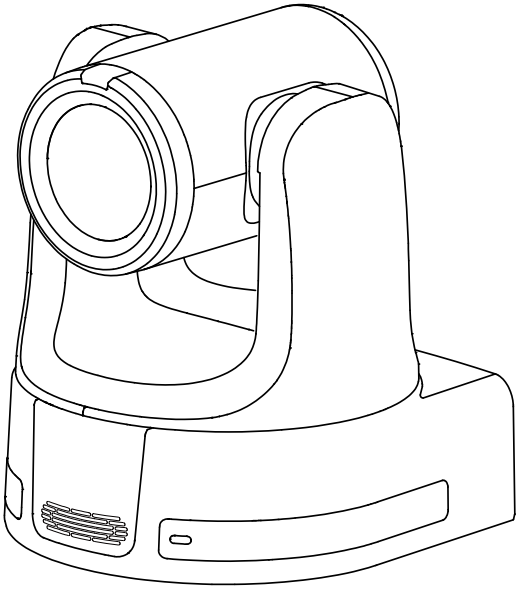
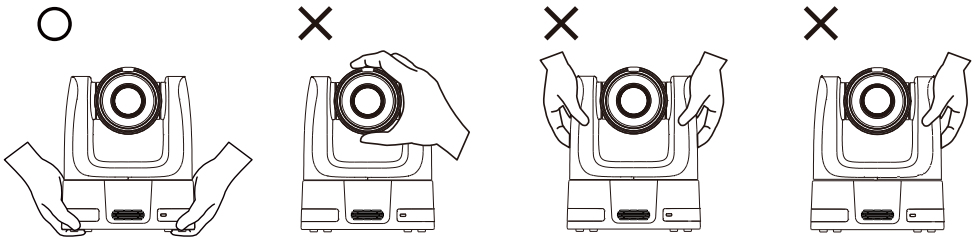
www.aver.com



# TR615
# Auto Tracking Camera

## User Manual

# 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。

(注)本製品同梱の電源ケーブルは、本製品同梱の電源アダプタでのみ使用してください。 本製品同梱の電源ケーブルは、他の電気機器では使用できません。

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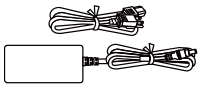
# Contents

# Overview

## Package Contents

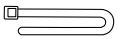
Camera



Power Adapter & Power Cord

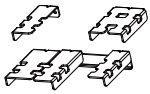
DIN8 to D-Sub9 Cable

Mini DIN9 to Mini DIN8 RS-232 Adaptor Cable

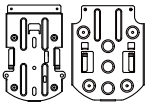


Cable Tie (x7)

Remote Control



Cable Fixing Plate (x3)

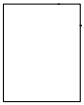


Ceiling Mount Bracket (x2)

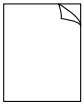
M2 x 4 mm Screw (x6)

1/4”-20, L=6.5 mm Screw (x2)

M3 x 6 mm Screw (x3)



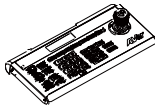
Drill Template



Quick Start Guide

## Optional Accessories

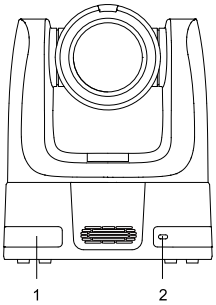
Wall Mount Bracket



Camera Controller (CL01)

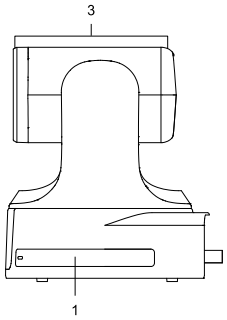
*For detail on optional accessories, consult your local dealer.

# Parts Info



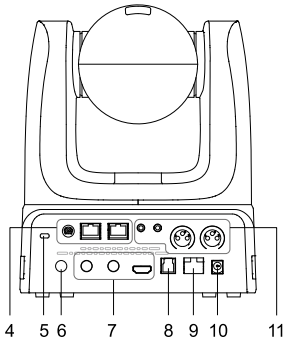

**Front View**

1. IR Sensor
2. LED Indicator




**Side View**

3. Tally Lamps (Front & Back)




**Back View**

4. Control Ports:
   RS-232 / RS-422 In / RS-422 Out
5. Kensington Lock
6. G/L Port
7. Video Output Ports:
   12G-SD1 / 12G-SDI 2 / HDMI
8. USB 3.0 Type-B Port
9. PoE++ 802.3bt
10. DC 12V Power Jack
11. Audio Input Ports:*
    Mic / Line / XLR-R / XLR-L

Audio Jack input level (max)

- MIC level: 50mV(rms), supplied voltage 2.5V
- Line level: 1V(rms)

XLR 3-pin balance input level (max)

- MIC level: -40dBu
- Line level: 4dBu
- Supply phantom power voltage 47±2V

## Tally Lamps

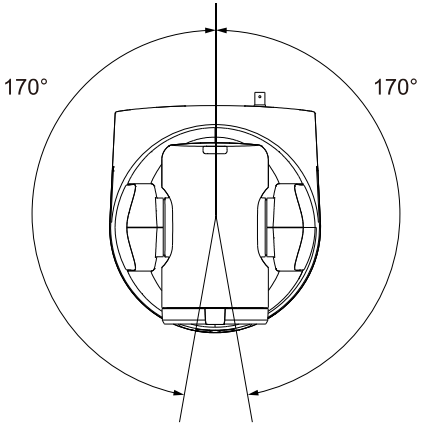
Programmable red, yellow, and green lights.
When video theme mode is set to Zoom and Teams:

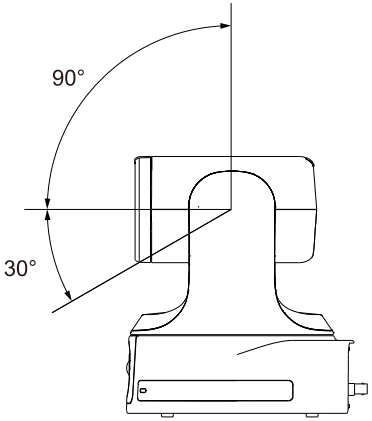
| Color | Status |
|---|---|
| Red | Streaming over USB |
| No light | Not streaming over USB |

## LED Indicator

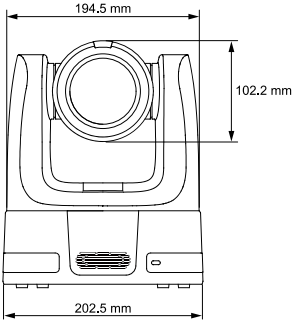
| Color | Status |
|---|---|
| Flashing orange | Start-up<br>*Ensure sufficient voltage to avoid repeated power cycling.* |
| Solid orange | Standby |
| Solid blue | Normal |
| Flashing blue | Auto tracking on |
| Flashing red | Firmware update |

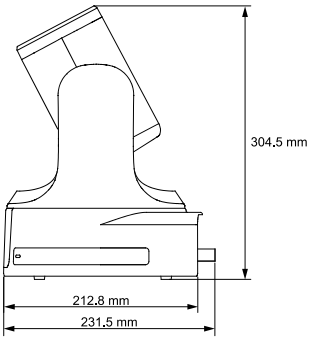
## Pan and Tilt Angle

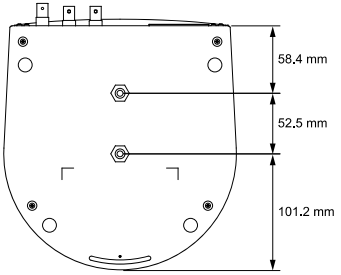


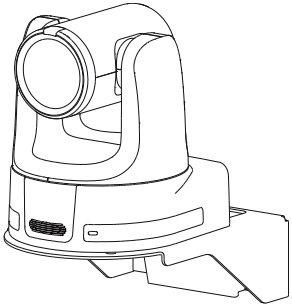



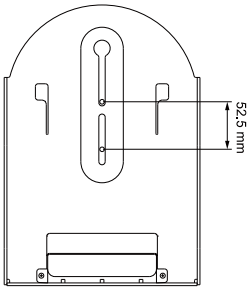
# Dimensions

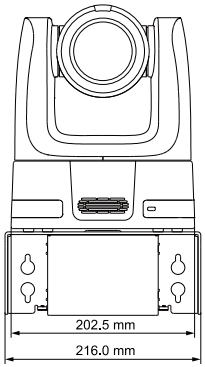

194.5 mm
102.2 mm
202.5 mm

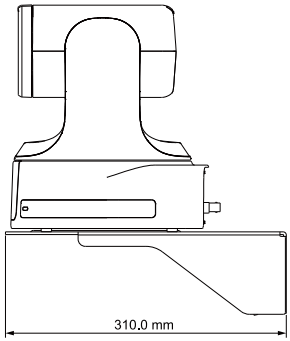

304.5 mm
212.8 mm
231.5 mm

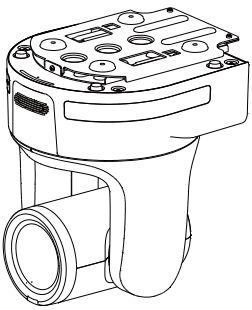

58.4 mm
52.5 mm
101.2 mm

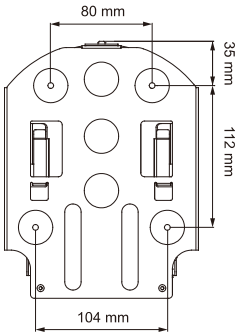


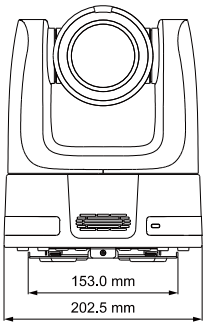

52.5 mm

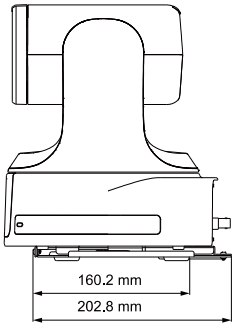

202.5 mm
216.0 mm


310.0 mm

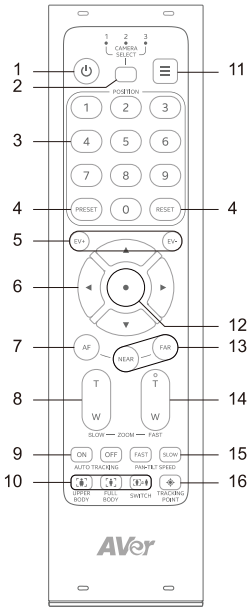



80 mm
35 mm
112 mm
104 mm


153.0 mm
202.5 mm

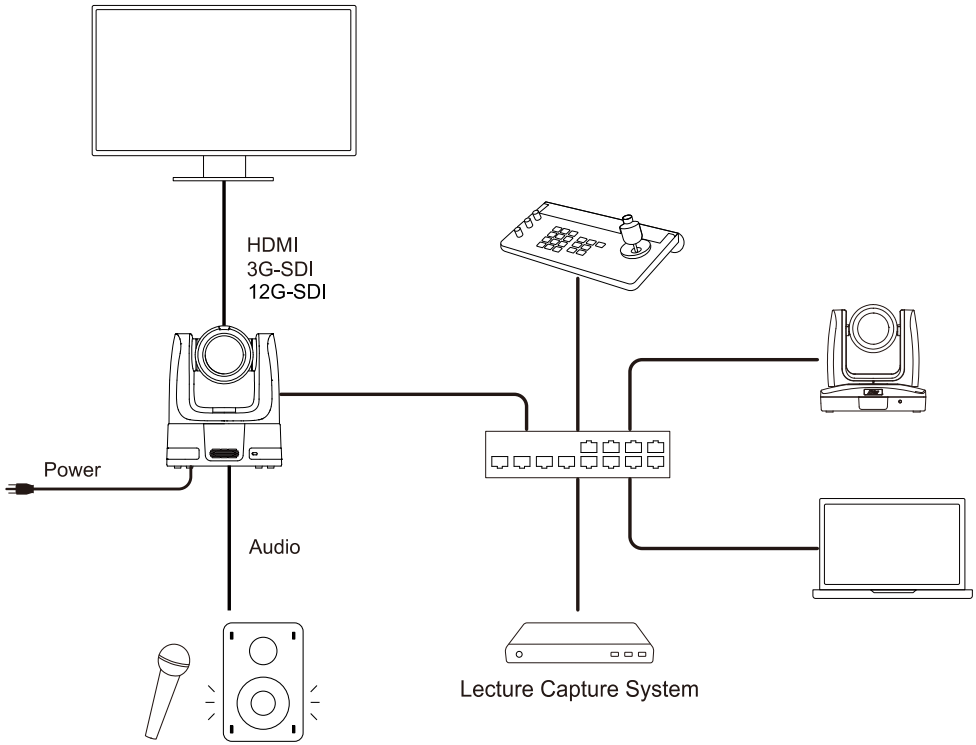

160.2 mm
202.8 mm

# Remote Control




| Name | Function |
|---|---|
| 1. Power | Enter Standby Mode or wake up.<br>**Note:** Waking up may take a while. |
| 2. Camera Select | No selection is required by default to operate the camera.<br>• Both the camera and the remote control are set to 1 at the factory.<br>• To assign a number to the camera, go to **System** > **Camera Selector** in the OSD menu. |
| 3. Number Buttons | Press a **Number button (0-9)** to load defined preset 0-9. |
| 4. Preset/Reset | • To save a preset, press and hold **Preset**, then press a **Number button (0-9)**.<br>• To reset a preset, press and hold **Reset**, then press a **Number button (0-9)**. |
| 5. EV +/- | • Press to adjust exposure value.<br>• Press and hold **EV+** to turn on RTMP.<br>• Press and hold **EV-** to turn off RTMP. |
| 6. Pan-Tilt Control | Control pan and tilt directions. |
| 7. Auto Focus | Turn on Auto Focus. |
| 8. Zoom Slowly | Zoom in or out slowly. |
| 9. Auto Tracking | Turn Auto Tracking on or off. |
| 10. Frame Presenter | • Upper Body: Frame presenter's upper body.<br>• Full Body: Frame presenter's full body.<br>• Switch: Switch the presenter. |
| 11. Menu | Open or close the OSD menu during HDMI output. |
| 12. Enter | • Confirm a selection in the OSD menu.<br>• Press to One Push Focus (auto-focus once). |
| 13. Near / Far | Press **Near** or **Far** to adjust focus manually. |
| 14. Zoom Fast | Zoom in or out quickly. |
| 15. Pan-Tilt Speed | Adjust pan-tilt speed. |
| 16. Tracking Point | Load tracking point (Preset 1). |

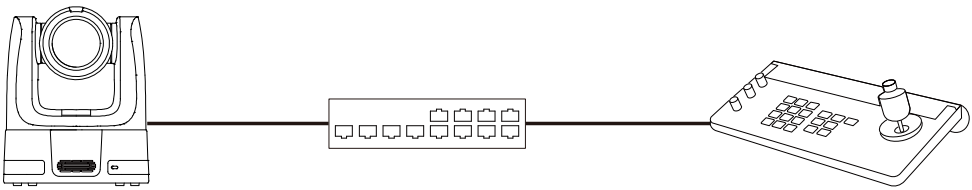
# Connections




## IP Connection

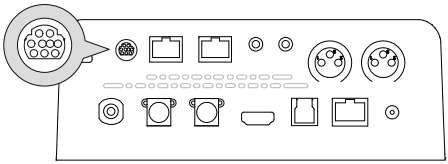
1. Connect the camera PoE++ 802.3bt port to a port on the Ethernet switch. The switch must provide PoE++ if you are not using a power adapter.

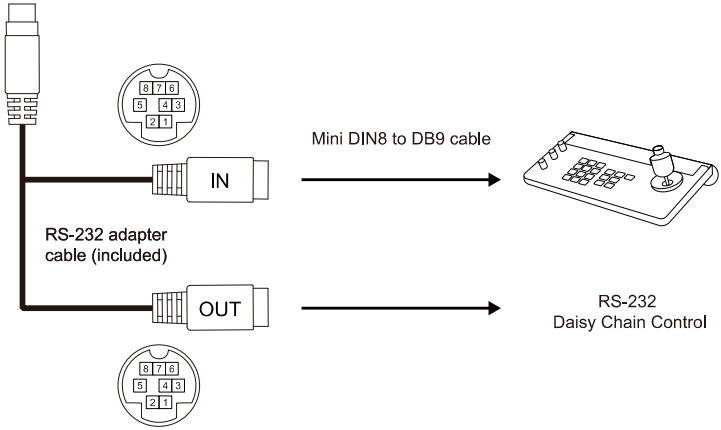
2. Connect the Camera Controller's IP port to a port on the Ethernet switch.



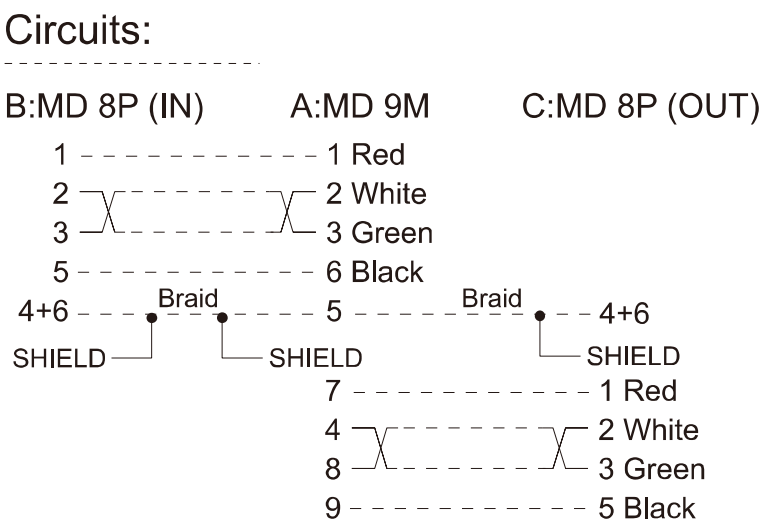
# RS-232 Connection

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

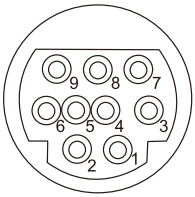





- **Mini DIN9 to Mini DIN8 RS-232 Adaptor Cable Pin Definition**

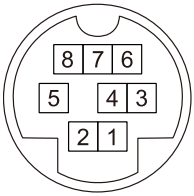


- **RS-232 Pin Definition**



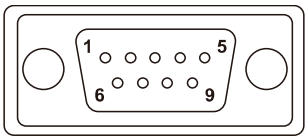

| Function | Mini DIN9 Pin # | I/O Type | Signal | Description |
|---|---|---|---|---|
| VISCA IN | 1 | Output | DTR | Data Terminal Ready |
| | 2 | Input | DSR | Data Set Ready |
| | 3 | Output | TXD | Transmit Data |
| | 6 | Input | RXD | Receiver Data |
| VISCA OUT | 7 | Output | DTR | Data Terminal 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 |

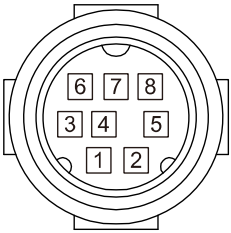
- **Mini DIN8 Cable Pin Definition**

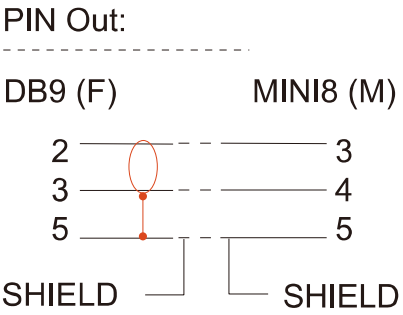



| Pin # | Signal |
|---|---|
| 1 | DTR |
| 2 | DSR |
| 3 | TXD |
| 4 | GND |
| 5 | RXD |
| 6 | GND |
| 7 | NC |
| 8 | NC |

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

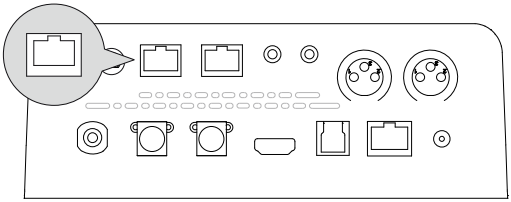


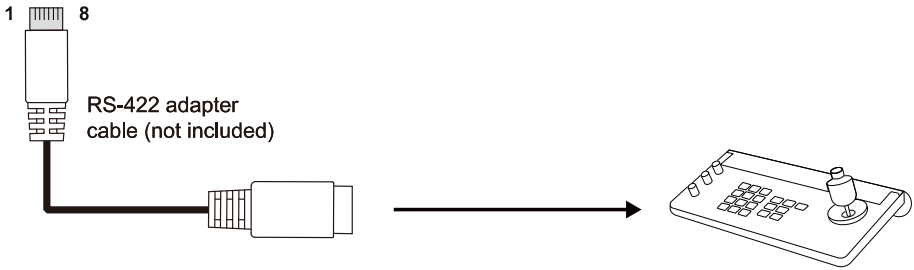



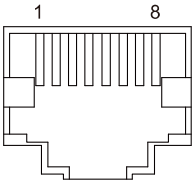



# RS-422 Connection

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

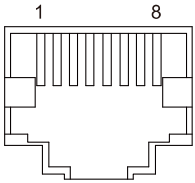






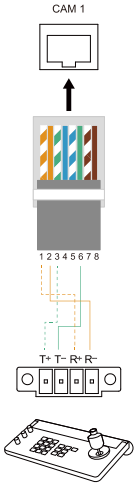

| Pin # | Pin |
|---|---|
| 1 | TX- |
| 2 | TX+ |
| 3 | RX- |
| 4 | GND |
| 5 | GND |
| 6 | RX+ |
| 7 | N.C. |
| 8 | N.C. |

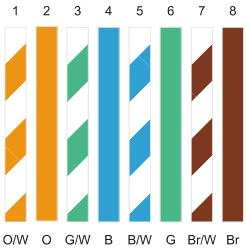
RS-422 Input Port Pin Definition



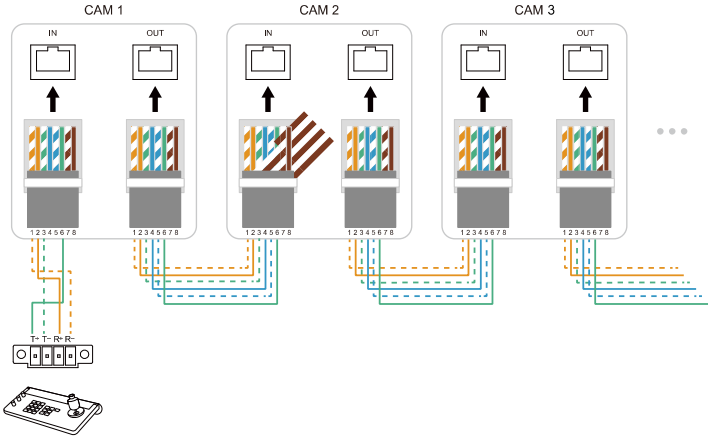

| Pin # | Pin |
|---|---|
| 1 | RX- |
| 2 | RX+ |
| 3 | TX- |
| 4 | GND |
| 5 | GND |
| 6 | TX+ |
| 7 | N.C. |
| 8 | N.C. |

RS-422 Output Port Pin Definition




T-568B Cable



# Audio Input Connection

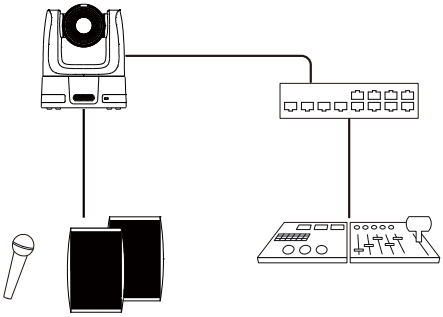
Connect to your audio devices to receive audio.

Audio Jack input level (max)

- MIC level: 50mV(rms), supplied voltage 2.5V
- Line level: 1V(rms)

XLR 3-pin balance input level (max)

- MIC level: -40dBu
- Line level: 4dBu
- Supply phantom power voltage 47±2V

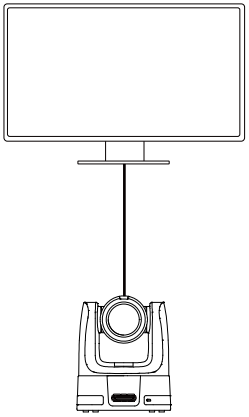


# Video Output Connection

Use the HDMI cable (not included) to connect to a monitor or TV. Or you can use a 12G-SDI cable to connect to a 12G-SDI display. Please wait about 25 seconds for the video display to activate.

**Note:**

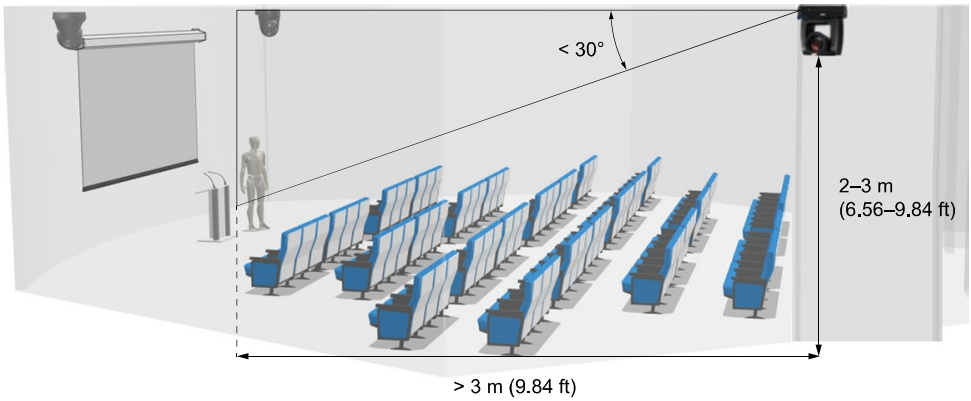
- The camera can stream video via HDMI and 12G-SDI simultaneously.
- Press and hold the **Menu** button on the remote control to open the OSD menu.



# Installation

## Mounting Measurements

- Motion tracking

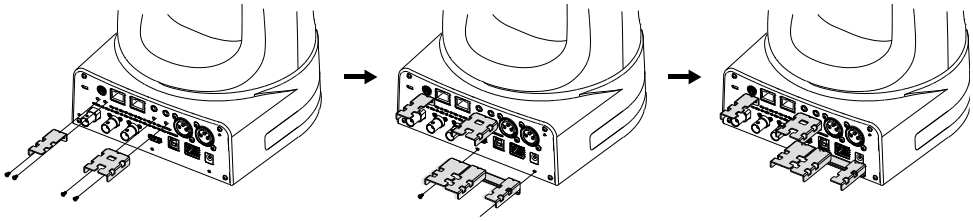



- Voice tracking (with 3rd party microphones)

| Optical zoom | Distance from subject | Height | Can be inverted |
|---|---|---|---|
| 12X | 1.6-12 m | 1.8-3 m | Yes |
| 21X | 2.0-20 m | 1.8-3.5 m | Yes |
| 30X | 1.8-30 m | 1.8-3.8 m | Yes |

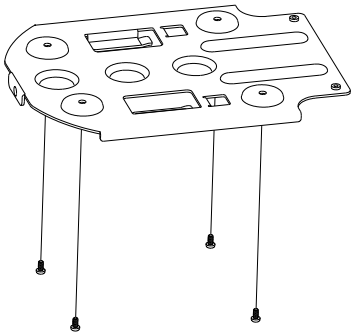
# Cable Fixing Plate Installation

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

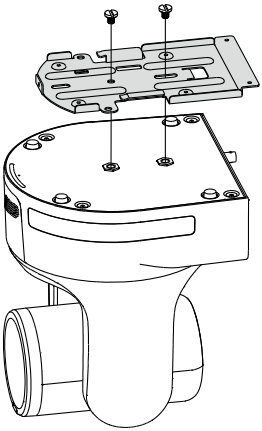


# Ceiling Mount Installation

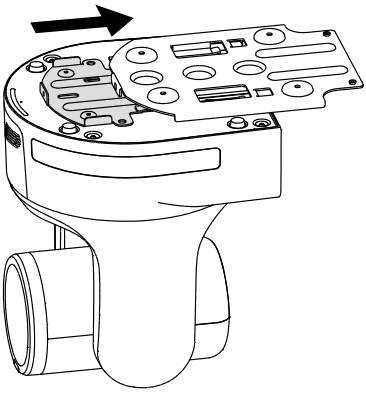
1. Secure the mount bracket to the ceiling.
   Screw: 4 screws, M4 x 10 mm (not Included)



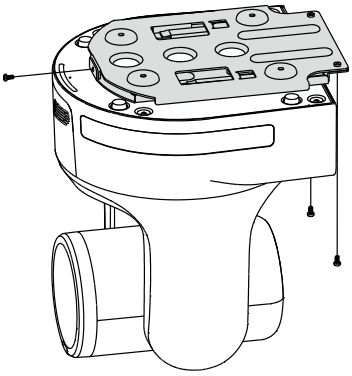
2. Secure the mount bracket to the camera.
   Screw: 2 screws, 1/4"-20 L=6.5 mm (included)



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)

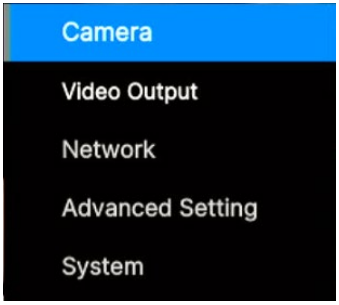


# Set Up the Camera

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.

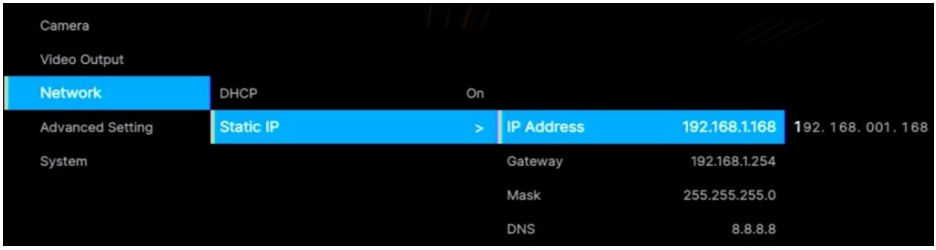



### Change Your Network Setting

**Note:** The camera's default network is DHCP.

- **Static IP**

1. Press the (MENU) button on remote control to open the OSD menu.
2. Go to **Network** > **DHCP** > **Off.**
3. Then go to **Network** > **Static IP**.
   Select and enter **IP Address**, **Gateway**, **Mask** and **DNS** to configure.

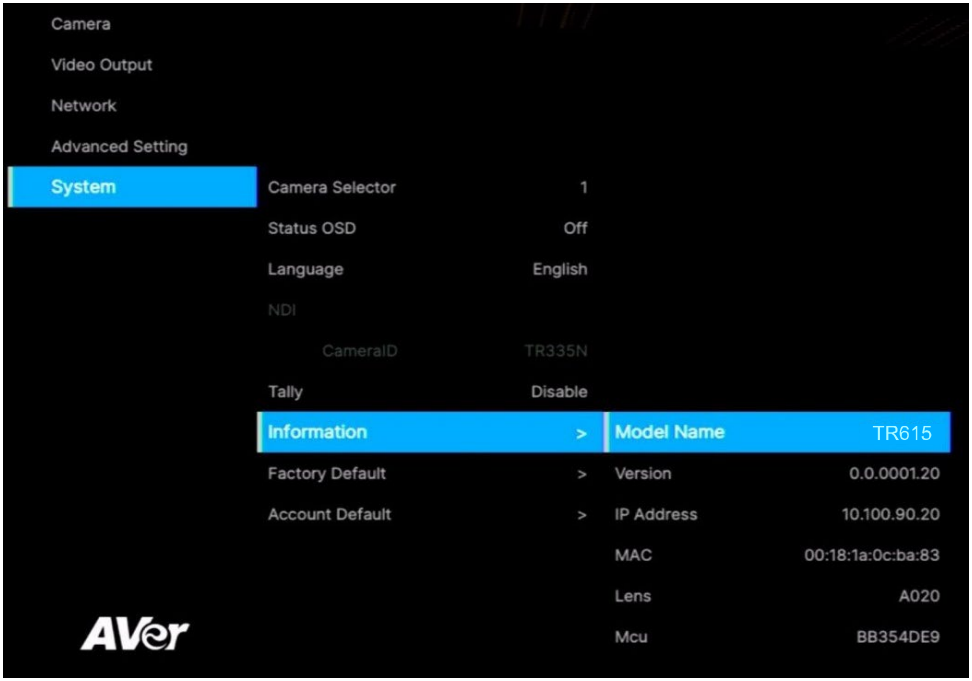


- **DHCP**

1. Press the (MENU) button on remote control to open the OSD menu.

2. Go to **Network** > **DHCP** > **On**.


3. Then go to **System** > **Information** to see the 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 | |
| | | 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/Tile Slow | Off / On |
| | | L/R Set | Default / Reverse |
| | | Mirror | Off / On |
| | | Flip | Off / On |
| | | Pan/Tilt Reset | |
| | Noise Reduction | 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 | |
| | WDR | Off / On | |
| | Back Light Compensation (BLC) | Off / On | |
| | LDC | | |

| | | | |
|---|---|---|---|
| Video Output | Theme | Standard | |
| | | ZOOM | |
| | | TEAMS | |
| | | NDI | |
| | Frequency | 50 | |
| | | 59.94 | |
| | | 60 | |
| | HDMI Resolution | 2160p60 | |
| | | 2160p59.94 | |
| | | 2160p50 | |
| | | 2160p30 | |
| | | 2160p29.97 | |
| | | 2160p25 | |
| | | 1080p60 | |
| | | 1080p59.94 | |
| | | 1080p50 | |
| | | 1080p30 | |
| | | 1080p29.97 | |
| | | 1080p25 | |
| | | 720p60 | |
| | | 720p59.94 | |
| | | 720p50 | |
| | HDMI1/HDMI2 Source | PTZ Camera | |
| | | Wide Angle Camera | |
| | | PIP/PBP | |
| 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 |
| 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 / Hybrid | |
| System | Camera Selector | 1,2,3 | |

| | | | |
|---|---|---|---|
| | Status OSD | OFF | |
| | | ON | |
| | Language | English / 繁體中文 / 日本語 | |
| | NDI | Camera ID TR615 | |
| | Tally | Disable/ Enable | |
| | Information | Model Name | TR615 |
| | | Version | 0.0.0000.00 |
| | | IP Address | 192.168.1.168 |
| | | MAC | 00:18:1a:04:9e:81 |
| | | Lens | A206 |
| | | MCU | BFBCD15 |
| | Factory Default | Off/On | |
| | Account Default | Off/On | |

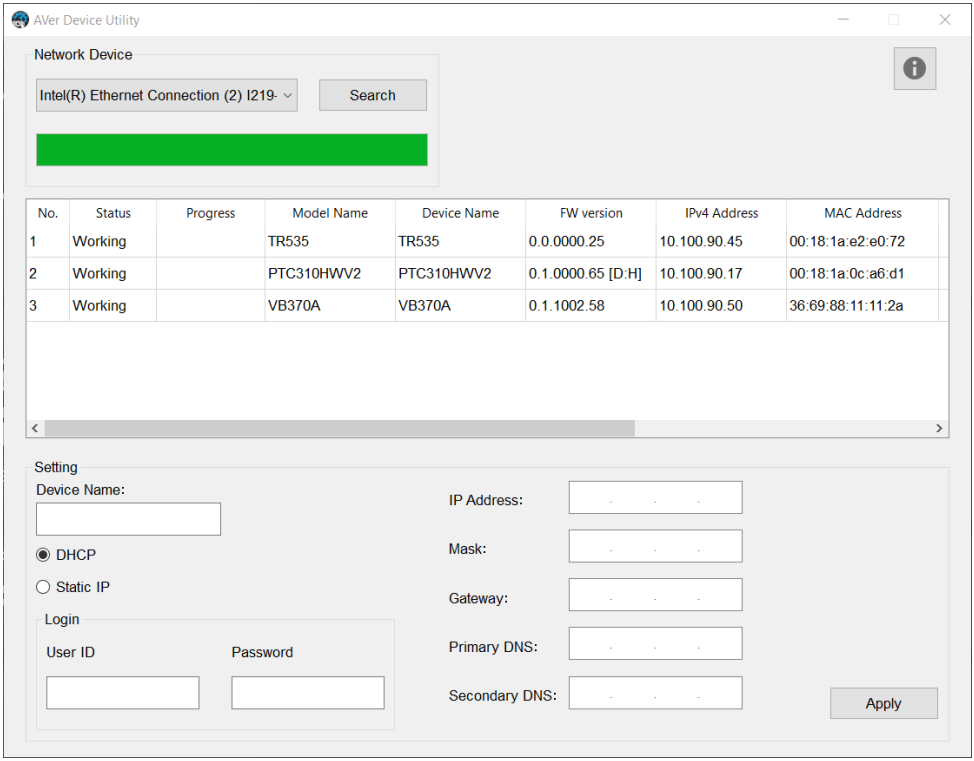
# Access the Web Interface

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

- AVer Device Utility
- AVer Enterprise Management

**Note:** The camera default network is DHCP.

## AVer Device Utility



**To access the web interface:**

1. Download AVer Device 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.
   - AVer Device 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, and numbers. The password cannot be the same as the username.
  If you want to use symbols, the supported symbols includes: !$%'()*+,-./<=>?@[\]^_{}~

**To change your network to DHCP or static IP:**

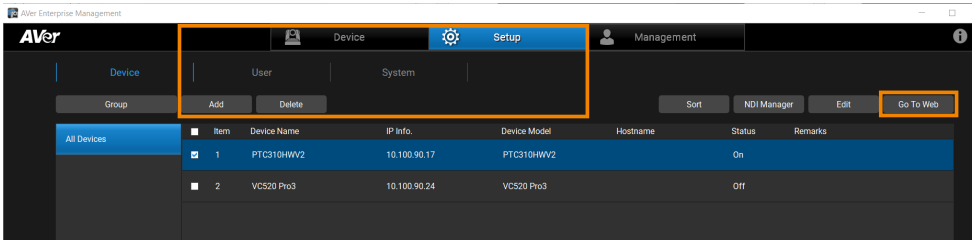
1. Select the checkbox of your camera.

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 Enterprise Management




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

1. Download AVer Enterprise Management from AVer Download Center (https://www.aver.com/download-center) and launch the software.

2. Log in with the AVer Enterprise Management default username and password **admin**/**admin**.

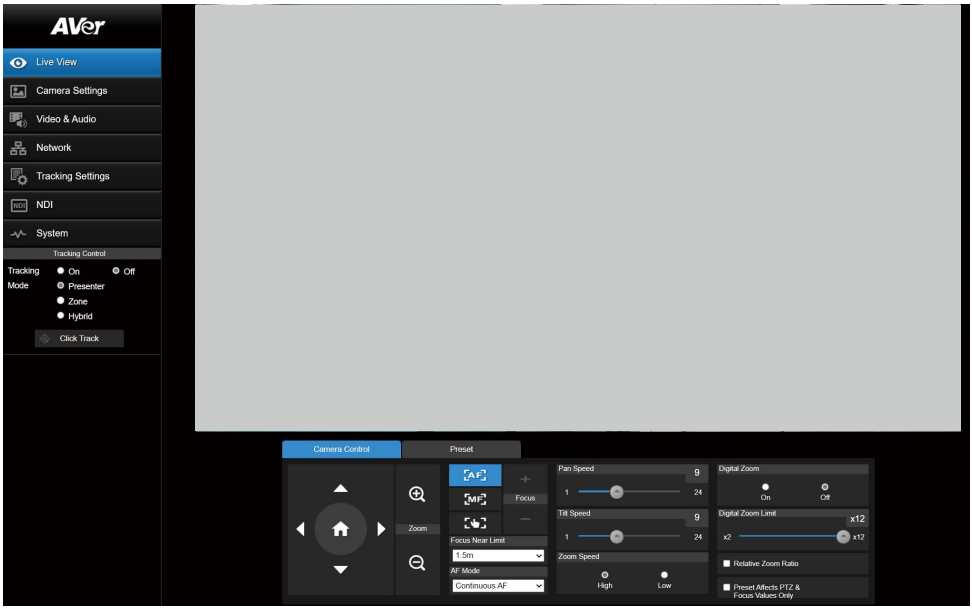
3. Go to **Setup** > **Add**, then click **Auto Search** to see available devices on the same local area network (LAN).

4. Click to select your camera, enter the changed camera username and password, then click **Save** to add the camera to the device list.

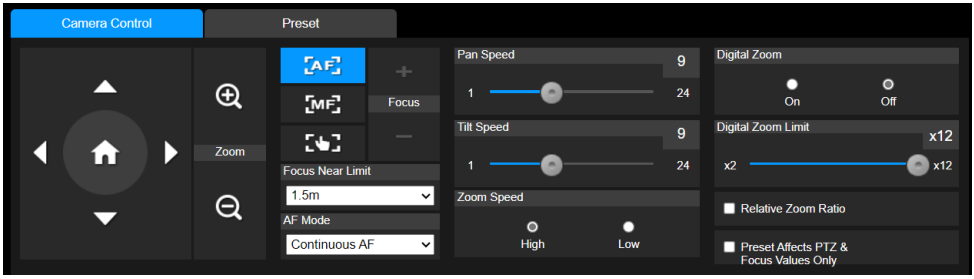
5. Select the checkbox of your camera, then click **Go to Web** button to open the web interface in your browser.

# Web Interface

## Live View



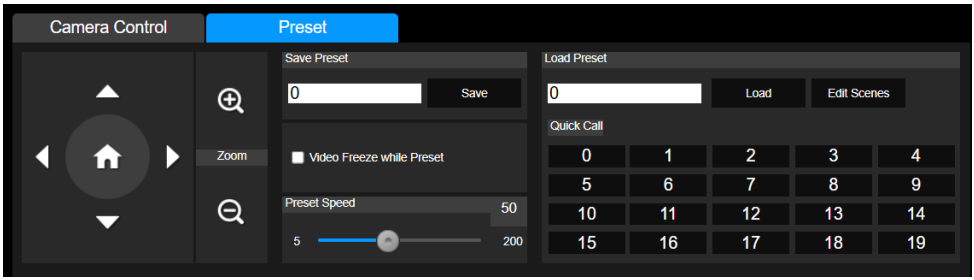

### Camera Control




| Item | Description |
|---|---|
| Pan and Tilt Controls | Position the camera.<br>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**:<br>• **AF Trigger after PTZ:** Automatically focus after each pan, tilt or zoom. |

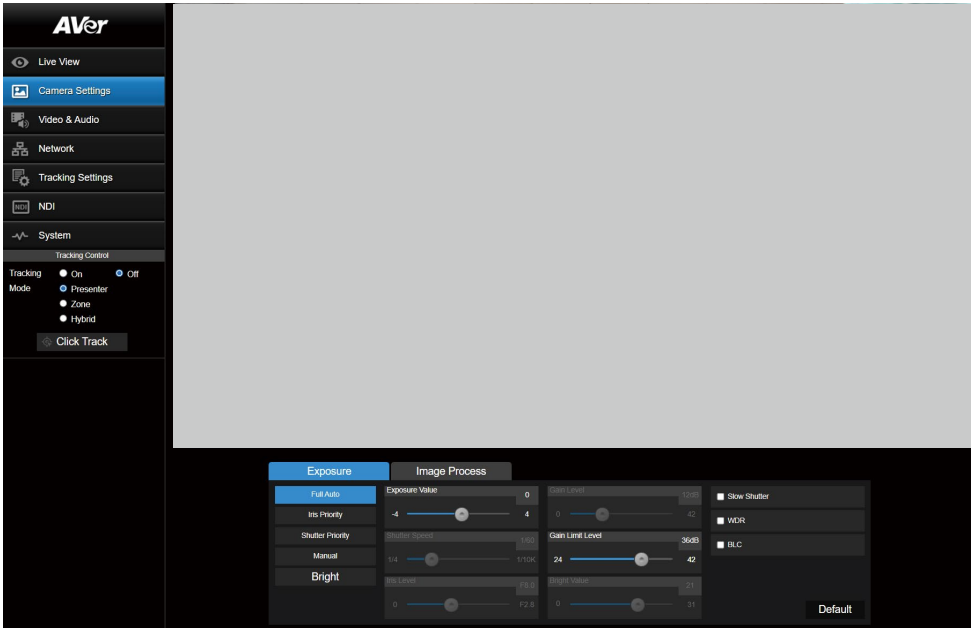
| | |
|---|---|
| | • **Continuous AF:** Automatically focus continuously.<br>• **Face Priority AF:** Automatically focus faces with AI. |
| Manual Focus | Click to manually focus. Adjust the focus with + - buttons. |
| One Push Focus | Click to automatically focus once. |
| Focus Near Limit | Set up 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.<br>Select to save only pan, tilt, zoom and focus values for presets. |

## Preset

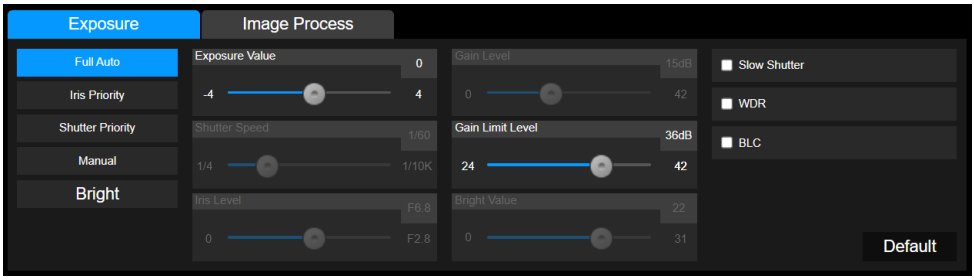



| Item | Description |
|---|---|
| Save Preset | 1. Position the camera using pan, tilt and zoom controls.<br>2. Enter a preset number (0–255) in the **Save Preset** field and click **Save**. |
| Load Preset | 1. Enter a preset number (0–255) in the **Load Preset** field and click **Load**.<br>2. Or 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 Speed | Adjust the camera speed when moving to presets. |
| Edit Scenes | To customize camera functions for preset 0–9:<br>1. Click **Edit Scenes**.<br>2. Select **Scenes 0–9** from the **Scenes List** to add up to 10 CGI commands.<br>3. Select a scene from the **Set Scenes** drop-down list for each preset. |

# Camera Settings




## Exposure

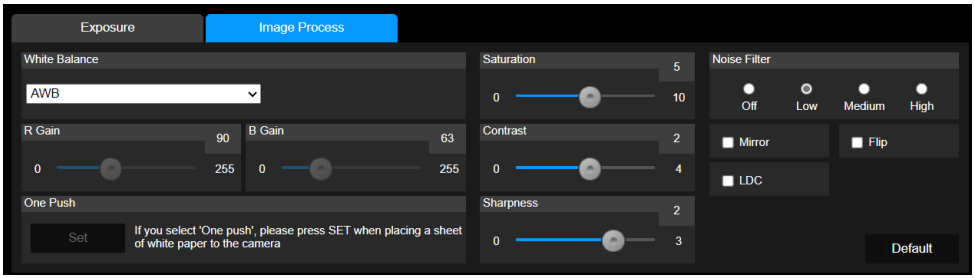



**Note:** Click **Default** to reset Exposure to factory default settings.

| Item | Description |
|---|---|
| Exposure Mode | Choose an exposure mode. |
| Exposure Value | Adjust exposure, shutter, iris, gain and brightness. |
| Shutter Speed | |
| Iris Level | |
| Gain Level | |

| | |
|---|---|
| Gain Limit Level | |
| Bright Value | |
| Slow Shutter | Turn slow shutter, wide dynamic range (WDR), backlight compensation (BLC) on or off. |
| WDR | |
| BLC | |

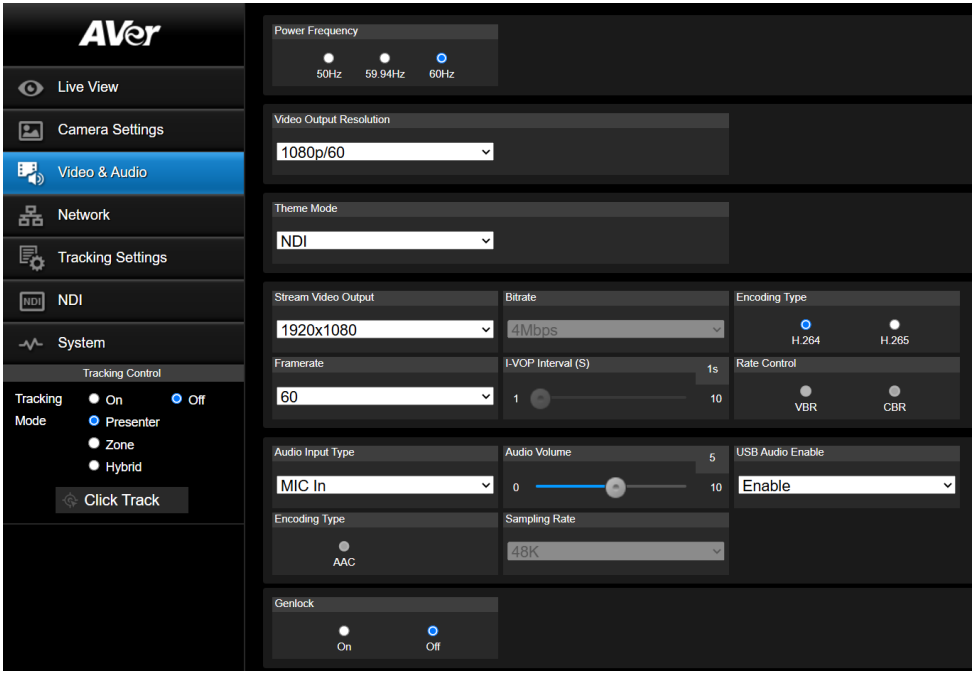
## Image Process




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

| Item | Description |
|---|---|
| White Balance | Choose a white balance mode<br>• In **Manual** mode, you can also adjust the **R Gain** and **B Gain**.<br>• 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. |
| LDC | Select the checkbox to automatically correct distortion. |

# Video & Audio




**Video and Audio Settings**

| Item | Description |
|---|---|
| Power Frequency (Hz) | Select **50Hz**, **59.94Hz** or **60Hz** based on your country or region. |
| Video Output Resolution | Select a resolution to display on your video output device.<br>Please wait about 18 seconds when switching resolutions. |
| Theme Mode | Select a video mode based on the output interface you use.<br>For details on resolution, please refer to <Output Interface and Resolution Table>. |
| Allow Resolution Under 720p | Turn the function on or off. |
| Stream Video Output | Select a stream resolution on live view from the drop-down list. |
| Bitrate | Select a bitrate from the drop-down list. |
| Encoding Type | Select **H.264** or **H.265** to encode streaming video. |
| Framerate | Select a framerate for live stream: **1**, **5**, **15**, **20** or **30** for power frequency **59.94Hz** or **60Hz**; **1**, **5**, **15**, **20** or **25** for power frequency **50Hz**. |
| I-VOP Internal (S) | Drag the slider to set the value from **1s** to **10s**. |
| Rate Control | Select **VBR** or **CBR**. |

| | |
|---|---|
| Audio Input Type | Select **Line in** or **Mic in** based on the audio device you are using for optimal audio performance. |
| Audio Volume | Drag the slider to set the volume from **0** to **10**. |
| USB Audio Enable | Select from the drop-down list to turn on or off the setting. |
| Encoding Type (audio) | Select to encode audio. |
| Sampling Rate | Select a sampling rate from the drop-down list. |
| Genlock | Turn on the function to synchronize the camera view across multiple video output sources. |

## Output Interface and Resolution Table

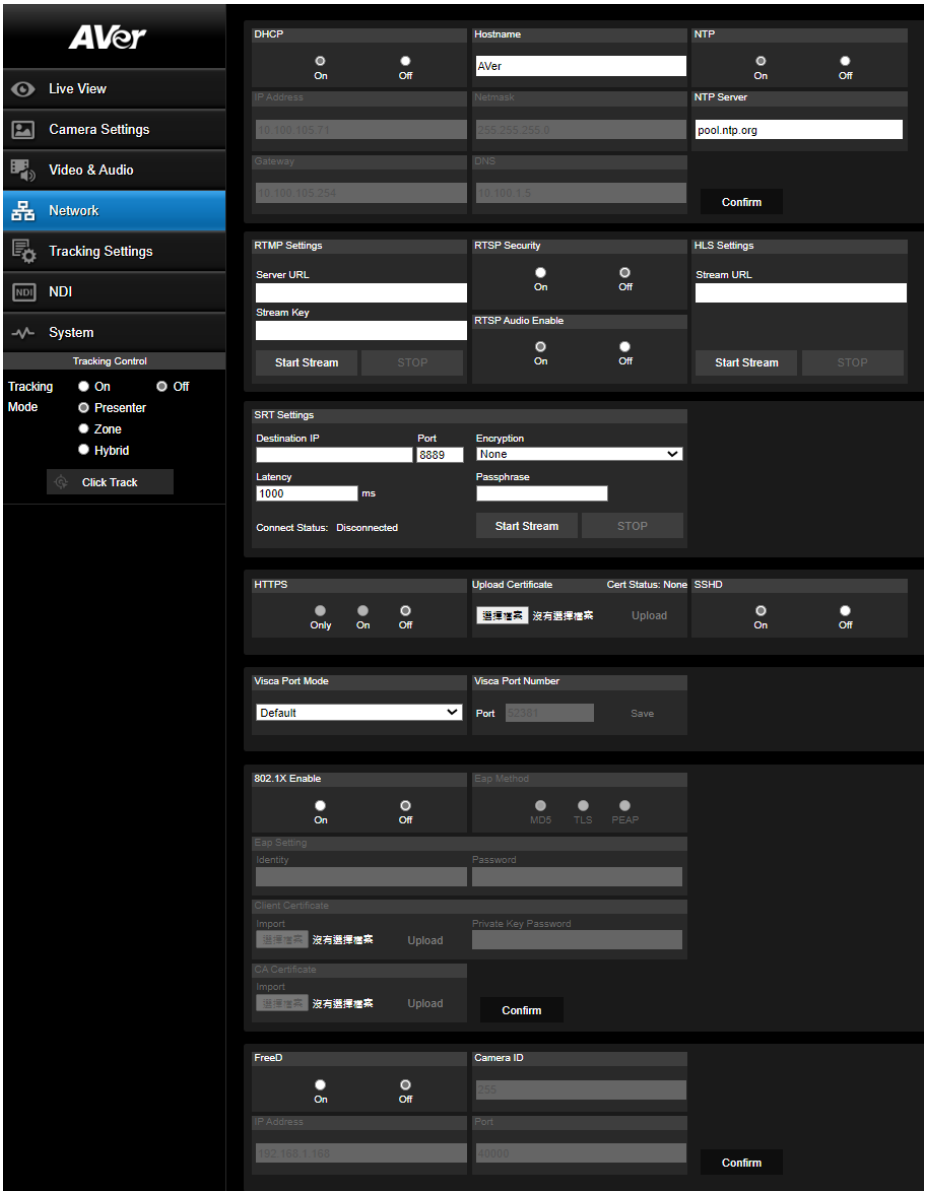
| Theme Mode | Video Quality | Output Interface | Sleep Mode ** |
|---|---|---|---|
| Standard (default) | Standard | HDMI, SDI, IP, USB, NDI XH2 | N/A |
| Teams* | Teams certified | USB | Rotate towards the I/O ports (preset 20) when not streaming over USB |
| Zoom* | Zoom certified | HDMI, SDI, IP, USB, NDI XH2 | |
| NDI | Standard | HDMI, SDI, IP, NDI XH3 | N/A |

* UAC will be automatically disabled when Zoom or Teams mode is selected.

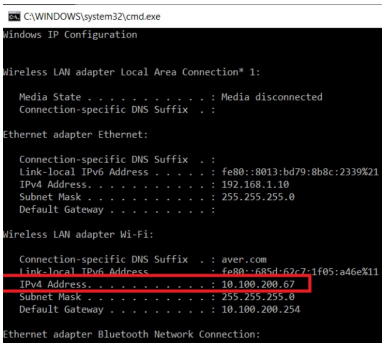
** To change the sleep mode position, go to **System** > **Sleep to Preset** on the web interface.

| Theme Mode | Output Interface Support Resolution | | | | | |
|---|---|---|---|---|---|---|
| | HDMI | 12G-SDI | USB | IP | NDI HX2 | NDI HX3 |
| Standard (default) | 2160p60 | 2160p60 | 2160p60 | 2160p60 | 2160p60 | - |
| Teams | - | - | 2160p60 | - | - | - |
| Zoom | 2160p60 | 2160p60 | 2160p60 | 2160p60 | 2160p60 | - |
| NDI | 2160p60 | 2160p60 | 2160p60 | 2160p60 | 2160p60 | 2160p60 |

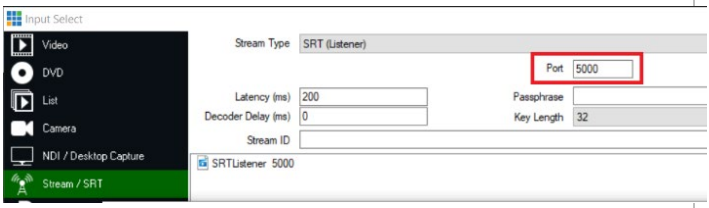
# Network


AVer
Live View
Camera Settings
Video & Audio
Network
Tracking Settings
NDI
System
Tracking Control
Tracking Mode
On
Off
Presenter
Zone
Hybrid
Click Track
DHCP
On
Off
Hostname
AVer
NTP
On
Off
IP Address
10.100.105.71
Netmask
255.255.255.0
NTP Server
pool.ntp.org
Gateway
10.100.105.254
DNS
10.100.1.5
Confirm
RTMP Settings
Server URL
Stream Key
Start Stream
STOP
RTSP Security
On
Off
RTSP Audio Enable
On
Off
HLS Settings
Stream URL
Start Stream
STOP
SRT Settings
Destination IP
Port
8889
Encryption
None
Latency
1000
ms
Passphrase
Connect Status: Disconnected
Start Stream
STOP
HTTPS
Only
On
Off
Upload Certificate
Cert Status: None
選擇檔案
沒有選擇檔案
Upload
SSHD
On
Off
Visca Port Mode
Default
Visca Port Number
Port
52381
Save
802.1X Enable
On
Off
Eap Method
MD5
TLS
PEAP
Eap Setting
Identity
Password
Client Certificate
Import
選擇檔案
沒有選擇檔案
Upload
Private Key Password
CA Certificate
Import
選擇檔案
沒有選擇檔案
Upload
Confirm
FreeD
On
Off
Camera ID
255
IP Address
192.168.1.168
Port
40000
Confirm

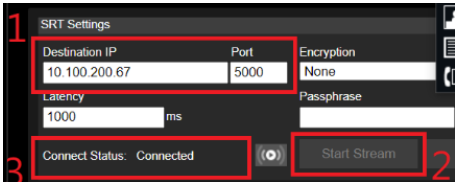
| Item | Description |
|---|---|
| DHCP | Set the network to DHCP or Static IP.<br>• DHCP: Turn on **DHCP** and click **Confirm** to save the setting. The camera will be assigned IP settings automatically.<br>• Static IP: Turn off **DHCP**, enter **IP Address**, **Netmask**, **Gateway** and **DNS**, and click **Confirm** to save the settings. |
| Hostname | Enter a hostname that is displayed on devices such as an IP router.<br>• The default is the last 6 digits of Mac address. |
| 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.<br>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.<br>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.<br>• When **Security** is turned off:<br>1. Enter your camera's RTSP URL into the media player.<br>2. PTZ camera: rtsp://[camera IP address]:554/live_st1<br>Wide-angle camera: rtsp://[camera IP address]:8554/live_st2<br>Example: rtsp://192.168.1.100:554/live_st1<br>• When **Security** is turned on:<br>1. Enter your camera's RTSP URL, username and password into the media player.<br>2. PTZ camera: rtsp://[username:password]@[camera IP address] :554/live_st1<br>Wide-angle camera: rtsp://[username:password]@[camera IP address] :8554/live_st2<br>Example: rtsp://1:1@192.168.1.100:554/live_st1<br>3. Username and password: camera's web interface login |
| RTSP Audio Enable | Enable audio output during video stream on media players. |
| HLS Settings | Configure HTTP Live Streaming (HLS) settings to provide adaptive bitrate streaming, which ensures smooth playback and minimizes buffering.<br>1. Enter the stream URL obtained from the streaming service or server.<br>2. Click **Start Stream** to start streaming, **Stop** to stop streaming. |
| SRT Settings | • vMix<br>1. Make sure the vMix workstation and your camera are on same network. Copy the workstation's IP address. |



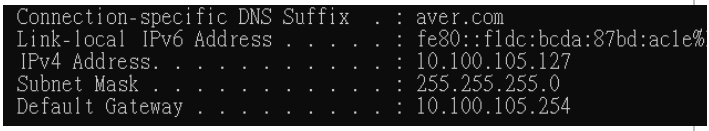

2. Go to **Stream** tab > select **SRT (Listener)** from the **Stream Type** drop-down list. Copy the **Port** value.



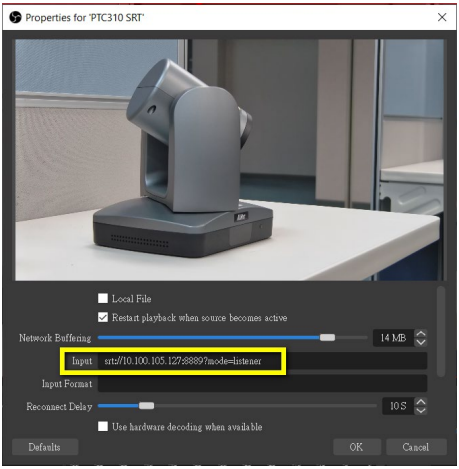

3. Paste the IP address and Port value into **SRT Settings** fields and click **Start Stream**. **Connect Status** will change to **Connected**.




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




  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

| | |
|---|---|
| |  <br>4. If there is no image, right-click on the source > **Transform** > **Fit to screen** to re-scale image. |
| HTTPS | Enable HTTPS to establish a secure connection between your browser and your camera. To enable HTTPS access on your camera:<br>1. Obtain a SSL certificate for encryption and decryption in base-64 encoded format and use a private key in PKCS#8 format (unencrypted).<br>2. Package the required certificate content into PEM format. The SSL certificate uploaded to the camera must be in PEM format.<br>3. Click **Choose File** to select the certificate file, and then click **Upload**.<br>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**. |
| FreeD | Turn the FreeD protocol on to send camera positioning data to a virtual reality production system.<br>When FreeD is turned on, enter the following information:<br>• Your **Camera ID**.<br>• The **IP Address** and **Port** of the device receiving your camera's positioning data.<br>• Manually enter pan and tilt backlash amount to ensure accurate aiming.<br>When finished, 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.

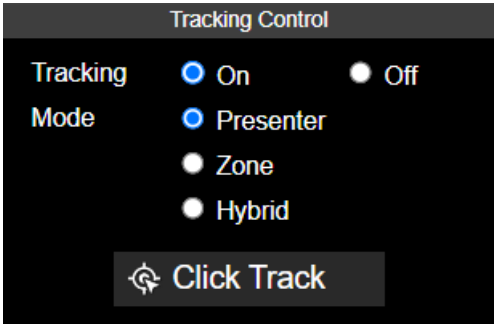
**Hybrid**

Hybrid Mode combines Presenter Mode and Zone 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

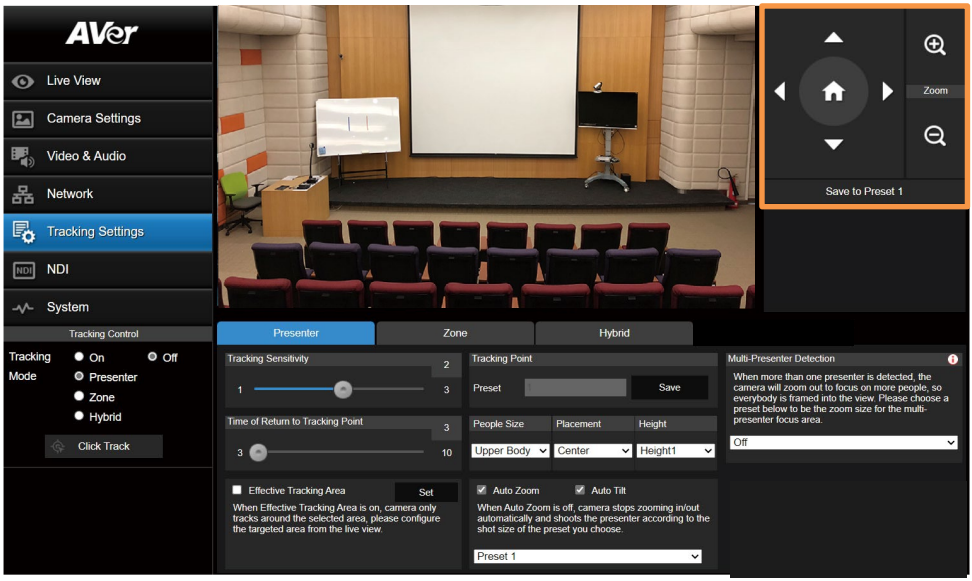
| | Presenter | Zone | Hybrid (Presenter + Zone) |
|---|---|---|---|
| Use case | Performance arts | Keynotes, presentations | All of the above |
| Perfect for | Movements | Content | Movements and content |
| Available presets | Preset 1 | Presets 6–9 | Presets 10–13 |
| Presets can have a detection area | ✓ | - | ✓ Presenter |
| 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.

## 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.

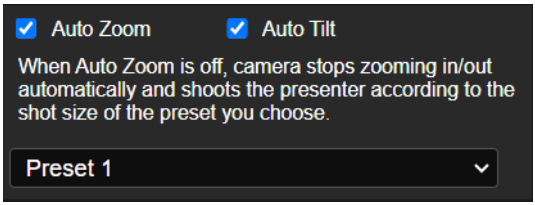
**To set up Presenter Mode:**

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.<br>1. Select the checkbox and click **Set**.<br>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). |

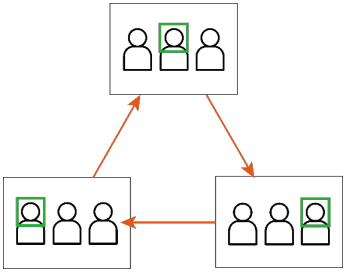
<table>
<tr><td>People Size, Placement, Height</td><td>• Frame the presenter's full body or upper body.<br>• Horizontally align the presenter to the left, center or right.<br>• Vertically align the presenter to the center or bottom.</td></tr>
<tr><td>Auto Zoom<br><br>Auto Tilt</td><td>• When Auto Zoom is turned off, the zoom ratio will be based on your selected preset from the drop-down list.<br>• When Auto Tilt is turned off, the tilt angle will be based on your selected preset from the drop-down list.<br><br> 
</td></tr>
<tr><td>Multi-Presenter Detection</td><td>When multiple presenters are detected, the camera will go to your selected Multi-Presenter Detection preset and frame entire group on screen.<br><br>1. Go to Tracking Settings > Presenter.<br><br>2. Make sure Auto Zoom is turned on.<br><br>3. Select a preset from the Multi-Presenter Detection drop-down list to turn on Multi-Presenter Detection.<br><br>Note:<br>• Make sure you have defined the required preset.<br>• The preset should cover a wide area where multiple presenters may appear.</td></tr>
</table>

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

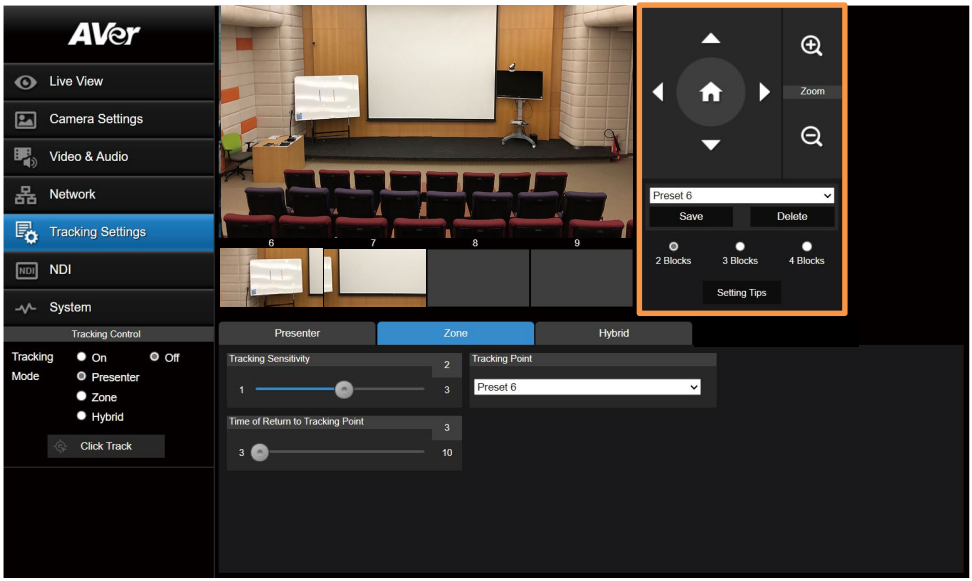
**Note:** Presenter Mode lets you switch the presenter you want to track. Click the **Click Track** button to frame everyone on screen in bounding boxes and click to select the presenter you want to track. Selected presenter will be in a red frame.

**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.

**To set up Zone Mode:**

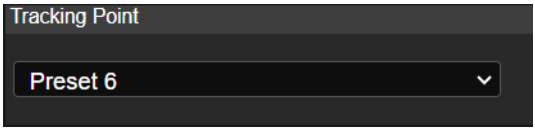
1. Go to **Tracking Settings** > **Zone**.
2. Select the number of **Blocks** (presets) you want to track.
3. Select the presets you want to save from the drop-down list. Presets 6–9 are available.

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

4. 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.

5. 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 | If no one is in the presets, the camera will return to the tracking point (Preset 6 or selected preset).<br>  |



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

**To set up Zone Mode with the remote control:**

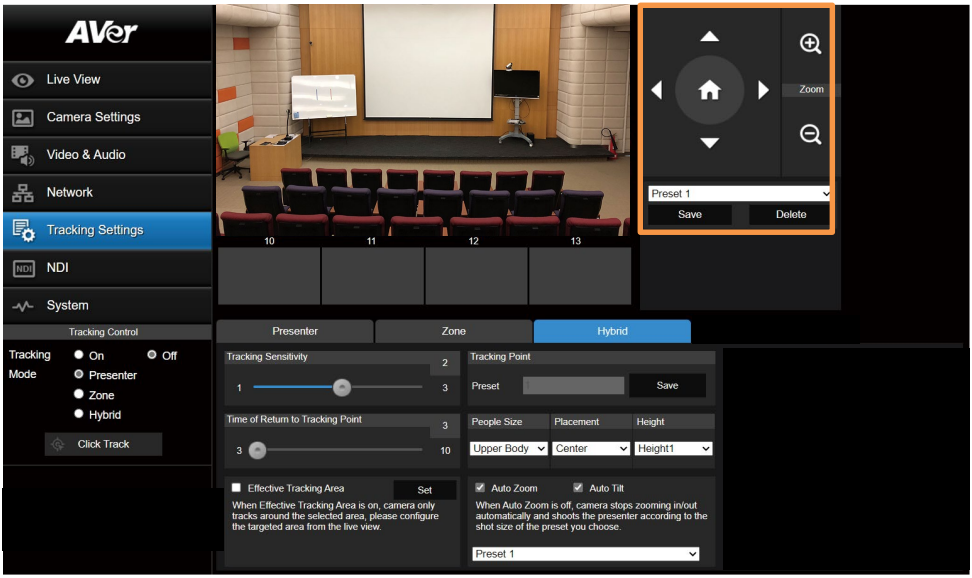
1. Use directional buttons to position your camera. Press and hold **Preset**, then press **Number button 6** to save Preset 6. Repeat these steps for Preset 7.

   **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.

## Hybrid Mode




Hyrbid Mode combines Presenter Mode and Zone Mode.

Uses presets when the presenter is inside of presets, frames and follows the presenter when they are outside of presets.

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

**To set up Hybrid Mode:**

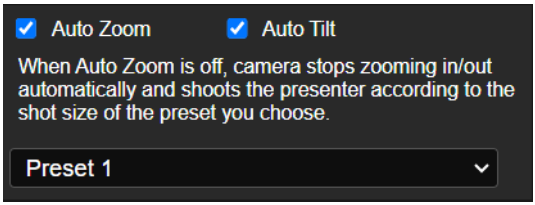
1. Go to **Tracking Settings** > **Hybrid**.
2. Use pan, tilt and zoom controls to position your camera and click **Save to Preset 1** to save the **Tracking Point**.
3. Then, select the presets you want to save from the drop-down list. Presets 10–13 are available.

4. 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:**

Do not overlap presets. Leave ample room between presets for a smooth transition.

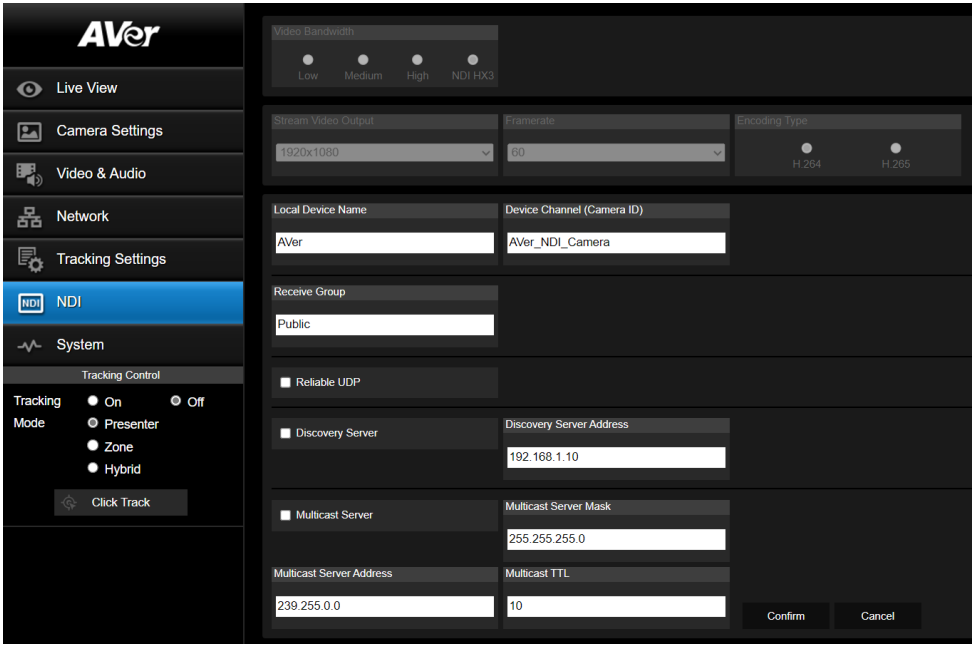
5. Configure additional settings:

| 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.<br>1. Select the checkbox and click **Set**.<br>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 | • Frame the presenter's full body or upper body.<br>• Horizontally align the presenter to the left, center or right.<br>• Vertically align the presenter to the center or bottom. |
| Auto Zoom | • When **Auto Zoom** is turned off, the zoom ratio will be based on your selected preset from the drop-down list.<br>• When **Auto Tilt is** turned off, the tilt angle will be based on your selected preset from the drop-down list. |
| Auto Tilt |  |

6. Turn on **Tracking** and select **Hyrbid 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.

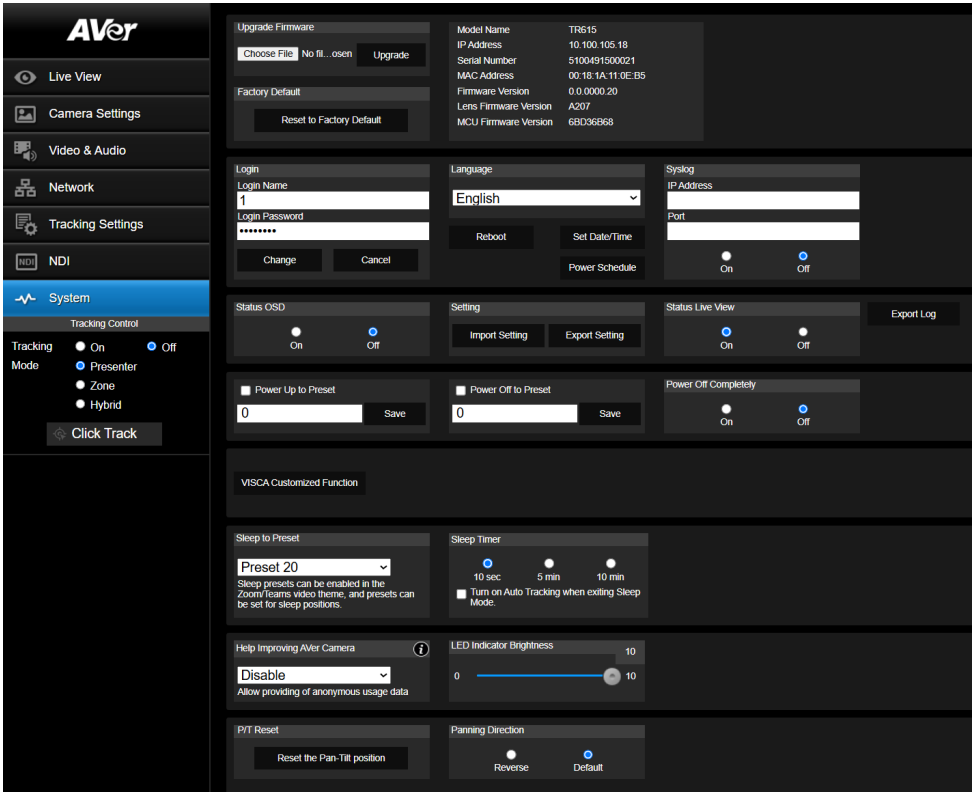
# NDI




| Item | Description |
|---|---|
| Local Device Name | Enter a name that identifies your camera group on the NDI software.<br>• The default is AVer. |
| Device Channel (Camera ID) | Enter a name that identifies your camera on the NDI software.<br>• The default is your model name.<br>• 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.<br>• All devices in the receive group receive the same NDI streams.<br>• 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. |

| | |
|---|---|
| Multicast Server | Select the checkbox to enable multicast server to allow efficient distribution of NDI streams to multiple receivers without overwhelming the network. |
| Discovery Server Address | Enter the IP address of a server running a discovery server application. |
| 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:<br>1. Download the latest firmware from AVer Download Center (https://www.aver.com/download-center).<br>2. On the web interface, go to **System** > **Upgrade firmware**.<br>3. Click **Browse** to select the firmware.<br>4. Click **Upgrade**.<br>5. Refresh the browser after the upgrade is complete.<br>**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. |
| Factory Default | Reset the camera to factory default settings. |
| Login | For first-time login, you'll be prompted to change the username and password:<br>• Username: Use 1-32 characters. |

| | |
|---|---|
| | • Password: Use 8-32 characters and a combination of uppercase letters, lowercase letters, and numbers. The password cannot be the same as the username.<br>If you want to use symbols, the supported symbols includes: !$%'()*+,-./<=>?@[\]^_{}~. |
| 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.<br>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.<br>To enable:<br>1. Make sure the preset has been defined.<br>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.<br>To enable:<br>1. Make sure the preset has been defined.<br>2. Select **Power Off to Preset** > enter a preset number > click **Save**. |
| Power Off Completely | Turn the camera off instead of entering sleep mode. |
| 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.<br>• To enable:<br>1. Make sure the preset has been defined.<br>2. Go to **Video & Audio** > **Theme Mode** > choose **Zoom** or **Teams**.<br>3. Go to **Systems** > **Sleep to Preset** > choose a preset.<br>4. Go to **Systems** > **Sleep Timer** > select a duration.<br>• To disable, choose **Off** from the **Sleep to Preset** drop-down list. |
| 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. |

| | |
|---|---|
| P/T Reset | Click **Reset the Pan-Tilt position** button to re-calibrate the camera pan-tilt position. |
| Panning Direction | Switch the camera left and right panning direction when using the remote control. |

# 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 | |
| | Tele(Variable) | 8x 01 04 07 2p FF | p=0 (Low) to 7 (High) |
| | Wide(Variable) | 8x 01 04 07 3p FF | |
| | Direct | 8x 01 04 47 0p 0q 0r 0s FF | pqrs: Zoom Position |
| CAM_Focus | Stop | 8x 01 04 08 00 FF | |
| | Far (Standard) | 8x 01 04 08 02 FF | Each 'Far/Near' needs a 'stop' |
| | 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 | pqrs: Zoom Position |
| 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)<br>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:<br>pp: 0x00 To 0xFF normal preset<br>pp: 0x5F => Turn on OSD menu<br>pp: 0xA0 => Full Body<br>pp: 0xA1 => Upper Body<br>pp: 0xA2 => Tracking Point<br>pp: 0xA3 => Switch<br>pp: 0xA4 => Presenter mode |

| | | | |
|---|---|---|---|
| | | | pp: 0xA5 => Zone mode<br>pp: 0xA6 => Hybrid 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)<br>WW: Tilt speed setting 0x01 (low speed) to 0x18 (high speed)<br>YYYY: Pan Position<br>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 | Standard | 8x 01 04 A3 00 FF | |
| | ZOOM | 8x 01 04 A3 01 FF | |
| | Teams | 8x 01 04 A3 02 FF | |
| | NDI | 8x 01 04 A3 03 FF | |
| Reboot | On | 8x 01 04 A4 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_WBModeInq | 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_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_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_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 |
| 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<br>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 ~ 0XFFFFFFFF | | | | 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?ActPreset= | 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?ActProNames= | 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?ActProNames= | Set,N,(Name)&(random) | | | N= Profile number |
| RTMP Start streamming | /webui?Set= | Set=vdo_rtmp_enable,3,1 | | | |
| RTMP Stop streamming | /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