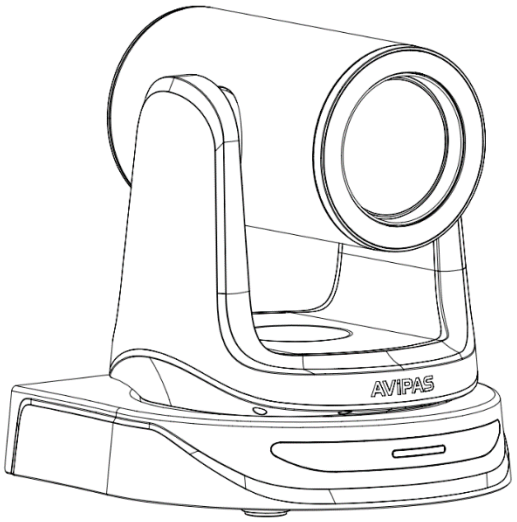
Model: AV-2025
20X HDMI & USB PTZ Camera



User Manual

V1.0

Please read this user manual

thoroughly before using.

www.avipas.com

Preface

Thank you for selecting AViPAS AV-2025 HDMI & USB PTZ Camera. This manual provides comprehensive information on the camera's features, installation procedures, and operational guidelines. Please ensure you read this manual thoroughly before proceeding with the installation and use of the camera.

Precautions

This product should only be used under the specified conditions to avoid damaging the camera:

- Keep dry: Avoid exposure to rain or moisture.
- Do not disassemble: Opening the cover poses a risk of electric shock. If issues arise, please contact an authorized technician.
- User within specified condition: Adhere strictly to recommended temperature, humidity, and power requirements.
- Clean carefully: Wipe gently with a soft, dry cloth. For heavier dirt, use a neutral detergent; avoid solvents.

Note:

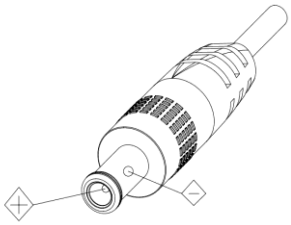
This is a class A production. Electromagnetic radiation at certain frequencies may affect the image quality of TV in home environment.

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Safety Guides

- **Electric Safety:** Installation and operation must accord with electric safety standards.
- **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. The polarity of the power supply plug is shown in the drawing below.

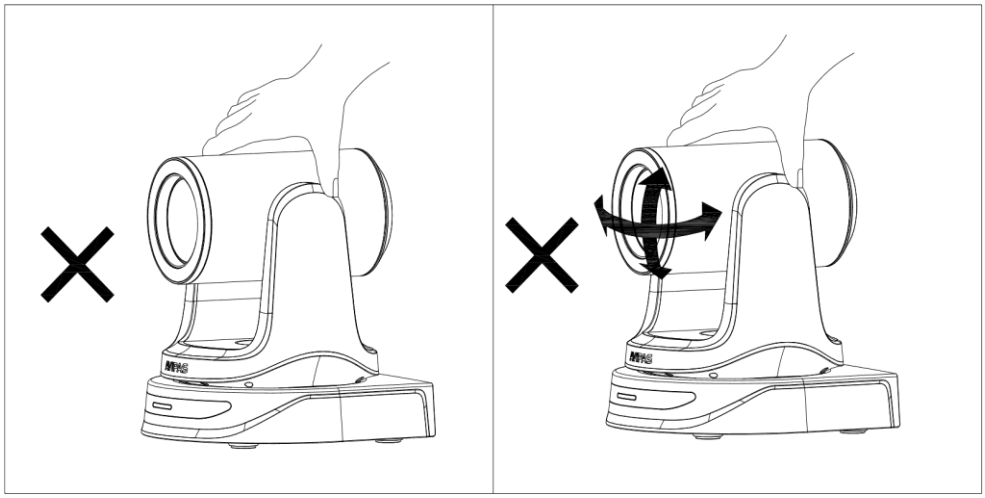


- **Installation precautions**
    1. Do not grasp the camera lens when carrying it. Do not touch the camera lens by hand. Mechanical damage may result from doing so.
    2. Do not use corrosive liquid, gas or solid environment to avoid any cover (plastic material) damage.
    3. Make sure there is no obstacle within rotation range.
    4. Do not power on before the 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!**

Note:

Video quality may be affected by the specific frequencies of the electromagnetic field.

Never grasp the head of the camera or move the camera by hand when it is working. Otherwise, the mechanism may be affected.



Package Included

When unpacked, check if all supplied accessories are included:

Camera ---------- 1pc
Power Adapter (US standard) ----------1pc
Power Cord (US standard) ----------1pc
RS232 Cable (9-Pin DB-9 Female to 8-Pin Mini-Din Male) ----------1pc
USB 2.0 Cable (Type-A to Type-C) ----------1pc
IR Remote Control----------1pc
User Manual ---------- 1pc

Camera Overview

Product Highlights

- **UHD Video Output**: Featuring a 1/2.8-inch Sony CMOS sensor with 2.4MP mega pixels
- **Zoom**: 20x optical zoom, 2x digital zoom lens with 60-degree field of view
- **Multiple Video Output Interface**: Supports HDMI, LAN and USB2.0 Type-C outputs simultaneously, suitable for a variety of applications.
- **Audio Input**: 3.5mm TRS Line-in audio input, embedded out through IP streaming with AAC & LPCM encoding
- **Advanced H.264/H.265 Compression**: Maximizes storage efficiency and minimizes bandwidth usage without compromising image quality
- **2D/3D Noise Reduction and High SNR(≥50db):** Significantly enhances video quality, especially in low-light conditions
- **Easy Adjustable Image Settings**: With both automatic and manual adjustment options, effortlessly fine-tune White Balance, Exposure, Focus, and Iris
- **Preset Position**: Up to 128 preset positions via Serial and IP, 10 preset positions via IR remote
- **Multiple Control Options:** IR Remote control, IP control (RJ45)**,** USB (Type-C), RS232 and RS485 serial
- **Multiple Streaming Protocols**: Supports multiple streaming protocols including RTSP, RTMP, SRT and RTP Multicast, ensuring versatile and reliable video transmission for any application
- **Multiple Control Protocol**: Supports VISCA, PELCO-P, PELCO-D, VISCA over IP, ONVIF and UVC1.1 control protocols; IP VISCA over both TCP and UDP
- **PoE (Power over Ethernet):** With PoE supported, allowing a single Cat5/6 cable for delivering power to the camera, control signal, and video out from camera, simplify installation

Specifications

Camera	**AV-2025B(Black) / AV-2025W(White)**
Sensor	1/2.8-inch Sony CMOS sensor, 2.4MP
Zoom	20x Optical Zoom, 2x Digital Zoom
Lens	f4.9~98mm, F1.5~3.0
Minimum Illumination	0.1 Lux (F1.5)
Horizontal Viewing Angle	View angle: 60°(Far)~3.23°(Near)
Video Format	HDMI： 1920*1080P60/59.94/50/30/29.97/25/24/23.98 ; 1920*1080I60/59.94/50 ; 1280*720P60/59.94/50/30/29.97/25
	IP Streaming: Main Stream: 1920*1080@3~60; 1280*720@3~60; 1024*576 @3~60 Sub Stream: 1280*720@3~60; 1024*576@3~60; 640*360 @3~60
	USB Type-C： YUY2：640*480@10 MJPG/H264/H265: 1920*1080@30/25/20/15/10/5; 1280*720@60/50/30/25/15/10; 720*576@30/25/20/15/10/5;640*480@30/25/20/15/10/5; 320*240@30/25/20/15/10/5
Pan/ Tilt, Auto Tracking Movement & Tally Light	
Pan/Tilt Rotation	Pan: ±170°; Tilt: -30°~+90°
Pan/Tilt Control Speed	Pan: 0 - 120°/sec; Tilt: 0 - 80°/sec
Preset Speed	Pan: 100°/sec; Tilt: 45°/sec; (*Note: recall preset speed)*
Max Preset Positions	IR remote control: 10; Serial RS232/RS485: 128; IP: 128
Image Parameter	
Noise Reduction	2D & 3D
SNR	≥50dB
Exposure	Auto/ Manual/ Shutter/ Iris/ Bright
White Balance	Auto / Manual/ Indoor/ Outdoor/ ATW/ One Push/ Color Temperature (range: 1800k-10000k)
Anti-Flicker	50Hz, 60Hz, OFF
Focus	Auto, Manual
Iris	CLOSE~F11
Shutter Speed	1/30s ~ 1/10000s
Backlight Compensation	On / Off
Flip Horizontal	On / Off
Flip Vertical	On / Off
Gamma	Support
WDR	Off / Dynamic level adjustment
Input/Output Interface	
Video Output	1x HDMI, 1x LAN(RJ45), 1x USB2.0 (Type-C)
Communication Interface	1x 8-pin Mini DIN RS232-in (Female), 1x 8-pin Mini DIN RS232-out (Female),

	1x RS485 (shared with RS232-in port) 1x USB-C
Control Protocol	ONVIF / VISCA / Pelco-D / Pelco-P/ UVC1.1/ VISCA-Over-IP
Audio Input Interface	3.5mm TRS Line-in input, embedded audio out via IP streaming
DC Input	DC12V
RS232 Daisy Chain	Supported up to 7 cameras under VISCA protocol
IP Networking Specification	
Video Encoding Standard	H.264 / H.265
Video Streaming Mode	First streaming, Second streaming
Bitrate Control	Variable Bitrate (VBR), Constant Bitrate (CBR)
Bitrate Range	1024Kbps~16384Kbps
Network Port Speed	1000Mbps
Streaming Protocols	TCP/ IP, UDP, HTTP, RTSP, RTMP/RTMPS, SRT, RTP, etc.
Audio Encoding Format	AAC & LPCM
USB Communication	UVC 1.1
General Specification	
Power Input	DC12V, PoE (IEEE802.3af Standard)
Input Electric Current	Maximum: 1A
Power Consumption	Maximum: 13W
Stored Temperature	-10℃~+50℃
Storage Humidity	20%~95%
Working Temperature	-10℃~+50℃
Working Humidity	20%~80%
Dimension	6.6*6.6*7.1inch (167.5*168*180mm)
Weight	3.1LB (1.4kg)

Camera Interface

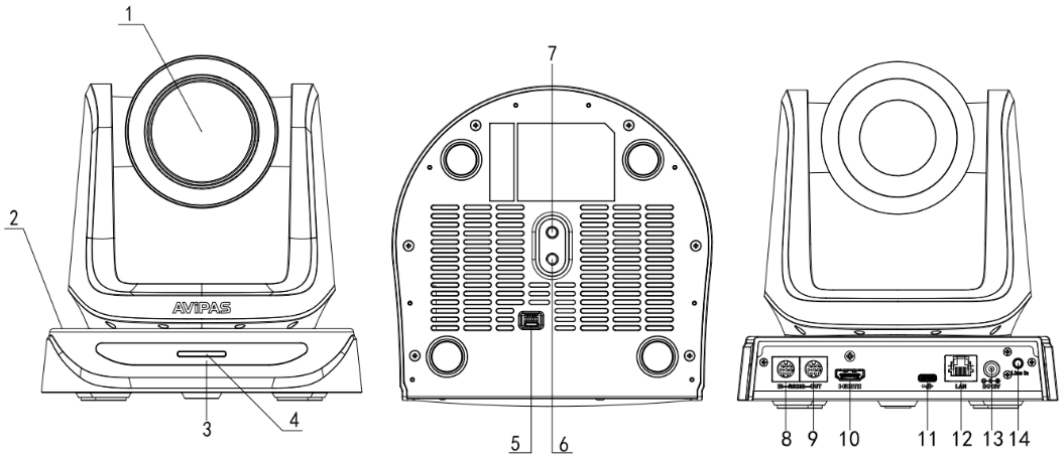


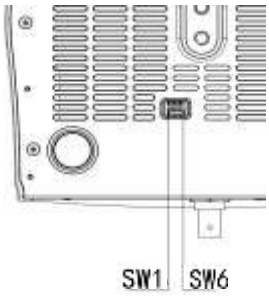
Figure 1.1 Interface Diagram

1. Camera Lens
2. Camera Base
3. IR Receiver Panel
4. Power Indicator Light*
5. Dial Switch**
6. Screw Hole for Tripod (1/4-20”)
7. Installation Hole
8. RS232 8-pin Mini Din (RS485) Input
9. RS232 8-pin Mini Din (RS485) Input
10. HDMI Output
11. USB2.0 Type-C Output
12. RJ45 Network Interface (LAN)
13. DC 12V Power Supply Socket
14. 3.5mm TRS Audio Input (Line-in)

*** 4. Normal working Mode:** Solid Blue color light

**** 5. Dial Switch Indication**

Note: Cameras are set to working mode by default. Please do not adjust the switch unless instructed by AViPAS.



Mode	SW-1	SW-2	Instruction
1	OFF	OFF	Upgrading mode
2	ON	OFF	Debugging mode
3	OFF	ON	Undefined
4	**ON**	**ON**	**Working mode**

	SW-3	SW-4	Instruction
1	OFF	OFF	Reserved
2	ON	OFF	Reserved
3	OFF	ON	Reserved
4	ON	ON	Reserved

	SW-5	SW-6	Instruction
1	OFF	OFF	Undefined
2	**ON**	**OFF**	**Working mode**
3	OFF	ON	Undefined
4	ON	ON	Undefined

Camera Installation

Camera Dimension (mm)

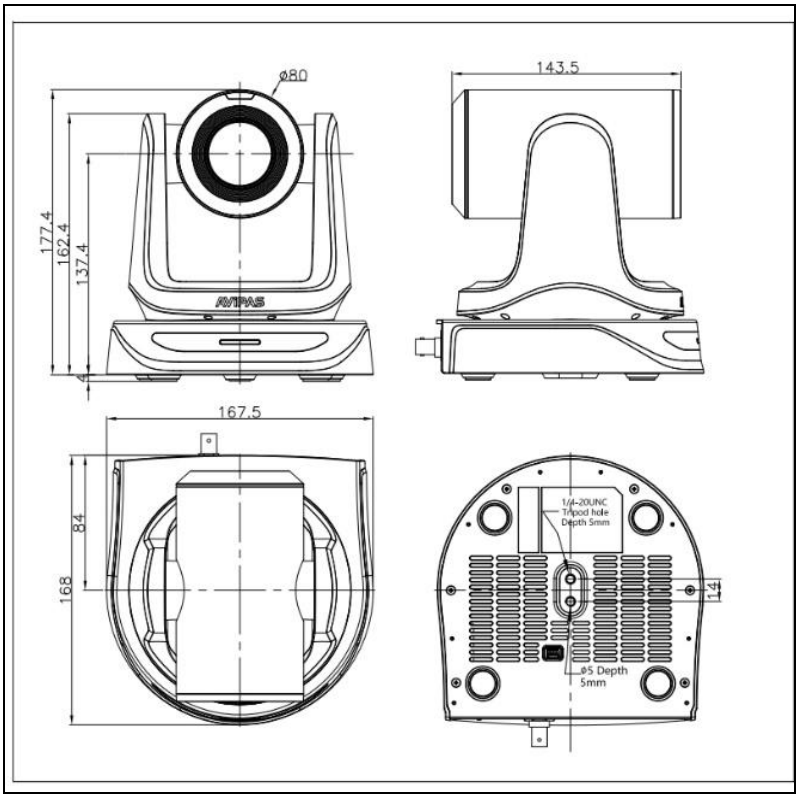


Figure 1.2 Dimension Diagram

Note: mm to inch unit conversion for figure 1.2

143.5mm=5.60 inch	177.4mm=6.98 inch	162.4mm=6.39 inch	137.4mm=5.41 inch
167.5mm=5.60 inch	168.0mm=6.60 inch	84.00mm=3.31 inch	80mm=3.15 inch

Mounting Brackets

Note: Ceiling or wall mounting brackets can only be mounted in a stable place to avoid falling.
For safety reasons, do not install the camera on the plasterboard.

1) Wall Mount Installation (Wall Mount Sold Separately)

Note: Customers may select any wall mount bracket that is compatible with the installation requirements. Or choose from AViPAS wall mount brackets: ***AV-W22G*** *(Black) or* ***AV-W22W*** *(White).*

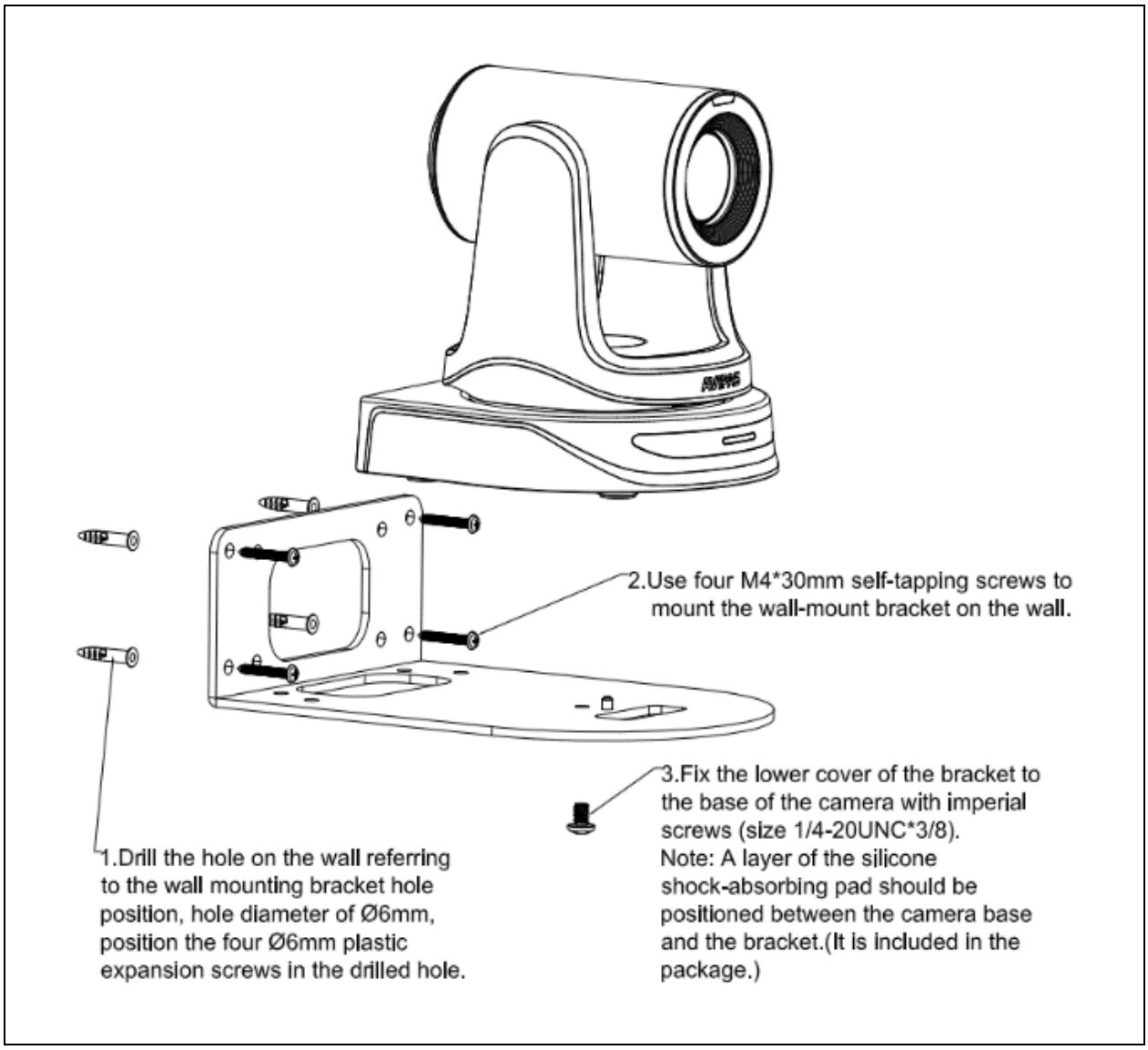


Figure 1.3 Wall Mount Image

Instructions:

1. Drill the hole on the wall referring to the wall mounting bracket hole position, hole diameter of φ6mm, position the four φ6mm plastic expansion screws in the drilled hole.
2. Use four M4*30 self-tapping screws to mount the wall-mount bracket on the wall.
3. Fix the lower cover of the bracket to the base of the camera with imperial screws（SIZE 1/4-20UNC*3/8）
   Note：A layer of silicone shock-absorbing pad should be positioned between the camera base and the bracket. (It is included in the package)

2) Ceiling Mount Installation (Ceiling Mount Sold Separately)

Note: Customers may select any wall mount bracket that is compatible with the installation requirements. Or choose from AViPAS wall mount brackets: ***AV-C20G*** *(Black) or* ***AV-C20W*** *(White).*

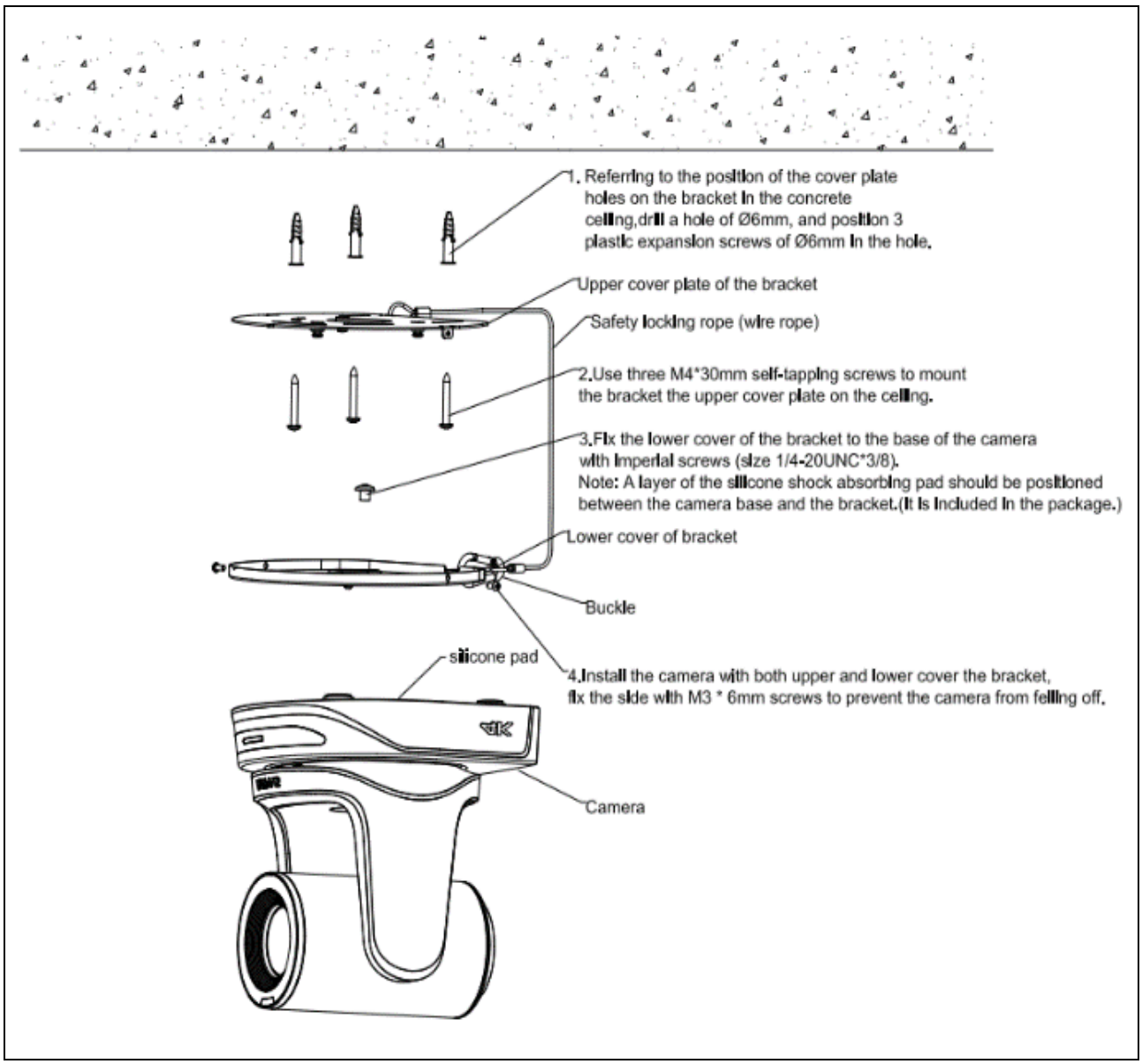


Figure 1.4 Ceiling Mount Image

Instructions:

1. Referring to the position of the cover plate holes on the bracket in the concrete ceiling, drill a hole of φ6, and position 3 plastic expansion screws of φ6 in the hole.
2. Use three M4*30 self-tapping screws to mount the bracket on the upper cover plate on the ceiling.
3. Fix the lower cover of bracket to the base of the camera with imperial screws（Size 1/4-20UNC*3/8）
   Note：A layer of silicone shock-absorbing pad should be positioned between the camera base and the bracket. (It is included in the package).
4. Install the camera with both the upper and lower cover of the bracket, fix the side with M3*6 screws to prevent the camera from falling off.

IR Remote Guide



POWER Button



Under working status, press the POWER button to enter standby mode. Press it again to switch to working mode.

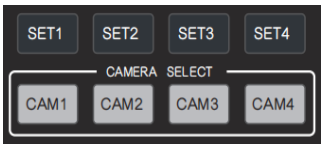
FREEZE （NOT supported through USB output）

Press FREEZE to freeze/ unfreeze the view of image on display.

IRT (IR Transfer/IR Pass)

Open / close the IR pass function. Once pressed the IRT key, the camera will receive and pass the IR remote control signal to the codec/terminal (via VISCA IN port).

SET 1~SET4 (Address Setting)

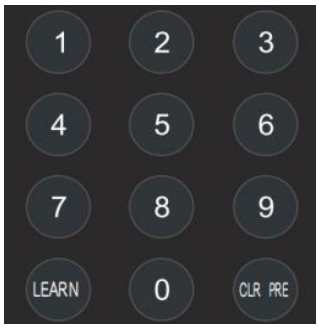


To set the current camera's address (ID), press and hold the key for 3 seconds until the backlight of that key is ON.

CAM1~CAM4 (Camera Selecting)

Press the corresponding camera number to select the camera. The default camera address (ID) is # CAM1

NUMERIC Button (1-9)



Set preset: press and hold the number for 3 seconds to set preset position.

Call preset: press the corresponding number to call preset position. *** If the preset position is set to #0, that will be the new 【HOME】 position*

CLR PRE (Clear Presets)

Press CLR PRE + number key to clear the corresponding preset position. Press and hold the key to clear all existing preset positions.



LEARN+LIMIT L: Set the Pan left limit position.

LEARN+LIMIT R: Set the Pan right limit position.

LEARN+LMT CLR: Clear all limit positions.

SCAN: Reserved



FOCUS: +/- Manually adjust focus, only valid under manual mode

ZOOM: +/- Manually adjust zoom

NAVIGATE Button: ▲Up /▼Down/◄Left/►Right

Under camera normal mode, use navigate keys to pan/ tilt. On the camera On-Screen Display (OSD) menu, use navigate keys to select and enter submenu.

OK Button

Under Working Mode: Press the 【OK】button to return the camera to its 【HOME】position (default is centered).

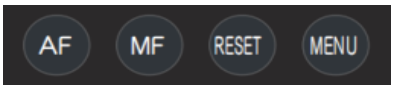
On OSD Menu: Press the 【OK】 button to confirm the selected options

AF: Auto focus

MF: Manual focus

RESET: Long press to reset back to factory default settings

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



F1: Reserved

F2: Reserved

F3: Reserved

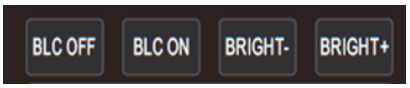
F4: Reserved



BLC OFF: Not available

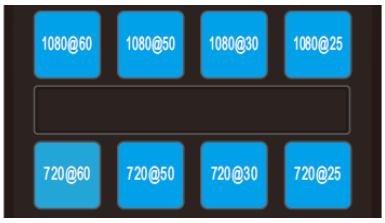
BLC ON: Not available

BRIGHT-/BRIGHT+: Set image brightness, only valid under "Bright priority" exposure mode



VIDEO FORMAT SELECTION: Press and hold for 3 seconds to select video output format.

*** After selection, the image will flicker once and then return to normal, indicating that the video format has been successfully changed.*



Camera OSD (On-Screen Display) Menu

1. Under working mode, press the MENU key on the IR remote control, to enter the OSD menu as shown below:



Figure 1.5 OSD Menu

2. Main Menu Navigation: Press the ▲UP/▼DOWN arrows to select options from the main menu.
3. Sub-Menu Access:
   - Press the ►RIGHT arrow to enter the sub-menu. Use the ▲UP/▼DOWN arrows to navigate through the sub-menu options.
   - Use the ◄LEFT/►RIGHT arrows to adjust the current settings.
4. Returning to Previous Menu: Press the MENU key again to return to the previous menu. Repeat this step to exit the OSD. Or Select "RETURN" to previous menu, then Press MENU key to exit the OSD.

System Setting

MAIN MENU	SUB MENU	DESCRIPTIONS /VALUE	DEFAULT
SYSTEM	LAUGUAGE	English	English
	PROTOCOL	Optional: VISCA/ PELCO-P/ PELCO-D	VISCA
	ADDRESS	VISCA: 1~7, PELCO-P/D: 0~255	1
	BAUDRATE	2400/ 4800/ 9600/ 115200	9600
	PTZ SPEED	Pan Tilt speed: 5~24	18
	RETURN	Return to previous menu	

Focus Setting

MAIN MENU	SUB MENU	DESCRIPTIONS /VALUE	DEFAULT
FOCUS	FOCUS MODE	AUTO/MANU/PUSH	AUTO
	FOCUS LIMIT	1.5M/2M/3M/6M/10M	1.5M
	RATIO DIS	Zoom ratio display	OFF
	ZOOM SPEED	Zoom speed: 0~7	5
	RETURN	Return to previous menu	

Exposure Setting

MAIN MENU	SUB MENU	DESCRIPTION /VALUE	DEFAULT
EXPOSURE	EXPOSURE MODE	AUTO/ MANUAL/ SHUTTER/ IRIS/ BRIGHT	AUTO
	SHUTTER	1/30s~1/10000s, only valid under MANUAL	AUTO
	IRIS	0~F13, only valid under MANUAL	AUTO
	GAIN	0~15, only valid under MANUAL mode	AUTO
	BRIGHT	0~27, only valid under BRIGHT priority mode	
	FLICK	Anti-Flicker: 50Hz/60Hz/OFF	50Hz
	BACKLIGHT	ON/OFF	OFF
	GAMMA	0~6	0
	RETURN	Return to previous menu	

Image Setting

MAIN MENU	SUB MENU	DESCRIPTION /VALUE	DEFAULT
IMAGE	WB MODE	AUTO/IDR/ODR/PUSH/ATW/MANU/MANU2 /SON/FL	ATW
	B-GAIN	0~255, only valid under manual WB mode	AUTO
	R-GAIN	0~255, only valid under manual WB mode	AUTO
	DEFOG	0~15/OFF	OFF
	RETURN	Return to previous menu	

Quality Setting

MAIN MENU	SUB MENU	DESCRIPTION/VALUE	DEFAULT
QUALITY	2D NR	ON/OFF	OFF
	3D NR	OFF/AUTO/1~4, Higher value: Reduces motion noise in the image, slightly lower resolution; Lower value: Preserves higher resolution, more motion noise in the image.	AUTO
	SHARPNESS	0~15	3
	CONTRAST	0~15	8
	SATURATION	0~15	8
	BRIGHT	0~15	8
	D-WDR	0~6, OFF	OFF
	RETURN	Return to previous menu	

CTRL

MAIN MENU	SUB MENU	DESCRIPTION /VALUE	DEFAULT
CTRL	MIRROR	ON/OFF	OFF
	FLIP	ON/OFF	OFF
	D/N MODE	DAY/NIGHT	DAY
	GAIN LIMIT	GAIN LIMIT	128
	RETURN	Return to previous menu	

Video Format

MAIN MENU	SUB MENU		NOTE
FORMAT	1080P60	1080P59.94	After selecting the video format, press OK to confirm. ***Note:*** *The IR remote can only change the video format for* ***HDMI*** *output.* ● *To change the video format for* ***IP****, use the* ***Web UI****.* ● *To change the video format for* ***USB*** *output, use the* ***PC****.*
	1080P50	1080P30	
	1080P29.97	1080P25	
	1080P24	1080P23.98	
	1080I60	1080I59.94	
	1080I50	720P60	
	720P59.94	720P50	
	720P30	720P29.97	
	720P25		
	RETURN	Return to previous menu	

Network Setting

MAIN MENU	SUB MENU	DESCRIPTION	NOTE
NETWORK	DHCP	ON/OFF (default: OFF)	Use the up, down, left, and right navigation keys to select an item. Enter parameters using the numeric keys.
	ADDRESS	192.168.001.188	
	NETMASK	255.255.255.000	
	GATEWAY	192.168.001.001	
	RETURN	Return to previous menu	

*NOTE**:** When DHCP is "**OFF**," the camera IP address can be changed manually.*

*When DHCP is "**ON**," all default settings will be disabled. At this time, if the camera is connected directly to a managed network switch, the camera will automatically be signed with a new IP address.*

Reset Setting

MAIN MENU	SUB MENU	DESCRIPTION
RESET	CAMERA RESET	Reset all camera's image settings to factory default*
	PTZ RESET	Reset pan/tilt presets back to factory default
	ALL RESET	Reset all parameters back to factory default
	RETURN	Return to the previous menu

NOTE: "Camera Reset" only restores camera image settings to factory defaults. The camera's IP address, username, and password will remain unchanged.

Info Setting

MAIN MENU	SUB MENU	DESCRIPTION
INFO	CONTROL VER	Camera control firmware version
	CONTROL DATE	Camera control firmware releasing date
	FORMAT	Current video output format
	BAUDRATE	Current RS232 baud rate
	IP	Camera IP address
	NET MASK	Current subnet mask
	RETURN	Return to the previous menu

Camera Web UI

Access Camera via IP (computer)

Prerequired: The camera and PC must be in the same Local Area Network (LAN). It required the first three segments of their IP addresses to be identical, while the fourth segment is unique.

- Example: Camera current IP Address is: ***192.168.1.188***; PC's IP Address must be in the range of: ***192.168.1.XXX*** (*where XXX is any number different from 188, but less than 255).*

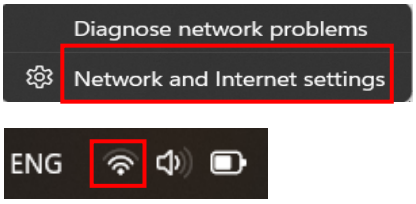
Tips: The IP address of each device in this network must be unique.

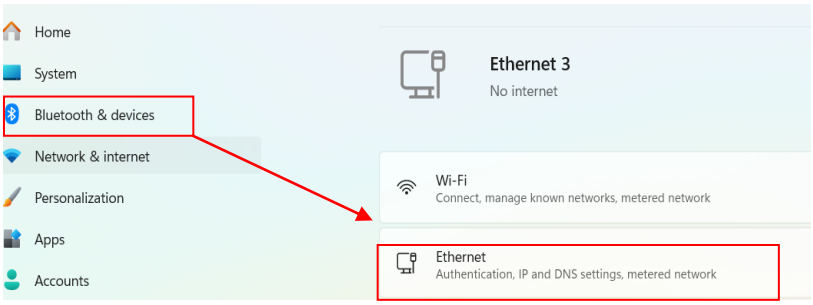
Assigning IP Address for PTZ Camera and PC to a same Local Area Network (LAN)

Windows User:

Step 1: **Connect Camera and PC** directly via **Ethernet Cable**, Or Connect both Camera and PC to a same Network switch (router or PoE switch) via Ethernet Cable

Step 2: From your PC, On the bottom-right corner of your PC, [right click] on the Network icon, then click on the **[Open Network and Internet Settings]** -> Click [**Network & internet**]-> Click [**Ethernet**]







Step 3: Click on [**Edit**] for "IP assignment"

Select "IP assignment" to [**Manual**], Turn [IPv4] "**ON"**

According to current **Camera IP address:** ***192.168.1.188***

(AV-2040 default IP address), to make PC IP address range ***192.168.1.XXX***

(the *first three segment must be same, while 4th must be unique*).

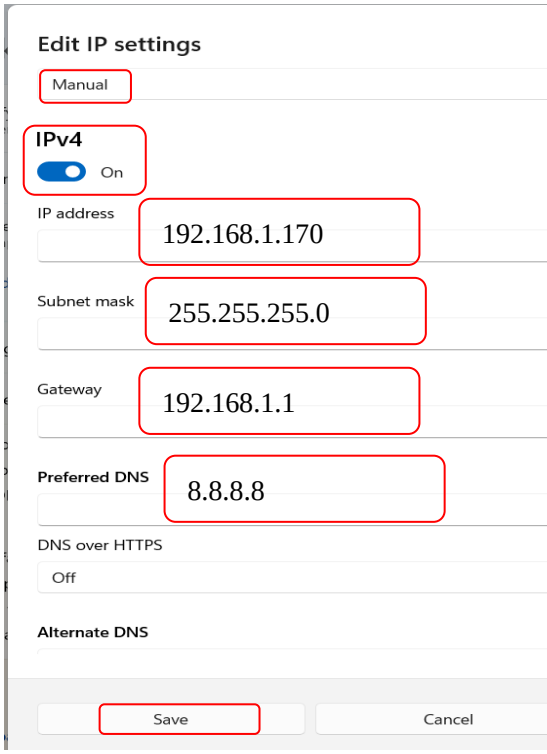
Change PC IPv4 address to: ***192.168.1.170***

Sub mask: ***255.255.255.0***

IPv4 gateway: ***192.168.1.1***

DNS: ***8.8.8.8*** (*different internet server may have different DNS)*

Click [**Save**]



Tips: *Gateway IPv4 address, the last digit must be number "1"*

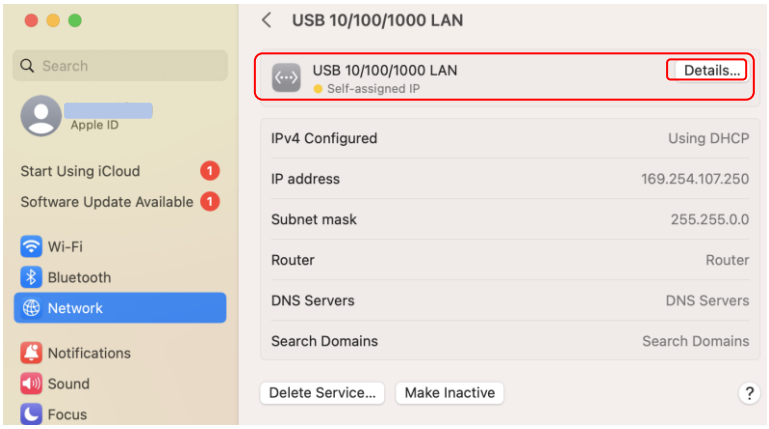
How to find current Camera IP address:

- *use IR remote to open OSD-> "INFO" setting-> camera's IP address*
- *use IR remote, long press [RESET] key, camera will back to factory default IP address 192.168.1.188*
- *Turn off camera and then turn on, the IP address will be shown on the display via HDMI or SDI connection*

For Mac User:

Step 1: **Connect Camera and PC** directly via **Ethernet Cable**, Or Connect both Camera and PC to a same Network switch (router or PoE switch) via Ethernet Cable

Step 2: From your Mac, go to [**System Settings**]-> Click [**Network**]-> [**LAN**] or [**Ethernet**] settings



Step 3: Click [**Details**] -> Click [**TCP/IP**]

From the Configure IPv4 menu, select [**Manually**].

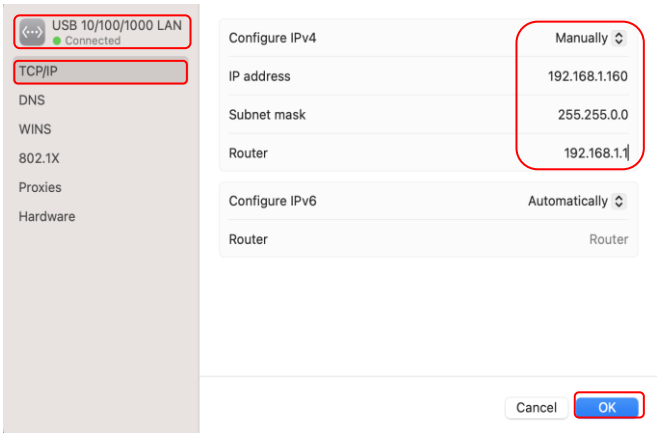
Change IPv4 Address to be consistent with the camera IP address. For example, **Camera IP address: *192.168.1.188***

Change PC IPv4 address to: *192.168.1.160*

Sub mask: *255.255.0.0* or *255.255.255.0*

Router: *192.168.1.1*

Click [**OK**]



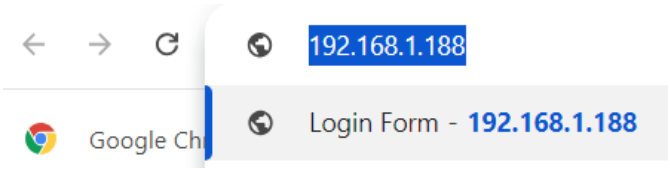
Tips: Router address, first three segment must be as same as camera IP address, the 4th digit must be number "1"

How to find current camera IP address, see page 16

Note: For more detailed tech support, please refer to: avipas.com-> SUPPORT -> "HOW TO" MATERIALS -> "Access camera via IP."

Web UI Login

Open a web browser, input Camera IP address. In this case, take AV-2025 as an example, the default AV-2025 IP address is 192.168.1.188.

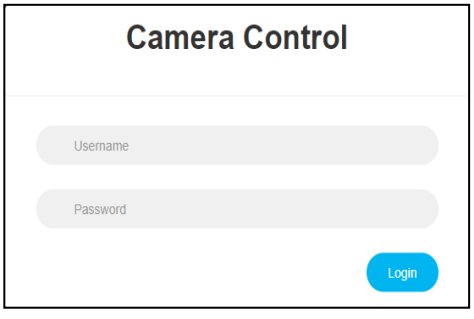


Then Logo in page will appear, enter Username and Password:

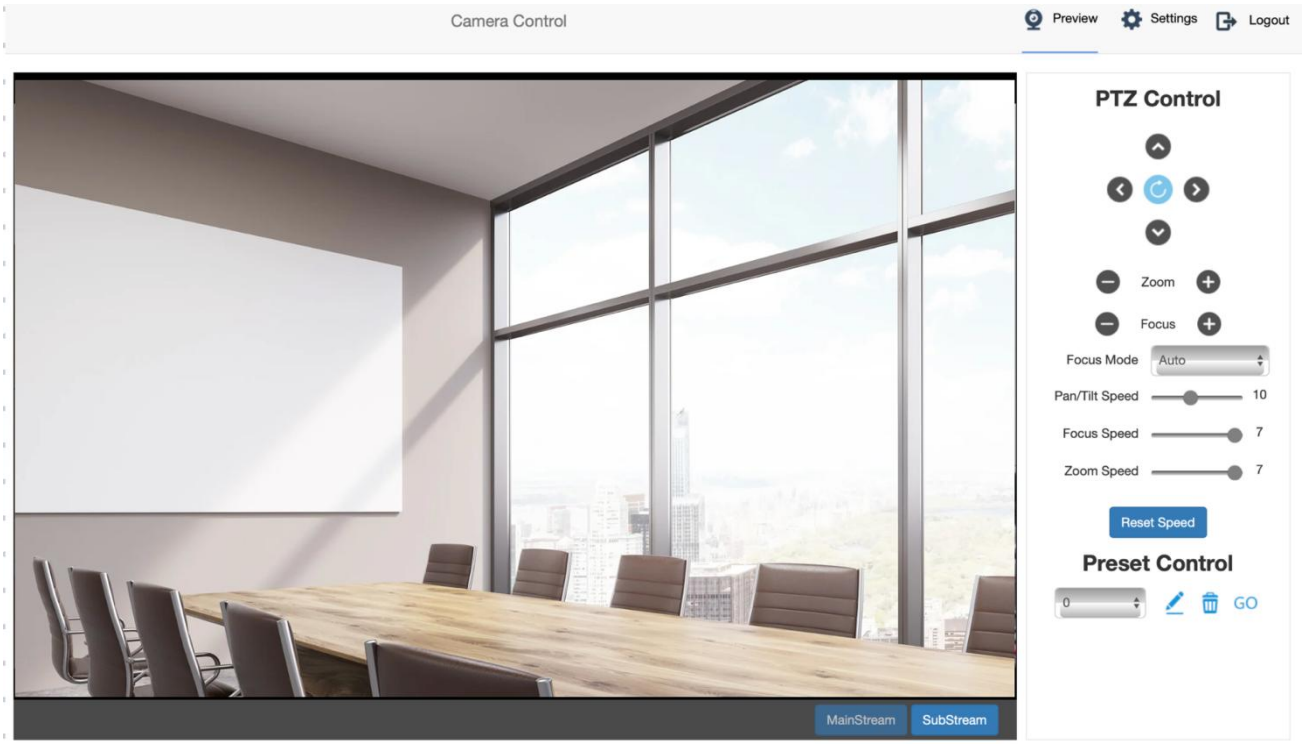
Default username: **admin**

Default password: **admin**

Click **"Login"**



Preview



Top-right corner: Navigation bar for "Preview," "Settings," and "Logout".
Right-side panel: PTZ (Pan-Tilt-Zoom) control panel with options for pan, tilt, zoom movements, focus mode selection, preset controls, and speed adjustments for PTZ and focus functions.
Bottom-right corner of the preview area: Users can switch between Main-Stream and Sub-Stream video previews.

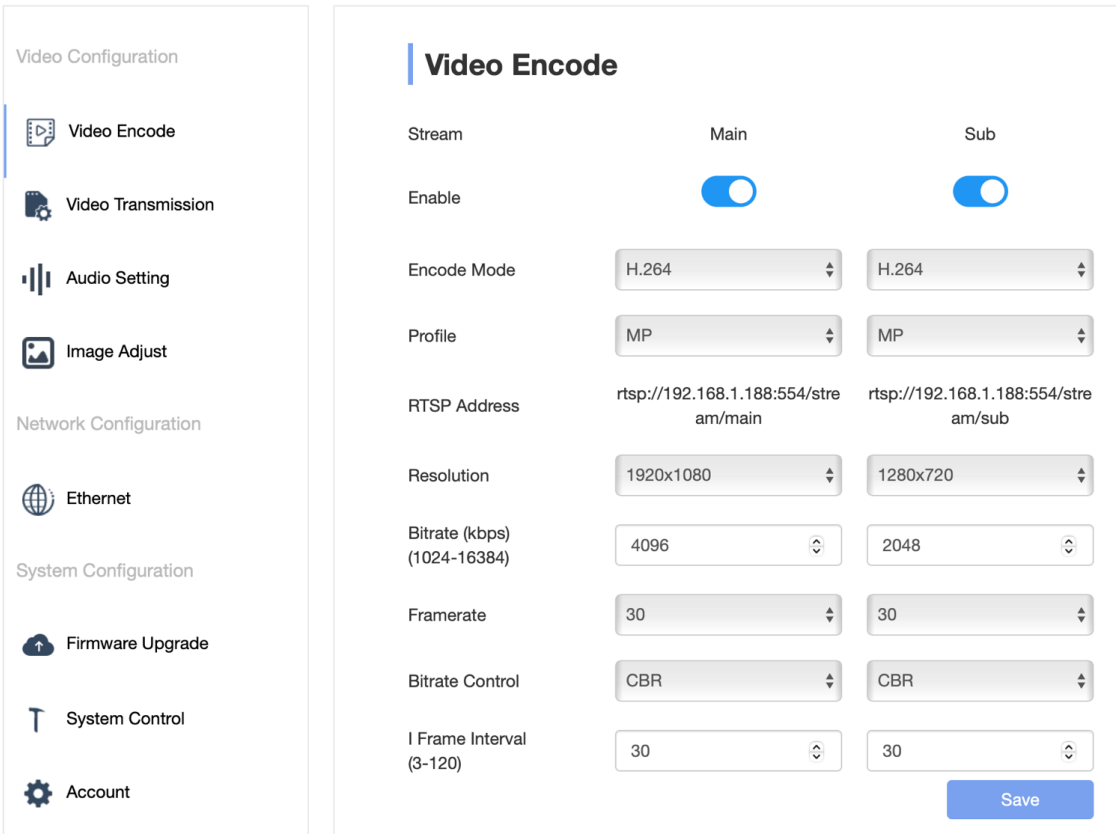
Settings

Click "**Settings**" to enter camera configuration interface with sub-menu on the left.

Video Configuration

1). Video Encode (RTSP Streaming)

Set the image encoding mode for both the main stream and sub-stream, including resolution, bit rate, frame rate, bit rate control, and I-frame interval. Adjust these parameters based on your specific network conditions.



Note: stream name is: 554/stream/main

For example: The default IP address of the camera is 192.168.1.188. To obtain video via RTSP stream, please use the URL below:

Main stream: rtsp://192.168.1.188:554/stream/main

Sub stream: rtsp://192.168.1.188:554/stream/sub

2). Video Transmission Settings (RTMP/SRT/RTP multicast streaming)

Set RTMP/SRT/RTP Multicast streaming parameters.

To push RTMP stream to a server or public platforms, please make sure the camera's IP configurations are set to be consistent with the public network, otherwise it will not connect to server successfully.



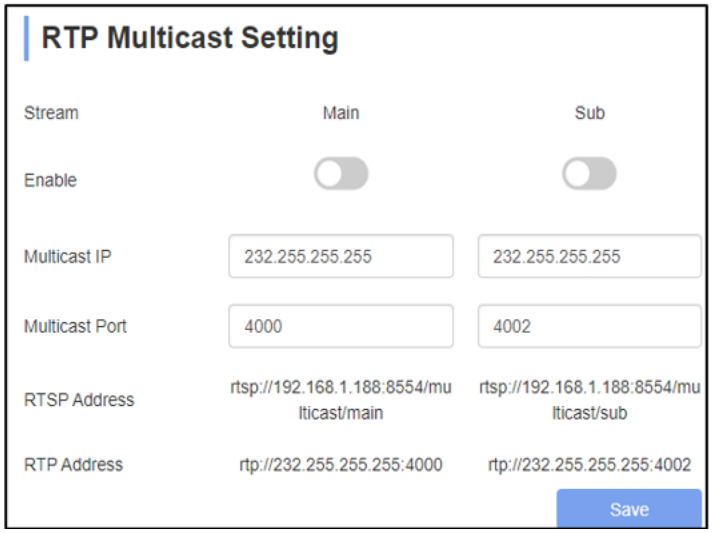
Note:

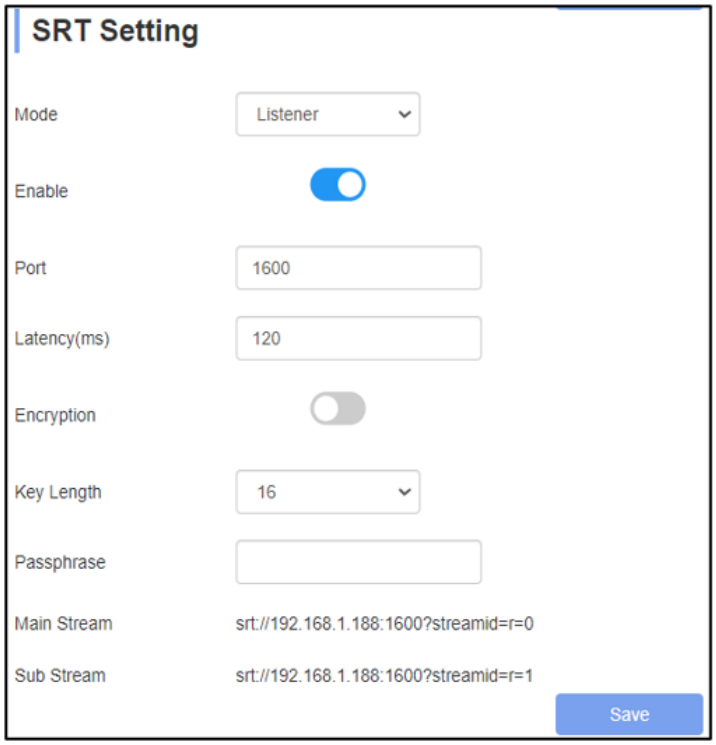
This is an indicator for RTMP streaming connection.

"Red": Not in Streaming or NO Connection

"Blue": Streaming & Stable Connection

Must Turn on [Audio State] in Audio Settings



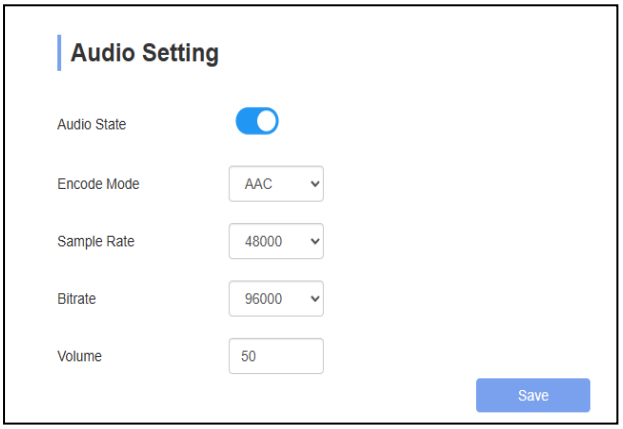


For more information regarding streaming settings, please refer to: www.avipas.com-> SUPPORT -> "HOW TO" MATERIALS -> How to live stream via RTMP(S), SRT, RTSP. Or contact us at service@avipas.com

3). Audio Settings

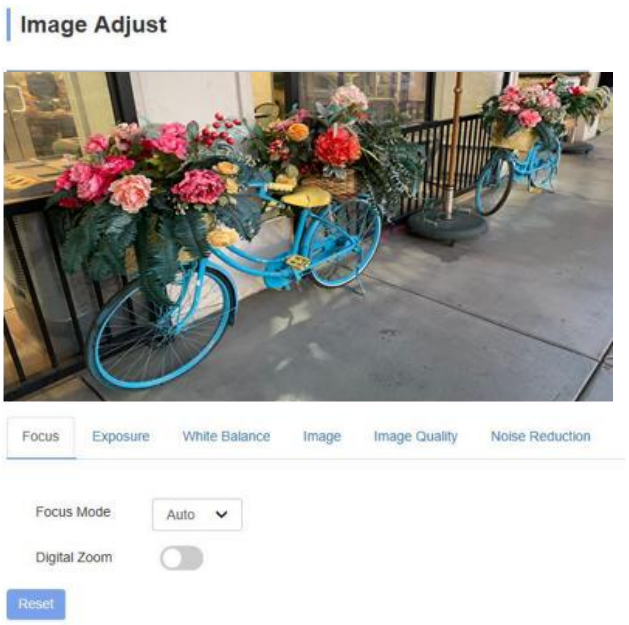
Audio State: To enable/disable embedded audio. Audio encoding mode can be selected (AAC or LPCM). Parameters such as sampling rate, bit rate and volume can be adjusted.

Note: when doing RTMP streaming, must turn [Audio State] ON

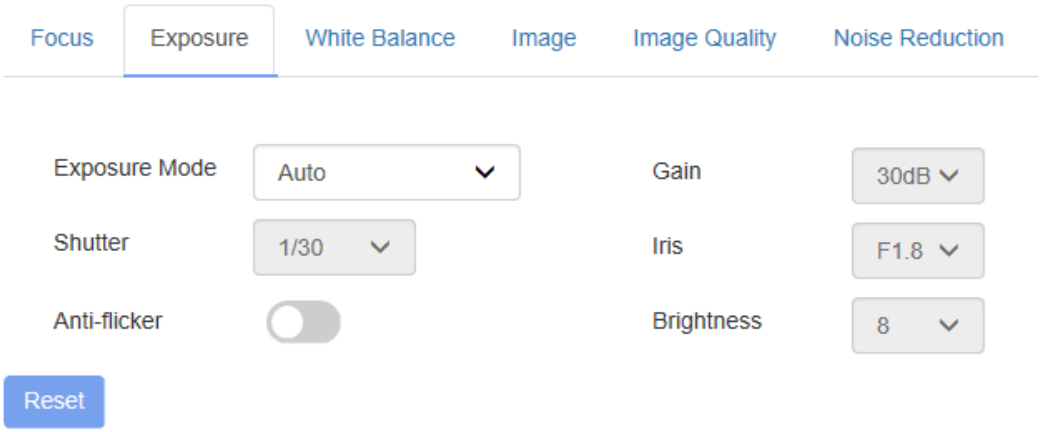


4). Image Settings

Image Adjust: set focus, exposure, white balance, image, image quality, noise-reduction, as the following picture:
Focus: focus mode options, focus sensitivity & digital zoom.



Exposure includes exposure mode, shutter speed, gain, iris, brightness & anti-flicker options.



White Balance: white balance mode, red gain, blue gain, color temperature.

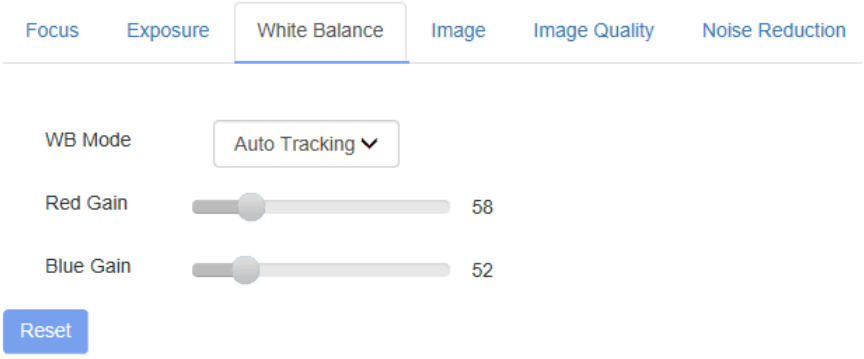


Image: settings for image flip (mirror and vertical flip), backlight compensation, image freeze, Gamma, WDR (wide dynamic range).

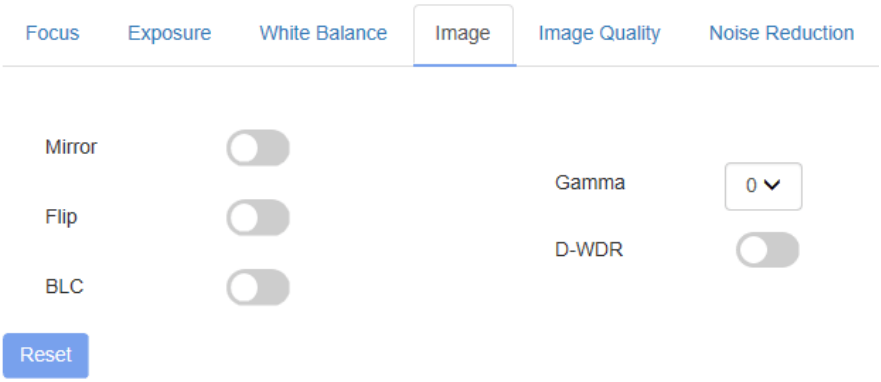
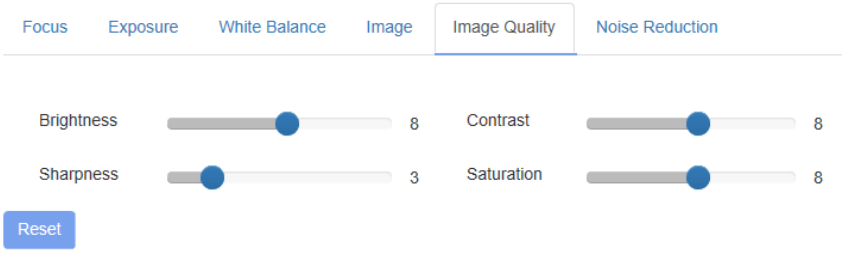
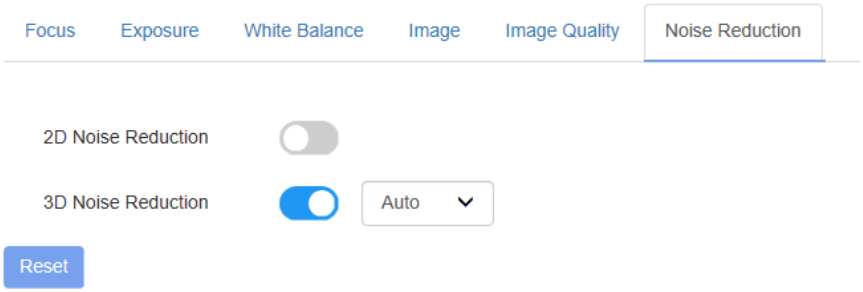


Image Quality: adjustment for brightness, sharpness, contrast, saturation.

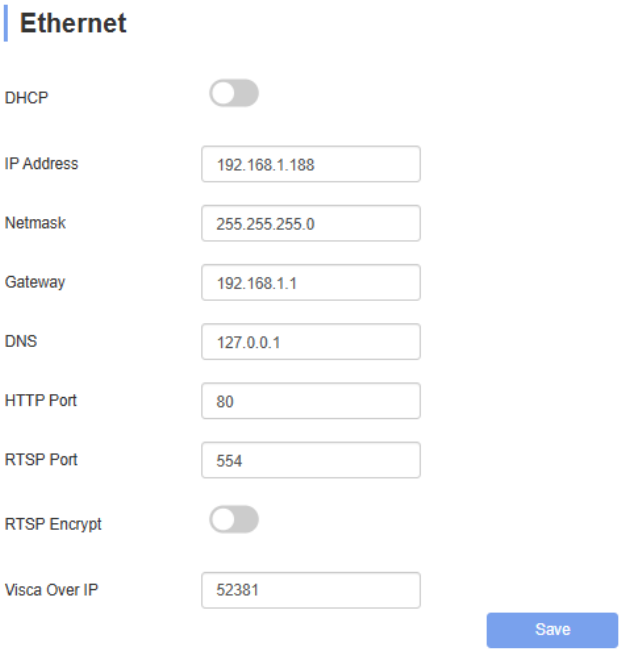


Noise reduction: 2D/3D reduction. There is on/off option for 2D, and off/auto/1~4 selections.



Network Configuration:

For setting up DHCP mode, change IP address, subnet mask, default gateway, http port, web port, main stream port and sub stream port.



Default IP settings are as follows:

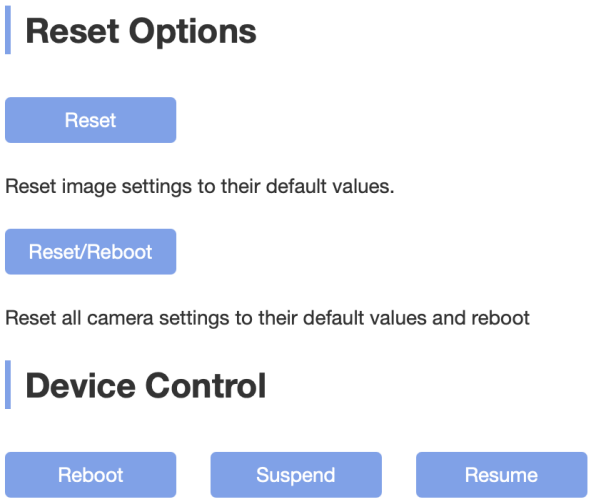
DHCP: OFF	**Gateway:** 192.168.1.1	**RTSP Port:** 554
IP Address: 192.168.1.188	**DNS:** 192.168.1.1	**RTSP Encrypt:** OFF
Netmask: 255.255.255.0	**HTTP Port:** 80	**VISCA OVER IP Port:** 52381
Username/PSW: admin/admin	**ONVIF Port:** 8000	

System Configuration

1). Firmware Upgrade



2). System Control



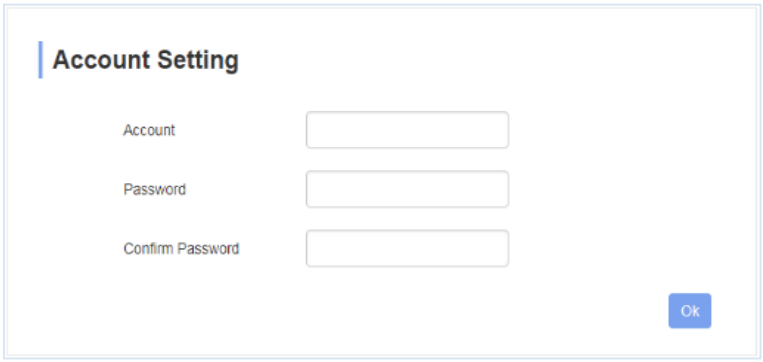
Reset Options: To reset the camera to default settings.

- Reset: reset camera image settings to default values.
- Reset/Reboot: reset all camera settings back to factory default settings (including IP configurations, image settings, tracking settings and protocol), and reboot camera.

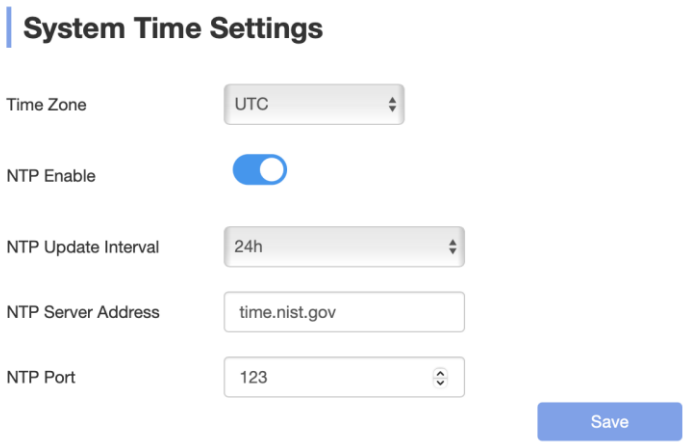
Device Control:

- Reboot: Restart camera
- Suspend: Enter sleep mode
- Resume: Resume to working mode

3). Account Setting: To set camera account login ID and password.



4). System Time: To set the time zone and NTP enable.



UVC Control

1. Make sure the USB2.0 camera output is connected to the USB2.0 port on the PC/MAC, and it is recognized by the PC Device Manager. If connected to the USB3.0 port, video resolution may be compromised.
2. The interval of control commands sent from the server (via USB) to the camera should be no less than 250ms.

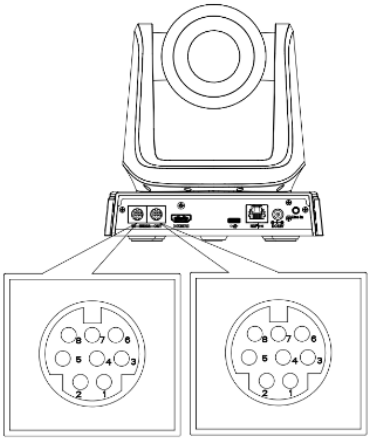
PU_BRIGHTNESS_CONTROL	81 01 04 4d 00 00 0p 0q FF
PU_CONTRAST_CONTROL	81 01 04 A2 00 00 0p 0q FF
PU_SATURATION_CONTROL	81 01 04 A1 00 00 0p 0q FF
PU_SHARPNESS_CONTROL	8x 01 04 42 00 00 0p 0q FF
PU_GAMMA_CONTROL	8x 01 04 5B 0p FF
PU_WHITE_BALANCE_TEMPERATURE_CONTROL	8x 01 04 35 0X FF
PU_BACKLIGHT_COMPENSATION_CONTROL	81 01 04 33 02/03 FF
PU_POWER_LINE_FREQUENCY_CONTROL	8x 01 04 AA 00/01/02 FF
CT_ZOOM_ABSOLUTE_CONTROL	8x 01 04 47 0p 0q 0r 0s FF
CT_PANTILT_ABSOLUTE_CONTROL	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z F
CT_PANTILT_RELATIVE_CONTROL	8x 01 06 01 pp qq rr ss FF
CT_ZOOM_RELATIVE_CONTROL	8x 01 04 07 pp FF

Serial Control

AV-2025 could be controlled through RS232 and RS485 interface. Serial parameters are as below:

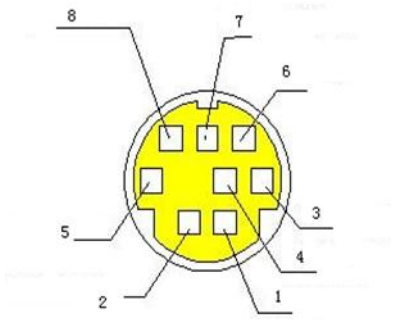
Parameter	Value	Parameter	Value
Baud rate	2400/4800/9600/115200	Stop Bit	1bit
Start Bit	1 bit	Check Bit	None
Data Bit	8 bit		

1). RS-232 Interface (female 8-pin Mini DIN) Definition



	PIN NO	CAM RS232 IN	CAM RS232 OUT
RS232	1	DTR	DTR
	2	DSR	DSR
	3	TXD	TXD
	4	GND	GND
	5	RXD	RXD
RS485	6	A (+)	NO CONNECTION
	7	IR OUT	
	8	B (-)	

2). Camera Mini-Din 8-pin RS-232 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). Connection illustration:

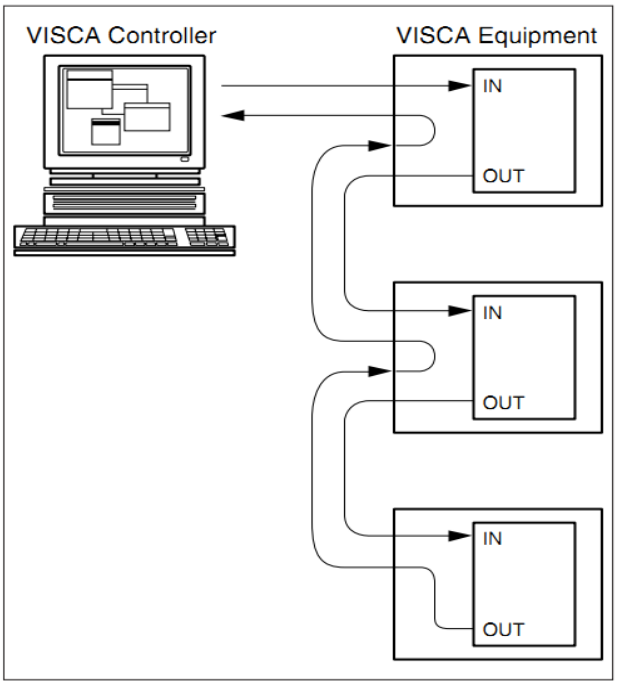
Camera Daisy Chain Control

Camera RS232 IN (Female)		8-pin Mini DIN (Male)	
1	DTR	1	DTR
2	DSR	2	DSR
3	TXD	3	TXD
4	GND	4	GND
5	RXD	5	RXD
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC

Camera RS232 with DB-9 Connection

Camera RS232 IN		Windows DB-9	
1	DTR	1	DCD
2	DSR	2	RXD
3	TXD	3	TXD
4	GND	4	DTR
5	RXD	5	GND
6	A (+)	6	DSR
7	IR OUT	7	RTS
8	B (-)	8	CTS
		9	RI

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.NC	6.NC
7.IR OUT	7.NC
8. NC	8.NC

Protocol Commands

VISCA Protocol Commands

Part1 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 adderss+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.

Part 2 Camera Control Commands

Command type	**function**	**command**	
AddressSet	Broadcast	88 30 01 FF	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)~7(high)
	Wide (Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position (0(wide) ~0x4000(tele))
	Direct with speed	8x 0A 04 47 0t 0p 0q 0r 0s FF	t: spd 0~7 pqrs: zoom position (0(wide) ~0x4000(tele))
CAM_DZoom	ON	8x 01 04 06 02 FF	
	OFF	8x 01 04 06 03 FF	
	Combine Mode	81 01 04 36 00 FF	Combine with optical zoom control
	Separate Mode	81 01 04 36 01 FF	Separate from optical zoom control
	Stop	81 01 04 06 00 FF	Enable In separate mode
	Tele (Variable)	81 01 04 06 2p FF	Enable In separate mode
	Wide (Variable)	81 01 04 06 3p FF	Enable In separate mode
	Direct	81 01 04 46 0p 0q 0r 0s FF	Enable In separate mode
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far (Standard)	8x 01 04 08 02 FF	

Command type	function	command	
	Near (Standard)	8x 01 04 08 03 FF	
	Far (Variable)	81 01 04 08 2p FF	p=0 (Low) to 7 (High)
	Near (Variable)	81 01 04 08 3p FF	p=0 (Low) to 7 (High)
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: focus position
	Auto Focus	81 01 04 38 02 FF	
	Manual Focus	81 01 04 38 03 FF	
	One Push AF	8x 01 04 18 01 FF	
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: zoom position (0(wide)~ 0x4000(tele)) tuvw:focus position
CAM_WB	Auto	8x 01 04 35 00 FF	
	Indoor	8x 01 04 35 01 FF	
	Outdoor	8x 01 04 35 02 FF	
	OnePush	8x 01 04 35 03 FF	
	ATW	8x 01 04 35 04 FF	
	Manual	8x 01 04 35 05 FF	
	Sodium lamp	8x 01 04 35 08 FF	
	fluorescent	8x 01 04 35 09 FF	
	OnePush Trigger	8x 01 04 10 05 FF	
CAM_RGain	Reset	8x 01 04 03 00 FF	R Gain manual control
	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 (0~0xFF)
CAM_Bgain	Reset	8x 01 04 04 00 FF	B Gain manual control
	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 (0-0xFF)
CAM_AE	Full Auto	81 01 04 39 00 FF	Automatic Exposure mode
	Manual	81 01 04 39 03 FF	Manual Control mode
	Shutter Priority	81 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	81 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	81 01 04 39 0D FF	Bright Mode (manual control)
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 (0~0x15)
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting(0~0xD)
	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 (0~ 0x11)
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting (0~0x0F)
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 0C 00 00 0p 0q FF	pq: Gain Positon (0~0x0E)
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	

Command type	function	command	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	pq: Bright l Positon (0~0x1B)
CAM_OverallBright	Direct	8x 01 04 A4 00 00 0p 0q FF	pq: Bright l Positon (0~0x0F) different with AE BRIGHT
CAM_WDR	On	8x 01 04 3D 02 FF	ExposureCompensation ON/OFF
	Off	8x 01 04 3D 03 FF	
	Direct	8x 01 04 D3 pq FF	pq: ExpComp Position (0~0x6)
CAM_BackLight (BLC)	On	8x 01 04 33 02 FF	Backlight On
	Off	8x 01 04 33 03 FF	Backlight Off
CAM_Sharpness	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 (0~0x0F)
CAM_Memory(preset)	Reset	8x 01 04 3F 00 0p FF	p: Preset Number (=0 to 127) Corresponds to 0 to 9 on the Remote Commander
	Set	8x 01 04 3F 01 0p FF	
	Recall	8x 01 04 3F 02 0p 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_RS485Ctl	On	8x 01 06 A5 02 FF	
	Off	8x 01 06 A5 03 FF	
CAM_Saturation	Saturation	8x 01 04 A1 00 00 0p 0q FF	Pq: saturation level 0x00~0xff
CAM_Contrast	Contrast	8x 01 04 A2 00 00 0p 0q FF	Pq: contrast level 0x00~0xff
CAM_SpeedByZoom	On	8x 01 06 A0 02 FF	
	Off	8x 01 06 A0 03 FF	
CAM_Preset Freeze Set	Preset Freeze Set	8x 01 04 76 0p FF	p: Preset Freeze switch 3=OFF, 2=ON
CAM_Preset Speed Set	Preset Speed Set	8x 01 7E 01 0B pp qq FF	pp: Preset NO. qq: Preset Speed 2~24 default:15
CAM_Preset Speed Adj	Preset Speed Adj	8x 01 7E 01 1B 0p FF	p: Adjustment of direction 3=down, 2=up
CAM_PTSpeed	PT Speed	8x 01 04 C1 00 00 0p 0q FF	Pq: PT speed 0x05~0x18
CAM_ZoomSpeed	Zoom Speed	8x 01 04 D1 00 00 0p 0q FF	Pq: Zoom speed 0x01~0x07
CAM_ZoomDisplay	On	8x 01 06 C2 02 FF	
	Off	8x 01 06 C2 03 FF	
CAM_IRaddress	IR address	8x 01 06 D8 0p FF	p: IR address 1~4
CAM_Gamma	Gamma set	81 01 04 5B 0p FF	P: Gamma NO (0~6)
CAM_MountMode	UP	8x 01 04 A4 02 FF	Mount Up
	Down	8x 01 04 A4 03 FF	Mount Down
CAM_ColorGain	Direct	8x 01 04 49 00 00 00 0p FF	(0~0x0E)
CAM_2D Noise Reduction	Direct	8x 01 04 53 0p FF	0 – OFF 1 – ON
CAM_3D Noise Reduction	Direct	8x 01 04 54 0p FF	0 – OFF 1 – AUTO 2-5 – level
FLICK	50HZ	81 01 04 23 01 FF	
	60HZ	81 01 04 23 02 FF	
	OFF	81 01 04 23 00 FF	
VideoSystem Set		8x 01 06 35 00 pp FF	pp: Video format

Command type	function	command	
			1080P60 0x2E 1080P50 0x2F 1080I60 0x01 1080I50 0x04 1080P30 0x06 1080P25 0x08 720P60 0x09 720P50 0x0C 720P30 0x0E 720P25 0x11
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (=0000 to FFFF)
IP address control	IP set	8x 01 04 AB 0p 0q 0r 0s 0m 0n 0x 0y FF	Set ip to: pq.rs.mn.xy
	Mask set	8x 01 04 AC 0p 0q 0r 0s 0m 0n 0x 0y FF	Set mask to: pq.rs.mn.xy
	Gateway set	8x 01 04 AD 0p 0q 0r 0s 0m 0n 0x 0y FF	Set gateway to: pq.rs.mn.xy
SYS_Menu	Menu On	8x 01 06 06 02 FF	Turn on the menu
	Menu Off	8x 01 06 06 03 FF	Turn off the menu
	Menu Back	8x 01 06 06 10 FF	Menu step back
	Menu Ok	8x 01 7E 01 02 00 01 FF	Menu ok
IR_Receive	On	8x 01 06 08 02 FF	IR (remote commander) receive ON/OFF
	Off	8x 01 06 08 03 FF	
	On/Off	8x 01 06 08 10 FF	
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 (TBD) ZZZZ: Tilt Position (TBD)
	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	

Part 3 Camera Control Command

Command type	command	return	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_DZoomOnOff Inq	8x 09 04 06 FF	y0 50 0p FF	p 2: ON 3: OFF
CAM_DZoomModeInq	8x 09 04 36 FF	y0 50 0p FF	p 0: combination mode 1: separate mode

CAM_DZoomPosiInq	8x 09 04 46 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_SpeedByZoomInq	8x 09 06 A0 FF	y0 50 0p FF	p 2: ON 3: OFF
CAM_PTSpeedInq(IR)	8x 09 04 C1 FF	y0 50 pp FF	pp: 0x05~0x18
CAM_ZoomSpeedInq(IR)	8x 09 04 D1 FF	y0 50 0p FF	p:0x00~0x07
CAM_FocusModeInq	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	Indoor mode
		y0 50 02 FF	Outdoor mode
		y0 50 03 FF	OnePush mode
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual
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_GainPosiInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
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_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain
CAM_MemoryInq	8x 09 04 3F FF	y0 50 pp FF	pp: 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_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID
CAM_DHCPInq	8x 09 04 AE FF	y0 50 pp FF	
CAM_IPInq	8x 09 04 AB FF	y0 50 0p 0p 0q 0q 0r 0r 0s 0s FF	
CAM_MASKInq	8x 09 04 AC FF	y0 50 0p 0p 0q 0q 0r 0r 0s 0s FF	
CAM_GATEWAYInq	8x 09 04 AD FF	y0 50 0p 0p 0q 0q 0r 0r 0s 0s FF	
CAM_FlareModeInq	8x 09 04 B6 FF	y0 50 pp FF	
CAM_FlareBrightModeInq	8x 09 04 B7 FF	y0 50 pp FF	
CAM_FlareRed	8x 09 04 B8 FF	y0 50 pp FF	
CAM_FlareGreen	8x 09 04 B9 FF	y0 50 pp FF	
CAM_FlareBlue	8x 09 04 BA FF	y0 50 pp FF	
CAM_IDInq			
CAM_VersionInq	8x 09 00 02 FF	y0 50 ab cd mn pq rs tu vw FF	
VideoSystemInq(Telycam)	8x 09 06 23 FF	y0 50 pp FF	pp: Video format
VideoSystemInq(Sony)	8x 09 04 24 72 FF	y0 50 0p 0p FF	pp: Video format

IR_Transfer	8x 09 06 1A FF	y0 50 02 FF	On
		y0 50 03 FF	Off
IR_Receive	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	CAM_Backlight
		y0 07 7D 01 04 3F FF	CAM_Memory
		y0 07 7D 01 06 01 FF	Pan_tiltDrive
Pan-tiltMaxSpeedInq	8x 09 06 11 FF	y0 50 ww zz FF	ww: PanMaxSpeed zz: Tilt Max Speed
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww: PanPosition zzzz: Tilt Position
MainstreamResolutionInq	8x 09 04 C2 00 FF	y0 50 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrs: Column (x size) mnxy: Line (y size) only support:1920*1080,1280*720, 1024*576
MainstreamRateInq	8x 09 04 C2 01 FF	y0 50 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrsmnxy: bitrate (1024~16384)
SubstreamResolutionInq	8x 09 04 C3 00 FF	y0 50 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrs: Column (x size) mnxy: Line (y size) only support:1280*720, 1024*576, 640*360
SubstreamRateInq	8x 09 04 C3 01 FF	y0 50 0p 0q 0r 0s 0m 0n 0x 0y FF	pqrsmnxy: bitrate (1024~5120)

Note: [x] means the camera address: [y] = [x+8].

VISCA Pan Tilt Absolute Position Value

Pan Angle	VISCA Value	Tilt Angle	VISCA Value
-170	0xF670	-30	0xFE50
-135	0xF868	0	0x0000
-90	0xFAF0	30	0x01B0
-45	0xFD78	60	0x0360
0	0x0000	90	0x510
45	0x0288		
90	0x0510		
135	0x0798		
170	0x0990		

VISCA Pan Tilt Speed Value

Pan (Degree/Second)		Pan (Degree/Second))	
0	0.3	0	0.3
1	1	1	1
2	1.5	2	1.5
3	2.2	3	2.2
4	2.4	4	3.6
5	2.6	5	4.7

6	2.8	6	6
7	3.0	7	8
8	3.2	8	10
9	3.4	9	12
10	3.8	10	15
11	4.5	11	18
12	6	12	23
13	9	13	30
14	15	14	39
15	19	15	48
16	25	16	59
17	32	17	69
18	38	18	80
19	45		
20	58		
21	75		
22	88		
23	105		
24	120		

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

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

Maintenance and Troubleshooting

Maintenance

1. Please turn off the camera and disconnect the power adapter whenever the camera is not in use.
2. Use soft cloth or tissue to clean the camera cover. Wipe it with 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.

Troubleshooting

1. **No video feed on display**
   - Check Power Supply: Ensure the camera's power supply is connected and the power indicator light on the camera is solid blue.
   - Check if the camera can perform self-check (move the lens for the entire range) when powered on.
   - Check Video Connections: Ensure that all video cables (HDMI or whichever you are using) are securely connected to both the camera and the display.
   - Check the Input Selection display: if the "Input" on display set to the correct input
   - Check Video Format: check video format from camera that compatible with the video format on display.

2. **IR Remote control does not work**
   - Ensure the remote control address is set to 1. If the camera is reset to factory defaults, the remote control address must also be set to 1**.**
   - Check the battery, make sure it has enough capacity.
   - Verify the menu setting. Camera control via IR remote is only available after exiting the menu. Note: If video outputs via LAN, the menu will not be displayed on screen. The camera menu will automatically close after 30sec.

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

4. **Web pages cannot log in**
   - Ensure the network cable is properly connected. The Ethernet port indicator light should be flashing yellow
   - Check if the computer is set to the same local network segment that consistent with the IP address of the camera. For details, please refer to: avipas.com-> SUPPORT -> HOW TO MATERIALS -> "Access camera via IP." Or see page 14 & 15 for the instructions on how to login camera.

5**. Cannot see image preview under Web UI**
   - Clear browser cache or try different browsers, or different computers.
   - Restart the camera, turn it off, then turn it on.
   - Make sure the camera's firmware is up to date.
   - Reset camera back to factory default.

Warranty and Support

Warranty

Thank you for your interest in the products of AVIPAS Inc.
This Limited Warranty applies to UHD Conference Camera purchased from AVIPAS Inc.
This Limited Warranty covers any defect in material and workmanship under normal use within the Warranty Period. AVIPAS Inc. will repair or replace the qualified products at no charge.
AVIPAS Inc. provides a **two (2)-year** warranty (from the date of purchase) for this UHD 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.

Support

For more help, please visit our website: avipas.com for technical support, FAQs and more knowledge-based information about how to better use our camera. Visit us at www.avipas.com or contact service@avipas.com

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