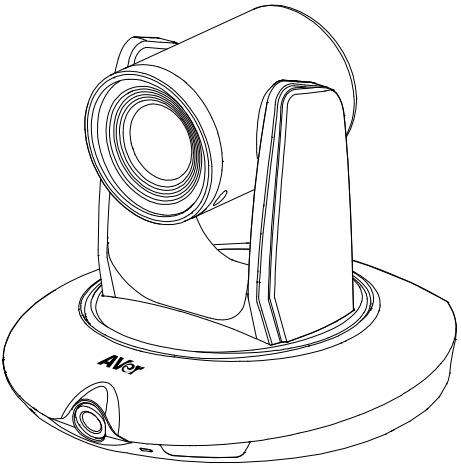
www.aver.com



TR320

User Manual

V.1.0.0

IMPORTANT NOTICE

- ✧ PLEASE READ THE INSTRUCTIONS IN THIS MANUAL BEFORE INSTALLING THE TR320 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.

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

European Community Compliance Statement (Class A)

This product is herewith confirmed to comply with the requirements set out in the Council Directives on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive 2014/30/EU.

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 to correct this interference.

DISCLAIMER

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

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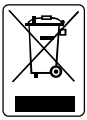

The mark of Crossed-out wheeled bin indicates that this product must not be disposed of with your other household waste. Instead, you need to dispose of the waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. For more information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

[별표 4]

사용자안내문

사 용 자 안 내 문
이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

※ 사용자 안내문은 “업무용 방송통신기자재”에만 적용한다.

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INTRODUCTION

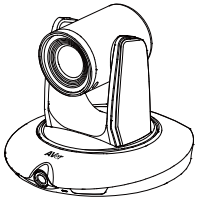
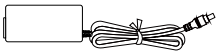
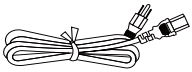
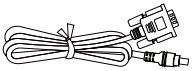
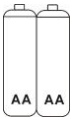
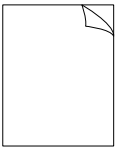
AVer TR320 is a professional tracking camera which supports the wide area tracking mode. The TR320 uses body motion and image analysis algorithm to track the intended target; the target subject does not need to wear any signal transmitting device. The TR320 can communicate with most recording systems through RS232, RS485 or an IP network interface.

Package Contents

The following items are included in the package.

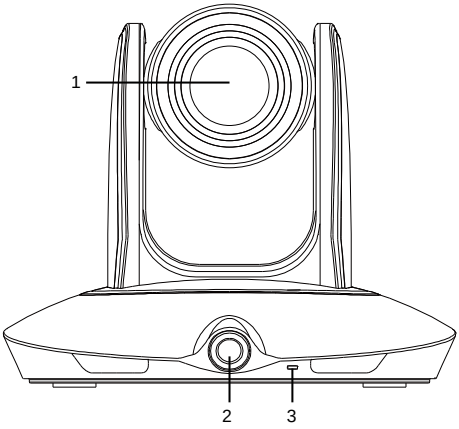
[Note]

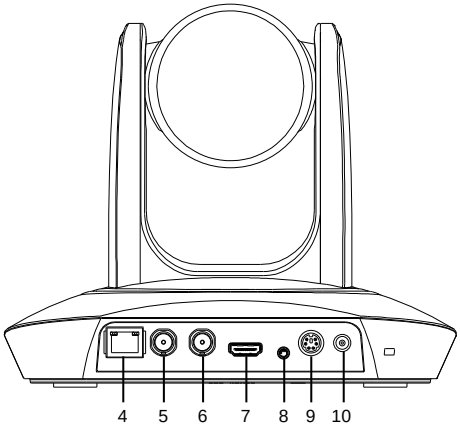
1. Do not disassemble or modify the items by yourself. Contact the dealer for help when the item failed to work.
2. Store the items in a dry place away from moisture.

TR320 unit	Power adapter	Power cord	RS-232 to D-Sub 9 cable
			
Battery	**Quick Guide**	**Remote Control**	
			

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

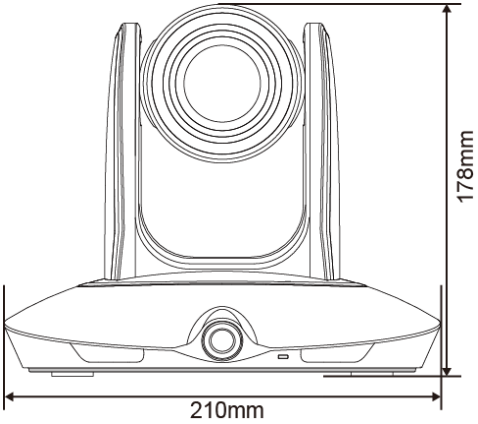
Product Overview

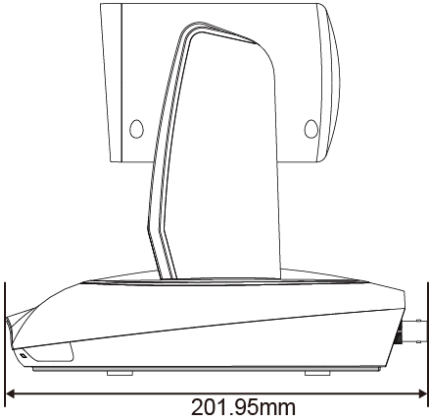




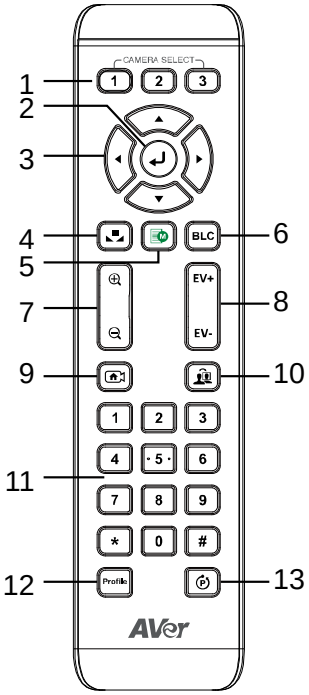
1. PTZ camera
2. Panoramic camera
3. Power indicator
4. RJ-45 port
5. 3G-SDI 2 port(Panoramic view)
6. 3G-SDI 1 port(PTZ view)
7. HDMI port(PTZ view)
8. Video in port
9. RS-232 port
10. Power jack

Dimension





Remote Controller



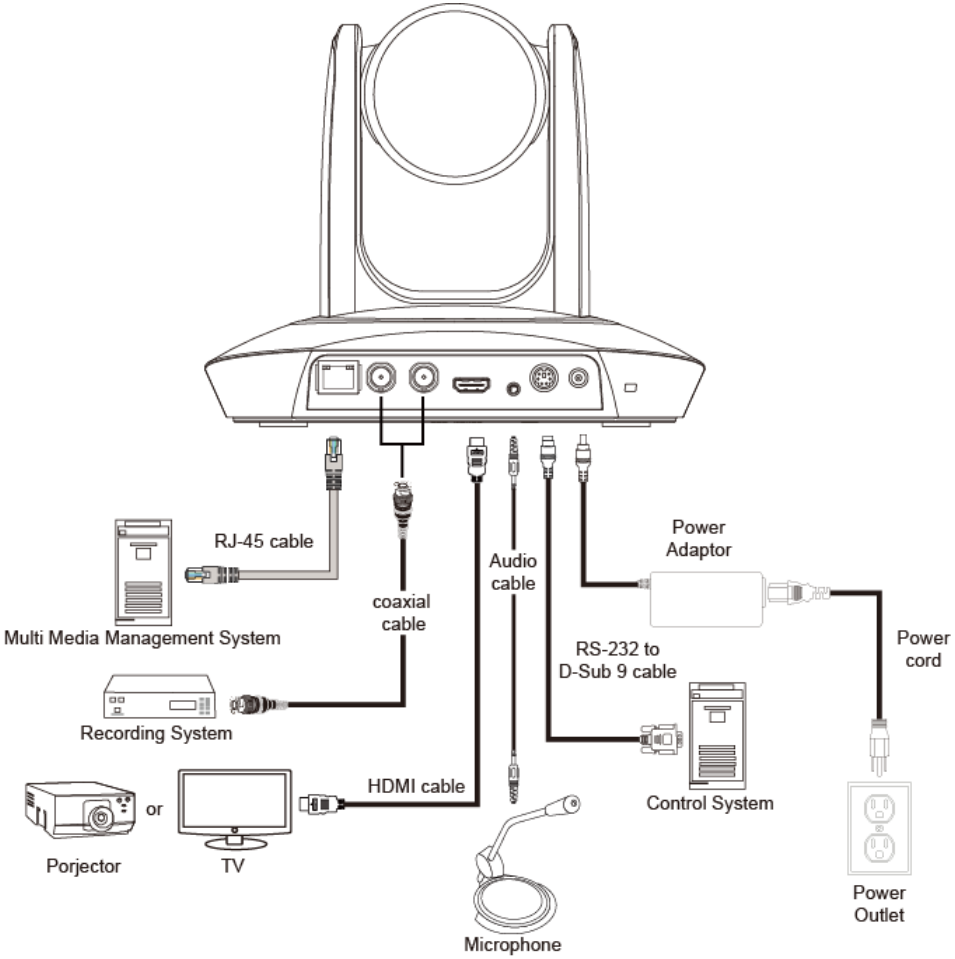
1. Camera select
[Note] Only channel No.1 is available. Before you use remote, please press channel 1 first.

2. Enter
3. Camera direction control
4. White balance
5. OSD menu
6. Back light control
7. Zoom in/out
8. Exposure compensation
9. Back to zero position(home preset)
[Note] Press and hold **3** seconds to turn on or turn off the TR320 unit.
Only supported with TR320 FW version **0.0.1000.08** and above.

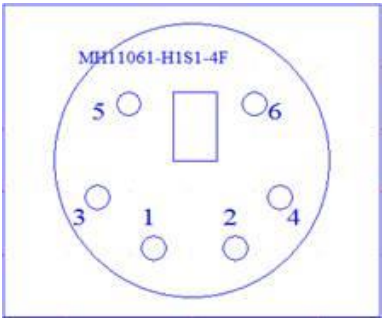
10. Tracking on/off
11. Number buttons
12. Profile
13. Preset

CONNECTIONS

Device Connections



RS232 Pin Definition



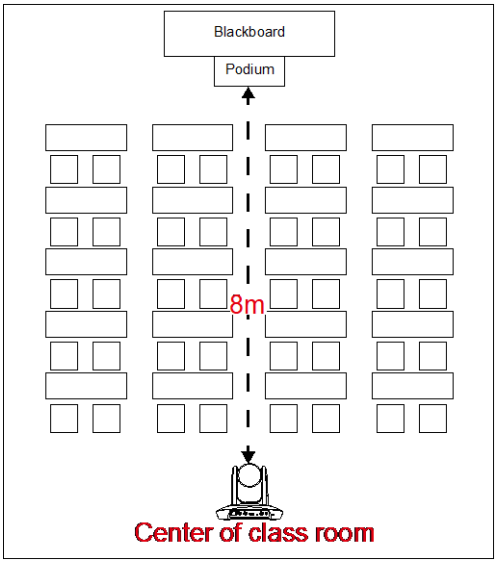
Pin	Definition
1	RS232_DTR
2	RS232_DSR
3	N.C.
4	RS232_TXD
5	GND
6	RS232_RXD

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 TR320, the tracking camera will automatically zoom in/out to maintain the appropriate size and proportion.
  - If the tracking target is locked, TR320 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 a brightly lit environment. If the light level is not enough, it may not be able to properly track the object.
  - It should not be used in an environment with high bright contrast. For example, the environment with lots of IFP or projectors in the background. When the target enters or leaves the high bright contrast zone, the TR camera may not be able to track the object properly.

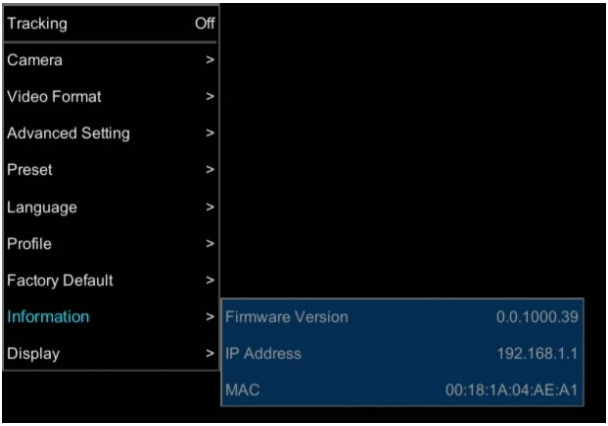
- **Install height range (from floor):** 2 ~ 3m; **2.4m** is suggested.
- **Distance range to podium:** 4~10m; **8m** is suggested.
- **Position:** Center of class room.



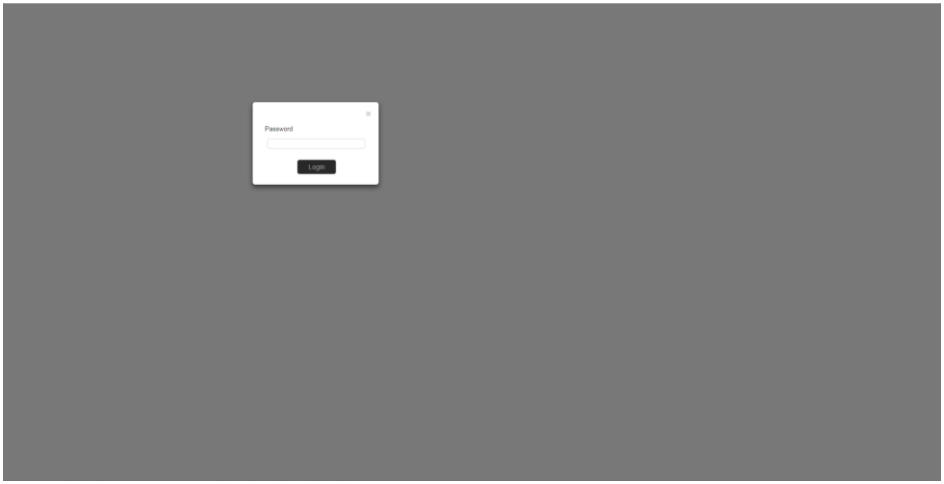
WEB SETUP

Make a Connection to TR320 via a Web Browser

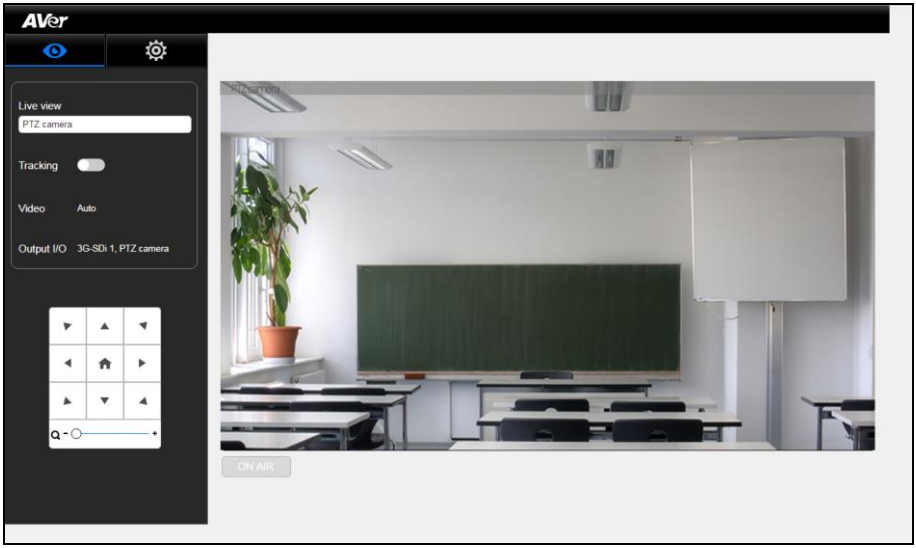
1. **Find the IP address of TR320:** call out OSD menu of the TR320. Use ▲ and ▼ buttons on remote controller to go to “Information” to find the IP address information.



2. Open the browser on your PC and enter the IP address of TR320.
3. Enter the password of TR320 to login. The default password is “**admin**”.



4. After login, User should see the main interface of TR320.



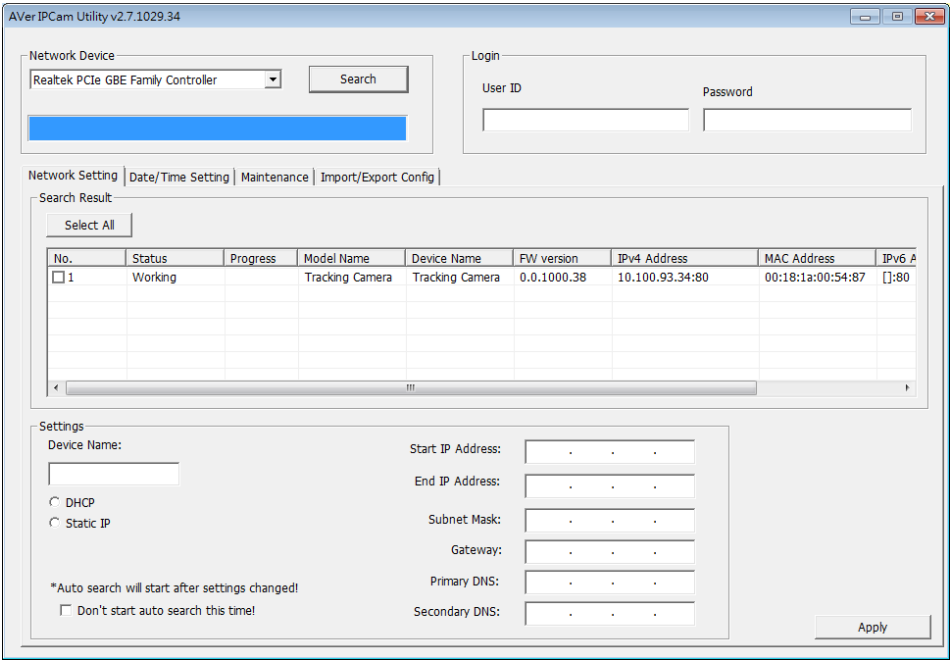
Make a Connection to TR320 via AVer IPCam Utility

[Note] The TR320 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://www.aver.com/download-center .
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.

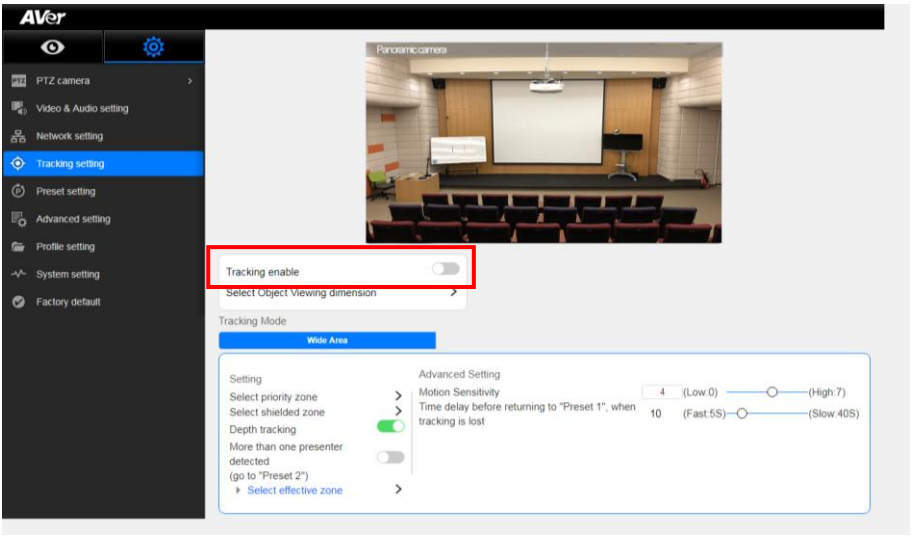
[Note] If IPCam utility cannot find the camera, please check following:

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.



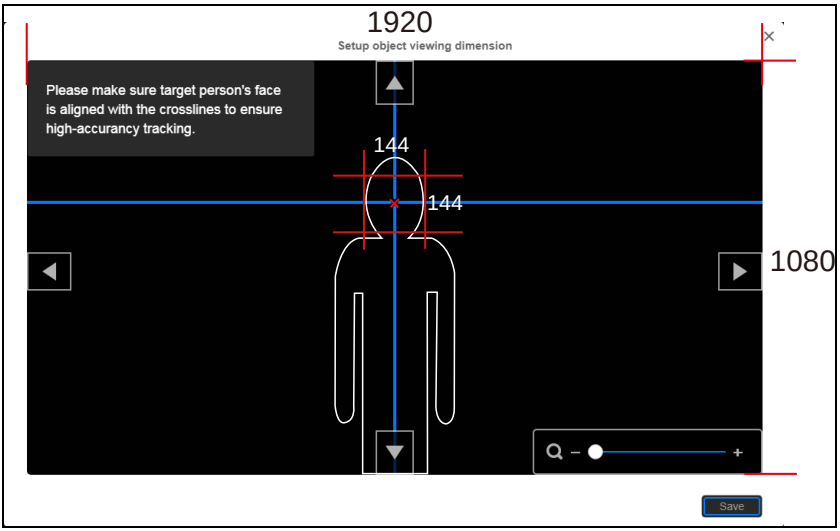
Enable Tracking Function

Turn on and off the tracking function. Select > **Tracking setting** > **Tracking on**.



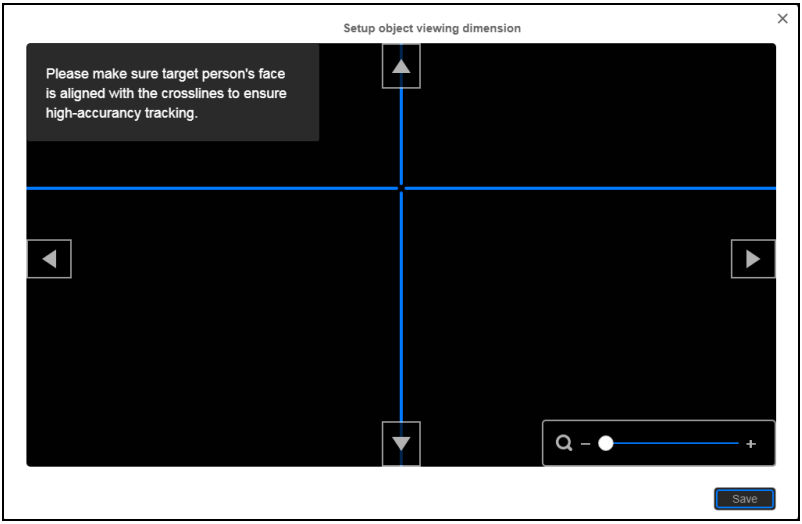
Setup Object Viewing Dimension

Please make sure the target person's face is aligned with the crosslines to ensure high-accuracy tracking. Use the camera zoom and positioning to get the best coverage. Typically you can just use your thumb size as a good yardstick. You should only have to do this once.



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.



Wide Area Mode

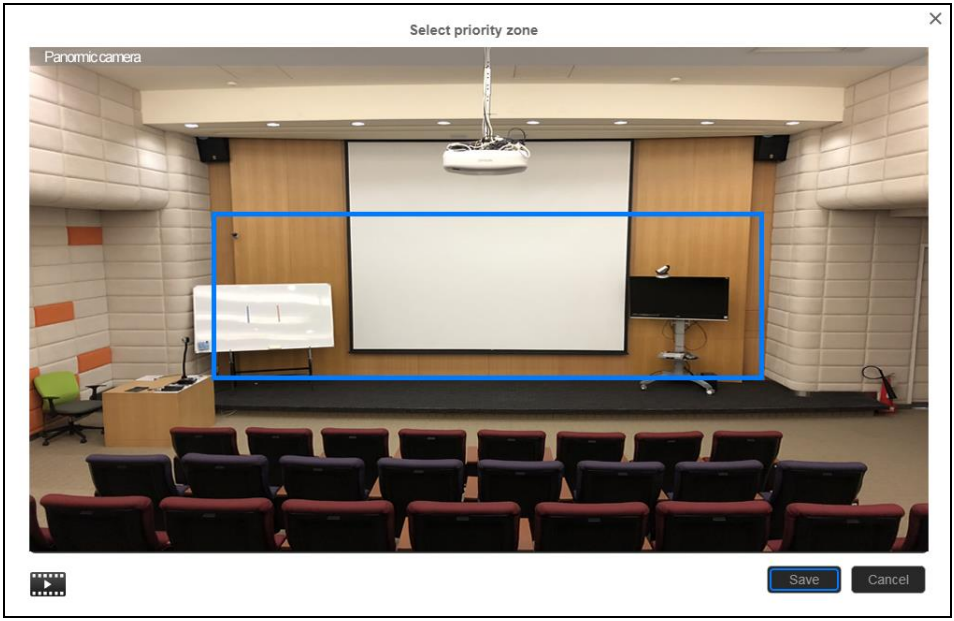
In Wide Area mode, the TR320 will start tracking when object enters the priority zone and the face of the object is detected.

Setup Priority Zone

If the TR320 detects motion in the defined zone it will be triggered to start tracking. If a priority zone isn't setup, then, the entire panoramic camera view will be the default active zone.

[Note] The screen of priority zone setting is based on the 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 the Select priority zone screen, drag and select the area that needs to be tracked (the blue frame is the tracking area). To re-select the area, just drag and select another wanted area.
4. Click "**Save**" to save the setting.

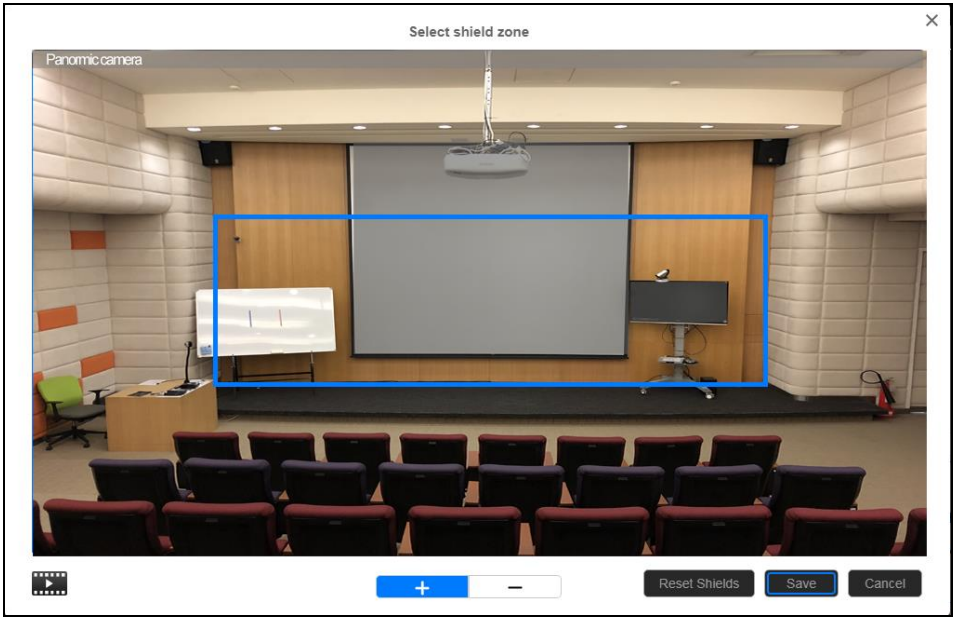


Setup Shielded Zone

Define the area(s) that you don't want the camera to track. The shielded zone(s) should be within the active zone. 8 shielded 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 shielded zone. Click **Skip** to stop tutorial. To watch again, select to play online tutorial.
3. In the Shielded tracking zone screen, click the "**+**" and select the area(s) that you don't want to track (a gray block will show on the screen). In the example below, you should shield the projector screen and the TV that may influence tracking. In fact, you should shield all areas where you think there might be "motion" interference. To delete the shielded zone area, click "**-**"and select the shield to delete. Or select "**Reset Shields**" to delete all shields.
4. Select "**Save**" to save the setting.

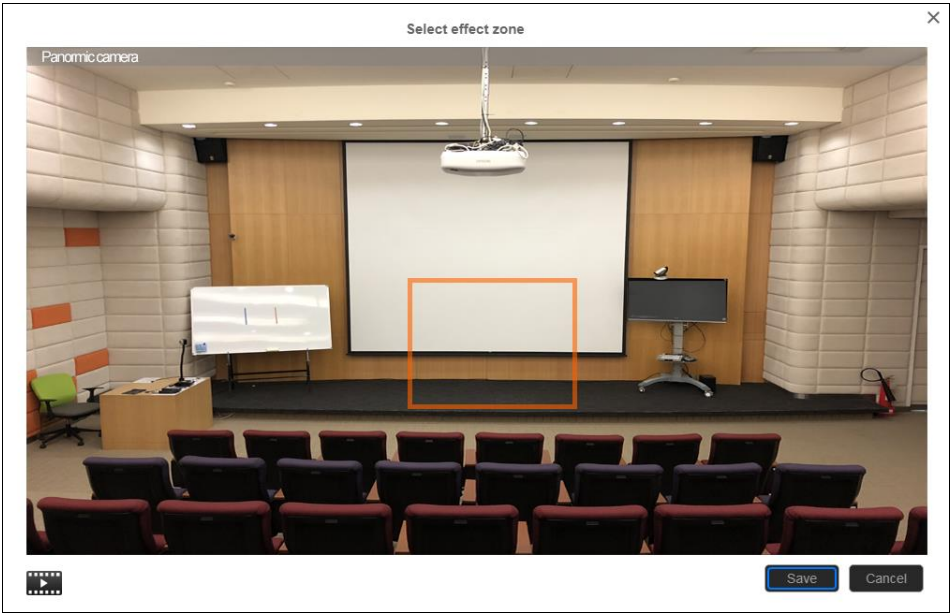


Setup Multi-people Detection

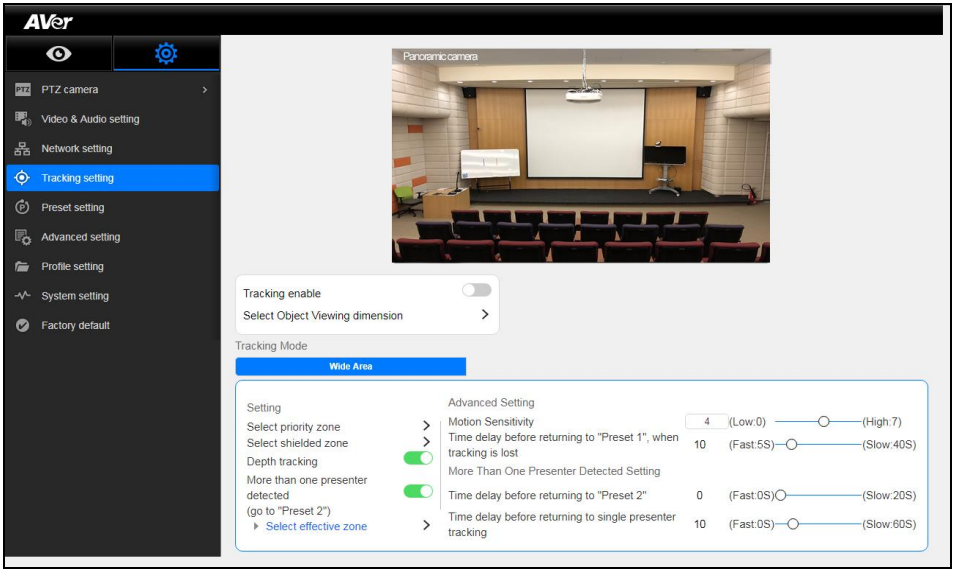
Define the area as a multiple people detection area. The camera will move to preset 2 and stop tracking the original object until the multi-people detection mode is stopped.

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

1. Select > **Tracking setting** > **Wide Area** > **Multi-people detection**.
2. Select "**Select effect zone**" to set the multiple people detection area. An online tutorial will display. Click **Skip** to stop tutorial. To watch again, select to play online tutorial.
3. In the "Select effect zone" screen, drag and set the area to be the designated 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.



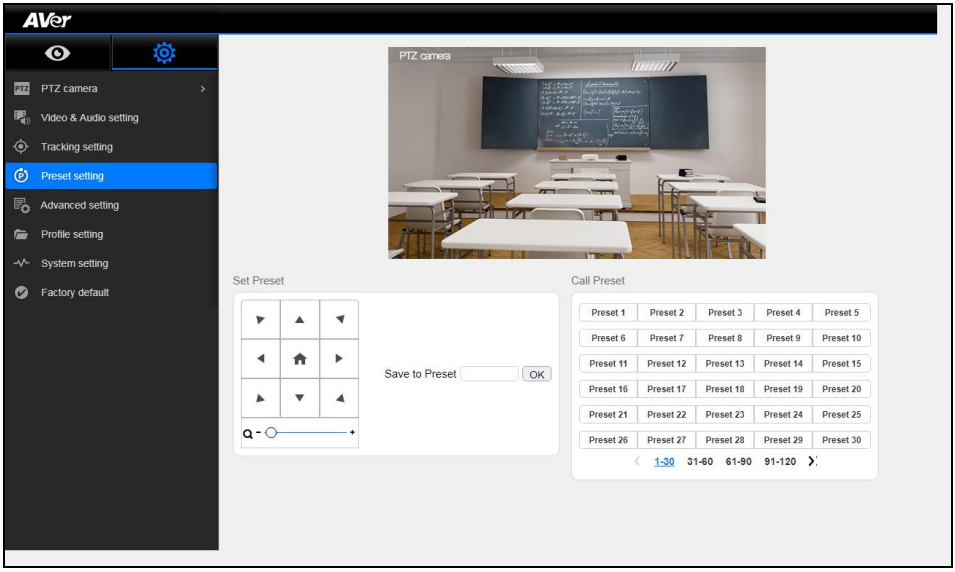
4. **Time to go preset 2:** set the time to move the camera to preset 2 after multi-people detection is activated.
5. **Time delay before returning to single presenter tracking:** set the time period to back to tracking the main presenter after multi-people detection mode is no longer effective



Preset Setup

Define the specific location to view when select preset number (1~255). **When TR320 loses tracking, it will back to the preset 1 position.**

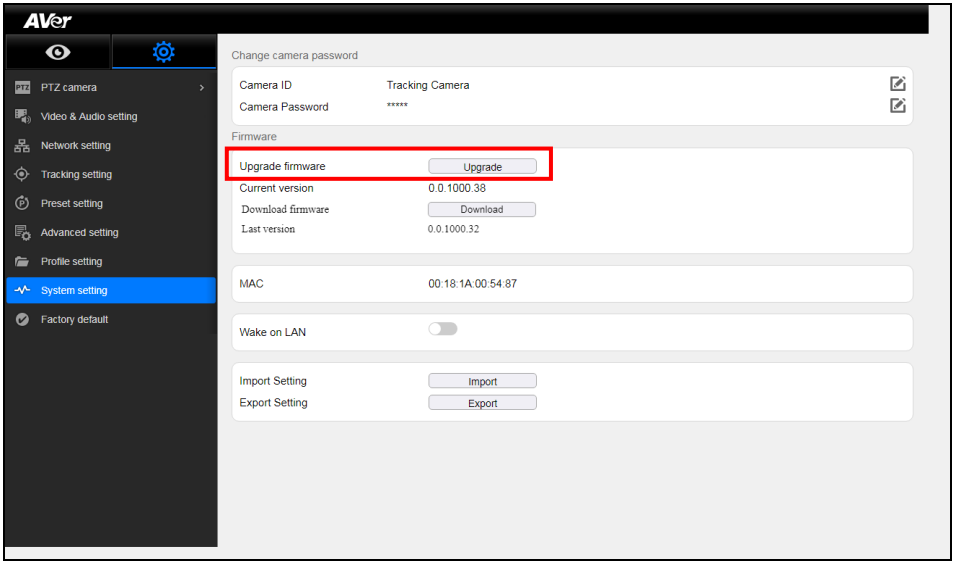
1. Open the browser and enter the IP address of TR320 to.
2. Select > **Preset Setting**.
3. Use the direction control panel to adjust the TR320 to the desired position.
4. Next, select the preset number in "**Save to Preset**" column and click "**Save**" button to save the preset.



5. Select any preset number in the Call Preset section to re-call that preset location immediately.
6. After calling any preset, the tracking feature will be turned off automatically. Remember to **turn on** the **tracking** manually. Or press on remote controller.

Firmware Update

1. Download the newest firmware from http://pro.averusa.com
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.



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 TR320:554/live_st1

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

Panoramic camera: rtsp://IP address of TR320:8554/live_st2

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

OSD SETUP

Before You Begin

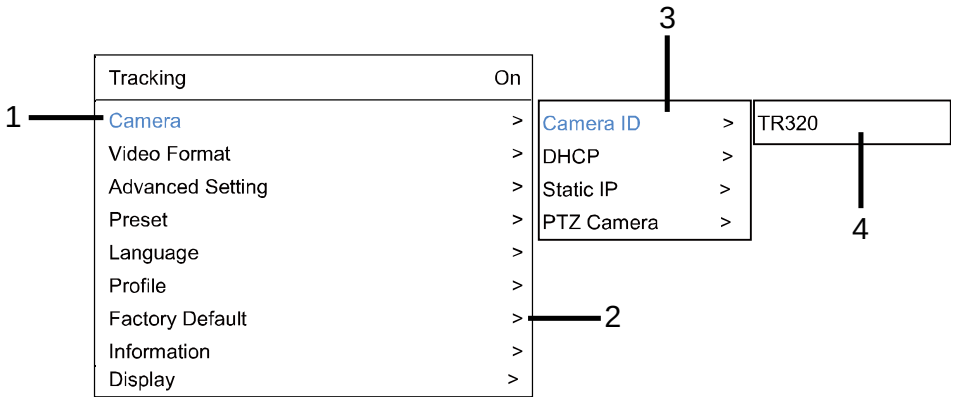
Make sure all connections are connected successfully before using the TR320.

First Time Use

Trigger OSD Menu

Press button on remote controller to call out the OSD menu. Use ▶ to enter sub-menu, use ▲ and ▼ to move to the selection and use ↵ to confirm the selection. Press ◀ button to go back to the previous level.

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 TR320.

There are two ways to setup IP address of TR320. Please follow the steps below to setup the IP address.

■ Static IP Address

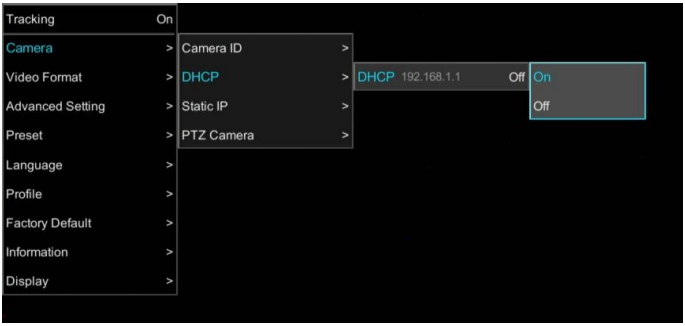
Assign a fixed IP address for TR320.

1. After starting-up, press button on 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**".

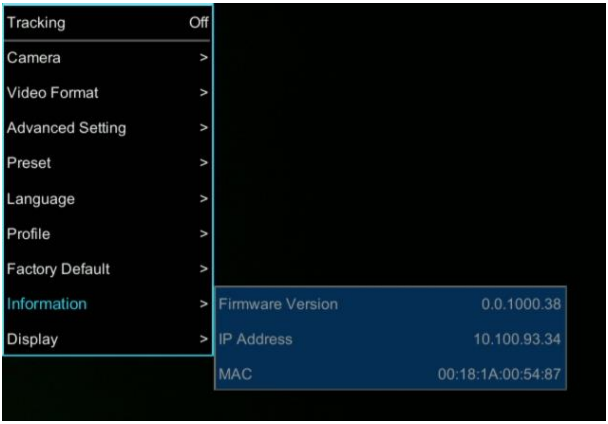
■ Dynamic IP Address(DHCP)

Get IP address from your local DHCP server.

1. After starting-up, press button on 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.

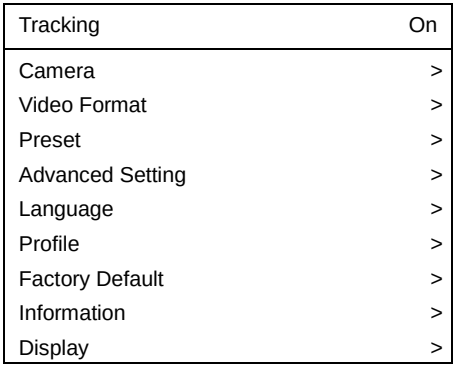


3. Use ▲ and ▼ buttons go to “**Information**” to check the IP address information.



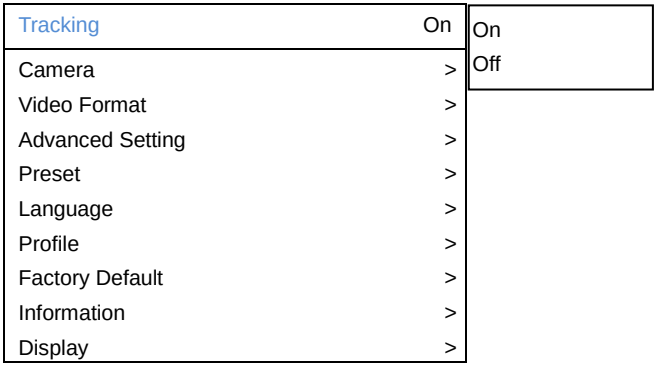
OSD Tree Map

Main



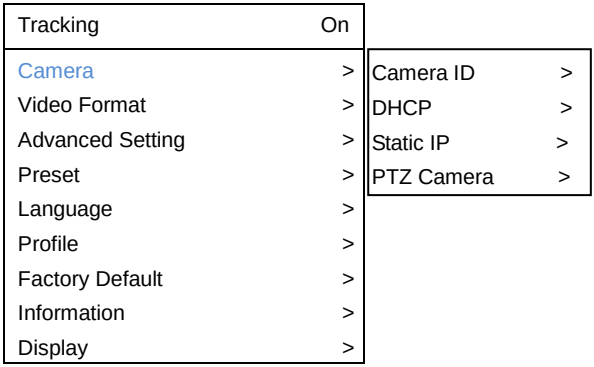
Tracking

- User can enable or disable auto-tracking.
- TR320 will not track an object automatically when the feature is disabled.
- To enable auto-tracking, please select “**On**”.
- To disable auto-tracking, select “**Off**”.



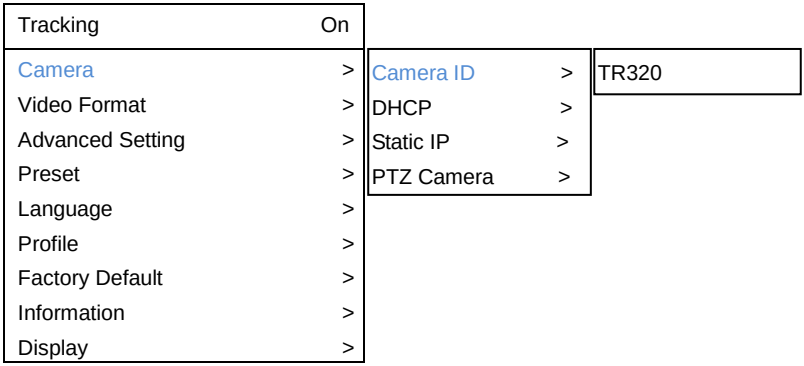
Camera

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



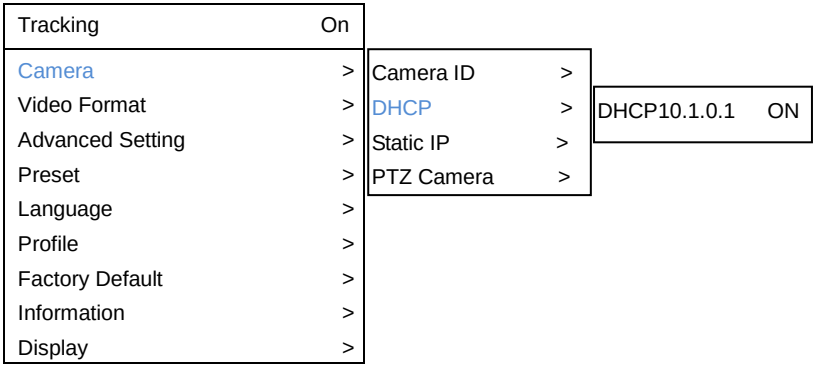
Camera ID

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



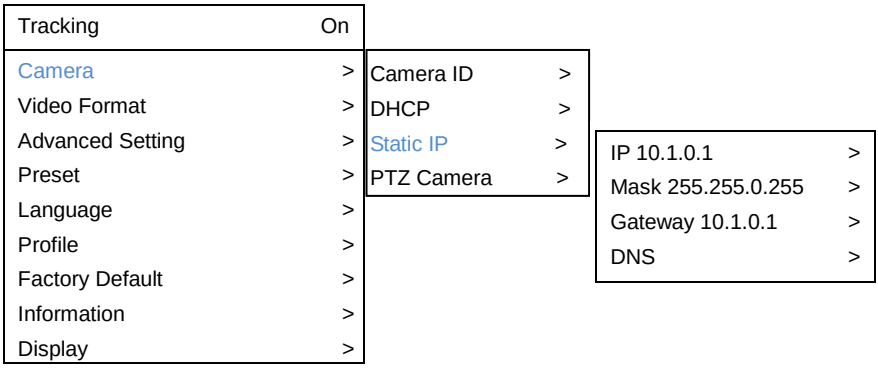
DHCP

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



Static IP

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



PTZ Camera

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

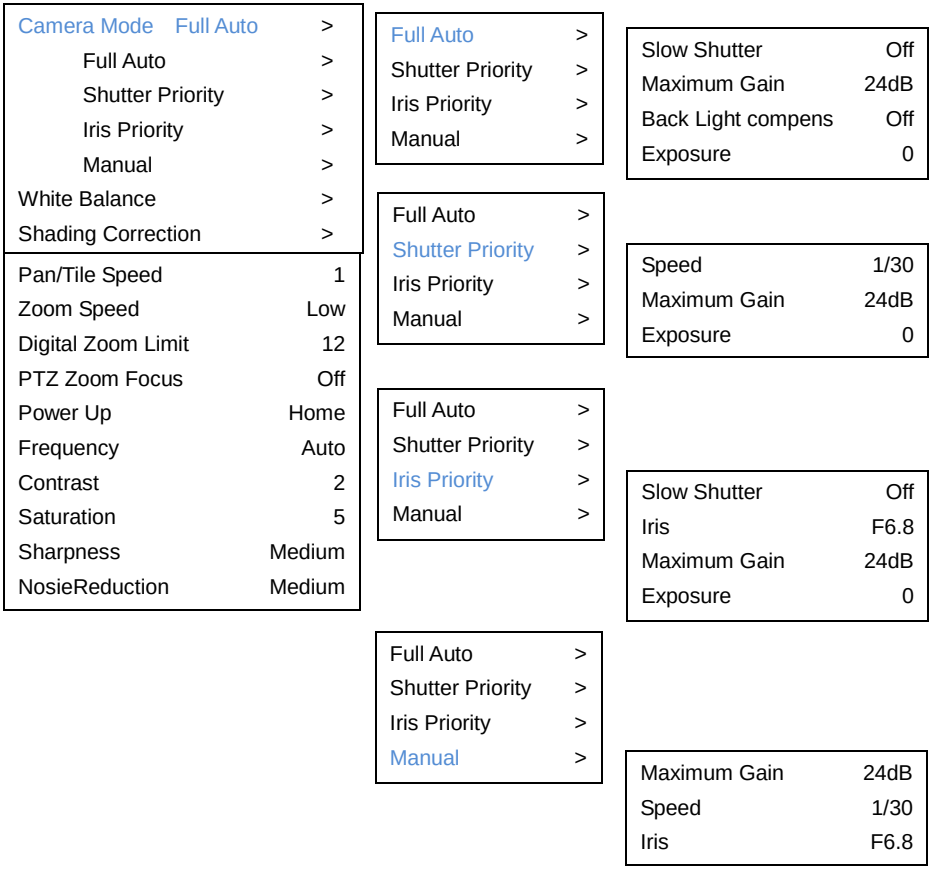
Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>
Display	

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

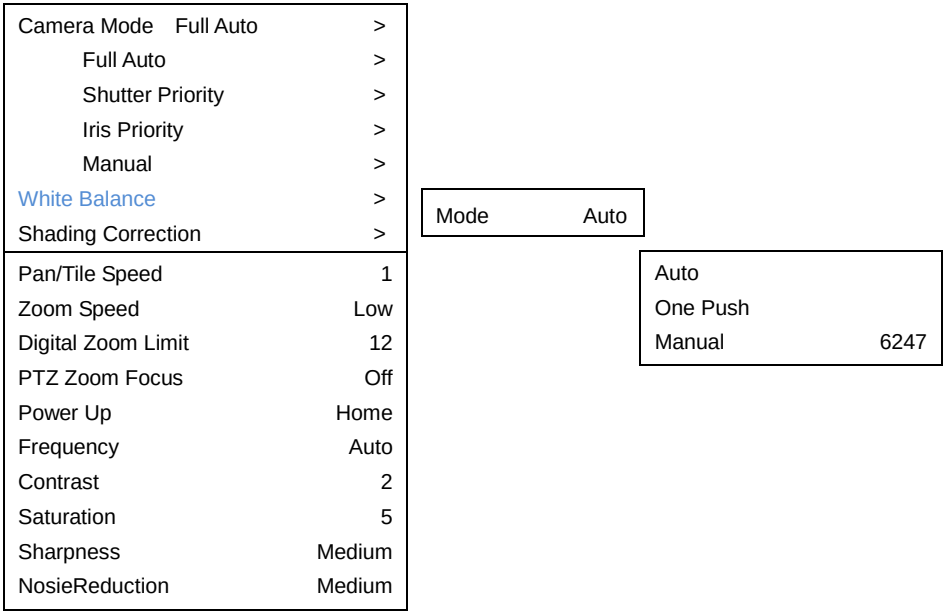
Camera Mode

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



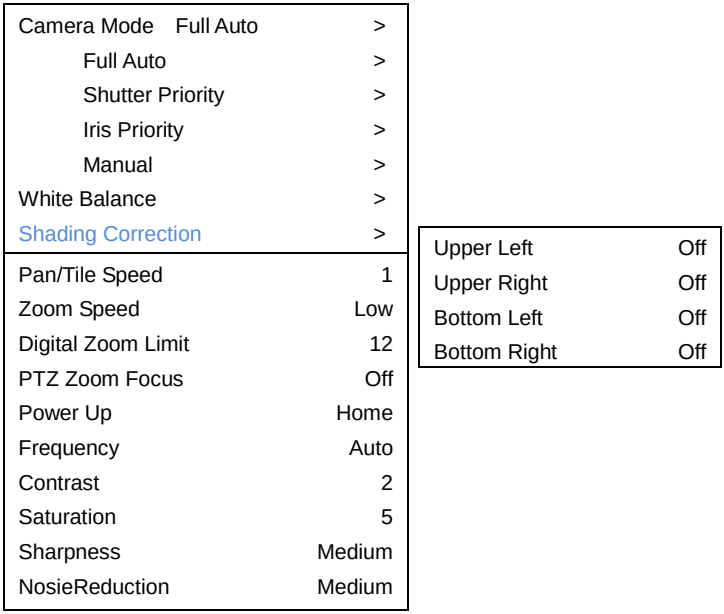
White Balance

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



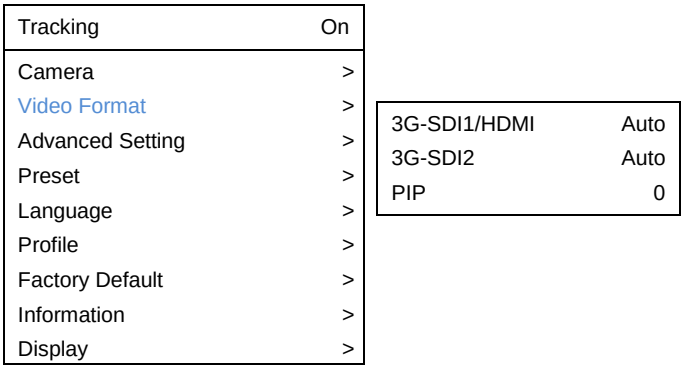
Shading Correction

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



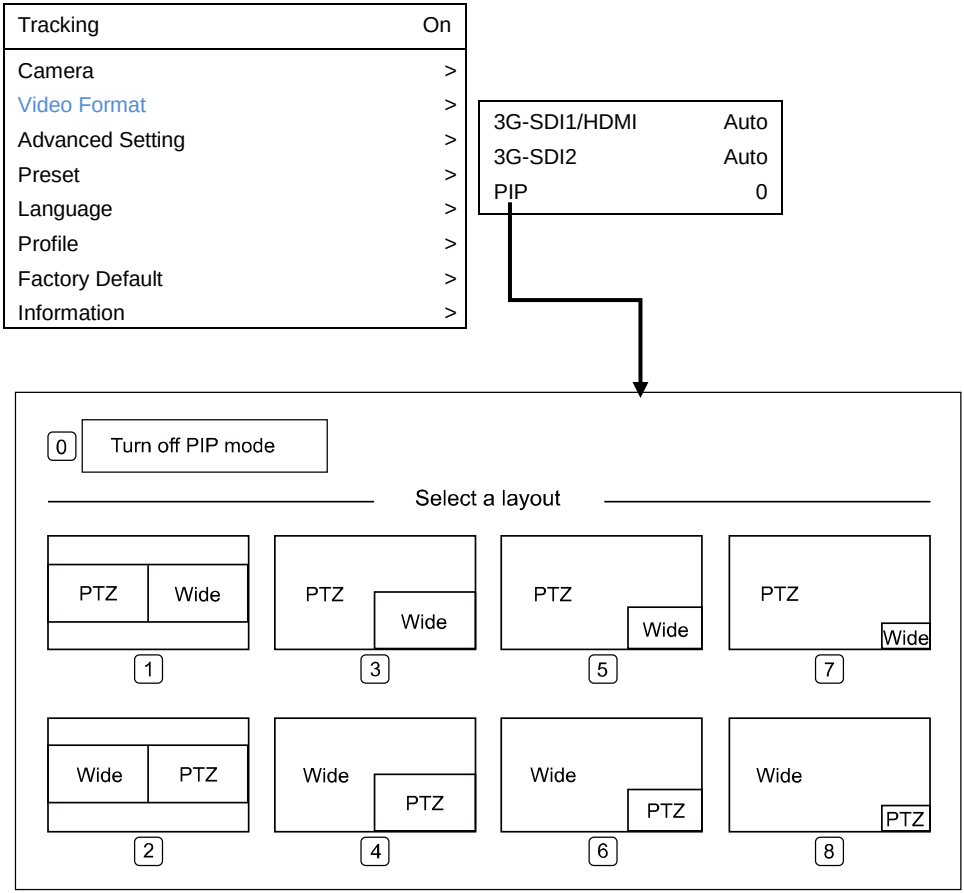
Video Format

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



PIP Mode

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



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

TR320 allows you to set 10 preset locations via remote controller.

■ **To set up preset point:**

1. Enter OSD and turn off the tracking function.
2. Move camera to the preferred location and zoom distance.
3. Press bottom > **Preset** > **Set** and use arrow key to assign a preset number and press enter button on remote controller.

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

Hold on the "**P**" button > 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 remote controller.

[Tip] Shortcut of calling a preset location: hold on the “**P**” button > press number you want to recall, ex: 1.

Language

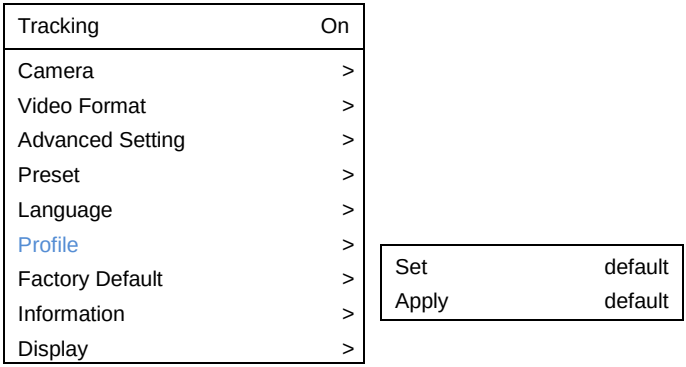
To change language, go to **OSD menu** > **Language**.

Profile

TR320 allows you to save 5 profiles.

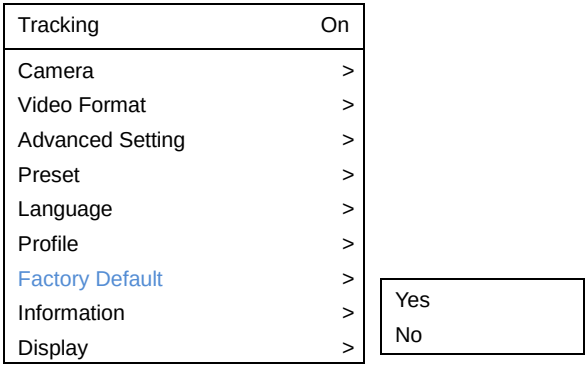
To set the profile, go to OSD menu > **Set** and use arrow key to assign a number and press enter button.

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



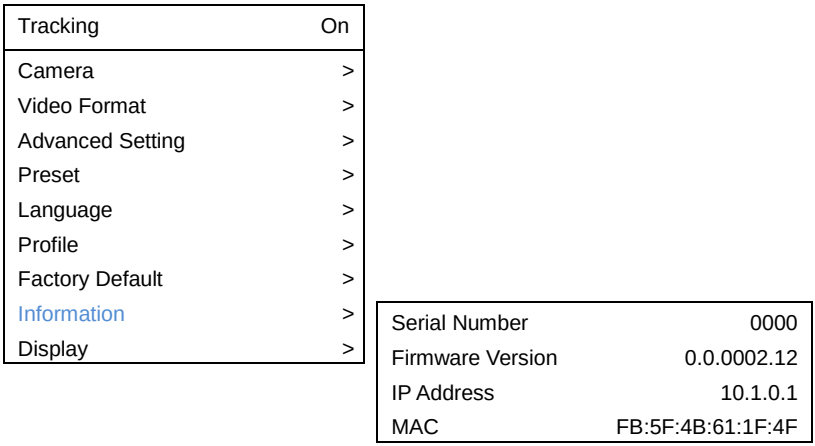
Factory Default

To reset the TR320 to default setting, go to OSD menu > **Factory Default** > **Yes** and press enter button.



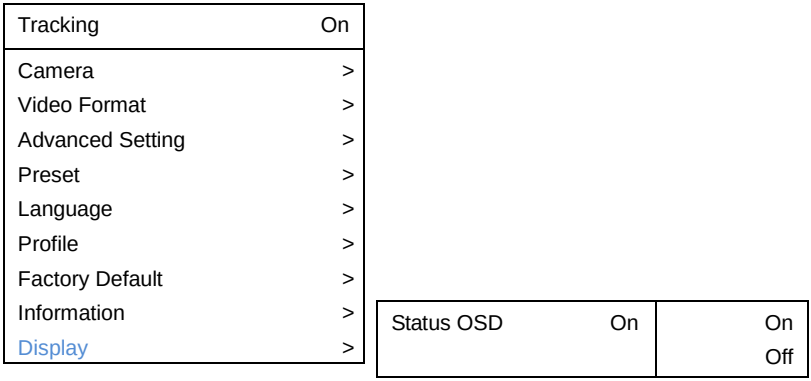
Information

To check out information on the TR320, ex: FW version. Go to OSD menu > **Information**.



Display

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



Hot Key

Press certain button on remote controller to perform hot key function.

Button	Action	Function
	Press and hold(3secs)	Power on/off camera. **[Note]** Only support at TR320 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. This mode only works in PIP Mode 2
8	Press eight times(88888888)	Set TR320 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 preset 1.

3. How does tracking work in Wide Area mode?

When a person enters the priority zone, the PTZ camera will move to the position of the object and perform face detection. After the face is detected, the PTZ camera will start following the person.

4. What is the definition of HOME position?

Home is the default position after the camera boots up. Users can define the position after the camera boots up by going to: WebUI PTZ > PTZ > power up ACT.

5. Are Presets 2 ~ 9 used for anything related to tracking?

If you turn off tracking, the TR320 becomes a regular PTZ camera. User can manipulate it to assign position via center control system command.

6. This camera supports several profiles; does each profile have different PRESETS?

Each profile has its own preset definition.

7. If we want to stop tracking and to focus on a specific location, what should I do?

Press "P" and the preset number. The camera will go to the assigned location.