM |
| Left | 0xFF | Address | 0x00 | 0x04 | Pan Speed | Tilt Speed | SUM |
| Right | 0xFF | Address | 0x00 | 0x02 | Pan Speed | Tilt Speed | SUM |
| Upleft | 0xFF | Address | 0x00 | 0x0C | Pan Speed | Tilt Speed | SUM |
| Upright | 0xFF | Address | 0x00 | 0x0A | Pan Speed | Tilt Speed | SUM |
| DownLeft | 0xFF | Address | 0x00 | 0x14 | Pan Speed | Tilt Speed | SUM |
| DownRight | 0xFF | Address | 0x00 | 0x12 | Pan Speed | Tilt Speed | SUM |
| 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 |
| Set Preset | 0xFF | Address | 0x00 | 0x03 | 0x00 | Preset ID | SUM |
| Clear Preset | 0xFF | Address | 0x00 | 0x05 | 0x00 | Preset ID | SUM |
| Call Preset | 0xFF | Address | 0x00 | 0x07 | 0x00 | Preset ID | SUM |
| Query Pan Position | 0xFF | Address | 0x00 | 0x51 | 0x00 | 0x00 | SUM |
| Query Pan Position Response | 0xFF | Address | 0x00 | 0x59 | Value High Byte | Value Low Byte | 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 |

5.3 Pelco-P Protocol Command List

| Function | Byte1 | Byte2 | Byte3 | Byte4 | Byte5 | Byte6 | Byte7 | Byte8 |
|----------|-------|---------|-------|-------|-----------|------------|-------|-------|
| Up | 0xA0 | Address | 0x00 | 0x08 | Pan Speed | Tilt Speed | 0xAF | XOR |
| Down | 0xA0 | Address | 0x00 | 0x10 | Pan Speed | Tilt Speed | 0xAF | XOR |
| Left | 0xA0 | Address | 0x00 | 0x04 | Pan Speed | Tilt Speed | 0xAF | XOR |

| | | | | | | | | |
|---------------------------------|------|---------|------|------|-----------------|----------------|------|-----|
| Right | 0xA0 | Address | 0x00 | 0x02 | Pan Speed | Tilt Speed | 0xAF | XOR |
| Upleft | 0xA0 | Address | 0x00 | 0x0C | Pan Speed | Tilt Speed | 0xAF | XOR |
| Upright | 0xA0 | Address | 0x00 | 0x0A | Pan Speed | Tilt Speed | 0xAF | XOR |
| DownLeft | 0xA0 | Address | 0x00 | 0x14 | Pan Speed | Tilt Speed | 0xAF | XOR |
| DownRight | 0xA0 | Address | 0x00 | 0x12 | Pan Speed | Tilt Speed | 0xAF | XOR |
| 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 |
| Set Preset | 0xA0 | Address | 0x00 | 0x03 | 0x00 | Preset ID | 0xAF | XOR |
| Clear Preset | 0xA0 | Address | 0x00 | 0x05 | 0x00 | Preset ID | 0xAF | XOR |
| Call Preset | 0xA0 | Address | 0x00 | 0x07 | 0x00 | Preset ID | 0xAF | XOR |
| Query Pan Position | 0xA0 | Address | 0x00 | 0x51 | 0x00 | 0x00 | 0xAF | XOR |
| Query Pan Position Response | 0xA0 | Address | 0x00 | 0x59 | Value High Byte | Value Low Byte | 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 |

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 one (1)-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.

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VER: 2018-09-11 (EN)

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