

# Professional PTZ Camera

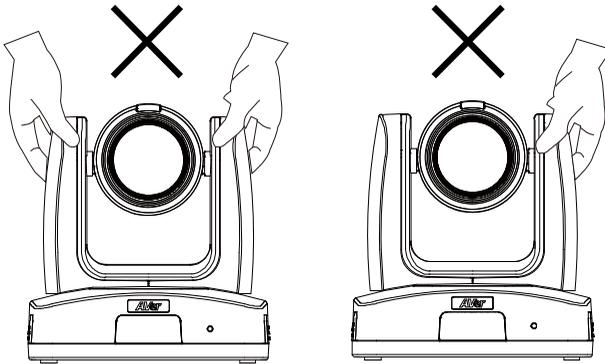
PTZ310V2 / PTZ310NV2 / PTZ310UV2 / PTZ310UNV2  
PTZ330V2 / PTZ330NV2 / PTZ330UV2 / PTZ330UNV2

## User Manual

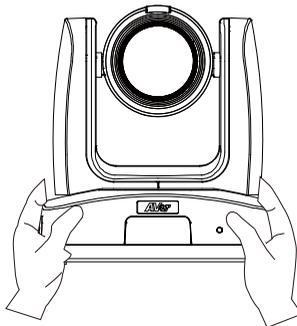


# WARNING

- To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture. Warranty will be void if any unauthorized modifications are done to the product.
- Do not drop the camera or subject it to physical shock.
- Use the correct power supply voltage to avoid the damaging 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.
- Hold the bottom of the camera with both hands to move the camera. Do not grab the lens or lens holder to move the camera.



**OK**



## **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.

## **Remote Control Battery Safety Information**

- Store batteries in a cool and dry place.
- Do not throw away used batteries in the trash. Properly dispose of used batteries through specially approved disposal methods.
- Remove the batteries if they are not in use for long periods of time. Battery leakage and corrosion can damage the remote control. Dispose of batteries safely and through approved disposal methods.
- Do not use old batteries with new batteries.
- Do not mix and use different types of batteries: alkaline, standard (carbon-zinc) or rechargeable (nickel-cadmium).
- Do not dispose of batteries in a fire.
- Do not attempt to short-circuit the battery terminals.

## **DISCLAIMER**

No warranty or representation, either expressed or implied, is made with respect to the contents of this documentation, its quality, performance, merchantability, or fitness for a particular purpose. Information presented in this documentation has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies. The information contained in this documentation is subject to change without notice.

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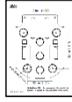
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# Package Contents

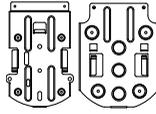
## Package Contents



Camera Unit



Drilling Paper



Ceiling Mount  
Bracket (x2)



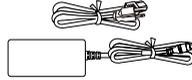
Quick Start Guide



Cable Fixing Plate



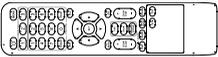
M2 x 4mm  
Screw (x3)



Power Adapter &  
Power Cord



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



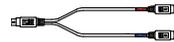
Remote Control



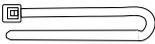
M3 x 6mm  
Screw (x3)



DIN8 to D-Sub9  
Cable



RS-232 In/Out  
Y Cable



Cable Ties (x4)

\*The power cord will vary depending on the standard power outlet of the country where it is sold.

## Optional Accessories



Wall Mount  
Bracket

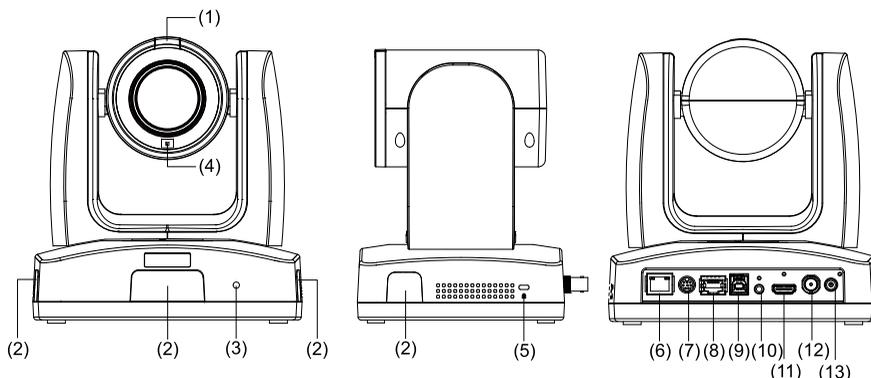


Camera Controller  
(CL01)

\* For details on optional accessories, please consult with your local dealer.

# Product Introduction

## Overview



(1) Tally Lamp	(6) PoE+ IEEE 802.3AT	(10) Audio In**
(2) IR Sensor	(7) RS-232 Port	(11) HDMI Port
(3) LED Indicator	(8) RS-422 Port	(12) 3G-SDI***
(4) Light Sensor*	(9) USB 3.0 Port (Type-B)	(13) DC Power Jack
(5) Kensington Lock		

\* The model names with “I” have this feature.

\*\* Line input level: 1Vrms (max.).

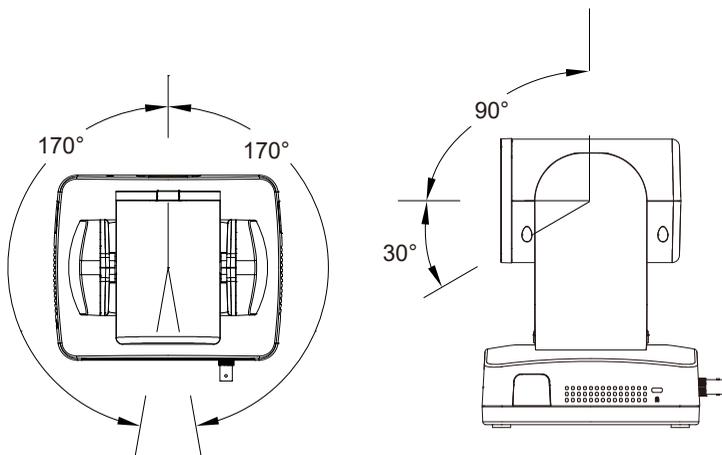
\*\* Mic input level: 50mVrms (max.); Supplied voltage: 2.5V.

\*\*\* The model names with “H” do not have this feature.

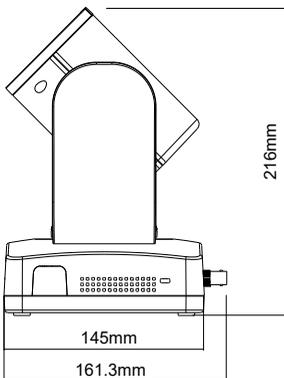
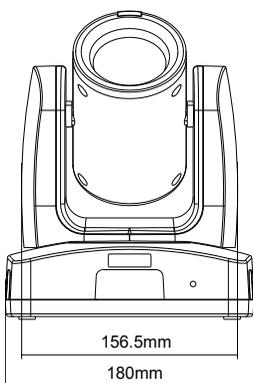
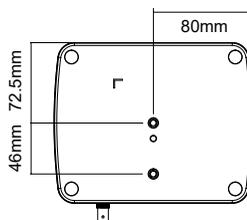
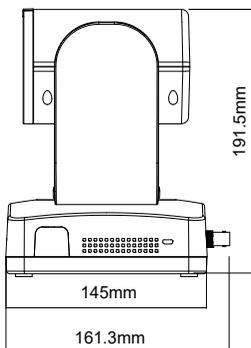
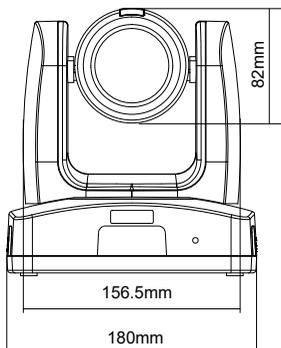
## LED Indicators

LED	Status
Blue (Blinking)	SmartFrame
Blue (Solid)	Normal Operation
Red (Blinking)	FW Updating
Orange (Blinking)	Camera Initialization
Orange (Solid)	Standby
Purple (Blinking)	SmartShoot

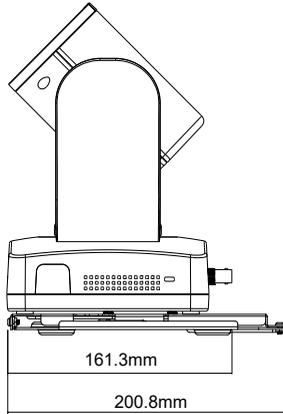
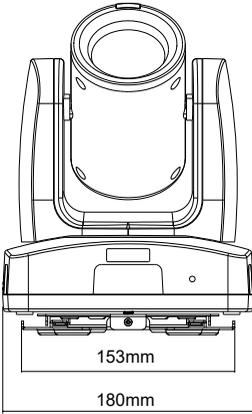
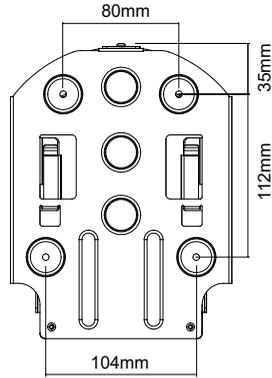
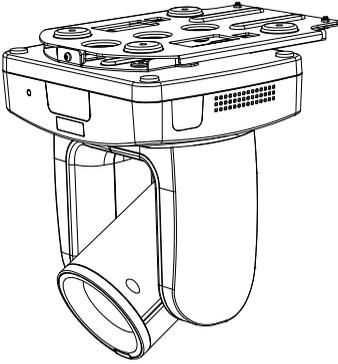
## Pan and Tilt Angle



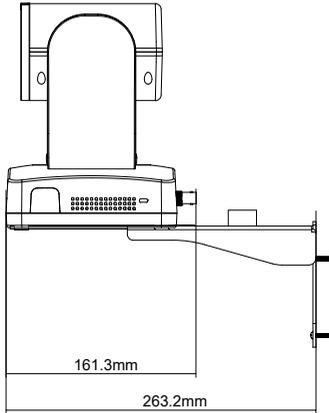
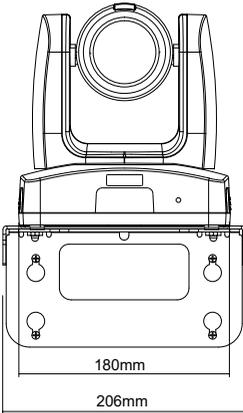
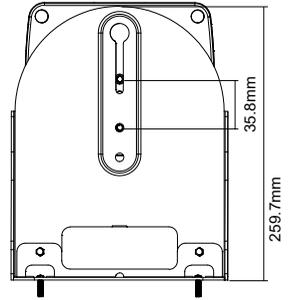
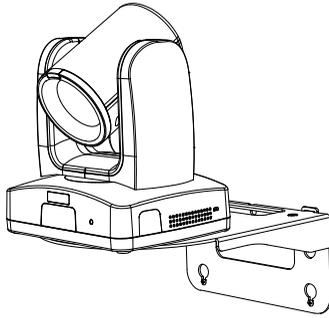
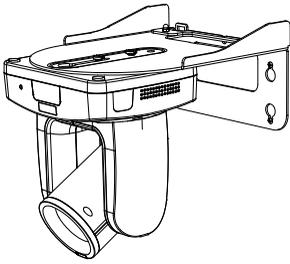
## Dimensions



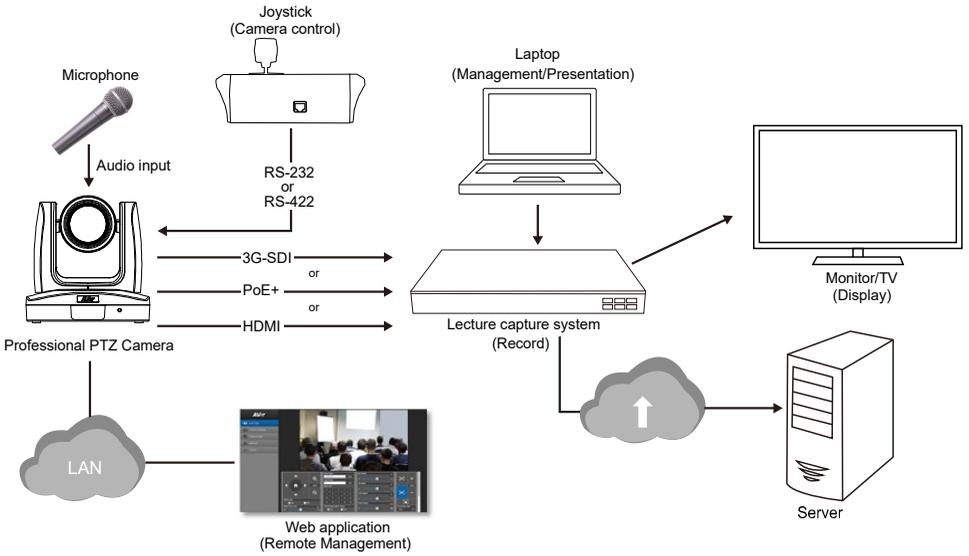
# Ceiling Mount



# Wall Mount



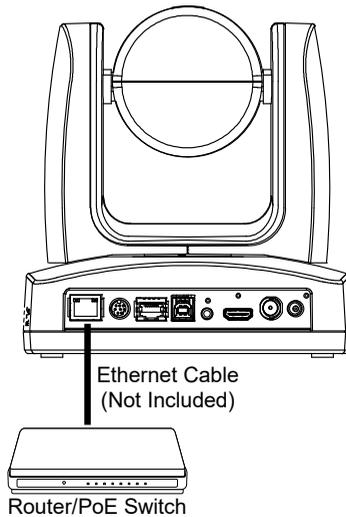
# Device Connection



# PoE Connection

Connect the camera to the router or switch through the PoE+ port.

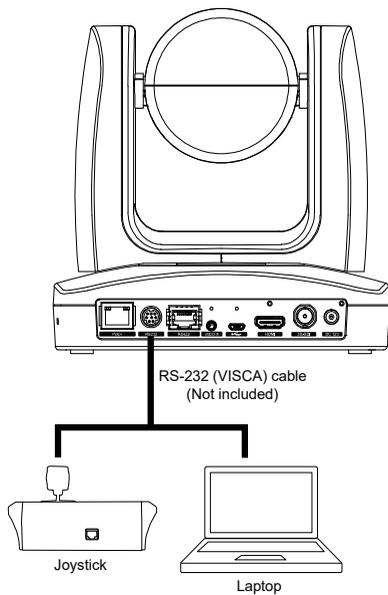
**[Note]** Only support IEEE 802.3AT PoE+ standard.



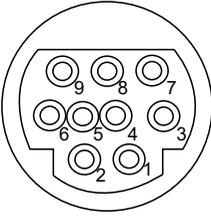
## RS-232 and RS-422 Connection

Connect through the RS-232 or RS-422 for camera control.

### ■ RS-232

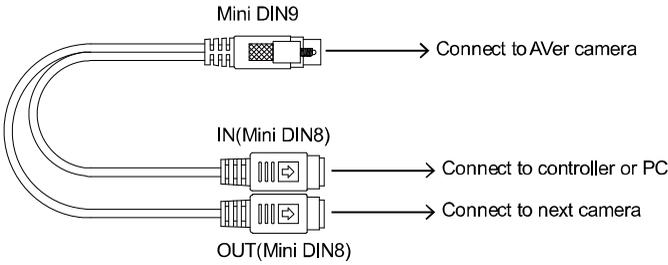


● **RS-232 Port Pin Definition**

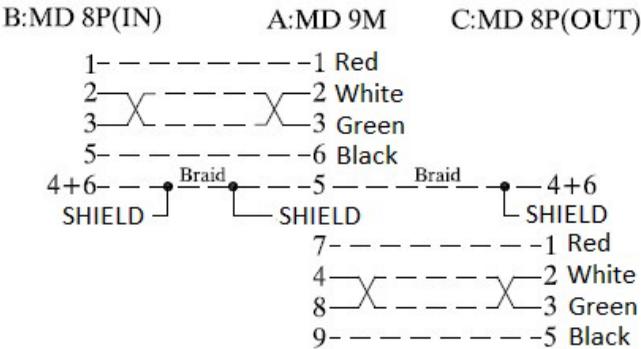


Function	Mini DIN9 PIN #	I/O Type	Signal	Description
VISCA IN	1	Output	DTR	Data Terminal Ready
	2	Input	DSR	Data Set Ready
	3	Output	TXD	Transmit Data
	6	Input	RXD	Receiver Data
VISCA OUT	7	Output	DTR	Data Terminal Ready
	4	Input	DSR	Data Set Ready
	8	Output	TXD	Transmit Data
	9	Input	RXD	Receiver Data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

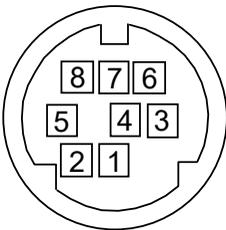
● **RS-232 mini DIN9 to mini DIN8 Cable Pin Definition**



**CIRCUITS:**

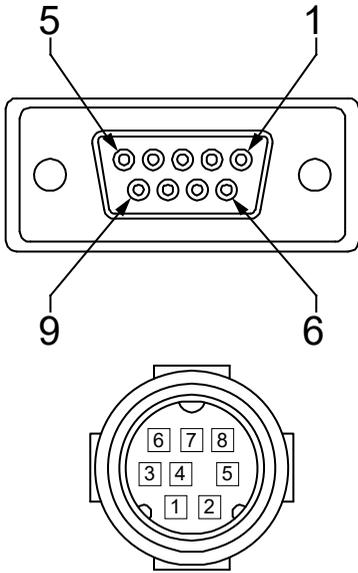


**Mini DIN8 Cable Pin Definition**

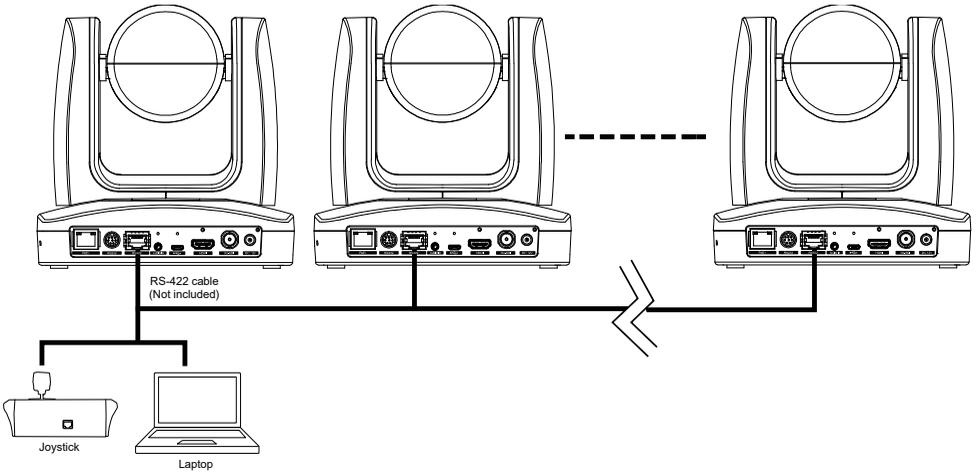


No.	Signal
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	GND
7	NC
8	NC

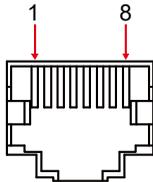
● Din8 to D-Sub9 Cable Pin Definition



■ RS-422

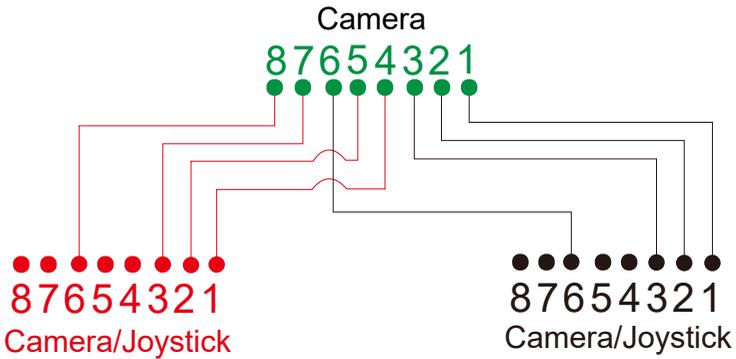


**[Note]** Use cat5e splitter for multi-camera connection.



RS-422 Pin			
No.	Pin	No.	Pin
1	TX+	5	TX-
2	TX-	6	RX-
3	RX+	7	RX+
4	TX+	8	RX-

Cat5e splitter pin assignment:

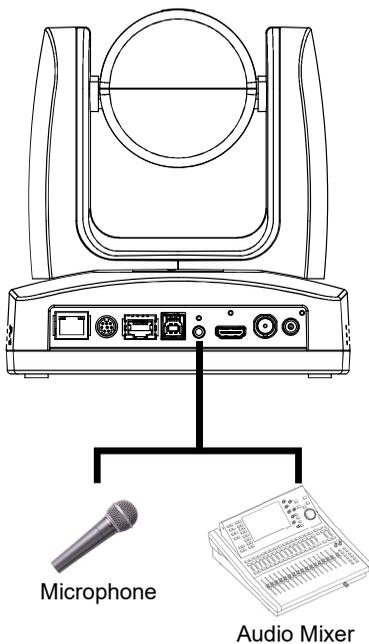


## Audio Input Connection

Connect the audio device for audio receiving.

### [Note]

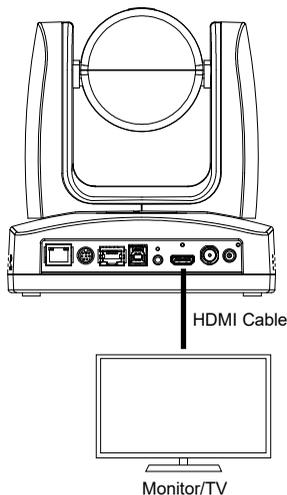
- Line input level: 1Vrms (max.).
- Mic input level: 50mVrms (max.); Supplied voltage: 2.5V.



## Video Output Connection

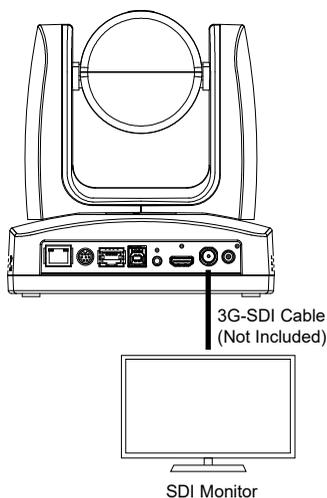
### ■ HDMI

Use the HDMI cable to connect with monitor or TV for video output.



### ■ 3G-SDI

Connect to 3G-SDI monitor for video output.

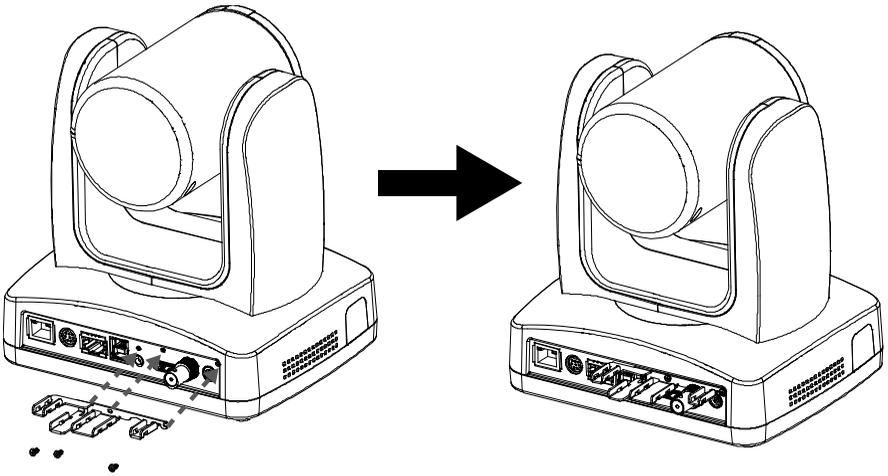


### [Notes]

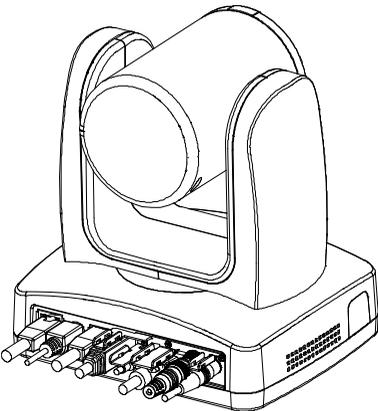
- HDMI and 3G-SDI monitors can be connected to camera and output live video simultaneously; Assuming HDMI monitor is well connected before the camera turned on, the OSD menu will be displayed on HDMI monitor in default.
- The model names with "H" do not have 3G-SDI.

## Cable Fixing Plate Installation

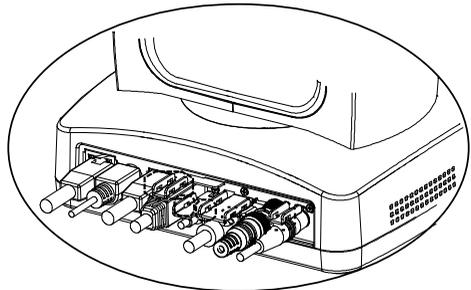
1. Secure the cable fixing plate to the camera with 3 M2 x 4mm screws (included in the package).



2. Plug in cables.

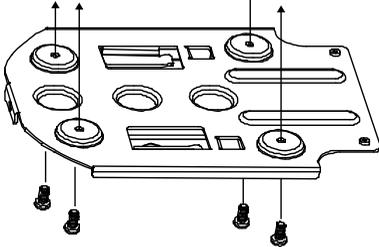


3. Use 4 cable ties to secure the cables and cable fixing plate.

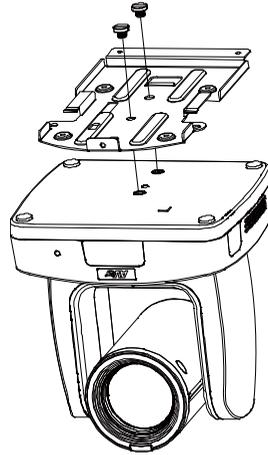


## Ceiling Mount Installation

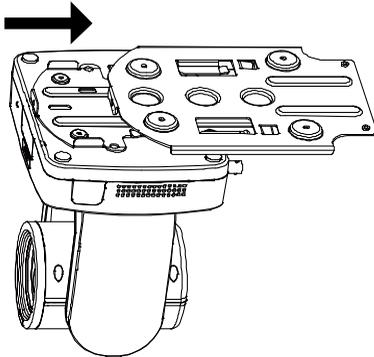
1. Secure the mount bracket on the ceiling.  
Screw: 4 screws, M4 x 10mm (Not Included in the package)



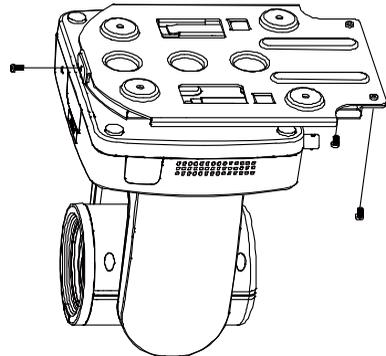
2. Install the mount bracket on the camera.  
Screw: 2 screws, 1/4"-20 L=6.5mm (Included in the package)



3. Slide the mount bracket with the camera into the mount bracket which secured on the ceiling.



4. Secure the camera with screws.  
Screw: 3 screws, M3 x 6mm (Included in the package)

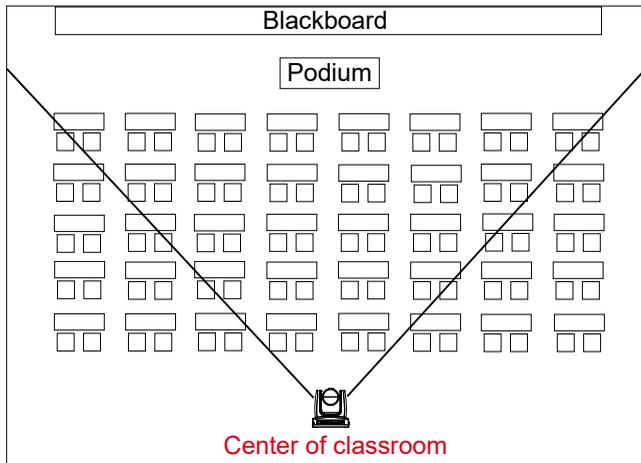
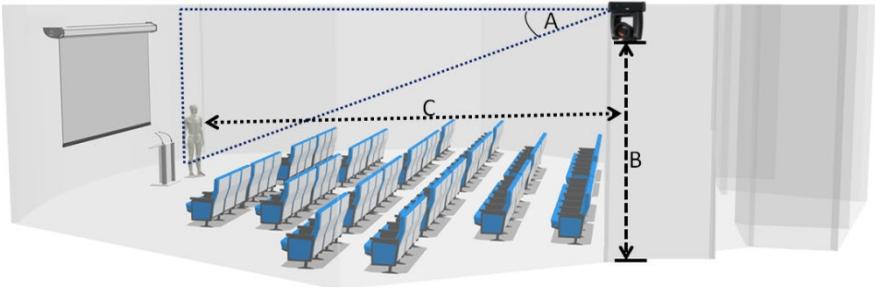


**[Note]** Connect necessary cables after sliding the camera into the mount bracket.

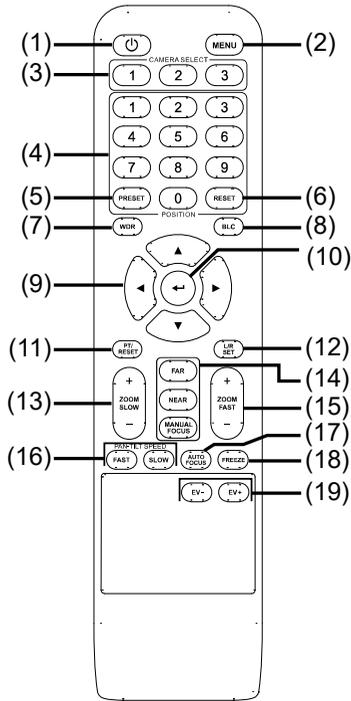
## Camera Installation

- **Angle A:** less than 30°
- **Height B:** 2~3m from floor
- **Distance C:** longer than 3m away from podium
- **Position:** center of classroom
- **Distance between the camera and the target (presenter):**

Optical zoom ratio ability	Upper body size	Full body size
12X	3~16m	3~28m
16X	3~30m	4~55m
21X	3~40m	4~65m
30X	3~44m	3~76m



# Remote Control



Name	Function
(1) Power	Turn the unit on/standby.
(2) Menu	Open and exit the OSD menu.
(3) Camera Select	CAM1 to CAM3 button Select a camera to operate.
(4) Numeric Pad	<ul style="list-style-type: none"> <li>■ Use for setting the preset position 0~9.</li> <li>■ Press number button (0~9) to move the camera to pre-configured preset position 0~9.</li> </ul>
(5) Preset	Press <b>"Preset"</b> + <b>"Number button (0~9)"</b> to set the preset position.
(6) Reset	Press <b>"Reset"</b> + <b>"Number button (0~9)"</b> to cancel pre-configured preset position.
(7) WDR	Turn on/off WDR function.
(8) BLC	Turn on/off backlight compensation.
(9) ▲, ▼, ◀, & ▶	Pan and tilt the camera.
(10) Enter	<p>Access the OSD menu, confirm the selection or make a selection in OSD menu.</p> <ul style="list-style-type: none"> <li>■ Short press to activate One Push Focus.</li> <li>■ Long press (2 seconds) to activate SmartFrame.</li> </ul> <p><b>[Note]</b> to use the "SmartFrame" hot key, please make sure the function is turned <b>"On"</b> (using the OSD menu or web interface). Refer to &lt;SmartFrame&gt; section for more details.</p>

Name	Function
(11) PT Reset	Reset the Pan-Tilt position.
(12) L/R SET	Left and right orientation setting. - Press "L/R SET" + "1" button to reset setting. - Press "L/R SET" + "2" button to move to opposite direction.
(13) Zoom Slow +/-	Zoom in/out slowly.
(14) MF/Far/Near	Enable manual focus. Use Far/Near to adjust the focus.
(15) Zoom Fast +/-	Zoom in/out fast.
(16) Pan-Tilt Fast/Slow	Pan-Tilt speed adjustment.
(17) AF	Auto focus.
(18) Freeze	Freeze the live image.
(19) EV +/-	<ul style="list-style-type: none"> <li>■ Short press to adjust EV level.</li> <li>■ Long press EV+ to turn on RTMP.</li> <li>■ Long press EV- to turn off RTMP.</li> </ul>

# Set Up the Camera

## OSD Menu

You can use the supplied Remote Control to operate the OSD Menu. Press the **MENU** button to call out the OSD menu and use the **▲**, **▼**, **◀**, **▶** and **↩** buttons to operate the OSD menu.



## IP Address Setup

### Static IP

1. Press the **MENU** button on the remote control to call out the OSD menu.
2. Go to **Network > Static IP**.

**[Note]** Turn the DHCP off before setting up static IP (**Network > DHCP > Off**).

3. Select the **IP Address**, **Gateway**, **Netmask** and **DNS** to configure. Press **↩** and use **◀**, **▶** and Numeric Pad to enter the data.

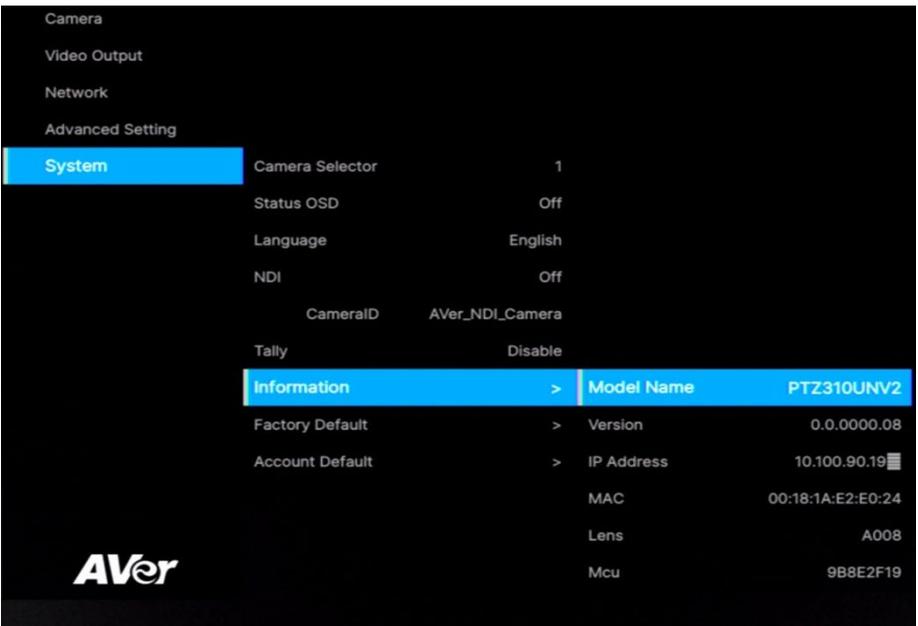


## DHCP

1. Press the **MENU** button on the remote control to call out the OSD menu.
2. Go to **Network > DHCP > On**.



3. After turning the DHCP on, the user can go to **System > Information** to view the IP address.



## OSD Menu Tree

### Camera

Set up camera parameters – Exposure Mode, White Balance, Pan Tilt Zoom, Noise Reduction, Saturation, Contrast, Sharpness, Mirror and Flip.

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer	4 <sup>th</sup> Layer	5 <sup>th</sup> Layer
Camera	Exposure Mode	Full Auto	Exposure Value	-4/-3/-2/-1/0/1/2/3/4
			Gain Limit Level	24dB/27dB/30dB/33dB/36dB /39dB/42dB
			Slow Shutter	Off/On
		Shutter Priority	Exposure Value	-4/-3/-2/-1/0/1/2/3/4
			Shutter Speed	60Hz: 1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000,
				50Hz: 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000
			Gain Limit Level	24dB/27dB/30dB/33dB/36dB /39dB/42dB
		Iris Priority	Exposure Value	-4/-3/-2/-1/0/1/2/3/4
			Iris Level	F1.6/F2.0/F2.4/F2.8/ F3.4/F4.0/F4.8/F5.6/F6.8/ F8.0/F9.6/F11/F14/Close
			Gain Limit Level	24dB/27dB/30dB/33dB/36dB /39dB/42dB
			Slow Shutter	On/Off
		Manual	Shutter Speed	60Hz: 1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000,

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer	4 <sup>th</sup> Layer	5 <sup>th</sup> Layer
				50Hz: 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100,1/120,1/150,1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000
			Iris Level	F1.6 /F2.0/F2.4/F2.8/ F3.4/F4.0/F4.8/F5.6/F6.8/ F8.0/F9.6/F11/F14/Close
			Gain Level	0 dB/3 dB/6 dB/9 dB/12 dB /15 dB/18 dB/21 dB/24dB/ 27dB/30dB/33dB/36dB/39dB /42dB
		Bright	0-31	-
	White Balance	Auto	-	-
		ATW	-	-
		Indoor	-	-
		Outdoor	-	-
		One push	-	-
		Manual	R Gain (0-255) B Gain (0-255)	- -
	Pan Tilt Zoom	Preset Speed	5/25/50/100/150/ 200	-
		Digital Zoom	Off/On	-
		Digital Zoom Limit	-	-
		Pan/Tilt Slow	Off/On	-
	Noise Reduction	Off/Low/Medium/High	-	-
	Saturation	0-10	-	-
	Contrast	0-4	-	-
	Sharpness	0-3	-	-
	Mirror	Off/On	-	-
	Flip	Off/On	-	-

## Video Output

Select video resolution (2160p is only supported on certain models).

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer
Video Output	Theme Mode	Standard
		ZOOM
		TEAMS
		NDI HX3
	Frequency	50 Hz/59.94 Hz/60 Hz
	Resolution	2160P/60, 2160P/59, 2160P/50, 2160P/30, 2160P/29, 2160P/25, 1080P/60, 1080P/59, 1080P/50, 1080P/30, 1080P/29, 1080P/25, 1080I/60, 1080I/59, 1080I/50, 720P/60, 720P/59, 720P/50,

## Network

Set up IP mode – DHCP or static IP.

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer
Network	DHCP	Off/On
	Static IP	IP Address, Gateway, Mask, DNS

## Advanced Setting

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer	4 <sup>th</sup> Layer
Advanced Setting	Audio	Input Type	Line In
			MIC In
		Auto Gain Control	Off/On
		Noise Suppression	Off/Low/Normal
		Audio Volume	0-10
	Control	Serial Port	RS-232/RS-422
		Protocol	VISCA/PELCO D/PELCO P
		Camera Address	1-7
		Baud Rate	2400/4800/9600/38400
	SmartShoot	Off/On	
SmartFrame*	Off/On		

\*Only certain models support SmartFrame.

## System

- **Status OSD:** Enable/disable Preset status (Save Preset, Call Preset, Cancel Preset) display on the screen.
- **Camera Selector:** Set the camera ID 1~3 for using remote control on multiple cameras control (also see No.3 Camera Select in Remote Control chapter).
- **NDI:** Enable/disable NDI function.
- **Tally:** Enable tally function.
- **Account Default:** If you forget your password for the web interface, use Account Default to reset it to **admin/admin**.

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer
System	Camera Selector	1-3
	Status OSD	Off/On
	Language	English/繁體中文/日本語/简体中文/한국어/ Tiếng Việt
	NDI	Off/On
		Camera ID
	Tally	Disable/Enable
	Information	Model Name/Version/IP Address/MAC/Lens/Mcu
	Factory Default	Off/On
Account Default	Off/On	

## Web Setup

Connect the camera from a remote site through the internet. Recommended browser: Chrome.

### Access the Web Interface of the Camera

To access the Web interface of the camera, you have to find the IP address of the camera using **AVer IPCam Utility** or **AVer PTZ Management** software.

#### Accessing the Camera via AVer IPCam Utility

To find the IP address of your cameras using the IPCam Utility installer, follow the steps below.

1. Download the IPCam Utility from <https://www.aver.com/download-center> and run the IPCam Utility.
2. Click **Search**, and all available devices will be listed on the screen.
3. Select a camera from the list, the camera info will be displayed in the Settings field.

**[Note]** The default network of the camera is DHCP and the default ID/Password are **admin/admin**. If you want to configure the network to static IP (192.168.1.168), input the ID/Password in the **Login** field, select the “camera model” on the list, select “Static IP”, enter the static IP related information, and then click the **Apply** button.

AVer IPCam Utility v2.7.1029.34

Network Device: Intel(R) Ethernet Connection (12) I219-V [Search]

Login: User ID [ ] Password [ ]

Network Setting | Date/Time Setting | Maintenance | Import/Export Config

Search Result

No.	Status	Progress	Model Name	Device Name	FW version	IPv4 Address	MAC Address	IPv6 Address
1	Working	50%	TR311HVV2	TR311HVV2	0.1.0000.28	10.100.90.23:80	02:00:70:98:76:05	1:80

Settings

Device Name: TR311HVV2

DHCP  
 Static IP

\*Auto search will start after settings changed!  
 Don't start auto search this time

Start IP Address: 10 . 100 . 90 . 23  
End IP Address: . . .  
Subnet Mask: 255 . 255 . 255 . 0  
Gateway: 192 . 168 . 1 . 254  
Primary DNS: 168 . 95 . 1 . 1  
Secondary DNS: 0 . 0 . 0 . 0

[Apply]

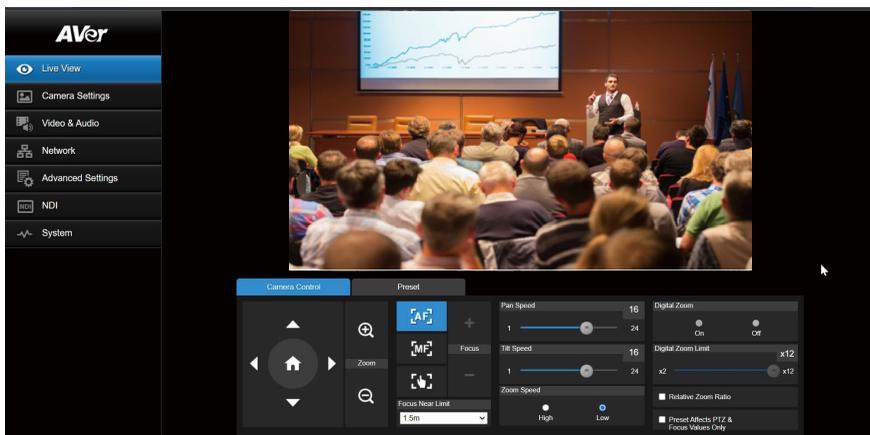
To access the Web interface, double-click on the IP address in the IPv4 Address column.

For the first-time user, you will be prompted with a Login window to change the ID and password.



The image shows a 'Login' window with a dark background. At the top, it says 'Please change new Name & Password for login'. Below this, there are two input fields: 'Login Name' with a person icon and 'Login Password' with a lock icon. At the bottom, there are two buttons: 'Cancel' and 'Change'.

4. Login with the new ID/Password, the Web interface of the camera will be displayed. Please refer to the Live View chapter for more details.



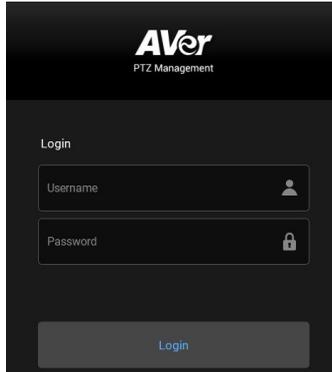
**[Note]** If IPCam utility cannot find the camera, please check the following:

1. Please make sure the Ethernet connection of the camera is well connected.
2. The camera and PC (IPCam Utility) are in the same LAN segment.

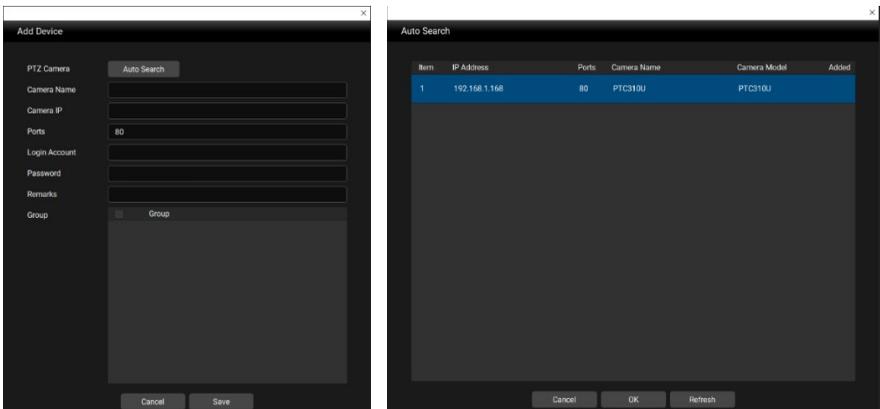
## Accessing the Camera via AVer PTZ Management

To find the IP address of your cameras using the AVer PTZ Management, follow the steps below.

1. Download the AVer PTZ Management software from <https://www.aver.com/download-center>
2. Download the Windows program and install it.
3. After setting up the user ID and password, log in to the software (default User Name/Password: admin/admin).



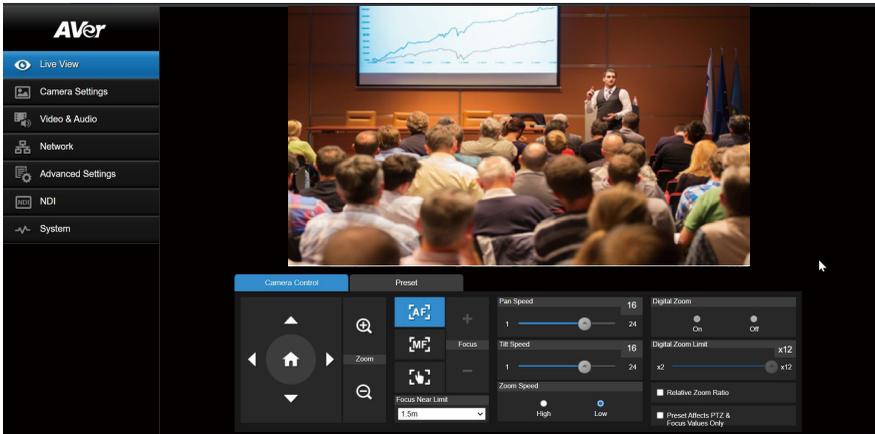
4. On the Main page of PTZ Management, click **Setup > Add** and then click **Auto Search**. The cameras connected on the same LAN with the computer will be displayed.



5. Click on the camera and input the camera ID and Password to add the camera to the device list (default ID/Password are **admin/admin**). Click the **Go to Web** button to access the Web interface of the camera.

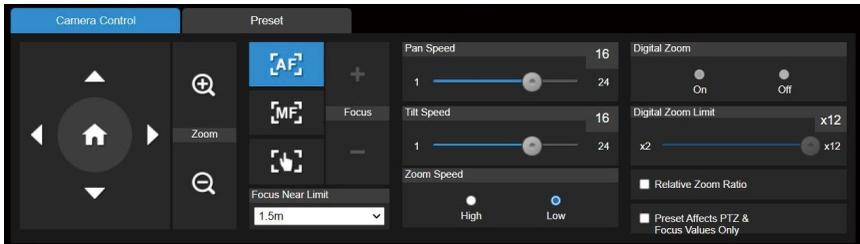
## Live View

You can control the camera and operate the Preset functions using this page.



## Camera Control

Click the **Camera Control** tab to display the panel below for operation.



### Pan-Tilt-Zoom Control

Use , , , and  to navigate the camera view. Adjust the **Pan Speed** and **Tilt Speed** if necessary.

Use  and  to zoom in or zoom out the live image. You can also select **Zoom Speed (High/Low)**.

Click  to go back to home (default) position.

## Focus

**Auto Focus** : Click for the camera to perform the auto focus.

**Manual Focus** : Click to manually adjust the focus. You can use the **Focus +** and **Focus -** buttons to adjust the focus.

**One Push Focus** : Click to automatically adjust the focus once.

**Focus Near Limit**: Set up the focus distance limit.

**AF Mode**: If **Auto Focus** is selected, you can further set up the **AF Mode**.

- **Continuous AF**: The camera will automatically adjust focus all the time.
- **AF Trigger after PTZ**: The camera will automatically adjust focus every time when you perform the pan, tilt or zoom functions.

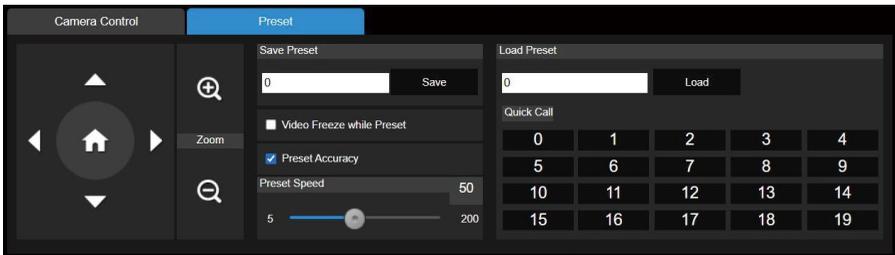
**[Note]** **AF Mode** will be available when updating the firmware to A009 or later.

**Relative Zoom Ratio**: Enable/disable the function. If this function is enabled, the pan/tilt speed will be automatically adjusted based on the zoom ratio. The more the zoom ratio, the slower the pan/tilt speed.

**Preset Affects PTZ & Focus Values Only**: Enable this function to save only the value of pan, tilt, zoom and focus for the configured preset points.

## Preset

Click the **Preset** tab to display the panel below. You can configure and operate the preset positions.



To set up preset positions:

1. Select the **Preset** tab in live view page.
2. Use , ,  and  to navigate the camera view. Optionally use  and  to zoom in or zoom out the images.
3. Input a preset number (0~255) in the **Save Preset** column and click **Save** to save the position.
4. Follow Step 2 and 3 to set up more preset positions.

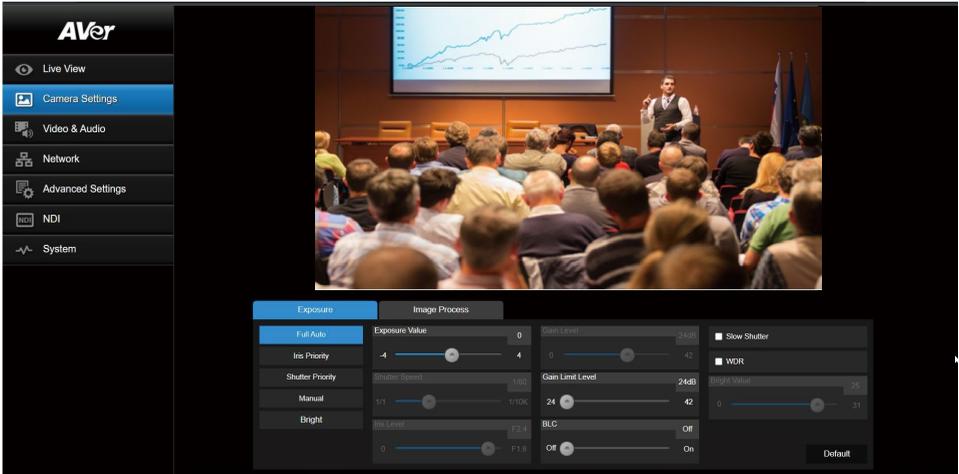
To perform the go to preset positions:

1. Input a preset number (0~255) in the **Load Preset** column or click a preset number (0~19) in the **Quick Call** section.
2. Click **Load**, the camera will move to the preset position.

When operating the go to preset positions, you can optionally adjust the **Preset Speed**, enable/disable the **Video Freeze while Preset** or **Preset Accuracy** function.

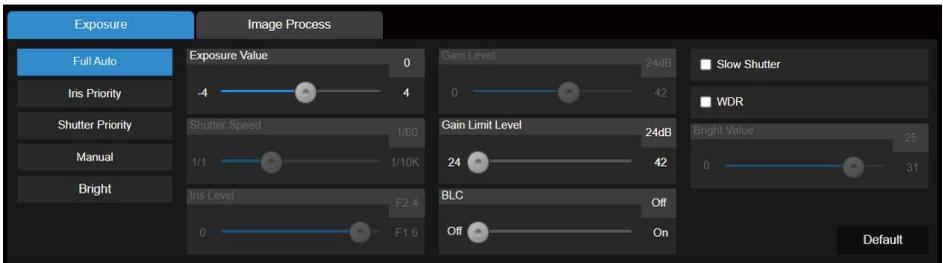
- **Video Freeze with Preset:** When this function is selected, the camera will not display the view along the path when moving from one position to another. The camera will only display the view of the positions.
- **Preset Accuracy:** Enable this function to optimize the positioning accuracy of the setup preset positions.
- **Preset Speed:** Adjust the preset speed.

## Camera Settings



### Exposure

Click the **Exposure** tab to display the panel below for configuration.



- **Exposure Mode:** Options include **Full Auto**, **Iris Priority**, **Shutter Priority**, **Bright**, and **Manual**. Select an exposure mode and optionally adjust the value of **Exposure Value**, **Gain Level**, **Shutter Speed**, **Gain Limit Level**, **Iris Level**, and **BLC**.
- **Slow Shutter:** Enable/disable the function.
- **WDR:** Enable/disable the function.

Click the **Default** button to reset the **Exposure** settings to factory default.

## Image Process

Click the **Image Process** tab to display the panel below for configuration.

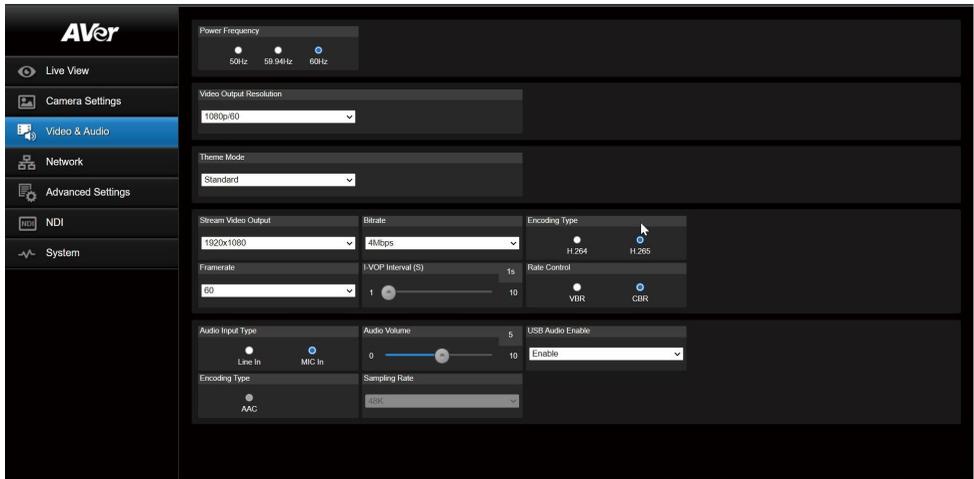


- **White Balance:** Options include **AWB**, **ATW**, **Indoor**, **Outdoor**, **One Push** and **Manual**. If **Manual** is selected, adjust the **R Gain** and **B Gain** manually. If **One Push** is selected, click the **Set** button in the **One Push** field when placing a white paper sheet in front of the camera lens.
- **Saturation:** Adjust the value.
- **Contrast:** Adjust the value.
- **Sharpness:** Adjust the value.
- **Noise Filter:** Select **Off**, **Low**, **Middle** or **High**.
- **Mirror:** Enable/disable the function.
- **Flip:** Enable/disable the function.

Click the **Default** button to reset the **Image Process** settings to factory default.

## Video & Audio

You can configure video and audio settings on this page.



### Video Setting:

- **Power Frequency:** Select **50Hz**, **59.94Hz** or **60Hz** based on your region.
- **Video Output Resolution:** Select a resolution to display on your video output device.
- **Theme Mode:** Select a preferred theme mode according to your needs for video conference software or stream network. Options include **Standard**, **ZOOM**, **Teams**, and **NDI**.  
**[Note]** The NDI option only appears when NDI license has been activated. Please refer to [<NDI>](#) for more details.
- **Stream Video Output:** Select a stream resolution on live view. Options include **3840x2160**, **1920x1080**, **1280x720**, **960x540**, **640x480** or **640x360**.  
**[Note]** 2160p is only supported on certain models.
- **Framerate:** Select a framerate for live stream – **1**, **5**, **15**, **20**, **30** or **60** for power frequency **59.94Hz** or **60Hz**; **1**, **5**, **15**, **20**, **25**, or **50** for power frequency **50Hz**.
- **Bitrate:** **512kbps**, **1Mbps**, **2Mbps**, **4Mbps**, **8Mbps**, **16Mbps**, **32Mbps**, **64Mbps** or **Auto**.
- **I-VOP Interval (S):** Move scroll bar to set the value – **1s** to **10s**.
- **Allow Resolution Under 720p:** Select **On** to allow transferring lower resolution video streaming when working with some video conference software such as Teams. It's recommended to select **Off** if you want to keep better image quality during video call.
- **Encoding Type:** Select **H.264** or **H.265**.
- **Rate Control:** Select **VBR** or **CBR**.

**Audio Setting:**

- **Audio Input Type:** Select an audio source for the audio input. **Line In** or **MIC In**.
- **Encoding Type:** Select **AAC**.
- **Audio Volume:** Adjust the audio volume.
- **USB Audio Enable:** Select **On** or **Off**.

## Network

You can configure network settings on this page.

- **DHCP:** You can set up the network to DHCP or Static IP.  
DHCP: Select **On** to enable the **DHCP** button. The camera will be automatically assigned with the related IP settings. Click **Confirm** to save the settings.  
Static IP: Select **Off** to disable the **DHCP** button and manually input the **IP Address**, **Netmask**, **Gateway** and **DNS**. Click **Confirm** to save the settings.
- **Hostname:** The default Hostname is AVer. You can change the hostname to be displayed on other devices, e.g. IP router.
- **RTMP Settings:** Configure the **RTMP** settings to transfer camera stream to the broadcasting platform, e.g. YouTube. To set up the **RTMP** settings:
  1. Input the **Server URL** and **Stream Key** of the broadcasting platform you use. Please refer to the instruction of the broadcasting platform you use to get the RTMP server URL and stream key.
  2. Click **Start Stream**, the camera stream should be transferred to your broadcasting platform.
  3. To stop broadcasting, click **STOP**.
- **RTSP Security:** Configure the **RTSP** settings to display camera streams on applications such as VLC, PotPlayer or Quick Time using the RTSP stream. To enable **RTSP**:
  1. Select **On** in the **RTSP Security** field.
  2. Select **On** in the **RTSP Audio Enable** field if you want to transfer audio.
  3. On your application, input the **RTSP** (ex: `rtsp://192.168.1.100/live_st1`) and ID/Password of the camera.  
RTSP URL: `rtsp://[IP address of the camera]/live_st1`  
ID/Password: Same with the Web login ID/Password.
- **HLS Settings:** To transfer the HLS streaming, input the **Stream URL** and click **Start Stream**. Click **STOP** to stop transferring.
- **SRT Settings:** Please refer to the below examples to set up SRT streaming.

Example 1 vMix:

Set the workstation and the TR300V2 camera in the same network. Check the workstation's IP address (Destination IP). Example:

```
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:

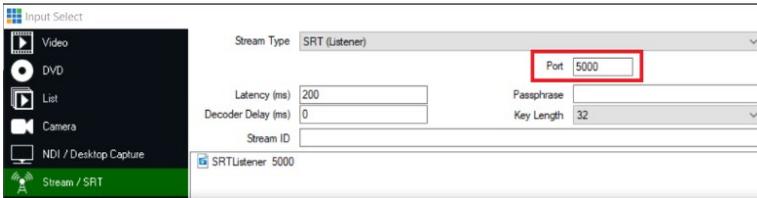
    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::8013:bd79:8b8c:2339%21
    IPv4 Address. . . . . : 192.168.1.10
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

Wireless LAN adapter Wi-Fi:

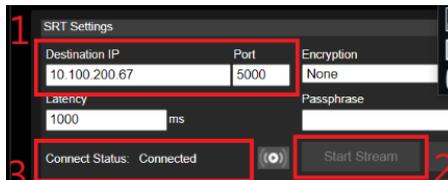
    Connection-specific DNS Suffix  . : aver.com
    Link-local IPv6 Address . . . . . : fe80::685d-62c7-1f05:a46e%11
    IPv4 Address. . . . . : 10.100.200.67
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.100.200.254

Ethernet adapter Bluetooth Network Connection:
```

Select SRT (Listener) from Stream Type in vMix Input Select window.



Enter the information into the SRT Settings TR300V2 web interface, then click on **Start Stream**, **Connect Status** shows **Connected**.

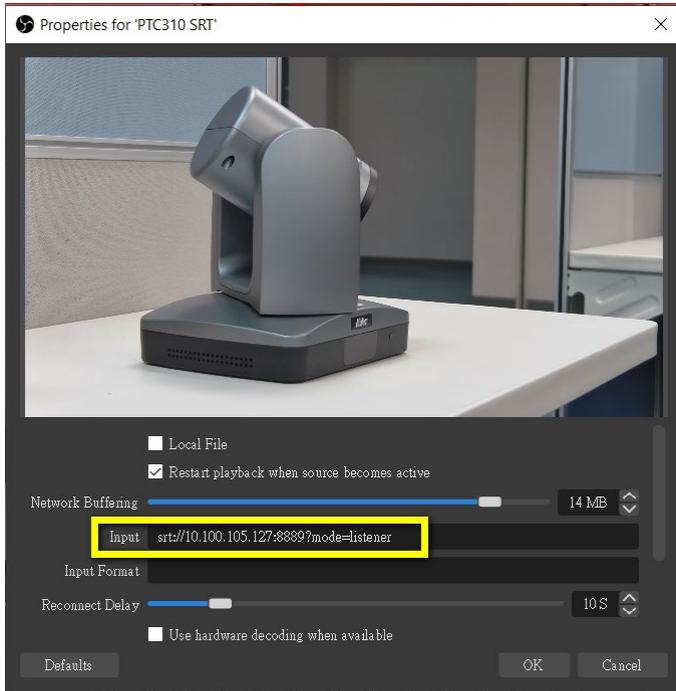


Example2 OBS (Open Broadcaster Software):

Set the workstation and the TR300V2 camera in the same network. Check the workstation's IP address (Destination IP). Example:

```
Connection-specific DNS Suffix . : aver.com
Link-local IPv6 Address . . . . . : fe80::f1dc:bcda:87bd:acle%12
IPv4 Address. . . . . : 10.100.105.127
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.100.105.254
```

Open OBS, add a scene, add a source, enter srt://Work Station IP:port?mode=listener  
Example: srt://10.100.105.127:8889?mode=listener

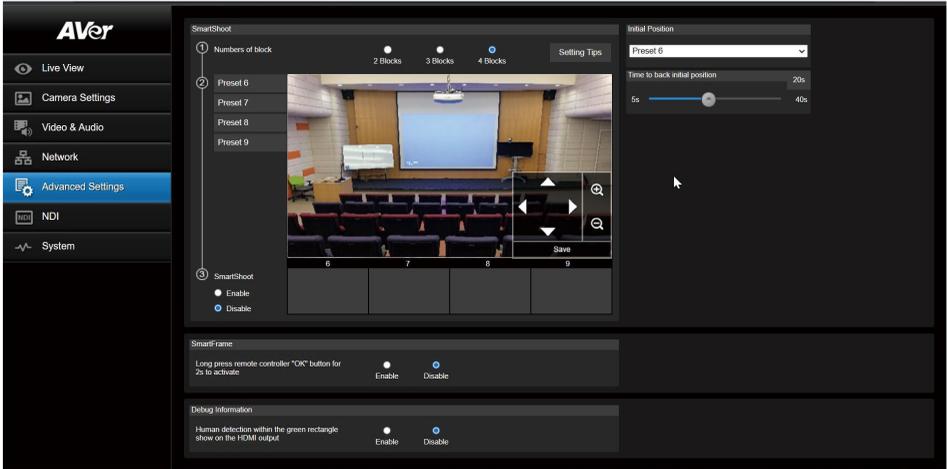


**[Note]** If there is no image, please try right-click on the source->Transform->Fit to screen to re-scale image.

**HTTPS:** Enable HTTPS to establish a secure connection between your browser and your camera. To enable HTTPS access on your camera, follow the steps below.

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. In the HTTPS setup field, select **On** and then click the **Choose File** button to select the certificate file. Click **Upload**.

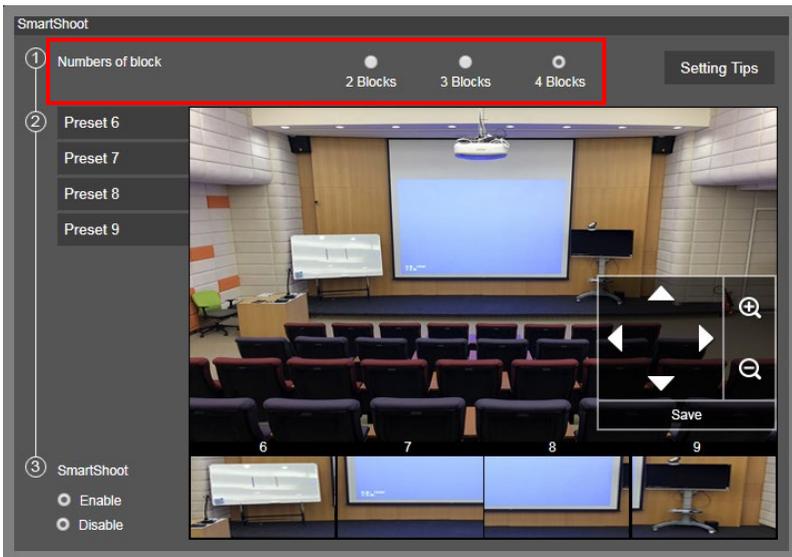
## Advanced Setting



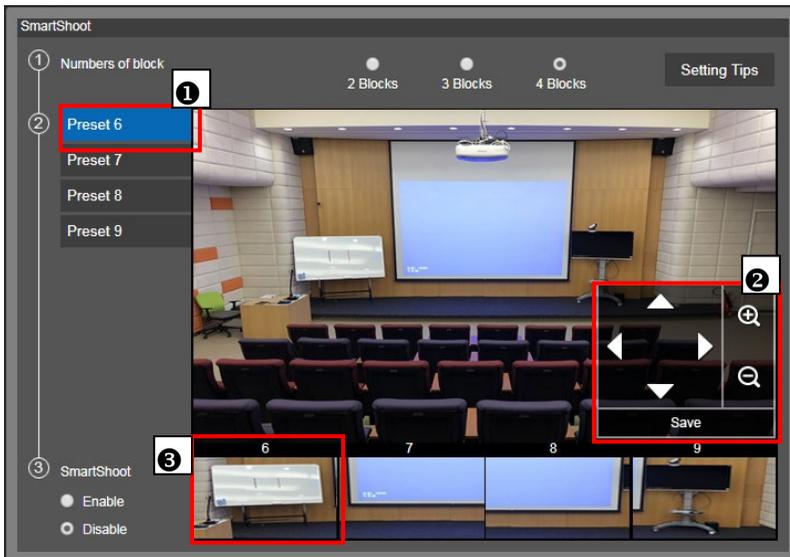
### SmartShoot

Setup the block area for the camera to detect object and follow-up the object to move the camera when the object is in block area that user has set.

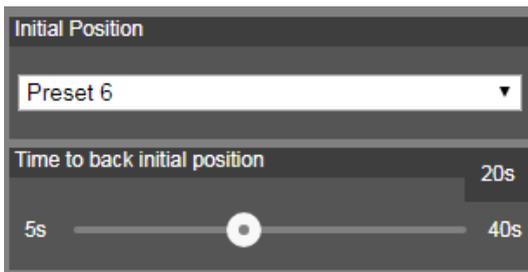
1. In the advanced setting interface, select the “**Number of block**” (2, 3, or 4). Each block is corresponding to one preset position. The maximum is 4 blocks (4 preset positions).



2. Set the preset positions in order (Preset 6 to Preset 9). Use direction control panel to move the camera to wanted position and select “save” to save the preset position. And, a snapshot of the preset image will show at corresponding image display box. Repeat the step to set another preset position.



3. Set the “Initial Position” and “Time to back initial position”. The camera will go back to initial position based on the time set at Time to back initial position.



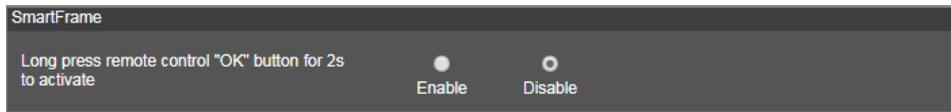
4. Select “Enable” to activate the SmartShoot function. To stop the SmartShoot function, select “Disable”.

**[Note]** In OSD menu, user can enable and disable SmartShoot function, too.

## SmartFrame

Press  button on the remote control to enable to auto focus the face of object and zoom in. Select "**Enable**" to activate the function.

**[Note]** Only certain models support SmartFrame.



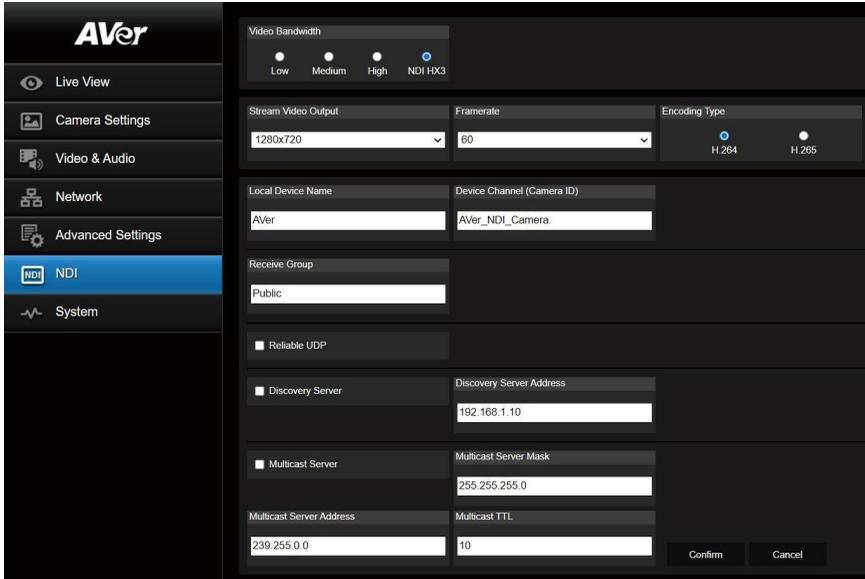
## Debug Information

Select "**Enable**", and the human detection within the green rectangle will show on the HDMI output.

## NDI

You can configure NDI settings on this page.

**[Note]** The NDI function is only available for certain models.



- **Video Bandwidth:** Select **Low**, **Medium**, **High**, or **NDI HX3**. The **NDI HX3** option is to enable NDI|HX 3 for better video with reduced latency.
- **Stream Video Output:** Select a stream resolution on live view. Options include **3840x2160**, **1920x1080**, **1280x720**, **960x540**, **640x480** or **640x360**.  
**[Note]** 2160p is only supported on certain models.
- **Framerate:** Select a framerate for live stream – **1**, **5**, **15**, **20**, **30** or **60** for power frequency **59.94Hz** or **60Hz**; **1**, **5**, **15**, **20**, **25**, or **50** for power frequency **50Hz**.
- **Encoding Type:** Select **H.264** or **H.265**.
- **Local Device Name:** Enter a name of the camera to be shown within NDI devices. For best results, name all AVer cameras the same Local Device Name. e.g. PTZ Cameras or Tracking Cameras.
- **Device Channel (Camera ID):** Enter a channel name for the camera. The channel name is an identity name for the camera to be displayed within NDI devices. **AVer\_NDI\_Camera** is set up as default. The maximum character is 10. The following characters are supported:

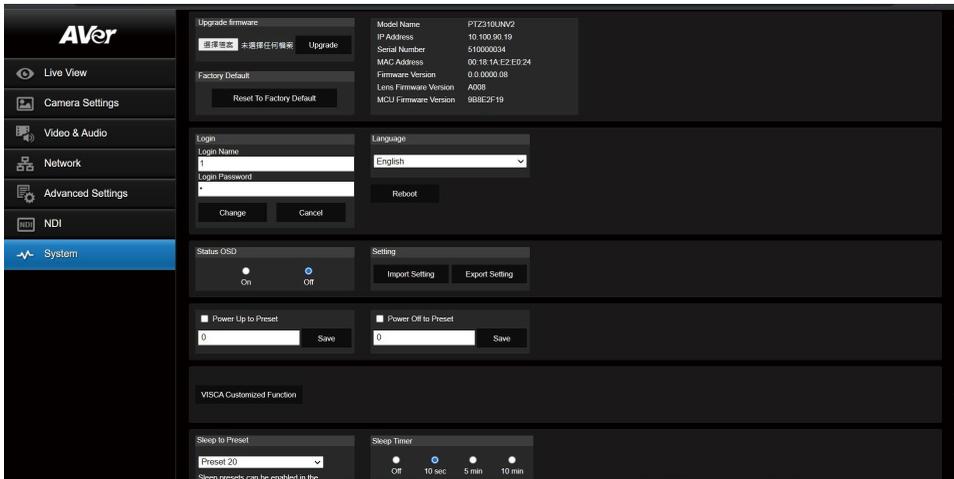
Numeric characters	0123456789
Alphabetic characters	ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
Symbols	! @ % ^, . / : + ? [ ] { } - _ ~

- **Receive Group:** Enter a name of the receive group. The Receive Group allows you to limit which users on your LAN can see the NDI source. For best results, the Receive Group should remain **Public**. Once the Receive Group is changed, you will need to join the Receive Group through NDI® Access Manager.
- **Reliable UDP:** Check the box to enable the **Reliable UDP** protocol.
- **Discovery Server:** Check the box to enable **Discovery Server**. Input the IP address in the **Discovery Server Address** column.
- **Multicast Server:** Check the box to enable **Multicast Server**. Input the related info in the **Multicast Server Mask** and **Multicast Server Address** columns. You can use the **Multicast TTL** to adjust the Multicast Time-To-Live interval.

Click **Confirm** to save the settings. If you want to disable NDI, go to **Video & Audio** setup page and select any other video source from the **Theme Mode** list.

## System

You can view the system information, or configure some system settings on this page.



- **Upgrade firmware:** Follow below steps to upgrade the firmware.
  1. Download the newest firmware from <https://www.aver.com/download-center/>.
  2. On the Web page, go to **System > Upgrade firmware**.
  3. Click **Choose File** to select the firmware.
  4. Click **Upgrade** to start upgrading the firmware.
  5. Refresh the browser after the upgrade process is complete.
- **Factory Default:** Clear all values and reset the camera back to factory default values.
- **Camera Information:** Displays the camera information.
- **Login:** The default login ID and password are **admin/admin**. To change the login ID and password, input the new login ID and password (no more than 32 characters long, and include letters or numbers) and then click **L/R SET**. Your password must be no more than 32 characters long, and include letters or numbers.
- **Language:** Change the Web UI language.
- **Status OSD:** Enable/disable to display the status info on the live view. When operating the Preset (Save Preset, Call Preset, Cancel Preset), Zoom or Tracking functions, the status will be displayed on the live screen.
- **Setting:** Click **Import Setting** to import camera configurations. Click **Export Setting** to export camera configurations.
- **VISCA Customized Function:** Configure the settings and then click **OK**.
- **Power Up to Preset:** If this function is enabled, after camera power-up, the camera will move to the input preset position. To set up this function, input a preset position and then click **Save**. Ensure the preset positions have been pre-configured before enabling this function.
- **Power Off to Preset:** If this function is enabled, when power-off the camera, the camera will move

to the input preset position. To set up this function, input a preset position and then click **Save**. Ensure the preset positions have been pre-configured before enabling this function.

- **Sleep to Preset:** Select a pre-configured preset point for the Sleep mode. When the camera enters the Sleep mode, the camera will turn to the selected preset point. To perform this function, ensure to select **ZOOM** in the **Video & Audio > Theme Mode** setup field.
- **Sleep Timer:** Set up a duration for the sleep timer. When there is no UVC connection and timer is up, the camera will enter the sleep mode. You can select **Off** to disable the sleep mode. To perform this function, ensure to select **ZOOM** in the **Video & Audio > Theme Mode** setup field.
- **Help Improving AVer Camera:** Select the function to send anonymous usage data for AVer Information Inc.
- **LED Indicator Brightness:** Adjust the value.

# Appendix

## VISCA RS-232 Command Table

Command Set	Command	Command Packet	Comments
CAM_Power	On	8x 01 04 02 02 FF	
	Off	8x 01 04 00 03 FF	Power ON/OFF
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Text(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 - PTC210: 0x0000~0x0020 PTC230: 0x0110~0x0400
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far (Standard)	8x 01 04 08 02 FF	
	Near (Standard)	8x 01 04 08 03 FF	Each 'Far/Near' needs a 'stop'
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
CAM_WB	One Push	8x 01 04 35 01 FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position
	Auto	8x 01 04 35 00 FF	Normal Auto
	ATW	8x 01 04 35 04 FF	
CAM_RGain	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
CAM_BGain	One Push	8x 01 04 30 05 FF	One Push WB Trigger
	Up	8x 01 04 03 02 FF	Manual Control of B Gain
CAM_AE	Down	8x 01 04 03 03 FF	
	Up	8x 01 04 04 02 FF	Manual Control of B Gain
CAM_Shutter	Down	8x 01 04 04 03 FF	
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 04 FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 08 FF	Iris Priority Automatic Exposure mode
CAM_Iris	Bright	8x 01 04 39 02 FF	Bright Mode (Manual Control)
	Up	8x 01 04 0A 02 FF	Shutter Setting
CAM_Gain	Down	8x 01 04 0A 03 FF	
	Up	8x 01 04 0B 03 FF	Iris Setting
CAM_Bright	Down	8x 01 04 0C 02 FF	Gain Setting
	Up	8x 01 04 0C 03 FF	
CAM_Backlight	Up	8x 01 04 0D 02 FF	Bright Setting
	Down	8x 01 04 0D 03 FF	
	Up	8x 01 04 0E 02 FF	Exposure Compensation Amount Setting
	Down	8x 01 04 0E 03 FF	
CAM_Preset	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_Menu	Reset	8x 01 04 3F 00 pp FF	pp: Preset Number 0x00~0x0F
	On/Off	8x 01 04 3F 01 pp FF	
Pan-Slt Drive	Recall	8x 01 04 3E 02 pp FF	
	On/Off	8x 01 06 0E 10 FF	Display ON/OFF
	Up	8x 01 06 01 VV WW 03 03 FF	
	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	VV: Pan speed setting 0x01 (low speed) to 0x18 (high speed)
	Up/Left	8x 01 06 01 VV WW 01 02 FF	WW: Tilt speed setting 0x01 (low speed) to 0x18 (high speed)
	Up/Right	8x 01 06 01 VV WW 02 02 FF	
CAM_VDR	Down/Left	8x 01 06 01 VV WW 01 02 FF	
	Down/Right	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	
CAM_MenuEnter	Reset	8x 01 04 3D 05 FF	Wdr ON/OFF
	On	8x 01 04 3D 02 FF	
Tally Lamp ON	Off	8x 01 04 3D 03 FF	
Tally Lamp OFF	On	8x 01 7E 01 0A 00 02 FF	Enter Submenu
Freeze	Freeze On	8x 01 01 0A 00 03 FF	Freeze On Immediately
	Freeze Off	81 01 04 62 03 FF	Freeze Off Immediately
Freeze	Presets Freeze On	81 01 04 62 22 FF	Freeze On When Running Preset
	Presets Freeze Off	81 01 04 62 23 FF	Freeze Off When Running Preset
CAM_Memory Special	Set	8x 01 04 3F 01 pp FF	<b>These are changeable depending on VISCA Customized Functions web setting.</b> pp: 0x00 to 0x0F normal preset pp: 0x5F => Trun on OSD menu pp: 0xA0 => Full Body pp: 0xA1 => Upper Body pp: 0xA2 => Tracking Point pp: 0xA3 => Switch pp: 0xA4 => Presenter mode (supported in FW v25 or newer) pp: 0xA5 => Zone mode (supported in FW v25 or newer) pp: 0xA6 => Hybrid mode (supported in FW v25 or newer)
	Absolute Position	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 02 02 02 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 AD 02 FF	
	Off	8x 01 04 AD 03 FF	
Effective Tracking area	On	8x 01 04 A3 02 FF	
	Off	8x 01 04 A3 03 FF	
RTMP	On	8x 01 04 A2 02 FF	
	Off	8x 01 04 A2 03 FF	
Video mode	IP-Stream	8x 01 04 A3 00 FF	
	USB only	8x 01 04 A3 01 FF	
Seboot	NDR only	8x 01 04 A3 02 FF	
	Streaming only	8x 01 04 A3 03 FF	
Preset Affects PTZ & Focus Values Only	On	8x 01 04 A4 FF	
	Off	8x 01 04 A5 02 FF	
Relative Zoom Ratio	On	8x 01 04 A5 03 FF	
	Off	8x 01 04 A6 02 FF	
Auto Tilt	On	8x 01 04 A6 03 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

Inquiry Command	Command Packet	Reply Packet	Comments
CAM_PoweringInq	8x 09 04 00 FF	y0 50 02 FF y0 50 03 FF	On 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	pg: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pg: 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	pg: Shutter Position
CAM_IrisPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pg: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pg: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pg: Bright Position
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pg: 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	pgrs: Focus Position
zoom_Pos_Inq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pgrs: Zoom Position
PT_Pos_Inq	8x 09 06 12 FF	y0 50 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_OSD MENU orvoff	8x 09 7E 04 76 01 FF	y0 50 02 FF y0 50 03 FF	On Off
CAM_Tally	8x 09 7E 01 0A FF	y0 50 02 FF y0 50 03 FF	On Off
CAM_WDR mode	8x 09 04 3D FF	y0 50 02 FF y0 50 03 FF	On Off
CAM_BLC mode	8x 09 04 33 FF	y0 50 02 FF y0 50 03 FF	On 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.w
USB Status	8x 09 36 69 05 FF	y0 50 00 FF y0 50 01 FF	USB cable plug out USB cable plug in
UVC Status	8x 09 36 69 06 FF	y0 50 00 FF y0 50 01 FF	UVC stream off UVC stream on

# Visca over IP Settings

VISCA over IP

## PORT

Internet protocol	IPv4
Transport protocol	UDP
Port address	52381

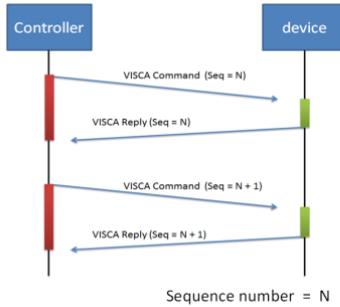
## FORMAT

	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

## Sequence number



# CGI Command

CGI List for Video Transmission					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
Get JPEG	/screenshot				1280x720.jpg
Get RTSP stream	rtsp://ip/live_01				
Get MJPG	http://IP/html/live.html				

CGI List for Camera Control					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
up start	/cgi-bin/SetPtz#	1,0,18,(random)			
up end	/cgi-bin/SetPtz#	1,0,28,(random)			
down start	/cgi-bin/SetPtz#	1,1,18,(random)			
down end	/cgi-bin/SetPtz#	1,1,28,(random)			
left start	/cgi-bin/SetPtz#	0,1,18,(random)			
left end	/cgi-bin/SetPtz#	0,1,28,(random)			
right start	/cgi-bin/SetPtz#	0,0,18,(random)			
right end	/cgi-bin/SetPtz#	0,0,28,(random)			
zoom_in start	/cgi-bin/SetPtz#	2,0,18,(random)			
zoom_in end	/cgi-bin/SetPtz#	2,0,28,(random)			
zoom_out start	/cgi-bin/SetPtz#	2,1,18,(random)			
zoom_out end	/cgi-bin/SetPtz#	2,1,28,(random)			
set preset:	/cgi-bin?ActPreset=#	1,N&(random)			N : position
load preset:	/cgi-bin?ActPreset=#	0,N&(random)			N : position
set preset speed	/cgi-bin?Set-preset_speed,3, val	val: {min: 1, max: 6}			
Absolute Position (Pan)	/cgi-bin?Set-ptz_p,3, val	val: {min: 2048, mid: 962944, max: 1925888}			Follows CGI preset speed
Absolute Position (Tilt)	/cgi-bin?Set-ptz_t,3, val	val: {min: 2048, mid: 165696, max: 662784}			Follows CGI preset speed
Absolute Position (Zoom)	/cgi-bin?Set-ptz_z,3, val	val: {min: 2048, mid: 14224, max: 28448}			Follows CGI preset speed

CGI List for Various Settings					
exposure value	/cgi-bin?Set=#	img_expo_expo,3,N&(random)	value	1 ~ 9	N : value
saturation	/cgi-bin?Set=#	img_saturation,3,N&(random)	value	0 ~ 10	N : value
contrast	/cgi-bin?Set=#	img_contrast,3,N&(random)	value	0 ~ 4	N : value
Reboot	GET(Basic Authentication)	/cgi-bin?OnePush=#			
Factory Reset	GET(Basic Authentication)	/cgi-bin?OnePush=d			
RTMP Start streaming	/cgi-bin?Set=#	vdo_rtmp_enable,3,1			
RTMP Stop streaming	/cgi-bin?Set=#	vdo_rtmp_enable,3,0			
Save RTMP server URL		/cgi-bin?SaveRtmpUrl=#		value empty for clearing up the field	
Save RTMP stream Key		/cgi-bin?SaveRtmpKey=#		value empty for clearing up the field	
Inquiry for RTMP status		/cgi-bin?Get=vdo_rtmp_status		Streaming: vdo_rtmp_status=2 Stopped: vdo_rtmp_status=0	
Get RTMP server URL		/cgi-bin?GetRtmpUrl			
Get RTMP stream key		/cgi-bin?GetRtmpKey			
USB status	GET(Basic Authentication)	/cgi-bin?Get=usb_status_inquire,3			
		-Reply		usb_status_inquire,3=X/n/n	X: 0(plug out), 1(plug in)
UVC status	GET(Basic Authentication)	/cgi-bin?Get=uvc_status_inquire,3			
		-Reply		uvc_status_inquire,3=X/n/n	X: 0(stream off), 1(stream on)
Status get (Model name & mac & FW_VER)		/cgi-bin?SetString=sys_name&net_mac&sys_fw_ver&_=#1635216271678			<a href="http://10.100.105.110/cgi-bin?GetString=sys_name&amp;net_mac&amp;sys_fw_version&amp;_=#1635216271678">http://10.100.105.110/cgi-bin?GetString=sys_name&amp;net_mac&amp;sys_fw_ver&amp;_=#1635216271678</a>
Serial No. get		/cgi-bin?GetSerialNumber&_=#1635216271680			<a href="http://10.100.105.110/cgi-bin?GetSerialNumber&amp;_=#1635216271680">http://10.100.105.110/cgi-bin?GetSerialNumber&amp;_=#1635216271680</a>
script (Using cURL to update firmware)		curl.exe -X POST --user NAME:PASSWORD -F file1=@_ISP_FILE "http://IP_ADDRESS/system"			<p>Please download curl (curl for Windows), this is a command line tool for network transferring. Put curl.exe and ISP file in the same folder, and then execute the script to upgrade camera.</p> <p>For example, ISP file is 0_0.0000.29.dat , IP address is 10.100.105.109 and username password is 1:1, you can enter this script to execute ISP process.</p> <pre>curl.exe -X POST --user 1:1 -F file1=@_0.0000.29.dat "http://10.100.105.109/system"</pre>