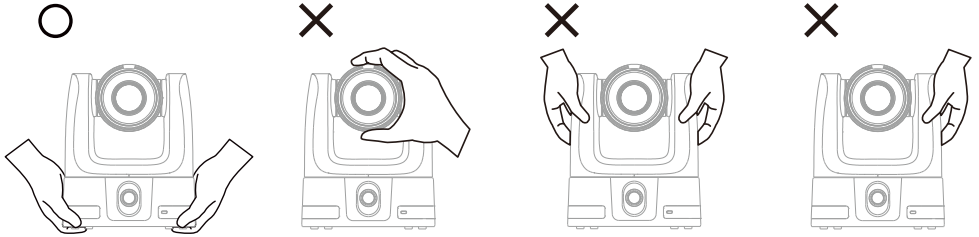


Dual-Lens Auto Tracking Camera

— User Manual —

TR535(N) / TR525(N)

Warning



- Hold the bottom of the camera with both hands to carry the camera. Whether the camera is connected to power or not, do not grab any part of the lens or the lens holder to carry the camera or adjust pan and tilt.
- Do not drop the camera or subject it to physical shock.
- Ensure the power supply voltage is correct before using the camera.
- Do not place the camera where the cord can be stepped on as this may result in fraying or damage to the lead or the plug.
- To reduce the risk of fire or electric shock, do not expose the camera to rain or moisture. Warranty will be voided if any unauthorized modifications are done to the camera.

Federal Communications Commission

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radiofrequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Warning

This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Caution

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

PoE

The PoE++ port is connected only to PoE networks without routing to the outside plant.

PSTI Statement of Compliance

Please refer to the following website: <https://www.aver.com/product-security-advisory>

VCCI-A

この装置は、クラス A 機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

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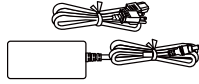
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Overview

Package Contents



Camera



Power Adapter &
Power Cord



DIN8 to D-Sub9
Cable



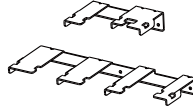
Mini DIN9 to Mini DIN8
RS-232 Adaptor Cable



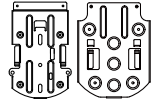
Cable Tie (x7)



Remote Control



Cable Fixing Plate (x2)



Ceiling Mount
Bracket (x2)



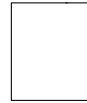
M2 x 4 mm
Screw (x5)



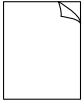
1/4\"-20, L=6.5 mm
Screw (x2)



M3 x 6 mm
Screw (x3)



Drill Template

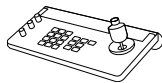


Quick Start Guide

Optional Accessories



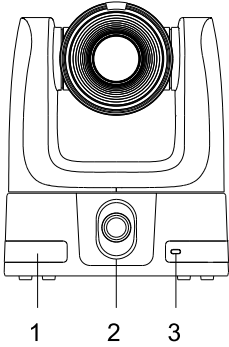
Wall Mount Bracket



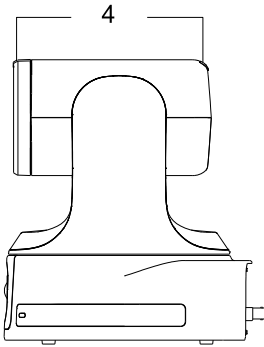
Camera Controller
(CL01)

*For detail on optional accessories, consult your local dealer.

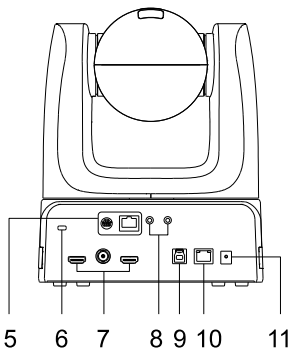
Parts Info



1. IR Sensor
2. Wide-Angle Lens
3. LED Indicator



4. Tally Lamps



5. Control Ports
RS-232 / RS-422
6. Kensington Lock
7. Video Output Ports
HDMI 1 / 3G-SDI / HDMI 2
8. Audio Input Ports
Mic / Line
9. USB 3.0 Type-B Port
10. PoE++ 802.3bt
11. DC Power Jack

Tally Lamps

Programmable red, yellow, and green lights.

When video theme mode is set to Zoom:

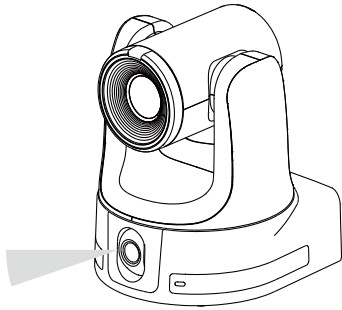
Color	Status
Red	Streaming over USB
No light	Not streaming over USB

LED Indicator

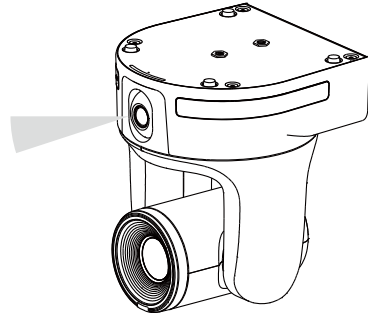
Color	Status
Flashing orange	Start-up
Solid orange	Standby
Solid blue	Normal
Flashing blue	Auto tracking on
Flashing purple	Gesture control on
Flashing red	Firmware update

Wide-Angle Lens Tilt Angle

- The wide-angle lens has a 110-degree field of view and a continuous tilt.
- The wide-angle lens tilts automatically based on how it's installed:



Downward

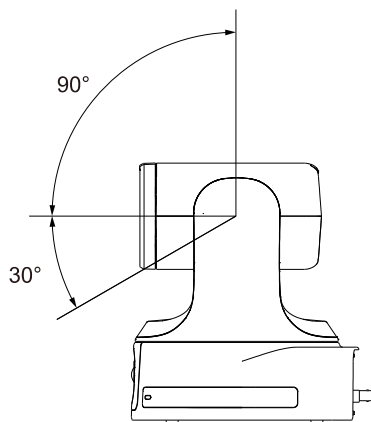
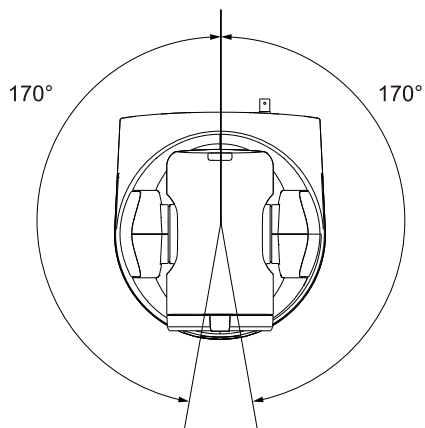


Upward

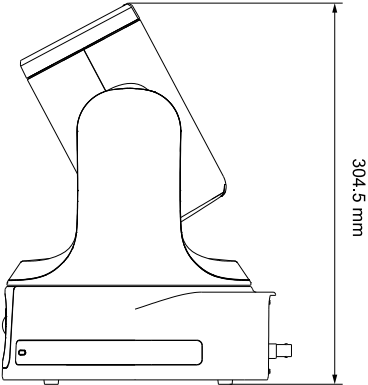
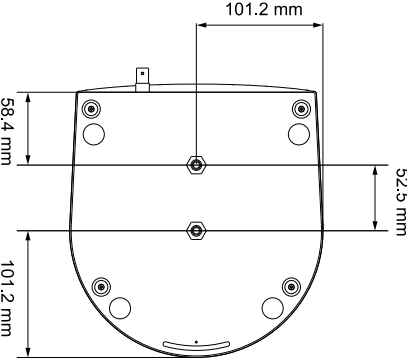
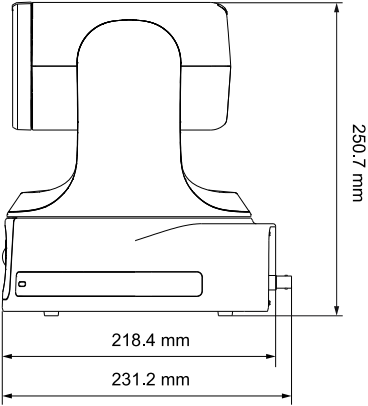
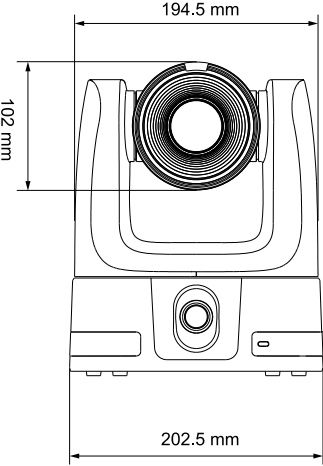
Both image mirror and flip must be turned on.

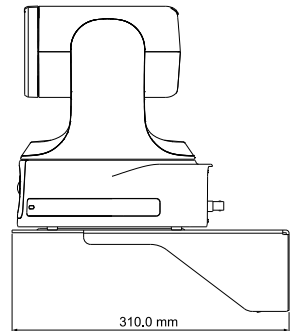
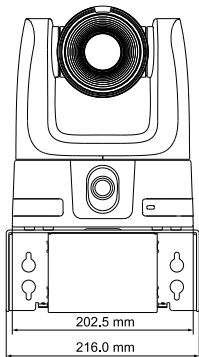
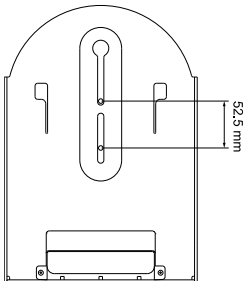
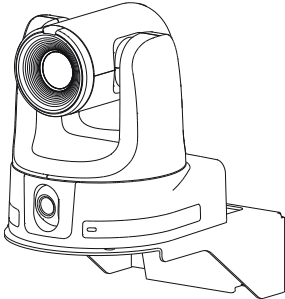
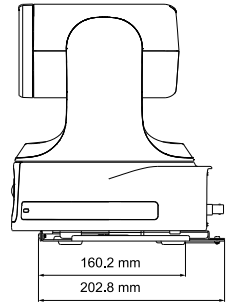
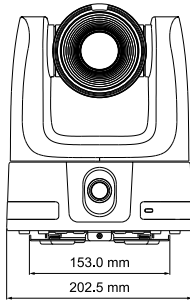
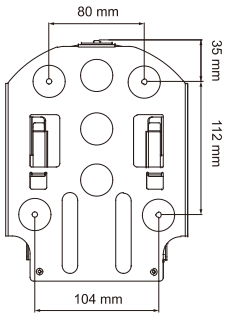
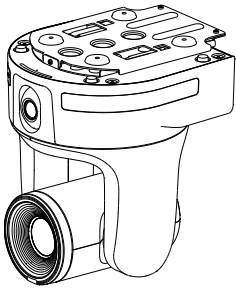
- To adjust the tilt angle, do any of the following:
 - When accessing the camera web interface for the first time, you will be prompted to calibrate.
 - Go to **System > Wide-Angle Camera Setting** on the camera web interface.

Pan and Tilt Angle

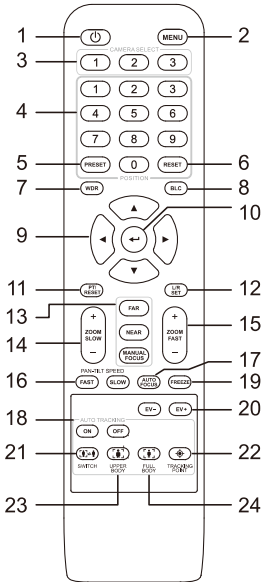


Dimensions



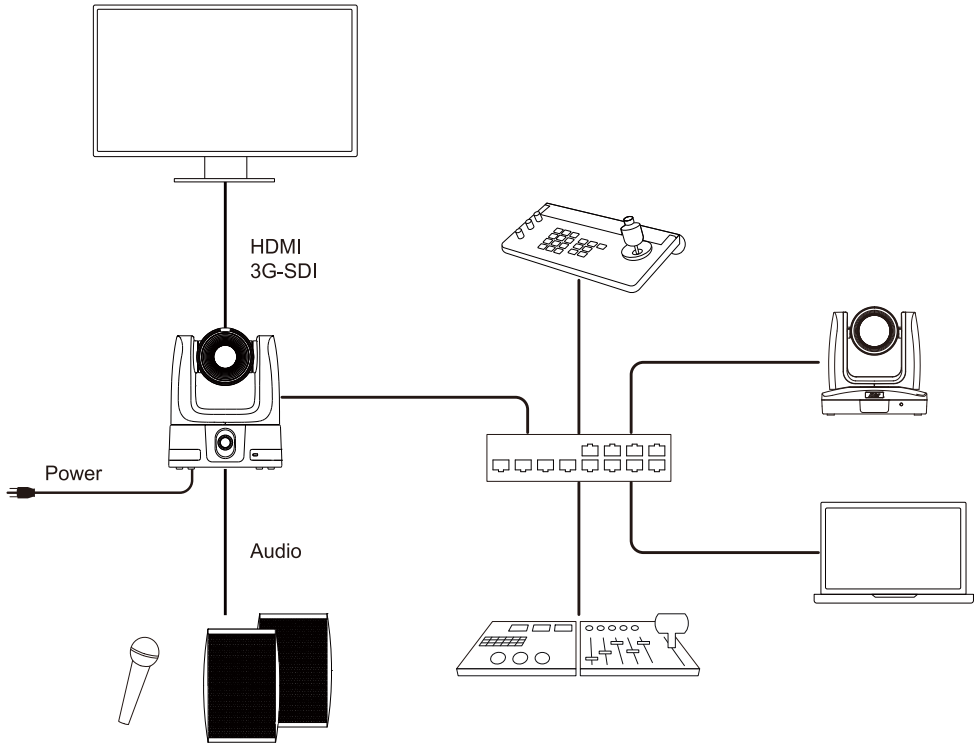


Remote Control



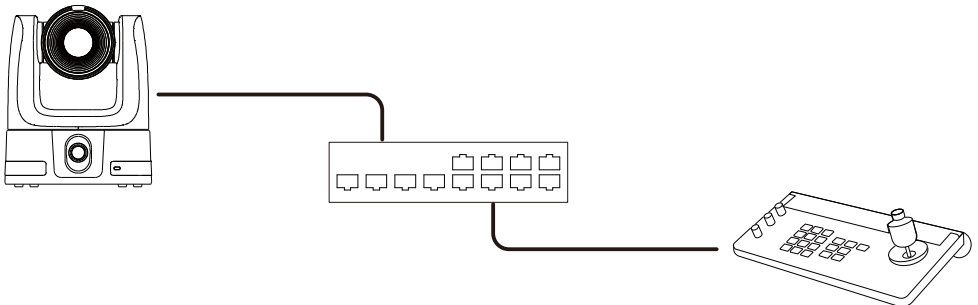
Name	Function
1. Power	Power on or enter standby mode.
2. Menu	Open and close the OSD menu during HDMI output.
3. Camera Select	No selection is required by default to operate the camera. <ul style="list-style-type: none"> Both camera and remote control have been set to 1 at the factory. Assign a number to the camera in the OSD menu: System > Camera Selector.
4. Number Pad	Press Number button (0-9) to move the camera to defined preset position 0-9.
5. Preset	Press and hold Preset , then press Number button (0-9) to save the preset position.
6. Reset	Press and hold Reset , then press Number button (0-9) to reset preset position.
7. WDR	Turn Wide Dynamic Range on or off.
8. BLC	Turn Backlight Compensation on or off.
9. Directional Pad	Press once for incremental movement or press and hold for continuous pan or tilt.
10. Enter	<ul style="list-style-type: none"> Confirm a selection in the OSD menu. Press and hold to One Push Focus.
11. PT Reset	Return the pan-tilt position to the center.
12. L/R SET	<ul style="list-style-type: none"> Invert L/R Pan Direction: Press and hold L/R SET, then press Position 2. Reset L/R Pan Direction: Press and hold L/R SET, then press Position 1.
13. Far / Near / Manual Focus	Turn on manual focus. Use Far/Near to adjust the focus.
14. Zoom Slow +/-	Zoom in or out slowly.
15. Zoom Fast +/-	Zoom in or out fast.
16. Pan-Tilt Speed Fast / Slow	Adjust pan-tilt speed.
17. Auto Focus	Auto focus.
18. Auto Tracking	Turn Auto Tracking on or off.
19. Freeze	Freeze the live view.
20. EV +/-	<ul style="list-style-type: none"> Press to adjust EV level. Press and hold EV+ to turn on RTMP. Press and hold EV- to turn off RTMP.
21. Switch	Switch presenter.
22. Tracking Point	Load tracking point (Preset 1).
23. Upper Body	Frame the presenter's upper body.
24. Full Body	Frame the presenter's full body.

Connections



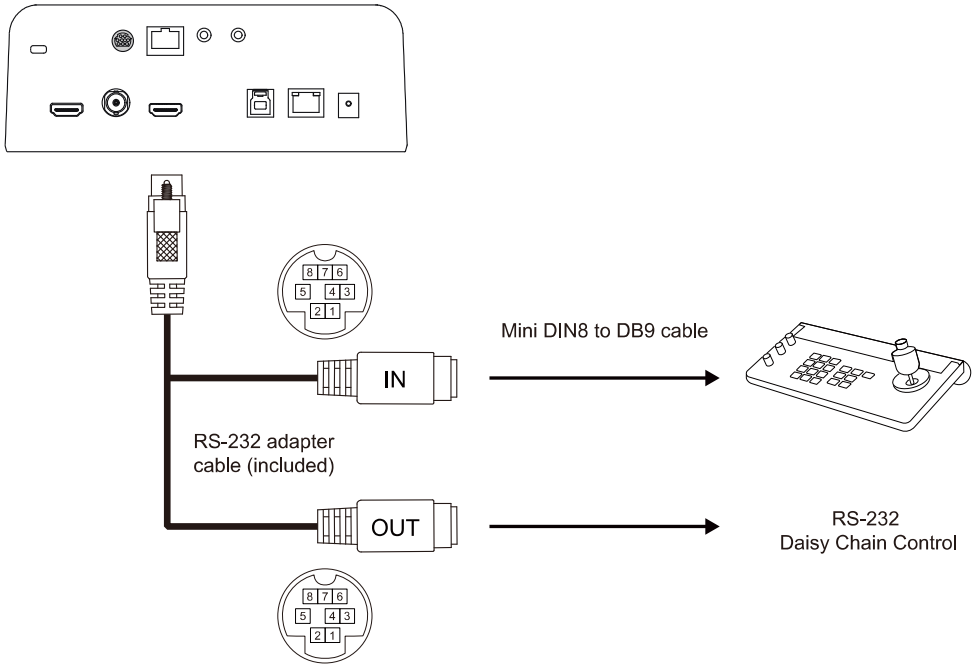
IP Connection

1. Connect the camera PoE++ 802.3bt port to a port on the Ethernet switch. The switch must provide PoE++ if you are not using a power adapter.
2. Connect the Camera Controller's IP port to a port on the Ethernet switch.



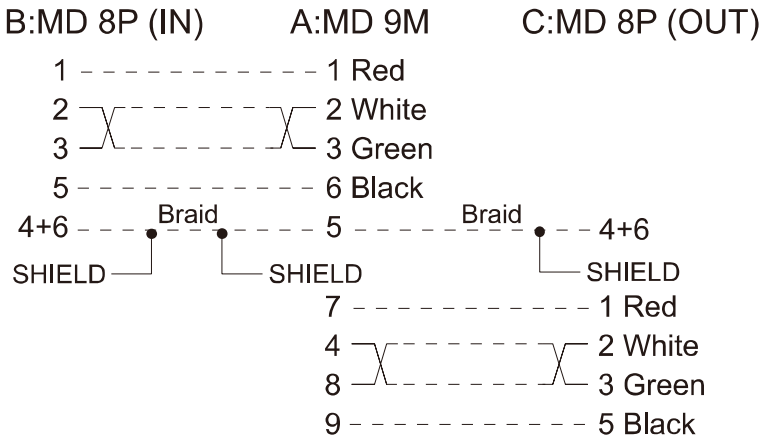
RS-232 Connection

Use the included mini DIN9 to mini DIN8 RS-232 adapter cable to make a RS-232 connection to your control device.

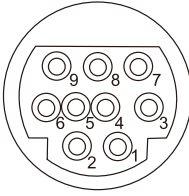


- Mini DIN9 to Mini DIN8 RS-232 Adaptor Cable Pin Definition**

Circuits:

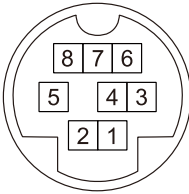


● **RS-232 Pin Definition**



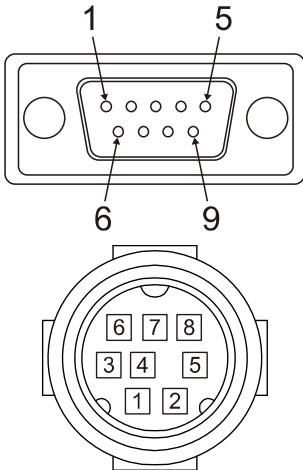
Function	Mini DIN9 Pin #	I/O Type	Signal	Description
VISCA IN	1	Output	DTR	Data Terminal Ready
	2	Input	DSR	Data Set Ready
	3	Output	TXD	Transmit Data
	6	Input	RXD	Receiver Data
VISCA OUT	7	Output	DTR	Data Terminal Ready
	4	Input	DSR	Data Set Ready
	8	Output	TXD	Transmit Data
	9	Input	RXD	Receiver Data
	5	Input	I/O	Detect DIN8/DIN9
---	Shield	---	GND	Ground

● **Mini DIN8 Cable Pin Definition**

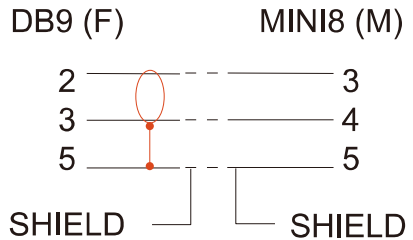


Pin #	Signal
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
7	NC
8	NC

● **Din8 to D-Sub9 Cable Pin Definition**

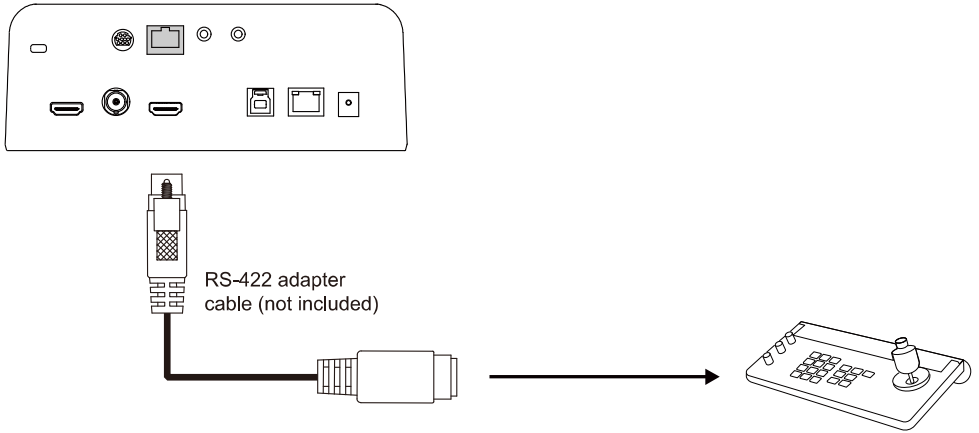


PIN Out:

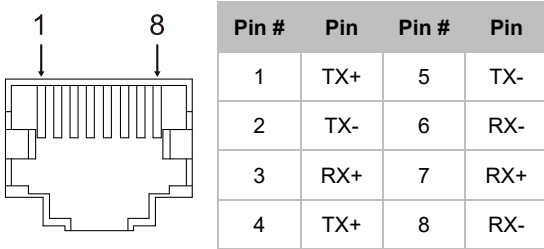


RS-422 Connection

Use an RS-422 adapter cable to make a RS-422 connection to your control device.

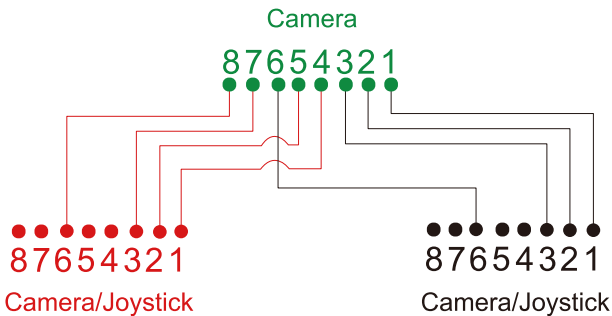


- RS-422 Pin Definition**



Or you can use a Cat5e splitter to make a RS-422 daisy chain multiple camera connection.

- Cat5e Splitter Pin Definition**

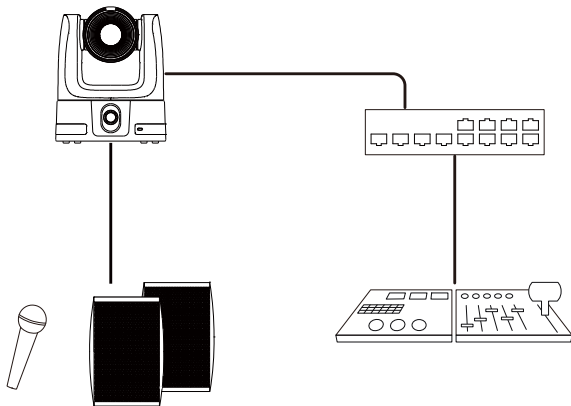


Audio Input Connection

Connect to your audio devices to receive audio.

Mic input level: 50 mVrms max.; supplied voltage: 2.5 V.

Line input level: 1 Vrms max.

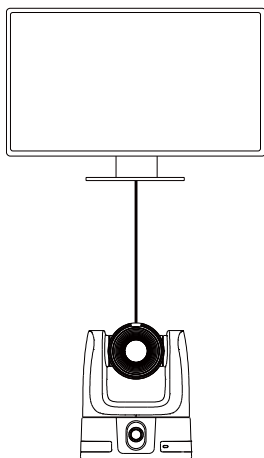


Video Output Connection

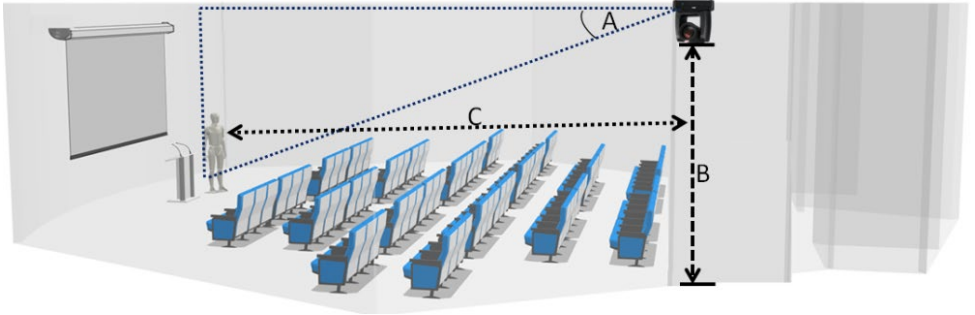
Use the included HDMI cable to connect to a monitor or TV. Or you can use a 3G-SDI cable to connect to a 3G-SDI display.

Note:

- The camera can stream video via HDMI and 3G-SDI simultaneously.
- The OSD menu will appear by default if you make an HDMI connection before turning on the camera.



Installation

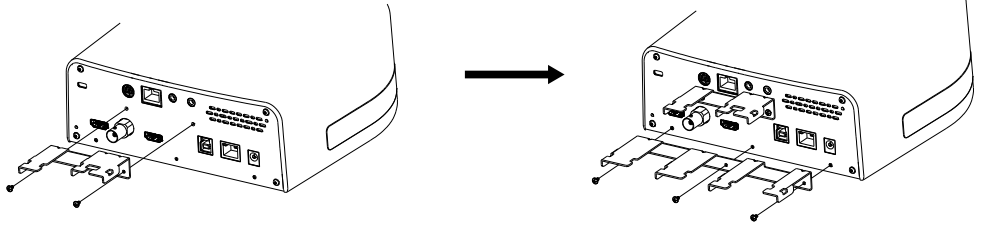


- **Angle (A):** Less than 30°.
- **Height (B):** 2–3m from floor.
- **Distance (C):** 3 m away or more from podium
- **Position:** Center back of the venue
- **Distance between camera and presenter:**

Optical zoom ratio	Upper body	Full body
12X	3–16 m	3–28 m
16X	3–30 m	4–55 m
22X	3–40 m	4–65 m
30X	3–44 m	3–76 m

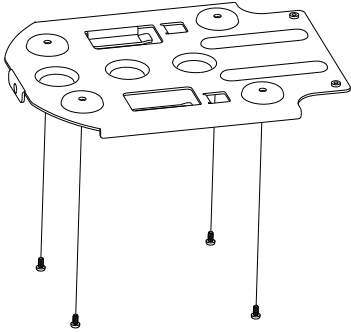
Cable Fixing Plate Installation

1. Secure the cable fixing plate to the camera with the included M2 x 4 mm screws (x5).
2. Connect the cables.
3. Use the cable ties to secure the cables to the cable fixing plate.

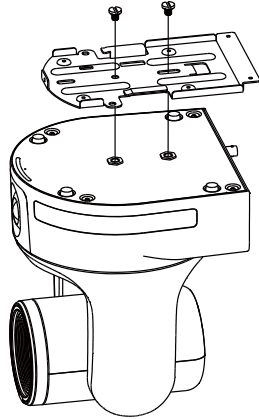


Ceiling Mount Installation

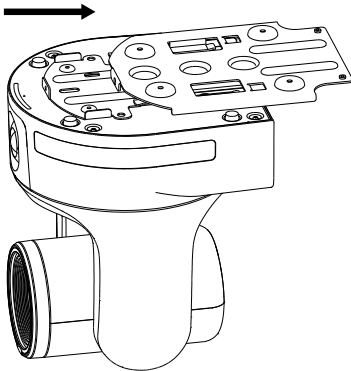
1. Secure the mount bracket to the ceiling.
Screw: 4 screws, M4 x 10 mm (not included)



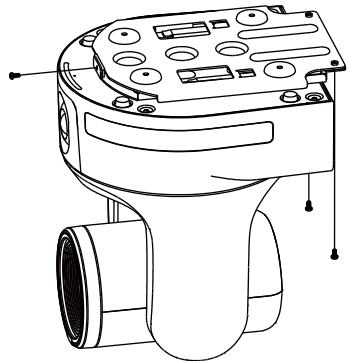
2. Secure the mount bracket to the camera.
Screw: 2 screws, 1/4"-20 L=6.5 mm (included)



3. Slide the mount bracket with the camera into the mount bracket secured to the ceiling. Then connect the cables.



4. Secure the two mount brackets with screws.
Screw: 3 screws, M3 x 6 mm (included)



Set Up the Camera

You can configure camera settings on the OSD menu or the web interface.

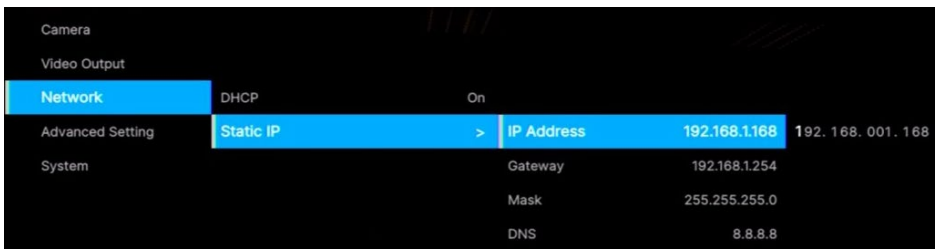
Access the OSD Menu

During HDMI output, Press the **Menu** button (MENU) on remote control to open the OSD menu.



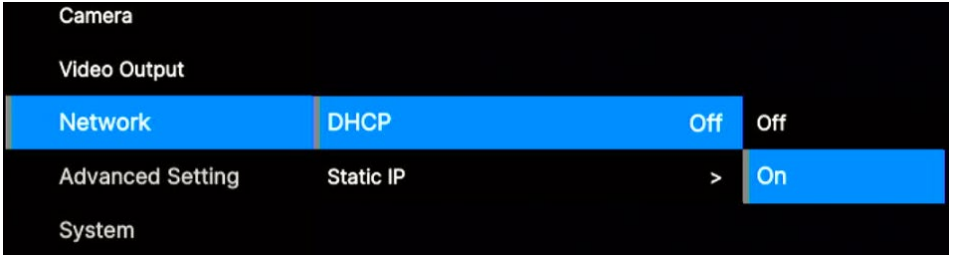
Change Your Network to Static IP

1. Press the (MENU) button on remote control to open the OSD menu.
2. Your camera default network is DHCP. Go to **Network** > **DHCP**, then turn off DHCP.
3. Select and enter **IP Address**, **Gateway**, **Mask** and **DNS** to configure.

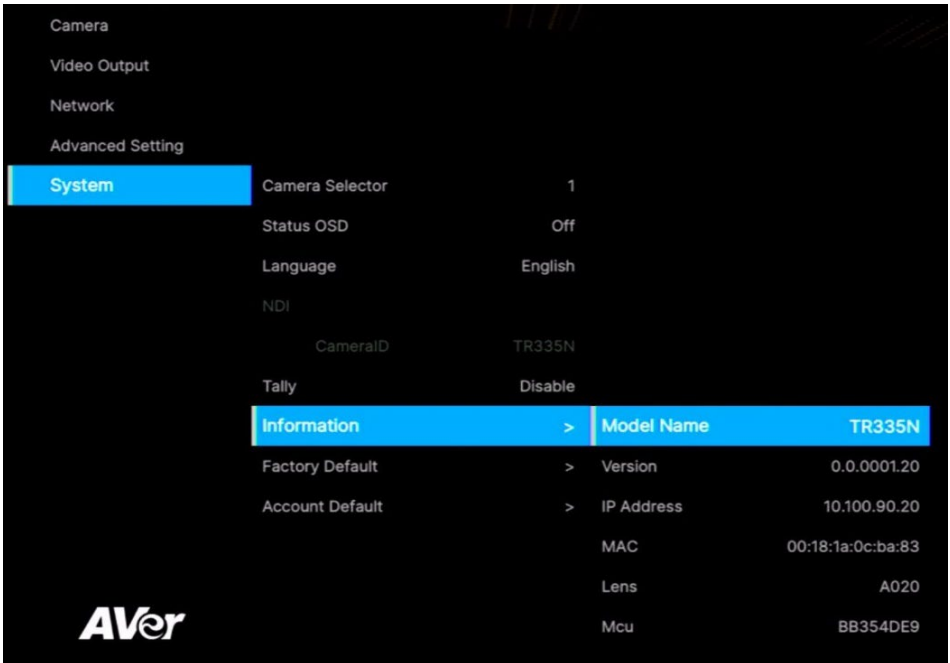


Change Your Network to DHCP

1. Press the **MENU** button on remote control to open the OSD menu.
2. Your camera default network is DHCP. Or go to **Network > DHCP**, then turn on DHCP.



3. Go to **System > Information** to see your camera's IP address.



OSD Menu Tree

1st Level	2nd Level	3rd Level	4th Level
Camera	Exposure Mode	Full Auto	Exposure Value
			Gain Limit Level
			Slow Shutter
		Shutter Priority	Exposure Value
			Shutter Speed
			Gain Limit Level
		Iris Priority	Exposure Value
			Iris Level
			Gain Limit Level
			Slow Shutter
		Manual	Shutter Speed
			Iris Level
			Gain Level
		Bright	Bright value
		White Balance	Auto
	ATW		
	Indoor		
	Outdoor		
	One push trigger		
	Manual		R gain
			B gain
	Pan Tilt Zoom	Preset Speed	5, 25, 50, 100, 150, 200
		Digital Zoom	Off / On
		Digital Zoom Limit	x2, x3, x4, x5, x6, x7, x8, x9, x10, x11, x12
		Pan/Tilt Slow	Off / On
	Noise filter	Off / Low / Middle / High	
	Saturation	0 1 2 3 4 5 6 7 8 9 10	
	Contrast	0 1 2 3 4	
	Sharpness	0 1 2 3	
	Mirror	Off / On	
Flip	Off / On		
Video Output	Theme	IP	
		HDMI	
		USB	
		ZOOM	
		TEAMS	
		(NDI)	

	Frequency		60	
			59.94	
			50	
	HDMI1 Resolution		2160p60	
			2160p59.94	
			2160p50	
	HDMI2 Resolution		2160p30	
			2160p29.97	
			2160p25	
			1080p60	
			1080p59.94	
			1080p50	
			1080p30	
			1080p29.97	
			1080p25	
			1080i60	
			1080i50	
			720p60	
			720p59.94	
	720p50			
	HDMI1/HDMI2 Source		PTZ Camera	
			Wide Angle Camera	
			PIP/PBP	
SDI Source		HDMI-1		
		HDMI-2		
PIP Mode		PBP-1		
		PBP-2		
		PIP-1		
		PIP-2		
		PIP-3		
		PIP-4		
		PIP-5		
PIP-6				
Network	DHCP		OFF	
			ON	
	Static IP		IP Address	192.168.1.168
			Gateway	192.168.1.254
			Mask	255.255.255.0
			DNS	168.95.1.1
	Speed		10M/100M/1000M/2500M	
Advanced Setting	Audio		Input Type	Line in / Mic in
			Audio Volume	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

	Control	Serial Port	RS232 / RS422
		Protocol	VISCA / PELCO D/PELCO P
		Camera Address	1 2 3 4 5 6 7
		Baud Rate	4800 / 9600 / 38400
	Tracking	Off/On	
	Tracking Mode	Presenter/Zone/Segment/Hybrid	
System	Camera Selector	1,2,3	
	Status OSD	OFF	
		ON	
	Language	English/日本語/繁中/簡中/韓語/越南語	
	NDI	On/OFF	
		Camera ID	
	Tally	Disable/ Enable	
	Information	Model Name	TR535
		Series number	xxxxxxxxxx
		Version	0.0.0000.00
		IP ADDR	192.168.1.168
		MAC	00:18:1a:04:9e:81
Factory Default	Off/On		
Account Default	Off/On		

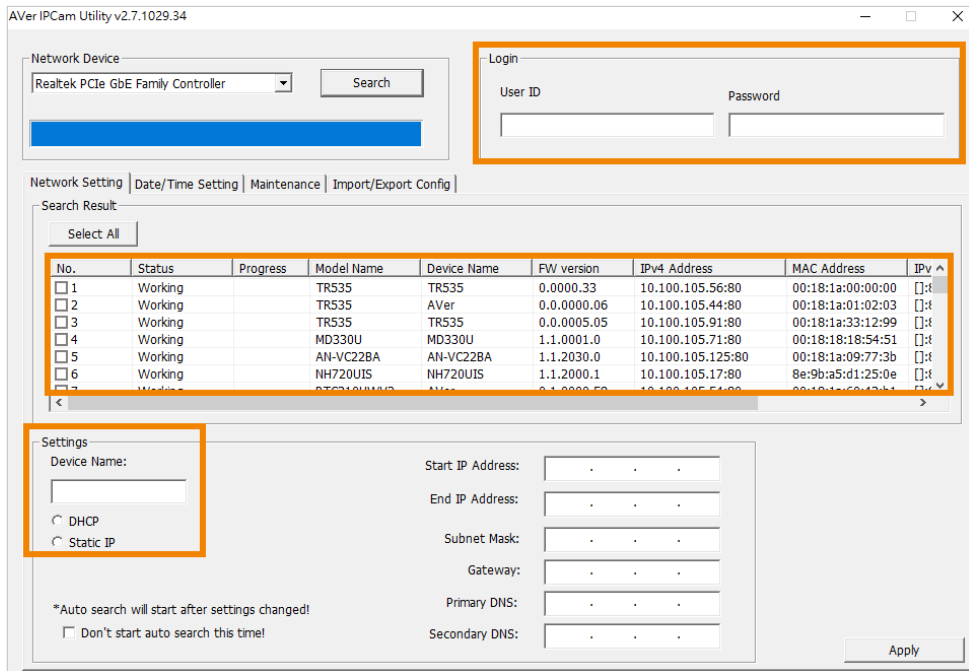
Access the Web Interface

To access the web interface of the camera, you can use any of the following software to find its IP address:

- AVer IPCam Utility
- AVer PTZ Management

Note: The camera default network is DHCP.

AVer IPCam Utility



To access the web interface:

1. Download IPCam Utility from AVer Download Center (<https://www.aver.com/download-center>) and launch the software.
2. Click **Search** to see available devices on the same local area network (LAN).

Note:

- Make sure your camera has internet.
- IPCam Utility and camera must be on the same LAN.

3. Double-click on your camera's IP address in the **IPv4 Address** column to open the web interface in your browser. For first-time login, you'll be prompted to change the username and password.

When you log in for the first time:

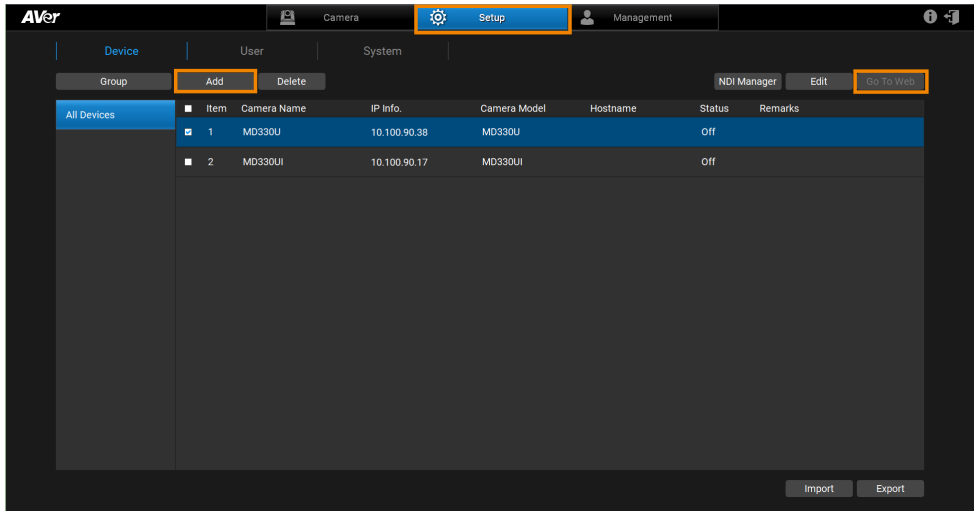
Change the username and password before logging in to the web interface.

- Username: Use 1-32 characters.
- Password: Use 8-32 characters and a combination of uppercase letters, lowercase letters, numbers, and symbols (%+=, -_ ^/ @. ~). The password cannot be the same as the username.

To change your network to DHCP or static IP:

1. Select the checkbox of your camera.
2. Enter the changed username and password in the **Login** field.
3. Select **DHCP** or **Static IP**, then enter your network settings if applicable in the **Settings** section.
4. Click **Apply**.

AVer PTZ Management

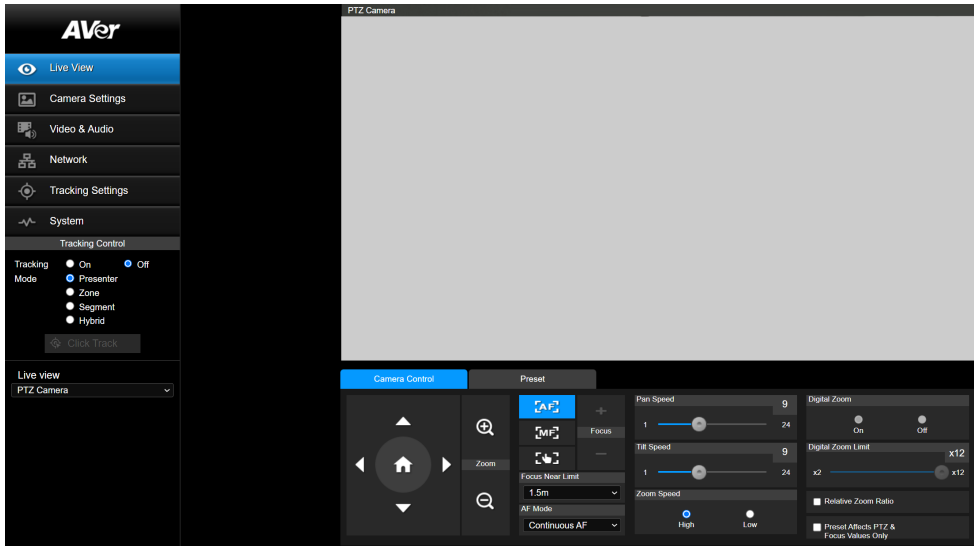


Note: The PTZ Management default username and password is **admin/admin**.

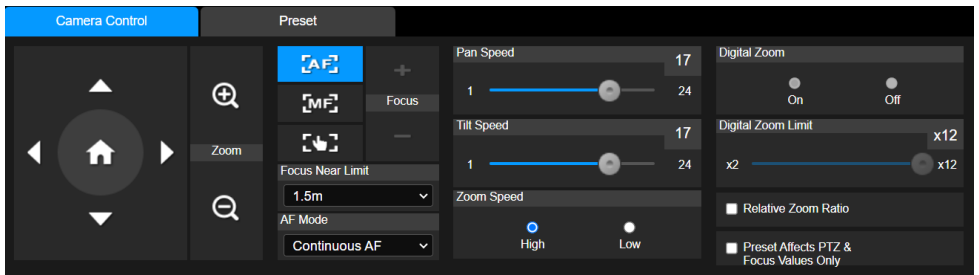
1. Download PTZ Management from AVer Download Center (<https://www.aver.com/download-center>) and launch the software.
2. Log in with the PTZ Management default username and password **admin/admin**.
3. Go to **Setup > Add**, then click **Auto Search** to see available devices on the same local area network (LAN).
4. Click to select your camera, enter the changed camera username and password, then click **Save** to add the camera to the device list.
5. Select the checkbox of your camera, then click **Go to Web** button to open the web interface in your browser.





Web Interface



Live View



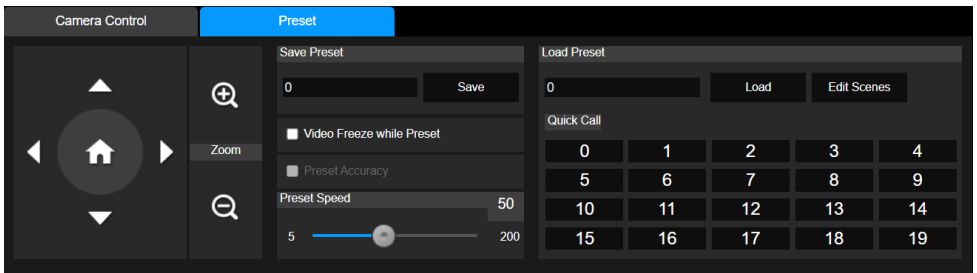
Camera Control



Item	Description
Pan and Tilt Controls	Position the camera. Drag the slider to adjust Pan Speed and Tilt Speed .
Home Position 	Move the camera to the Home position.
Zoom  	Zoom in or zoom out the live view and select Zoom Speed .
Auto Focus 	Select Auto Focus and then choose an AF mode : <ul style="list-style-type: none"> ● AF Trigger after PTZ: Automatically focus after each pan, tilt or zoom. ● Continuous AF: Automatically focus continuously.

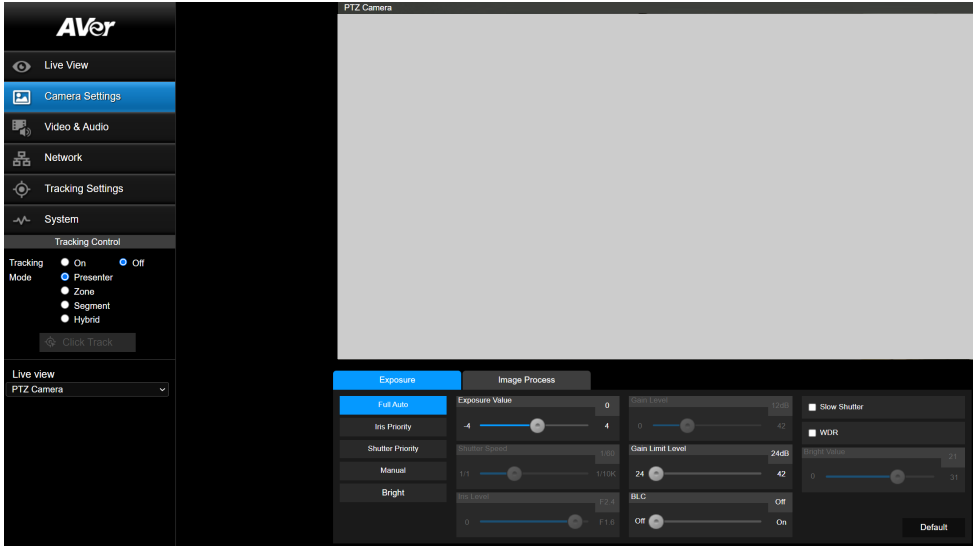
Manual Focus 	Click to manually focus. Adjust the focus with + - buttons.
One Push Focus 	Click to automatically focus once.
Focus Near Limit	Set up the nearest focus limit.
Digital Zoom	Turn digital zoom on or off.
Digital Zoom Limit	Adjust the digital zoom.
Relative Zoom Ratio	Select to automatically adjust pan and tilt speeds based on the zoom ratio.
Preset Affects PTZ & Focus Values Only	A preset typically includes pan, tilt, zoom, focus, and 3A (autofocus, autoexposure, auto white balance) values. Select to save only pan, tilt, zoom and focus values for presets.

Preset

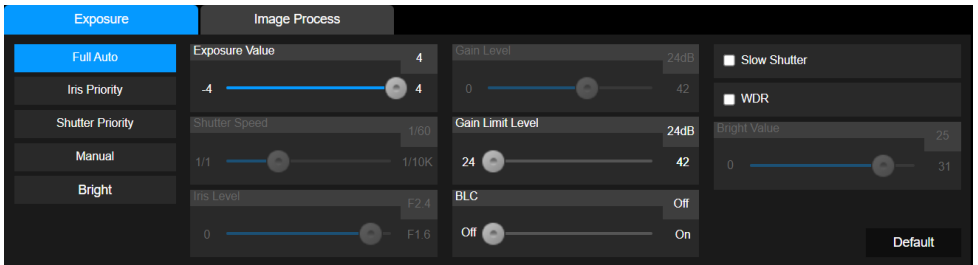


Item	Description
Save Preset	<ol style="list-style-type: none"> 1. Position the camera using pan, tilt and zoom controls. 2. Enter a preset number (0–255) in the Save Preset field and click Save.
Load Preset	<ol style="list-style-type: none"> 1. Enter a preset number (0–255) in the Load Preset field and click Load. 2. Or click a preset number (0–19) in the Quick Call section.
Video Freeze while Preset	Select to display only the live view from presets. The live view from the moving path will not be displayed.
Preset Accuracy	Select to improve the accuracy of moving to presets.
Preset Speed	Adjust the camera speed when moving to presets.
Edit Scenes	<p>To customize camera functions for preset 0–9:</p> <ol style="list-style-type: none"> 1. Click Edit Scenes. 2. Select Scenes 0–9 from the Scenes List to add up to 10 CGI commands. 3. Select a scene from the Set Scenes drop-down list for each preset.

Camera Settings



Exposure

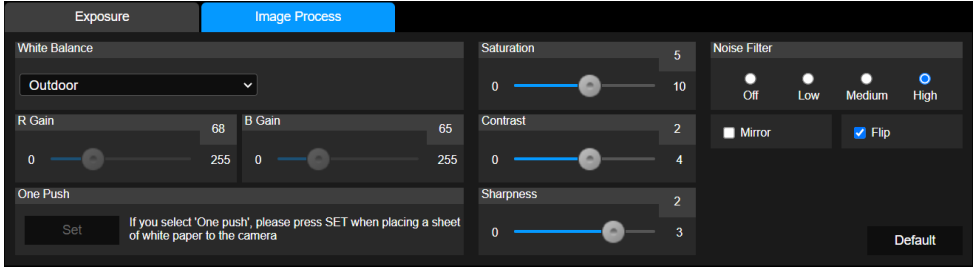


Note: Click **Default** to reset Exposure to factory default settings.

Item	Description
Exposure Mode	Choose an exposure mode.
Exposure Value	Adjust exposure, shutter, iris and gain.
Shutter Speed	
Iris Level	
Gain Level	
Gain Limit Level	
BLC	Turn backlight compensation (BLC), slow shutter, wide dynamic

Slow Shutter	range (WDR) on or off.
WDR	
Bright Value	Drag the slider to adjust the brightness value.


Image Process



Note: Click **Default** to reset Image Process to factory default settings.

Item	Description
White Balance	Choose a white balance mode <ul style="list-style-type: none"> ● In Manual mode, you can also adjust the R Gain and B Gain. ● In One Push mode, place a piece of white paper in front of the camera lens and click Set to calibrate white balance.
Saturation	Adjust saturation, contrast and sharpness.
Contrast	
Sharpness	
Noise Filter	Select a noise filtering level.
Mirror	Select the checkbox to flip the image horizontally.
Flip	Select the checkbox to flip the image vertically.

Video & Audio



- Live View
- Camera Settings
- Video & Audio
- Network
- Tracking Settings
- System

Tracking Control

Tracking Mode On Off

- Presenter
- Zone
- Segment
- Hybrid

Click Track

Live view

PTZ Camera

Power Frequency: 60Hz

HDMI-1 Resolution: 1080p/60

HDMI-2 Resolution: 1080p/60

3GSDI Source: HDMI-1

Theme Mode: IP

Priority Mode: 4K60

HDMI-1 Source: PTZ Camera

HDMI-2 Source: PTZ Camera

PIP/PBP Mode: PBP(PTZ/Wide)

PTZ Camera Stream

Stream Video Output: 3840x2160	Frame rate: 60	Bitrate: 4Mbps
I-VOP Interval (S): 1	Encoding Type: H.264	Rate Control: CBR

Wide Angle Camera Stream

Stream Video Output: 3840x2160	Frame rate: 30	Bitrate: 4Mbps
I-VOP Interval (S): 1	Encoding Type: H.264	Rate Control: CBR

Audio Input Type: MIC In	Encoding Type: AAC	Audio Volume: 5
Sampling Rate: 48K	USB Audio Enable: Enable	

Video Settings

Item	Description
Power Frequency (Hz)	Select 50Hz , 59.94Hz or 60Hz based on your country or region.
Priority Mode	Apply video modes and set the maximum resolution according to the output interface: <ol style="list-style-type: none"> Go to Theme Mode to select a video mode according to the output interface you use. Then go to Priority Mode to set the maximum resolution for that video mode.
Theme Mode	<p>Note:</p> <ul style="list-style-type: none"> Lens distortion correction (LDC) only supports up to Priority Mode 4K30 ° For details on resolution, please refer to <Output Interface and Resolution Table> °
HDMI-1 Resolution	Select a resolution.
HDMI-1 Source	Select a video source.
HDMI-2 Resolution	Select a resolution.
HDMI-2 Source	Select a video source.
3G-SDI Source	Select a video source.
PIP Mode	Select a picture-in-picture (PIP) or picture-by-picture (PBP) layout.

PTZ Camera Stream

Item	Description
Stream Video Output	Choose a streaming output resolution for the live view.
Framerate	Choose a framerate
Bitrate	Choose a bitrate.
I-VOP Interval (S)	Drag the slider to choose how often I-VOPs appear in a video stream. Shorter I-VOP intervals result in higher video quality but also larger file sizes.
Encoding Type	Select H.264 or H.265 .
Rate Control	Select Variable Bit Rate (VBR) or Constant Bit Rate (CBR).

Wide Angle Camera Stream

Item	Description
Stream Video Output	Choose a streaming output resolution for the live view.
Framerate	Choose a framerate
Bitrate	Choose a bitrate.

I-VOP Interval (S)	Drag the slider to choose how often I-VOPs appear in a video stream. Shorter I-VOP intervals result in higher video quality but also larger file sizes.
Encoding Type	Select H.264 or H.265 .
Rate Control	Select Variable Bit Rate (VBR) or Constant Bit Rate (CBR).

Audio Settings

Item	Description
Audio Input Type	Select Line In or MIC In .
Encoding Type	AAC
Audio Volume	Drag the slider to adjust the microphone volume.
Sampling Rate	48K
USB Audio Enable	Turn off to stop transmitting audio over USB.

Output Interface and Resolution Table

Mode	Video Quality	Output Interface	Sleep Mode **
IP (default)	Standard	HDMI, SDI, IP, USB, NDI HX2*	N/A
HDMI			
USB			
Teams	Teams certified		Rotate towards the I/O ports (preset 20) when not streaming over USB
Zoom	Zoom certified		
NDI*	Standard	HDMI, SDI, IP, Full NDI	N/A

* NDI is available for model names with N only.

** To change the sleep mode position, go to **System > Sleep to Preset** on the web interface.

Theme Mode	Priority Mode	IP, NDI	HDMI	USB	Full NDI
		PTZ / Wide-Angle	PTZ / Wide-Angle	PTZ / Wide-Angle	PTZ
IP(default)	4K60	4K60 / 4K30	2K60	2K60 / 2K30	-
	4K30	4K30	2K30	2K30	-
	2K60	2K60	2K60	2K60	-
HDMI	4K60	2K60 / 2K30	4K60 / 4K30	2K60 / 2K30	-
	4K30	4K30	4K30	4K30	-
	2K60	2K60	2K60	2K60	-
USB	4K60	2K60 / 2K30	2K60	4K60 / -	-
	4K30	2K30	2K30	4K30 / -	-
	2K60	2K60	2K60	2K60	-
Teams	4K60	2K60 / 2K30	2K60	4K30 / -	-
	4K30	2K30	2K30	4K30 / -	-
	2K60	2K60	2K60	2K60 / -	-
Zoom	4K60	2K60 / 2K30	2K60	4K30 / -	-
	4K30	2K30	2K30	4K30 / -	-
	2K60	2K60	2K60	2K60 / -	-
NDI*	4K60	4K60 / 4K30	2K60	-	4K30
	4K30	4K30	2K30	-	4K30
	2K60	2K60	2K60	-	4K30

Note: Lens distortion correction (LDC) only supports up to Priority Mode 4K30 •

Network

AVer

Live View

Camera Settings

Video & Audio

Network

Tracking Settings

System

Tracking Control

Tracking Mode On Off

Presenter

Zone

Segment

Hybrid

Click Track

Live view

PTZ Camera ▼

DHCP <input checked="" type="radio"/> On <input type="radio"/> Off IP Address: 10.100.105.94 Gateway: 10.100.105.254	Hostname TR535 Netmask: 255.255.255.0 DNS: 10.100.1.5	NTP <input checked="" type="radio"/> On <input type="radio"/> Off NTP Server: pool.ntp.org <div style="text-align: right; margin-top: 10px;">Confirm</div>
--	---	---

RTMP Settings Server URL Stream Key <div style="text-align: center; margin-top: 10px;"> <input type="button" value="Start Stream"/> <input type="button" value="STOP"/> </div>	RTSP Security <input type="radio"/> On <input checked="" type="radio"/> Off RTSP Audio Enable <input checked="" type="radio"/> On <input type="radio"/> Off	HLS Settings Stream URL <div style="text-align: center; margin-top: 10px;"> <input type="button" value="Start Stream"/> <input type="button" value="STOP"/> </div>
--	---	---

SRT Settings Destination IP: 192.168.31.16 Port: 5000 Latency: 1000 ms Connect Status: Disconnected	Encryption: None Passphrase: **** <div style="text-align: center; margin-top: 10px;"> <input type="button" value="Start Stream"/> <input type="button" value="STOP"/> </div>
--	---

HTTPS <input type="radio"/> Only <input type="radio"/> On <input checked="" type="radio"/> Off	Upload Certificate: Choose File No fil...hosen Upload	Cert Status: None SSH <input checked="" type="radio"/> On <input type="radio"/> Off
--	---	---

Visca Port Mode Default	Visca Port Number Port: 52381 Save
--	---

802.1X Enable <input type="radio"/> On <input checked="" type="radio"/> Off	Eap Method <input type="radio"/> MD5 <input type="radio"/> TLS <input type="radio"/> PEAP
Eap Setting Identity: Password: 	
Client Certificate Import: Choose File No fil...hosen Upload Private Key Password: 	
CA Certificate Import: Choose File No fil...hosen Upload	
<input type="button" value="Confirm"/>	

Item	Description
DHCP	Set the network to DHCP or Static IP. <ul style="list-style-type: none"> ● DHCP: Turn on DHCP and click Confirm to save the setting. The camera will be assigned IP settings automatically. ● Static IP: Turn off DHCP, enter IP Address, Netmask, Gateway and DNS, and click Confirm to save the settings.
Hostname	Enter a hostname that is displayed on devices such as an IP router. <ul style="list-style-type: none"> ● The default is your model name.
NTP	Turn Network Time Protocol (NTP) on or off.
NTP Server	Enter your NTP server.
RTMP Setting	Stream live video to a video platform such as YouTube. <ol style="list-style-type: none"> 1. Enter the Server URL and Stream Key of your video platform. Please refer to the instruction of your platform to obtain the server URL and stream key. 2. Click Start Stream to start streaming, Stop to stop streaming.
RTSP Security	Protect your video stream on media players such as VLC, PotPlayer and QuickTime by ensuring that only authorized users can access it. <ul style="list-style-type: none"> ● When Security is turned off: <ol style="list-style-type: none"> 1. Enter your camera's RTSP URL into the media player. 2. PTZ camera: rtsp://[camera IP address]:554/live_st1 Wide-angle camera: rtsp://[camera IP address]:8554/live_st2 Example: rtsp://192.168.1.100:554/live_st1 ● When Security is turned on: <ol style="list-style-type: none"> 1. Enter your camera's RTSP URL, username and password into the media player. 2. PTZ camera: rtsp://[username:password]@[camera IP address] :554/live_st1 Wide-angle camera: rtsp://[username:password]@[camera IP address] :8554/live_st2 Example: rtsp://1:1@192.168.1.100:554/live_st1 3. Username and password: camera's web interface login
HLS Settings	Configure HTTP Live Streaming (HLS) settings to provide adaptive bitrate streaming, which ensures smooth playback and minimizes buffering. <ol style="list-style-type: none"> 1. Enter the stream URL obtained from the streaming service or server. 2. Click Start Stream to start streaming, Stop to stop streaming.
SRT Settings	<ul style="list-style-type: none"> ● vMix <ol style="list-style-type: none"> 1. Make sure the vMix workstation and your camera are on same network. Copy the workstation's IP address.


```

C:\WINDOWS\system32\cmd.exe
Windows IP Configuration

Wireless LAN adapter Local Area Connection* 1:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix  . :

Ethernet adapter Ethernet:

Connection-specific DNS Suffix  . :
Link-local IPv6 Address . . . . . : fe80::8013:bd79:8b8c:2339%21
IPv4 Address. . . . . : 192.168.1.19
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :

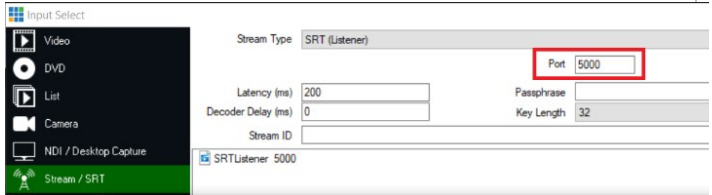
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix  . : aver.com
Link-local IPv6 Address . . . . . : fe80::685d:6272:1f05:a46e%11
IPv4 Address. . . . . : 10.100.200.67
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.100.200.254

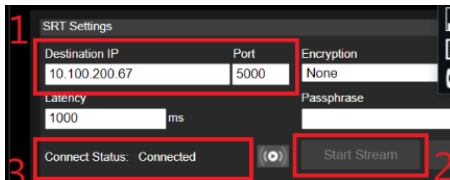
Ethernet adapter Bluetooth Network Connection:

```

2. Go to **Stream** tab > select **SRT (Listener)** from the **Stream Type** drop-down list. Copy the **Port** value.



3. Paste the IP address and Port value into **SRT Settings** fields and click **Start Stream**. **Connect Status** will change to **Connected**.



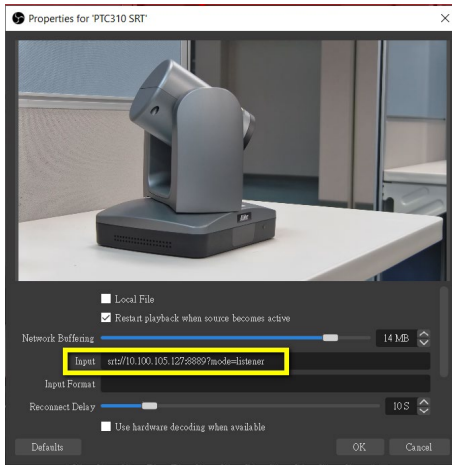
- **OBS (Open Broadcaster Software)**
 1. Make sure the OBS workstation and your camera are on same network. Copy the workstation's IP address.

```

Connection-specific DNS Suffix . : aver.com
Link-local IPv6 Address . . . . . : fe80::f1dc:b0da:87bd:acle%
IPv4 Address. . . . . : 10.100.105.127
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.100.105.254

```

2. Open OBS. Add a scene and a source.
3. Enter "srt://[Workstation IP]:[port]?mode=listener" in the **Input** field.
Example: srt://10.100.105.127:8889?mode=listener



4. If there is no image, right-click on the source > **Transform** > **Fit to screen** to re-scale image.

HTTPS	<p>Enable HTTPS to establish a secure connection between your browser and your camera. To enable HTTPS access on your camera:</p> <ol style="list-style-type: none"> 1. Obtain a SSL certificate for encryption and decryption in base-64 encoded format and use a private key in PKCS#8 format (unencrypted). 2. Package the required certificate content into PEM format. The SSL certificate uploaded to the camera must be in PEM format. 3. Click Choose File to select the certificate file, and then click Upload. 4. Turn on HTTPS.
SSHD	Turn remote debugging from AVer on or off.
Visca Port Mode	Select a VISCA port mode.
Visca Port Number	Enter a VISCA port number.
802.1x Enable	Turn 802.1x Enable on or off.
Eap Method	When 802.1x Enable is turned on, select an Eap method.
Eap Setting	Based on your Eap method, complete the authentication and click Confirm .

Tracking Settings

Tracking Modes Overview

For details on settings, please refer to their respective chapters.

Presenter

Frames and follows the presenter on screen.



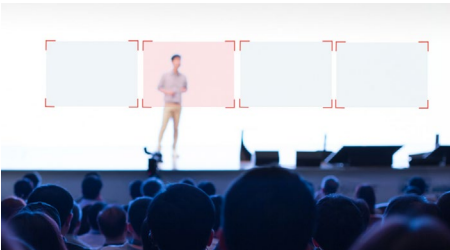
Zone

Frames and follows the presenter on screen using up to four presets. When the presenter exits the previous preset, the camera will follow and move to the next preset.



Segment

Segment Mode lets you define a detection area for each preset. When the presenter enters the detection area, the camera will move to the corresponding preset.



Hybrid

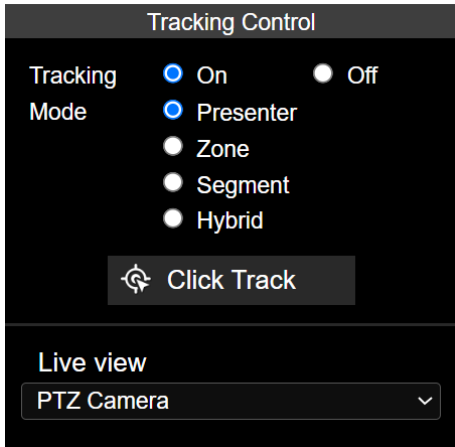
Hybrid Mode combines Presenter Mode and Segment Mode, and lets you define a detection area for each preset. When the presenter enters the detection area, the camera will move to the corresponding preset. When the presenter leaves the detection area, the camera frames and follows the presenter.



Compare Tracking Modes

	Presenter	Zone	Segment	Hybrid (Presenter + Segment)
Use case	Performance arts	Keynotes, presentations	Keynotes, presentations	All of the above
Perfect for	Movements	Content	Content, having audience on screen	Movements and content
Detection lens	PTZ	PTZ	Wide angle	PTZ + Wide angle
Available presets	Preset 1	Presets 6–9	Presets 14–17	Presets 10–13
Presets can have a detection area	-	-	✓	✓ Segment
Click Track	✓	-	-	✓ Presenter

Tracking Control Panel

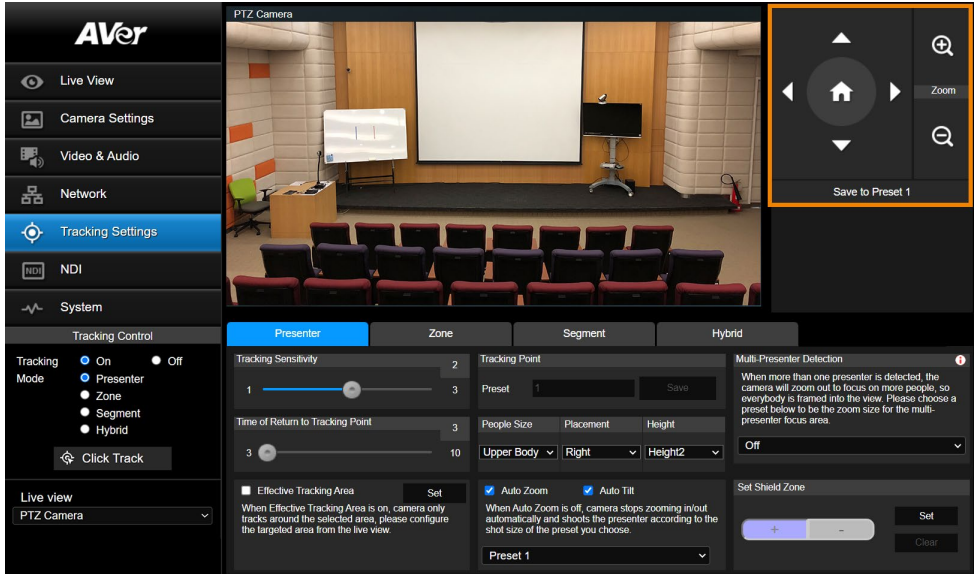


- **Tracking:** Turn tracking on or off.
- **Mode:** Select a tracking mode to frame and follow the presenter in real time as they move. For details on tracking settings, please refer to respective chapters.
- **Click Track:** Presenter Mode lets you switch the presenter you want to track. Click the **Click Track** button to frame everyone on screen in bounding boxes and click to select the presenter you want to track. Selected presenter will be in a red frame.



- **Live view:** Select the PTZ lens or the wide-angle lens.

Presenter Mode

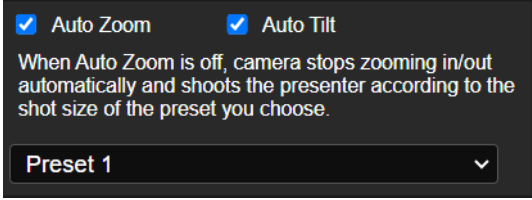


Presenter Mode frames and follows the presenter on screen, and returns to the tracking point (Preset 1) when no one is on screen.

To set up Presenter Mode:

1. Go to **Tracking Settings > Presenter**.
2. Use pan, tilt and zoom controls to position your camera and click **Save to Preset 1** to save the **Tracking Point**.
3. Configure additional settings:

Item	Description
Tracking Sensitivity	Drag the slider to adjust tracking sensitivity.
Time of Return to Tracking Point	Drag the slider to set an idle time (second) before the camera return to the tracking point.
Effective Tracking Area	Define an effective tracking area. The camera only tracks the presenter inside that area. <ol style="list-style-type: none"> 1. Select the checkbox and click Set. 2. Drag the upper-left or the lower-right corner of the red square to adjust the size of the tracking area.
Tracking Point	If no one is on screen, the camera will return to the tracking point (Preset 1).

<p>People Size, Placement, Height</p>	<ul style="list-style-type: none"> ● Frame the presenter's full body or upper body. ● Horizontally align the presenter to the left, center or right. ● Vertically align the presenter to the center or bottom.
<p>Auto Zoom</p>	<ul style="list-style-type: none"> ● When Auto Zoom is turned off, the zoom ratio will be based on your selected preset from the drop-down list. ● When Auto Tilt is turned off, the tilt angle will be based on your selected preset from the drop-down list.
<p>Auto Tilt</p>	
<p>Multi-Presenter Detection</p>	<p>When multiple presenters are detected, the camera will go to your selected Multi-Presenter Detection preset and frame entire group on screen.</p> <ol style="list-style-type: none"> 1. Go to Tracking Settings > Presenter. 2. Make sure Auto Zoom is turned on. 3. Select a preset from the Multi-Presenter Detection drop-down list to turn on Multi-Presenter Detection. <div style="background-color: #f0f0f0; padding: 10px; margin: 10px 0;"> <p>Note:</p> <ul style="list-style-type: none"> ● Make sure you have defined the required preset. ● The preset should cover a wide area where multiple presenters may appear. </div> <ol style="list-style-type: none"> 4. You can also define an exclusion zone in Set Shield Zone to avoid unwanted multi-presenter detection, such as when you have audience in the front row.
<p>Set Shield Zone</p>	<p>Define an exclusion zone to avoid unwanted multi-presenter detection.</p> <ul style="list-style-type: none"> ● To add a shield zone: <ol style="list-style-type: none"> 1. Click Set. 2. Select the plus icon, then drag a gray square over an area you want to shield on the live view with your mouse. 3. Click Save. ● To delete a shield zone:

1. Click **Set**.
 2. Select the **minus** icon, then select a gray square you want to delete on the live view with your mouse.
 3. Click **Save**.
- To clear all shield zones:
 1. Click **Set**.
 2. Click **Clear** to clear all shield zones on the live view.
 3. Click **Save**.

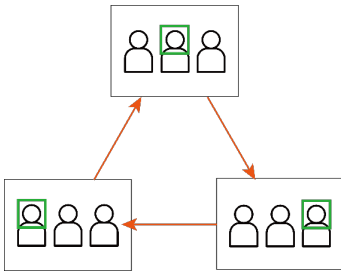
4. Turn on **Tracking** and select **Presenter Mode** on the **Tracking Control** panel.

Note: Presenter Mode lets you switch the presenter you want to track. Click the **Click Track** button to frame everyone on screen in bounding boxes and click to select the presenter you want to track. Selected presenter will be in a red frame.

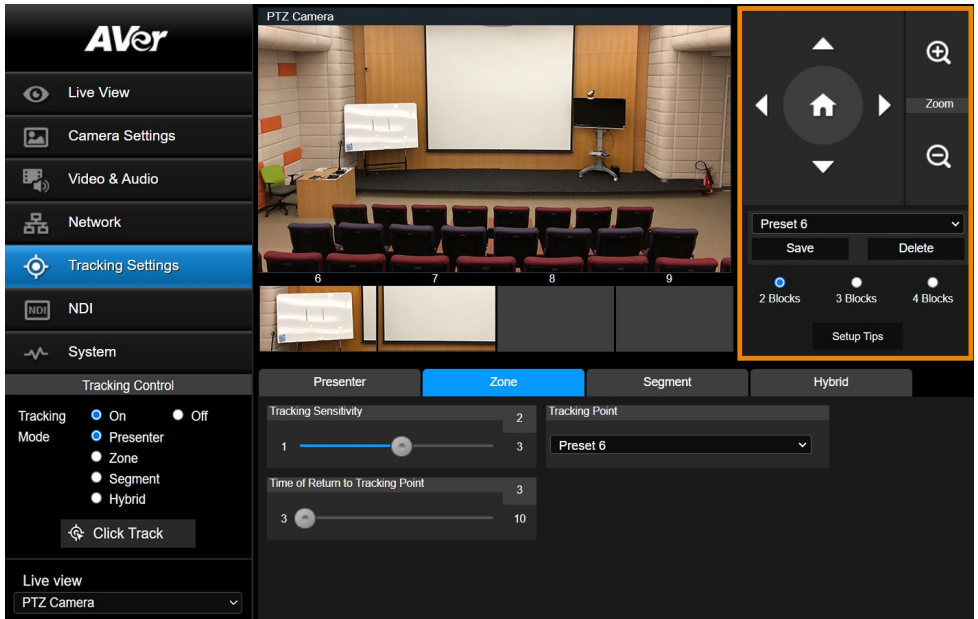


To set up Presenter Mode with the remote control:

1. Use directional buttons to position your camera. Press and hold **Preset**, then press **Number button 1** to save the tracking point (Preset 1).
2. Press **Auto Tracking ON** to turn on Presenter Mode.
3. Press **Upper Body** or **Full body**.
4. To switch presenters, press **Switch**. With each press, cycle through presenters clockwise, starting from the center.



Zone Mode



Zone Mode uses up to 4 presets to frame and follow the presenter on screen. When the presenter exits the previous preset, the camera will follow and move to the next preset.

When no one is in the presets, the camera returns to the tracking point (Preset 6 or selected preset).

Note:

- Zone Mode detects any faces or human silhouettes entering the presets. Beside the presenter, make sure there are no other faces or human silhouettes on a poster in the presets to avoid interference.
- If you are framing both the presenter and the audience, we recommend using Segment Mode.

To set up Zone Mode:

1. Go to **Tracking Settings > Zone**.
2. Select the number of **Blocks** (presets) you want to track.
3. Select the presets you want to save from the drop-down list. Presets 6–9 are available.

2 Blocks	3 Blocks	4 Blocks
Preset 6, 7	Preset 6, 7, 8	Preset 6, 7, 8, 9

- Use pan, tilt and zoom controls to position your camera and click **Save** to save that position. A thumbnail will appear in the preview. Repeat these steps for all presets.



Note: Define overlapping presets from left to right for a smooth transition. When the presenter exits the previous preset, the camera will follow and move to the next preset.

- Configure additional settings:

Item	Description
Tracking Sensitivity	Drag the slider to adjust tracking sensitivity.
Time of Return to Tracking Point	Drag the slider to set an idle time (second) before the camera return to the tracking point.
Tracking Point	<p>If no one is in the presets, the camera will return to the tracking point (Preset 6 or selected preset).</p> <div style="border: 1px solid black; background-color: #333; color: white; padding: 5px; margin-top: 10px;"> <p>Tracking Point</p> <p style="background-color: #555; color: white; padding: 2px;">Preset 6</p> </div>

- Turn on **Tracking** and select **Zone Mode** on the **Tracking Control** panel.



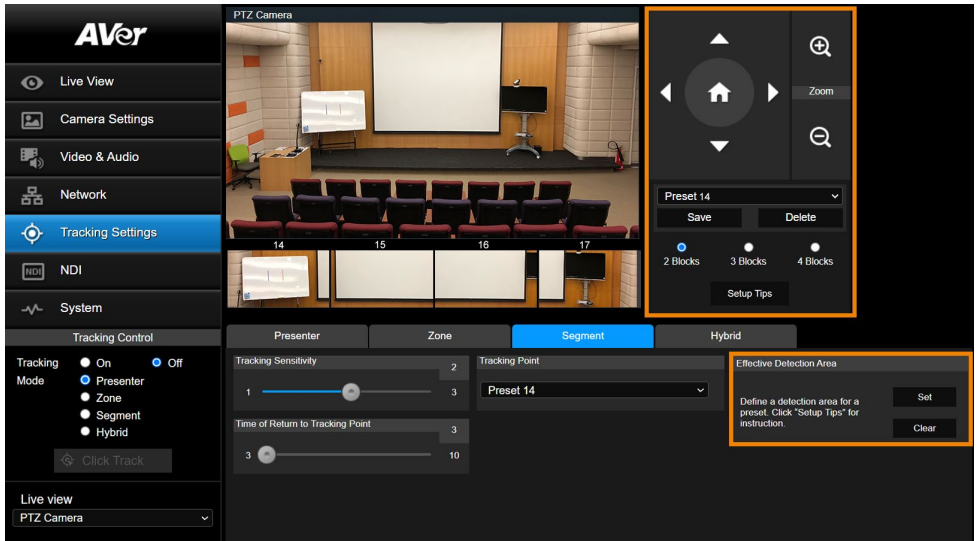
To set up Zone Mode with the remote control:

1. Use directional buttons to position your camera. Press and hold **Preset**, then press **Number button 6** to save Preset 6. Repeat these steps for Preset 7.

Note: Zone Mode has 2 blocks by default. To select more blocks, access the web interface.

2. Press **Auto Tracking ON** to turn on Presenter Mode
3. Then press and hold **Tracking Point** to switch tracking mode from Presenter Mode to Zone Mode.

Segment Mode



Similar to Zone Mode, Segment Mode uses up to 4 presets to frame and follow the presenter on screen, but lets you define a detection area for each preset for added precision.

When the presenter enters the detection area, the camera will move to the corresponding preset. When no one is in the detection areas, the camera returns to the tracking point (Preset 14 or selected preset).

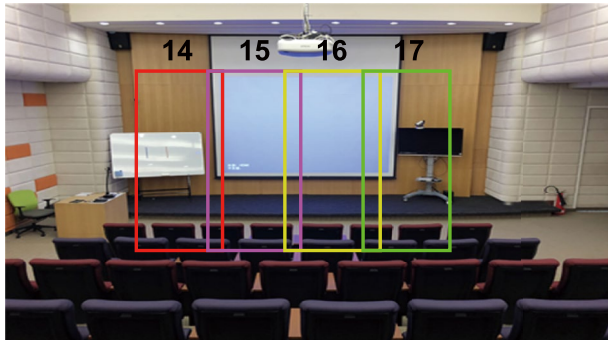
Note:

- Segment Mode detects any faces or human silhouettes entering the detection areas. Apart from the presenter, make sure there are no other faces or human silhouettes on a poster in the detection areas to avoid interference.
- The camera uses the wide-angle lens for detection areas and the PTZ lens for presets. The camera live view will switch accordingly when you save detection areas and presets.

To set up Segment Mode:

1. Go to **Tracking Settings > Segment**.
2. First, define detection areas. Click **Set** in the **Effective Detection Area** section.
3. Drag a square over the area you want the camera to detect on the wide-angle live view.

- Select the number of **Blocks** (presets) you want to track. Then click **Save**.
Detection areas will be equally divided based on the number of blocks you select and appear on the wide-angle live view.



Note:

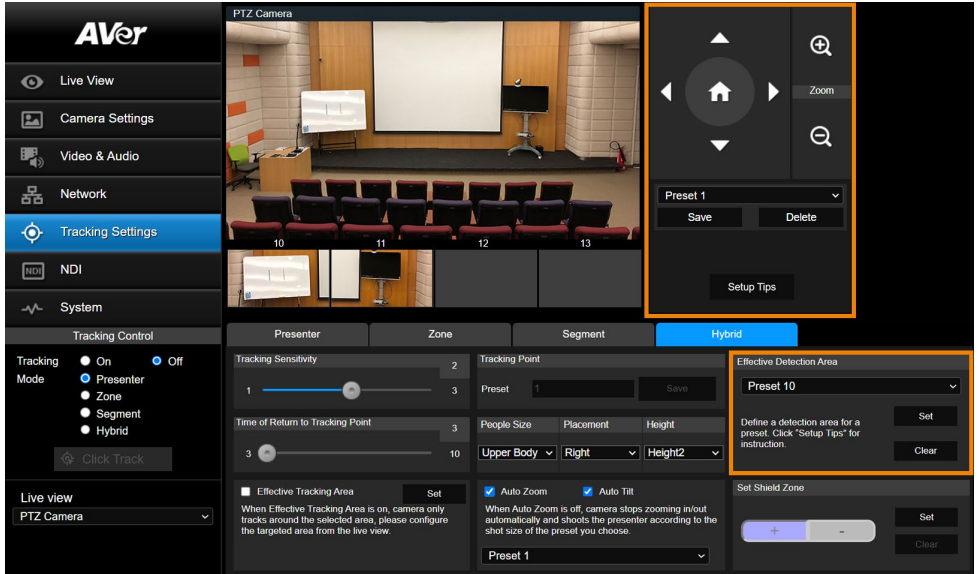
- The number on top of each color square represents the corresponding preset.
- Drag the edge of the color square to resize. The detection areas must overlap.

- Second, define presets. Select the presets you want to save from the drop-down list, and the camera live view will switch to the PTZ lens. Presets 14–17 are available.
- Use pan, tilt and zoom controls to position your camera and click **Save** to save that position. A thumbnail will appear in the preview. Repeat these steps for all presets.
- Configure additional settings:

Item	Description
Tracking Sensitivity	Drag the slider to adjust tracking sensitivity.
Time of Return to Tracking Point	Drag the slider to set an idle time (second) before the camera returns to the tracking point.
Tracking Point	<p>If no one is in the detection areas, the camera will return to the tracking point (Preset 14 or selected preset).</p> <div data-bbox="446 1177 980 1305" style="border: 1px solid black; padding: 5px; background-color: #333; color: white;"> <p>Tracking Point</p> <p>Preset 14 ▾</p> </div>

- Turn on **Tracking** and select **Segment Mode** on the **Tracking Control** panel.

Hybrid Mode



Hybrid Mode combines Presenter Mode and Segment Mode, and lets you define a detection area for each preset. Defining a detection area will allow a smoother transition, but you can also define a preset without one.

When the presenter enters the detection area, the camera will move to the corresponding preset. When the presenter leaves the detection area, the camera frames and follows the presenter.

When no one is on screen, the camera returns to the tracking point (Preset 1).

Note: The camera uses the wide-angle lens for detection areas and the PTZ lens for presets. The camera live view will switch accordingly when you save detection areas and presets.

To set up Hybrid Mode:

1. Go to **Tracking Settings > Hybrid**.
2. First, define detection areas. Detection areas are saved individually for each preset. From the **Effective Detection Area** drop-down menu, select a preset you want to save the detection area for. Presets 10–13 are available.
3. Click **Set**. Then drag a square over the area you want the camera to detect on the wide-angle live view.
4. Click **Save**. The camera will automatically switch to the PTZ live view around that detection area.

5. Second, define presets. Use pan, tilt and zoom controls to position your camera and click **Save** to save that position. A thumbnail will appear in the preview. Repeat steps 2–5 for all presets.

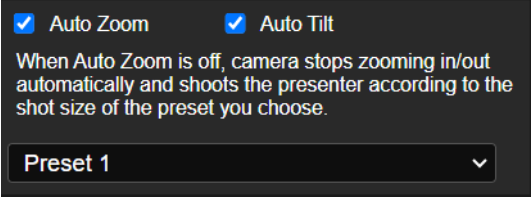


Note:

- Do not overlap presets. Leave ample room between presets for a smooth transition.
- The preset must be larger and covers the detection area.

6. Select **Preset 1** from the drop-down list to save the tracking point. Use pan, tilt and zoom controls to position your camera and click **Save** to save that position
7. Configure additional settings:

Item	Description
Tracking Sensitivity	Drag the slider to adjust tracking sensitivity.
Time of Return to Tracking Point	Drag the slider to set an idle time (second) before the camera returns to the tracking point.
Effective Tracking Area	Define an effective tracking area. Only presenters inside the area will be tracked. <ol style="list-style-type: none"> 1. Select the checkbox and click Set. 2. Drag the upper-left or the lower-right corner of the red frame to adjust the size of the tracking area.
Tracking Point	If no one is on screen, the camera will return to the tracking point (Preset 1).
People Size, Placement, Height	<ul style="list-style-type: none"> ● Frame the presenter's full body or upper body. ● Horizontally align the presenter to the left, center or right. ● Vertically align the presenter to the center or bottom.
Auto Zoom	<ul style="list-style-type: none"> ● When Auto Zoom is turned off, the zoom ratio will be based on your selected preset from the drop-down list. ● When Auto Tilt is turned off, the tilt angle will be based on your selected preset from the drop-down list.

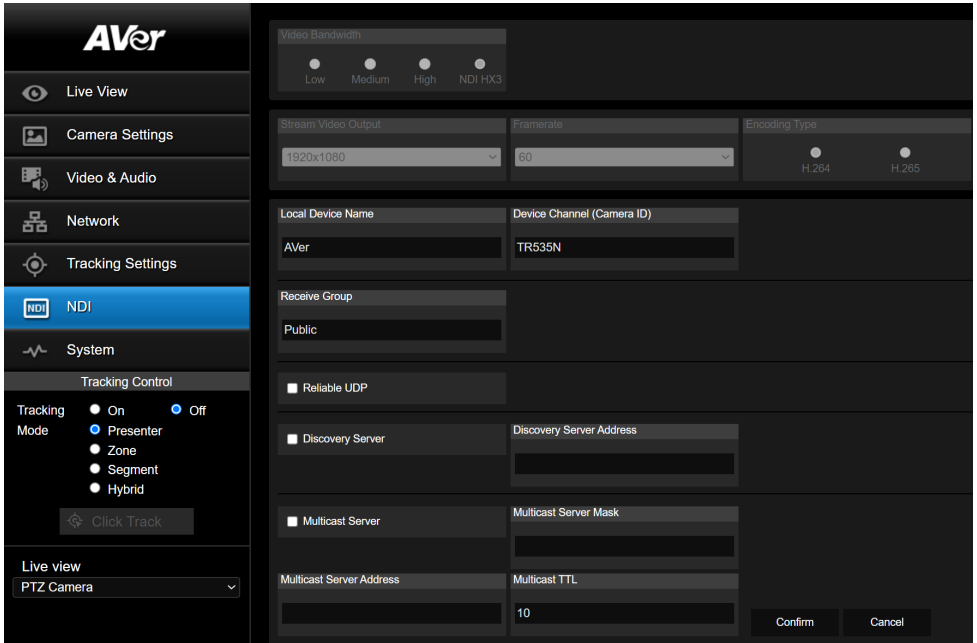
Auto Tilt	
Set Shield Zone	<p>Define an exclusion zone to avoid unwanted multi-presenter detection.</p> <ul style="list-style-type: none"> ● To add a shield zone: <ol style="list-style-type: none"> 1. Click Set. 2. Select the plus icon, then drag a gray square over an area you want to shield on the live view with your mouse. 3. Click Save. ● To delete a shield zone: <ol style="list-style-type: none"> 1. Click Set. 2. Select the minus icon, then select a gray square you want to delete on the live view with your mouse. 3. Click Save. ● To clear all shield zones: <ol style="list-style-type: none"> 1. Click Set. 2. Click Clear to clear all shield zones on the live view. 3. Click Save.

8. Turn on **Tracking** and select **Hybrid Mode** on the **Tracking Control** panel.

Note: Presenter Mode lets you switch the presenter you want to track. Click the **Click Track** button to frame everyone on screen in bounding boxes and click to select the presenter you want to track. Selected presenter will be in a red frame.

NDI

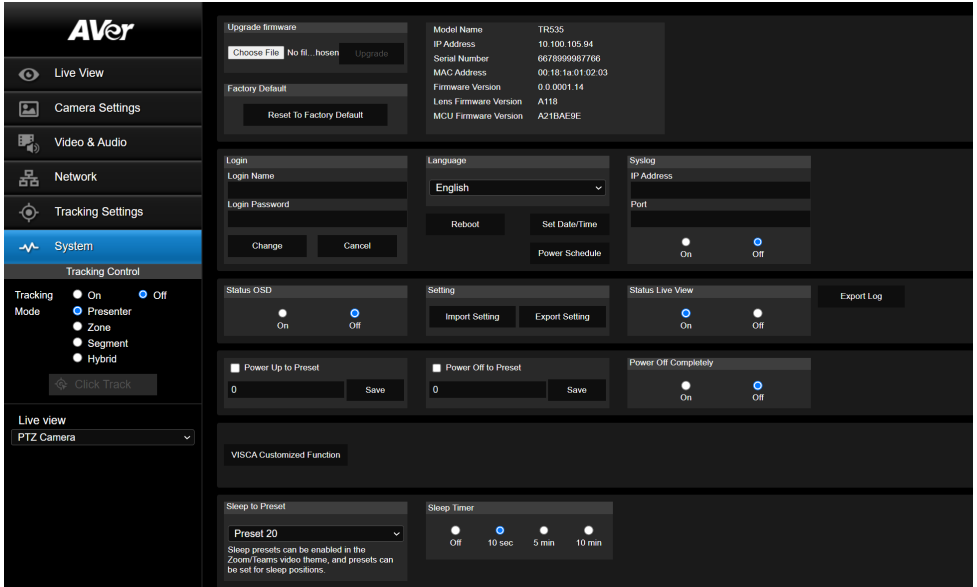
Note: NDI is available for model names with N only.



Item	Description
Video Bandwidth	Select a bandwidth. NDI HX3 is a protocol that enables high-quality video streaming over IP networks.
Stream Video Output	Choose a streaming output resolution for the live view.
Framerate	Choose a framerate.
Encoding Type	Select H.264 or H.265 .
Local Device Name	Enter a name that identifies your camera group on the NDI software. <ul style="list-style-type: none"> The default is AVer.
Device Channel (Camera ID)	Enter a name that identifies your camera on the NDI software. <ul style="list-style-type: none"> The default is your model name. A name must have no more than 10 characters. Use number, upper and lower case letter, or special character (! @ % ^ , . / : + ? [] { } - _ ~).
Receive Group	Enter a name for a receive group. <ul style="list-style-type: none"> All devices in the receive group receive the same NDI streams. The receive group should remain public. If this is changed,

	you will need to join the group through NDI® Access Manager.
Reliable UDP	Select the checkbox to enable Reliable User Datagram Protocol (RUDP).
Discovery Server	Select the checkbox to enable discovery server to allow devices to discover and connect to each other on a network automatically.
Discovery Server Address	Enter the IP address of a server running a discovery server application.
Multicast Server	Select the checkbox to enable multicast server to allow efficient distribution of NDI streams to multiple receivers without overwhelming the network.
Multicast Server Mask	Enter the network mask to specify the range of IP addresses that are eligible to receive NDI streams.
Multicast Server Address	Enter the IP address of a group of recipients that receive NDI streams from a multicast server.
Multicast TTL	Enter a multicast time to live (TTL) value between 1-255 to control the distance multicast packets can travel.

System



Item	Description
Upgrade Firmware	To upgrade the firmware: <ol style="list-style-type: none"> 1. Download the latest firmware from AVer Download Center (https://www.aver.com/download-center). 2. On the web interface, go to System > Upgrade firmware. 3. Click Browse to select the firmware. 4. Click Upgrade. 5. Refresh the browser after the upgrade is complete. <p>Note: Keep your camera connected to a power source during firmware upgrade. Network connection will be lost during the process and camera will reboot automatically after upgrading.</p>
Factory Default	Reset the camera to factory default settings.
Login	For first-time login, you'll be prompted to change the username and password: <ul style="list-style-type: none"> ● Username: Use 1-32 characters. ● Password: Use 8-32 characters and a combination of uppercase letters, lowercase letters, numbers, and symbols (%+=, - ^/@.~). The password cannot be the same as the username.
Language	Change the web interface language.
Reboot	Restart your camera.
Set Date/Time	Set the camera date and time.

Power Schedule	Schedule specific times for the camera to reboot or shut down.
Syslog	Turn on to receive technical supports. Enter the IP Address and Port of the receiving device for debug and problem analysis.
Status OSD	Turn on to display preset and zoom ratio on HDMI output.
Setting	Import or export your camera settings
Status Live View	Turn the camera live view on or off.
Export Log	Export system log.
Power Up to Preset	Move the camera to the defined preset after powering on. To enable: 1. Make sure the preset has been defined. 2. Select Power Up to Preset > enter a preset number > click Save .
Power Off to Preset	Move the camera to the defined preset before powering off. To enable: 1. Make sure the preset has been defined. 2. Select Power Off to Preset > enter a preset number > click Save .
VISCA Customized Function	Set VISCA customized functions and click OK .
Sleep to Preset	When no video is transmitted over USB on Zoom or Teams, set up Sleep to Preset and Sleep Timer to move the camera to a defined preset after a period of time for enhanced privacy. ● To enable: 1. Make sure the preset has been defined. 2. Go to Video & Audio > Theme Mode > choose Zoom or Teams . 3. Go to Systems > Sleep to Preset > choose a preset. 4. Go to Systems > Sleep Timer > select a duration. ● To disable, choose Off from the Sleep to Preset drop-down list or select Off in Sleep Timer .
Sleep Timer	
Help Improving AVer Camera	Opt-in or opt-out of providing anonymous usage data.
LED Indicator Brightness	Drag the slider to adjust the brightness.
Wide-Angle Camera Setting	Adjust the wide-angle lens tilt angle.

Appendix

VISCA RS-232 Command Table

Command Set	Command	Command Packet	Comments
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	p=0 (Low) to 7 (High) pqrs: Zoom Position
	Tele(Variable)	8x 01 04 07 2p FF	
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	
CAM_Focus	Stop	8x 01 04 08 00 FF	Each 'Far/Near' needs a 'stop'
	Far (Standard)	8x 01 04 08 02 FF	
	Near (Standard)	8x 01 04 08 03 FF	
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
	One Push	8x 01 04 18 01 FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	ATW	8x 01 04 35 04 FF	
	Indoor	8x 01 04 35 01 FF	
	Outdoor	8x 01 04 35 02 FF	
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	Manual	8x 01 04 35 05 FF	Manual Control mode
	One Push	8x 01 04 10 05 FF	One Push WB Trigger
CAM_RGain	Up	8x 01 04 03 02 FF	Manual Control of R Gain
	Down	8x 01 04 03 03 FF	
CAM_Bgain	Up	8x 01 04 04 02 FF	Manual Control of B Gain
	Down	8x 01 04 04 03 FF	
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 (Manual control)
CAM_Shutter	Up	8x 01 04 0A 02 FF	Shutter Setting
	Down	8x 01 04 0A 03 FF	
CAM_Iris	Up	8x 01 04 0B 02 FF	Iris Setting
	Down	8x 01 04 0B 03 FF	
CAM_Gain	Up	8x 01 04 0C 02 FF	Gain Setting
	Down	8x 01 04 0C 03 FF	
CAM_Bright	Up	8x 01 04 0D 02 FF	Bright Setting
	Down	8x 01 04 0D 03 FF	
CAM_Exposure Compensation	Up	8x 01 04 0E 02 FF	Exposure Compensation Amount Setting
	Down	8x 01 04 0E 03 FF	
CAM_Backlight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF

	Off	8x 01 04 33 03 FF	
CAM_Preset	Reset	8x 01 04 3F 00 pp FF	pp: Preset Number 0x00-0xFF
	Set	8x 01 04 3F 01 pp FF	
	Recall	8x 01 04 3F 02 pp FF	
CAM_Menu	On/Off	8x 01 06 06 10 FF	Display ON/OFF
Pan-tilt Drive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed setting 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed setting 0x01 (low speed) to 0x18 (high speed)
	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	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
CAM_WDR	On	8x 01 04 3D 02 FF	Wdr ON/OFF
	Off	8x 01 04 3D 03 FF	
CAM_MenuEnter		8x 01 7E 01 02 00 01 FF	Enter Submenu
Tally Lamp	ON (RED)	8x 01 7E 01 0A 00 02 FF	
	OFF	8x 01 7E 01 0A 00 03 FF	
	ON (Green)	8x 01 7E 01 0A 00 04 FF	8x 01 7E 01 0A 00 04 FF
	ON (Amber)	8x 01 7E 01 0A 00 05 FF	
Freeze	Freeze On	81 01 04 62 02 FF	Freeze On Immediately
	Freeze Off	81 01 04 62 03 FF	Freeze Off Immediately
	Preset Freeze On	81 01 04 62 22 FF	Freeze On When Running Preset
	Preset Freeze Off	81 01 04 62 23 FF	Freeze Off When Running Preset
Auto Tracking	On	8x 01 04 7D 02 FF	Auto tracking ON/OFF
	Off	8x 01 04 7D 03 FF	
CAM_Memory Special	Set	8x 01 04 3F 01 pp FF	These are changeable depending on VISCA Customized Functions web setting: pp: 0x00 To 0xFF normal preset pp: 0x5F => Turn on OSD menu pp: 0xA0 => Full Body pp: 0xA1 => Upper Body pp: 0xA2 => Tracking Point pp: 0xA3 => Switch pp: 0xA4 => Presenter mode pp: 0xA5 => Zone mode

			pp: 0xA6 => Hybrid mode pp: 0xA7 => segment mode
Absolute Position	Set	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	VV: Pan speed setting 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed setting 0x01 (low speed) to 0x18 (high speed) YYYY: Pan Position ZZZZ: Tilt Position
Auto zoom	On	8x 01 04 A0 02 FF	
	Off	8x 01 04 A0 03 FF	
Effective Tracking area	On	8x 01 04 A1 02 FF	
	Off	8x 01 04 A1 03 FF	
RTMP	On	8x 01 04 A2 02 FF	
	Off	8x 01 04 A2 03 FF	
sys_theme_mode	IP	8x 01 04 A3 00 FF	
	HDMI	8x 01 04 A3 01 FF	
	USB	8x 01 04 A3 02 FF	
	ZOOM	8x 01 04 A3 03 FF	
	Teams	8x 01 04 A3 04 FF	
Reboot	On	8x 01 04 A4 FF	
	Off	8x 01 04 A4 03 FF	
Preset Affects PTZ & Focus Values Only	On	8x 01 04 A5 02 FF	
	Off	8x 01 04 A5 03 FF	
Relative Zoom Ratio	On	8x 01 04 A6 02 FF	
	Off	8x 01 04 A6 03 FF	
Auto Tilt	On	8x 01 04 A7 02 FF	
	Off	8x 01 04 A7 03 FF	
Auto Zoom/Tilt preset	Set	8x 01 04 A8 pp FF	pp: 0x00 To 0xFF normal preset
Multi presenter	On	8x 01 04 A9 02 FF	
	Off	8x 01 04 A9 03 FF	
Multi presenter preset	Set	8x 01 04 AA pp FF	pp: 0x00 To 0xFF normal preset

Inquiry Command	Command Packet	Reply Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_WBModelInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	In Door
		y0 50 02 FF	Out Door
		y0 50 03 FF	One Push WB
		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_AEModelInq	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_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_FocusModelInq	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
zoom_Pos_Inq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
PT_Pos_Inq	8x 09 06 12 FF	y0 50 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	YYYY: Pan Position ZZZZ: Tilt Position
CAM_Preset Inq	8x 09 04 3F FF	y0 50 pp FF	Return the last preset number which has been operated pp:01-FF
CAM_Tracking status	8x 09 36 69 02 FF	y0 50 01 FF	On
		y0 50 00 FF	Off
CAM_Tracking_mode	8x 09 36 69 01 FF	y0 50 01 FF	Presenter
		y0 50 02 FF	Zone
		y0 50 03 FF	Hybrid

		y0 50 04 FF	Segment
CAM_Tracking body size	8x 09 36 69 03 FF	y0 50 01 FF	Full body
		y0 50 02 FF	Upper body
CAM_OSD MENU on/off	8x 09 7E 04 76 01 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_Tally	8x 09 7E 01 0A FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_WDR mode	8x 09 04 3D FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_BLC mode	8x 09 04 33 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_Live Freeze	8x 09 04 62 01 FF	y0 50 02 FF	Freeze On
		y0 50 03 FF	Freeze Off
CAM_Preset Freeze	8x 09 04 62 02 FF	y0 50 02 FF	Preset Freeze On
		y0 50 03 FF	Preset Freeze Off
Firmware version	8x 09 36 69 04 FF	y0 50 0p 0q 0r 0s 0t 0u 0v 0w FF	fw_ver: p.q.rstu.vw
USB Status	8x 09 36 69 05 FF	y0 50 00 FF	USB cable plug out
		y0 50 01 FF	USB cable plug in
UVC Status	8x 09 36 69 06 FF	y0 50 00 FF	UVC stream off
		y0 50 01 FF	UVC stream on

VISCA over IP Settings

PORT

Internet protocol	IPv4
Transport protocol	UDP
Port address	52381

FORMAT

	byte 0	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte8 ~~~ byte23
func	Payload type		Payload length		Sequence number				Payload (1 to 16 bytes)
data	Value1	Value2	1~16 (0x0001~0x0010)		0X00000000 ~ 0XFFFFFFF				VISCA Packet (see page VISCA)

Payload type

Name	Value1	Value2	Description
VISCA command	0x01	0x00	Stores the VISCA command.
VISCA inquiry	0x01	0x10	Stores the VISCA inquiry.
VISCA reply	0x01	0x11	Stores the reply for the VISCA command or VISCA inquiry

CGI Command

CGI List for Video Transmission					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
Get MJPEG stream	http://ip/livestream/livestream?action=get				640x360
Get RTSP stream	rtsp://ip/live_st1				
GET JPEG	/webui?StartStreaming=ActionPTZ				
	/webui?SaveImage=Mod_cram_ptz1.jpg	Mod_cram_ptz1.jpg ~ Mod_cram_ptz4.jpg			

CGI List for Camera Control					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
up start	/webui?SetPtzf=	1,0,1&(random)			
up end	/webui?SetPtzf=	1,0,2&(random)			
down start	/webui?SetPtzf=	1,1,1&(random)			
down end	/webui?SetPtzf=	1,1,2&(random)			
left start	/webui?SetPtzf=	0,1,1&(random)			
left end	/webui?SetPtzf=	0,1,2&(random)			
right start	/webui?SetPtzf=	0,0,1&(random)			
right end	/webui?SetPtzf=	0,0,2&(random)			
zoom_in start	/webui?SetPtzf=	2,0,1&(random)			
zoom_in end	/webui?SetPtzf=	2,0,2&(random)			
zoom_out start	/webui?SetPtzf=	2,1,1&(random)			
zoom_out end	/webui?SetPtzf=	2,1,2&(random)			
set preset:	/webui?ActPrese t=	1,N&(random)			N : position
load preset:	/webui?SetPtzf=	0,N&(random)			N : position

CGI List for Various Settings					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
exposure value	/webui?Set=	img_expo_expo, 3,N&(random)	value	1 ~ 9	N : value
saturation	/webui?Set=	img_saturation,3 ,N&(random)	value	0 ~ 10	N : value
contrast	/webui?Set=	img_contrast,3, N&(random)	value	0 ~ 4	N : value
Tracking on:	/webui?Set=	trk_tracking,3,1 &(random)			

Tracking off:	/webui?Set=	trk_tracking,3,0 &(random)			
Reboot	/webui?Set=reboot,3,1&X				X : random value
Factory Reset	/webui?OnePush=C_DEFAULT&X				X : random value
Call Profile	http://ip/webui?ActProfiles=	call,3,N&(random)			N= Profile number
Save Profile	/webui?ActProfiles=	save,3,N&(random)			N= Profile number
Set Profile Name	/webui?ActProfiles=	Set,N,(Name)&(random)			N= Profile number
Tracking On/Off Get	/webui?Get=trk_tracking,3&_X	PTC	- Reply	On trk_tracking=1 Off trk_tracking=0	X : random value
Call Profile	/webui?ActProfiles=	call,3,N&(random)			N= Profile number
Save Profile	/webui?ActProfiles=	save,3,N&(random)			N= Profile number
Set Profile Name	/webui?ActProfiles=	Set,N,(Name)&(random)			N= Profile number
RTMP Start streaming	/webui?Set=	Set=vdo_rtmp_enable,3,1			
RTMP Stop streaming	/webui?Set=	Set=vdo_rtmp_enable,3,0			

Pelco-P Command

PAN AND TILT COMMANDS P/T bit(byte4.0) = 0

	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte 8
func	STX	ADDR	data1	data2	data3	data4	ETX	checksum
data	0xA0	0~7F	cmd 1	cmd 2	Pan speed	Tilt speed	0xAF	1~7 XOR

note : speed = 0x00~0x30

byte3 : command 1

bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
NA	CAM ON	NA	CAM ON/OFF	NA	NA	NA	NA

note : power off : byte3.6 = 0 & byte3.4 = 1

byte4: command 2

bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
NA	ZOOM Wide	ZOOM Tele	TILT Down	TILT Up	PAN Left	PAN Right	P/T bit 0(always)

EXTENDED COMMAND SET P/T bit(byte4.0) = 1

	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte 8
func	STX	ADDR	data1	data2	data3	data4	ETX	checksum
Set Preset XX	0xA0	0~7	0x00	0x03	0x00	Preset #	0xAF	1~7 XOR
Go To Preset XX	0xA0	0~7	0x00	0x07	0x00	Preset #	0xAF	1~7 XOR
Track ON	0xA0	0~7	0x00	0x65	0x00	0x00	0xAF	1~7 XOR
Track OFF	0xA0	0~7	0x00	0x67	0x00	0x00	0xAF	1~7 XOR
WOL ON	0xA0	0~7	0x00	0x69	0x00	0x00	0xAF	1~7 XOR
WOL OFF	0xA0	0~7	0x00	0x6B	0x00	0x00	0xAF	1~7 XOR
Read Profile XX	0xA0	0~7	0x00	0x6D	0x00	Profile #	0xAF	1~7 XOR
Save To Profile XX	0xA0	0~7	0x00	0x6F	0x00	Profile #	0xAF	1~7 XOR

note : Preset # : 0x01 ~ 0xFF

Profile # : 0x01 ~ 0x05

Pelco-D Command

PAN AND TILT COMMANDS P/T bit(byte4.0) = 0

	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7
func	SYNC	ADDR	cmd 1	cmd 2	data1	data2	checksum
data	0xFF	1~80	cmd 1	cmd 2	Pan speed	Tilt speed	2~6 SUM

note : speed = 0x00~0x30

byte3 : command 1

bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
SENSE ON	NA	NA	NA	CAM ON/OFF	NA	NA	NA

note : power off : byte3.7 = 0 & byte3.3 = 1

byte4: command 2

bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
NA	ZOOM Wide	ZOOM Tele	TILT Down	TILT Up	PAN Left	PAN Right	P/T bit 0(always)

EXTENDED COMMAND SET P/T bit(byte4.0) = 1

	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7
func	SYNC	ADDR	data1	data2	data3	data4	checksum
Set Preset XX	0xFF	1~8	0x00	0x03	0x00	Preset #	2~6 SUM
Go To Preset XX	0xFF	1~8	0x00	0x07	0x00	Preset #	2~6 SUM
Track ON	0xFF	1~8	0x00	0x65	0x00	0x00	2~6 SUM
Track OFF	0xFF	1~8	0x00	0x67	0x00	0x00	2~6 SUM
WOL ON	0xFF	1~8	0x00	0x69	0x00	0x00	2~6 SUM
WOL OFF	0xFF	1~8	0x00	0x6B	0x00	0x00	2~6 SUM
Read Profile XX	0xFF	1~8	0x00	0x6D	0x00	Profile #	2~6 SUM
Save To Profile XX	0xFF	1~8	0x00	0x6F	0x00	Profile #	2~6 SUM

note : Preset # : 0x01 ~ 0xFF

Profile # : 0x01 ~ 0x05