

TIC600 Engineering survey installation instruction



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Statements

- The contents of this manual will be updated from time to time, and the updated contents will be added to the new version of the manual without notice.
- The manual may contain technical inaccuracies or printing errors

Safety precautions

- When installing the equipment, please have qualified service personnel or system installation personnel to operate
- Install the equipment in the environment with lightning protection
- Please do not touch the lens to prevent it from being damaged or dirty.
- Please pay attention to prevent the lens from being worn, scratched or even scratched.
- Because uncooled infrared thermal system uses a very sensitive thermal sensor, the lens shall not be directly aimed at a strong radiation source (such as the sun, direct laser beam or reflection) under any circumstances (whether the system is turned on or off), otherwise it will cause permanent damage to uncooled infrared thermal system.
- This product is a precision electronic instrument, so please handle it carefully in the process of use, storage and transportation to prevent the equipment from being collided by external force or falling from high place and other dangerous actions.
- During transportation and storage, the ambient temperature shall not be lower than - 25 °C; the original packing box must be used during transportation
- Before turning on the device, make sure that the power supply is connected properly. If the power supply is connected incorrectly, the device may be damaged
- Do not press any object on the power line, and do not place the equipment where the power line is easily touched
- If the equipment runs abnormally, please contact the supplier and do not dismantle the equipment by yourself.

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1 Product introduction



TIC600 infrared thermal imaging temperature measurement and screening system is composed of human body temperature camera, human body temperature measurement blackbody and temperature measurement and screening software. Its main feature is non-contact temperature measurement, which is suitable for large-scale screening in the scene of train station, airport, bus station, hospital and school with large flow of people, so as to realize temperature anomaly warning. It can be widely used for medical temperature measurement, real-time temperature information transmission, accurate detection, rapid diagnosis, etc.

The core purpose of the temperature measurement and screening system is to screen the target of fever personnel from the normal temperature population, and then check it again through the medical temperature measurement instrument.

2 Site Survey and Commissioning Guide

TIC600 infrared thermal temperature measurement and screening system belongs to precision temperature measurement and imaging equipment, it has the following requirements for engineering exploration application.

2.1 Scenario requirements

- The ambient temperature should be kept relatively constant to avoid obvious changes in the body surface temperature of the tested personnel;
When the ambient temperature is within 16-32 °C, the equipment supports accurate temperature measurement, and the temperature deviation value is ± 0.3 °C;
When the ambient temperature exceeds 16-32 °C, the equipment will not be able to guarantee the accuracy of temperature measurement;
Indoor scene: It is recommended to use diversion belt (L-type or Z-type)
Outdoor scene: outdoor scene is not recommended, if necessary, it must be used with tent / shelter / sealed shed + diversion belt (L or Z type)
According to the actual application scenario, it may be necessary to adjust the ambient temperature by adding air conditioner or electric heater;
- The installation position of the camera shall be well illuminated to avoid backlighting;
- The camera monitoring area shall not be interfered by strong heat sources such as strong light or sunlight;

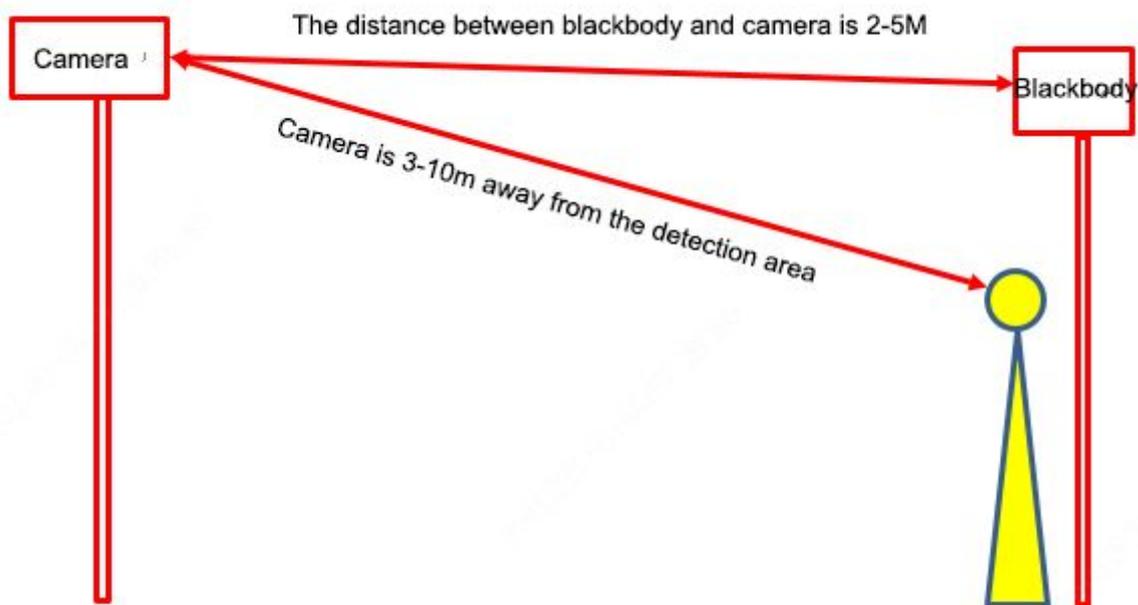
2.2 Installation requirements

- Camera: no mandatory requirement, the recommended installation height is between 2-3 meters, with a depression angle is between 0-10 °C.
- Blackbody: no mandatory requirement, the recommended installation height is between 1.5-2 meters, with a depression angle of 0 °C
- Distance: the distance between blackbody and camera is recommended to be 2-5M, and the distance between detection area and camera is recommended to be 3-10m;
- Width: the maximum width of the detection area is 0.4 times of the detection distance (if necessary, it can be constrained by the guide band);

Attention:

1. **One network cable, computer and 2-3 plug-ins (for power supply) are required;**
2. **The focal length of the visible camera lens needs to be adjusted to the maximum to ensure that it is consistent with the infrared thermal camera's field of view**

Refer to the Appendix for equipment components and assembly instructions.



Installation diagram

2.3 Temperature measurement and screening system instructions

2.3.1 Temperature measurement instructions

In order to ensure the accuracy of software temperature measurement, the tested personnel should meet below requirements:

- The tested personnel can wear masks, but their forehead cannot be covered. It is recommended to take off hats, scarves, sunglasses, masks, warming stickers and other items in advance;
- **When the tested person just enter the room from the outside, they need to adapt themselves for 2-5 minutes before testing;**
- It should be measured 30 minutes after exercise or eating hot food, and the forehead should be kept dry, and it shouldn't be covered by the hair.

- The face needs to be focused clearly, so that camera can detect the skin surface such as forehead directly.
- The tested person should walk normally along the guide belt (no more than 2 steps per second), and look up at the camera when passing the detection area;

2.3.2 Screening instructions

The core purpose of the temperature measurement and screening system is to screen the target of fever personnel from the normal temperature population, and then check it again through the medical temperature measurement instrument.

If you want to simulate the test of fever personnel, you can choose more than 2 normal temperature personnel to test together, and one of them can hold a 38-40 °C warm mineral water bottle and put it on the forehead to test.

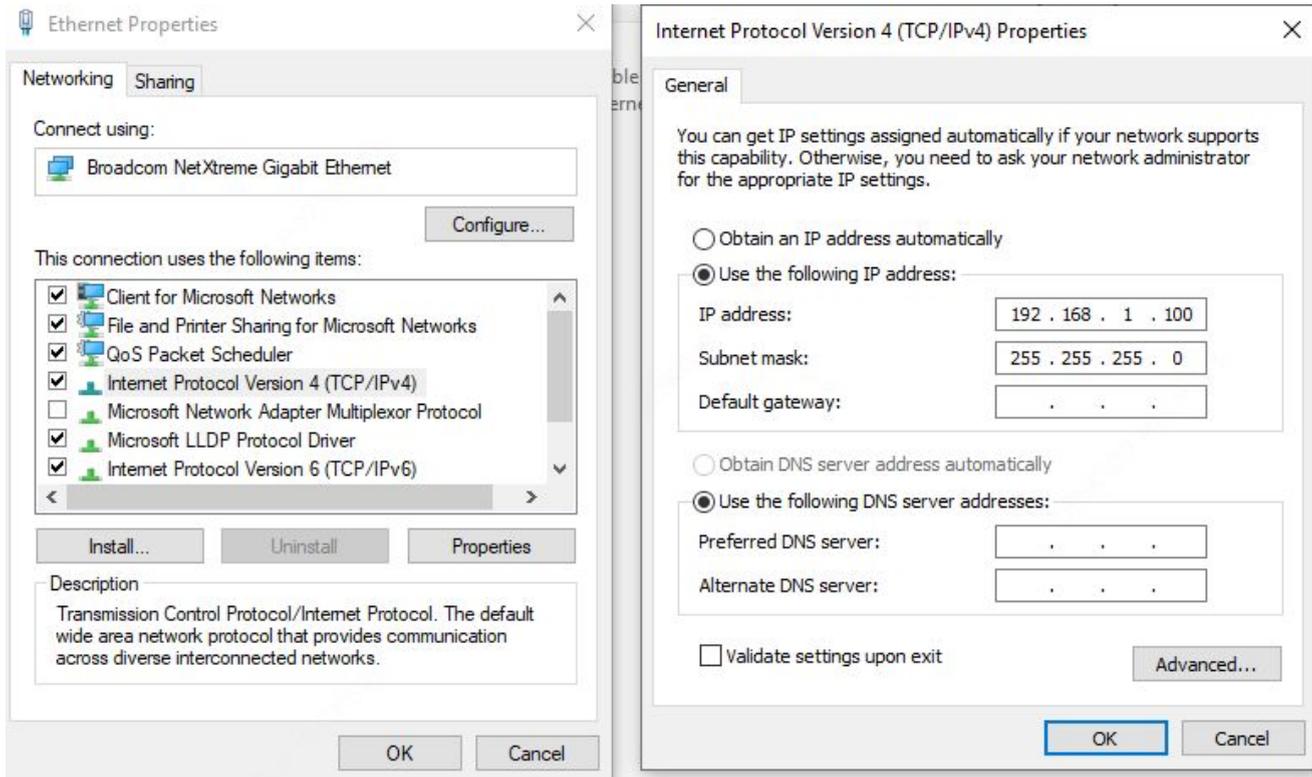
3 Debugging guidance

3.1 Computer host requirements

- system : win7 or win10
- processor : i5 9600 and above
- hard disk : 1T above
- Monitor : 17 inches above
- Memory more than 8GB
- IE10/IE11

3.2 Computer network configuration

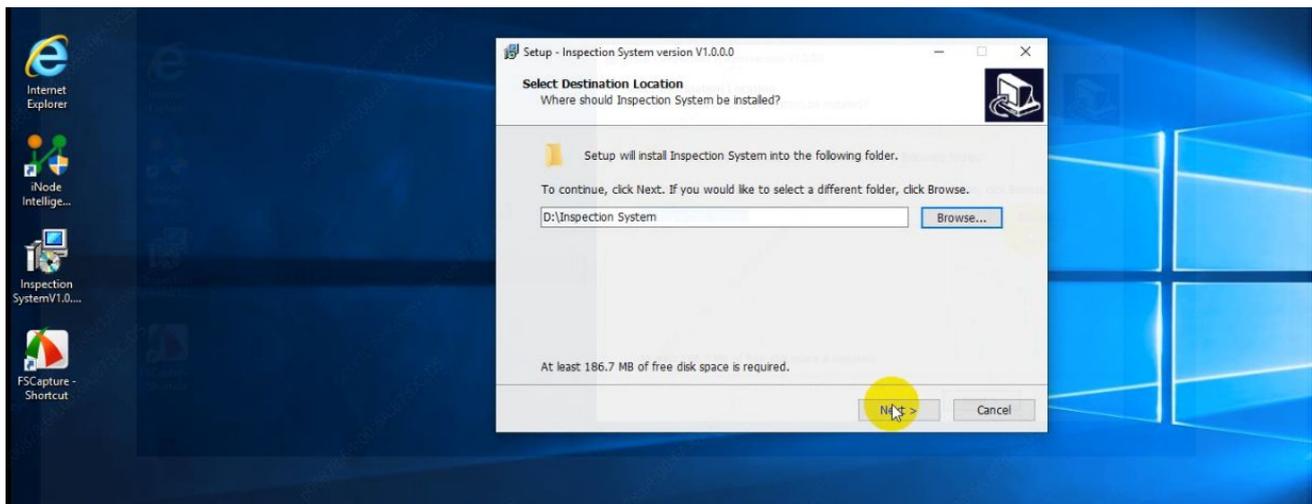
- 1. Turn off computer firewall ;**
- 2. Uninstall computer antivirus software ;**
- 3. Configure the IP address of the computer as 192.168.1.100 (it must be modified to this IP address), subnet mask: 255.255.255.0**



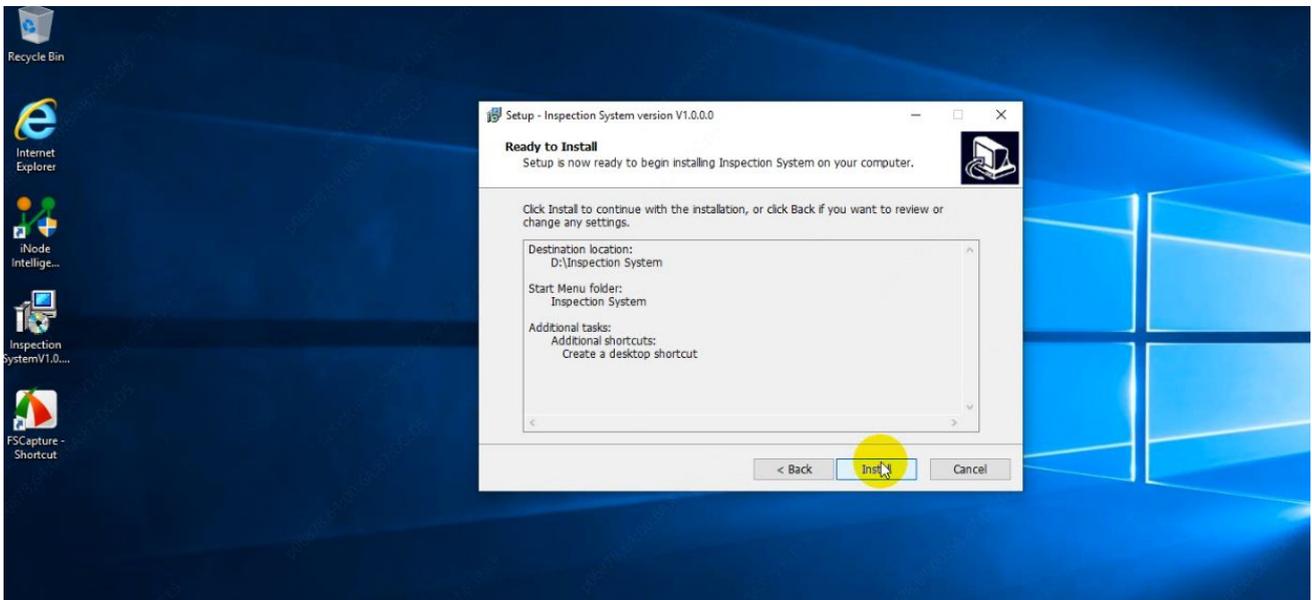
3.3 Temperature measurement software installation and device connection

3.3.1 Software installation

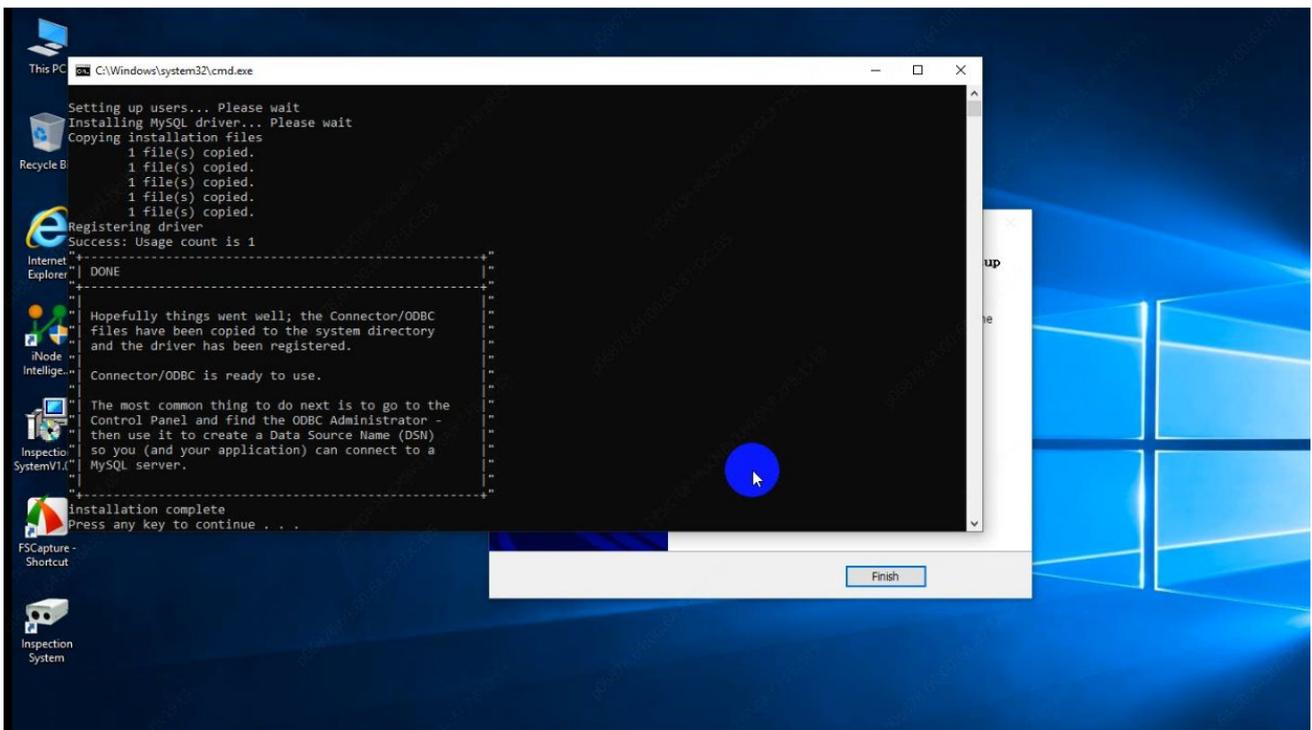
1. First, Click Install package"Inspection System version V X.X.X.X",
2. Second, Click "Browse" button to select software installation path, as shown in the figure below



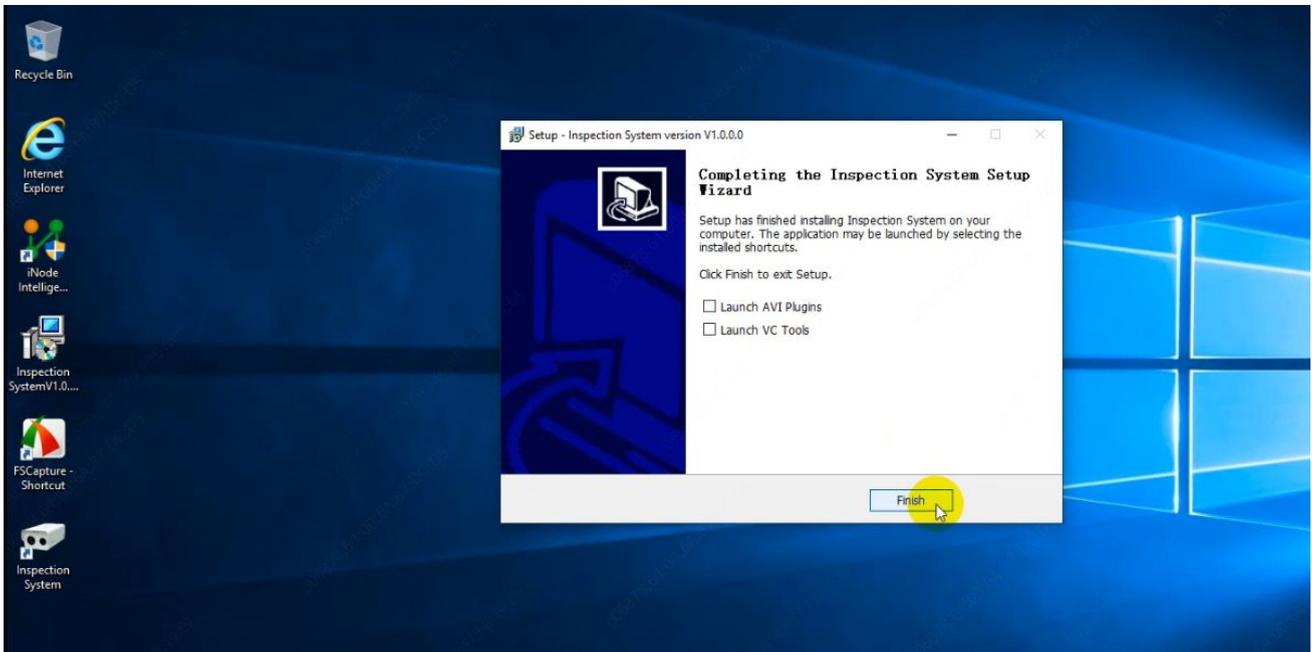
3. Click "Next" and "Install" button to install



4. After installation, wait for the system to configure itself, then press any key to continue



5. Uncheck the “Launch AVI Plugins” and “Launch VC Tools”, click “Finish” button to finish installation



6. Finally, you can see “Inspection System” software on the desktop, Run the software as administrator



3.3.2 Device connection

After opening the software with the administrator's permission, wait for the device to connect by itself. The interface displays the live show, which means that the device connection is completed

3.4 Software version of equipment



Open the client software, enter the "System para" -> "Advanced Configuration" interface, check the device software version, and confirm whether it meets the following requirements,

If not, it is recommended to refer to the appendix Methods of software installation and upgrade for upgrading

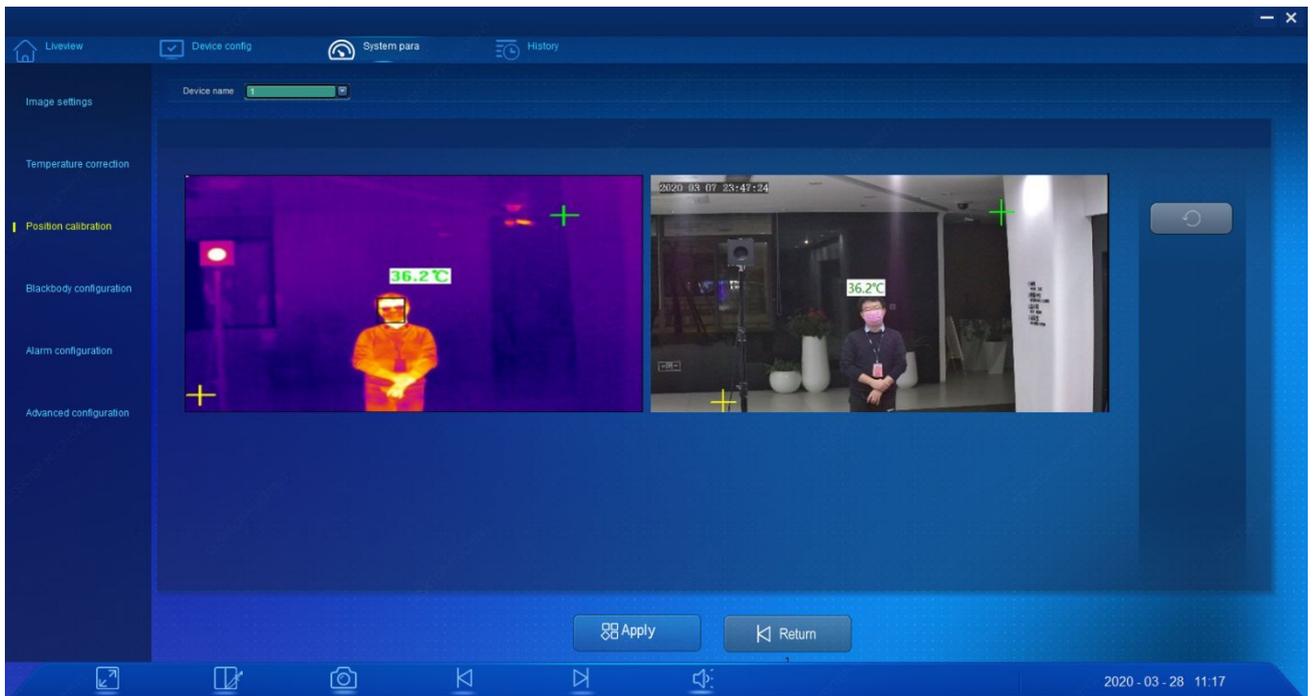
The computer client system version needs to be upgraded to V1.0.0.0 or later

The version of infrared thermal camera system needs to be upgraded to IR-V3.03-20200328 or later

The version of visible camera system needs to be upgraded to IPC_Q6301-B0003P22D1907B07 or later

3.5 Client software configuration

3.5.1 Position calibration



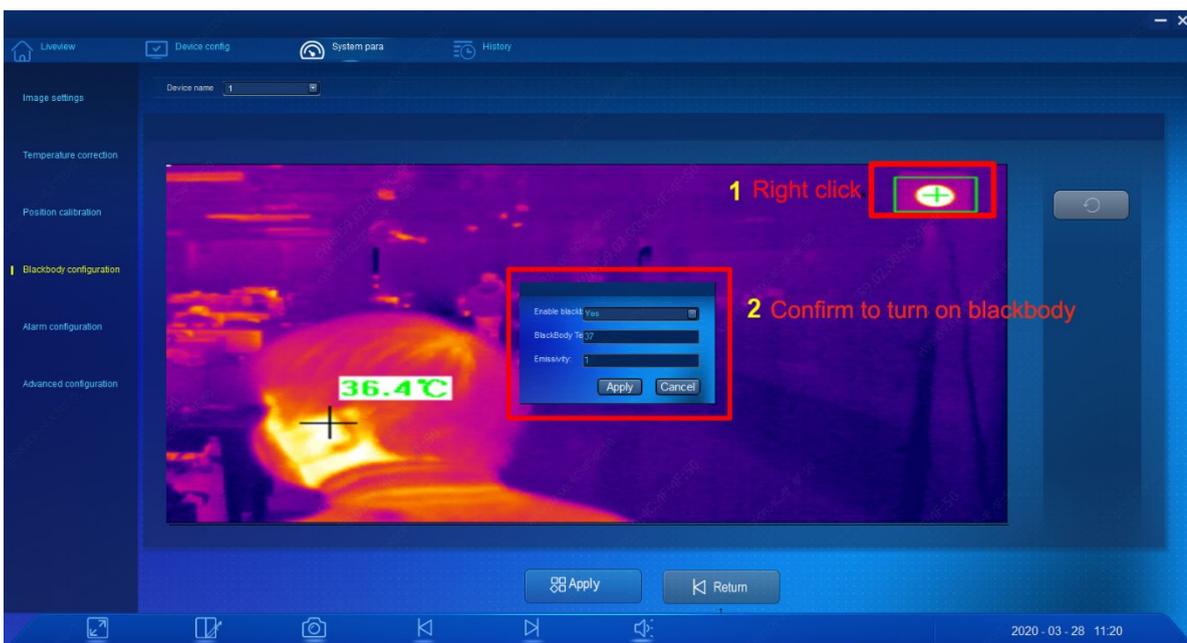
□ Enter "System para"-> "Position calibration" interface

- A reference person needs to be standing at a distance of 5m from the camera for calibration (standing on the left and right side of the screen in turn).
- First, move the yellow calibration points on the infrared and visible images to the same position on the lower left corner of the image ((such as knee position).
- Then move the green calibration points on the infrared and visible images to the same position on the upper right corner of the image (such as the raised palm).
- After all four points have been moved, click "Apply" to complete the setting.

Attention :

1. **The calibration point must be calibrated on the plane of 5m position, with the reference person or obvious reference as the calibration point.**
2. **The calibration point must be close to the diagonal of the screen.**
3. **If the equipment position does not move after one calibration, it is not necessary to calibrate again.**

3.5.2 Blackbody configuration

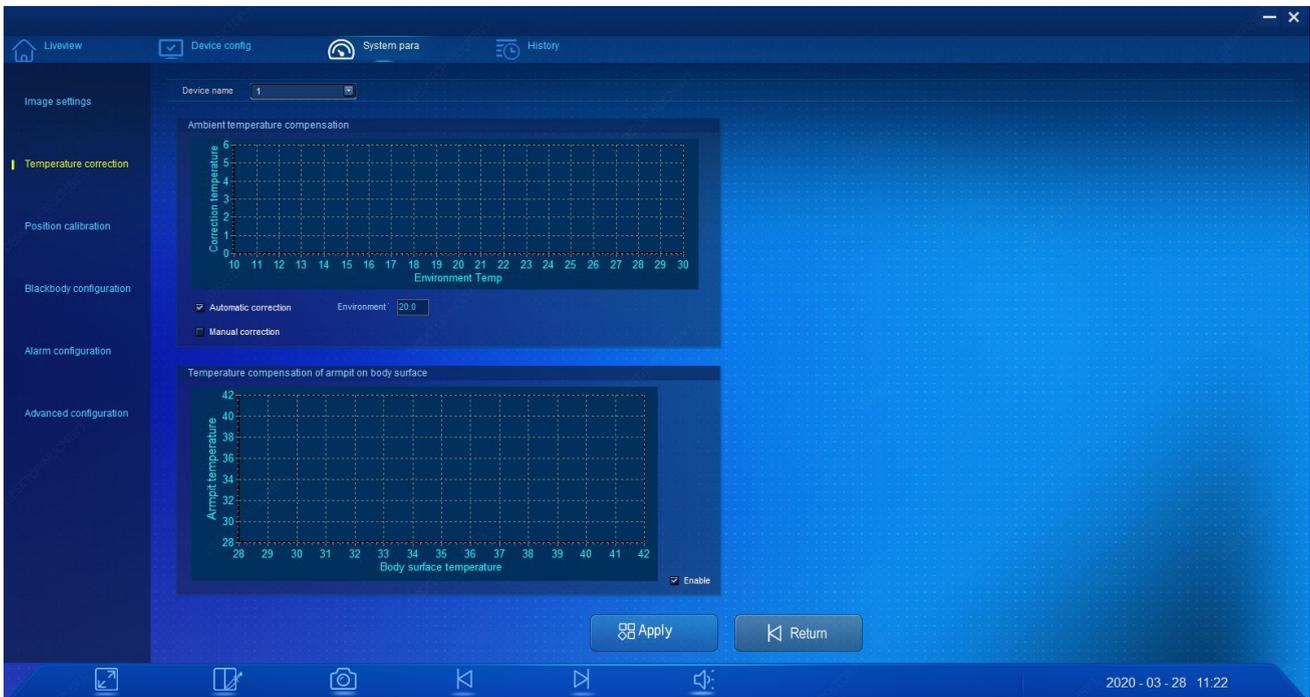


- Enter "System para"-> "Blackbody configuration" interface
- First, select the location of the blackbody, and include the whole round target of the blackbody in the blackbody box.
- Then right click the blackbody box to turn on the blackbody, and the blackbody temperature should be 37°C consistent with the actual blackbody box display temperature, and the specific emissivity should be set to 1.
- Click "Apply" to complete the setting.

Attention :

1. **After the blackbody is powered on, check if there is a temperature display on the blackbody rear panel. The default setting is 37 °C, it means that the blackbody is working normally when the upper and lower temperatures are the same (or no more than ± 0.2 °C),**
2. **The round target of the blackbody should be kept facing the camera.**

3.5.3 Temperature correction

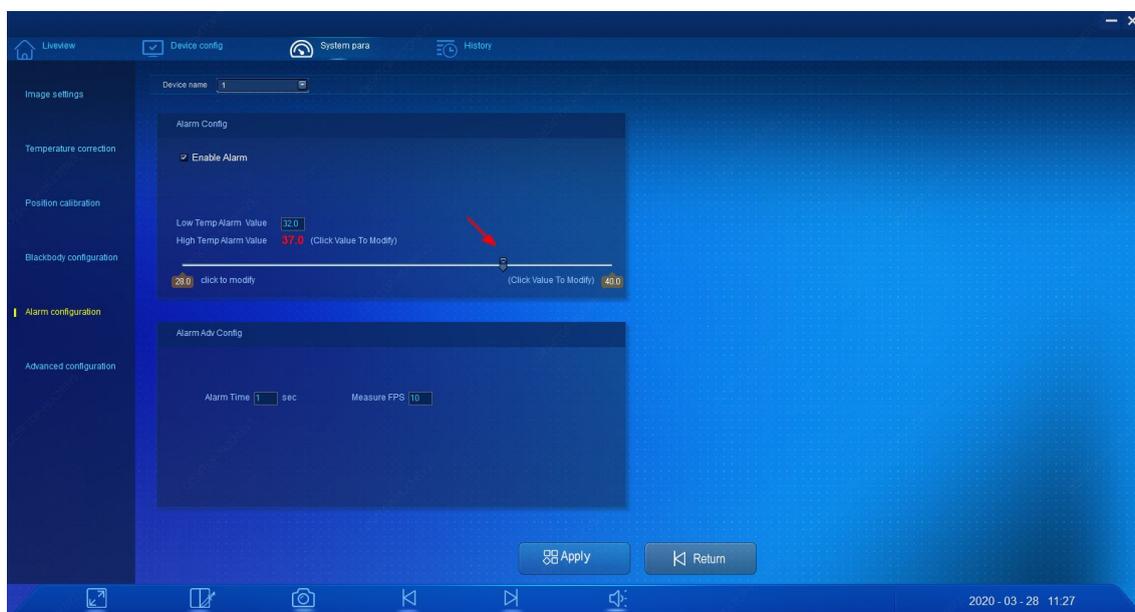


- Enter “System para”-> “Temperature correction” interface
- When you need to view the actual body surface temperature of the target (such as the measurement test of the certification company), you need to uncheck "Enable" in Temperature compensation of armpit on body surface configuration interface, and uncheck "Automatic correction" and "manual correction" in the ambient temperature compensation configuration interface.
- When you need to view the mapped armpit temperature of the target (such as the actual temperature screening application), you need to check "Enable" in Temperature compensation of armpit on body surface configuration interface , and check "Automatic correction" in the ambient temperature compensation configuration interface, and fill in the average indoor ambient temperature (usually 25 °C) in the “Environment”
- Click "Apply" to complete the setting.

Attention :

1. The ambient temperature compensation function is used to compensate the temperature of the body surface (such as forehead) according to the ambient temperature, so as to avoid inaccurate temperature measurement due to too large difference between the actual ambient temperature and .the body temperature
2. The correction function of body surface’s armpit temperature is used to correct the compensated body surface (such as forehead) temperature and convert it to armpit temperature of human body, which is more convenient for practical application
3. After the armpit temperature correction of body surface is turned on, the system will map the body surface temperature between 32 °C ~ 35 °C to the body temperature between 36.2 °C ~ 36.4 °C, so it is normal phenomenon for most people with normal body temperature to measure the temperature between 36.2 °C ~ 36.4 °C

3.5.4 Alarm configuration



- Enter "System"->Alarm configuration interface.
- Adjust the alarm threshold according to the actual needs (37.3 °C is recommended).
- Confirm that "Enable Alarm" is selected.
- Click "Apply" to complete the setting.

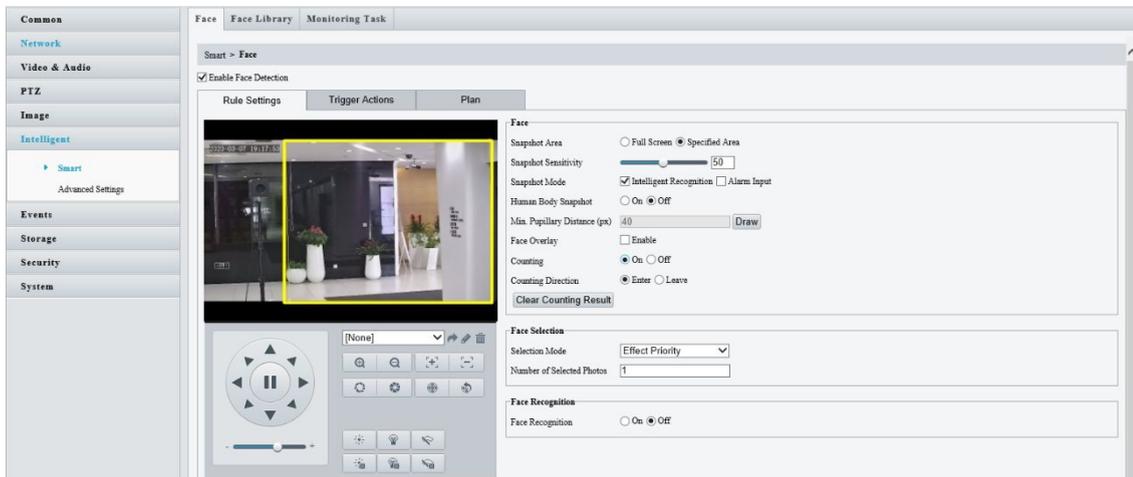
3.5.5 Alarm record query



In the menu bar, you can query the alarm record (the login password is "admin"), you can see the picture record on the left page.

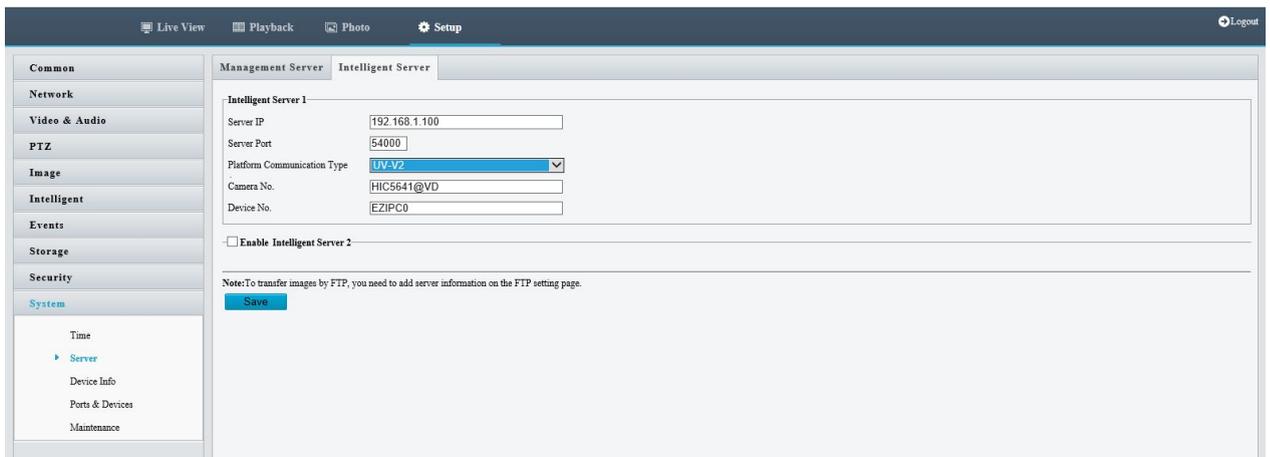
3.6 Visible camera software configuration

3.6.1 Detection area configuration



Log in to the visible light device web page, open the “Setup”-“Smart”-“Face” interface, select "Specified Area" in "snapshot Area", but do not put the location of the blackbody into the detection range, as shown in the yellow box above.

3.6.2 Intelligent server configuration



Log in to the visible light device web page, open “Setup”-“System”-“Server”-“Intelligent Server” interface to modify the configuration. Change the “Server IP” to the computer IP address (192.168.1.100) and change the “Server Port” to 54000, then select the “Platform Communication Type” as UV V2.

3.7 Common questions

3.7.1 There is no image when opening the client software

1. Please check whether the device is powered on, whether the power supply is loose, and whether the network cable is connected
2. Please check whether the computer IP address and software "device management" configuration are modified as required.
3. When Long Ping the IP address device is intermittent, try to change the root network cable.
4. If there is no abnormality, then judge the camera fault.

3.7.2 The device has detected high temperature but does not alarm

1. Check whether the alarm threshold is set correctly. Generally, the alarm threshold is set to 37.3 °C. Check whether the alarm threshold is set too large.
2. No temperature measurement if no face is detected: the face temperature measurement version detects the face first and then measures the temperature, and automatically discards the temperature lower than 30 °C and higher than 50 °C when measuring the temperature, so the hot water cup in hand usually does not alarm.

3.7.3 Device alarm but no sound

1. Check whether the alarm sound button in the lower right corner of the software is on.
2. Check that the computer speakers are on.

3.7.4 The device has an alarm sound but does not capture

1. Check whether the computer firewall and anti-virus software are closed
2. Whether the intelligent server address of visible light IPC is configured correctly (to be configured as computer IP address), and whether the port number is correct (to be configured as 54000)
3. It is recommended to use standard computer to test.

3.7.5 The device always gives false alarm

The following possible reasons need to be checked:

1. Please check whether the device moves and whether the blackbody temperature source can be seen in the infrared image. If not, you need to adjust the angle of the device to ensure that the blackbody is seen, and then select the blackbody in the software
2. Check whether the external blackbody is powered on? It needs to be more than 15 minutes stable after power on
3. Check whether the position calibration is accurate, and whether the face frame superimposed by the visible image and the infrared image in the live preview is consistent
4. Check whether the face detection frame in the infrared alarm capture image detects the high-temperature background. If there is, you need to block the high-temperature background to avoid interference
5. The outdoor environment temperature rises sharply, and the body surface temperature rises too much with the seasons change, it may cause over the manual compensation temperature in the client. Generally, if the outdoor environment changes more than 10 degrees, it is necessary to adjust the ambient temperature in the temperature correction page.

4 Appendix

4.1 Equipment components

The equipment components are as the following: (You need to have your own cable and socket)

Serial	Name	Quantity	remarks
1	Camera	1	Including infrared thermal and visible camera, output cable, power adapter
2	Blackbody	1	Include power line
3	Tripod	2	Standard tripod

4	Client software	1	Infrared temperature measurement screening software
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4.2 Equipment assembly instructions

4.2.1 Equipment installation

1. Open the tripod packing box and take out the tripod and tripod accessories.



2. Take off the fixed base of tripod, then fix the base on the camera directly, finally install the camera to tripod, as shown in the figure:



3. The installation in blackbody is the same as above

4. The effect of installation is as shown in the figure:

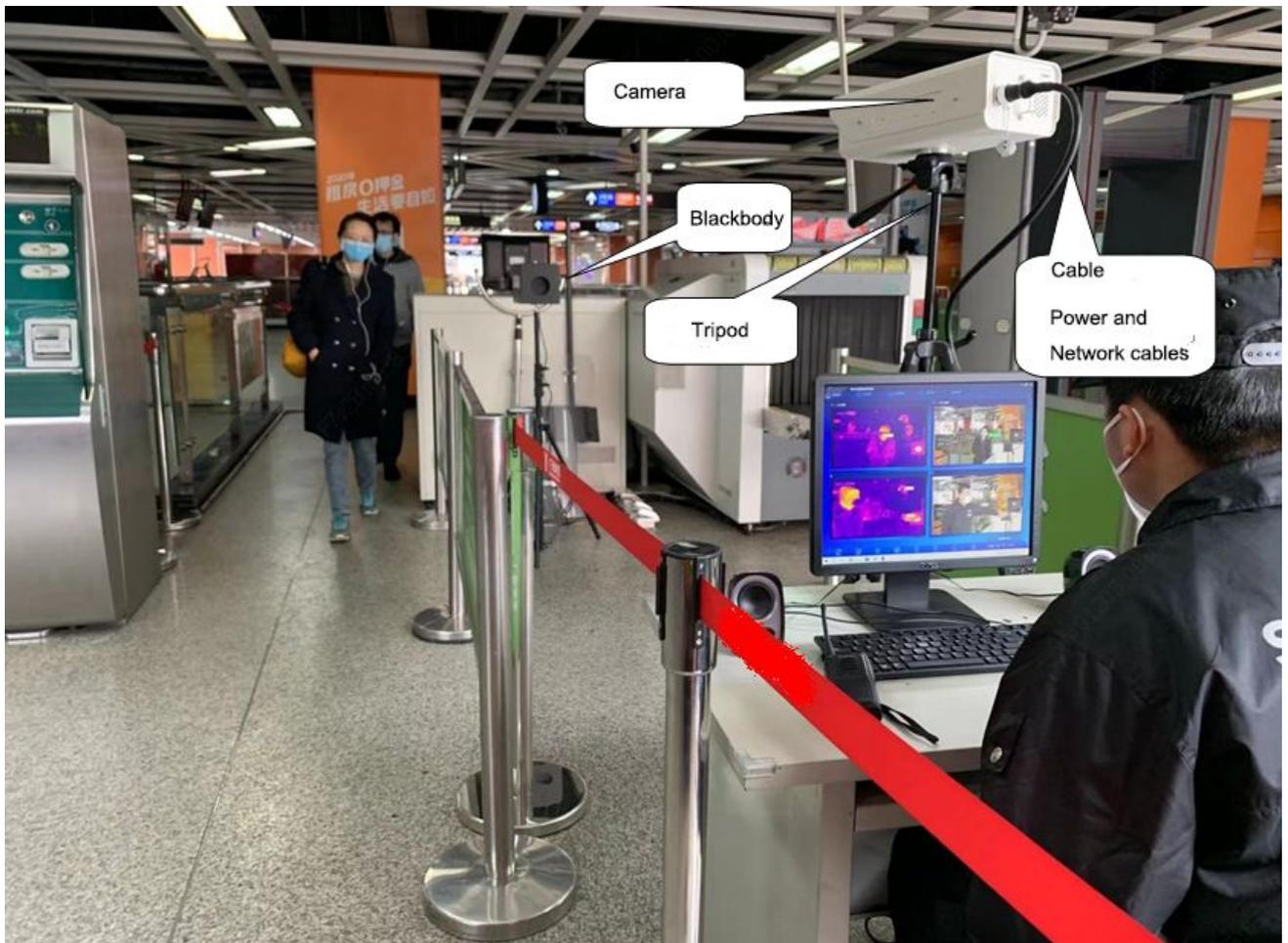


5. The distance between camera and blackbody is about 2-5M.

4.2.2 Line connection

1. Connect the two ends of the output cable to the camera and DC12V power adapter
2. Plug the two ends of the into the output cable and the network port of the computer.

4.2.3 Schematic diagram after assembly



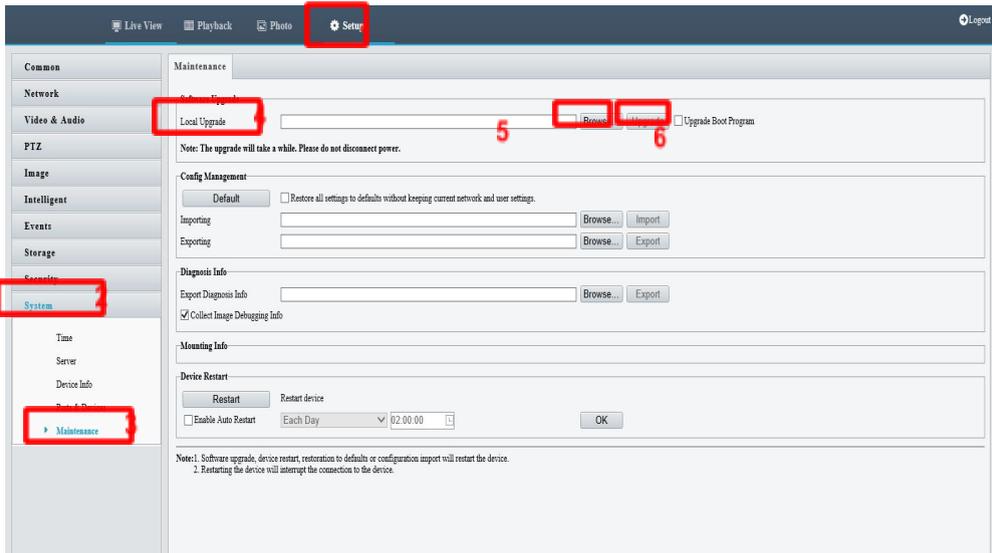
4.3 Methods of software installation and upgrade

4.3.1 Client upgrade

1. Uninstall the original client software first, and then open the task manager to confirm that no client related programs are running
2. Open a new client software and run it as an administrator.。

4.3.2 Visible camera software upgrade

1. Open IE browser, log in IP of 192.168.1.13, then log in user name of "admin" when the password is "123456", switch to "Setup"->"System"->"Maintenance", point to upgrade package, and click upgrade.
2. After the upgrade, it is recommended to restore the default configuration of visible camera software.



4.3.3 Infrared thermal camera upgraded

