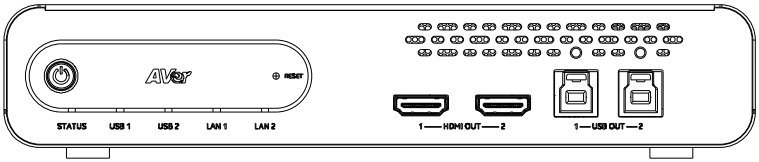
www.aver.com



MT300 Matrix Tracking Box

User Manual

Federal Communication 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.

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More Help

For FAQs, technical support, software and user manual download, please visit:

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Download Center: https://www.averusa.com/pro-av/support/
Technical Support: https://averusa.force.com/support/s/contactsupport

Europe Branch office
Download Center: https://www.avereurope.com/download-center
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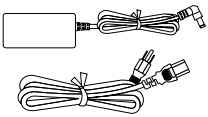
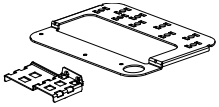
Overview

Package Contents

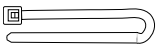
MT300
Matrix Tracking Box



Power Adapter &
Power Cord



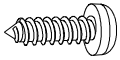
Cable Fixing Plate
(x2)



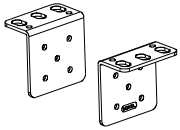
Cable Ties (x13)

3.0 x 5mm
Flat Head Screw (x5)

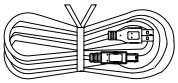
3.0 x 5mm
Truss Head Screw (x4)



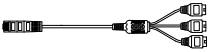
M3 x 10mm
Screws (x4)



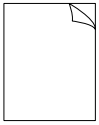
Rack Mount Bracket
(x2)



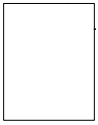
USB 3.0 Cable (x2)
1.5 m/4.92 ft



RS-422 Cable



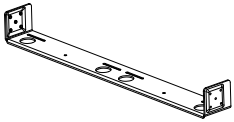
Quick Start Guide



Warranty Card*

*Only for Japan

Optional Accessories

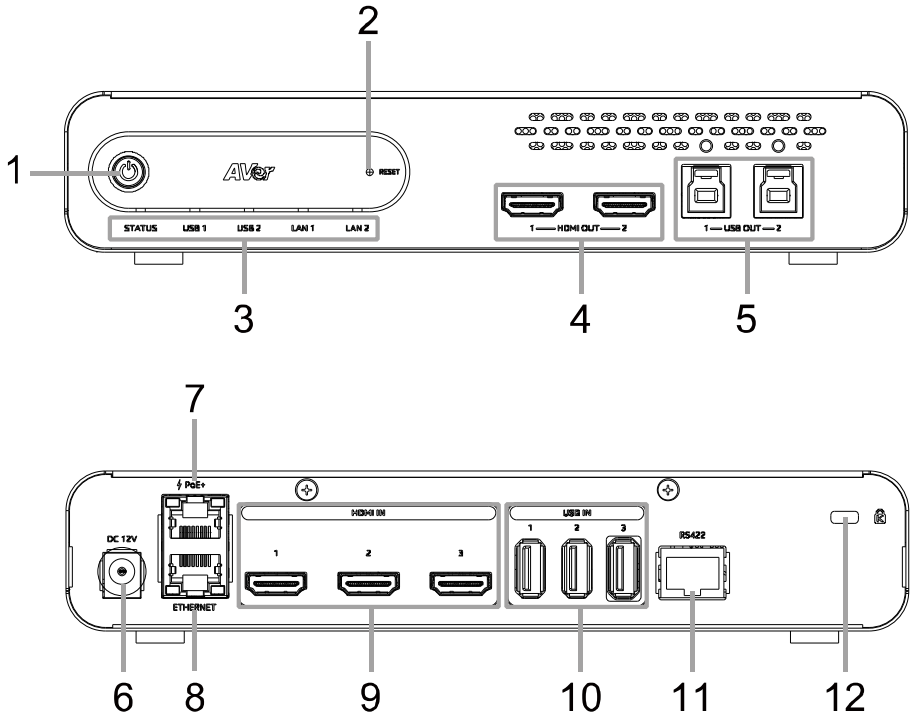


Server Rack Mount

3.0 x 5mm
Flat Head Screw (x3)

3.0 x 5mm
Truss Head Screw (x2)

Connections



Front Panel

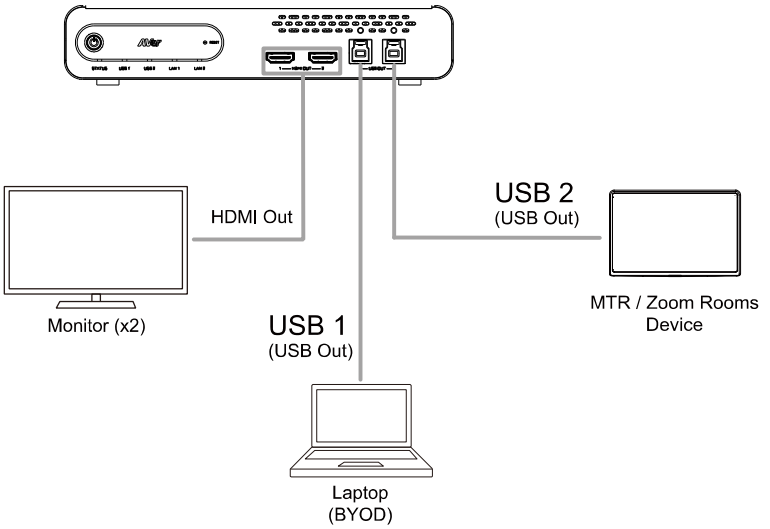
1. Power Button
2. Reset Button
3. Status LEDs
4. HDMI Out Port*2
5. USB Out 3.0 Port (Type-B)*2

   (Only 1 USB output each time)

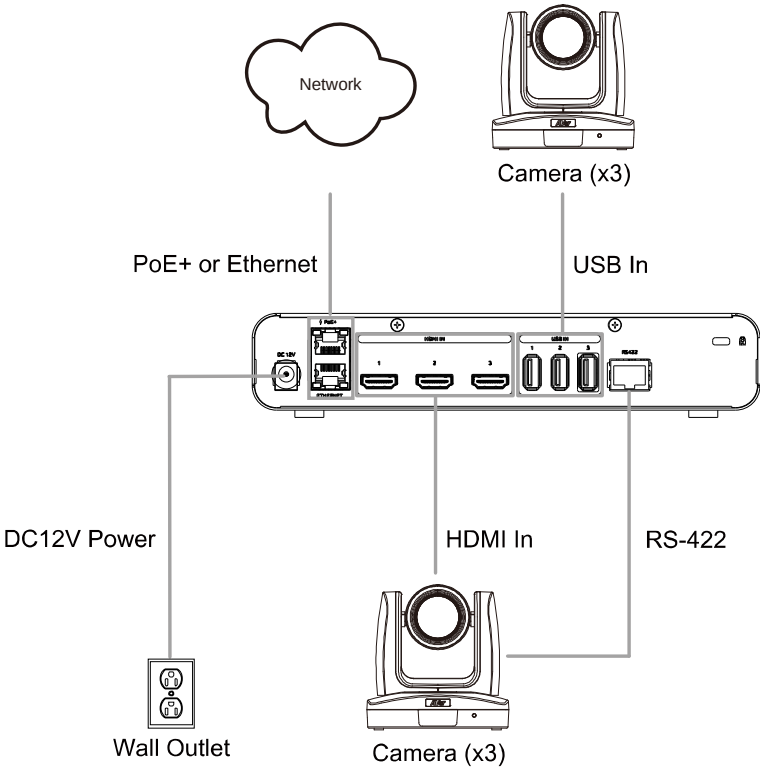
Back Panel

6. DC Power Jack
7. PoE+ Port IEEE 802.3AT
8. Ethernet Port
9. HDMI In Port*3
10. USB In 2.0 Port (Type-A)*3
11. RS-422 Port
12. Kensington Lock

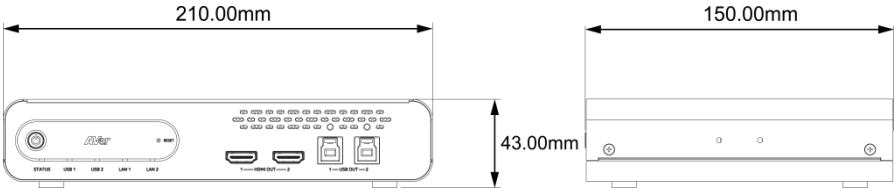
Front Panel



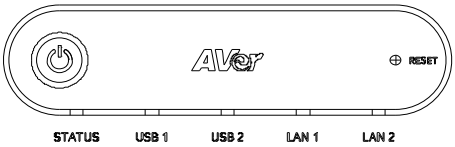
Back Panel



Dimensions



LED Indicators



STATUS (Power/System)

LED	Status
Solid orange	Powered on but not operating
Solid green	Operating successfully
Flashing green	Firmware updating

USB 1 / USB 2

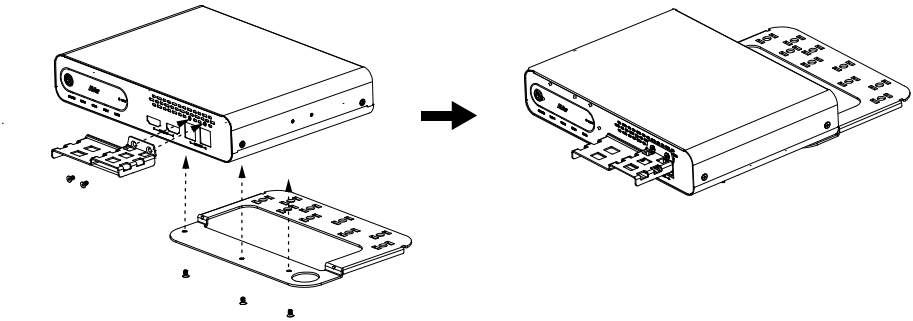
LED	Status
Solid green	Connected and ready for UVC / UAC streaming
Flashing green	Streaming in UVC / UAC

LAN 1 / LAN 2

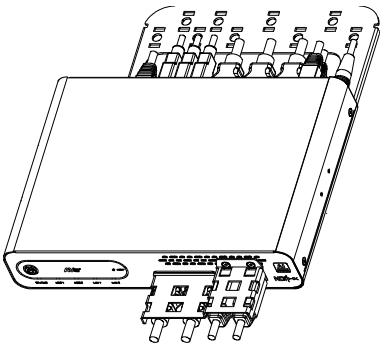
LED	Status
Solid green	Ethernet connected

Cable Fixing Plate Installation

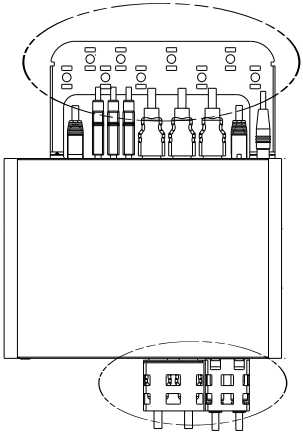
1. Secure the cable fixing plates to the tracking box with 5 flat hat 3.0 x 5mm screws in the package.



2. Plug in cables.

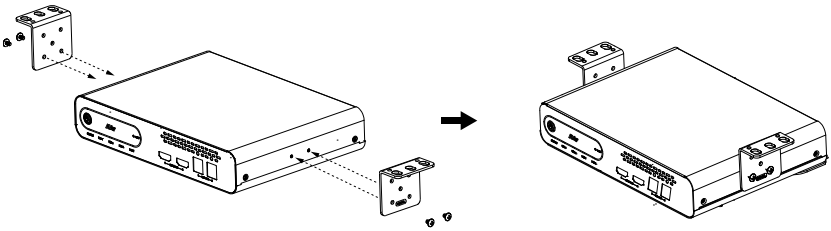


3. Use 13 cable ties in the package to secure the cables and cable fixing plates.

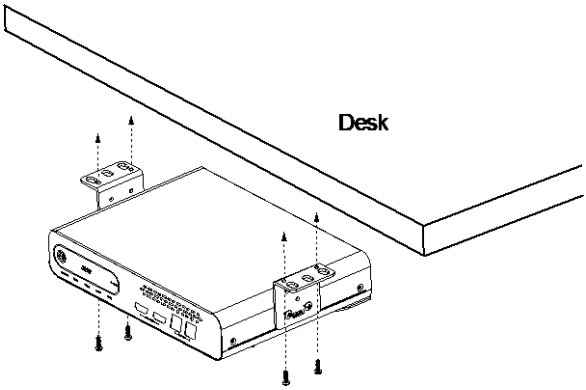


Desk Mount Installation

1. Secure the mount brackets on the tracking box.
   Screw: 4 truss head screws, 3.0 x 5mm

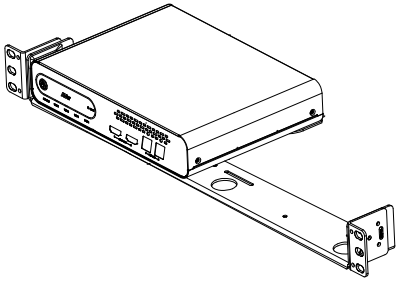


2. Install the mount brackets and the tracking box under the desk.
   Screw: 4 screws, M3 x 10mm



Server Rack Mount (Optional Accessories)

For details on optional accessories, consult your local dealer.



Getting Started

Web Interface Setup

Configure settings through the web interface.

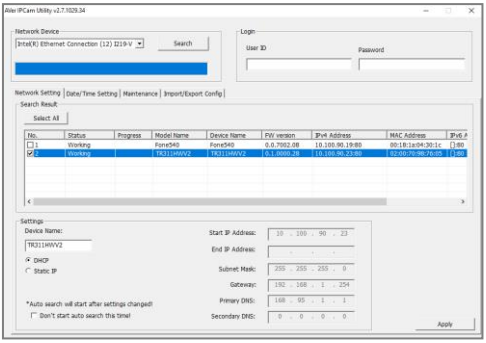
With AVer IPCam Utility

1. Download and run IPCam Utility from the AVer Download Center (https://www.aver.com/download-center).
2. Click **Search** to see the list of devices.
3. If the tracking box doesn't appear, make sure:
   - The Ethernet cable is well connected to the tracking box.
   - The tracking box and the PC running IPCam Utility are in the same LAN segment.

4. Select the tracking box from the list to see device information in **Settings**.
   - The default network is Static IP, and the default username/password is **admin/admin**.

Network Port	Default IP Address
PoE+ Port (Recommended)	192.168.1.168
Ethernet Port	192.168.168.168

   - To change the network to DHCP, enter the ID/Password in the **Login** field, check the device checkbox, select **DHCP** in **Settings**, and then click **Apply**.



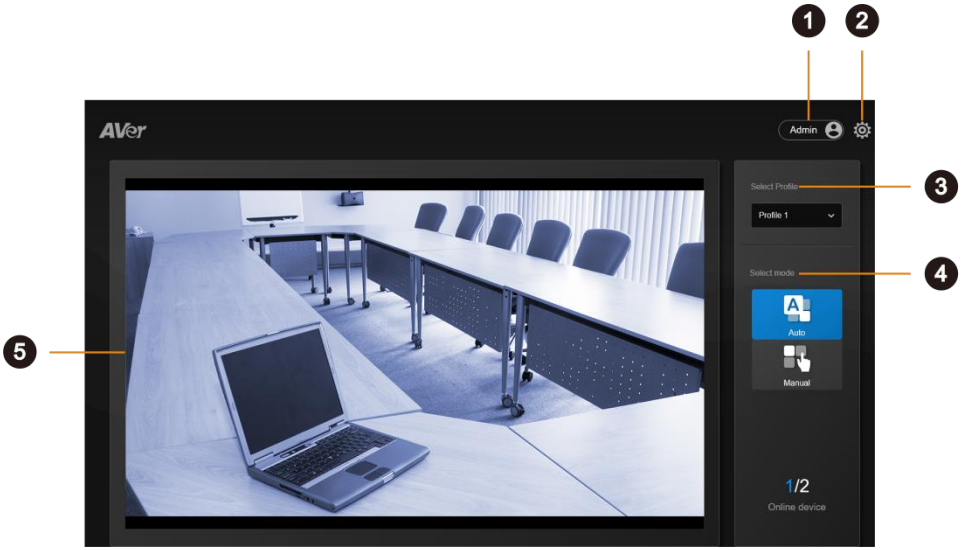
5. Double-click on the device row to open the web interface,.
6. Enter the default username/password **admin/admin**. First-time user will be prompted to change your login.

With Power over Ethernet Plus (PoE+)

1. Connect the tracking box to the network using the PoE+ port.
2. Set up your computer with static IP 192.168.1.x.
3. Type in 192.168.1.168 in your web browser to open the web interface.
4. The default network is Static IP, and the default username/password is **admin**/**admin**.
5. You can also use the Ethernet port to open the web interface:

Network Port	Default IP Address	Computer IP setting
PoE+ Port (Recommended)	192.168.1.168	192.168.1.x
Ethernet Port	192.168.168.168	192.168.168.x

Main Screen



1. **Account**
   Switch between admin and user accounts.
   - An admin account provides access to settings and configurations that are not available to a user account.
   - A user account can select profiles and switch between Auto and Manual Mode.

2. **Settings**
   Click to enter the settings menu.

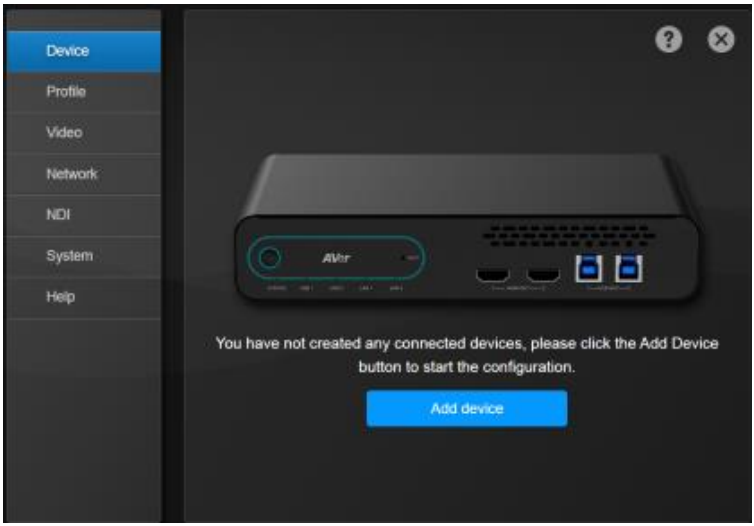
3. **Select profile**
   Select a pre-configured profile setting. A profile can include settings for both Auto and Manual Mode.

4. **Select mode**
   Switch between Auto and Manual Mode and see its camera live view.

5. **Live view**
   Display the camera live view.

Device

Go to **Settings** icon on the main screen > **Device**.



To add cameras and microphones:

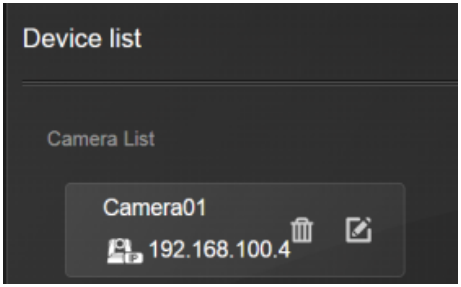
1. Click **Add device**.
2. Fill out the **Add New Device** dialog box.

Item	Description
Select Camera or Microphone	Add a camera or a microphone.
Connect camera via IP / USB Port / HDMI Port	● IP: Connect the camera via Ethernet or PoE+. ● USB: Port 1 and 2 is used for video streaming, while Port 3 is used for video and audio streaming. Enter a name to be displayed in the device list. ● HDMI: Select **Control via IP** or **Control via RS-422**. Enable or disable human tracking in **Control via RS-422**.
IP Address	Auto search or manually enter the IP address.
Camera Account	Enter the camera's account name.
Camera Password	Enter the camera's password.
Streaming via RTSP/NDI	● Real-Time Streaming Protocol (RTSP): Make sure your camera and receiving device or application support RTSP. ● Network Device Interface (NDI): Make sure your camera and receiving device or application support NDI. Enter a name for your NDI group (optional).
Device Name	Enter a name to be displayed in the device list.

3. Click **Save**.

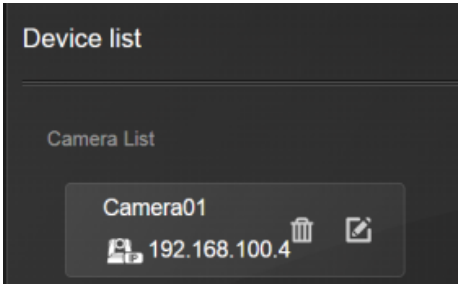
To edit devices:

- Hover over the device and click the **Pencil** icon.
- Edit device in the dialog box and click **Save**.



To delete devices:

1. Hover over the device and click the **Trash can** icon.



Profile

Go to **Settings** icon on the main screen > **Profile**.

Auto Mode Settings

Auto Mode integrates AVer PTZ Link (Premium version) software, which connects AVer cameras to third-party microphone systems (supported models) from Audio-Technica, ClearOne, Nureva, Sennheiser, Shure and Yamaha.

Third-party microphone systems may require setup in their manufacture software. For details on settings, please refer to <Supported Microphones> in the user manual for PTZ Link.

PTZ Link (Premium version) Integration

Features	
IP connectivity	✓
USB connectivity	✓
Automatic video switching	✓
Human tracking (supported models)	✓
Active position (late 2023 release)	✓
AVer camera + microphone group	25
Microphone channel	128
Preset point	256

Supported AVer Cameras

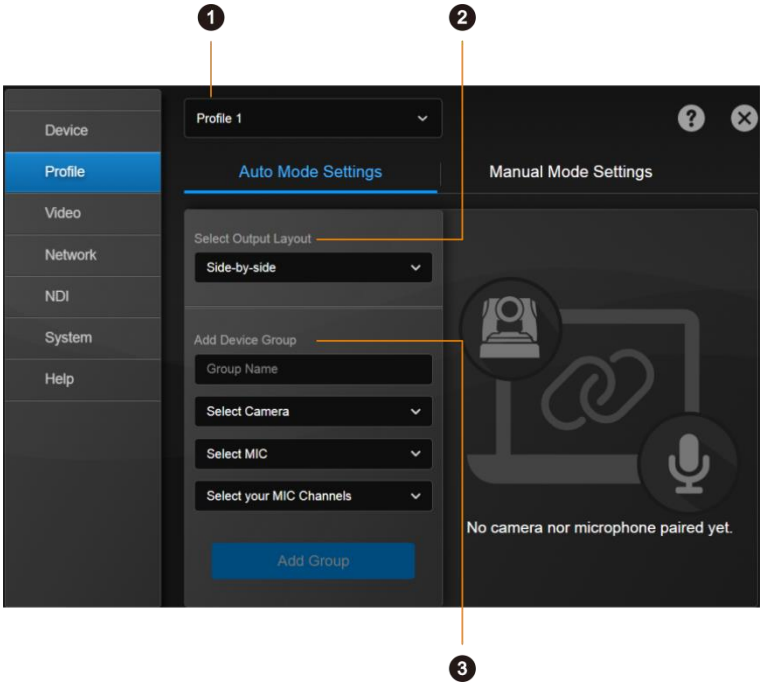
PTC V2 Series	PTC500 Series	PTC330 Series	PTC310 Series	PTC115 Series
PTC330UV2	PTC500S	PTC330	PTC310	PTC115
TR333V2	*TR530*	*TR331*	*TR311*	*TR320*
PTC320UNV2	PTC500+	PTC330N	PTC310U	PTC115+
TR323NV2	*TR530+*	*TR331N*	*TR313*	*TR320+*
PTC320UV2		PTC330U	PTC310H	
		TR333		
PTC310UV2			PTC310N	
TR313V2			*TR311N*	
PTC310HWV2			PTC310UN	
TR311HWV2			*TR313N*	
			PTC310HN	

PTZ330V2 Series	PTZ310V2 Series	PTZ330 Series	PTZ310 Series
PTZ330V2	PTZ310V2	PTZ330	PTZ310
Late 2023 release	Late 2023 release		
PTZ330NV2	PTZ310NV2	PTZ330N	PTZ310N
Late 2023 release	Late 2023 release		
PTZ330UV2	PTZ310UV2		
PTZ330UNV2	PTZ310UNV2		
DL Series			
DL30			

*US model name in italics

**Orange models do not support human tracking.

Go to **Settings** icon on the main screen > **Profile** > **Auto Mode Settings**.



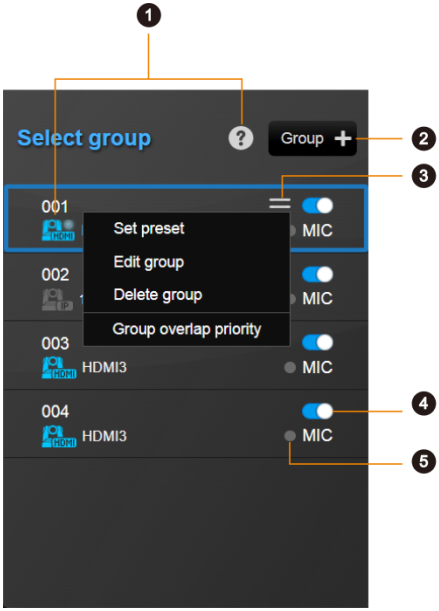
1. **Profile**
   Select a profile to save the settings in or rename the profile from the drop-down list. The settings are saved automatically when closing the Auto Mode Settings screen.

2. **Select Output Layout**
   Select a video display layout for up to 3 devices.

3. **Add Device Group**
   Add up to 25 AVer camera + microphone groups by selecting your camera, microphone and microphone channels.

Select Group

The device groups are displayed in the Select Group section.



1. Device status

The icon indicates your camera status. Click the question mark for reference.

Icon	Status
	Camera is sending data to MT300
	Device online
	Device offline
	Incorrect account or password

2. Group +

Click to add camera + microphone pairs.

3. Hamburger menu (triple bars)

Click to select a camera + microphone group and click the hamburger menu.

Item	Description
Set preset	Set up 0-255 preset positions.
Edit group	Edit name, device pair and channels.
Delete group	Delete a group from list.
Group overlap priority	Set a group as priority.

4. Toggle switch

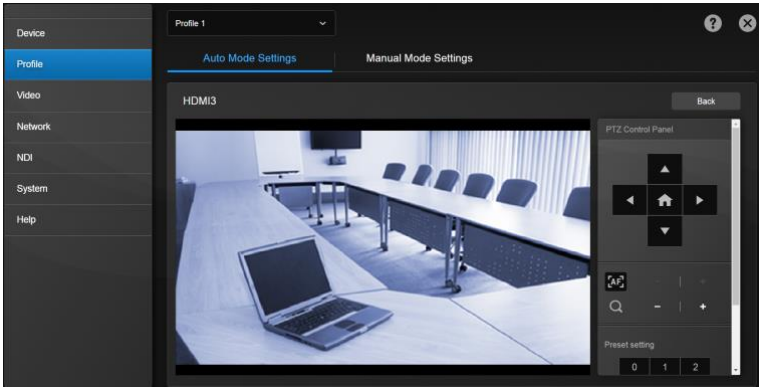
Enable or disable a group.

5. Microphone status indicator

- Green: Online
- Gray: Offline

Set Preset

Set up 0-255 preset positions.



To set up a preset position:

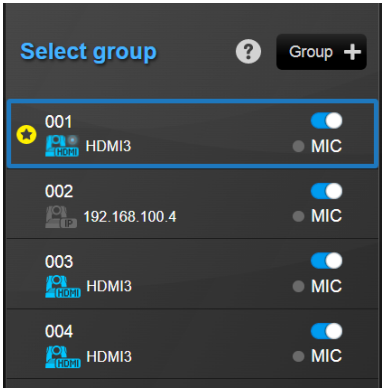
1. On Select group, click to select a group > hamburger menu > **Set preset**. To exit, click **Back**.
2. First, position the camera using pan, tilt and zoom controls.
3. Select a preset number from the Preset setting number pad and then click the save button to save that position. Use the back and forward arrows to display more numbers.
4. You may return to your defined position at any time by clicking the preset number on the Preset setting number pad.

Group Overlay Priority

Group overlay priority can be used when several camera + microphone groups share the same camera. When these microphones detect the same sound source, the camera will only move to the preset position configured in the priority group.

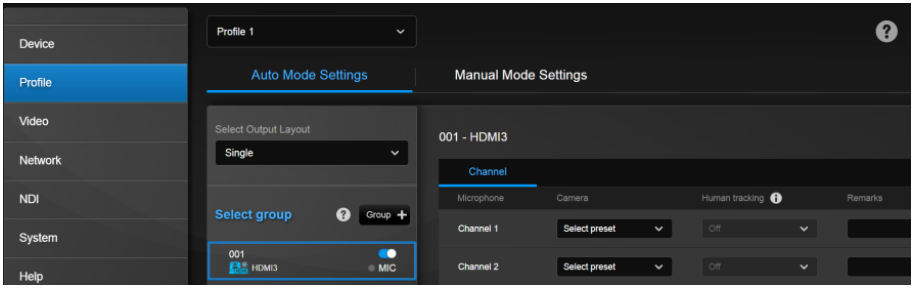
To set a group as priority:

1. Hover over the device and click the hamburger menu.
2. Select **Group overlap priority** and the star icon will indicate the priority group. To cancel, select **Group overlap priority** again.



Pair Presets with Microphone Channels

Pairing presets with microphone channels enables users to turn AVer cameras into voice tracking cameras. When the tracking box detects sound sources from a microphone channel (lobe), the corresponding camera will turn to a linked preset and frame the speaker.



To pairing presets with microphone channels:

1. Set up preset positions for your selected camera by following the steps in Set preset.

2. Select a preset from the **Select preset** drop-down list under the **Camera** column for each microphone channel (lobe).

3. Select **Presenter/Zone/Hybrid Mode** from the **Human tracking** drop-down list to track your presenter.
   - For supported AVer cameras, see Supported AVer Cameras.
   - For camera settings, refer to your AVer camera's user manual.
   - Presenter Mode example:
     - The presenter area is set to channel 1 and preset 1. Select Presenter Mode from the Human tracking drop-down list.
     - When the speaker starts talking in the presenter area, preset 1 and Presenter Mode tracking will be automatically turned on.

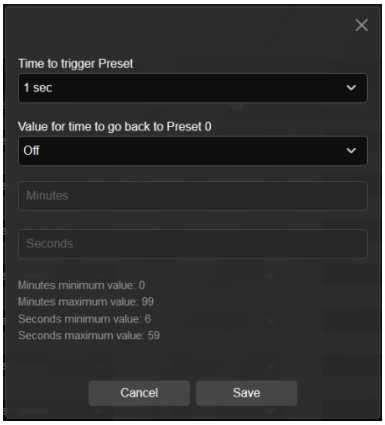
Microphone detects voice | **Camera goes to Preset 1** | **Presenter Tracking**

4. Add comments such as whiteboard in the **Remarks** field to help identify the pair.

5. Set time to trigger.

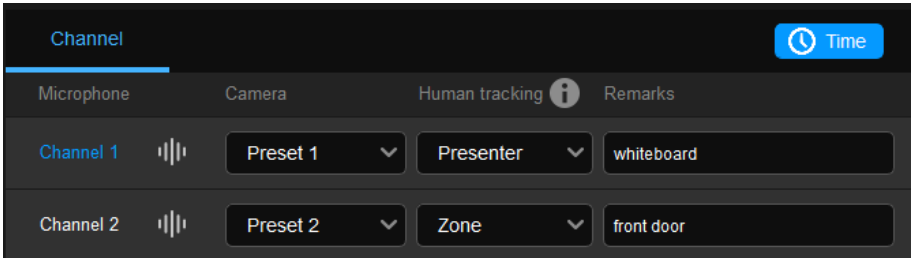
Horizontally scroll right and click the **Time** button

to set up how long it takes to trigger a preset or go back to a pre-configured Preset 0 (home position).



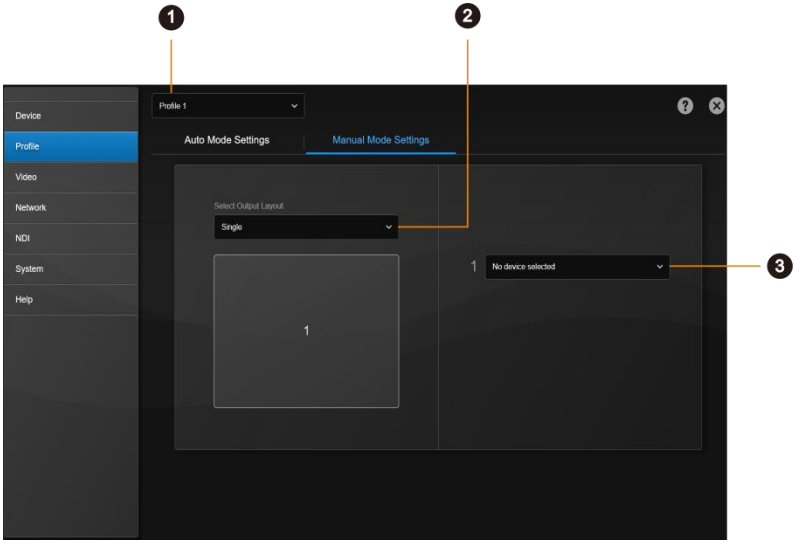
Item	Description
Time to trigger Preset	Select how long it takes for the camera to move to a preset after it detects a sound.
Value for time to go to Preset 0	Enter how long it takes for the camera to move to Preset 0 after it detects no sound.

6. The pairing is complete. When voices are detected, voice tracking icon will appear next to the channels. The blue channel marks the current preset.



Manual Mode Settings

Go to **Settings** icon on the main screen > **Profile** > **Manual Mode Settings**.



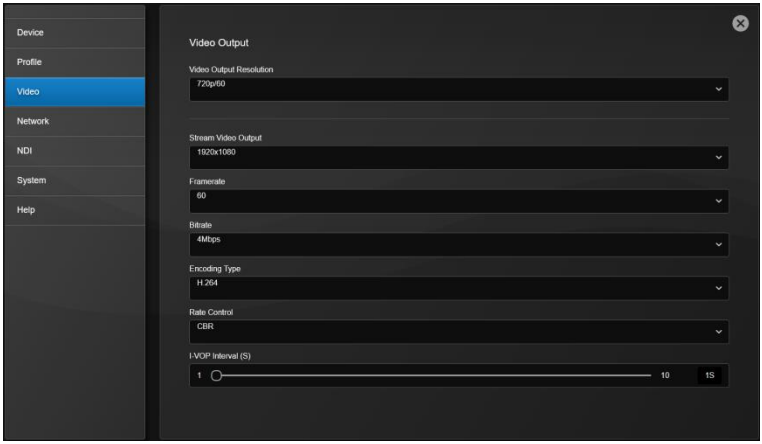
1. **Profile**
   Select a profile to save the settings in or rename the profile from the drop-down list. The settings are saved automatically when closing the Manual Mode Settings screen.

2. **Select Output Layout**
   Select a video display layout for up to 4 devices.

3. Select your device.

Video

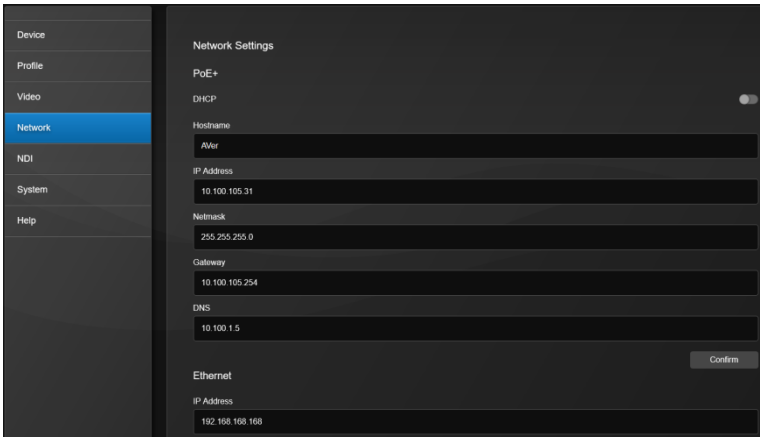
Go to **Settings** icon on the main screen > **Video**.



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

Network

Go to **Settings** icon on the main screen > **Network**.



PoE+

Item	Description
DHCP	Enable or disable DHCP.
Hostname	The default hostname is AVer. Change the hostname to be displayed on devices such as an IP router.
IP Address	Enter your network settings when DHCP is disabled.
Netmask	
Gateway	
DNS	

Ethernet

Item	Description
IP Address	Enter your network settings to set up an Ethernet network.
Netmask	
Gateway	
DNS	

RTMP Settings

Configure Real-Time Messaging Protocol (RTMP) settings to stream live audio and video to a video platform such as YouTube. To enable live streaming on YouTube:

1. Go to YouTube.
2. From the top right, click **Create** > **Go live**.
3. Copy and paste your YouTube server URL and stream key into the web interface.
4. Click **Start Stream** to start streaming, **Stop** to stop streaming.

RTSP Settings

Turn on Real-Time Streaming Protocol (RTSP) Security to protect your video stream on media players such as VLC, PotPlayer and QuickTime by ensuring that only authorized users can access it.

When RTSP Security is turned off:

1. Enter your camera's RTSP URL into the media player.
   - RTSP URL: rtsp://[camera IP address]/live_st1
     Example: rtsp://192.168.1.100/live_st1

When RTSP Security is turned on:

1. Enter your camera's RTSP URL and username/password into the media player.
   - RTSP URL: rtsp://[username:password]@[camera IP address]/live_st1
     Example: rtsp://1:1@192.168.1.100/live_st1
   - username/password: camera's username/password (web interface login)

HLS Settings

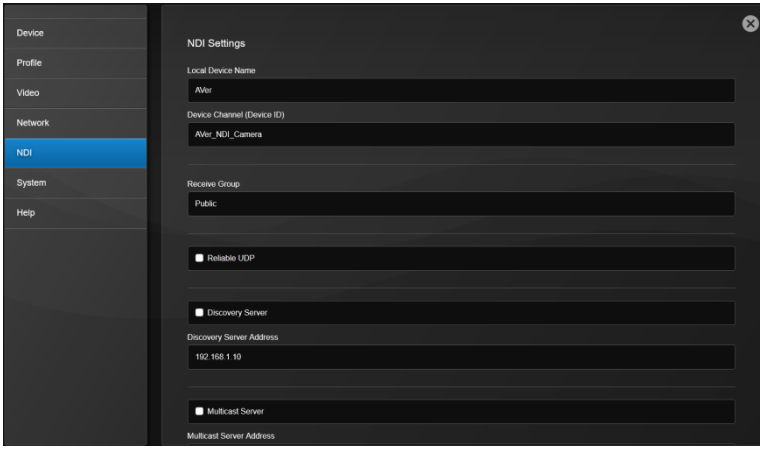
Configure HTTP Live Streaming (HLS) settings to provide adaptive bitrate streaming, which ensures smooth playback and minimizes buffering.

1. Enter the stream URL obtained from the streaming service or server.
2. Click **Start Stream** to start streaming, **Stop** to stop streaming.

NDI

Network Device Interface (NDI) is a protocol for transmitting high-quality video and audio over Ethernet networks. It allows devices to connect and communicate with each other and can transmit multiple streams simultaneously over a single network cable. Make sure your device or application support NDI.

Tracking box comes in two models: MT300 (without NDI) and MT300N (with NDI). To purchase NDI|HX upgrade, please visit NewTek Online Store (https://store.newtek.com/ndi-hx-upgrade-for-cameras.html#).
Go to **Settings** icon on the main screen > **NDI**.

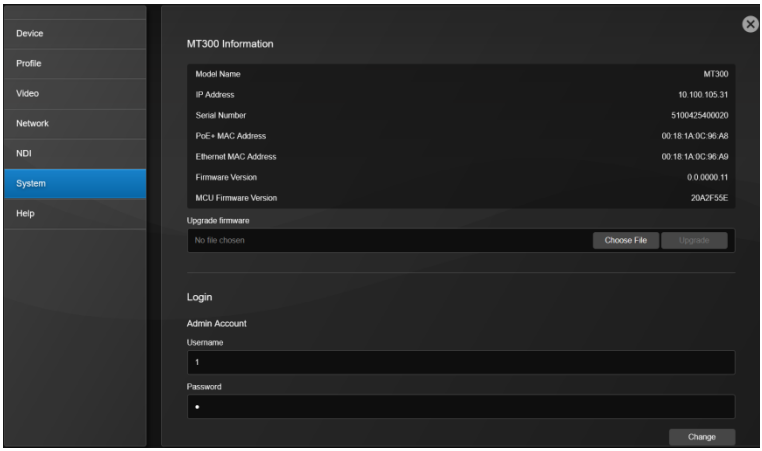


Item	Description
Local Device Name	Enter a name that identifies your device.
Device Channel (Device ID)	Enter a name that identifies a specific video or audio stream transmitted by your device. ● The default is MT300 or MT300N. ● Use no more than 10 characters, upper and lowercase letters, numbers and punctuation marks (! @ % ^ , . / : + ? [ ] { } - _ ~). ● Each NDI device can have multiple device channels.
Receive Group	Enter a name for a group of devices that receive the same streams. ● By creating a receive group, users can ensure that all devices in the group receive the same NDI streams. ● The receive group should remain **public**. If this is changed, you will need to join the group through NDI® Access Manager.

Reliable UDP	Select the checkbox to enable Reliable User Datagram Protocol (RUDP). ● This provides reliable data delivery between applications running on different devices over IP networks.
Discovery Server	Select the checkbox to enable discovery server. ● This allows devices to discover and connect to each other on a network automatically.
Discovery Server Address	Enter the IP address of a server running a discovery server application.
Multicast Server	Select the checkbox to enable multicast server. ● This allows efficient distribution of NDI streams to multiple receivers without overwhelming the network.
Multicast Server Address	Enter the IP address of a group of recipients that receive NDI streams from a multicast server.
Multicast Server Mask	Enter the network mask to specify the range of IP addresses that are eligible to receive NDI streams.
Multicast TTL	Enter a multicast time to live (TTL) value between 1-255. ● This controls the distance multicast packets can travel and limit their reach to a specific area in a network,

System

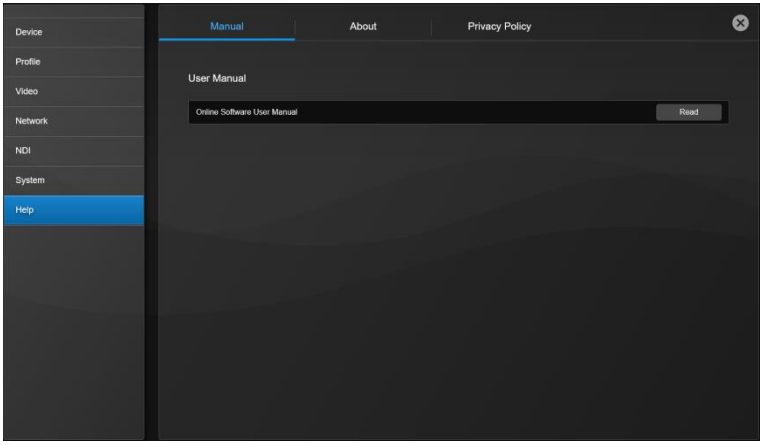
Go to **Settings** icon on the main screen > **System**.



Item	Description
MT300 Information	Display MT300 information such as the IP address.
Upgrade Firmware	Download the latest firmware from AVer Download Center (https://www.aver.com/download-center).
Login	Edit your admin and user account login. ● Admin: The default username/password is **admin/admin**. ● User: The default username/password is **user/user**.
General	● Language: Change the web interface language. ● Help us improve: Select the checkbox to provide anonymous usage data. ● Factory default: Erase all data and settings and restore your tracking box to factory settings. ● Reboot: Restart your tracking box.
Export / Import Settings	Export or import your tracking box settings and save debug files.

Help

View our user manual, terms and conditions, and private policy.
Go to **Settings** icon on the main screen > **Help**.



Specification

DC Power	12V/1.5A
PoE+	42.5-57V / 0.6A
Reset Button	Yes
USB Inputs	3, Type-A for peripherals input #1,#2 are UVC only #3 can be UVC or UAC
USB Outputs	2, Type-B for user application Non-simultaneous output Automatic switch to the port that is connected to host. Port #1 has higher priority if both ports are connected to host (PC or MTR),. Resolution, providing 4K, 1080p FPS: 15, 30, 60
HDMI Inputs	3 Input resolution: up to 1080p per channel
HDMI Outputs	2 Simultaneous display, same configuration 1080p, 25Hz / 1080p, 50Hz / 1080p, 30Hz / 1080p, 60Hz / 4K, 25Hz / 4K, 50Hz / 4K, 30Hz / 4K, 60Hz
Ethernet	2, 1 PoE+, 1 RJ-45 Max connection number: 5 (Web/RTSP/RTMP) Resolution, providing 1080p and 4K FPS: 1, 5, 10, 15, 30, 60
LED Indicators	Yes
	Status, USB 1, USB 2, network 1, network 2
Security	Kensington security lock
RS-422	Yes
Operating Temperature	0-50°c
Dimension	4.3 x 21 x 15 cm (1.7 x 8.3 x 5.9 in.)
Installation	2, mountable in a rack or under a table

Specifications are subject to change without prior notice.

Troubleshooting

No human tracking.

- Make sure your camera supports human tracking. For supported AVer cameras, see Supported AVer Cameras.
- If your camera is connected via HDMI and controlled via RS-422, make sure you select “Support Human Tracking” from the drop-down list. Hover over the device in the Device list and click the Pencil icon to edit.

Camera is too sensitive and flickering between presets.

- Select a longer length of time for Time to Trigger Preset.
- If you camera is shared among several camera + microphone groups, set a priority group in Group Overlay Priority.

Stop voice tracking.

- Mute the microphone by pressing its physical button or accessing its web application.
- Use the toggle switch to disable the group in the Select group section.

  Single video output: Audio is muted while video is still transmitting.

  Multiple video output: Both audio and video of the disabled group stop transmitting.