

NETWORKTV

# Auto Tracking Software User Guide



## V8 Auto Tracking PTZ HD Camera

telephone: +44 (0)333 335 5019

email: [info@networktv.tv](mailto:info@networktv.tv) web: [www.networktv.tv](http://www.networktv.tv)

Release 1.0



## TABLE OF CONTENTS

<b>Preface</b>	3
<b>Notes</b>	4
<b>What's in the Box</b>	4
<b>Quick Start</b>	5
<b>Features</b>	6
<b>Product Specification</b>	7
<b>Main Unit</b>	10
<b>Dimensions</b>	11
<b>IR Remote Controller Explanation</b>	12
<b>RS-232 Interface</b>	14
<b>VISCA Network Configuration</b>	15
<b>Serial Communication Control</b>	16
<b>Command List</b>	16
<b>Menu Setting</b>	17
<b>Network Function</b>	22
<b>Maintenance and Troubleshooting</b>	21



## Preface

Thank you for choosing this Auto Tracking PTZ HD Camera and software.

This guide introduces the function, installation and operation of the auto tracking software that works in conjunction with the V8 auto tracking HD camera. Prior to installation and usage, please read this manual and also the User Guide for the V8 camera.

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## Software Application

Please download the software from the [www.networktv.tv](http://www.networktv.tv) website.

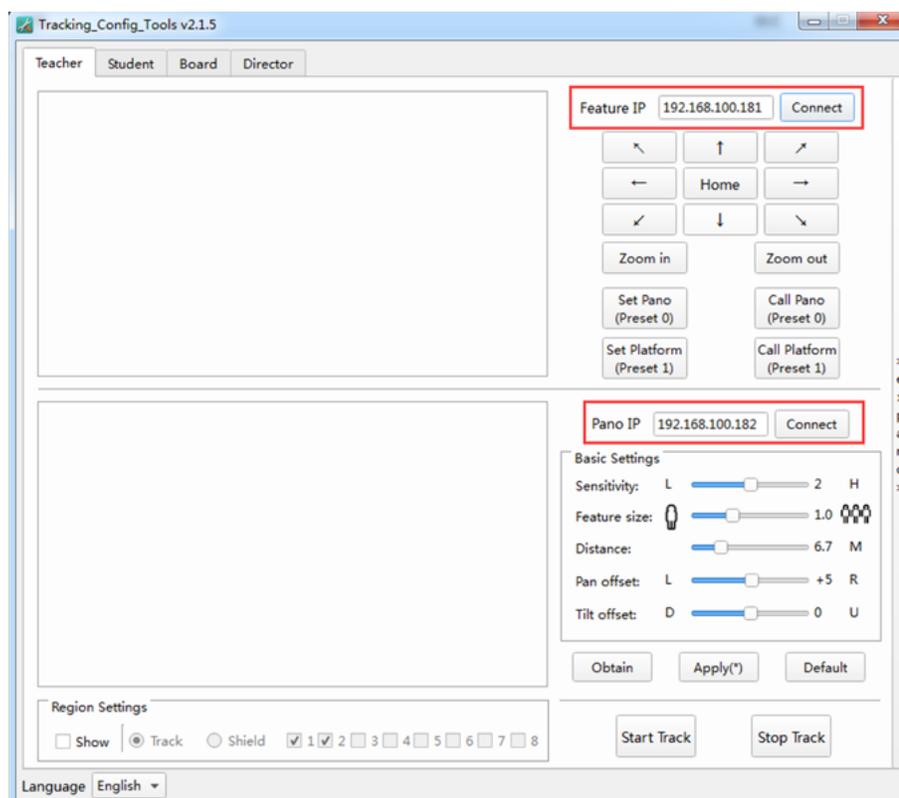
The software currently runs in a Windows operating system environment.

Once you have downloaded the software application you will have the thumbnail below on your desktop.



Double click the icon to start the auto tracking software.

When the software loads you will be presented with the interface as shown below.



# Teacher or Lecture Room Setup

## Step 1:

Enter the IP address of the cameras as shown in Fig.1 to connect the feature camera and the panorama camera and then click “Stop Track” to clear any previous settings and to start a new calibration.

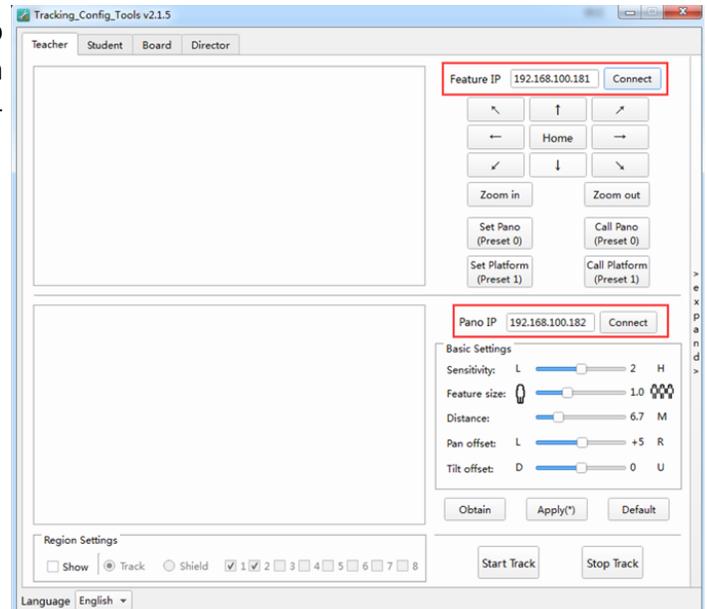


Fig. 1

## Step 2

When setting up the cameras, use the **【↑】** **【↓】** **【←】** **【→】** **【Zoom In】** **【Zoom Out】** buttons to adjust the camera positions in order to test the effectiveness of panorama scenes or feature scenes. See Fig.2.

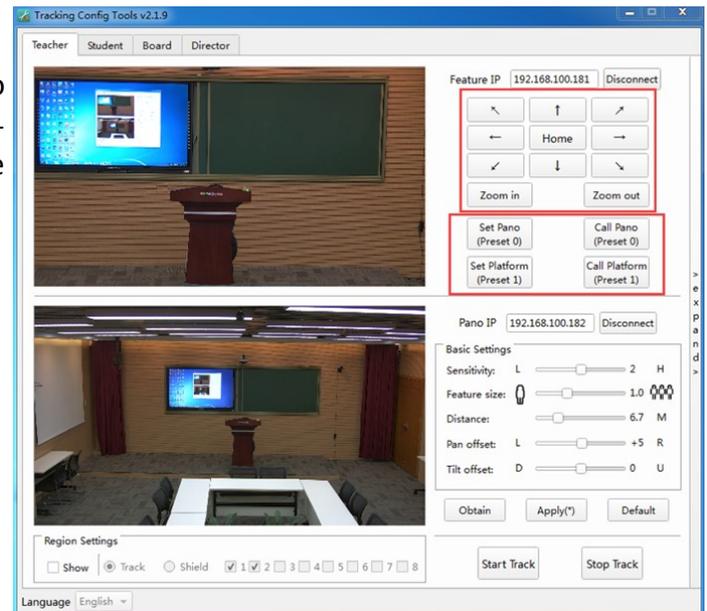


Fig. 2

## Basic Settings

### Step 3:

Adjust the parameters in “Basic Settings” and click the “Apply” button. See Fig.3.

- Sensitivity: sets tracking range and response speed for the camera based on 0~4; default value: 2.
- Feature Size: sets view range of the feature camera; setting range is 0.5~2.0; default value: 1.0.
- Distance: sets horizontal distance between the teacher camera and the podium; setting range is 3.0m~20.0m; default value: 6m.
- Pan Offset: sets camera horizontal range - 200~+200 (steps), 0.069°/step; Left offset: -200~0; Right offset: 0~200; default value: 0.
- Tilt Offset: sets camera vertical range -200~+200 (steps), 0.069°/step; Down offset: -200~0; Up offset: 0~200; default value: 0.

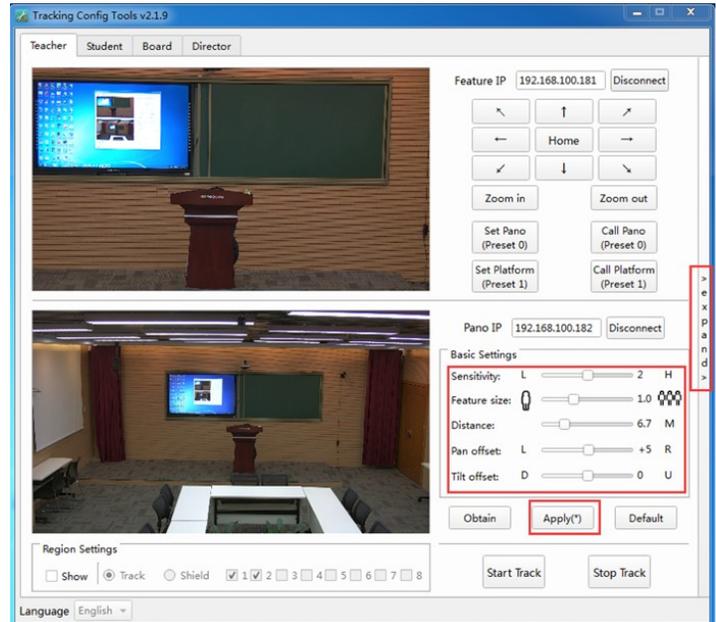


Fig. 3

## Tracking Area Settings

### Step 4:

Tracking area and shield area settings:

Tracking area settings: tick “Show” box and select “Track”. Click LMB (left mouse button) to make a start point and hold LMB to draw the tracking area. See Fig.4.

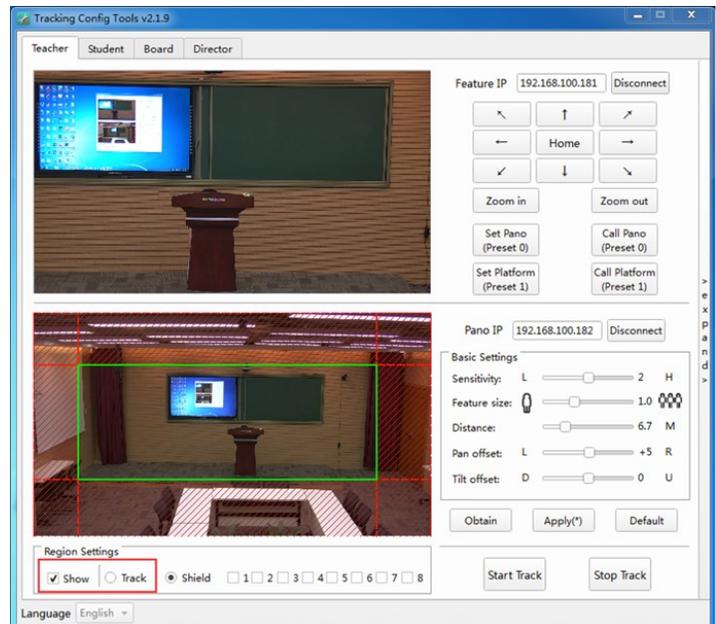


Fig. 4

## Shield Area Settings

Shield area settings: the shield area is used to screen interference sources in the tracking area; up to 8 shield areas are supported. Check “Show” box and select “Shield”; click LMB (left mouse button) to make a start point and hold LMB to draw shield areas. See Fig.5.

Note: A portion of tracking area should be kept beneath shield areas; shield areas cannot set on the left and right borders of tracking areas.

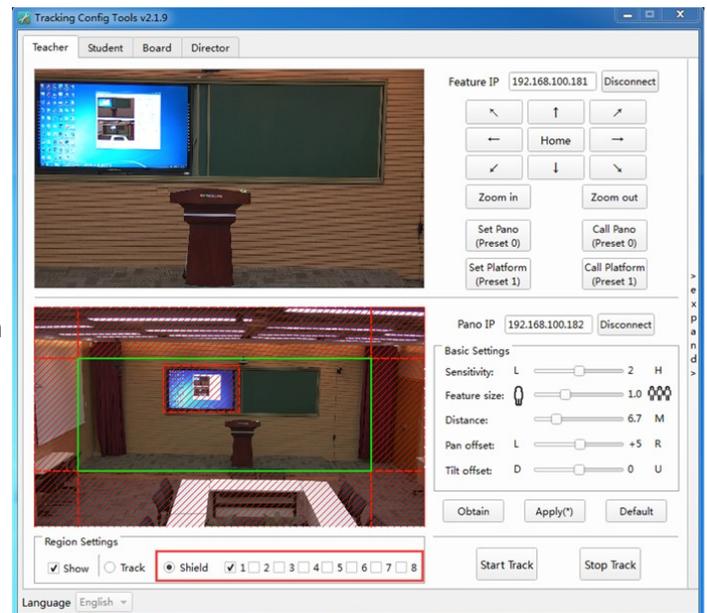


Fig. 5

**Advanced Settings:** Note: click “expand” to access advanced settings.

## Calibration Settings

Step 5:

Panorama scene camera calibration: check “Show calibration cross” box to show the calibration cross on the screen. Use PTZ to control camera positions and make sure the centre point of feature scene camera and panorama scene camera are converged. Then click “Calibration” to calibrate cameras; click “Reset” to get back to calibrated positions. See Fig. 6.

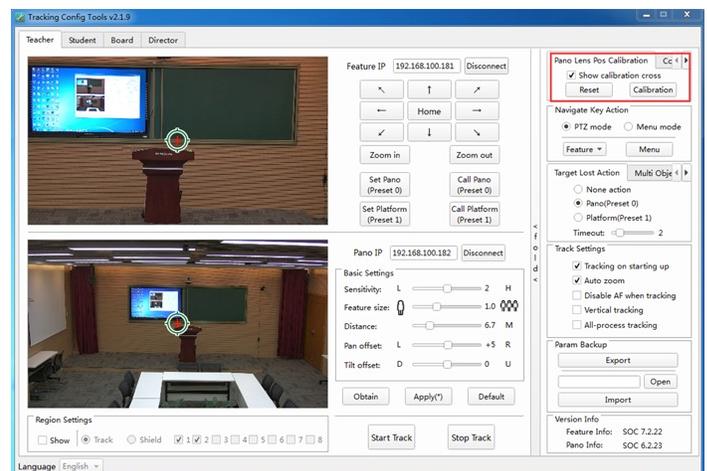
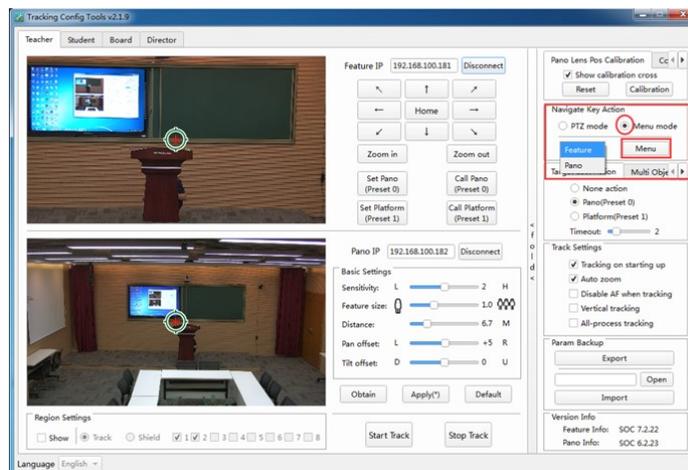
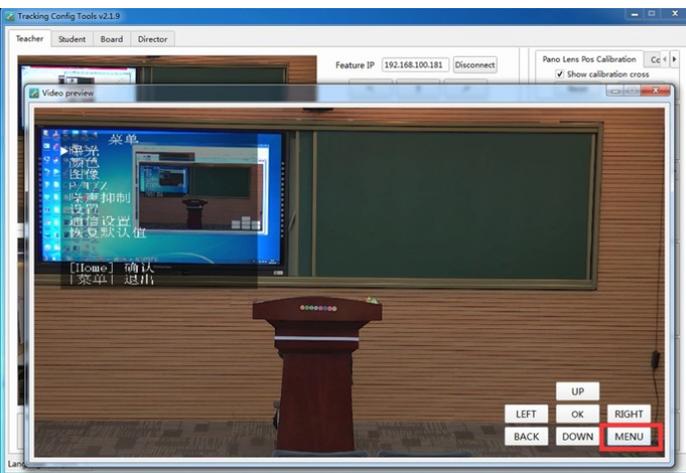


Fig. 6



## Navigate Key Action

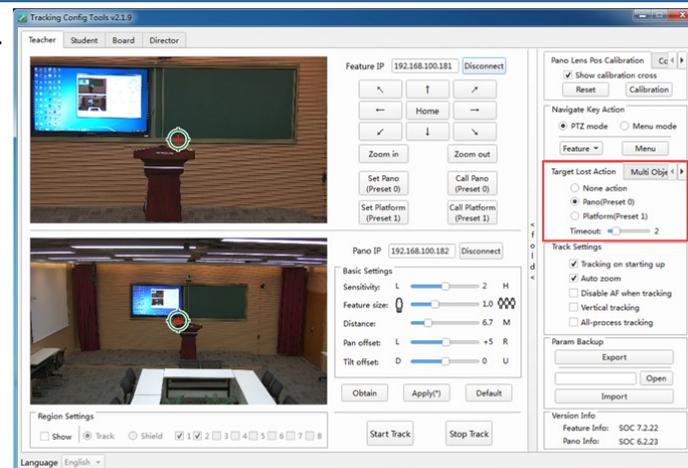
Navigate Key Action: PTZ mode and menu mode are available. In the menu mode, select “Feature” or “Pano” camera and click “Menu” button to show camera OSD (on-screen display) menu. See Fig. 7 and Fig. 8; in the menu mode, the feature camera can be controlled manually.



## Target Lost Action

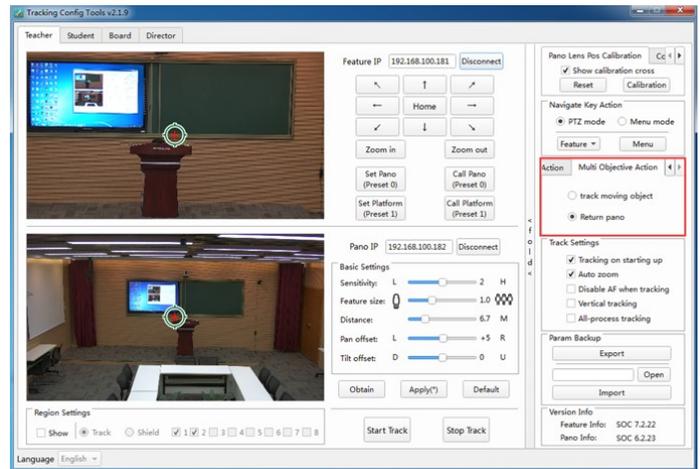
Target Lost Action: set up feature camera action after target is lost. Three actions can be selected: None action, Pano (Preset0), Platform (Preset 1).

Timeout: execute Target Lost Action after Timeout when target is lost; setting range: 0-15s; default value: 3s. See Fig. 9.



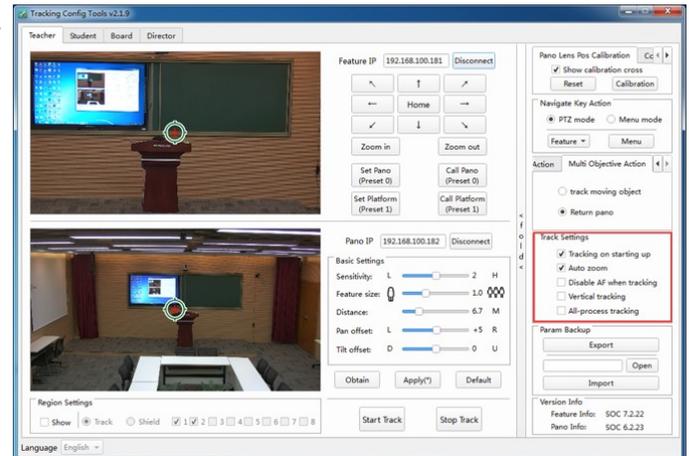
# Multi Objective Action

Multi Objective Action is used to set up the tracking status when there are multiple targets in teachers tracking area. Two actions can be selected: Track moving objective and Return Pano. When teacher numbers reduced from multiple targets to single target, cameras need 5 seconds delay before tracking single target. See Fig. 10.



# Track Settings

Track Settings is used to set up the operation mode of tracking cameras. Five operation modes are available: Tracking on starting up, Auto zoom, Disable AF when tracking, Vertical tracking and All-process tracking. Operation mode takes effect after checking “√”. See Fig. 11.



# Track Settings

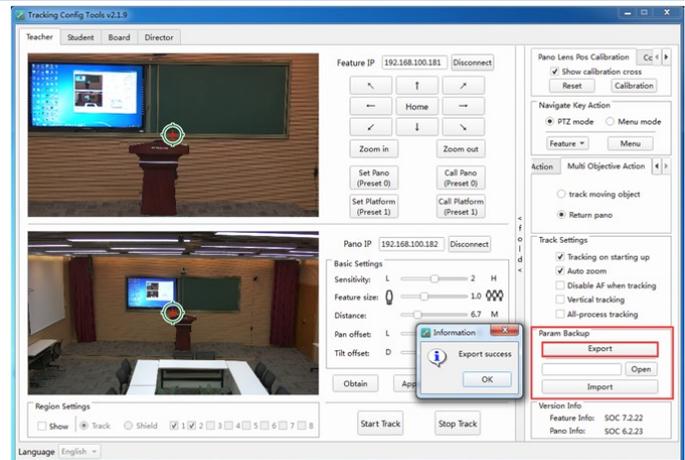


## Main Unit

Param Backup is used to import and export setting parameters of feature cameras to simplify setting operations under similar conditions. See Fig. 12.

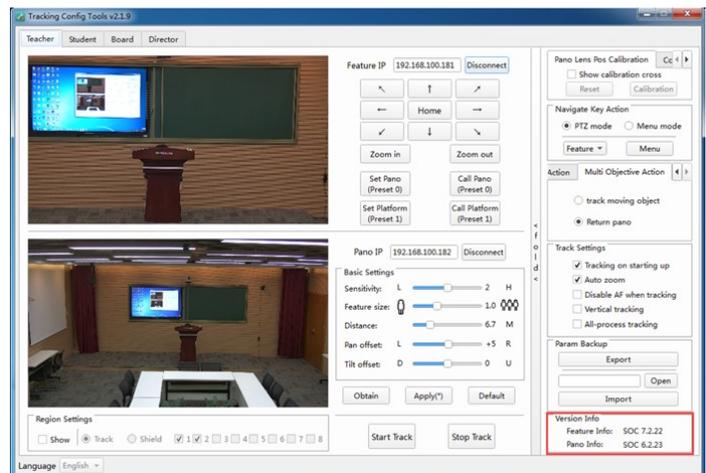
Export: when camera stops tracking, click “Export” to backup tracking parameters. Click “Open” to show file path.

Import: when camera stops tracking, click “Open” and select a parameter file. Then click “Import” to import the file.



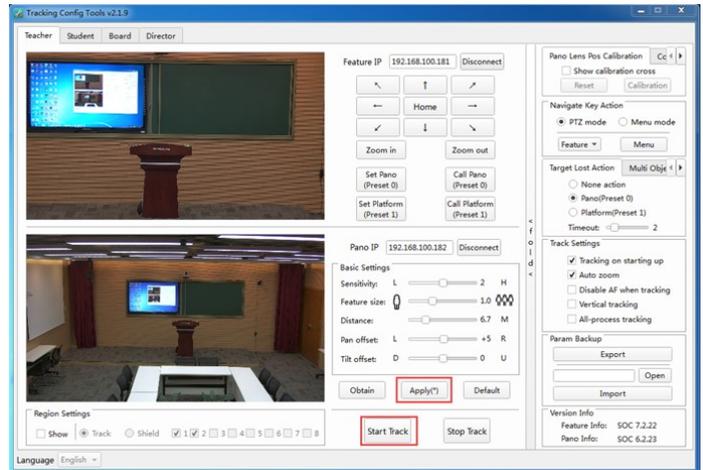
## Version Info

Version Info is used to show version information of feature and pano cameras. See Fig. 13.



# Start Tracking

**Step 6:**  
 Start tracking: after finishing step 1 ~5, click “Apply” button for the parameters to take effect. Click “Start Track” for auto tracking. See Fig. 14.

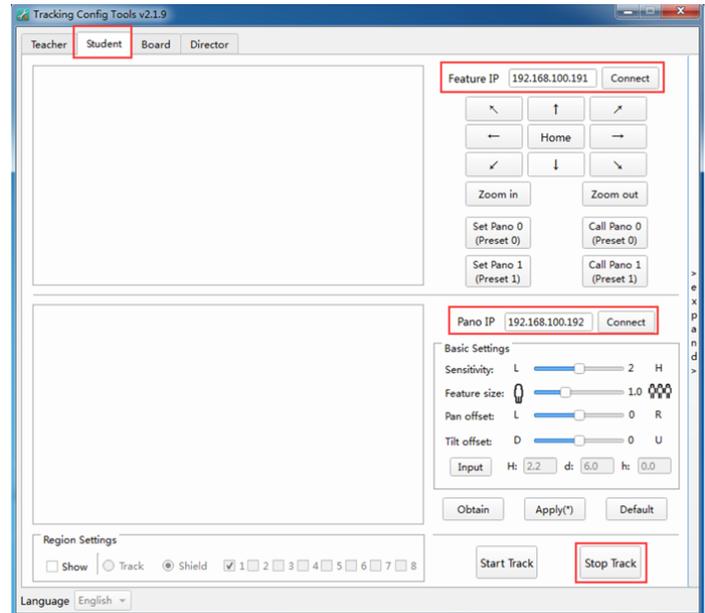




## Student Classroom Setup

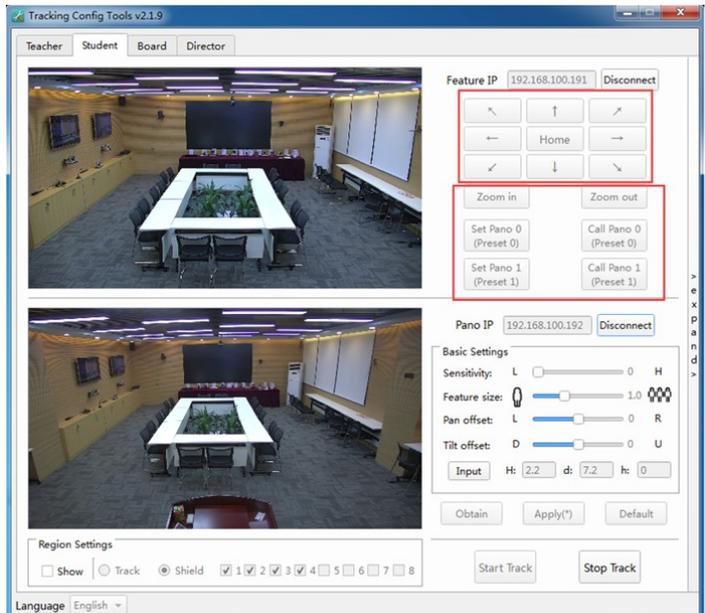
### Step 1:

Enter the IP address showed in Fig.15 to connect the feature camera and the panorama camera and then click “Stop Track” to start calibration. See Fig. 15.



### Step 2:

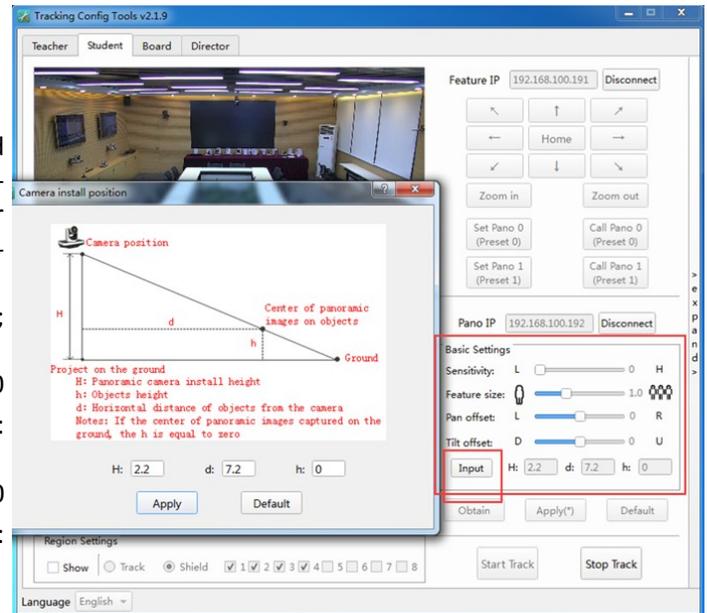
When setting cameras, use **【↑】** **【↓】** **【←】** **【→】** **【Zoom In】** **【Zoom Out】** to adjust camera positions in order to test the effectiveness of Panorama or feature scenes. See Fig. 16.



**Step 3:**

Adjust parameters in “Basic Settings” and click the “Apply” button to take effect. See Fig. 17.

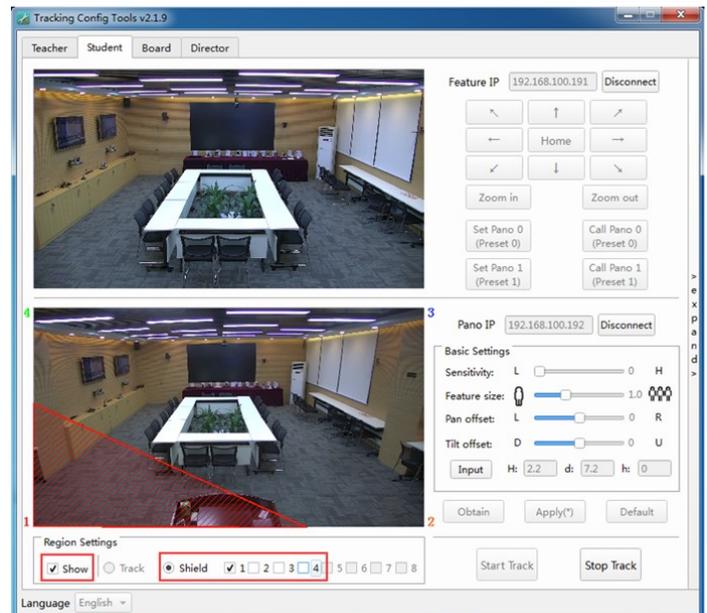
- **Sensitivity:** sets tracking range and response speed based on different tracking targets: for primary school students and junior high school student, set value to 3~4; for senior high school students, set value to 2; for college student, set value to 0 or 1. Default value: 2.
- **Feature Size:** sets view range of the feature camera; setting range: 0.5~2.0; default value: 1.0.
- **Pan Offset:** sets camera horizontal range -200~+200 (steps), 0.069°/step; Left offset: -200~0; Right offset: 0~200; default value: 0.
- **Tilt Offset:** sets camera vertical range -200~+200 (steps), 0.069°/step; Down offset: -200~0; Up offset:



**Step 4:**

Shield area settings:

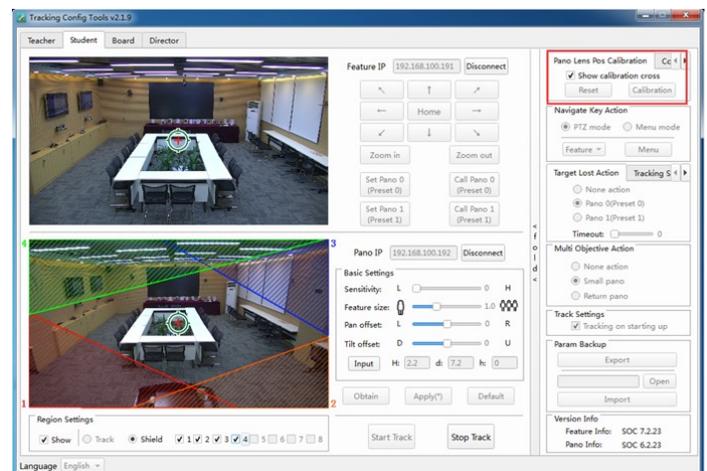
Shield area settings: tick “Show” box and select “/” in the shield area box such as box 1. Click left border of shield area 1 with LMB (left mouse button) and hold LMB in anti-clockwise direction to right border. See Fig. 18.



**Step 5:**

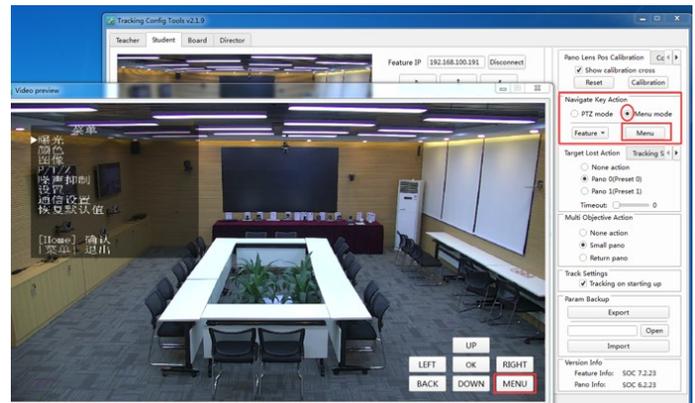
Advanced settings: click “expand” to access advanced settings.

Panorama camera calibration: check “Show calibration cross” box to show the calibration cross on the screen. Use PTZ to control camera positions and make sure the center point of feature scene camera and Panorama camera are converged. Then click “Calibration” to calibrate cameras; click “Reset” to get back to calibrated positions. See Fig. 19.



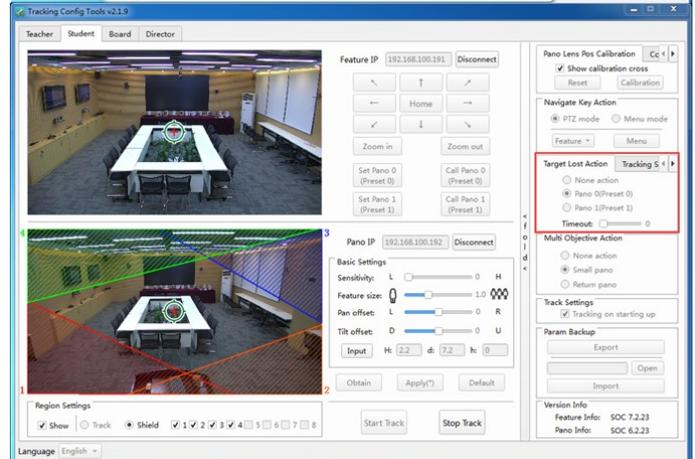


**Navigate Key Action:** PTZ mode and menu mode are available. In the menu mode, select “Feature” or “Pano” camera and click “Menu” button to show camera OSD (on-screen display) menu. See Fig. 20; in the menu mode, the feature camera can be controlled manually.

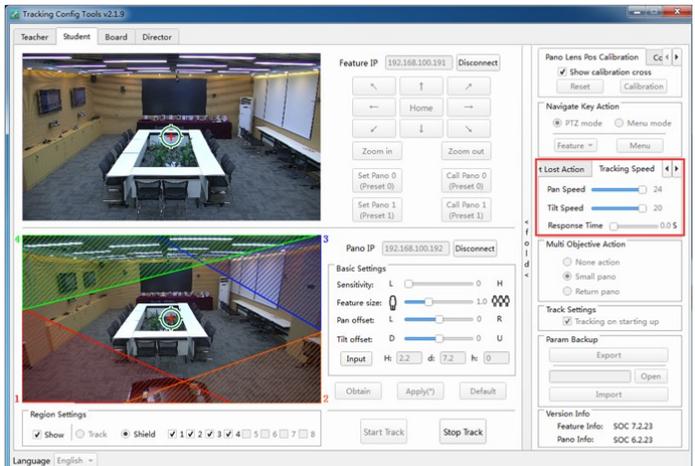


**Target Lost Action:** set up feature camera action after target is lost. Three actions can be selected: None action, Pano (Preset0), Platform (Preset 1).

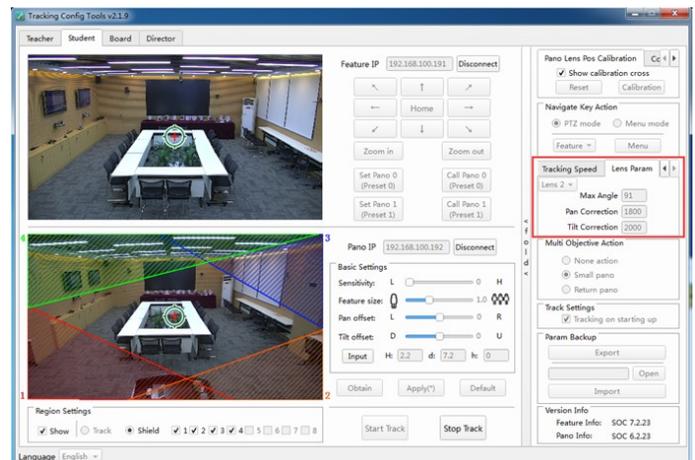
**Timeout:** execute Target Lost Action after Timeout when target is lost; setting range: 0-15s; default value: 0s. See Fig. 21.



**Tracking Speed:** sets the vertical tracking speed (Tilt Speed) and horizontal tracking speed (Pan Speed) of the feature camera;  
**Response Time:** sets the response time of the tracking camera when a student stands up. Default time: 0.6s. See Fig. 22.



**Lens Param:** sets the parameters of panorama camera. “Lens 1” is for 3.6mm lens and “Lens 2” is for 3mm lens. Default lens: lens 1. See Fig 23.



Multi Objective Action is used to set up the tracking status when there are multiple students standing up. Three actions can be selected: None action, Small pano, Return pano. Default settings: small pano.

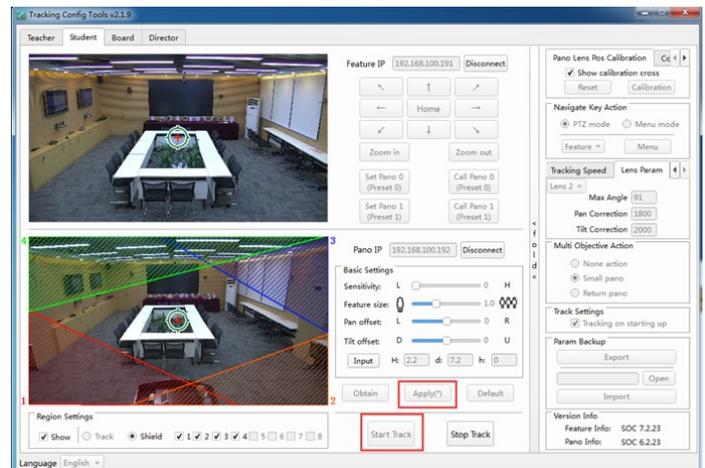
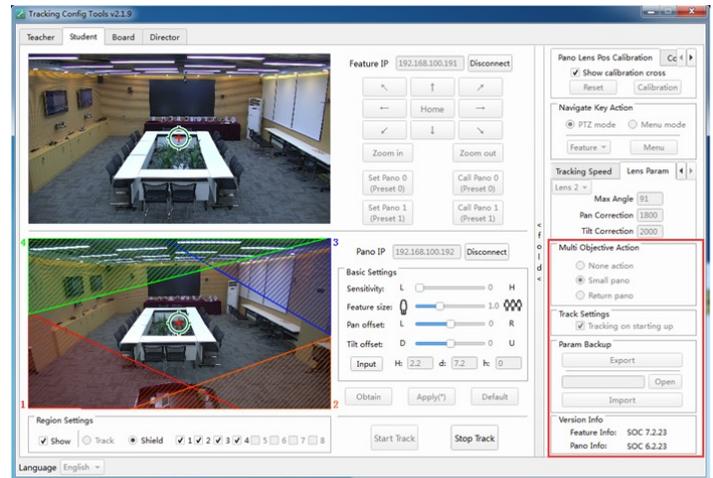
Track Settings is used to set up the operation mode of tracking cameras. Five operation modes are available: Tracking on starting up, Auto zoom, Disable AF when tracking, Vertical tracking and All-process tracking. Operation mode takes effect after ticking “√”.

Param Backup is used to import and export setting parameters of the feature camera to simplify setting operations under similar conditions.

Export: when camera stops tracking, click “Export” to backup tracking parameters. Click “Open” to show file path.

**Step 6:**

Start tracking: after finishing step 1 ~5, click “Apply” button for the parameters to take effect. Click “Start Track” for auto tracking. See Fig. 25.





## Director

### 1.3 Director

Director settings are used to configure the communication parameters between the teacher camera, the student camera and the board system. In order to set Director parameters, it is required to enter the board system IP and receiving port number as well as the communication commands among teacher camera, student camera and board system.

Step 1:

Set up communication protocols, command formats and director strategies, etc. See Fig. 26.

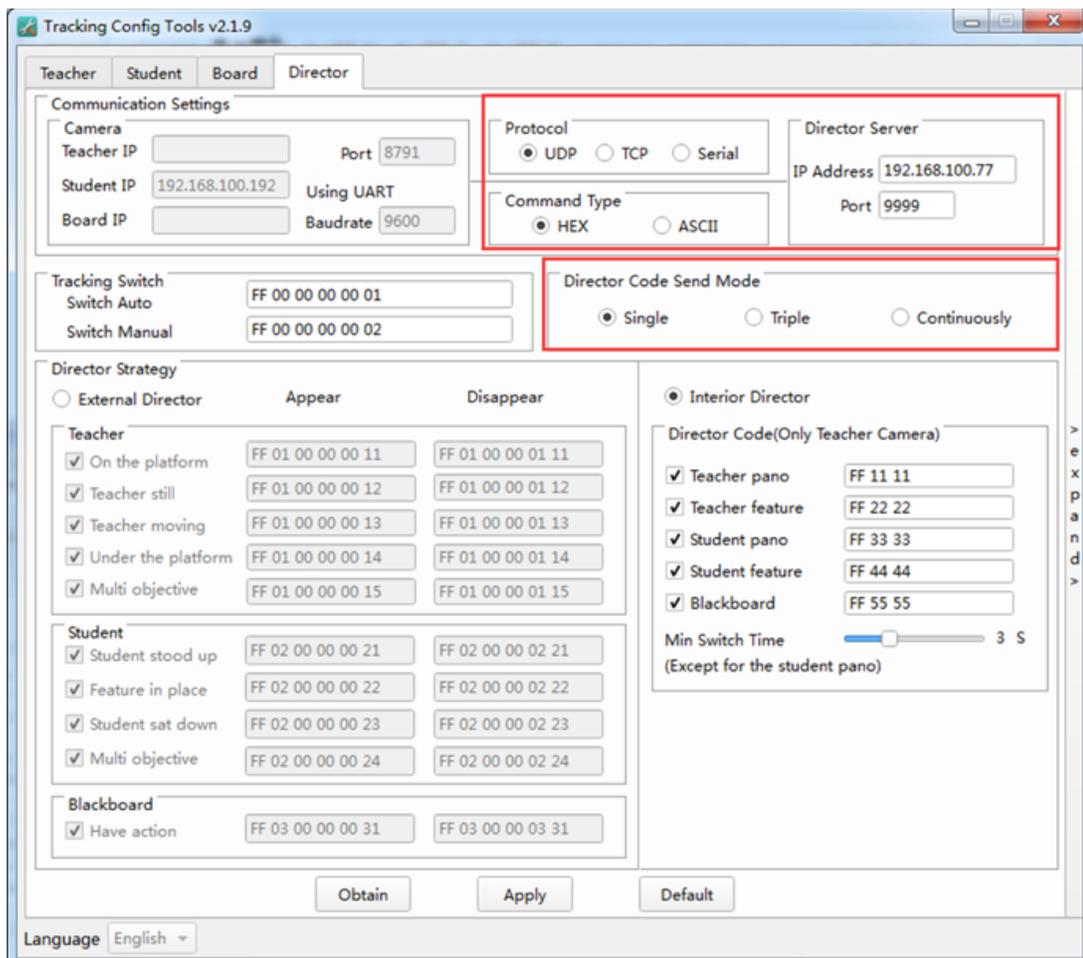
Port: when the UDP is selected as the communication protocol, the default port number is 8791 (no adjustment is permitted).

Baudrate: when the serial port is used for the communication protocol, the baudrate of the serial port is 9600K bps (no adjustment is permitted).

Protocol: the communication between the camera and the director system can be serial port or network. It is required to select one from UDP, TCP or serial port. Default setting: UDP.

Command Type:

It is used to select the type format between the camera and the director system. Support hexadecimal or character string for your free choice. Default format: hexadecimal.



**Step 2:**

Select director mode and fill in director strategy. Default setting: Interior Director. See Fig. 27.

Switch Auto: when “Switch Auto” is selected, the tracking mode is switched to automatic tracking. Default value: ff 00 00 00 00 01 (adjustment is available).

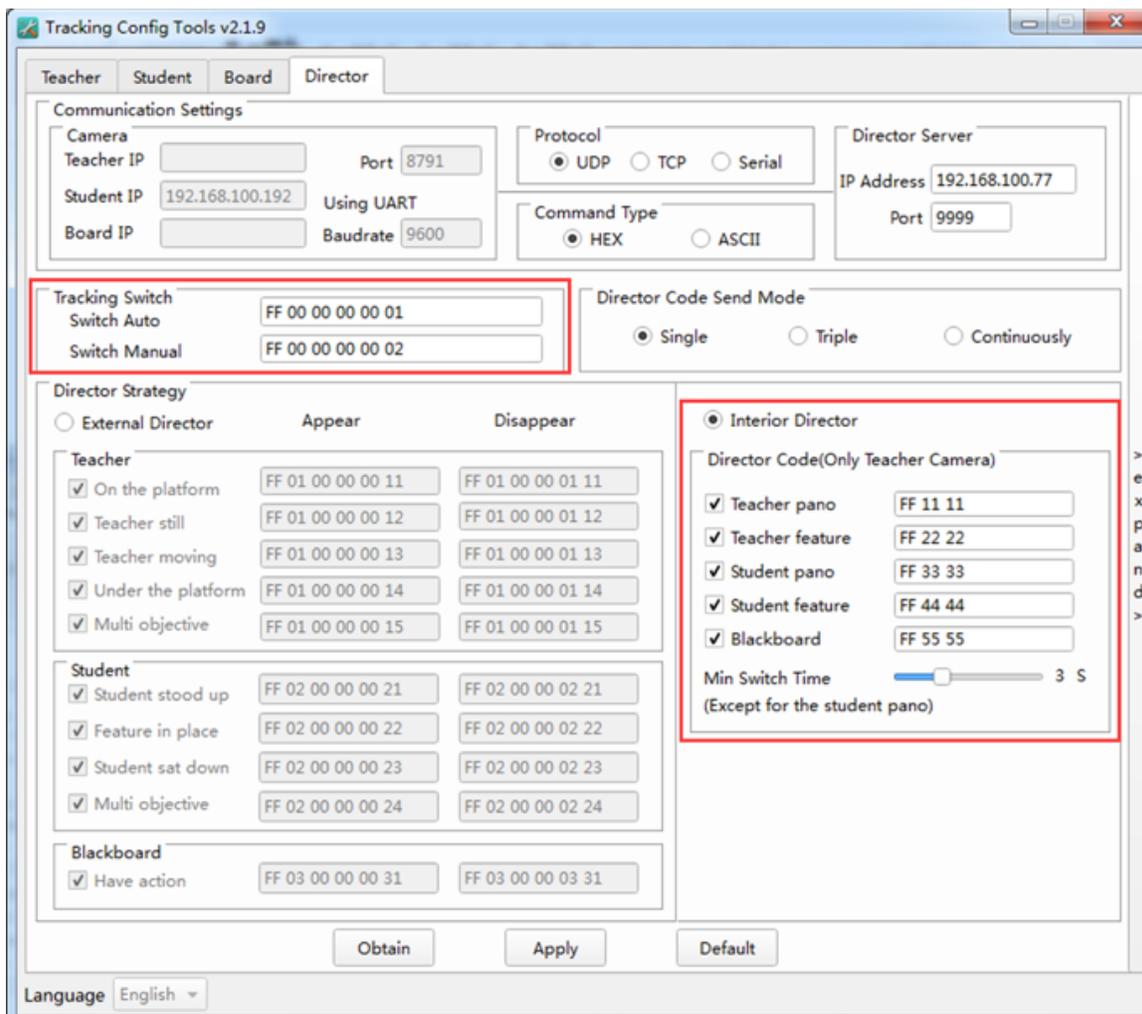
Switch Manual: when “Switch Manual” is selected, the tracking mode is switched to manual tracking. Default value: ff 00 00 00 00 02 (adjustment is available).

Director Strategy:

External Director: the board camera, the student camera and the teacher camera will send current status codes to the director system independently. For example: board camera has two status (action, no action); student camera has four status (stand up, take a seat, sit down and multiple targets); teacher camera has five status (step on the stage, no move, move, step down the stage, multiple targets). The director system needs to collect status from three cameras for directing the broadcast. For example, when the teacher steps on the stage, the PRM displays teacher’s feature scene; when the teacher steps down the stage, the PRM displays student’s panorama scene; when a student stands up, the PRM displays student’s feature scene; when multiple students stand up, the PRM displays student’s panorama scene.

Interior Director: the teacher camera will receive the status of board camera, student camera and teacher camera and send switch codes to the director system for broadcast. The director system needs not to judge current status. That is, when there is movement in board camera, the camera will send board switch code. If there is no movement in board camera, the system will judge if there is movement in student’s camera and finally judge if there is movement in teacher’s camera.

Min Switch Time: when the minimum switch time is locked, the broadcast image can switch to images with higher priority. Student feature scenes will not be processed.



**Step 3:**

After setting is complete, click “Apply” for the parameters to take effect. See Fig. 28.

The screenshot shows the 'Tracking Config Tools v2.1.9' application window with the 'Director' tab selected. The interface is divided into several sections:

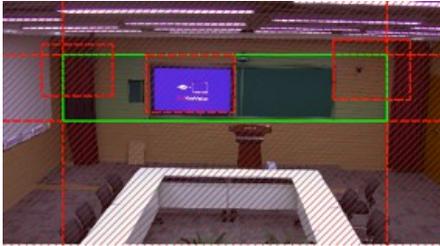
- Communication Settings:** Includes fields for Teacher IP, Student IP (192.168.100.192), Board IP, Port (8791), Baudrate (9600), Protocol (UDP selected), and Director Server IP Address (192.168.100.77) and Port (9999). Command Type is set to HEX.
- Tracking Switch:** Fields for Switch Auto (FF 00 00 00 00 01) and Switch Manual (FF 00 00 00 00 02).
- Director Code Send Mode:** Radio buttons for Single (selected), Triple, and Continuously.
- Director Strategy:** Radio buttons for External Director and Interior Director (selected). It includes a table for 'Appear' and 'Disappear' codes for Teacher, Student, and Blackboard actions.
- Director Code(Only Teacher Camera):** Checkboxes and input fields for Teacher pano (FF 11 11), Teacher feature (FF 22 22), Student pano (FF 33 33), Student feature (FF 44 44), and Blackboard (FF 55 55). A slider for 'Min Switch Time' is set to 3 S.

At the bottom, there are buttons for 'Obtain', 'Apply' (highlighted with a red box), and 'Default'. A 'Language' dropdown is set to 'English'.

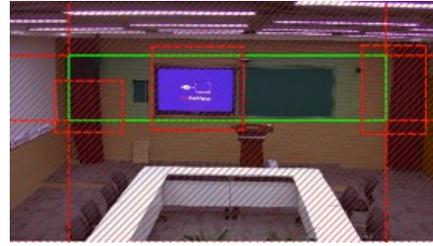


## Precautions

1. After setting the parameters, it is required to click “Apply” button for the system to take effect. Otherwise the changed parameters will not work.
2. A portion of tracking area should be kept beneath teacher shield areas; shield areas cannot set on the left and right borders of tracking areas. Otherwise when the leaves the tracking area from shield area, the target will not lose.



Correct Settings



Wrong Settings

3. When the teacher enters shield area, the camera will stop tracking after 30s; when there is teacher in the tracking area, the camera will lose target in shield area. When there are multiple teachers in the tracking area, if the parameter is set to “Return Pano”, then the tracking position will return to panorama 0 or feature 1 (optional). It will take 5 seconds delay from multiple teachers tracking to single teacher tracking.
4. The user should set Sensitivity based on different people. The default value is 0, which is suitable for adults.



## Firmware Update

Please refer to V8 Network Update Guide.



## Maintenance & Troubleshooting

### No video image IE browser

When the IP camera is used for the first time and accessed by Internet Explorer (or other web browser), you first need to install a media player plug-in. If you are using the camera via the Internet (for new users), then you will need to install a player software (VLC). Please go to the VLC website <http://www.videolan.org/vlc>, download and install VLC (player software). After installation, login again, and the video image is displayed (see the Network Function section, point 5.3).

Follow the checklist below if you are unable to access IP camera web pages via a browser:

1. Access the network with a PC and test whether you can access the camera via a Ping test. You may have a firewall issue or a cable may be unplugged.
2. If you need to, disconnect IP camera from the network and connect it to a PC (please refer to the Network Function section) to re-set the IP address.
3. Check the camera's IP address, subnet mask and gateway address.
4. Check for MAC addresses conflict.
5. Check that the Web port is not occupied by other devices.

If you modify the IP address and set it incorrectly, or forget web passwords, press the IR remote controller "[\*]+[#]+[Manual]" to restore the default value (Default IP: 192.168.100.88 Default username: admin Default password: admin)

### Sound

- **No sound**

1. Please check audio connection to host PC.
2. Please check IP Camera audio parameter setup, if intercepting function on.

### Control

- **IR remote controller cannot control the camera**

1. Change the battery
2. Check the camera working mode.
3. Check IR address of the Remote Control is set correctly.

- **Serial communication cannot control the camera**

1. Check the camera working mode.
2. Check control cable is connected correctly.