

IQVideo

4K EPTZ Camera

——Configuration Instructions——



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Chapter 1 Preparation Before Configuration

The Camera supports POE power supply. Power supply, control, data transmission, etc. can be realized through a single network cable.

Before configuration, preparing a computer on the same network segment, a network switch with POE power supply, and tracking configuration software.

The Auto-tracking Camera is divided into a teacher camera and a student camera. The tail plate marked 6.35mm is the teacher camera (the default IP of the teacher camera: 192.168.2.88), and 3.5mm is the student camera (the default IP of the student camera: 192.168.2.89); The installation height is preferably between 2.2 meters and 2.5 meters.

Chapter 2 Configuration Instructions

2.1 Configuration Software



EDUTrackerClient1.4.4.zip

Unzip the configuration software to the specified location, double-click to open the configuration software as shown in the figure below;

<input type="checkbox"/> Name	Date modified	Size
platforms	2020/12/4 16:32	
EDUBullseyeClient.exe	2020/11/26 15:06	363 KB
icudt52.dll	2014/1/22 21:30	22,957 KB
icuin52.dll	2014/1/22 21:30	1,790 KB
icuuc52.dll	2014/1/22 21:30	1,315 KB
MessageList.txt	2017/3/22 17:05	1 KB
msvcp110.dll	2012/7/26 19:08	522 KB
msvcr110.dll	2012/7/26 19:08	843 KB
opencv_core244.dll	2013/8/7 14:47	1,969 KB
opencv_highgui244.dll	2013/8/7 14:58	1,920 KB
Qt5Core.dll	2014/7/10 9:44	4,018 KB
Qt5Gui.dll	2014/6/19 18:52	4,270 KB
Qt5Network.dll	2014/6/19 18:51	827 KB
Qt5Widgets.dll	2014/6/19 18:55	4,270 KB

EDU Tracking System v1.3.0e

Search Interfaces: WLAN

	Device ID	Device Name	IP Address	Netmask
1	2F61149F0200000E	VSTeacherBullseye	192.168.17.182	255.255.252.0
2	2FA88875020000C3	VSStudentBullseye	192.168.17.183	255.255.252.0

Network Settings

Device ID:

Device Name:

IP Address:

Netmask:

Default Gateway:

Firmware Version:

Save Restore

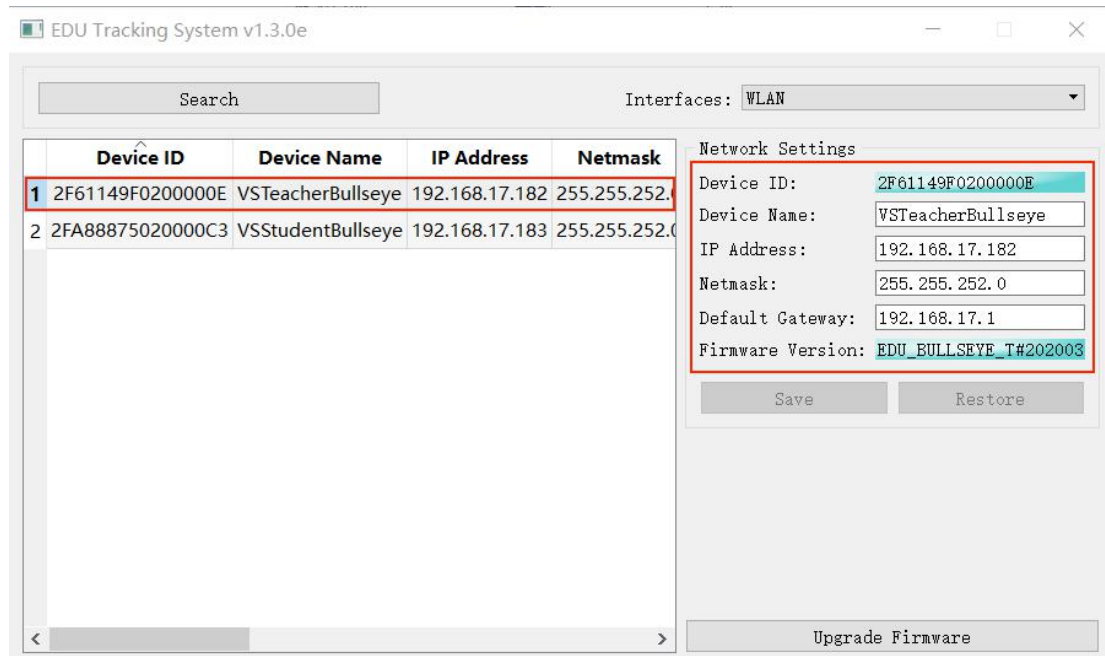
Upgrade Firmware

Click search to display all devices in the current network, and pay attention to selecting the corresponding network connection on the right.

2.2 Network Parameters Settings

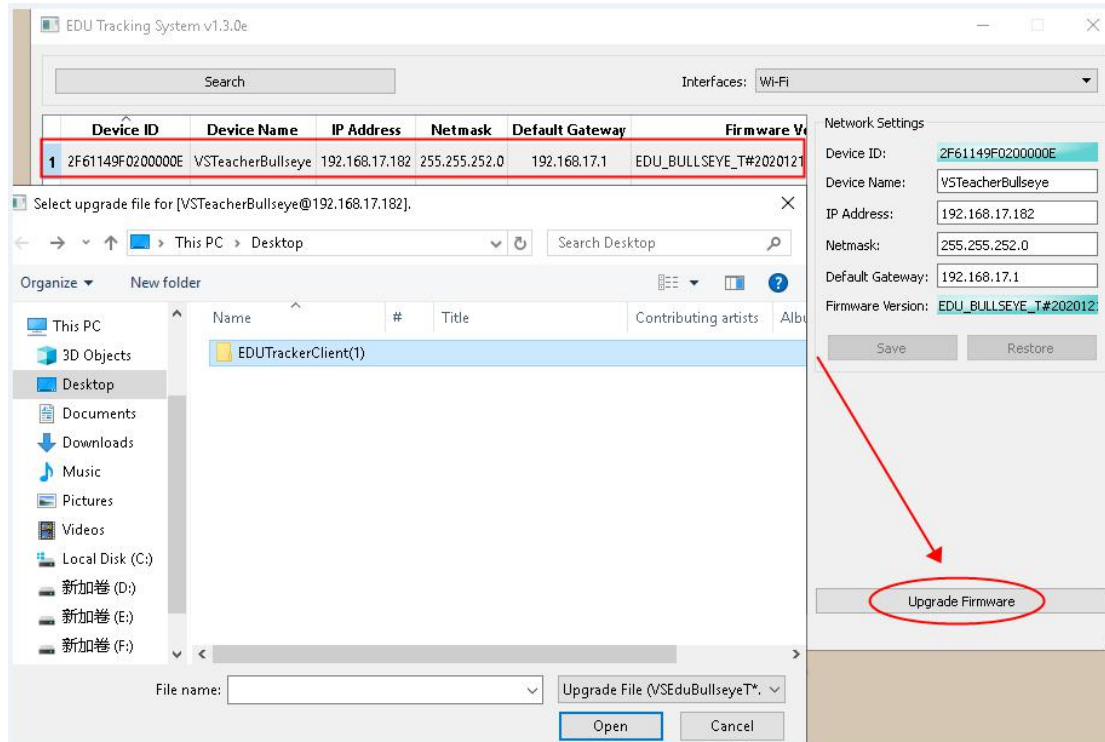
Click to select a device in the device list on the left, and the network parameters and software version information of the current device are displayed on the right. Click to

modify, and save the settings after the modification is completed without restarting, as shown in the figure below;



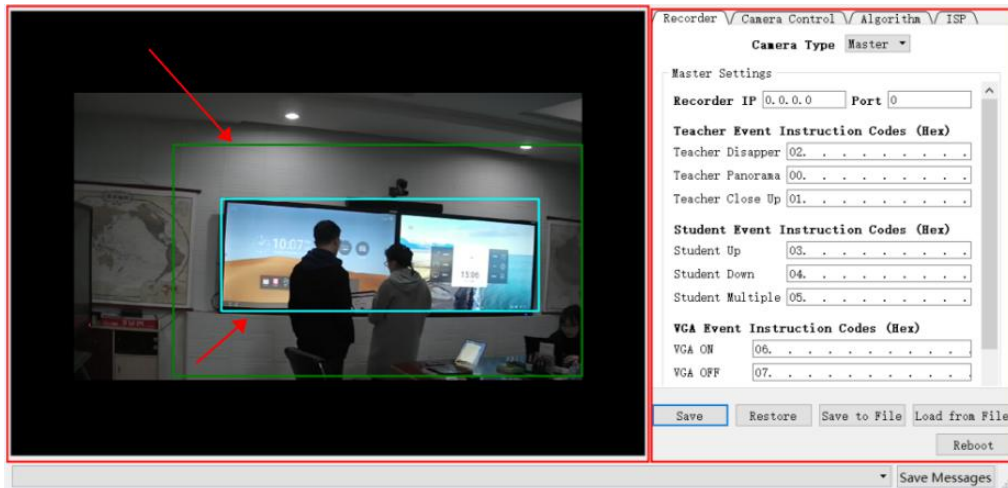
2.3 Upgrade Firmware

Click to select a device in the device list on the left, click the "Upgrade Firmware" button in the lower right corner, select the location of the upgrade package to open it, and the upgrade will be automatically completed (Note: The upgrade firmware will automatically select the upgrade package corresponding to the device type). As shown below;



2.4 Teacher Camera Configuration

Double-click to open a device in the device list (device name VSTeacher is the Teacher Camera). The configuration screen is displayed on the left. The final display screen is within the green box, and the screen display size can be customized. The blue box is the classroom trigger area. The size of the trigger area can be customized. You can right-click to increase the shielding area with unlimited number and size. The parameter configuration interface is displayed on the right. As the figure below.

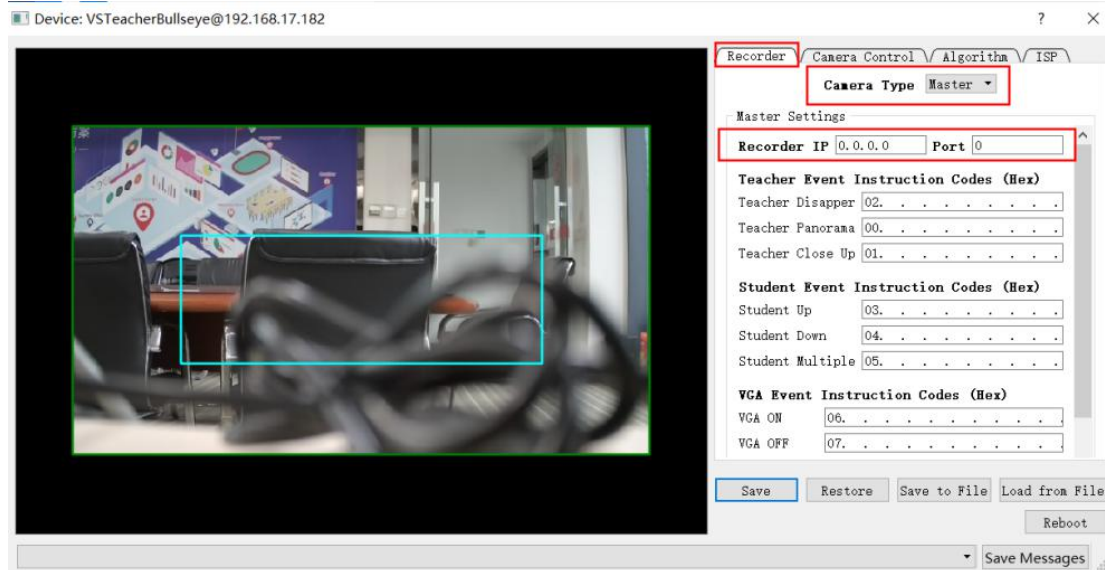


After the green box is set, click to save the parameters. And the final display screen of the RTSP can be changed to the modified screen in real time. RTSP address: rtsp://IP address/video1 is the panoramic image; rtsp://IP address/video2 is the close-up image. (e.g. rtsp://192.168.2.88/video1.)

The master camera supports the import and export of configuration parameters , and supports the configuration interface to restart.

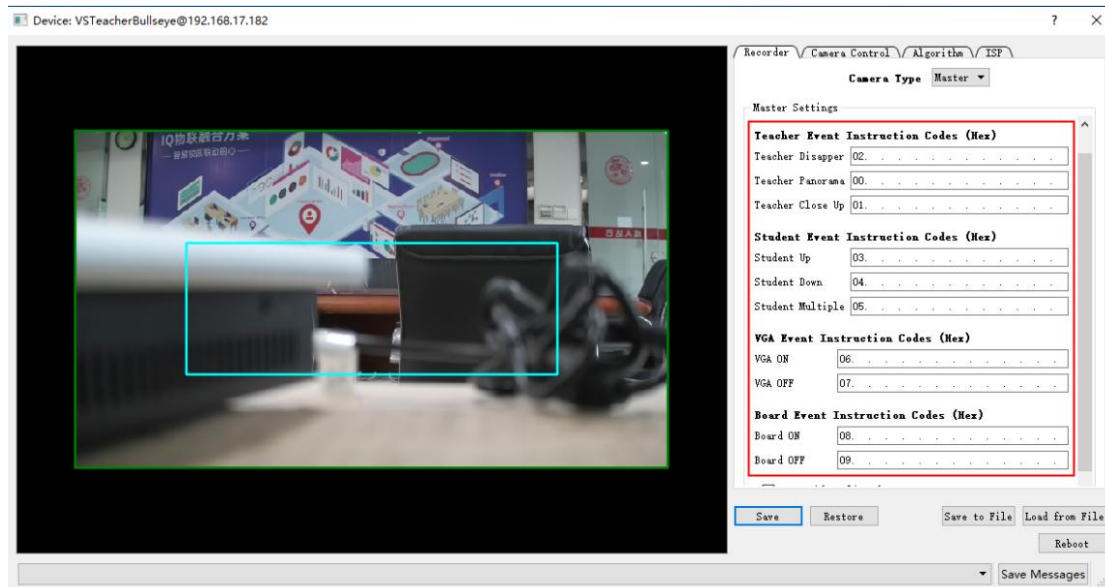
2.4.1 Parameter Setting-Recorder

The Auto-tracking Camera(Teacher) is defined as the master camera. Select "Master" in the drop-down menu of recorder-camera type, and fill in the corresponding Video Station's IP address and port number. As shown in the figure below;



Director Strategy-State Strategy

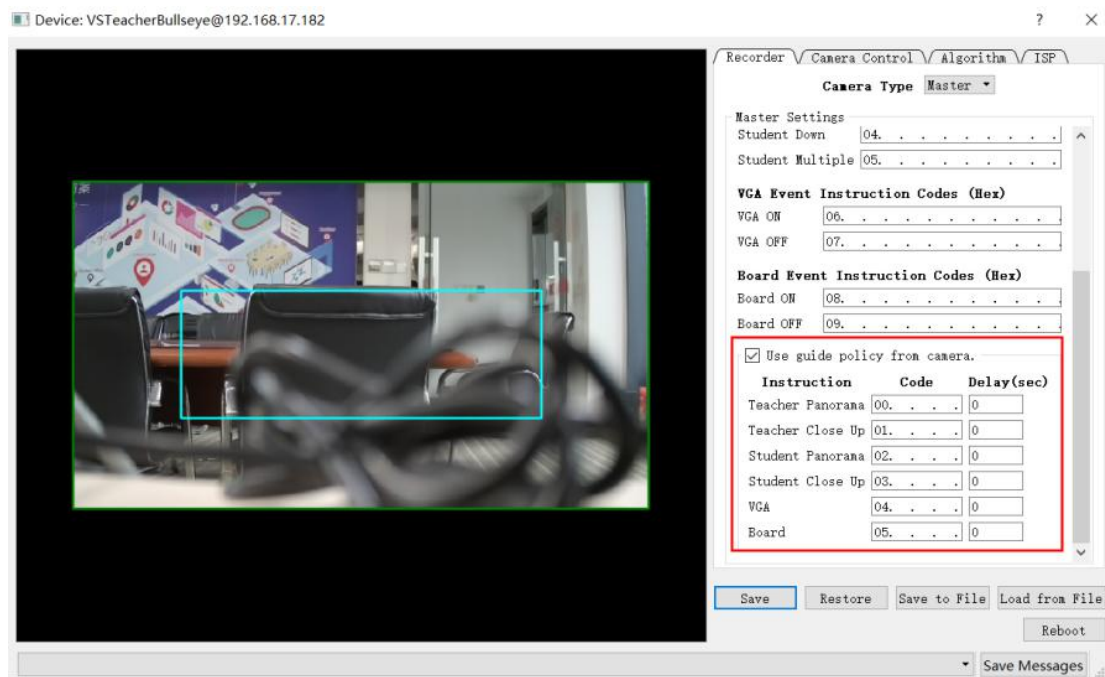
The tracking master camera supports sending only the current state command code(command supports custom hexadecimal format), and the screen switching command code is controlled by the Video Station. As shown below;



Director Strategy-Action Strategy

The master camera has a built-in director switching strategy. There is no need to set

another strategy from the Video Station. The camera director strategy is used by default. The priority of the strategy is: PPT > Blackboard-writing > Student > Teacher. Under the multi-camera strategy, record the entire area a panoramic image first when the target appears. After the close-up target appears, record the target close up image; as shown below



2.4.2 Parameter Setting-Camera Control

Tracking effect after target triggered;

Horizontal stop threshold—the value that allows the target center offset. The smaller the value, the more sensitive;

Horizontal trigger threshold—the target moving range triggers the camera horizontal tracking. The smaller the value the more sensitive;

(Note: The trigger threshold must be greater than the stop threshold)

Vertical stop threshold—the value that allows the target center offset. The smaller the

value, the more sensitive;

Vertical trigger threshold—the range of target height change triggers the camera to adjust vertically. The smaller the value, the more sensitive; (Note: the trigger threshold must be greater than the stop threshold)

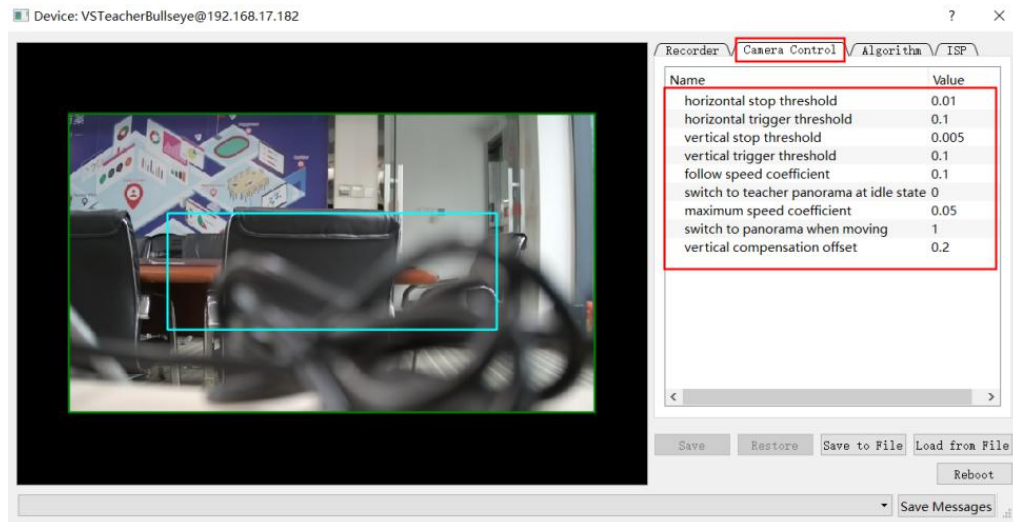
Following speed coefficient—the target moves horizontally, the precision of the camera following the target. The smaller the speed, the more sensitive;

Switch to teacher panorama at idle state—both teacher camera and student camera don't detect the event, it's idle status.(for example, when the teacher and the students are not present).This parameter controls whether recorder switch teacher panorama (1) or student panorama (0, default) at idle status;

Maximum speed coefficient—taking the speed level of the EPTZ. The larger the speed, the more sensitive;

Switch to panorama when moving—start the strategy that when the target moves in a wide range, switch to panorama of podium, when the target is static, switch to close-up. 1 is to open and 0 is to close;

Vertical compensation offset—the margin over the head of the target close-up. The larger the value, the larger the margin;



2.4.3 Parameter Setting-Algorithm

The necessary parameters for forming close-up target

Minimum target area (pixel amount)—detect the target in the trigger area to form the minimum area ratio of the close-up target. The smaller area, the more sensitive. Keep the default;

Minimum target aspect ratio—detect the target in the trigger area and form the shape of the close-up target. Keep the default;

Background reconstruction threshold—detect the size of the background change in the trigger area to determine whether to reload. Keep the default;

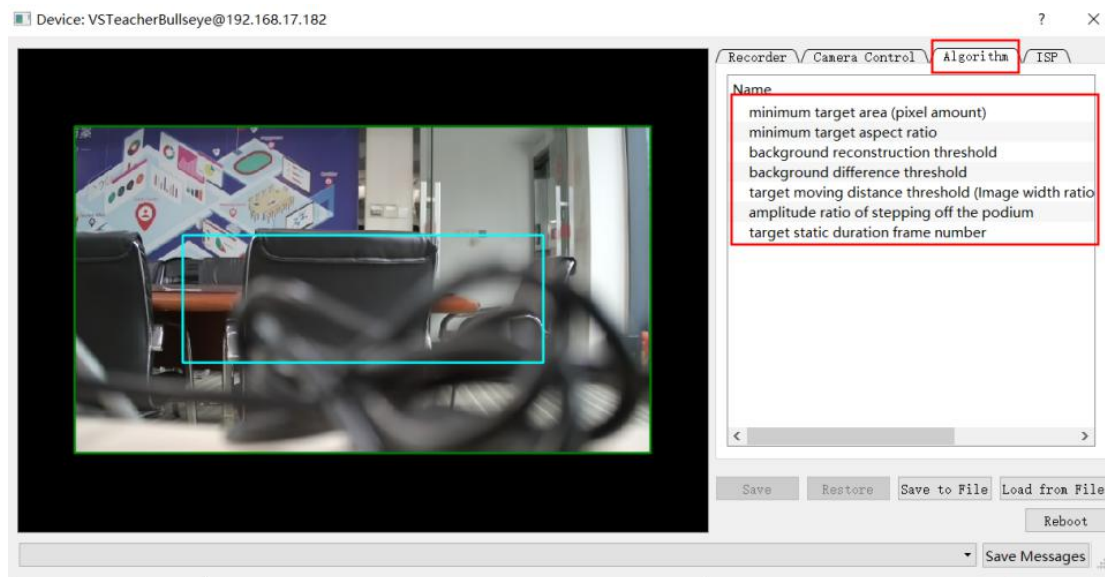
Background difference threshold—detect whether the target color in the trigger area is consistent with the background. You need to adjust when the classroom light is insufficient. The smaller the value, the more sensitive;

Target moving distance threshold (Image width ratio)—detect the target moving range in the trigger area, whether it forms a tracking target. The smaller the value, the more sensitive;

Amplitude ratio of stepping off the podium—detect the sensitivity of the teacher stepping off the podium. The smaller the value, the more sensitive;

Target static duration frame number—whether the target is regarded disappeared when the target is completely static. The smaller the value, the more sensitive;

Note: Minimum target area, Minimum aspect target ratio, and Target moving distance threshold are the prerequisites for forming the tracking target.



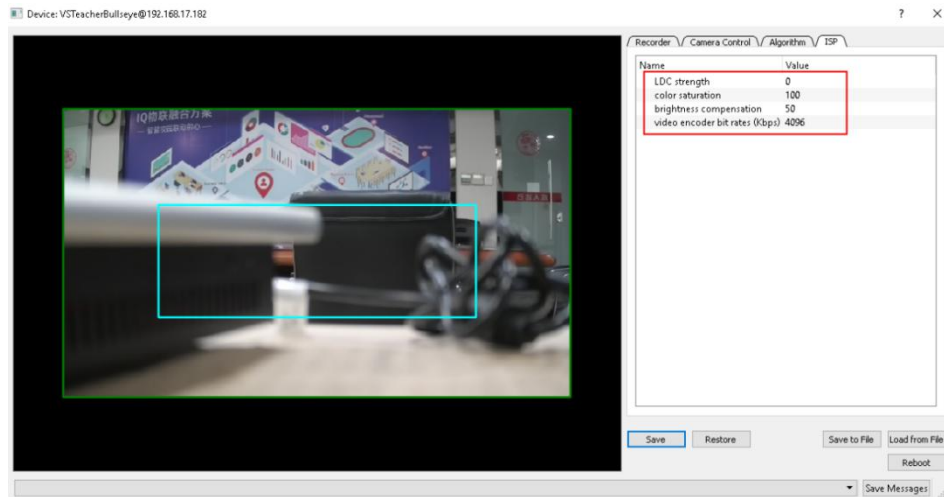
2.4.4 Parameter Setting-ISP

LDC strength—adjust the picture distortion caused by the lens;

Color saturation—adjust the color difference of the picture caused by light and other reasons;

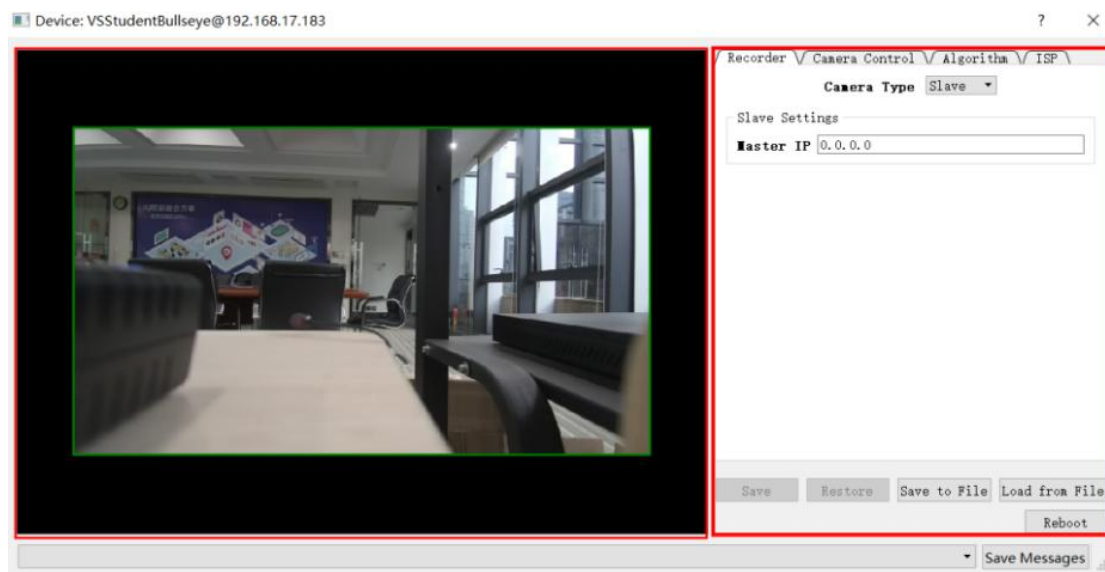
Brightness compensation—adjust the picture brightness difference caused by light and other reasons;

Video encoder bit rate(kbps)4096—output video encoding rate in kilobits per second (Kbps);



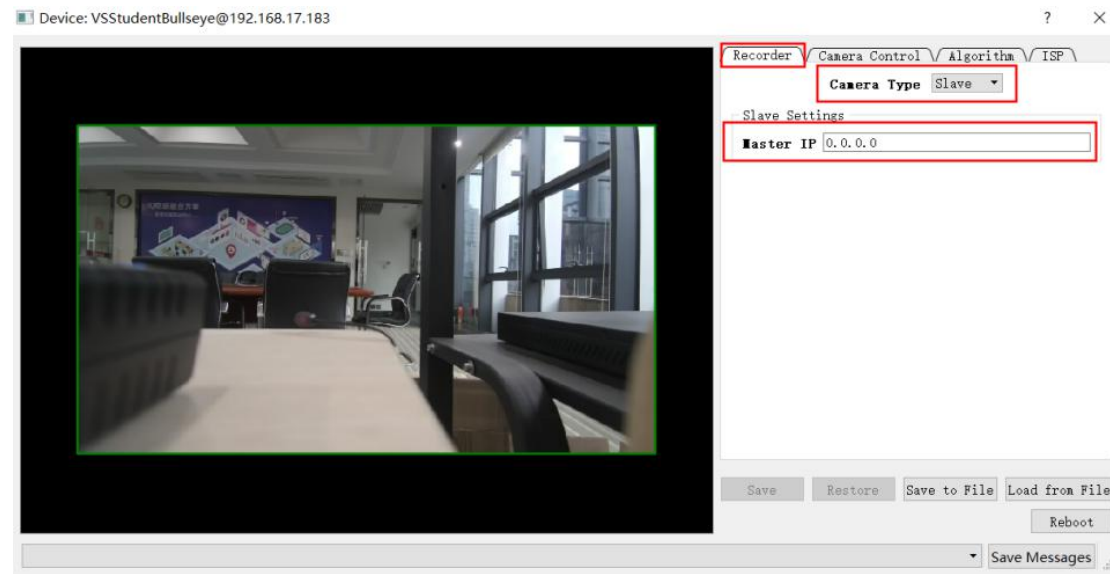
2.5 Student Camera Configuration

Double-click to open a device in the device list (device name VSStudent is the Student Camera). The configuration screen is displayed on the left. The final display screen is within the green box, and the screen display size can be customized. You can right-click to increase the shielding area with unlimited number and size. The parameter configuration interface is displayed on the right. As the figure below;



2.5.1 Parameter Setting-Recorder

The Student Camera is defined as slave camera, and the master camera IP address can be filled in as the same with the teacher camera.



2.5.2 Parameter Setting--Camera Control

Student tracking supports simultaneous detection of up to three targets. A single target stands up and gives close-up image directly. When two targets stand up, firstly give the first target close-up image and then give the second target. After a certain time, the medium shot of two people are given. Three targets are directly given the panoramic image.

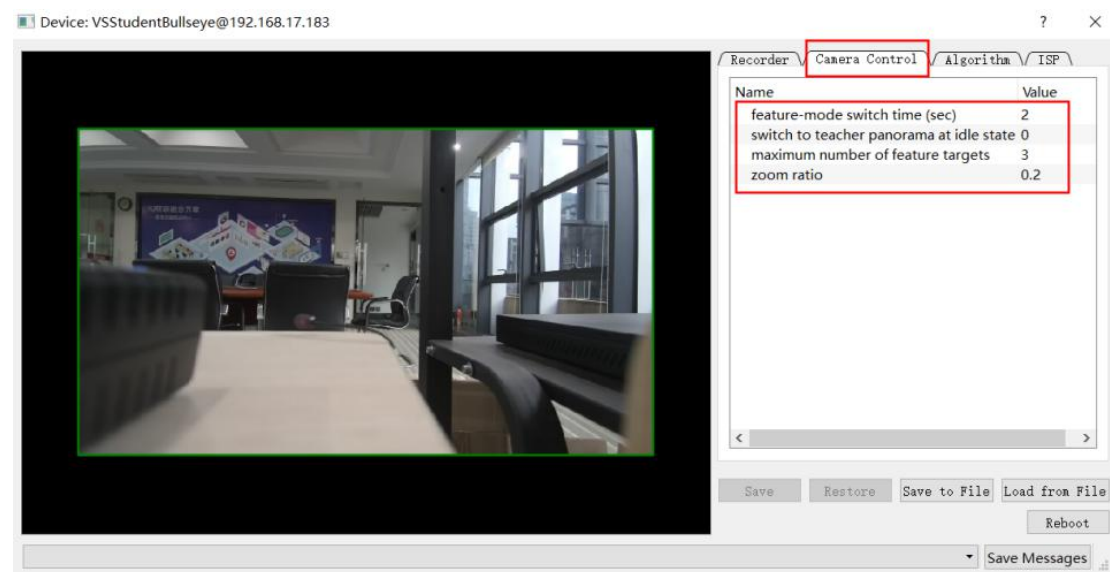
Feature-mode switch time (sec) — the time for switching the second standing target to the medium shot of two people;

Switch to teacher panorama at idle state—both teacher camera and student camera don't detect the event, it's idle status.(for example, when the teacher and the students are not present).This parameter controls whether recorder switch teacher panorama (1) or

student panorama (0, default) at idle status;

Maximum number of feature targets — the maximum supported number of simultaneous detection of multiple targets is three;

Zoom ratio — close-up magnification. The greater the value, the greater the magnification;



2.5.3 Parameter Setting-Algorithm

Determine the basic parameters that form an effective tracking target;

Minimum trajectory for standing targets—the smallest area the target stands that can be regarded as a tracking target. The smaller the area, the more sensitive ;

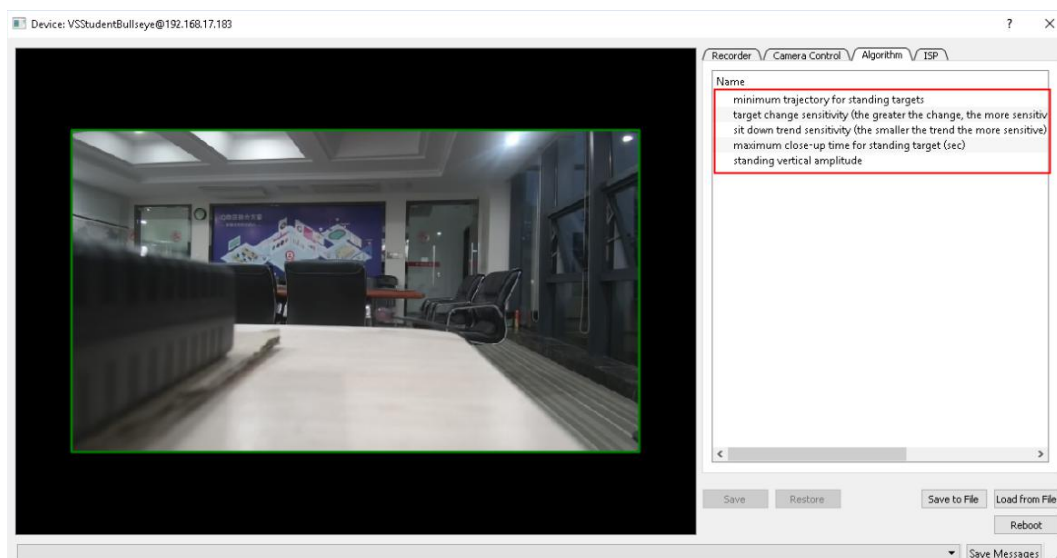
Target change sensitivity (the greater the change, the more sensitive)— after the close-up of the target is formed, the horizontal movement range triggers the loss of the target. For example, when a student stands up and go to the stage. The larger the value, the more sensitive ;

Sit down trend sensitivity (the smaller the trend the more sensitive) — after the close-up of the target is formed, the vertical movement range triggers the loss of the target,

such as a student sitting down or drastically lowering the head. The smaller the value, the more sensitive;

Maximum close-up time for standing target (sec)—after the target close-up is formed, if there are no trigger targets to sit down for a long time, it will be judged that the target is lost after the specified time;

Standing vertical amplitude — The minimum vertical movement detected to determine the tracking target. The smaller the value, the more sensitive

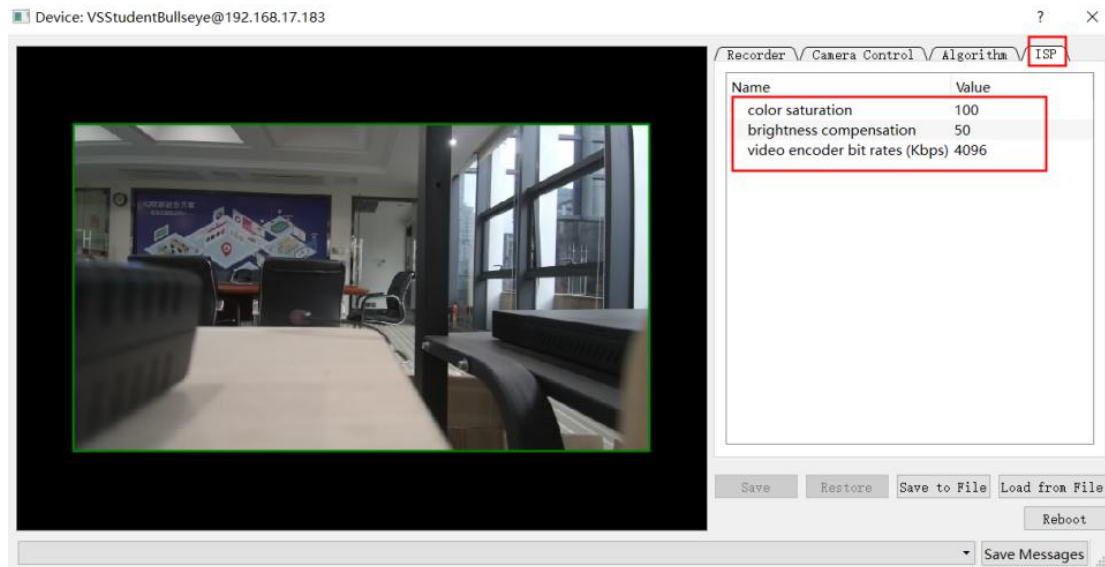


2.5.4 Parameter Setting--ISP

Color saturation-adjust the color difference of the picture caused by light and other reasons;

Brightness compensation-adjust the picture brightness difference caused by light and other reasons;

Video encoder bit rate(kbps)4096-output video encoding rate in kilobits per second (Kbps) as the unit;



Chapter 3 Common Problems

3.1 The configuration software can search the device, but double-click cannot open;

Solution : The configuration computer and device must be in the same network segment.

3.2 Tracking camera works normally, but the screen cannot be switched normally;

Solution : Check whether the master camera is properly connected to the video station, and whether the directing strategy has one to one correspondence.

3.3 Teacher tracking target is easy to lose ;

Solution : Check whether there is target interference in the trigger area; whether the shielding area is set properly; slightly increase the minimum target area (pixel amount), and reduce the background difference threshold;

3.4 Image of teacher tracking shakes seriously ;

Solution : Increase the horizontal stop threshold and horizontal trigger threshold (make

sure that the horizontal trigger threshold must be greater than the horizontal stop threshold);

3.5 The teacher close-up has too little margin over the head ;

Solution : Increase vertical compensation offset;

3.6 Student close-up is too small or too big ;

Solution : Adjust the min_zoom_ratio parameter. The larger the value, the smaller the multiple;

3.7 Student targets are difficult to trigger or triggered by mistake;

Solution : The minimum number of trajectories formed by the standing target and the vertical amplitude of the standing are too large, which makes it difficult to trigger the target.

If the value is too small, it will cause false triggers when lowering or raising your head and raising hands;

3.8 Student tracking targets are easy to lose or difficult to lose;

Solution : If the target change sensitivity is too large and the sitting trend sensitivity is too small, the tracking target is easy to lose. The target change sensitivity is too small, and the sitting sensitivity is too large, which makes it difficult to lose the target.

3.9 RTSP Network freeze or blurred screen;

Solution : It is recommended to use good quality gigabit switch.

3.10 RTSP Network Address;

If the camera IP address is 192.168.2.88, the RTSP network address are as follows;

Panorama image: rtsp://192.168.2.88/video1

Close-up image: rtsp://192.168.2.88/video2



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