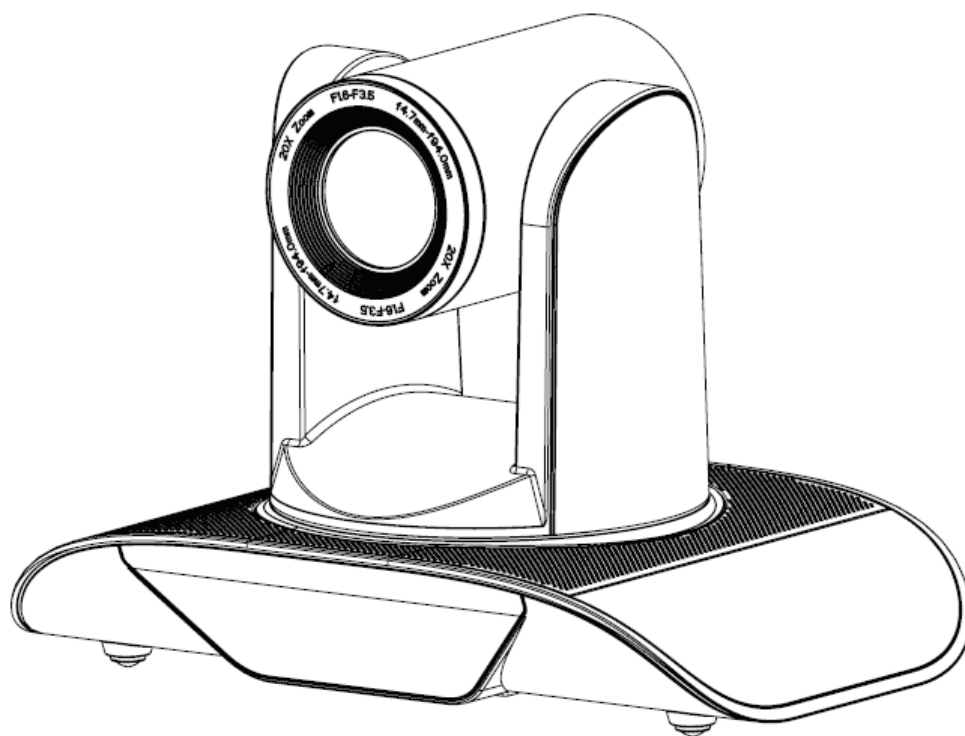




---

Model: AV-1362

**HDMI, USB2.0&3.0 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

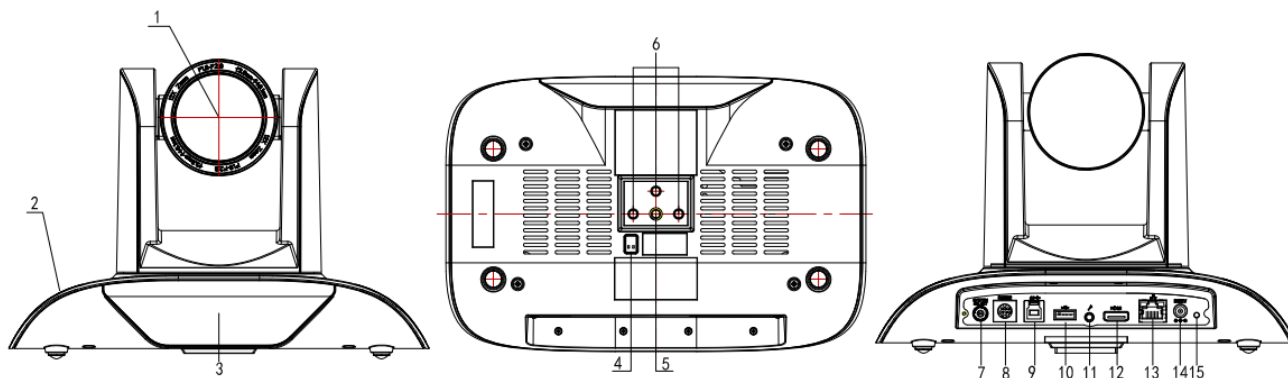


Figure 1.1 AV-1362 series

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| 1. Camera lens                        | 8. RS232 control interface (input)  |
| 2. Camera base                        | 9. USB3.0 interface                 |
| 3. Remote Control Receiver light      | 10. USB2.0 interface                |
| 4. Bottom DIP switch                  | 11. Audio Input interface           |
| 5. Tripod screw hole                  | 12. HDMI interface                  |
| 6. Installation Orientation Hole      | 13. 10/100M Network interface       |
| 7. Rotary Switch: Video format select | 14. DC12V Input Power Supply Socket |

## 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.

**Note:** If preset 0 is set, the camera automatically moves to the preset 0 position upon powering on.

## 1.3 Video output

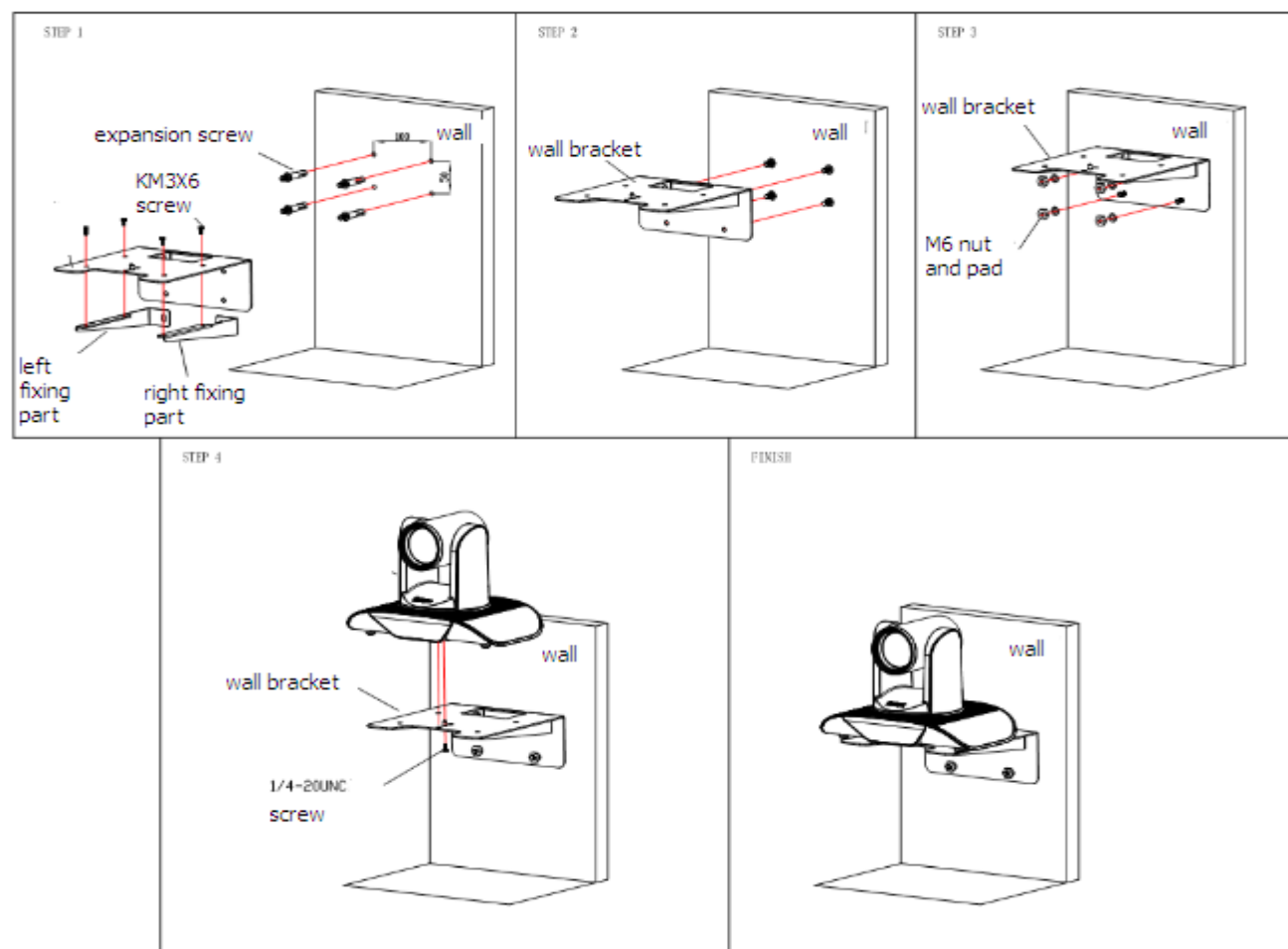
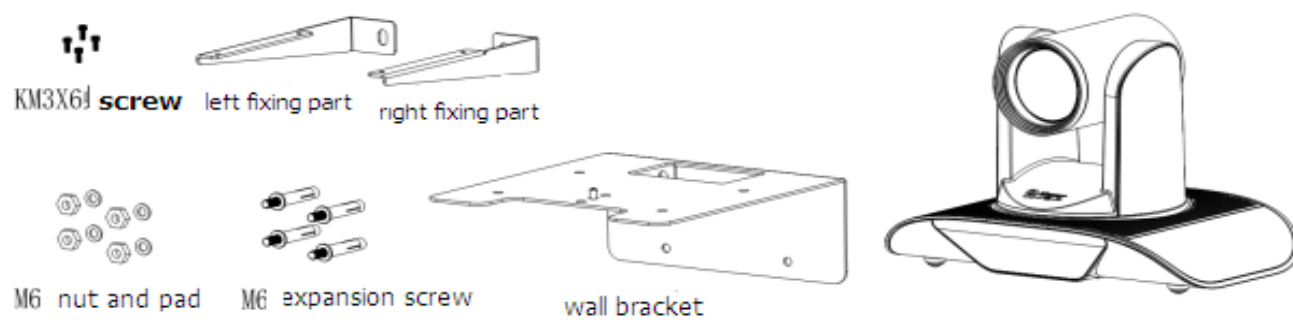
AV-1362 has 4 options for video output: LAN, HDMI, USB2.0 and USB3.0.

- 1) Video output from LAN.
  - a. Network cable connection port: AV-1362- No.14 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) HDMI video output

- a. HDMI video cable connection: AV-1362- No.13 in Figure1.1.
  - b. Connect the camera and the monitor via HDMI cable; video output is available after camera initialization.
- 3) USB2.0/3.0 video output
- a. USB2.0/3.0 cable connection: AV-1362- No.12 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.

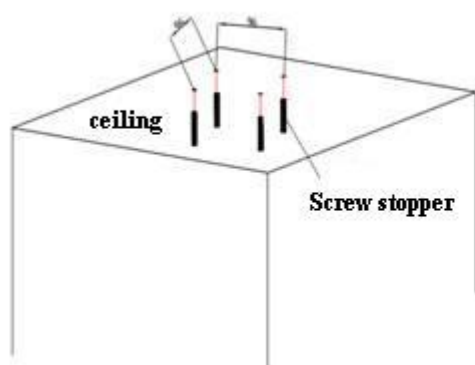
## 1.4 Bracket Mounting

### 1) Bracket installation steps

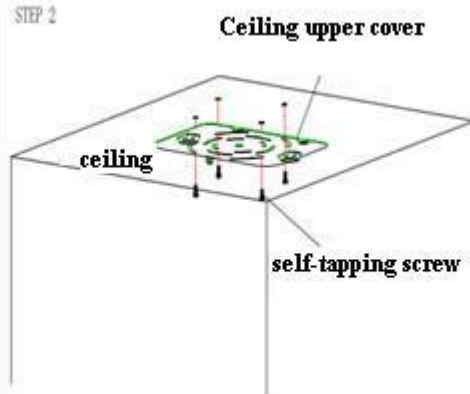


## 2) Upside-down installation steps

STEP 1



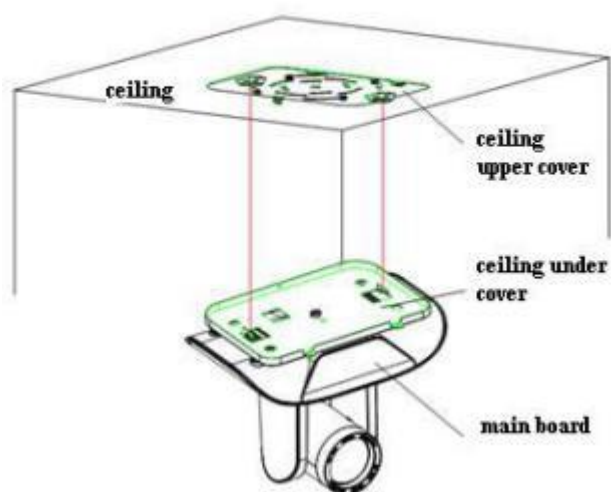
STEP 2



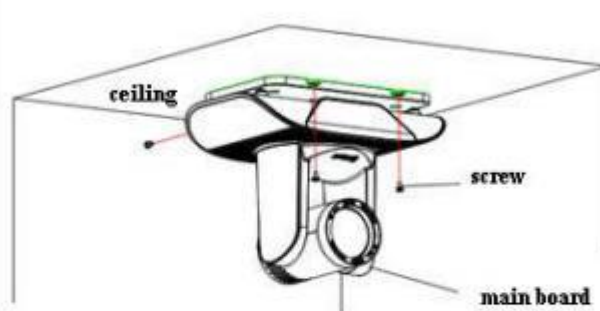
STEP 3



STEP 4



STEP 5



## 2. Product overview

### 2.1 Product introduction

#### 2.1.1 Dimensions

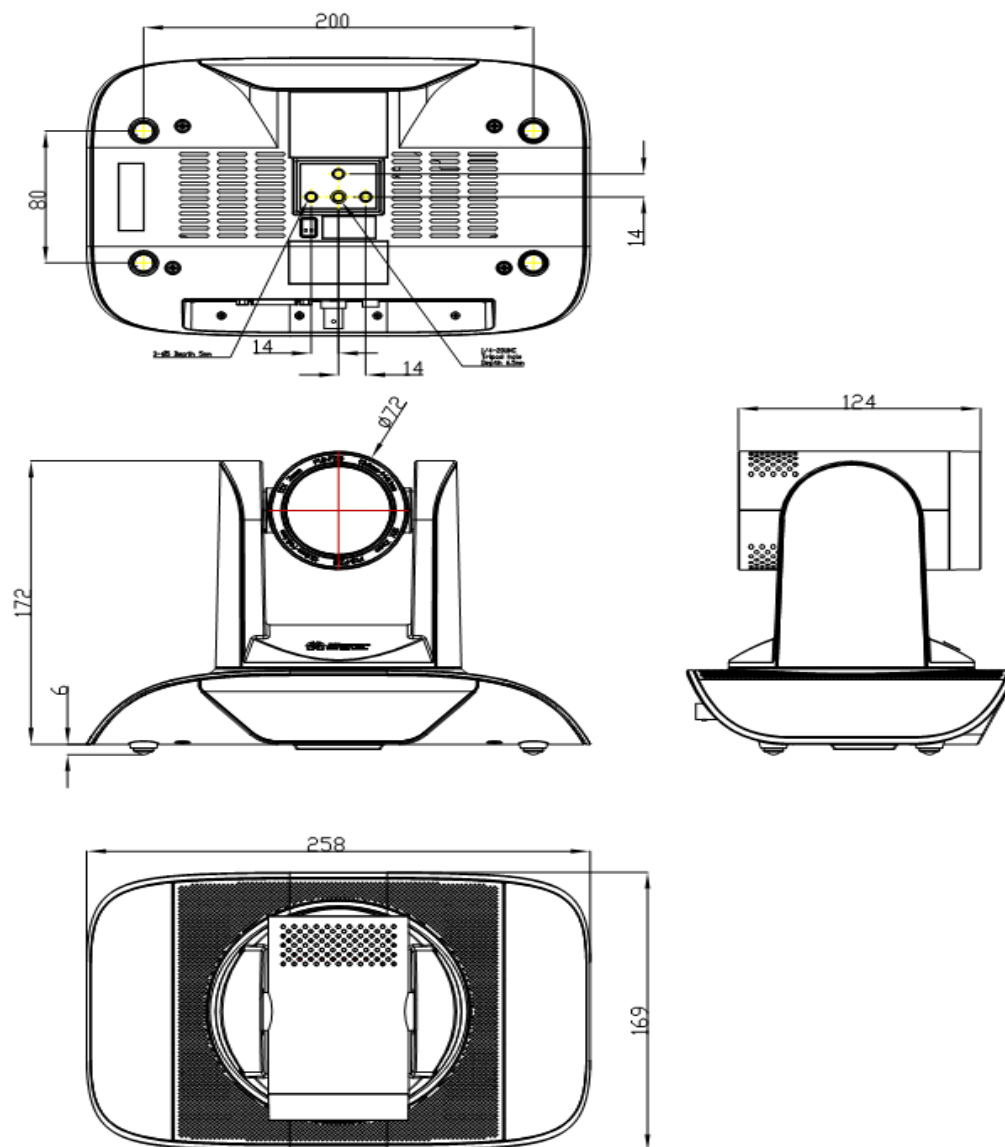


Figure 2.2 AV 1362 camera dimensions

#### 2.1.2 Accessories

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

Model NO.		AV-1362
Accessory	Standard	Power adapter 1pc
		RS232 cable 1pc
		USB3.0 cable 1pc
		USB2.0 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 HDMI, USB2.0, 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 remoter).
- 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	<b>HDMI video</b> 1080P60/50/30/25/59.94/29.97; 1080I60/50/59.94; 720P60/50/30/25/59.94/29.97

	<b>U3 video</b> 1080P60/50/30/25; 720P60/50/30/25; 960*540P30; 640*360P30; 640*480P30; 352*288P30; 960*540P30
	<b>U3 compatible with U2</b> 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
<b>Input/Output Interface</b>	
Video Interfaces	HDMI, USB2.0, SUB3.0, 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	3.5mm Line-in Jack
Audio Compression Format	AAC/MP3/PCM Audio compression
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)
<b>PTZ Parameter</b>	
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)
<b>Other Parameter</b>	
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 Interface instruction

### 2.4.1 External Interface

External interface of AV-1362: rotary switch, RS232 IN, HDMI output, USB2.0 output, USB3.0 output, LAN, DC12V power interface.

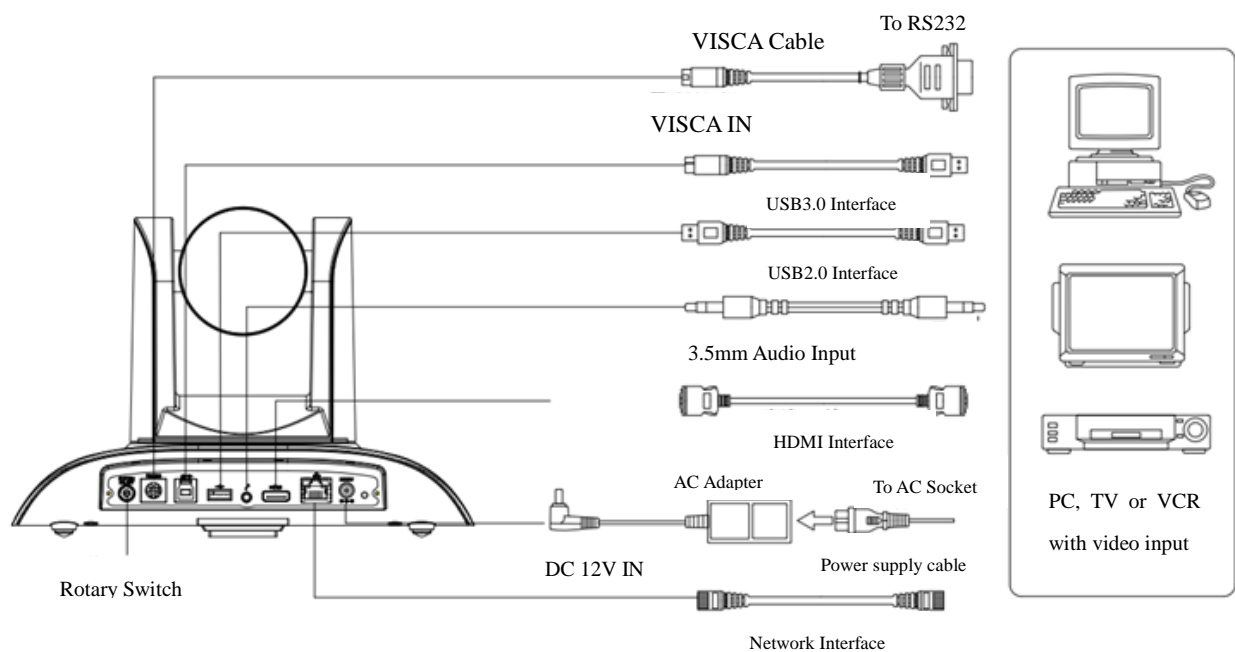


Figure 2.3 AV-1362 model external interface diagram

### 2.4.2 Bottom DIP Switch

AV-1362 model Bottom DIP Switch diagram shows as below in Figure 2.4.

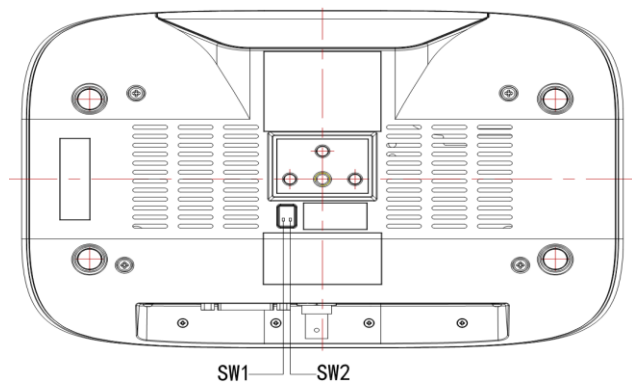


Figure 2.4 Bottom DIP Switch diagram

Two DIP switches of AV-1362 model are set either ON or OFF to select different modes of operation as shown in Table 2.2.

Table 2.2 DIP Switch setting

No.	SW2	SW1	Explanation
1	OFF	OFF	Software upgrade mode
2	ON	ON	Working mode

### 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-1362 has rotary DIP.

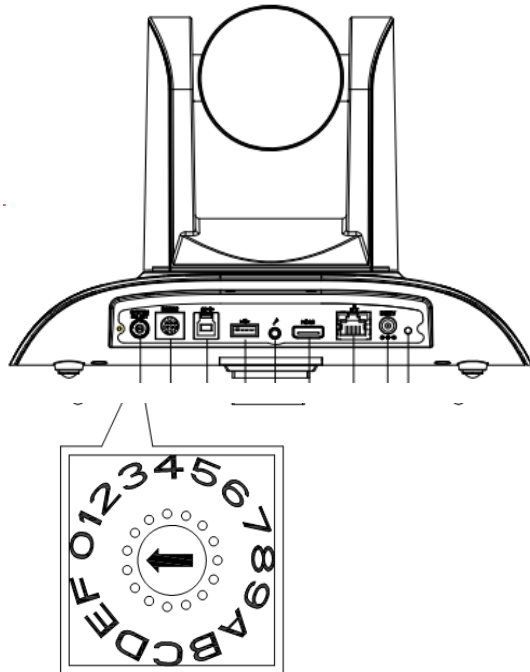


Figure 2.5 Rotary Dial diagram

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

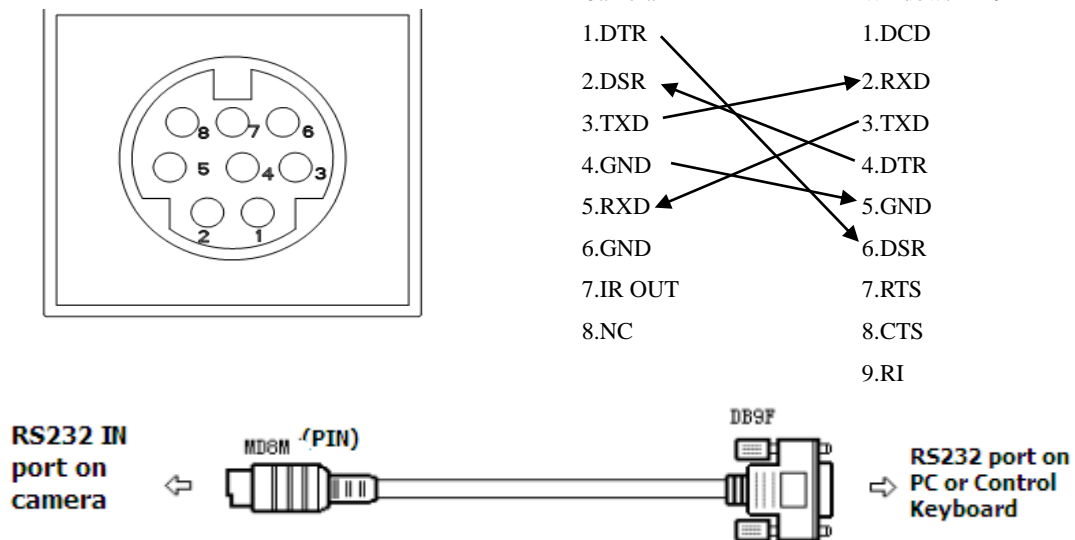
**Note:**

- 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.

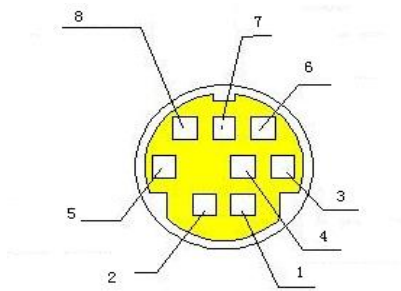
### 2.4.4 RS-232 interface

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

Computer or keyboard to camera connections

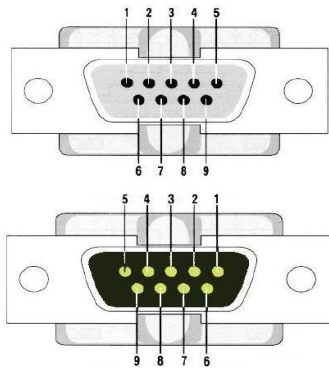


## 2) RS-232 mini-DIN 8-pin port definition



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-1362 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) HDMI output: connect the monitor with the corresponding video output port, the image will show on the monitor.
- 3) USB2.0/3.0 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.

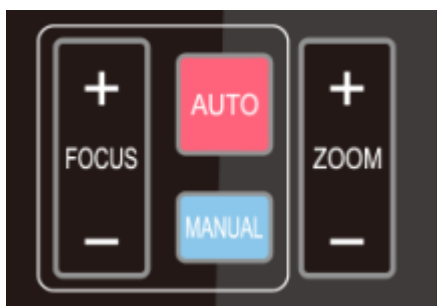
#### 2) Pan/Tilt Control



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

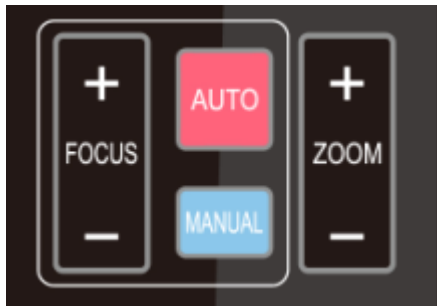
Press and hold the up/down/left/right key, the pan/tilt will keep running, from slow to fast, until it runs to the endpoint. The pan/tilt running stops as soon as the key is released.

#### 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.

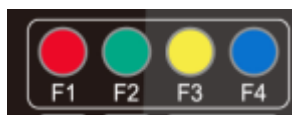
2. Preset running: press a number key 0~9 directly to run the corresponding preset position.

**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

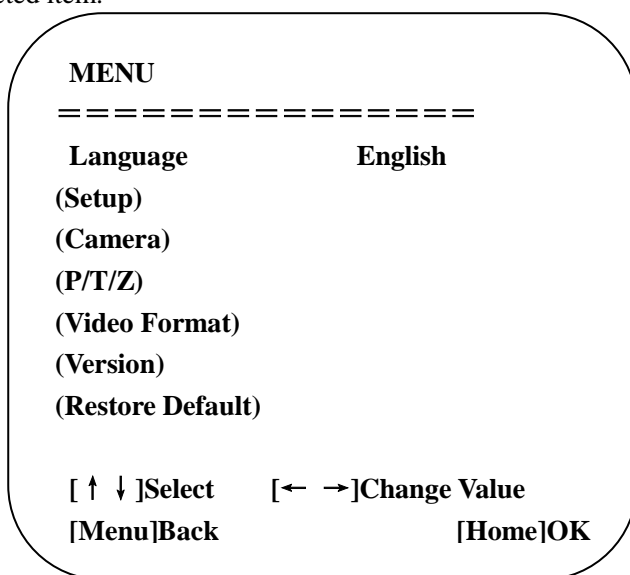
【\*】 + 【#】 + 【F3】 : Camera Address No. 3

【\*】 + 【#】 + 【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**  
=====

<b>Mode</b>	<b>Auto</b>
<b>EV</b>	<b>OFF</b>
<b>BLC</b>	<b>OFF</b>
<b>Flicker</b>	<b>50Hz</b>
<b>G.Limit</b>	<b>3</b>
<b>DRC</b>	<b>2</b>

[ ↑ ↓ ]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

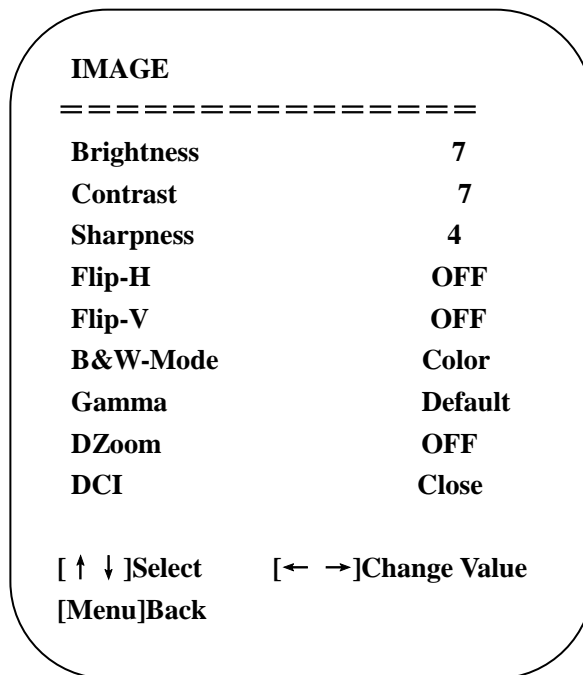
**Flip-V:** vertical flip, On/Off

**B&W mode:** color, B/W

**Gamma:** default, 0.45, 0.50, 0.55, 0.63

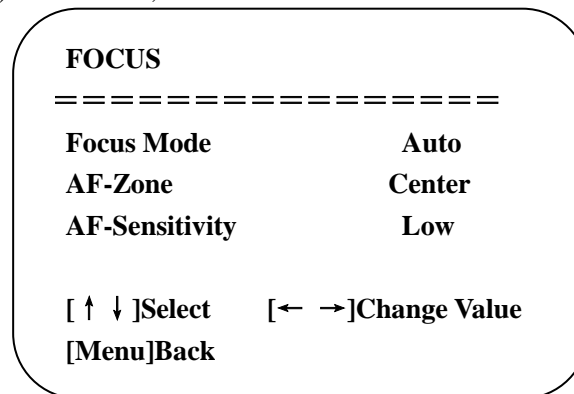
**DZoom:** digital zoom. On/Off

**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.

NOISE REDUCTION	
=====	
NR-2D	3
NR-3D	5
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

### 3.3.4 P/T/Z

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

P/T/Z	
=====	
Speed by zoom	ON
Zoom speed	8
Image Freezing	OFF
Acc Curve	Slow
[ ↑ ↓ ]Select    [ ← → ]Change Value	
[Menu]Back	

**Speed by zoom:** only effective when use remote control, On/Off

When zooming in, the PT running speed decreases proportionally (remote control mode)

**Zoom speed:** set the zoom speed for remote control, 1~8

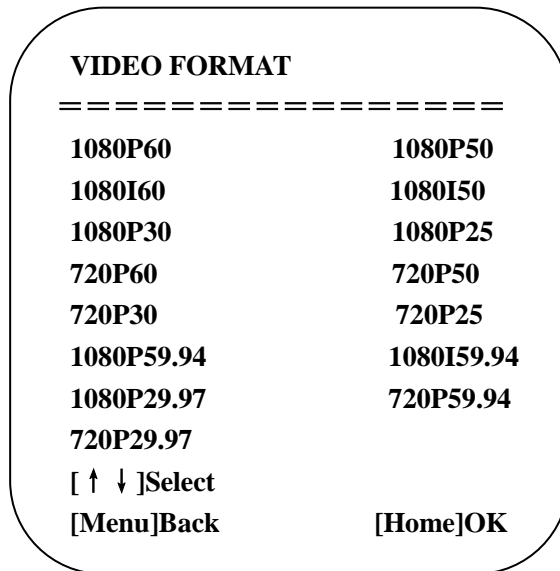
**Image Freezing:** On/Off

**Acc curve:** accelerating curve, fast/slow

### 3.3.5 Video Format

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

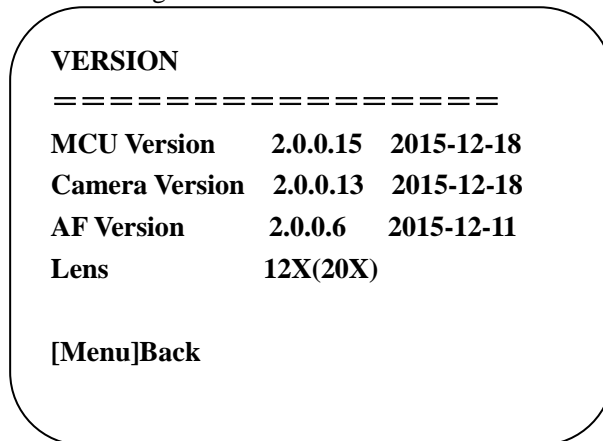




### 3.3.6 VERSION

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

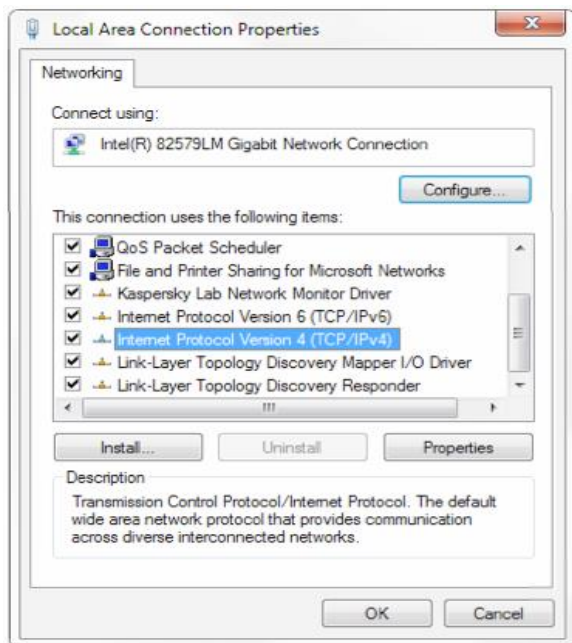
### 4.1 Connecting Mode

**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:

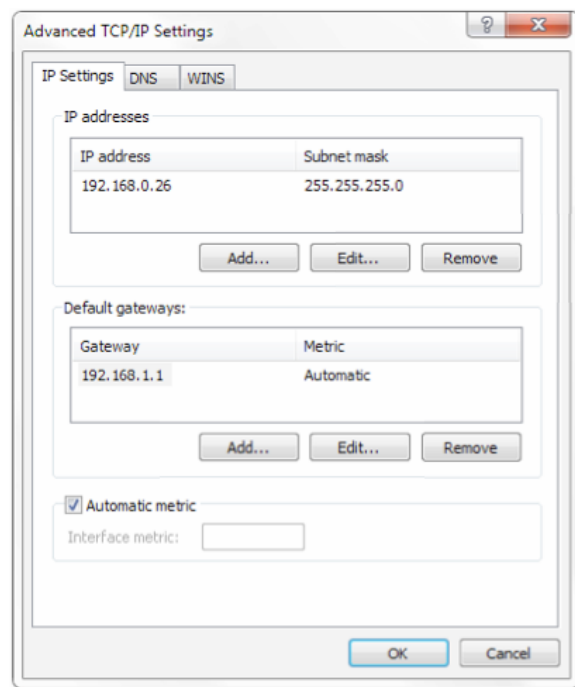
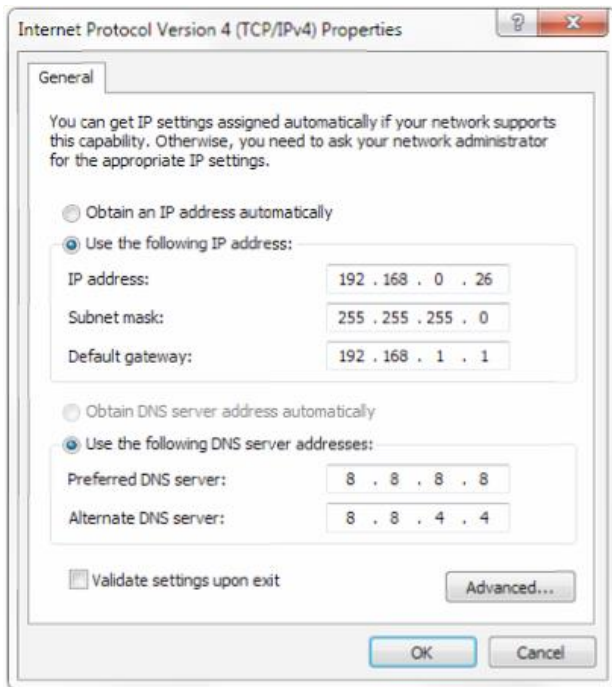


- Open “Local Area Connection Properties” on computer, select the “Internet protocol version 4(TCP/IPv4)” as shown in the picture on the left.

- 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.

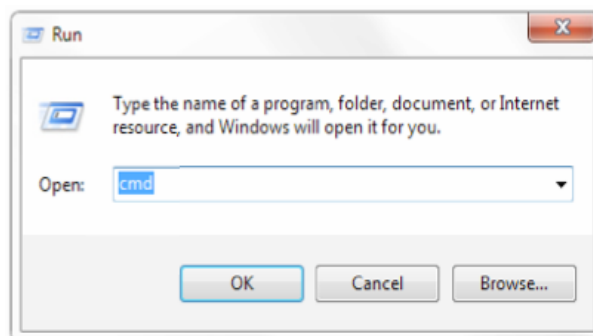
- User can add the corresponding network segment according to the revised IP address of the camera.



**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



			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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### Contact Details:

#### **AViPAS Inc.**

Address: 4320 Stevens Creek Blvd. Suite 227  
San Jose, CA 95129

Phone: 1-844-228-4727

Fax: (408) 228-8438

Email: [info@avipas.com](mailto:info@avipas.com)

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