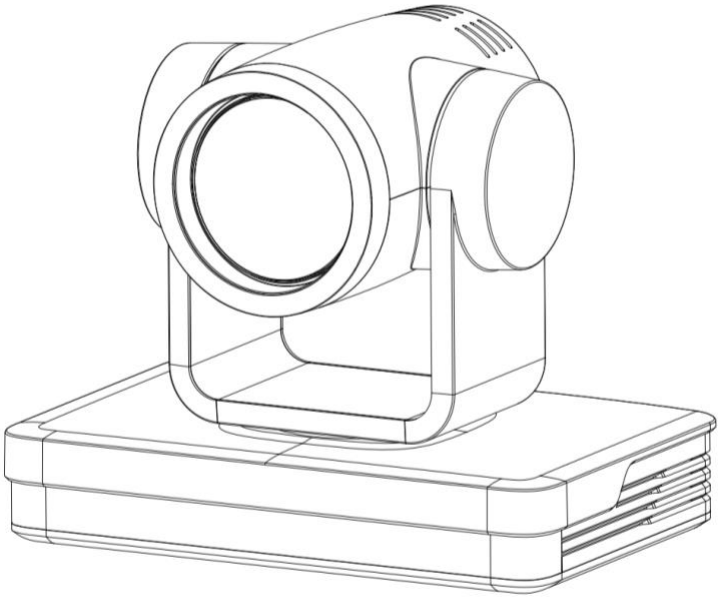
Model: AV-1563
30x Full HD PTZ Camera with PoE
Model: AV-1562
20x Full HD PTZ Camera with PoE



User Manual

V1.0

Please read this user manual
thoroughly before using.

www.avipas.com

Preface

Thanks for using this HD Video Conferencing Camera.

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

Precautions

This product 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.

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Attentions

- **Electric Safety**

  Installation and operation must accord with electric safety standard.

- **Use caution to transport**

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

- **Polarity of power supply**

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

- **Installation precautions**

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

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

  Make sure there is no obstacle within rotation range.

  Do not power on before installation is completed.

- **Do not dismantle the camera**

  We are not responsible for any unauthorized modification or dismantling.

CAUTION!

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

Supplied Accessories

When unpacked, check if all supplied accessories are included:

Camera 1PCS
AC power adaptor 1PCS
Power cord 1PCS
RS232 cable 1PCS
Remote control.....1PCS
User manual 1PCS

1. Camera Installation

1.1 Camera Interface Illustration

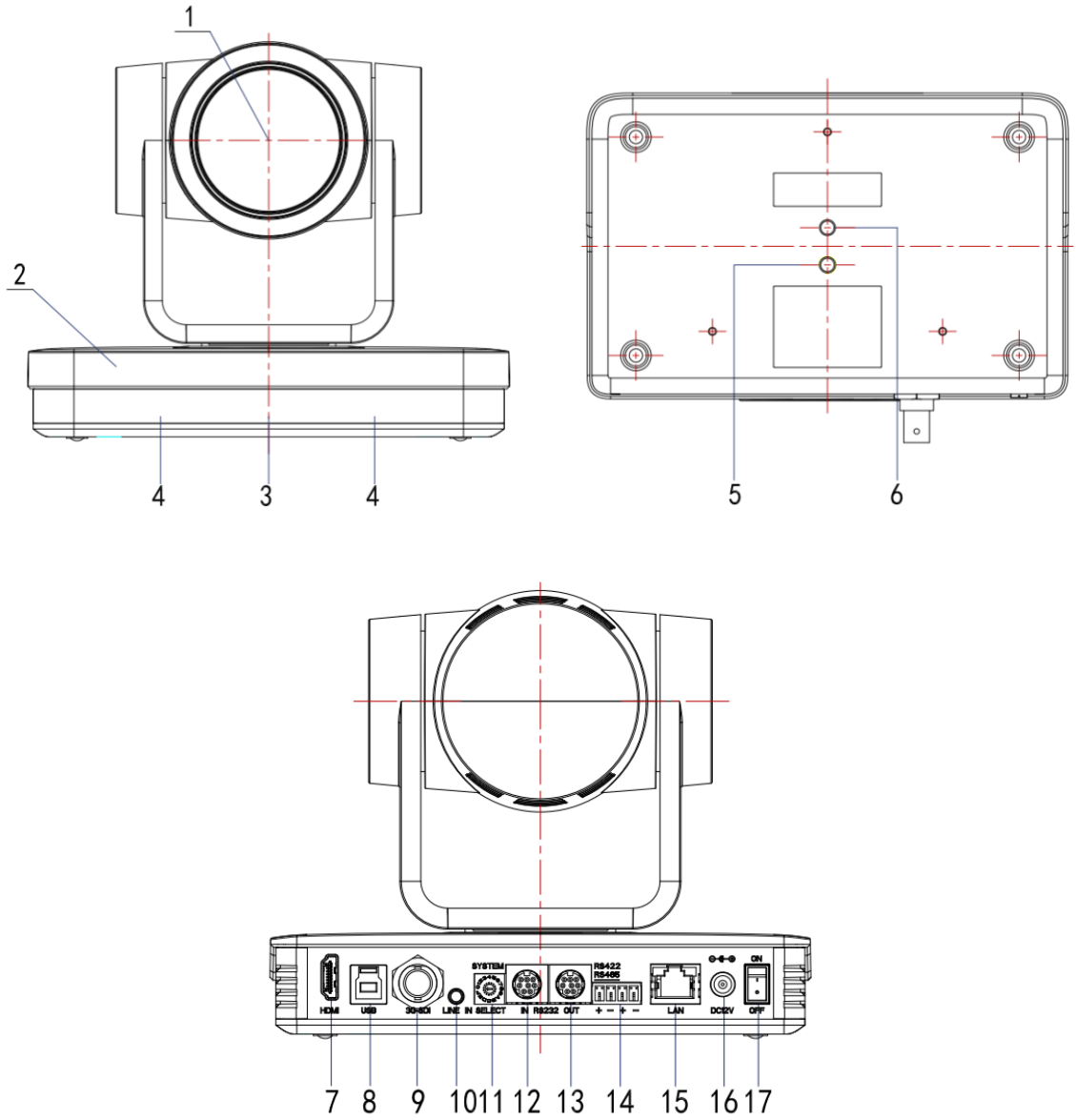


Figure 1.1 Interface of SU Model

1. Camera Lens
2. Camera Base
3. Remote Control Receiving Indicator
4. Infrared Receiver
5. Tripod Screw Hole
6. Screw Hole for Tripod
7. HDM Output
8. USB3.0 Output
9. SDI Output
10. Audio Input Interface (Line-in)
11. Rotary DIP Switch
12. RS232 Control Interface (input)
13. RS232 Control Interface (output)
14. RS422 Interface (Compatible with RS485)
15. Network Interface (LAN)
16. DC12V Input Power Supply Socket
17. Power Switch

1.2 Interface and Connection

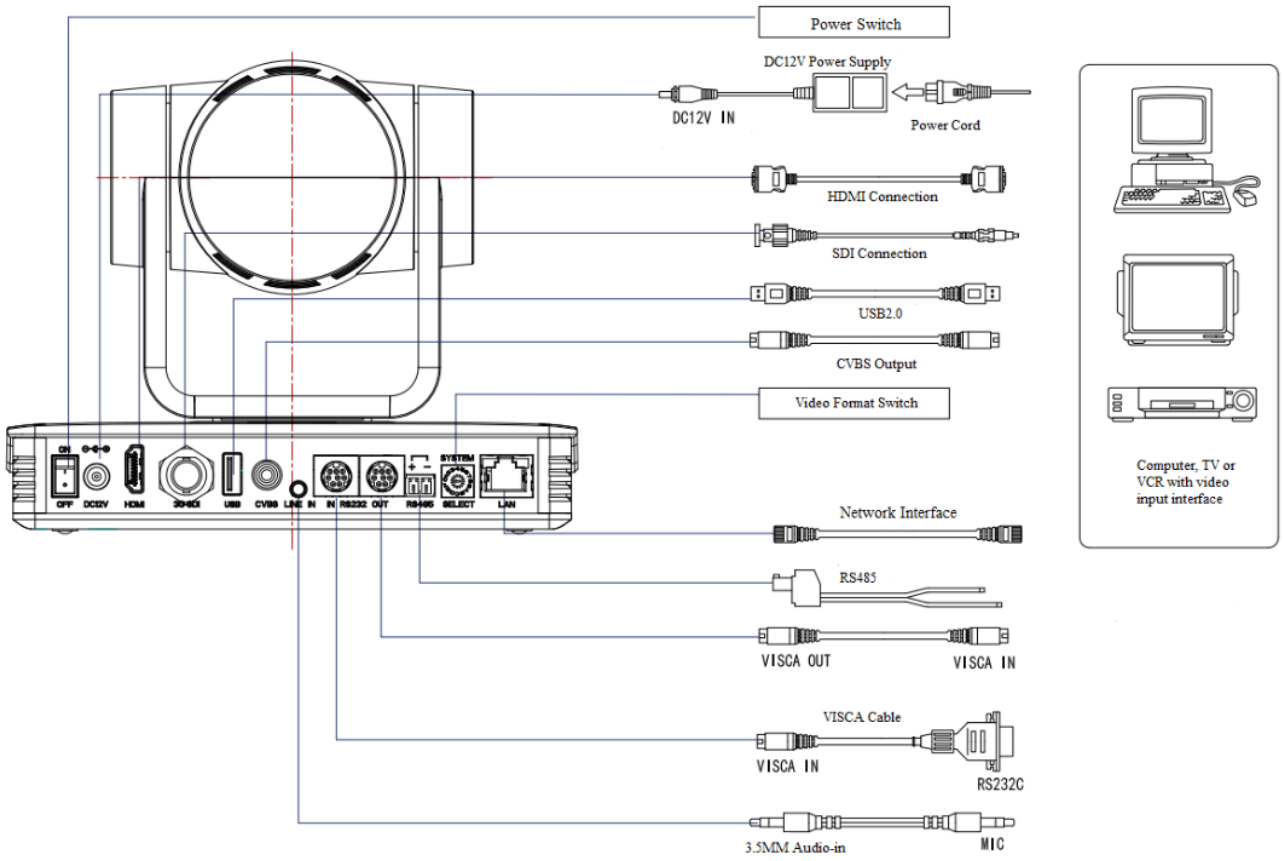


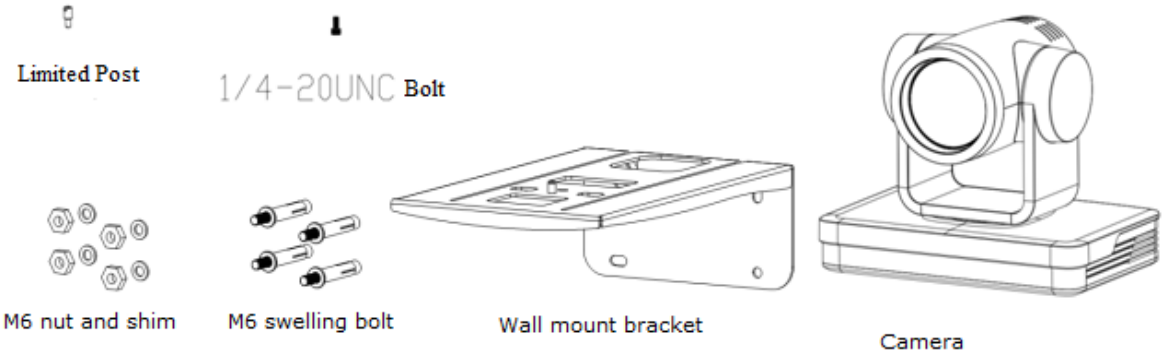
Figure 1.2 Wiring Diagram

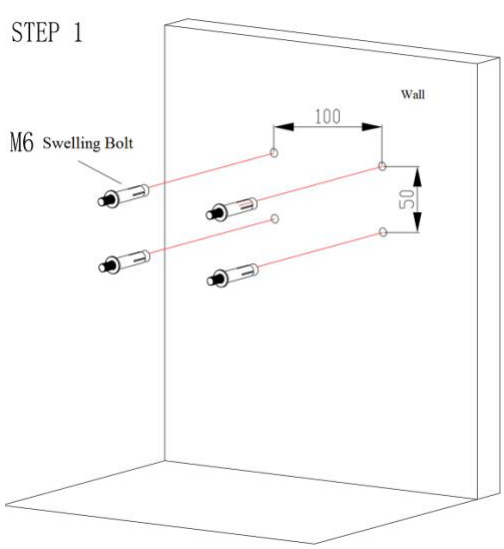
1) After powering on and initialization, camera will automatically go to preset position 0 (Center position as default).
2) The default cam address for the IR remote control is #1.

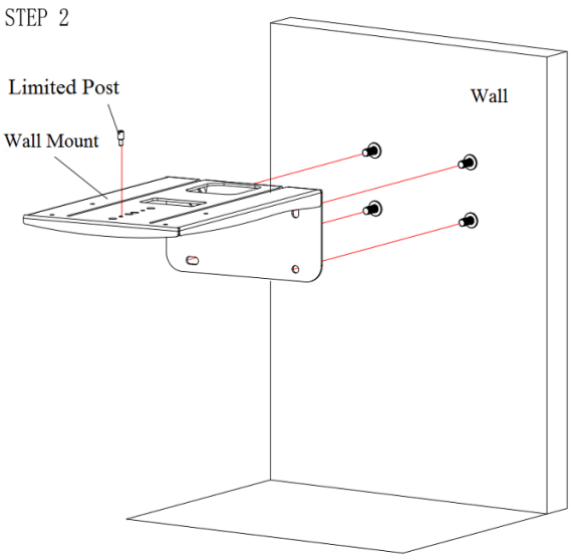
1.3 Mounting Brackets

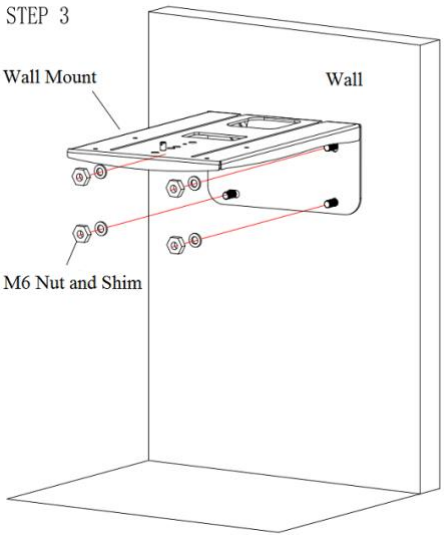
Note: Ceiling or wall mounting brackets can only be mounted on a template and concrete wall. For safety reason, plasterboard is not recommended.

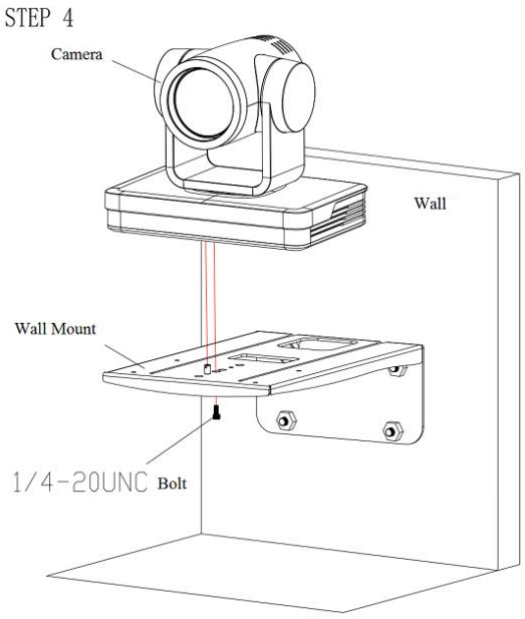
1) Wall Mount:

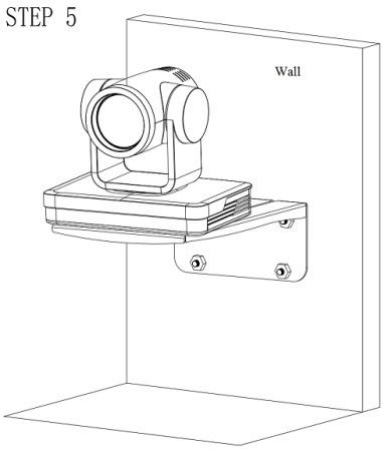

Limited Post
1/4-20UNC Bolt
M6 nut and shim
M6 swelling bolt
Wall mount bracket
Camera


STEP 1
Wall
100
M6 Swelling Bolt
50

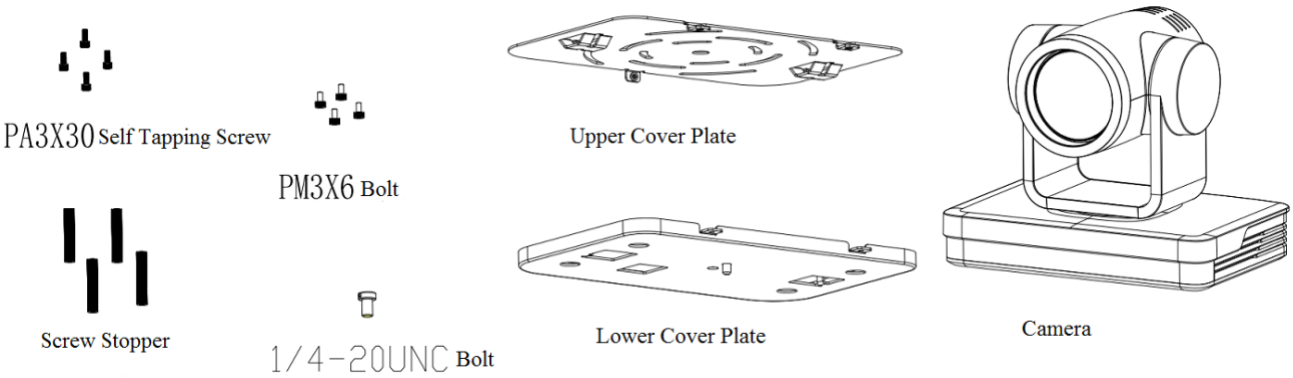

STEP 2
Limited Post
Wall
Wall Mount

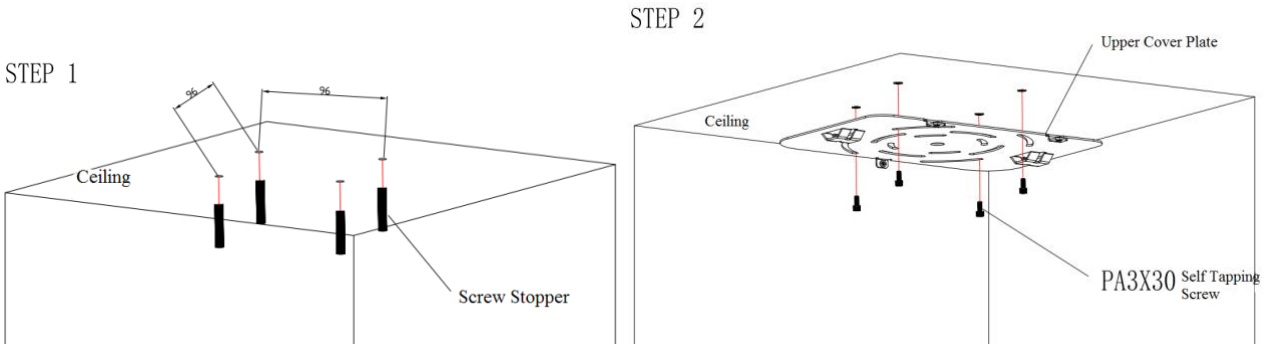

STEP 3
Wall Mount
Wall
M6 Nut and Shim

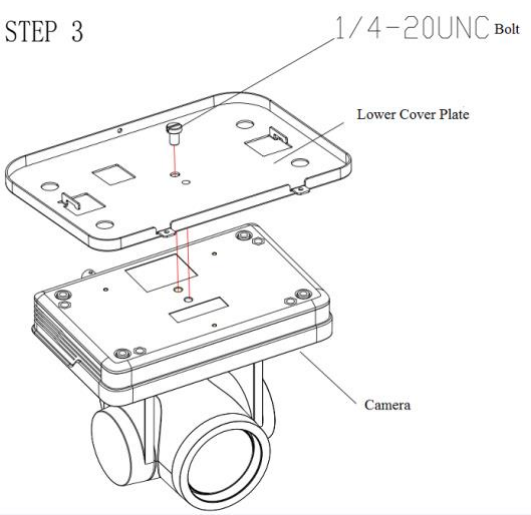

STEP 4
Camera
Wall
Wall Mount
1/4-20UNC Bolt

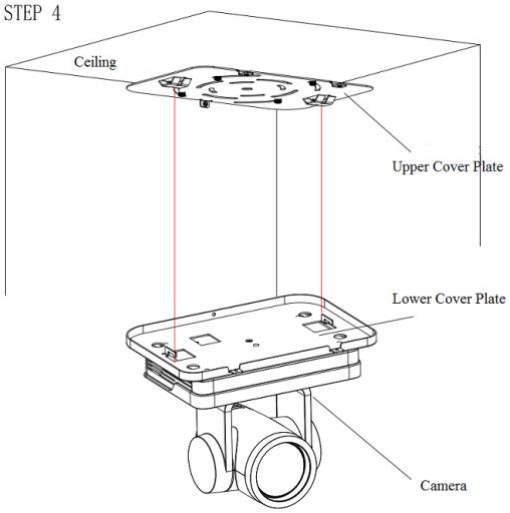


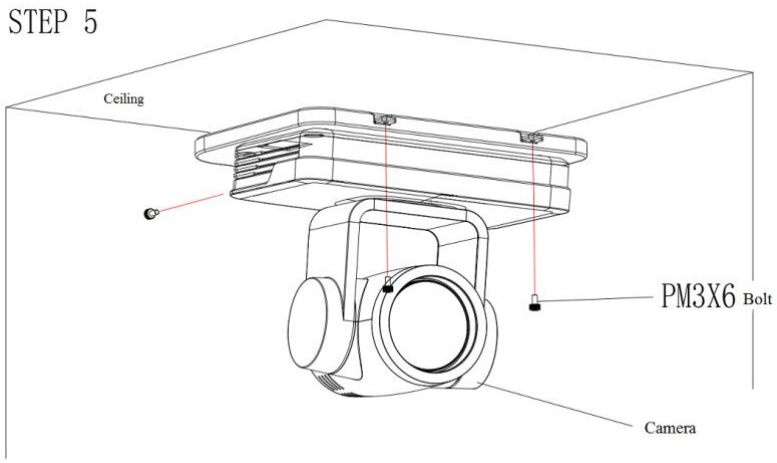
2) Ceiling Mounting











2. Product Overview

2.1 Dimensions

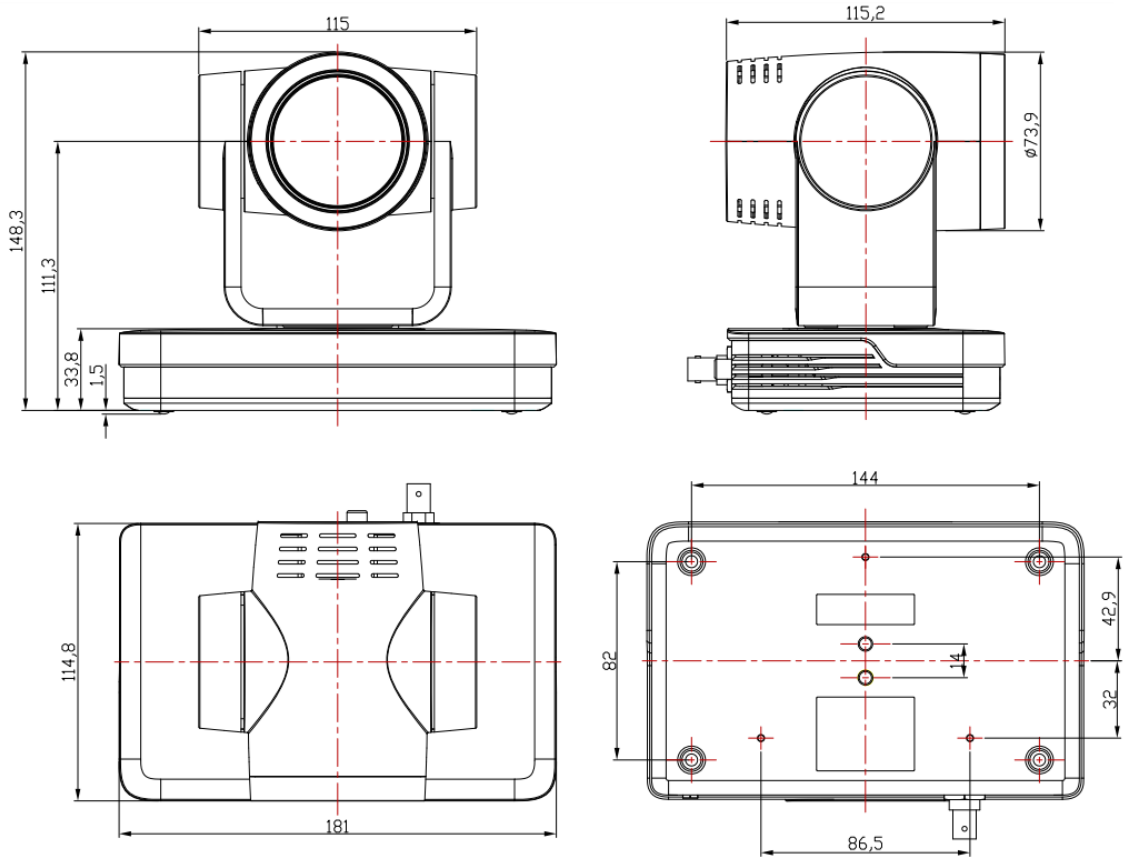
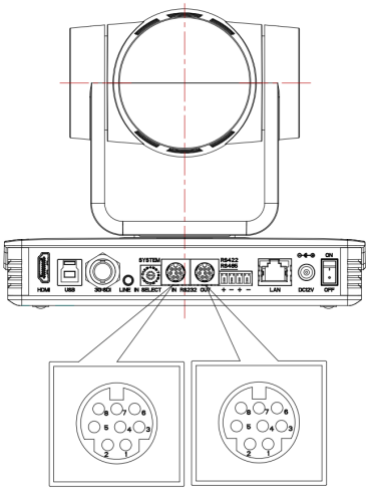


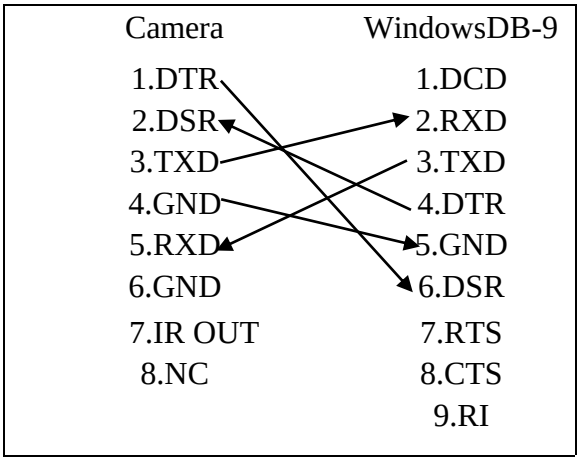
Figure 2.2 Product Dimensions

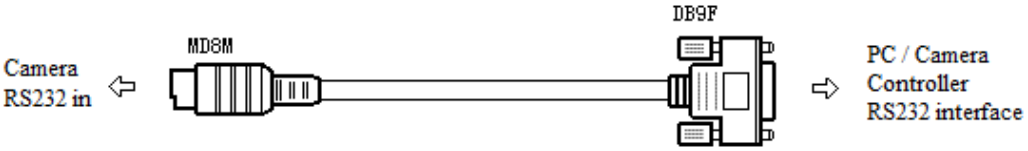
2.2 RS-232 Interface

1). RS-232 Interface Definition

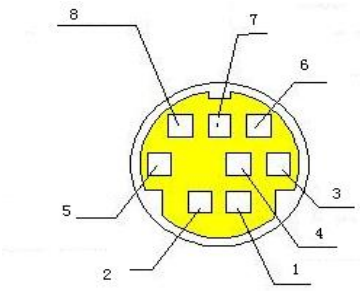


Connection to PC or Camera Controller



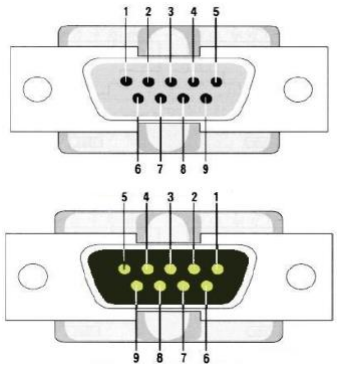


2). RS232 Mini-DIN 8-pin: Port Definition



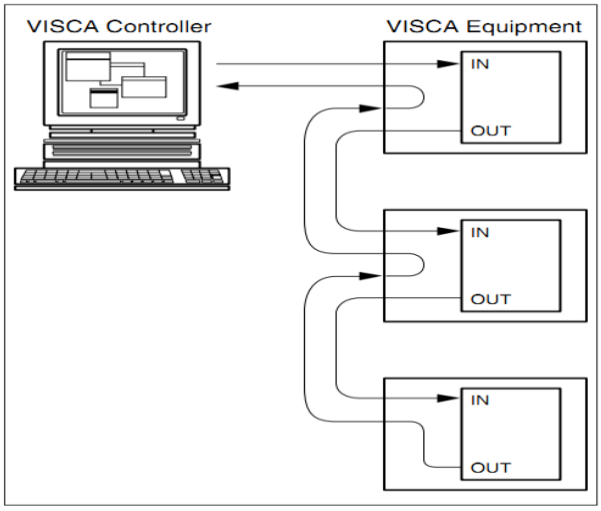
NO.	Port	Definition
1	DTR	Data Terminal Ready
2	DSR	Data Set Ready
3	TXD	Transmit Data
4	GND	Signal Ground
5	RXD	Receive Data
6	GND	Signal Ground
7	IR OUT	IR Commander Signal
8	NC	No Connection

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

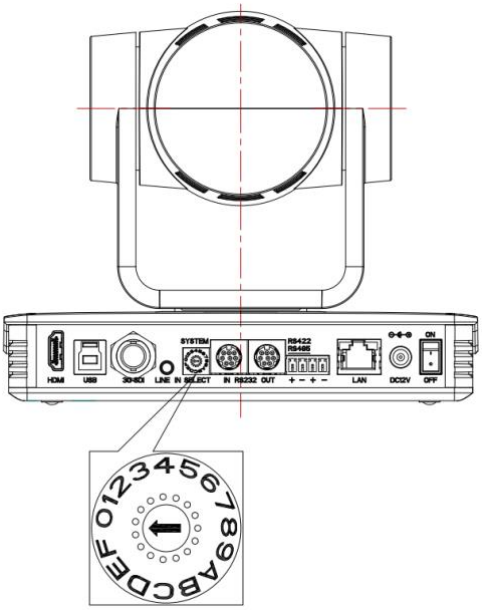
4). VISCA networking as shown below:



Camera cascade connection

Camera 1	Camera 2
1.DTR	1.DTR
2.DSR	2.DSR
3.TXD	3.TXD
4.GND	4.GND
5.RXD	5.RXD
6.GND	6.GND
7.IR OUT	7.OPEN
8. NC	8.OPEN

2.3 Rotary DIP Switch



Dial-up	video format	Dial-up	video format
0	1080P60	8	1080P59.94
1	1080P50	9	1080I59.94
2	1080I60	A	1080P29.97
3	1080I50	B	720P59.94
4	1080P30	C	720P29.97
5	1080P25	D	AV-1563: 720P29.97 AV-1562: 1080P59.94
6	720P60	E	AV-1563: 720P29.97 AV-1562: 1080P59.94
7	720P50	F	video format to be set from OSD menu

Note:
Please reboot the camera after switching the video format for changes to take effect.
Only when the dial is set at "F", video format can be changed from:
---webpage;
---remote control shortcut; (not all video formats are available)
---OSD menu;
Otherwise, video format can be changed from webpage and remote control shortcut. OSD menu won't show "video format" item.

2.4 Main Features

AV-1563/1562 camera features advanced ISP processing algorithms to provide vivid images with a strong sense of depth, high resolution and fantastic color rendition. It supports H.265/H.264 encoding which makes motion video fluent and clear even under less-than-ideal bandwidth conditions.

- **Full HD resolution:** 1/2.8-inch high-quality CMOS sensor. Resolution is up to 1920*1080 with a frame rate up to 60 fps.
- **30x/20x optical zoom lens:** with 65° (1563)/ 56° (1562) FOV without distortion.
- **Auto-focus technology:** fast, accurate and stable auto-focus technology.
- **Low noise and high SNR:** super high SNR achieved with low noise CMOS. Advanced 2D/3D noise reduction technology further reduces the noise while ensuring image clarity.
- **Multiple video output interface options:** HDMI, SDI, USB3.0, LAN. Simultaneously output video signal via HDMI, SDI, USB3.0 and LAN. LAN supports POE, USB3.0 support dual stream output, SDI output could be up to 1080P@60fps.
- **Multiple audio/video compression standards:** support H.264/H.265 video compression, up to 1920×1080 resolution @60 fps; support AAC, MP3 and G.711A audio compression, 8000,16000,32000,44100,48000 sampling frequency.
- **Built-in gravity sensor:** support PTZ auto-flip function and easy installation.
- **Multiple network protocols:** support ONVIF, GB/T28181, RTSP, RTMP protocols; support RTMP push mode, easy to be connected directly to streaming server (Wowza, FMS, etc.); support RTP multicast mode.
- **Control interface:** RS422 (compatible with RS485), RS232-IN, RS232-OUT for cascading.
- **Multiple control protocols:** support VISCA, PELCO-D, PELCO-P, VISCA over IP and ONVIF protocols.
- **Multiple presets:** up to 255 presets (10 presets using remote control).
- **IR/Wireless remote control:** users can choose IR remote control or wireless remote control via IP according to different applications.
- **Versatile for applications:** online-education, lecture capture, webcasting, video conferencing, tele-medicine, etc.

2.5 Specifications

Camera Parameter	
Optical Zoom	30X f4.3~129mm 20X f5.2-98mm
Sensor	1/2.8-inch high-quality HD CMOS sensor
Effective Pixels	16: 9, 2.07 megapixel
Video Format	**HDMI/SDI/LAN video format** 1080P60/50/30/25/59.94/59.97, 1080I60/50/59.94, 720P60/50/59.94/29.97 **USB3.0 interface video format (up to 30fps)** To USB3.0: YUY2/MJPEG/NV12/H.264/265: 1920*1080, 1280*720, 1024*576, 960*540, 800*448, 720*480, 640*360, 640*480, 320*176 To USB2.0: YUY2/NV12: 1024*576, 960*540, 800*448, 720*480, 640*360, 640*480, 320*176; MJPEG/H.264/H.265: 1920*1080, 1280*720, 1024*576, 960*540, 800*448, 720*480, 640*360, 640*480, 320*176
View Angle	30x: 65° (W) ~ 2.34°(T); 20x: 56° (W)~3.2° (T)
AV	30x: F1.6 ~ F4.7; 20x: F1.5~F3.0
Digital Zoom	10x
Min Illumination	0.5Lux (F1.8, AGC ON)

DNR	2D & 3D DNR
White Balance	Auto / Manual/ One Push/ Specify color temperature (range: 2400k-7100k)
Focus/Aperture/ Electronic Shutter	Auto/Manual/One Push Focus
Iris	Auto/Manual
Shutter	Auto/Manual
BLC	ON/OFF
WDR	OFF/ Dynamic level adjustment
Video Adjustment	Brightness, Color, Saturation, Contrast, Sharpness, B/W mode, Gamma curve
SNR	>50dB
Input/output Interface	
Video Output	HDMI, SDI, LAN, USB3.0
Video Stream	Dual stream output
Video Compression Format	LAN: H.265, H.264 USB3.0: YUY2, MJPEG, H.264, NV12, H.265
Audio Input Interface	Double track 3.5mm linear input
Audio Output Interface	HDMI, SDI, LAN
Audio Compression Format	AAC/MP3/G.711A
Control Interface	RS232-IN, RS232-OUT, RS422
Control Protocol	VISCA/Pelco-D/Pelco-P, Baud Rate: 115200/38400/9600/4800/2400bps
Power Interface	HEC3800 outlet (DC12V)
Input Voltage	DC12V±10%
Input Electric Current	Maximum: 1A
Power Consumption	Maximum: 12W
Network Protocols	RTSP, RTMP, ONVIF, GB/T28181; Network VISCA control protocol (VISCA over IP);
USB Communication	UVC (Video)
PTZ Parameter	
Pan/Tilt Rotation	±170°, -30°~+90°
Pan Control Speed	0.1 - 100°/sec
Tilt Control Speed	0.1- 45°/sec
Preset Speed	Pan: 100°/sec, Tilt: 45°/sec
Preset Number	255 presets (10 presets via remote control)
Other Parameter	
Stored Temperature	-10℃~+70℃
Storage Humidity	20%~95%
Working Temperature	-10℃~+50℃
Working Humidity	20%~80%
Dimension	7.1*4.5*5.9inch (181*115*149mm)
Weight	2.5lbs (1.15kg)

3. Remote Control

3.1 Functions for IR Remote Control

1). In this manual, “press the key” means a short press rather than a long-press and hold. A note will be given if a long-press for more than one second is required.
2). When a key-combination is required, do it in sequence. For example 【*】+【#】+【F1】 means press 【*】 first and then press【#】and lastly press【F1】.

1. Standby Button
Press this button and hold it for 3 secs to enter standby mode. The camera will do self-testing and return back to 【HOME】position. (Note: If Preset 0 is set, and with no operation for 12s, the camera will automatically turn to Preset position 0.

2. Camera Address Selection
Press the camera address number to control the particular camera with the address setting.

3. Number Keys
To set or call 0-9 presets.

4. *, #, Key Combination
To use as combination with 【F1-F4】 to set camera address.
【*】+【#】+【F1】: Camera Address No.1
【*】+【#】+【F2】: Camera Address No. 2
【*】+【#】+【F3】: Camera Address No. 3
【*】+【#】+【F4】: Camera Address No. 4

5. Focus Control
【AUTO】: to enter auto focus mode.
【MANUAL】: to enter manual focus mode.
Switch the camera focus mode to manual by pressing FOCUS【+】 or FOCUS【-】to adjust.

6. Zoom Control
ZOOM【+】: Lens near; ZOOM【-】: Lens far

7. Set/ Clear Presets
【SET PRESET】+【0-9】 number key: To set presets
【CLEAR PRESET】+【0-9】number key: To clear presets

8. Pan-Tilt Control Buttons
Press the ▲Up, ▼down, ◄left and ▼right buttons to adjust the camera position. Press 【HOME】 to return to the center position.

9. BLC Control
【BLC ON/OFF】: To turn on/off the back light.

10. Menu Settings

【MENU】: to open/ close the OSD menu; to enter/ exit the OSD menu, or to return to the previous submenu.

11. Key Combination Functions

1) 【#】+【#】+【#】: Clear all presets

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

3) 【*】+【#】+【9】: Flip switch

4) 【*】+【#】+【AUTO】: Enter the auto mode

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

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

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

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

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

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

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

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 Camera Menu

1. Menu Options

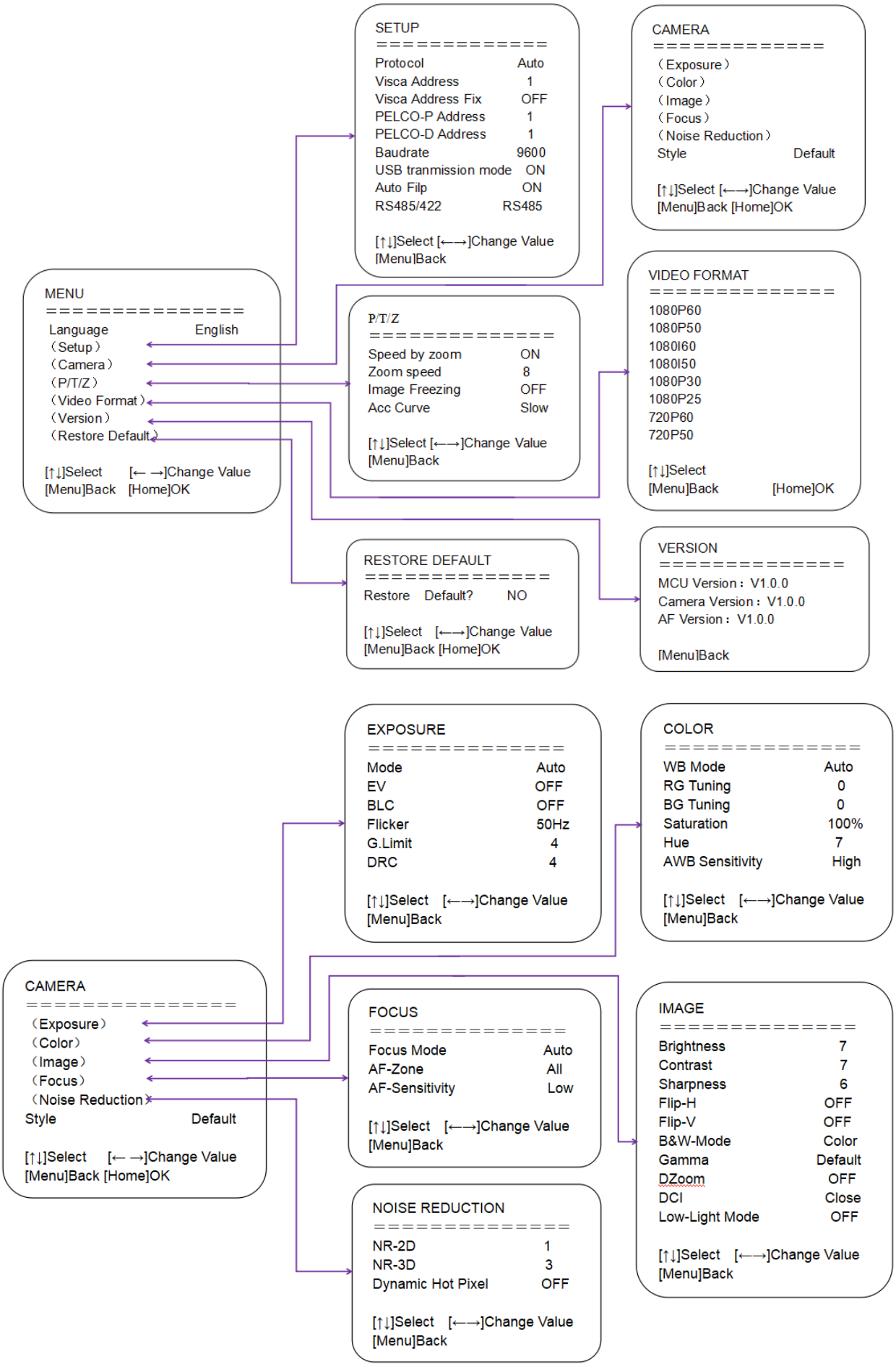
【MENU】: Enter /exit the OSD menu or return to the previous sub-menu

【HOME】: Enter the sub-menu

【↑】【↓】: Choose item

【←】【→】: Modify values

2. Menu Structure


MENU
Language English
（Setup）
（Camera）
（P/T/Z）
（Video Format）
（Version）
（Restore Default）
[↑↓]Select [←→]Change Value
[Menu]Back [Home]OK
SETUP
Protocol Auto
Visca Address 1
Visca Address Fix OFF
PELCO-P Address 1
PELCO-D Address 1
Baudrate 9600
USB tranmission mode ON
Auto Filp ON
RS485/422 RS485
[↑↓]Select [←→]Change Value
[Menu]Back
CAMERA
（Exposure）
（Color）
（Image）
（Focus）
（Noise Reduction）
Style Default
[↑↓]Select [←→]Change Value
[Menu]Back [Home]OK
P/T/Z
Speed by zoom ON
Zoom speed 8
Image Freezing OFF
Acc Curve Slow
[↑↓]Select [←→]Change Value
[Menu]Back
VIDEO FORMAT
1080P60
1080P50
1080I60
1080I50
1080P30
1080P25
720P60
720P50
[↑↓]Select
[Menu]Back [Home]OK
RESTORE DEFAULT
Restore Default? NO
[↑↓]Select [←→]Change Value
[Menu]Back [Home]OK
VERSION
MCU Version：V1.0.0
Camera Version：V1.0.0
AF Version：V1.0.0
[Menu]Back
EXPOSURE
Mode Auto
EV OFF
BLC OFF
Flicker 50Hz
G.Limit 4
DRC 4
[↑↓]Select [←→]Change Value
[Menu]Back
COLOR
WB Mode Auto
RG Tuning 0
BG Tuning 0
Saturation 100%
Hue 7
AWB Sensitivity High
[↑↓]Select [←→]Change Value
[Menu]Back
CAMERA
（Exposure）
（Color）
（Image）
（Focus）
（Noise Reduction）
Style Default
[↑↓]Select [←→]Change Value
[Menu]Back [Home]OK
FOCUS
Focus Mode Auto
AF-Zone All
AF-Sensitivity Low
[↑↓]Select [←→]Change Value
[Menu]Back
IMAGE
Brightness 7
Contrast 7
Sharpness 6
Flip-H OFF
Flip-V OFF
B&W-Mode Color
Gamma Default
DZoom OFF
DCI Close
Low-Light Mode OFF
[↑↓]Select [←→]Change Value
[Menu]Back
NOISE REDUCTION
NR-2D 1
NR-3D 3
Dynamic Hot Pixel OFF
[↑↓]Select [←→]Change Value
[Menu]Back

4. Network Configuration

4.1 Network Connection

Direct connection: Connect the camera and computer via an Ethernet cable directly.
Internet connection mode: Connect the camera to Internet (via a Router or a Switch).

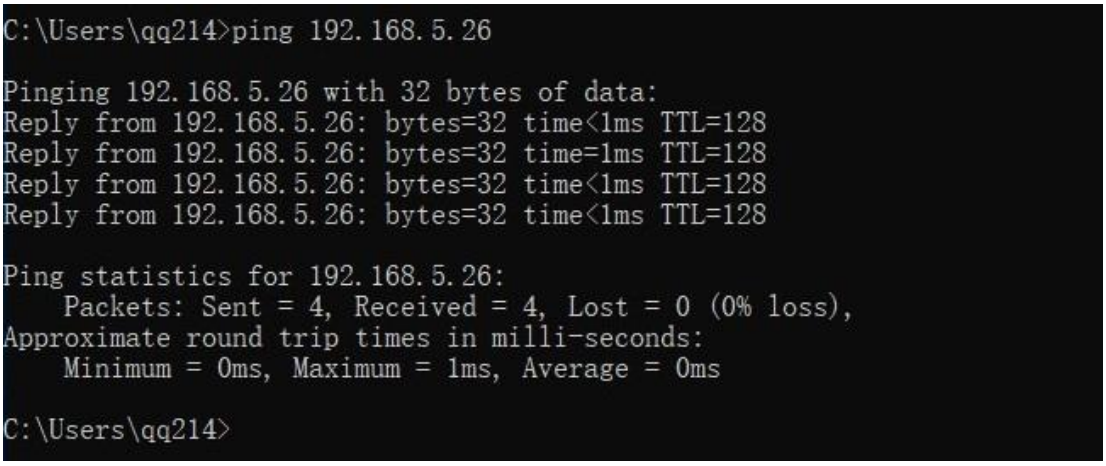
The computer must be assigned to the network segment where the camera IP address belongs to. The device will not be accessible otherwise.
The camera's default IP address is 192.168.5.163, and in this case, your computer's IP must be 192.168.5.xxx.

Open "Network and Sharing Center", select "Ethernet", "Ethernet Status", "Properties". Double click "Internet protocol version 4 (TCP/IPv4)". In the TCP/IPv4 Properties window; select "Advanced" to access TCP/IP settings. Set computer's IP, subnet mask and default gateway accordingly. Click the "Confirm" to finish the adding of IP segment. If you're using a camera with default settings, the recommended settings for your computer is:

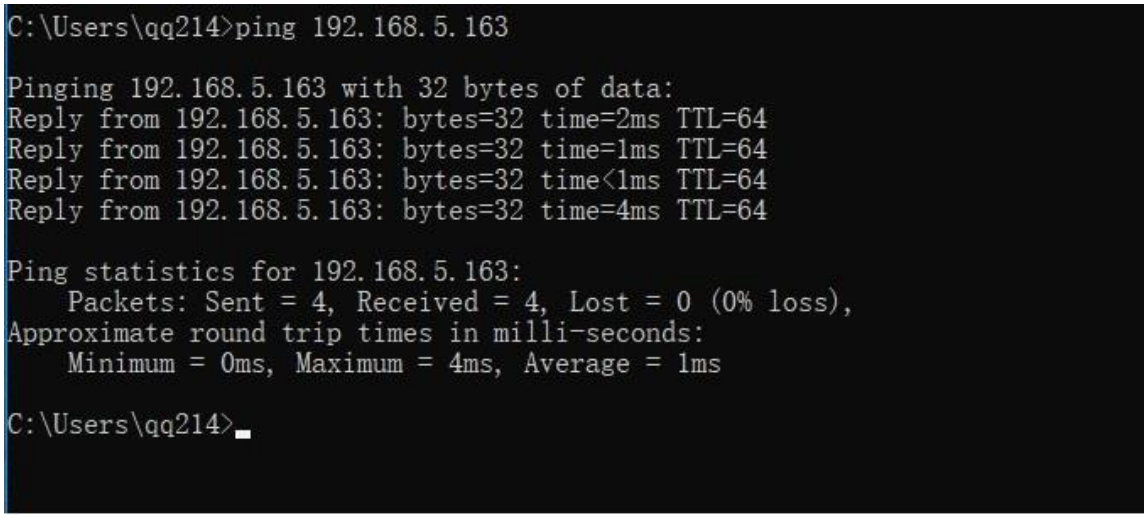
IP: 192.168.5.160
Subnet mask: 255.255.255.0
Default gateway: 192.168.5.1

Note: please make sure the IP address to be added is not the same as any other device connected to your computer.

To verify the network segment has been successfully added, click "Search" icon and input "cmd". Then click "Command Prompt" and open DOS command window. Ping 192.168.5.26 and press Enter key to display information as shown below:



Connect the camera to your computer, power on. Open DOS command window, and ping 192.168.5.163, then press Enter key.



4.2 IE Login

1) Web Page Login

Input the default IP address 192.168.5.163 in the browser and click Enter. User can login as administrator or as normal user. If login as administrator (Default User name/Password: admin), users can preview, playback, and set configuration; If login in as normal user (Default User name/Password:user1 or user2), users can only preview, playback, camera configurations cannot be changed.

Note: Web access support IE and Chrome browsers.

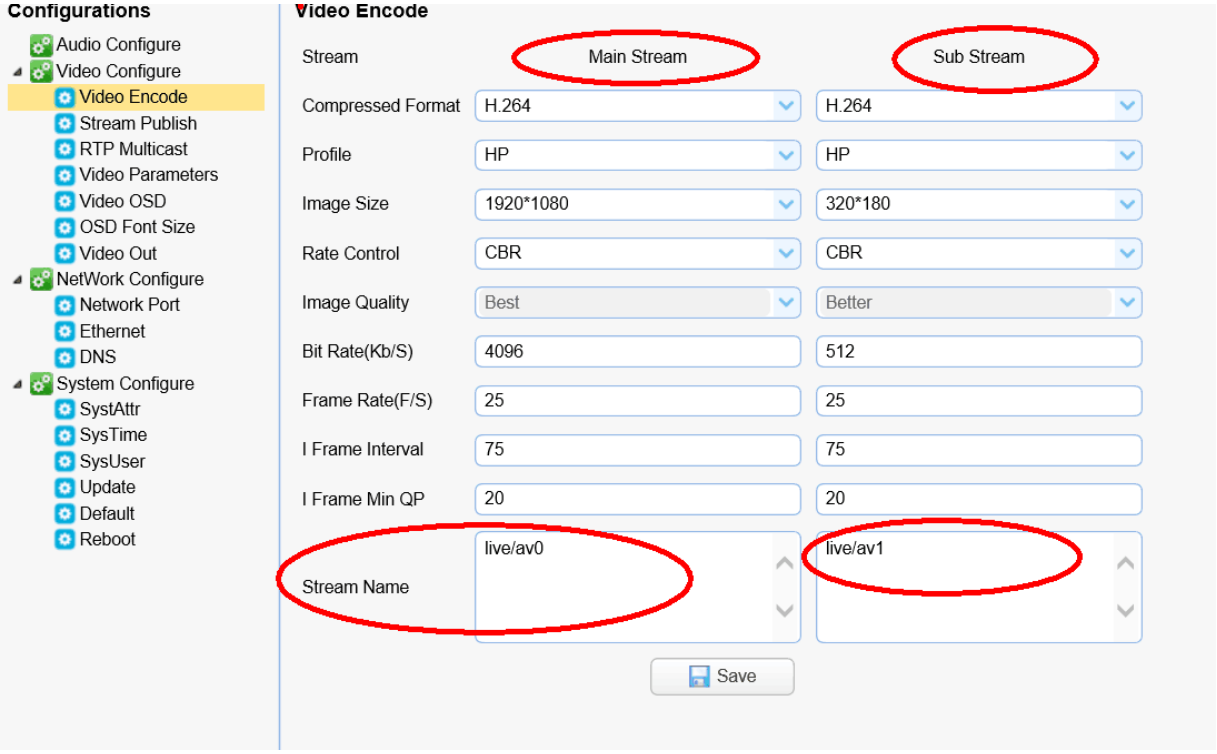
2) Download and Install Plug in for IE login

First-time login: a pop-up message will show on the bottom of IE browser: “Playback plug-in is not installed, please download and install!”. Click on this message, download and install MRWebXinstall.exe following the information.

4.3 Video Encode

1). Video Stream Capture

Configurations -> Video Configure-> Video Encode

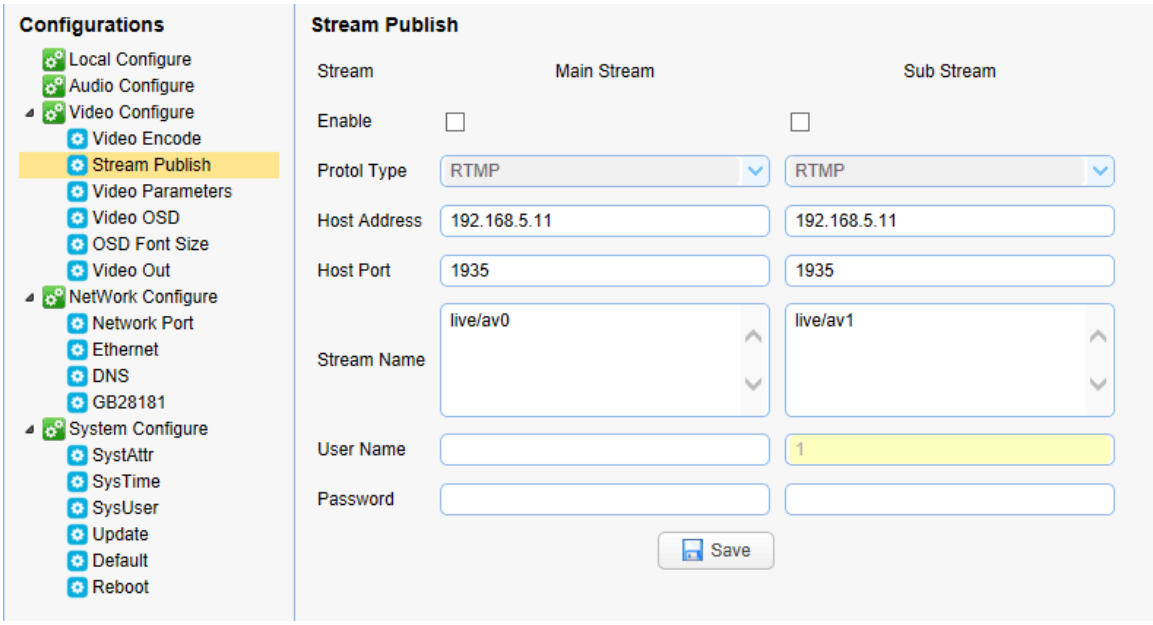


Configure the parameters according to the network settings.
Note: stream name live/av0 (live/ XXX)

For example:
The default IP address of the camera is 192.168.5.163. To obtain video via RTSP stream, please use the URL below:
rtsp://192.168.5.163/live/av0（av0 main stream）
rtsp://192.168.5.163/live/av1（av1 sub stream）

2). Push Video Stream

Configurations -> Video Configure-> Stream Publish

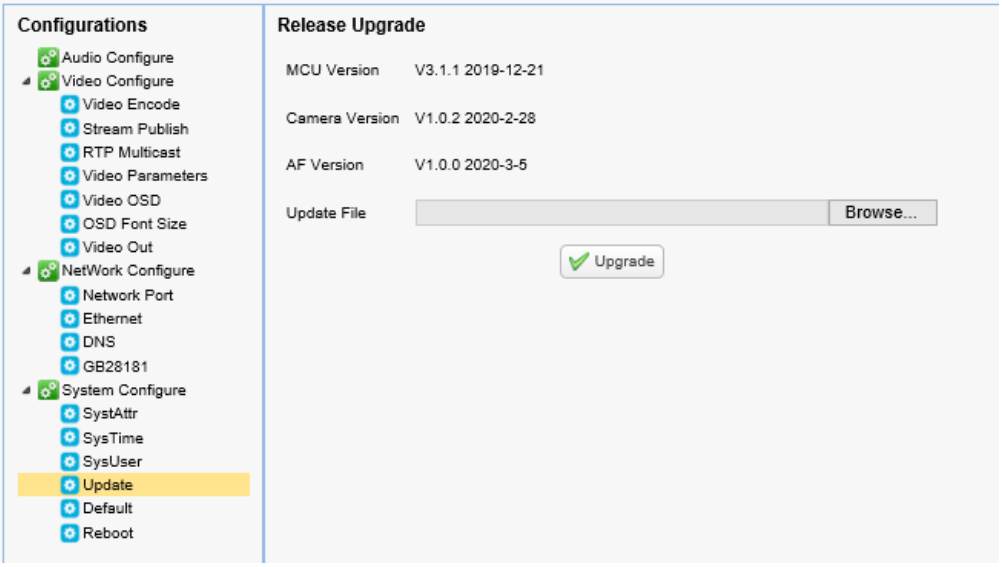


To push RTMP stream to a server/ platform (public network), make sure the camera's IP configurations are set to be consistent with the public network, otherwise it will not connect to server successfully. For connection details, please refer to: avipas.com-> SUPPORT -> HOW TO MATERIALS -> How to live stream.

Host address: server address. Can be a domain name or an IP address
Host port: server default port number
Stream name: live/test (live/ XXX)
Username and password: you will find the username and password on your server, otherwise leave it empty
Access URL：rtmp://host domain name: host port/live/xxx
Or (rtmp://host IP address: host port/live/xxx)

4.4 Software Upgrade

1). Log in to the web page to access camera settings.
2). Go to "Configurations" tab -> System Configure-> Update



3). Click "Browse…" to select the ".mrg" update file, then click upgrade button to start the upgrading process.
4). A "successful upgrade" message will prompt, and camera will reboot after completion of update.

Re-log in to check the firmware version to make sure software upgrade is successful.
Click "Reboot" -> "restore factory default" to restore camera to factory default and reboot. (default IP 192.168.5.163, user name: admin; password admin).

5. Serial Port Communication and Control

AV-1563 could be controlled through RS232/RS485 interface; 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.

5.1 VISCA Protocol Return Command

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 command parameters is accepted
Command Not Executable	z0 61 41 FF	Returned when a command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during

		auto focus.

5.2 VISCA Protocol Control Command

Command	Function	Command packet	Note
AddressSet	Broadcast	88 30 0p FF	p：Address setting
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	
	One Push mode	8x 01 04 38 04 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_AFSensitivity	High	8x 01 04 58 01 FF	Focus sensitivity Setting
	Normal	8x 01 04 58 02 FF	
	Low	8x 01 04 58 03 FF	
CAM_AFZone	Top	8x 01 04 AA 00 FF	Focus Region Setting
	Center	8x 01 04 AA 01 FF	
	Bottom	8x 01 04 AA 02 FF	
	ALL	8x1 01 04 AA 03 FF	
CAM_WB	One Push mode	8x 01 04 35 03 FF	
	One Push Trigger	8x 01 04 10 05 FF	One Push WB Trigger(Enabled during One Push WB mode)
	CAM_WB Mode	8x 01 04 35 pq FF	pq = 00--33 WBMode
CAM_AWBSensitivity	Low	8x 01 04 A9 00 FF	WB Sensitivity Setting
	Normal	8x 01 04 A9 01 FF	
	High	8x 01 04 A9 02 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

Command	Function	Command packet	Note
	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	Reset	8x 01 04 0C 00 FF	Gain Limit Setting
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Gain Limit	8x 01 04 2C 0p FF	p: Gain Positon
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	pq: Bright Positon
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation ON/OFF
	Off	8x 01 04 3E 03 FF	
	Reset	8x 01 04 0E 00 FF	Exposure Compensation Amount Setting
	Up	8x 01 04 0E 02 FF	
	Down	8x 01 04 0E 03 FF	
	Direct	8x 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position
CAM_Back Light	On	8x 01 04 33 02 FF	Back Light Compensation
	Off	8x 01 04 33 03 FF	
CAM_WDRStrength	Reset	8x 01 04 21 00 FF	WDR Level Setting
	Up	8x 01 04 21 02 FF	
	Down	8x 01 04 21 03 FF	
	Direct	8x 01 04 51 00 00 00 0p FF	p: WDR Level Positon
CAM_NR	2D	8x 01 04 53 0p FF	P=0-7 0:OFF
	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_Low-Light Mode	ON	8x 01 04 2D 01 FF	Low-Light Mode Setting
	OFF	8x 01 04 2D 00 FF	
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

Command	Function	Command packet	Note
CAM_Picture effect	B&W-Mode	8x 01 04 63 04 FF	Picture effect Setting
	OFF	8x 01 04 63 00 FF	
CAM_Memory	Reset	8x 01 04 3F 00 pq FF	pq: Memory Number(=0 to 254) Corresponds to 0 to 9 on the Remote Commander
	Set	8x 01 04 3F 01 pq FF	
	Recall	8x 01 04 3F 02 pq FF	
CAM_LR_Reverse	On	8x 01 04 61 02 FF	Image Flip Horizontal ON/OFF
	Off	8x 01 04 61 03 FF	
CAM_PictureFlip	On	8x 01 04 66 02 FF	Image Flip Vertical ON/OFF
	Off	8x 01 04 66 03 FF	
CAM_ColorSaturation	Direct	8x 01 04 49 00 00 00 0p FF	P=0-E 0:60% 1:70% 2:80% 3:90% 4:100% 5:110% 6:120% 7:130% 8:140% 9:150% 10:160% 11:160% 12:180% 13:190% 14:200%
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (=0000 to FFFF)
SYS_Menu	ON	8x 01 04 06 06 02 FF	Turn on the menu screen
	OFF	8x 01 04 06 06 03 FF	Turn off the menu screen
IR_Receive	ON	8x 01 06 08 02 FF	IR(remote commander)receive On/Off
	OFF	8x 01 06 08 03 FF	
IR_ReceiveReturn	On	8x 01 7D 01 03 00 00 FF	IR(remote commander)receive message via the VISCA communication ON/OFF
	Off	8x 01 7D 01 13 00 00 FF	
CAM_SettingReset	Reset	8x 01 04 A0 10 FF	Reset Factory Setting
CAM_Brightness	Direct	8x 01 04 A1 00 00 0p 0q FF	pq: Brightness Position
CAM_Contrast	Direct	8x 01 04 A2 00 00 0p 0q FF	pq: Contrast Position
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 5:720P50 1:1080P50 6:1080P30 2:1080i60 7:1080P25 3:1080i50 8:720P30 4:720P60 9:720P25
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-tilt LimitSet	Set	8x 01 06 07 00 0W 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	W:1 Up Right 0:Down Left 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	

5.3 VISCA Protocol Inquiry Command

Command	Command Packet	Return 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
		y0 50 04 FF	One Push mode
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_AFSensitivityInq	8x 09 04 58 FF	y0 50 01 FF	High
		y0 50 02 FF	Normal
		y0 50 03 FF	Low
CAM_AFZoneInq	8x 09 04 AA FF	y0 01 04 AA 00 FF	Top
		y0 01 04 AA 01 FF	Center
		y0 01 04 AA 02 FF	Bottom
		y0 01 04 AA 03 FF	All
CAM_WBModeInq	8x 09 04 35 FF	y0 50 pq FF	Auto
			pq =WBMode
CAM_AWBSensitivityInq	8x 09 04 A9 FF	y0 50 00 FF	Low
		y0 50 01 FF	Normal
		y0 50 02 FF	High
CAM_RGainInq	8x 09 04 43 FF	y0 50 0B FF	7000K
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter priority
		y0 50 0B FF	Iris priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_Gain LimitInq	8x 09 04 2C FF	y0 50 0p FF	p: Gain Positon
CAM_ BrightPosiInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompModeInq	8x 09 04 3E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_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: 2DNRLevel
CAM_NRLevel(3D) Inq	8x 09 04 54 FF	y0 50 0p FF	P:3D NRLevel
CAM_FlickerModeInq	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_ReverseInq	8x 09 04 61 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_PictureFlipInq	8x 09 04 66 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ColorSaturationInq	8x 09 04 49 FF	y0 50 00 00 00 0p FF	p: Color Gain setting 0h (60%) to Eh (130%)
CAM_IDInq	8x 09 04 22 FF	y0 50 0p FF	p: Gamma ID
IR_ReceiveInq	8x 09 06 08 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
IR_ReceiveReturn		y0 07 7D 01 04 00 FF	Power ON/OFF
		y0 07 7D 01 04 07 FF	Zoom tele/wide
		y0 07 7D 01 04 38 FF	AF ON/OFF
		y0 07 7D 01 04 33 FF	Camera _Backlight
		y0 07 7D 01 04 3F FF	Camera _Memery
		y0 07 7D 01 06 01 FF	Pan_titleDriver
CAM_BrightnessInq	8x 09 04 A1 FF	y0 50 00 00 0p 0q FF	pq: Brightness Position
CAM_ContrastInq	8x 09 04 A2 FF	y0 50 00 00 0p 0q FF	pq: Contrast Position
CAM_FlipInq	8x 09 04 A4 FF	y0 50 00 FF	Off
		y0 50 01 FF	Flip-H
		y0 50 02 FF	Flip-V
		y0 50 03 FF	Flip-HV
CAM_GammaInq	8x 09 04 5B FF	y0 50 0p FF	p: Gamma setting
CAM_Low-LightModeI	8x 09 04 2D FF	y0 50 00 FF	OFF

nq		y0 50 01 FF	ON
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 rs tu : ARM Version vw : reserve
VideoSystemInq	8x 09 06 23 FF	y0 50 0p FF	P: 0~E Video format 0:1080P60 5:720P50 1:1080P50 6:1080P30 2:1080i60 7:1080P25 3:1080i50 8:720P30 4:720P60 9:720P25
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	wwww: Pan Position zzzz: Tilt Position

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

5.4 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

5.5 Pelco-P Protocol Command List

Function	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7	Byte 8
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

6. Maintenance and Troubleshooting

6.1 Maintenance

1) Please power off the camera and disconnect the power adapter from socket, whenever the camera is not in use.
2) Use soft cloth or tissue to clean the camera cover. Wipe it with a soft, dry cloth when cleaning the camera lens. Wipe it gently with a mild detergent if needed. Do not use strong or corrosive detergents to avoid scratching the lens and affecting the video quality.

6.2 Troubleshooting

1) No video output
a. Check the camera power supply, make sure it is connected and the power indicator on the camera is solid green.
b. Check if the camera can perform self-check (move the lens for the entire range) when powered on.
c. Check the video select rotate dial, make sure the video output cable or video display is compatible.

2) No image
Check the video format (system select rotate dial on the rear panel), make sure its format is compatible with your monitor/switcher.

3) Video dithering when zoom-in or out
Check the camera installation, make sure the support is solid and still.

4) Remote control does not work
a. Remote control address is set to 1 (if the machine is set back to the factory defaults, remote control addresses need to be back to 1 too)
b. Check the battery, make sure it has enough capacity.
c. Check the menu setting. Camera control via remote controller is only available after exiting the menu. If video outputs via LAN, menu will not be displayed. Camera menu will automatically close 30sec.

5) Serial port does not work
a. Check the camera serial device protocol, baud rate and address (camera ID), make sure they're consistent with controller's settings.
b. Check the serial cable, make sure it is connected properly.

6) Web pages cannot log in
a. Check whether the network cable is connected properly (Ethernet port indicator light should be flashing yellow). First-time use, please connect the camera directly to your PC.
b. Check if the computer is set to the network segment that is consistent with the IP address of the camera. For details, please refer to: avipas.com-> SUPPORT -> HOW TO MATERIALS -> Access camera via IP.

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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