PTC500+ / PTC115+

User Manual

IMPORTANT NOTICE

✧ PLEASE READ THE INSTRUCTIONS IN THIS MANUAL BEFORE INSTALLING THE PTC500+ / PTC115+ TRACKING CAMERA.

✧ DO NOT DISASSEMBLE OR MODIFY THE ITEMS BY YOURSELF. CONTACT THE DEALER FOR HELP WHEN THE ITEMS IS FAILED TO WORK.

✧ CONNECT THE DEVICES WITH PROPER CABLES.

✧ TO REDUCE RISK OF ELECTRIC SHOCK ONLY USE INDOORS.

✧ AVOID INSTALLING AT HUMID ENVIRONMENT.

Federal Communication Commission Interference Statement

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

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.

In no event will AVer Information Inc. be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use this product or documentation, even if advised of the possibility of such damages.

TRADEMARKS

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The mark of Crossed-out wheeled bin indicates that this product must not be disposed of with your other household waste. Instead, you need to dispose of the waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. For more information about where to drop off your waste equipment for recycling, please contact your household waste disposal service or the shop where you purchased the product.

Remote control Battery Safety Information
- Store batteries in a cool and dry place.
- Do not throw away used batteries in the trash. Properly dispose 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.

Help

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

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Download Center: https://www.aver.com/download-center
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Technical Support: https://averusa.force.com/support/s/contactsupport

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Download Center: https://www.avereurope.com/download-center
Technical Support: https://www.avereurope.com/technical-support

Contact Information

Headquarters

AVer Information Inc.
https://www.aver.com
8F, No.157, Da-An Rd., Tucheng Dist., New Taipei City 23673, Taiwan
Tel: +886 (2) 2269 8535

USA Branch office

AVer Information Inc., Americas
https://www.averusa.com
668 Mission Ct., Fremont, CA 94539, USA
Tel: +1 (408) 263 3828
Toll-free: +1 (877) 528 7824
Technical support: support.usa@aver.com

Europe Branch office

AVer Information Europe B.V.
https://www.avereurope.com
Westblaak 134, 3012 KM, Rotterdam, The Netherlands
Tel: +31 (0) 10 7600 550
Technical support: eu.rma@aver.com

Japan Branch Office

アバー・インフォメーション株式会社
https://jp.aver.com
〒160-0023 日本東京都新宿区西新宿 3-2-26 立花新宿ビル 7 階
Tel: +81 (0) 3 5989 0290
テクニカル・サポート: VCInfo.JP@aver.com

Vietnam Branch Office

Công ty TNHH AVer Information (Việt Nam)
Tầng 5, 596 Nguyễn Đình Chiểu, P.3, Quận 3, Thành phố Hồ Chí Minh 700000, Việt Nam
Tel: +84 (0)28 22 539 211

CONTENTS

INTRODUCTION

AVer PTC500+ / PTC115+ is a professional tracking camera which can be wide area, stage or segment mode depended on user's subject target. The PTC500+ / PTC115+ use body motion and image analysis algorithm to tracking target; the target subject no need to wear any signal transmit device. The PTC500+ / PTC115+ can communicate with recording system through RS232, RS485 or network interface. The PTC500+ / PTC115+ has stable system, easy to use, and suitable for classroom, meeting room, and any lecture or course environment.

Package Contents

The following items are included in the package. Please check if each item is available and confirm if there are damage before using.

[Note]

1. Do not disassemble or modify the items by yourself. Contact the dealer for help when the items is failed to work.
2. Store the items in a dry place away from moisture.

PTC500+ / PTC115+ unit	Power adapter	Power cord	RS-232 to D-Sub 9 cable
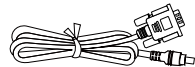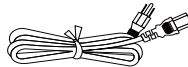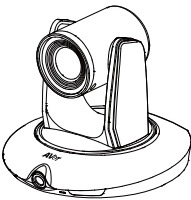
Quick Guide	Remote Control

[Note] The power cord will vary depending on the standard power outlet of the country where it is sold.

Product Overview
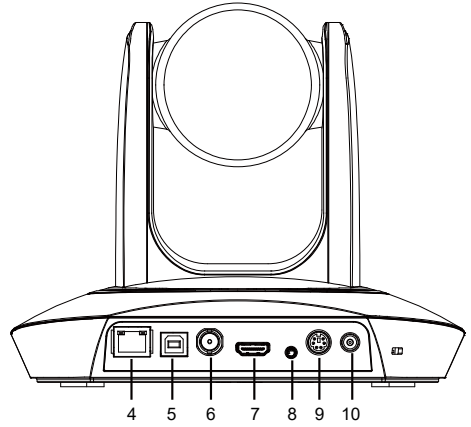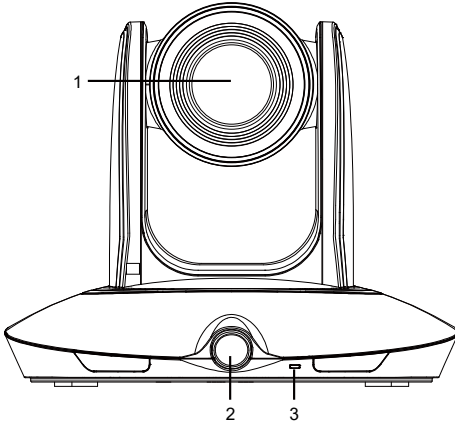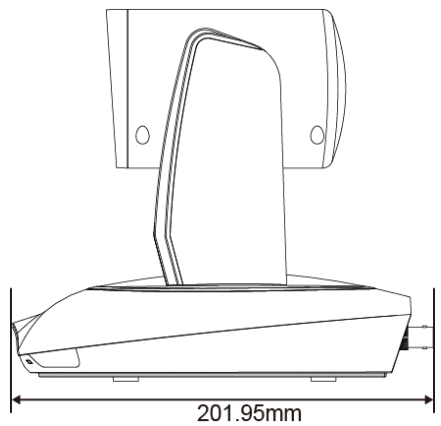

1. PTZ camera
2. Panoramic camera
3. Power indicator
4. PoE+ (IEEE 802.3at)
5. USB port (PTZ view)

6. 3G-SDI port*
7. HDMI port
8. Audio in port **
9. RS-232 port
10. Power jack

*3G-SDI: No audio out

**Audio input level: 1Vrms(max.)

Dimension

178mm

210mm

201.95mm
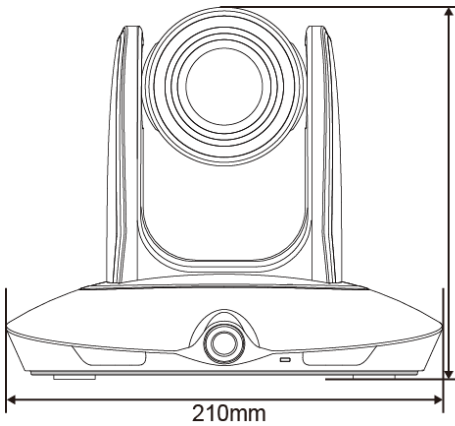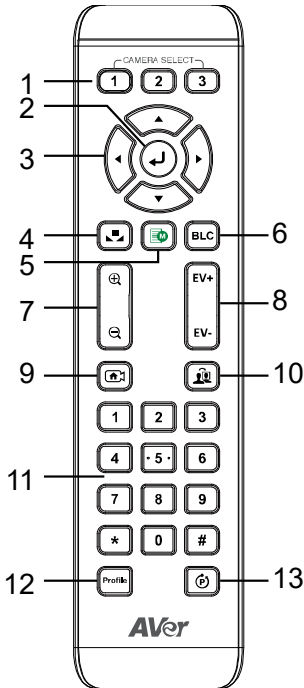
Remote Control

1. Camera select
[Note] Only channel No.1 is available. Before you use remote, please press channel 1 first.

2. Enter
3. Camera direction control
4. White balance
5. OSD menu
6. Back light control
7. Zoom in/out
8. Exposure compensation
9. Home position
[Note] Press and hold for 5 seconds to turn on or turn off the PTC500+ / PTC115+ unit. Only support at PTC500+ / PTC115+ FW version 0.0.1000.08 and above.

10. Tracking on/off
11. Number buttons
12. Profile
13. Preset

CONNECTIONS

Device Connections

RJ-45 cable
(PoE+)

Multi Media Management System
(PoE+ Switch or PoE+ Injector)

coaxial
cable

Audio
cable

Power
Adaptor

USB cable

Desktop

Recording System

RS-232 to
D-Sub 9 cable

Power
cord

Projector   or   TV

HDMI cable

Control System

Audio Mixer

Power
Outlet
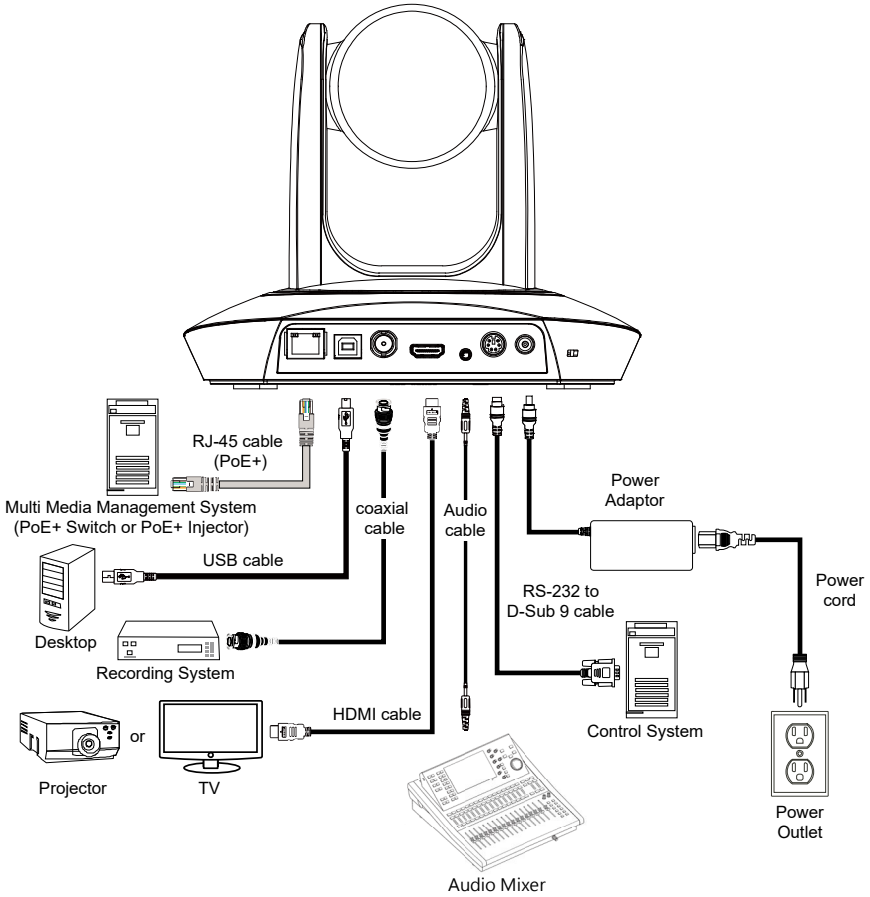
RS232 Pin Definition
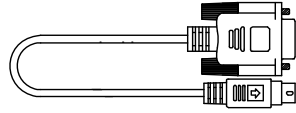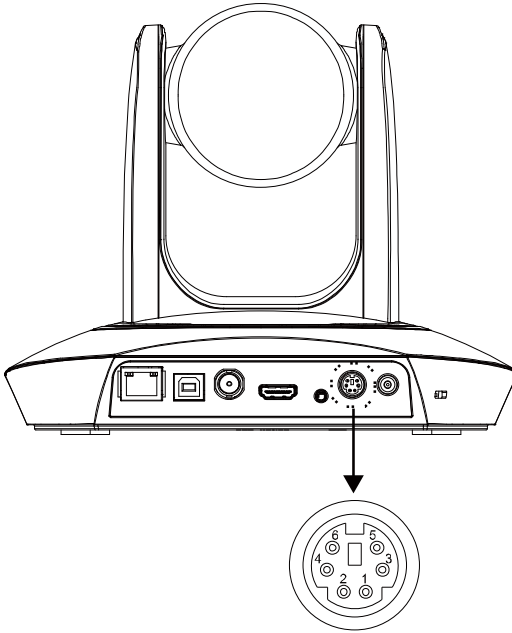
DIN6 TO DP9 Cable
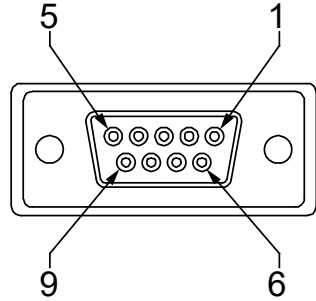
DIN6 PIN No.	DP9 PIN No.	I/O Type	Description
1	6	Output	DTR
2	4	Input	DSR
3	--	--	Not Connect
4	2	Output	TXD
5	5	GND	GND
6	3	Input	RXD

MODE INTRODUCTION

Wide Area Mode

- **Application**
  - ➢ This mode is suitable for teacher or lecturer tracking in normal classroom. The algorithm is based on face detection.
  - ➢ Regardless of the target close to or away from PTC500+ / PTC115+, the tracking camera will automatically zoom in/out to maintain the appropriate size and proportion.
  - ➢ If the tracking target is locked, PTC500+ / PTC115+ will not be affected by the other moving objects.
- **Limitation**
  - ➢ This mode is easily affected by the brown objects or the color similar to skin. Things like cartons and wood furniture.
  - ➢ It should be used in bright environment. If the light is not enough, it will cause PTC500+ / PTC115+ unable to distinguish the target face and lead to the tracking failure.
  - ➢ It could not be used on the environment with high bright contrast. For example, the environment is with IFP or projectors. When the target enters or leaves the high bright contrast zone, it is risky for PTC500+ / PTC115+ to lose the tracking target.

- **Install height range (from floor):** 2 ~ 3m; **2.4m** is suggested.
- **Distance range to podium:** 4~15m; **8m** is suggested.
- **Position:** Center of class room.
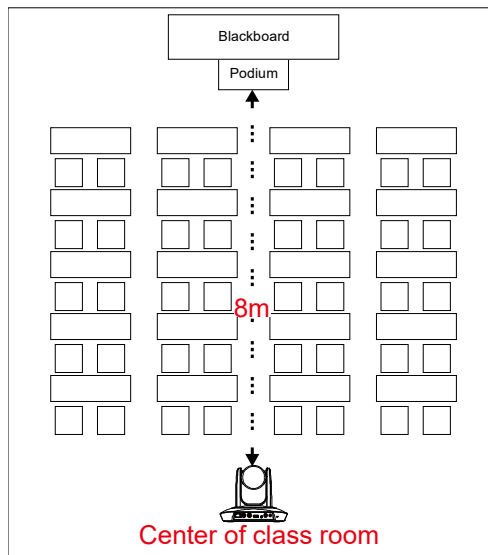
Stage and Segment Mode

■ **Application**

➢ It's suitable for complicate environment. It's the remedy for teacher mode. Due to absolute motion tracking, PTC500+ / PTC115+ will not be affected by the color of wood furniture or the high bright contrast.

➢ Suitable for only one person in the tracking zone.

■ **Limitation**

➢ Tracking is only available for horizontal movement. It will not auto zoom in/out for target close to or leaving away from PTC500+ / PTC115+.

➢ Due to absolute motion checking, it is unable to check who the target is or who the interference is. It doesn't have anti-interference ability.

➢ Due to the FOV limit, the tracking zone is only available within 120 degrees.

➢ Distance limitation <15M

■ **Install height range (from floor):** 2 ~ 3m; **2.4m** is suggested.

■ **Distance range to podium:** 4~15m; **8m** is suggested.
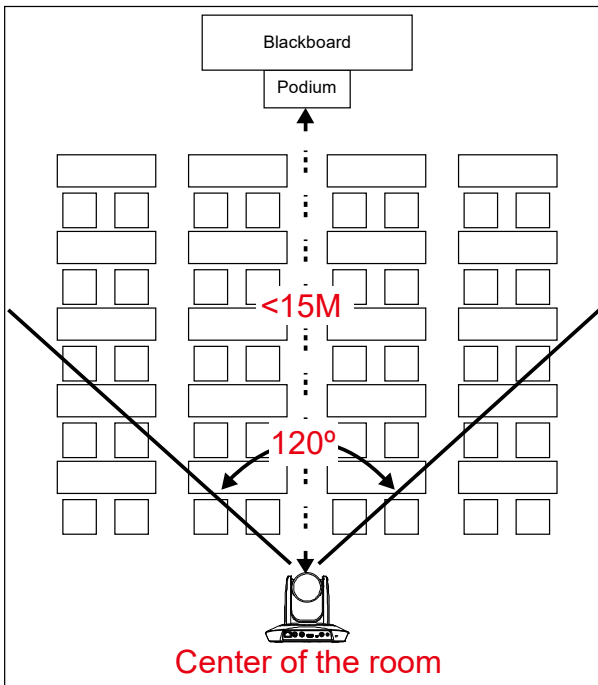
■ **Position:** Center of the room.

WEB SETUP

Make a Connection to PTC500+ / PTC115+ via Browser

1. **Find the IP address of PTC500+ / PTC115+:** call out OSD menu of PTC500+ / PTC115+. Use ▲ and ▼ buttons on the remote control to go to "Information" to find the IP address information.
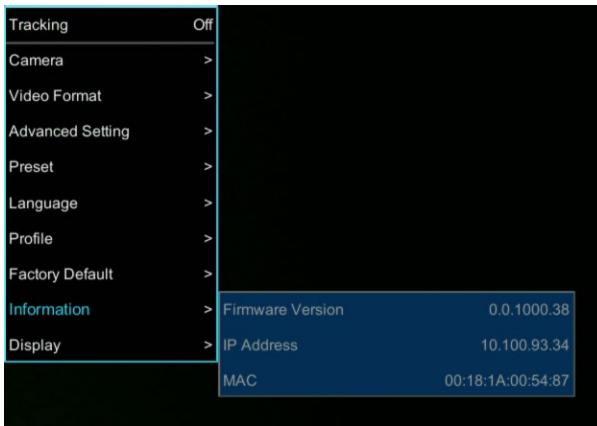
2. Open the browser on your PC and enter the IP address of PTC500+ / PTC115+.
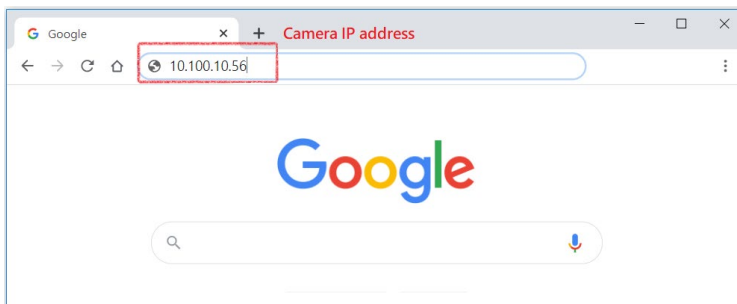
3. Enter the password of PTC500+ / PTC115+ to login. The default password is "**admin**".

4. After login, User should see the main interface of PTC500+ / PTC115+.
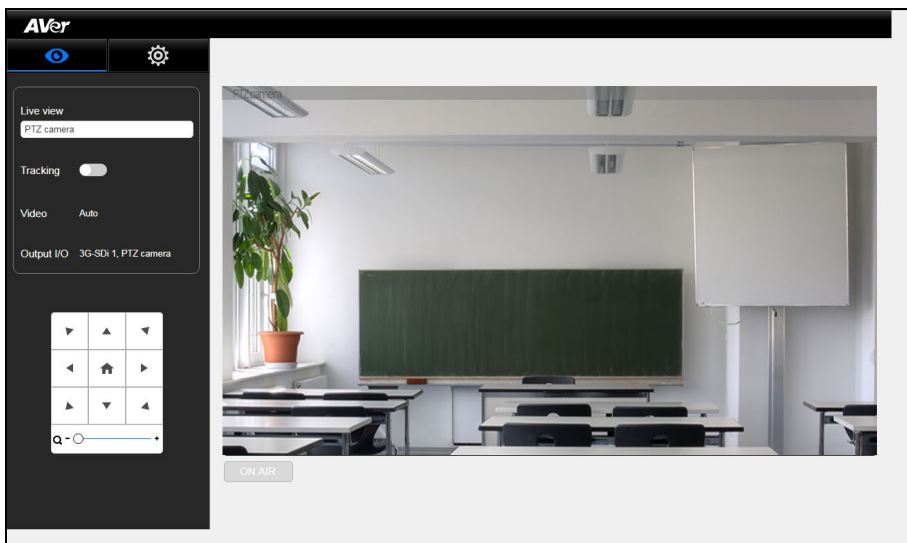
Make a Connection to PTC500+ / PTC115+ via AVer IPCam Utility

[Note] The PTC500+ / PTC115+ FW version 0.0.1000.08 and above supports IPCam Utiltiy application.

To find the IP address of your cameras, you can execute the IPCam Utility installer. Follow the below steps to find the IP address of camera.

1. Download the IPCam Utility from http://surveillance.aver.com/DownloadFile.aspx?n=2517|249C0709-10E3-4182-B8E3-C2CE8A79129C&t=ServiceDownload .
2. Run the IPCam Utility.
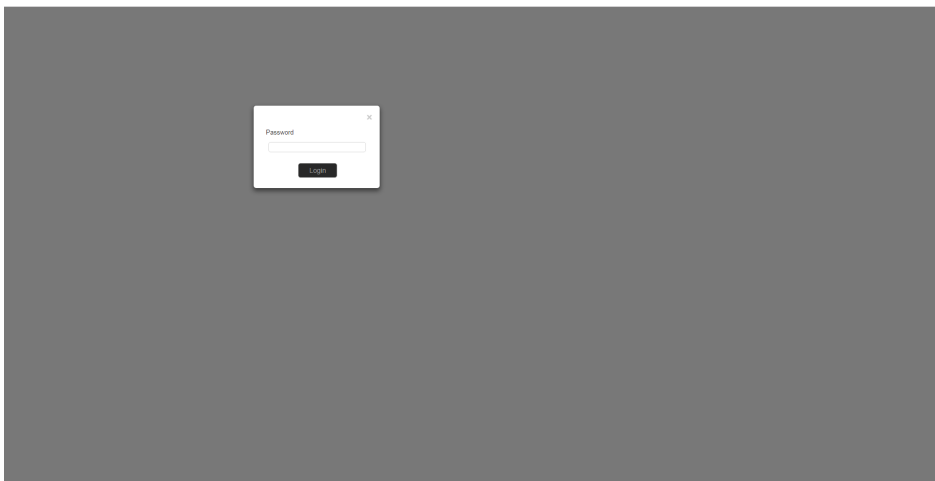3. Click Search, and all available devices will be listed on the screen.
4. Select a camera from the list.
5. The corresponding fields of IP address will display.
6. Double-click on the IP address of camera from the list can connect to camera through the browser.

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

1. Please make sure the Ethernet connection of camera is well connected.
2. The camera and PC (IPCam utility) are in the same LAN segment.
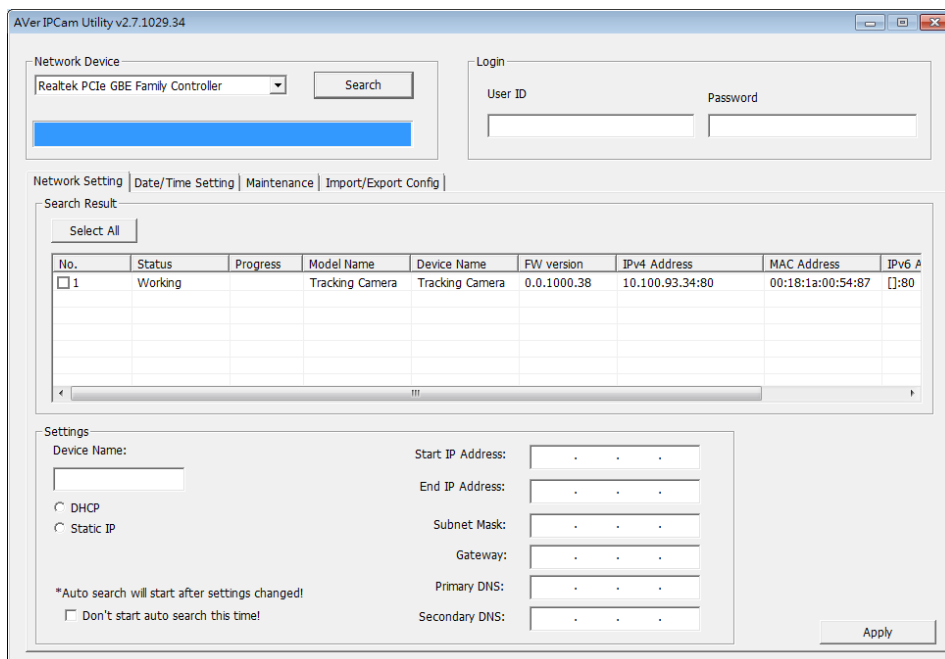
PTZ Camera
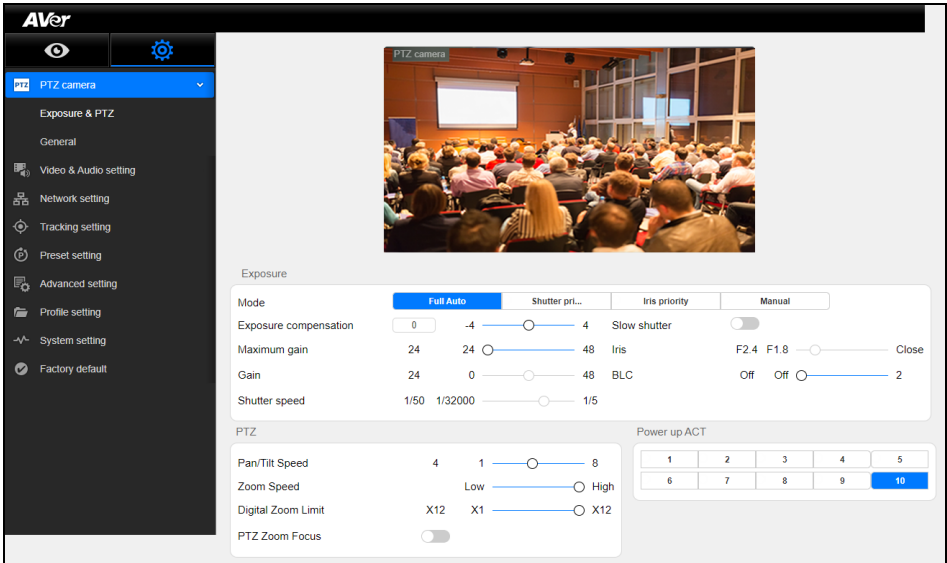
■ **Exposure**
- ➢ **Mode**:
  - ■ **Full Auto:** The camera automatically determines the shutter speed and the aperture while you can change other settings manually.
  - ■ **Shutter Priority**: You can manually change the shutter speed while the aperture is automatically determined by the camera.
  - ■ **Iris Priority**: You can manually change the aperture while the shutter speed is automatically determined by the camera.
  - ■ **Manual**: You can manually change both the shutter speed and aperture.
- ➢ **Exposure Compensation**: With the slider, you can brighten the image by selecting positive exposure compensation while negative exposure compensation for a darker image.
- ➢ **Maximum Gain**: After setting the maximum gain, you can have an image with the least noise without overexposure.
- ➢ **Gain**: You can use the slider to adjust the value of the gain only under **Manual** mode.
- ➢ **Shutter Speed**: You can slide to change the shutter speed.
- ➢ **Slow Shutter**: You can have a brighter image after selecting **Slow Shutter**.
- ➢ **Iris: You can use the slider to adjust aperture.**
- ➢ **BLC**: You can use the slider to adjust backlight compensation only under **Full Auto** mode.

■ **PTZ**
- ➢ **Pan/Tilt Speed**: You can use the slider to adjust the pan and tilt speed of the camera.
- ➢ **Zoom Speed**: You can use the slider to adjust the zoom speed of the camera.
- ➢ **Digital Zoom Limit**: You can manually choose a digital zoom level up to 12x.
- ➢ **PTZ Zoom Focus**: it is **Off** by default. When **PTZ Zoom Focus** is off, the camera will focus on the presenter once right after the camera stops zooming in/out. When toggled on, the

camera will constantly focus on the presenter as he/she walks around, which might cause a blurry image.

■   **Power up ACT**: Select a preset point for the camera to navigate to after the camera is turned on.
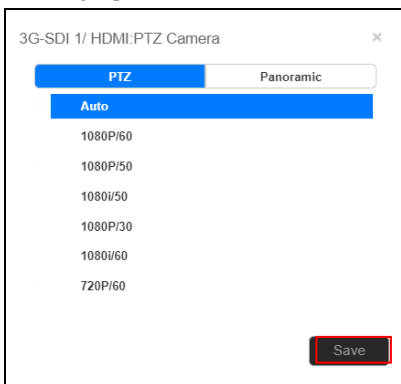
PTZ Camera

- **General**
    - **Contrast**: You can adjust the value of contrast.
    - **Saturation**: You can adjust the value of saturation.
    - **Sharpness**: You can switch between **Off**, **Low**, **Middle**, and **High**.
    - **Noise Reduction**: You can switch between **Off**, **Low**, **Middle**, and **High**.
    - **Shading Correction - Upper Left**: You can switch between **Off**, **Low**, **Middle**, and **High** to reduce vignetting for the upper left corner of the image.
    - **Shading Correction - Upper Right**: You can switch between **Off**, **Low**, **Middle**, and **High** to reduce vignetting for the upper right corner of the image.
    - **Shading Correction - Bottom Left**: You can switch between **Off**, **Low**, **Middle**, and **High** to reduce vignetting for the bottom left corner of the image.
    - **Shading Correction – Bottom Right**: You can switch between **Off**, **Low**, **Middle**, and **High** to reduce vignetting for the bottom right corner of the image.
    - **White Balance:** Click **Auto** and the camera will automatically adjust its white balance.
    - **White Balance:** Click **Manual** and you can adjust **R Gain** and **B Gain**.
    - **R Gain**: Choose a value between 0 and 255.
    - **B Gain**: Choose a value between 0 and 255.
    - **Frequency**: You can switch between **Off**, **50Hz**, **60Hz**, and **Auto**. Reboot the camera after altering frequency setting.

Video and Audio Setting
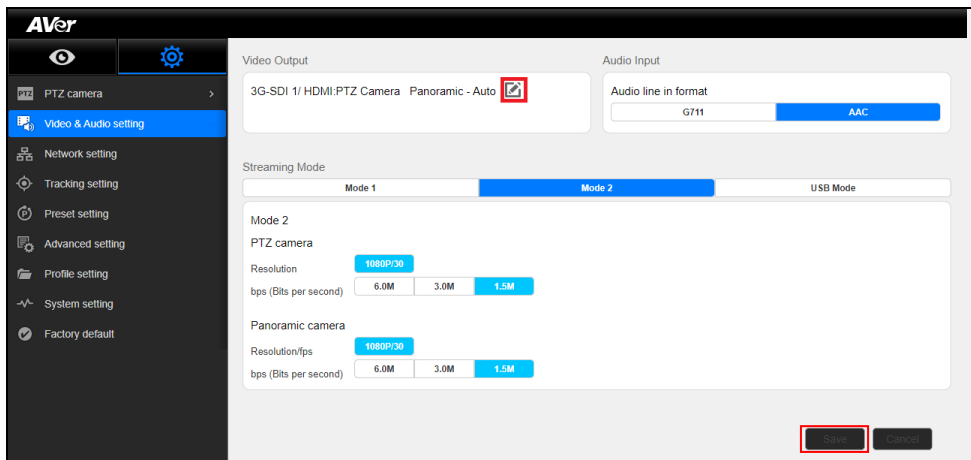
[Video Output] Click .

Select either the PTZ **camera or the** Panoramic **camera as the image source and select a combination of resolution and frame rate for the chosen camera. Select** Save**.**

[Audio Input]

Audio Line in Format: As the default streaming format, **AAC** provides better sound quality for streaming. Alternatively, you can select **G711** for the audio codec.

[Streaming Mode]

■ **Mode 1**

Select either a **PTZ** or **Panoramic** camera for streaming. As there is only one camera, you can enjoy better video quality.

● PTZ camera

Resolution/fps**: Choose a combination among** 1080P/60**,** 1080P/30**,** 720P/30**, and** 480P/30**.**

Bps (Bits per second)**: Choose a bitrate among** 6M, 4M**, or** 2M**.**

● Panoramic Camera

Resolution/fps**: Choose a combination among** 1080P/30**,** 720P/30**, and** 480P/30**.**

Bps (Bits per second)**: Choose a bitrate among** 6M, 3M**, or** 1.5M**.**

■ **Mode 2**

Select **Mode 2** to stream 2 cameras simultaneously.

● PTZ camera

Resolution: 1080P/30

Bps (Bits per second)**: Choose a bitrate among** 6.0M**,** 3.0M**, or** 1.5M**.**

● Panoramic Camera

Resolution/fps: 1080P/30

Bps (Bits per second)**: Choose a bitrate among** 6.0M**,** 3.0M**, or** 1.5M**.**

■ **USB Mode**: There is no network streaming for USB Mode.

Select **Save** to finish camera configuration.
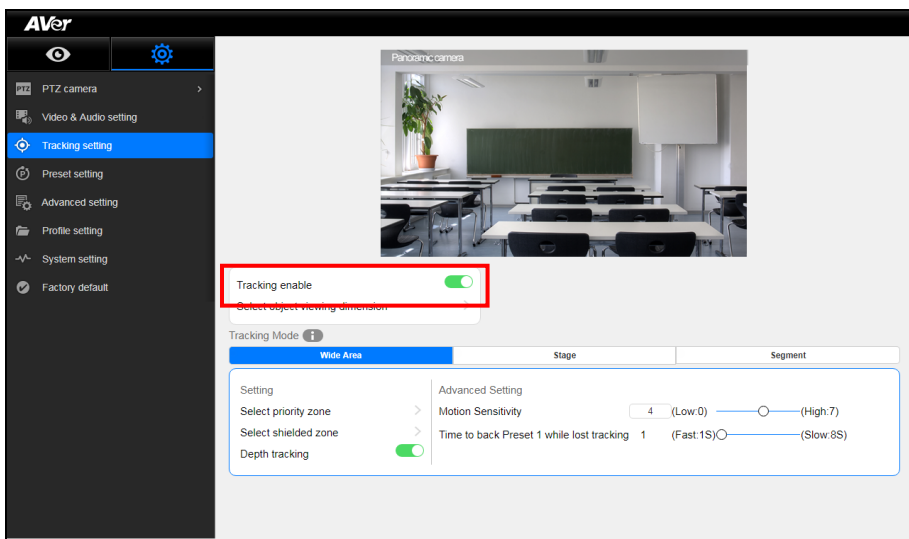
Network Setting
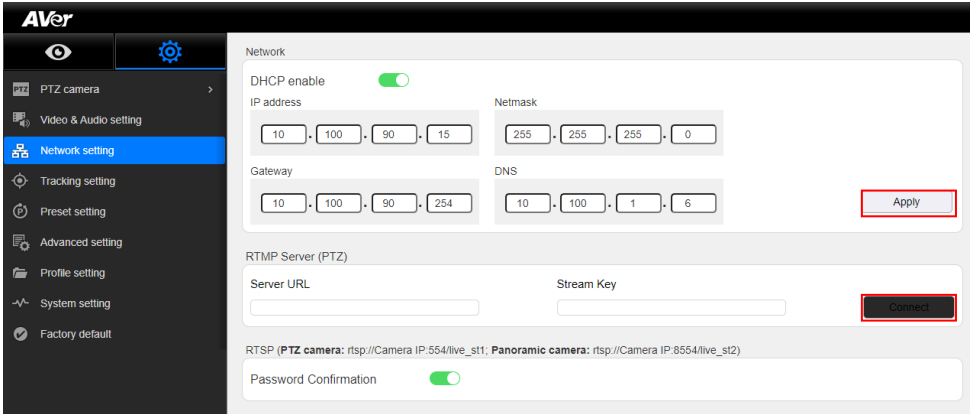
- ■ **DHCP enable**: You can toggle it on and the camera will be assigned with an IP address automatically. You can toggle it off to manually enter **IP address**, **Netmask**, **Gateway**, and **DNS**. Click **Apply**.

- ■ **RTMP Server (PTZ)**: Enter **Server URL** and **Stream Key**. Select **Connect.**

- ■ **RTSP Password Confirmation**: Toggle on **Password Confirmation** when required to enter password for RTSP.

Enable Tracking Function

Turn on and off the tracking function. Select [gear icon] > **Tracking setting** > **Tracking on**.

Setup Object Viewing Dimension

Set the size of tracking object on the screen. Aim the intersection of blue line can get best curacy of tracking. The illustration shows the minimum request. Set the person proportion more than the illustration. If target proportion is smaller than the photo, it may cause the tracking failure.
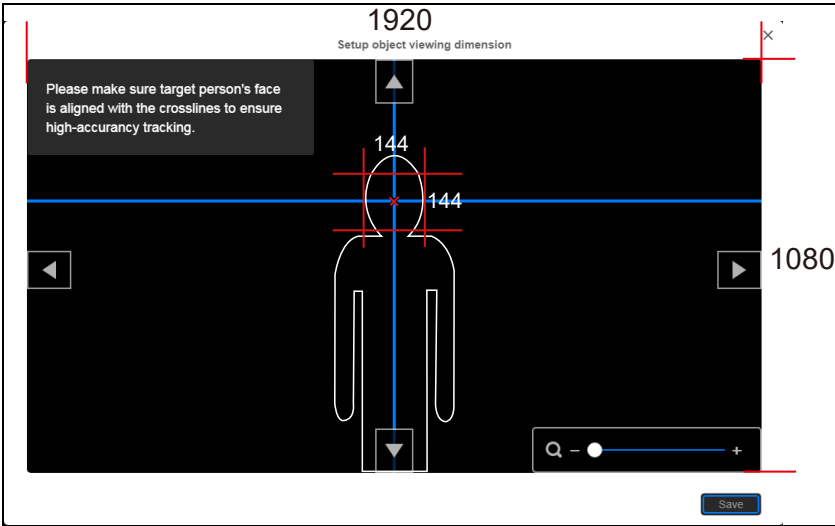
To set the object size for tracking select ⚙ > **Tracking setting** > **Setup object viewing dimension**

(Also see Object Viewing Dimension Setting chapter).

Use ▲, ▼, ◄, ► and zoom in/out to adjust object size. Then, click "**Save**" to save the setting.
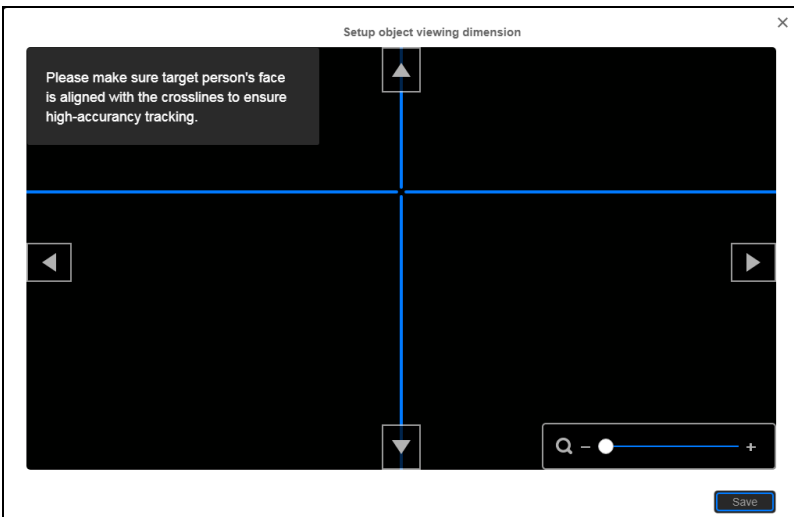
Tracking Mode Instruction

View the each tracking mode's brief instruction, feature, and use environment.

Select ⚙ > **Tracking Setting** > **Tracking Mode** ⓘ to view tracking mode instruction.

ⓘ Tracking mode instructions			✕
	Wide area	**Stage**	**Segment**
Introduction	Accurately track a chosen target anywhere in a crowd.	Track target in all lighting conditions with high accuracy.	Tracking by segment: stay fixed on one area until target moves to next area.
Features	The person tracking function captures every movement.	Horizontal continuous high-accuracy target tracking.	Track up to 4 fixed locations based on target's position.
Mostly used for	• Classrooms • Presenters moving through a crowd.	• Stage presentations • Stage performances • Target projectors behind	• After school podium. • Classroom podium. • Multiple panels need to be displayed.

Wide Area Mode

The PTC500+ / PTC115+ will start tracking when object enter the priority zone and the face of object is detected.

Setup Priority Zone

If PTC500+ / PTC115+ detects motions in the defined zone and PTC500+ / PTC115+ will be triggered to track. If priority zone doesn't setup, then, all the panoramic view will be the default active zone.

[Note] The screen of priority zone setting is based on panoramic camera view.

1. Select 　⚙　 > **Tracking setting** > **Wide Area** > **Select priority zone**.
2. An online tutorial will display. User can watch to learn how to setup tracking zone. Click **Skip** to stop tutorial. To watch again, select 　▶　 to play online tutorial.
3. In Select priority zone screen, drag and select the area that wants to be tracking (a blue frame will show on screen). To re-select the area, just drag and select another wanted area.
4. Click "**Save**" to save the setting.
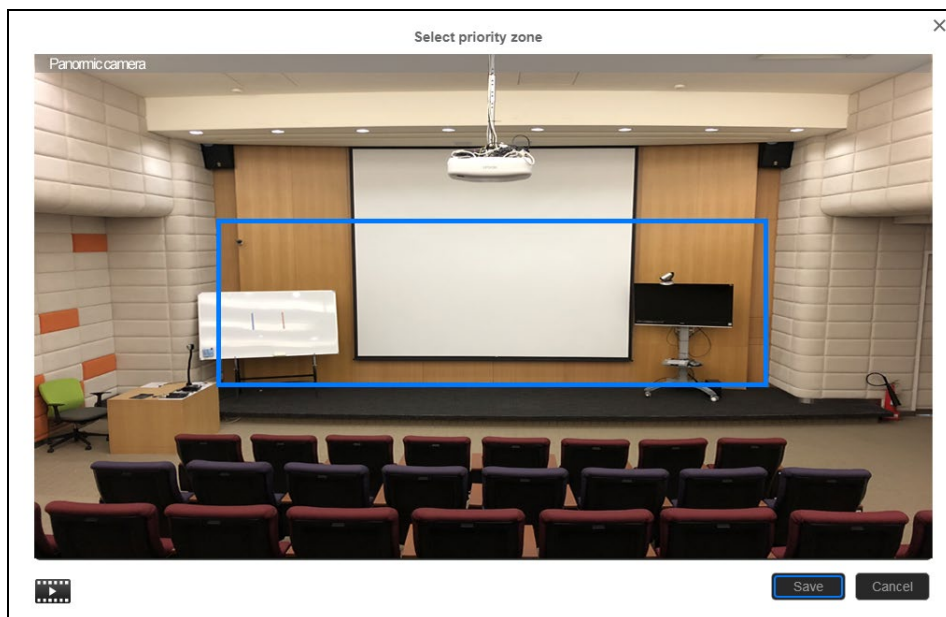
Setup Shielded Zone

Define the area that user doesn't want camera to track. The shield zone should be within the active zone. 8 shield zones can be set.

[Note] The screen of shielded zone setting is based on panoramic camera view.

1. Select ⚙ > **Tracking setting** > **Wide Area** > **Select shielded zone**.

2. An online tutorial will display. User can watch to learn how to setup shield zone. Click **Skip** to stop tutorial. To watch again, select 🎬 to play online tutorial.

3. In Shielded tracking zone screen, click the "**+**" and select the area in tracking zone that don't want to be tracking (a gray block will show on screen). For example: Shielded the projector screen and TV that may influence the tracking. To delete the shield zone area, click "**-**"and select the shield to delete it. Or select "**Reset Shields**" to delete all shields.

4. Select "**Save**" to save the setting.
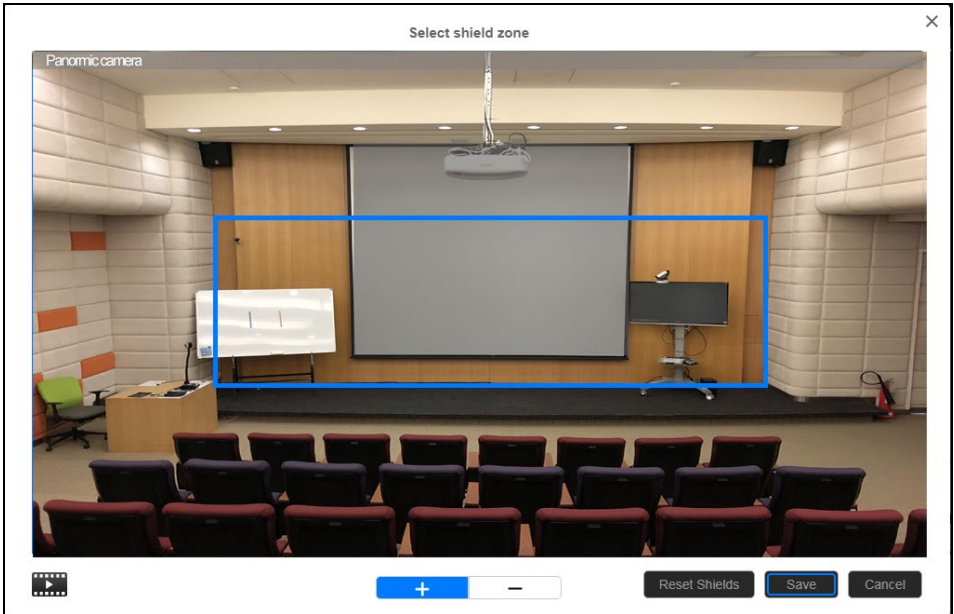
Setup Multi-presenter Detection

Define the area as a multiple presenter detection area. The camera will move to preset 2 position and stop tracking the original object until the multi-presenter detection mode is stop.

[Note] The screen of effect zone setting is based on panoramic camera view.

1. Select ⚙ > **Tracking setting** > **Wide Area** > **Multi-presenter detection**.

2. Select "**Select effect zone**" to set the multiple presenter detection area. An online tutorial will display. User can watch to learn how to setup shield zone. Click **Skip** to stop tutorial. To watch again, select 🎬 to play online tutorial.

3. In Select effect zone screen, drag and set the area that wants to be multiple people detection area (an orange frame will show on screen). To re-set the area, just drag again. Select "**Save**" to save the setting.
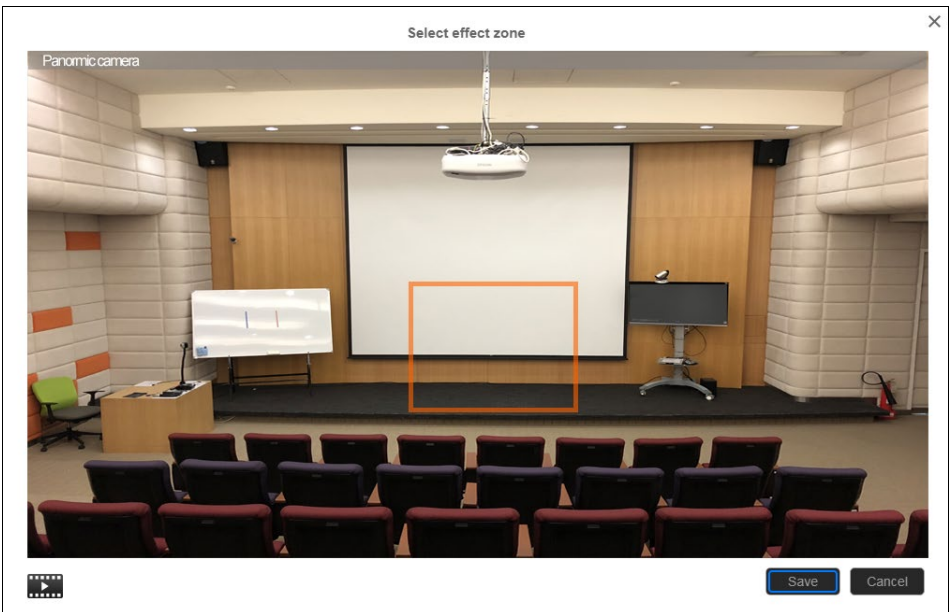
4. **Time delay before returning to "Preset 2":** Set the time to move the camera to preset 2 position after multi-people detect is activated.
5. **Time delay before returning to single presenter tracking:** Set the time period to back to tracking after multi-people detection is stop.

Stage Mode

The PTC500+ / PTC115+ will start tracking when there is an object moving in effective zone.

Setup Effective Zone

If PTC500+ / PTC115+ detects motions in the defined zone and PTC500+ / PTC115+ will be triggered to track. If tracking zone doesn't setup, then, all the panoramic view will be the default active zone.
[Note] The screen of effective zone setting is based on panoramic camera view.

1. Select 🔧 > **Tracking** > **Stage** > **Select effective zone**.
2. An online tutorial will display. User can watch to learn how to setup tracking zone. Click **Skip** to stop tutorial. To watch again, select 🎬 to play online tutorial.
3. In Select effective zone screen, drag and select the area that wants to be tracking (a blue frame will show on screen). To re-select the area, just drag and select another wanted area.
4. Click "**Save**" to save the setting.
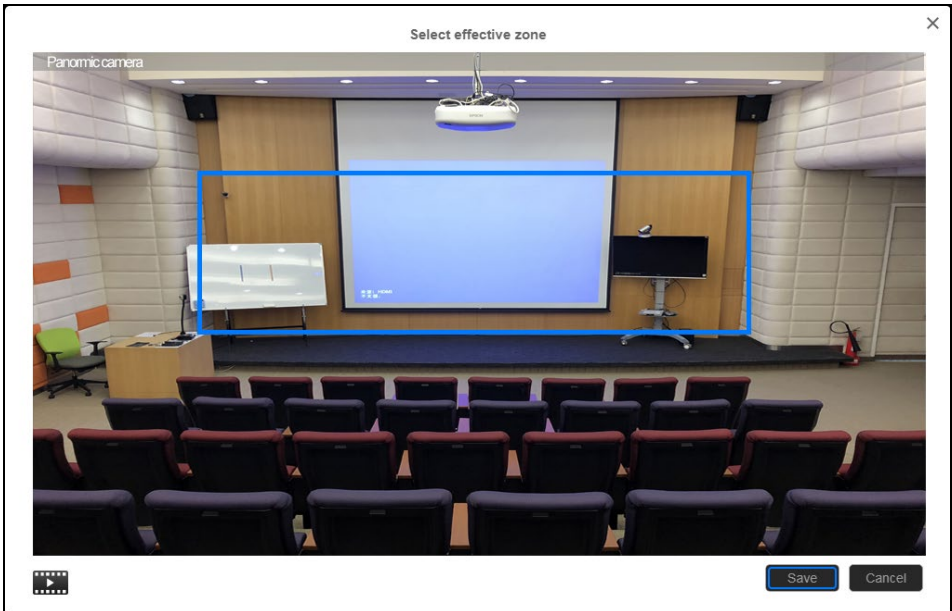
Setup Shielded Zone

Define the area that user doesn't want camera to track. The shield zone should be within the active zone. 8 shield zones can be set.

[Note] The screen of shield zone setting is based on panoramic camera view.

1. Select ![gear] > **Tracking setting** > **Stage** > **Select shielded zone**.

2. An online tutorial will display. User can watch to learn how to setup shield zone. Click **Skip** to stop tutorial. To watch again, select ![film] to play online tutorial.

3. In Shielded tracking zone screen, click the "**+**" and select the area in tracking zone that don't want to be tracking (a gray block will show on screen). For example: Shielded the projector screen and TV that may influence the tracking. To delete the shield zone area, click "**-**"and select the shield to delete it. Or select "**Reset Shields**" to delete all shields.

4. Select "**Save**" to save the setting.

Setup Target Tracking Body

Define the width of tracking target. 1 target zone can be set.

[Note] The screen of target tracking body is based on panoramic camera view.

1. Select ⚙ > **Tracking setting** > **Stage** > **Select target tracking body**.

2. An online tutorial will display. User can watch to learn how to setup tracking zone. Click **Skip** to stop tutorial. To watch again, select 🎞 to play online tutorial.

3. In select target tracking body screen, drag and set the width of object that wants to be tracked (an orange frame will show on screen). To re-set the width of object, just drag again.

4. Click "**Save**" to save the setting.
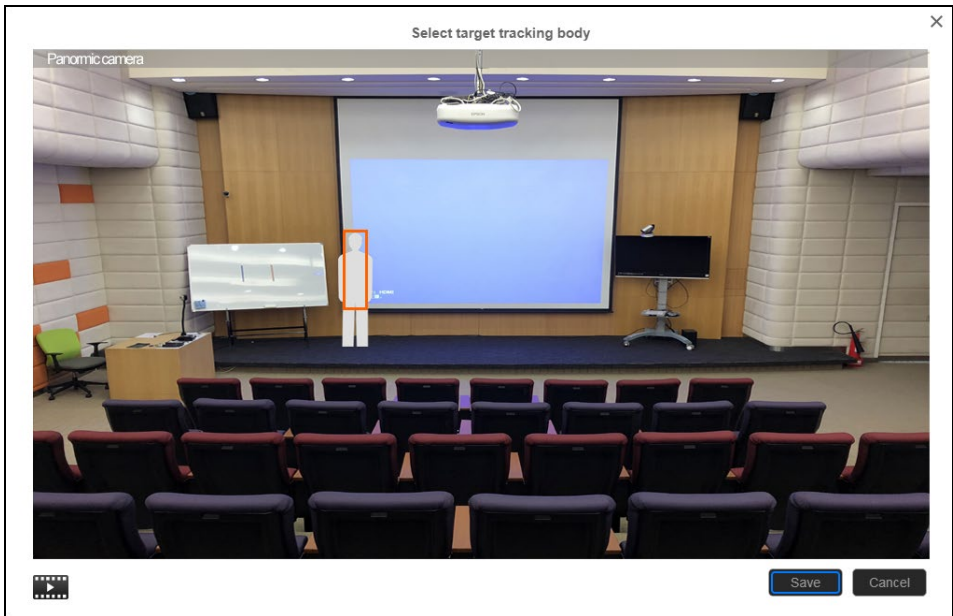
Setup Multi-people Detection

When multiple people detection is activated, the camera will move to preset 2 position and stop tracking the original object until the multi-people detection mode is stop.

1. Select ⚙ > Tracking **setting** > **Stage** > **Multi-people detection**.

2. **Time to go preset 2:** set the time to move the camera to preset 2 position after multi-people detect is activated.

3. **Time to back to tracking:** set the time period to back to tracking after multi-people detection is stop.

Segment Mode

**The PTC500+ / PTC115+ will start tracking when object is moving between the blocks.**

Setup Effective Zone

If PTC500+ / PTC115+ detects motions in the defined zone and PTC500+ / PTC115+ will be triggered to track. If effective zone doesn't setup, then, all the panoramic view will be the default active zone. The effective zone can be defined from 2 to 4 blocks.

[Note] The screen of effective zone setting is based on panoramic camera view.

1. Select ⚙ > **Tracking setting** > **Segment** > **Select effective zone**.

2. Drag a tracking area on screen (blue frame). Then, click "**Next**" button.
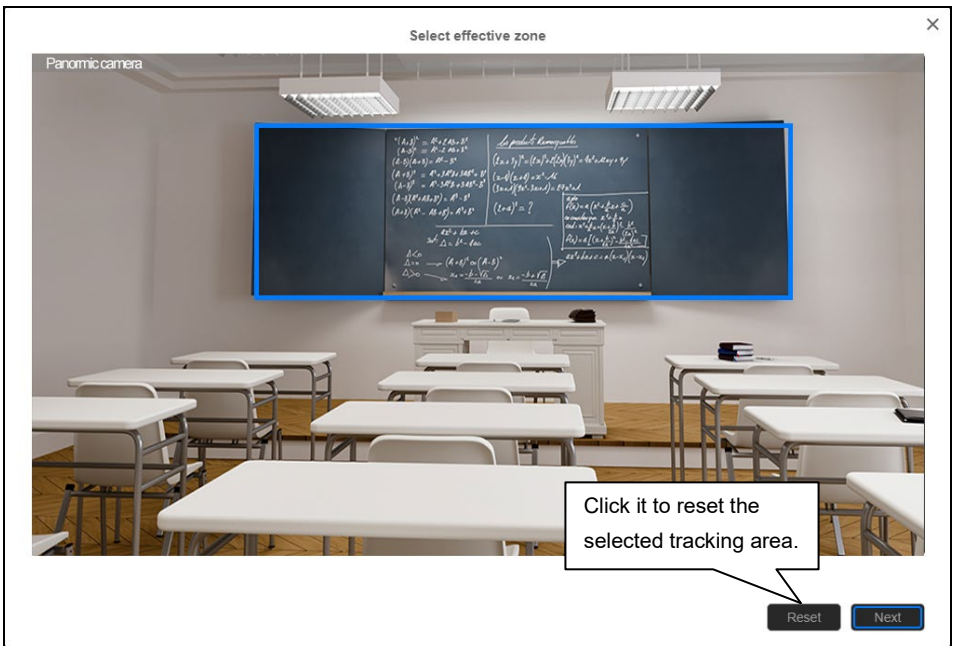
3. Select the tracking zone blocks – 2, 3, or 4 blocks. At least 2 blocks must be set.

Please select the number of division in tracking zone

2 blocks   3 blocks   4 blocks

Make an **overlap area** between blocks to avoid the camera move frequently at junction point.
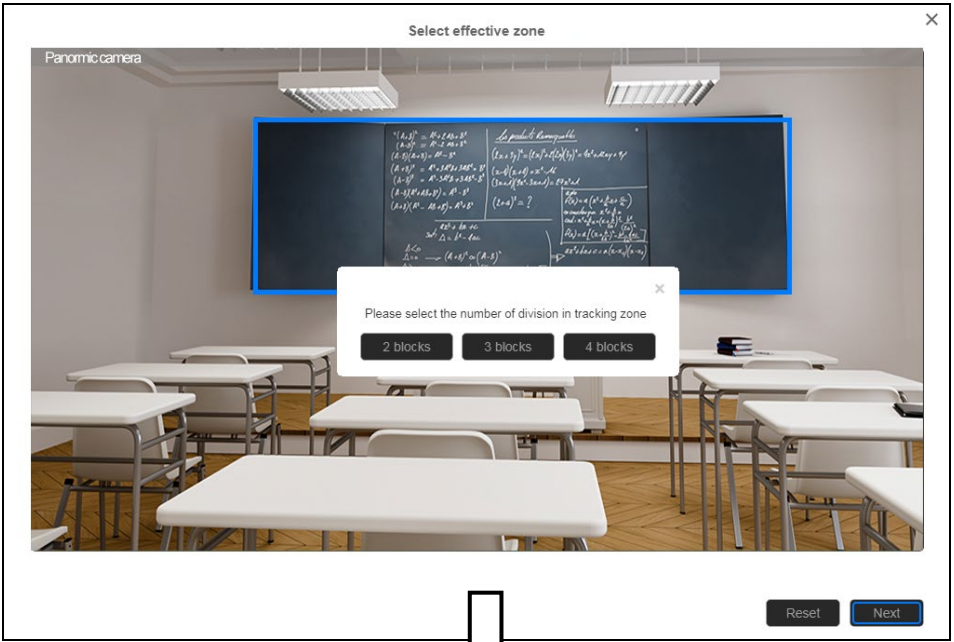
Click on the edge (left & right) to adjust block size.

Click the preset button to adjust block size.
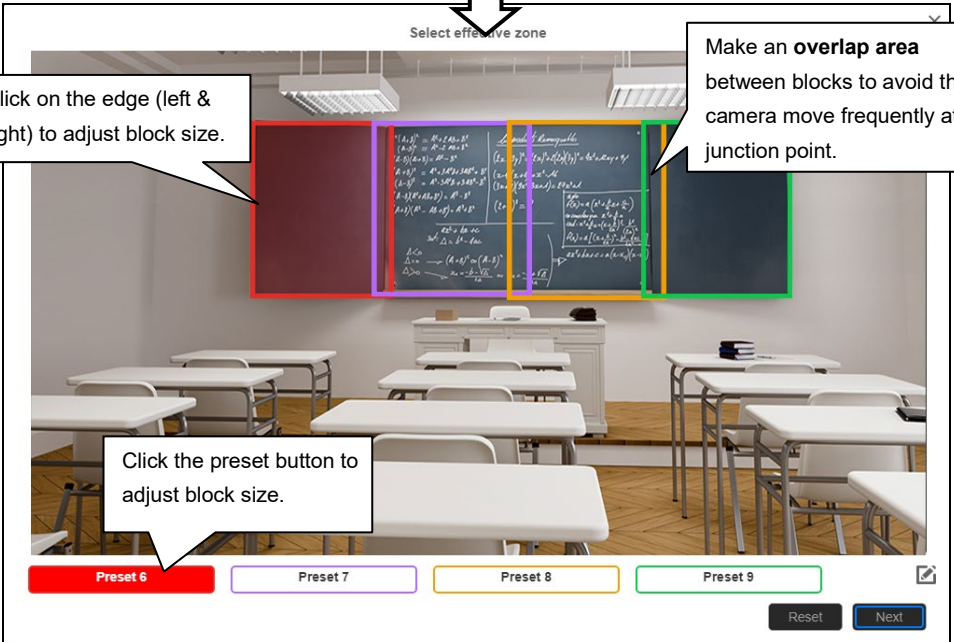
4. Click "**Next**" to set the position of tracking zone. Click preset button and use ▲, ▼, ◀, ▶, Zoom +/- to adjust to the desire position. When each time preset position is set, click "**Save**" to save the settings.
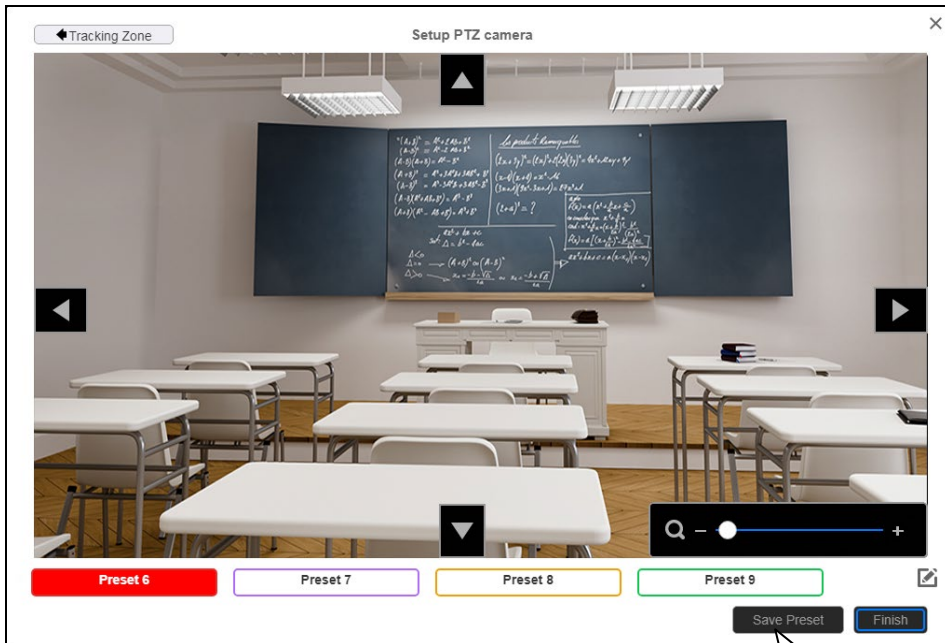
5. Click "**Finish**" to complete the settings.

When each time preset position is set, click "**Save**" to save the settings.
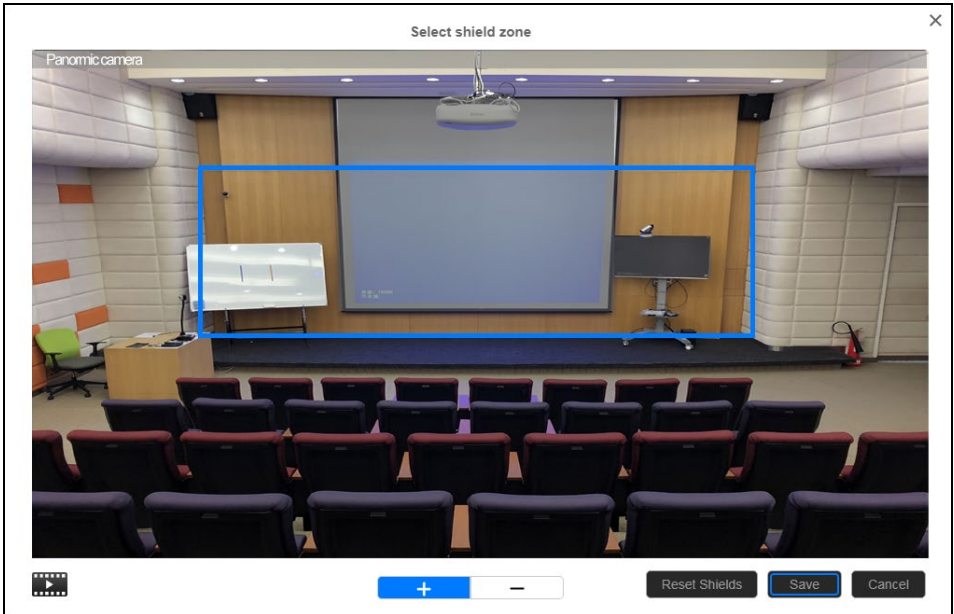
Setup Shielded Zone

Define the area that user doesn't want camera to track. The shield zone should be within the active zone. 8 shield zones can be set.

[Note] The screen of shield zone setting is based on panoramic camera view.

1. Select ⚙️ > **Tracking setting** > **Segment** > **Select shielded zone**.

2. An online tutorial will display. User can watch to learn how to setup shield zone. Click **Skip** to stop tutorial. To watch again, select ▶️ to play online tutorial.

3. In Shielded tracking zone screen, click the "**+**" and select the area in tracking zone that don't want to be tracking (a gray block will show on screen). For example: Shielded first row of student that may influence the tracking. To delete the shield zone area, click "**-**" and select the shield to delete it. Or select "**Reset Shields**" to delete all shields.

4. Select "**Save**" to save the setting.
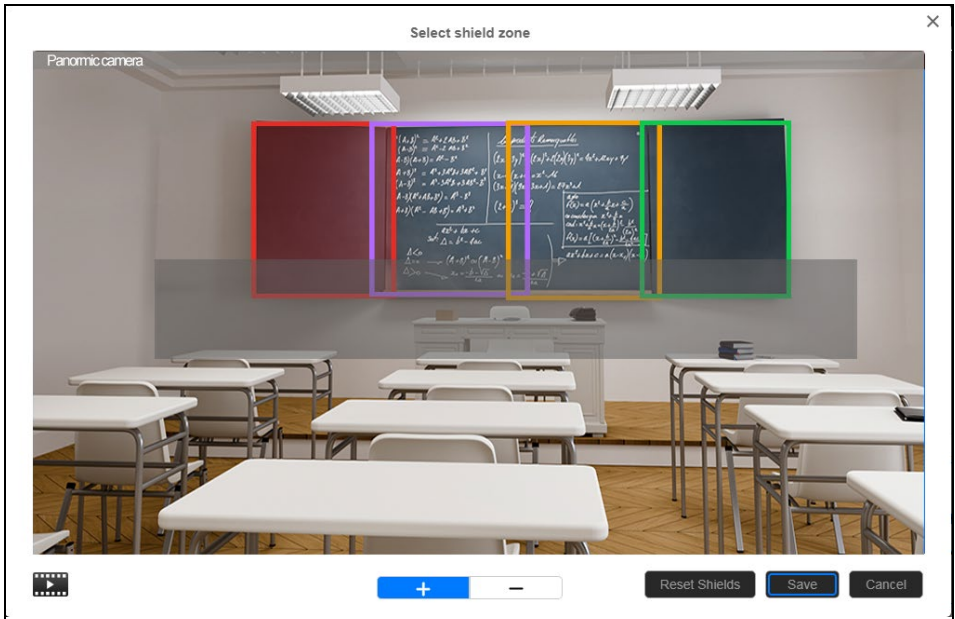
Setup Target Tracking Body

Define the width of tracking target. 1 target zone can be set.

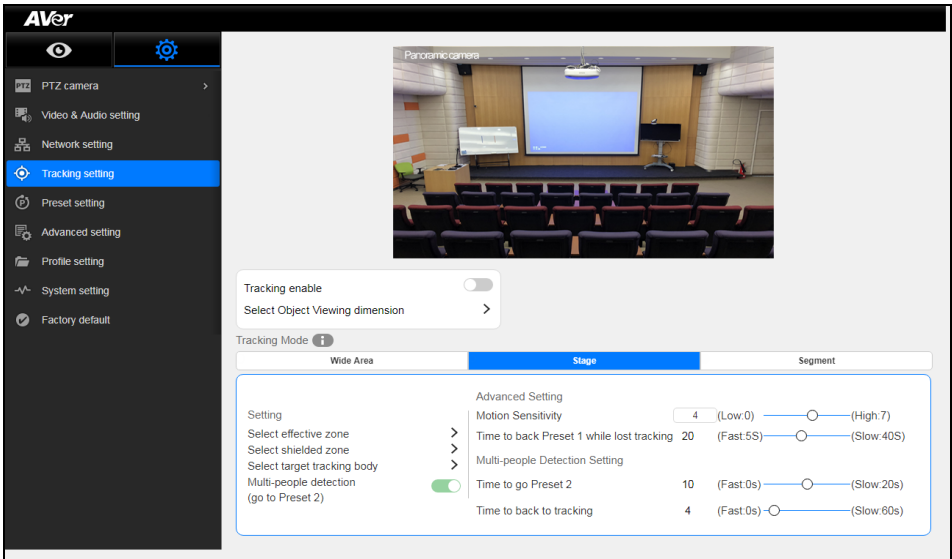**[Note]** The screen of target tracking body is based on panoramic camera view.

1. Select ![gear icon] > **Tracking setting** > **Segment** > **Select target tracking body**.

2. An online tutorial will display. User can watch to learn how to setup tracking zone. Click **Skip** to stop tutorial. To watch again, select ![play icon] to play online tutorial.

3. In select target tracking body screen, drag and set the width of object that wants to be tracked (an orange frame will show on screen). To re-set the width of object, just drag again.

4. Click "**Save**" to save the setting.
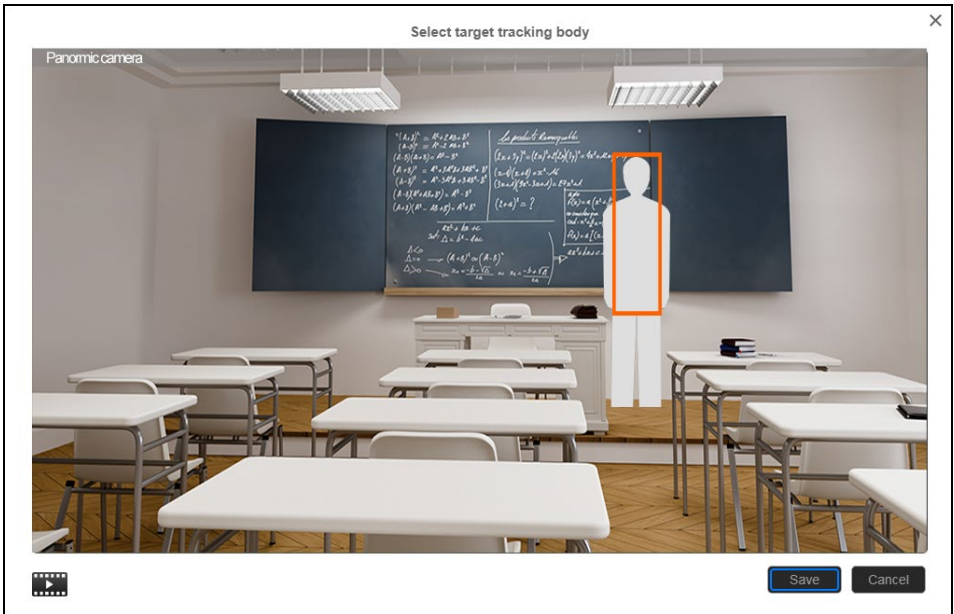
Preset Setup

Define the specific location to view when select preset number (1~255). **When PTC500+ / PTC115+ lose tracking, it will back to the preset 1 position.**

1. Open the browser and enter the IP address of PTC500+ / PTC115+ to login to PTC500+ / PTC115+.
2. Select ⚙ > **Preset Setting**.
3. Use the direction control panel to adjust the PTC500+ / PTC115+ to desires position.
4. Next, select the preset number in "**Save to Preset**" column and click "**Save**" button to save the preset.
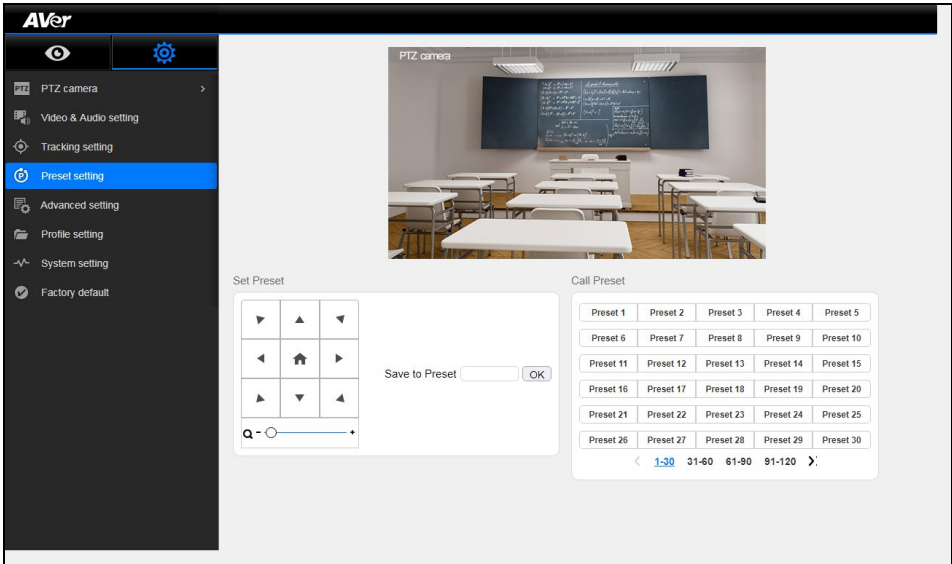
5. Select preset number in Call Preset section can view preset position view.
6. After call preset, the tracking will be off. Remember to **turn on** the **tracking** manually. Or press 🎦 on the remote control.

Advanced Setting
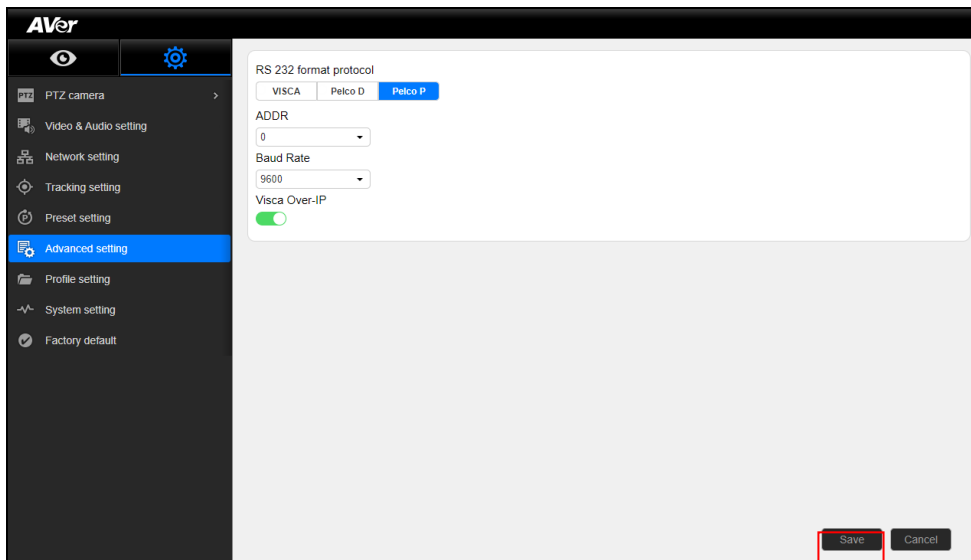
- ■ **RS232 format protocol**: Select **VISCA, Pelco D,** or **Pelco P**.
- ■ **ADDR**: Select a number from the drop-down list.
- ■ **Baud Rate**: Select **2400**, **4800**, **9600**, or **115200**.
- ■ **Visca Over-IP**: You can toggle between on and off states.

Select **Save** to finish camera configuration.

Profile Setting

You can save different camera configuration for different scenarios.
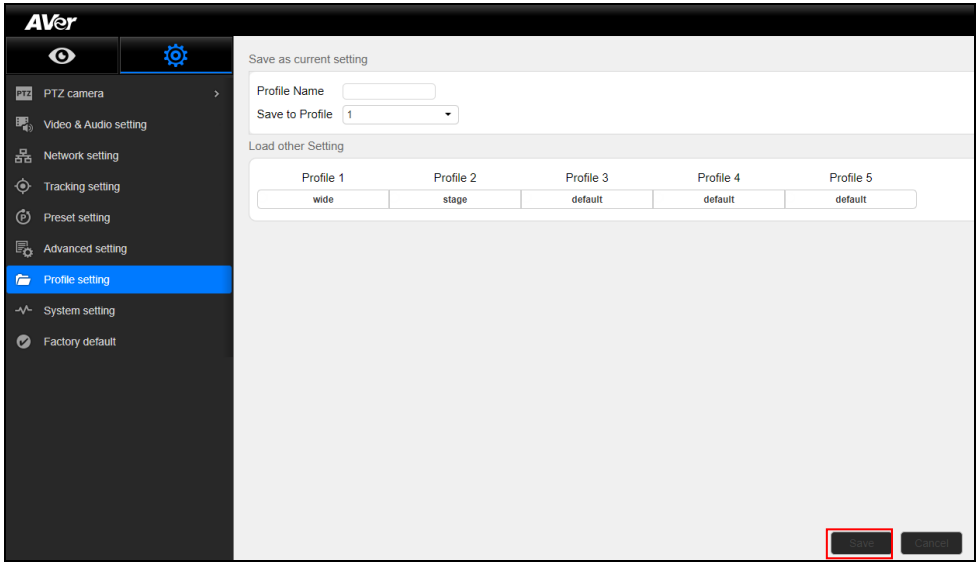
- ■ **Profile Name**: Name the camera setting.
- ■ **Save to Profile**: Select a number out of 1 to 5 for the camera setting you just named.
- ■ **Load other Setting**: You can load any one of the 5 profiles for camera setting.

Click **Save** to finish setting.

System Setting
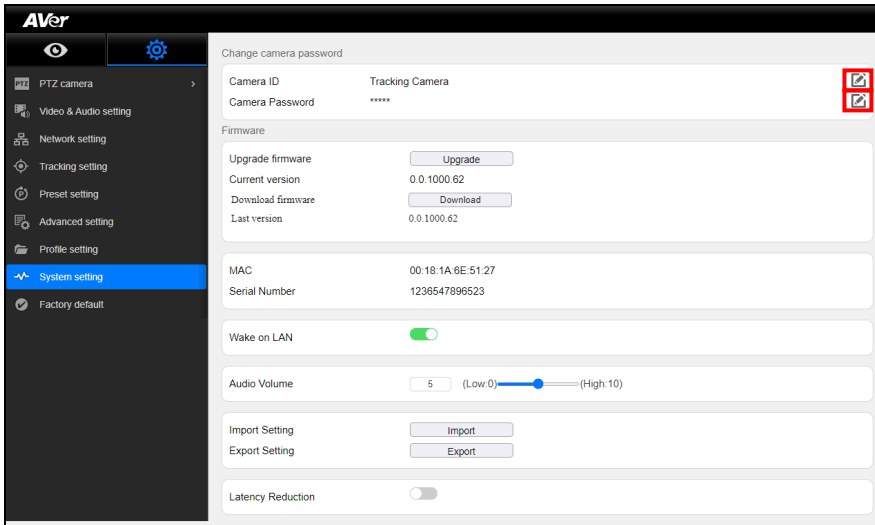
[Change camera password]

- **Camera ID**: You can see the camera ID. You can click the pencil icon to edit the camera name.
- **Camera Password**: The password will be hidden behind the asterisks You can click the pencil icon to change the password.

[Firmware]

- Upgrade firmware
    1. Download the newest firmware from http://www.aver.com/download-center .
    2. Connect to camera through browser.
    3. Select **System** > **Firmware** > **Upgrade firmware** > **Upgrade**.
    4. Select the firmware and select "**Upload**" button.
    5. After updating, refresh the browser.
- **Current vision**: You can find the current firmware version.
- **Download firmware**: You can download the firmware.
- **Last version**: You can see the last version.
- **MAC**: You can find the MAC address of the camera.
- **Serial Number**: You can find the serial number of the camera.
- **Wake on LAN**: You can enable/disable Wake on LAN.
- **Audio Volume**: You can key in any number from zero to ten and press **Enter** on your keyboard to change the volume. Alternatively, you can adjust the volume with the slider.
- **Import Setting**: Click **Import** and you can upload a set of camera settings.
- **Export Setting**: Click **Export** and your current camera settings will be downloaded.
- **Latency Reduction**: You can enable/disable Latency Reduction. After enabling Latency Reduction, the tracking camera will reboot. Enabling this function will disable **Digital Zoom**/**Noise Reduction**/**PIP** to reduce the latency.

Using RTSP connect to Camera

Use RTSP player connecting to camera; please enter the following RTSP URL in your application such as VLC, PotPlayer, or QuickTime.

PTZ camera: rtsp:// IP address of camera:554/live_st1

For example: rtsp://192.168.1.1:554/live_st1

Panoramic camera: rtsp://IP address of camera:8554/live_st2

For example: rtsp://192.168.1.1:8554/live_st2

OSD SETUP

Before You Begin

Make sure all connections are connected successfully before using the PTC500+ / PTC115+. Connections error will cause no image showing or no reaction. (For more information, please refer to Device Connections.) Turn off the OSD menu before you proceed to control the camera.

For the First Time Use

Trigger OSD Menu

Press [M] button on the remote control to call out OSD menu. Use ▶ to enter sub-menu, use ▲ and ▼ to move to the selection and use [↵] to confirm the selection. Press ◀ button can back to previous level of menu.

1	Blue text indicates the current selection.
2	">" means has sub-menu or value selection.
3	Sub-menu
4	Column for enter value or value selections.
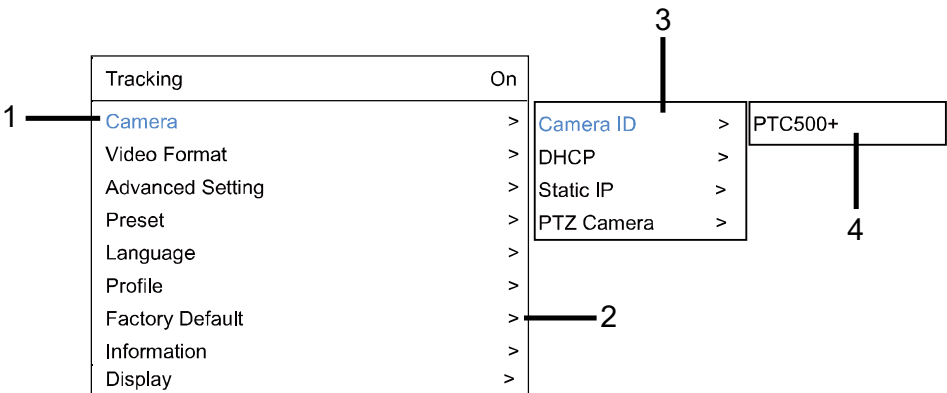
Setup IP Address

Setup IP address of PTC500+ / PTC115+.

There are two ways to setup IP address of PTC500+ / PTC115+. Please follow the steps below to setup the IP address.

- **Static IP Address**

Assign a fix IP address for PTC500+ / PTC115+.

1. After starting-up, press [⊞M] button on the remote control to call out OSD menu.
2. Turn the DHCP off first. Go to **Camera** > **DHCP** > **DHCP** > **Off** then press ▶ or enter button to confirm the selection. The menu selection will switch to "**Static IP**" when DHCP off is applied.
3. Use ▲, ▼, Enter button, and on-screen keyboard to setup the "**IP**", " **Gateway**", "**Mask**" and "**DNS**".
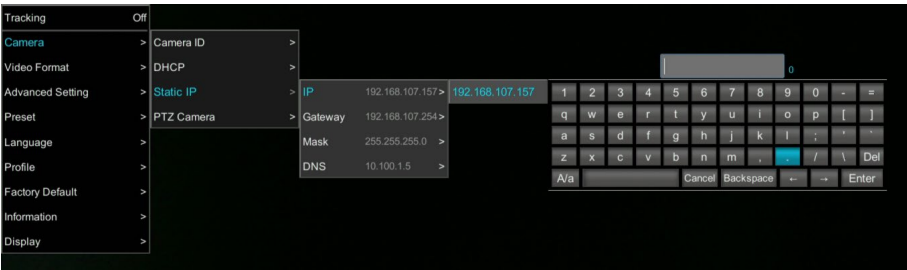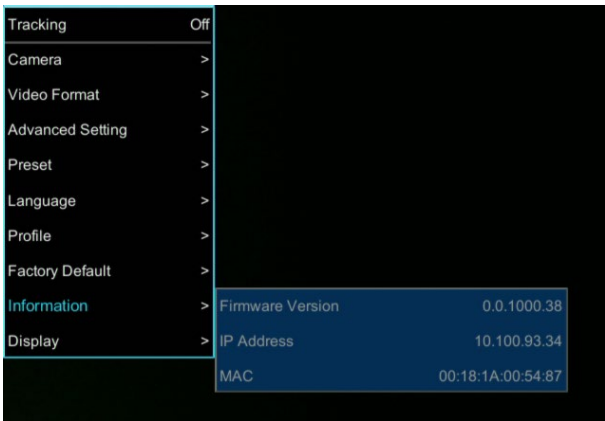
- **Dynamic IP Address(DHCP)**

Get IP address from your local DHCP server.

1. After starting-up, press [⊞M] button on the remote control to call out OSD menu.
2. Use ▲ and ▼ buttons to select the **Camera** > **DHCP** > **DHCP** > **On**, then press ▶ or enter button to get IP address from local DHCP server.
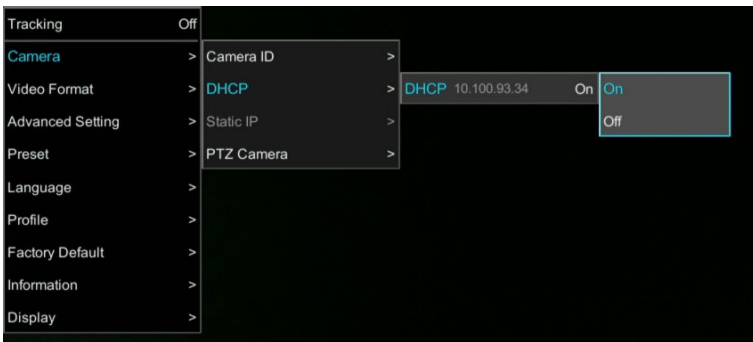
3. Use ▲ and ▼ buttons go to "**Information**" to check the IP address information.

Tracking	Off		
Camera	>		
Video Format	>		
Advanced Setting	>		
Preset	>		
Language	>		
Profile	>		
Factory Default	>		
Information	>	Firmware Version	0.0.1000.38
Display	>	IP Address	10.100.93.34
		MAC	00:18:1A:00:54:87

OSD Tree Map

Main

Tracking	On
Camera	>
Video Format	>
Preset	>
Advanced Setting	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Tracking

- User can enable or disable auto-tracking.
- PTC500+ / PTC115+ will not track on object automatically when the feature is disabled.
- To enable auto-tracking, please select "**On**".
- To disable auto-tracking, select "**Off**".

Tracking	On	On
Camera	>	Off
Video Format	>	
Advanced Setting	>	
Preset	>	
Language	>	
Profile	>	
Factory Default	>	
Information	>	
Display	>	

Camera

In the section, users can change camera ID, network setting and adjust parameter of camera settings.

Tracking	On		
Camera	>	Camera ID	>
Video Format	>	DHCP	>
Advanced Setting	>	Static IP	>
Preset	>	PTZ Camera	>
Language	>		
Profile	>		
Factory Default	>		
Information	>		
Display	>		

Camera ID

To change camera ID, please select **Camera** > **Camera ID**.

Tracking	On			
Camera	>	Camera ID	>	PTC500+ / PTC115+
Video Format	>	DHCP	>	
Advanced Setting	>	Static IP	>	
Preset	>	PTZ Camera	>	
Language	>			
Profile	>			
Factory Default	>			
Information	>			
Display	>			

DHCP

To enable DHCP, select **Camera** > **DHCP**.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Camera ID	>
DHCP	>
Static IP	>
PTZ Camera	>

DHCP10.1.0.1	ON

Static IP

To setup network as a static IP, select **Camera** > **Static IP** (Please set DHCP off before the Static IP setting)

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Camera ID	>
DHCP	>
Static IP	>
PTZ Camera	>

IP 10.1.0.1	>
Mask 255.255.0.255	>
Gateway 10.1.0.1	>
DNS	>

PTZ Camera

To adjust the parameters of PTZ camera, select **Camera** >**PTZ Camera**.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Camera ID	>
DHCP	>
Static IP	>
PTZ Camera	>

Camera Mode Full Auto	>
Full Auto	>
Shutter Priority	>
Iris Priority	>
Manual	>
White Balance	>
Shading Correction	>
Pan/Tile Speed	1
Zoom Speed	Low
Digital Zoom Limit	12
PTZ Zoom Focus	Off
Power Up	Home
Frequency	Auto
Contrast	2
Saturation	5
Sharpness	Medium
NosieReduction	Medium

Camera Mode

There are 4 modes of camera mode, you can select one from **Camera** > **PTZ Camera** > **Camera Mode**.

Camera Mode Full Auto	>
Full Auto	>
Shutter Priority	>
Iris Priority	>
Manual	>
White Balance	>
Shading Correction	>

Pan/Tile Speed	1
Zoom Speed	Low
Digital Zoom Limit	12
PTZ Zoom Focus	Off
Power Up	Home
Frequency	Auto
Contrast	2
Saturation	5
Sharpness	Medium
NosieReduction	Medium

Full Auto	>
Shutter Priority	>
Iris Priority	>
Manual	>

Slow Shutter	Off
Maximum Gain	24dB
Back Light compens	Off
Exposure	0

Full Auto	>
Shutter Priority	>
Iris Priority	>
Manual	>

Speed	1/30
Maximum Gain	24dB
Exposure	0

Full Auto	>
Shutter Priority	>
Iris Priority	>
Manual	>

Slow Shutter	Off
Iris	F6.8
Maximum Gain	24dB
Exposure	0

Full Auto	>
Shutter Priority	>
Iris Priority	>
Manual	>

Maximum Gain	24dB
Speed	1/30
Iris	F6.8

White Balance

To adjust white balance value, select **Camera** > **PTZ Camera** > **White Balance**.

Camera Mode Full Auto	>
Full Auto	>
Shutter Priority	>
Iris Priority	>
Manual	>
White Balance	>
Shading Correction	>
Pan/Tile Speed	1
Zoom Speed	Low
Digital Zoom Limit	12
PTZ Zoom Focus	Off
Power Up	Home
Frequency	Auto
Contrast	2
Saturation	5
Sharpness	Medium
Noise Reduction	Medium

Mode	Auto

Auto	
One Push	
Manual	6247

Shading Correction

To adjust shading correction, select **Camera** > **PTZ Camera** > **Shading Correction** (The option is for the screen corner shadow fixing.)

Camera Mode Full Auto	>
Full Auto	>
Shutter Priority	>
Iris Priority	>
Manual	>
White Balance	>
Shading Correction	>
Pan/Tile Speed	1
Zoom Speed	Low
Digital Zoom Limit	12
PTZ Zoom Focus	Off
Power Up	Home
Frequency	Auto
Contrast	2
Saturation	5
Sharpness	Medium
NosieReduction	Medium

Upper Left	Off
Upper Right	Off
Bottom Left	Off
Bottom Right	Off

Video Format

To adjust Video Format, select **Video Format** from OSD menu.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

3G-SDI1/HDMI	Auto
3G-SDI2	Auto
PIP	0

PIP Mode

Select picture-in-picture(PIP) mode. To turn off the PIP mode, select mode 0.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>

3G-SDI1/HDMI	Auto
3G-SDI2	Auto
PIP	0
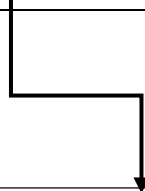
0   Turn off PIP mode

Select a layout

PTZ	Wide

1

PTZ	
	Wide

3

PTZ	
	Wide

5

PTZ	
	Wide

7

Wide	PTZ

2

Wide	
	PTZ

4

Wide	
	PTZ

6

Wide	
	PTZ

8

Advanced Setting

To adjust RS232 protocol, address and baud rate, select **Advance Setting** from OSD menu.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

RS232 Protocol	VISCA
Address(ADDRD)	1
Baud Rate	9600
VISCA-over-IP	off

Preset

PTC500+ / PTC115+ allows you to set 10 preset locations via the remote control.

■ **To set up preset point:**

1. Enter OSD and turn off the tracking function.

2. Move camera to the prefer location and zoom distance.

3. Press 🔲 bottom > **Preset** > **Set** and use arrow key to assign a preset number and press enter button on the remote control.

[Tip] Shortcut of setting a preset location as following:

Hold on the "**P**" button until the message shows up. Then, press number you want to set, ex: 1 and press enter.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Set	1
Call	1

■ **To call a preset location:**

Press 🔲 bottom > **Preset** > **call** and use arrow key to select which preset number you would like to recall -> press enter button on the remote control.

[Tip] Shortcut of calling a preset location: press "**P**" > press number you want to recall, ex: 1.

Language

To change language, go to **OSD menu** > **Language**.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

English
繁體中文
簡体中文
日本語
Deutsch
Francais
Espanol
한국어
Vietnamese

Profile

PTC500+ / PTC115+ allows you to save 5 profiles.

To set the profile, go to OSD menu > **Set** and use arrow key to assign a number and press enter button.

To call the profile, go to OSD menu > **Apply** and use arrow key to call an assigned number and press enter button.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Set	default
Apply	default

Factory Default

To reset the PTC500+ / PTC115+ to default setting, go to OSD menu > **Factory Default** > **Yes** and press enter button.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Yes
No

Information

To check out information on the PTC500+ / PTC115+, ex: FW version. Go to OSD menu > **Information**.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Firmware Version	0.0.0002.12
IP Address	10.1.0.1
MAC	FB:5F:4B:61:1F:4F

Display

Enable/disable status message display on screen. Go to OSD menu > **Display**.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Status OSD	On	On
Latency Reduction	Off	Off

[Note] If you select **On** for Status OSD, you will see the OSD menu on the HDMI screen. Select **Off** for the OSD menu before you proceed to control the camera.

Latency Reduction

After enabling Latency Reduction, the tracking camera will reboot. Enabling this function will disable Digital Zoom/Noise Reduction/PIP to reduce the latency.

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	>

Status OSD	On
Latency Reduction	Off

On
Off

Hot Key

Press certain button on the remote control to perform hot key function.

Button	Action	Function
🎥	Press and hold(5secs)	Power on/off camera. **[Note]** Only support at PTC500+ / PTC115+ FW version 0.0.1000.08 and above.
3	Press three times(333)	Enable/Disable tracking function When the hot key takes effect, you will see "tracking on" or "tracking off" on the right bottom side.
6	Press six times(666666)	Enable/Disable AVer Logo When the hot key takes effect, you will see "AVer" logo on the right bottom side.
7	Press seven times(7777777)	Show the tracking indicator When the hot key takes effect, you will see the tracking indicator on the target face.
8	Press eight times(88888888)	Set PTC500+ / PTC115+ IP address as default IP(192.168.1.168.)
9	Press nine times(999999999)	Password Reset mechanism: When the hot key takes effect, the password of entering Web UI will go back the default "admin".

FAQ

1. How to define the zoom level of tracking target?
It's determined by Setup Object Viewing Dimension. You should stand on the assigned location as a proportional scale and zoom in/out to the proportion that you want. The following tracking will based on this proportion.

2. How preset 1 has influence in the tracking settings?
When tracking cam loses the target, the position camera will go back to preset1.

3. How does tracking work in Wide Area mode?
When object enter the priority zone, PTZ camera will move to the position of object and do the face detection. After face is detected, PTZ camera will start tracking object in all area.

4. How does tracking work in Segment mode?
The tracking operation only works inside effective zone. When object is outside of effective zone, the camera will stop tracking object.

5. How to avoid it start tracking other person in the same area?
It's hard to do it. The algorithm is based on what the camera see. It is not intelligent enough to judge who should track or not if 2 or more persons are in the active zone. It will randomly choose one to track.

6. Will tracking be lost when we use PTC500+ / PTC115+ in a situation which the projector is turned on?
Yes, it might happen in "Wide Area mode". But we suggest to use "Stage mode" when the projector is turned on. Stage mode can be used for any lighting conditions.

7. What is the definition of HOME position?
Home is the default position after camera booting. User can define position aftercamera booting in below WebUI PTZ > PTZ > power up ACT.

8. What about Preset 2 ~9 are used for anything related to tracking?
If you turn off tracking, PTC500+ / PTC115+ is a regular PTZ. User can manipulate it to assign position via center control system command. The other presets are these usages.

9. This camera supports several profiles; does each profile have a different PRESET1?
Each profile has its own preset definition.

10. If we want to stop tracking and will to focus on specific location, how should I do?
Press "P" and the preset number. The camera will go to the assigned location.

11. In Wide area mode, I already masked the areas that might have something like president photo or something similar to human, but why the camera is still attracted to these areas.
The shielding zone is only for motion shielding. In complicate environment, we suggest to use stage mode to overcome it.

S232 Command Table

Visca Command Table

Command Set	Command	Command Packet	Comments
IF_Clear		8x 01 00 01 FF	x = Cam address
IF_Clear(broadcast)		88 01 00 01 FF	
CAM_Power	On	8x 01 04 00 02 FF	*RS-232 supported, UDP not supported
	Off	8x 01 04 00 03 FF	
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(Variable)	8x 01 04 07 2p FF	p=0 (Low) to 7 (High)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0Y 0Y 0Y 0Y FF	0xYYYY = zoom pos
CAM_Focus	Far(Variable)	8x 01 04 08 2P FF	p=0~F
	Near(Variable)	8x 01 04 08 3P FF	p=0~F
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
	One Push	8x 01 04 18 01 FF	
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	Manual	8x 01 04 35 05 FF	Manual Control mode
	One Push	8x 01 04 10 05 FF	One Push WB Trigger
CAM_RGain	Up	8x 01 04 03 02 FF	Manual Control of R Gain
	Down	8x 01 04 03 03 FF	
CAM_Bgain	Up	8x 01 04 04 02 FF	Manual Control of B Gain

	Down	8x 01 04 04 03 FF	
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	8x 01 04 39 0D FF	Bright Mode (Manual control)
CAM_Shutter	Up	8x 01 04 0A 02 FF	Shutter Setting
	Down	8x 01 04 0A 03 FF	
CAM_Iris	Up	8x 01 04 0B 02 FF	Iris Setting
	Down	8x 01 04 0B 03 FF	
CAM_Bright	Up	8x 01 04 0D 02 FF	Bright Setting
	Down	8x 01 04 0D 03 FF	
CAM_ExpComp	Up	8x 01 04 0E 02 FF	Exposure Compensation Amount Setting
	Down	8x 01 04 0E 03 FF	
CAM_Backlight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_Preset	reset	8x 01 04 3F 00 YY FF	YY = preset num(0~0x7F)
	set	8x 01 04 3F 01 YY FF	
	recall	8x 01 04 3F 02 YY FF	
CAM_Menu	On/Off	8x 01 06 06 10 FF	Display ON/OFF
Pan-tilt Drive	Up	8x 01 06 01 VV WW 03 01 FF	VV=pan speed: 0x00~0x0F

		Down	8x 01 06 01 VV WW 03 02 FF	WW= tilt speed: 0x00~0x0F
		Left	8x 01 06 01 VV WW 01 03 FF	
		Right	8x 01 06 01 VV WW 02 03 FF	
		UpLeft	8x 01 06 01 VV WW 01 01 FF	
		UpRight	8x 01 06 01 VV WW 02 01 FF	
		DownLeft	8x 01 06 01 VV WW 01 02 FF	
		DownRight	8x 01 06 01 VV WW 02 02 FF	
		Stop	8x 01 06 01 VV WW 03 03 FF	
		Home	8x 01 06 04 FF	
		Reset	8x 01 06 05 FF	
		PT_Direct	8x 01 06 02 00 00 0Y 0Y 0Y 0Y 0V 0V 0V 0V FF	0xYYYY = pan position 0xVVVV = tilt position
CAM_Track_ON			8x 01 04 7D 02 00 FF	
CAM_Track_OFF			8x 01 04 7D 03 00 FF	
CAM_Tracking_Mode		Wide Area	8x 01 04 A0 01 FF	
		Stage	8x 01 04 A0 02 FF	
		Segment	8x 01 04 A0 03 FF	
CAM_Profile_Read			8x 01 04 40 01 YY FF	YY = profile num(0x01~0x05)
CAM_Profile_Save			8x 01 04 40 02 YY FF	
CAM_WOL_ON			8x 01 04 7E 02 00 FF	
CAM_WOL_OFF			8x 01 04 7E 03 00 FF	
CAM_PIP_SET			8x 01 04 7F 01 YY FF	YY = pip num(0x01~0x09)
CAM_PIP_OFF			8x 01 04 7F 02 00 FF	

Inquiry Command	Command Packet	Reply Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_VersionInq	8x 09 00 02 FF		
PT_Pos_Inq	8x 09 06 12 FF	y0 50 0Y 0Y 0Y 0Y 0V 0V 0V 0V FF	0xYYYY = pan position 0xVVVV = tilt position
Zoom_Pos_Inq	8x 09 04 47 FF	y0 50 0Y 0Y 0Y 0Y FF	0xYYYY = zoom pos
Preset Inq	8x 09 04 3F FF	y0 50 pp FF	Return the last preset number which

			has been operated pp:01 - FF
CAM_FocusModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_Tracking status Inq	8x 09 36 69 02 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_Tracking mode Inq	8x 09 36 69 01 FF	y0 50 01 FF	Wide area
		y0 50 02 FF	Stage
		y0 50 03 FF	Segment
CAM_OSD MENU	8x 09 7E 04 76 01 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_BLC mode	8x 09 04 33 FF	y0 50 01 FF	BLC1
		y0 50 02 FF	BLC2
		y0 50 03 FF	OFF
Firmware version	8x 09 36 69 04 FF	y0 50 0p 0q 0r 0s 0t 0u 0v 0w FF	fw_ver: p.q.rstu.vw

Pelco-P Command Table

PAN AND TILT COMMAND	P/T bit(byte4.0) = 0						
	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte 8
func	STX	ADDR	data1	data2	data3	data4	ETX	checksum
data	0xA0	0~7F	cmd 1	cmd 2	Pan speed	Tilt speed	0xAF	1~7 XOR
					note : speed = 0x00~0x30			

byte3 : command 1

	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
	NA	CAM ON	NA	CAM ON/OFF	NA	NA	NA	NA
				note : power off : byte3.6 = 0 & byte3.4 = 1				

byte4 : command 2

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

EXTENDED COMMAND SET	P/T bit(byte4.0) = 1						
	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte 8
func	STX	ADDR	data1	data2	data3	data4	ETX	checksum
Set Preset XX	0xA0	0~7	0x00	0x03	0x00	Preset #	0xAF	1~7 XOR
Go To Preset XX	0xA0	0~7	0x00	0x07	0x00	Preset #	0xAF	1~7 XOR
Track ON	0xA0	0~7	0x00	0x65	0x00	0x00	0xAF	1~7 XOR
Track OFF	0xA0	0~7	0x00	0x67	0x00	0x00	0xAF	1~7 XOR
WOL ON	0xA0	0~7	0x00	0x69	0x00	0x00	0xAF	1~7 XOR
WOL OFF	0xA0	0~7	0x00	0x6B	0x00	0x00	0xAF	1~7 XOR
Read Profile XX	0xA0	0~7	0x00	0x6D	0x00	Profile #	0xAF	1~7 XOR
Save To Profile XX	0xA0	0~7	0x00	0x6F	0x00	Profile #	0xAF	1~7 XOR
						note : Preset # : 0x01 ~ 0xFF		
						Profile # : 0x01 ~ 0x05		

Pelco-D Command Table

PAN AND TILT COMMAND								
P/T bit(byte4.0) = 0								
		byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7
	func	SYNC	ADDR	cmd 1	cmd 2	data1	data2	checksum
	data	0xFF	1~80	cmd 1	cmd 2	Pan speed	Tilt speed	2~6 SUM
						note : speed = 0x00~0x30			

byte3 : command 1

		bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
		SENSE ON	NA	NA	NA	CAM ON/OFF	NA	NA	NA
						note : power off : byte3.7 = 0 & byte3.3 =			

byte4 : command 2

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

EXTENDED COMMAND SE								
P/T bit(byte4.0) = 1								
		byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7
	func	SYNC	ADDR	data1	data2	data3	data4	checksum
	Set Preset XX	0xFF	1~8	0x00	0x03	0x00	Preset #	2~6 SUM
	Go To Preset XX	0xFF	1~8	0x00	0x07	0x00	Preset #	2~6 SUM
	Track ON	0xFF	1~8	0x00	0x65	0x00	0x00	2~6 SUM
	Track OFF	0xFF	1~8	0x00	0x67	0x00	0x00	2~6 SUM
	WOL ON	0xFF	1~8	0x00	0x69	0x00	0x00	2~6 SUM
	WOL OFF	0xFF	1~8	0x00	0x6B	0x00	0x00	2~6 SUM
	Read Profile XX	0xFF	1~8	0x00	0x6D	0x00	Profile #	2~6 SUM
	Save To Profile XX	0xFF	1~8	0x00	0x6F	0x00	Profile #	2~6 SUM
						note : Preset # : 0x01 ~ 0xFF			
						Profile # : 0x01 ~ 0x05			

Example:
Camera Address: 1
Pan Left at high speed: FF 01 00 04 3F 00 44
Pan Right at medium speed: FF 01 00 02 20 00 23
Tilt Up at high speed: FF 01 00 08 00 3F 48
Tilt Down at medium speed: FF 01 00 10 20 00 31
Stop all actions (Pan / Tilt / Zoom / Iris etc.): FF 01 00 00 00 00 01

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 ~ 0XFFFFFFFF				VISCA Packet (see page VISCA)

Payload type

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

Sequence number

Controller — device

VISCA Command (Seq = N)

VISCA Reply (Seq = N)

VISCA Command (Seq = N + 1)

VISCA Reply (Seq = N + 1)

Sequence number = N
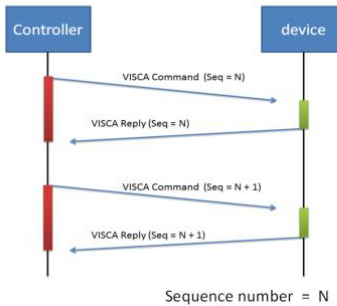
CGI Command Table

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

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

CGI List for Various Settings					
CGI item name	**URL**	**Command**	**Parameter Name**	**Parameter value**	**Description**
exposure value	/webui?Set=	img_expo_expo,3,N&(random)	value	1 ~ 9	N : value
saturation	/webui?Set=	img_saturation,3,N&(random)	value	0 ~ 10	N : value
contrast	/webui?Set=	img_contrast,3,N&(random)	value	0 ~ 4	N : value
Tracking on:	/webui?Set=	trk_tracking,3,1&(random)			
Tracking off:	/webui?Set=	trk_tracking,3,0&(random)			
Reboot	/webui?Set=reboot,3,1&**X**				X : random value
Factory Reset	/webui?OnePush=C_DEFAULT&**X**				X : random value
Call Profile	http://ip/webui?ActProFiles=	call,3,N&(random)			N= Profile number
Save Profile	/webui?ActProFiles=	save,3,N&(random)			N= Profile number
Set Profile Name	/webui?ActProNames=	Set,N,(Name)&(random)			N= Profile number
Tracking On/Off Get	/webui?Get=trk_tracking,3&_=**X**	PTC	- Reply	On trk_tracking=**1** Off trk_tracking=**0**	X : random value
Call Profile	/webui?ActProFiles=	call,3,N&(random)			N= Profile number
Save Profile	/webui?ActProFiles=	save,3,N&(random)			N= Profile number
Set Profile Name	/webui?ActProNames=	Set,N,(Name)&(random)			N= Profile number
RTMP Start streamming	/webui?Set=	Set=vdo_rtmp_enable,3,1			
RTMP Stop streamming	/webui?Set=	Set=vdo_rtmp_enable,3,0			