User Manual

Body Temperature Measurement + Face Recognition Intelligent Panel Terminal

Model: FFT-02

V1.1
305503000481

Table of Contents

1 Product introduction

1.1 Product description

The product of 1080P temperature measurement & face recognition intelligent panel terminal is with LCD display screen. The product is an AI intelligent access control product, which embedding algorithm of deep learning face recognition, integrating the high-precision thermal imaging temperature measurement chip as well as ISP image processing. The product is equipped with powerful functions such as face detection, mask detection, face recognition comparison, body temperature detection and living body judgment. It's able to accurately capture the information (such as facial information, identity information, whether to wear a mask, etc.) and the body surface temperature of the person, who has passed through the camera's view. It is able to effectively help the users to manage access authority and monitor body temperature status, which is helpful to prevent the epidemic. Users can manage access rights offline by loading the face library to the device, as well as matching with attendance software to achieve employee attendance management. The products can be widely applied in scenes such as community access, barrier gate and passage, office building and so on!

1.2 Product appearance
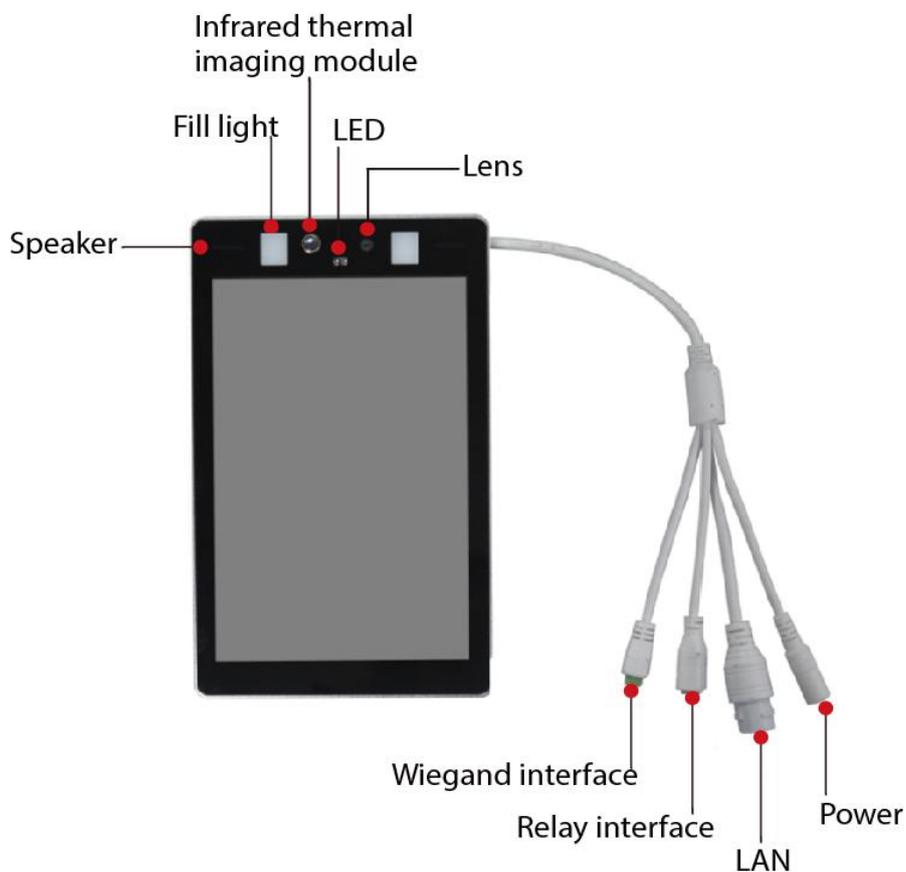
1.3 Definition of equipment interface

No.	Interface name	Interface description
1	Power interface	12VDC
2	Network interface	RJ45 network interface
3	Relay interface	+: NO Normally open port -: COM Common end
4	Wiegand interface	1: 12VDC 2: Wiegand protocol data port D1 3: Wiegand protocol data port D0 4: Signal ground

1.4 Packing Contents

● Panel Terminal × 1	● Power Adapter × 1
● Wall bracket × 1	● Wiegand male socket× 1
● Expansion Screws× 1	● User Manual× 1

2 Equipment installation

2.1 Hardware Installation

There are two ways to install this Panel Terminal. You can install it on the gate or on the wall.

2.1.1 The first way

You can put the gate bracket directly on the gate interface.

2.1.2 The second way

If you don't need the gate bracket, you can remove the bracket.
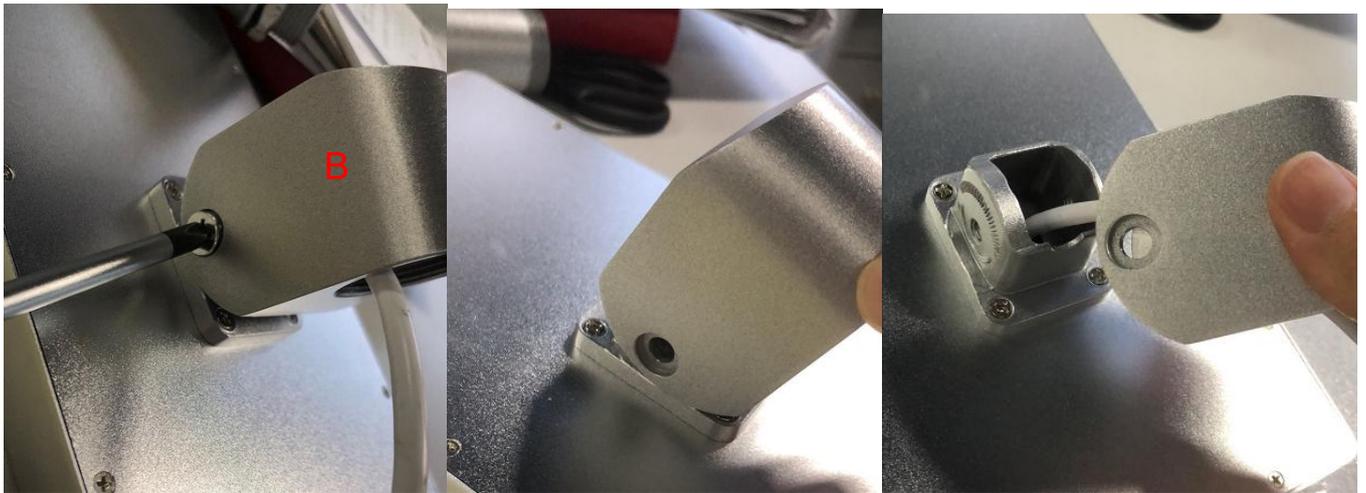
1. Unscrew the bracket A counterclockwise

2. Take the tail wire out of the bracket, as shown in the figure below.
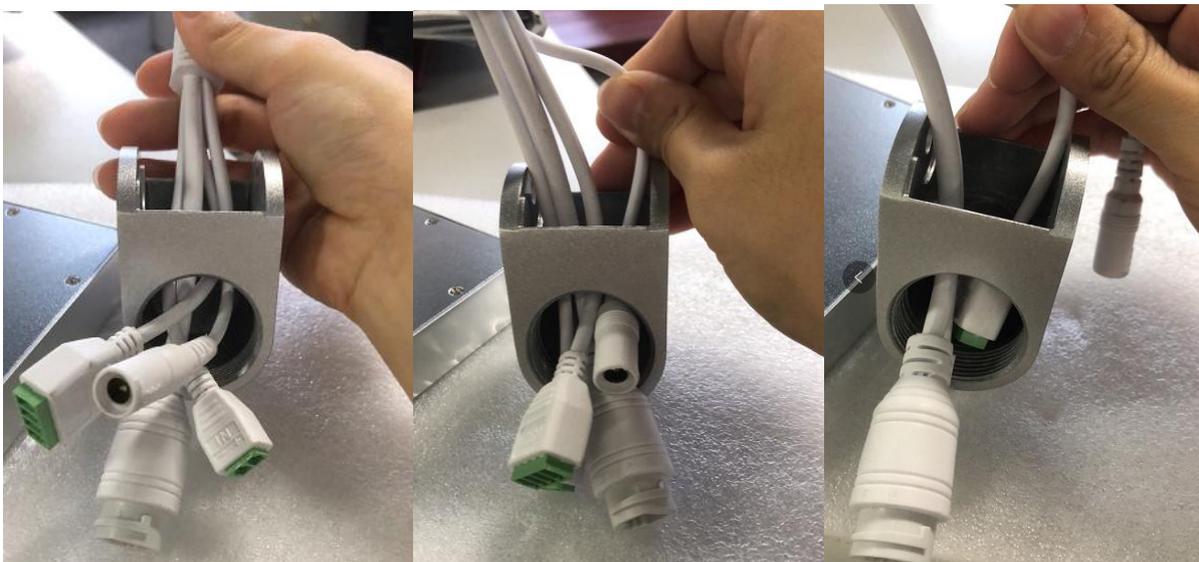
3. After taking out bracket A, use a screwdriver to loosen the screws on both sides of bracket B counterclockwise
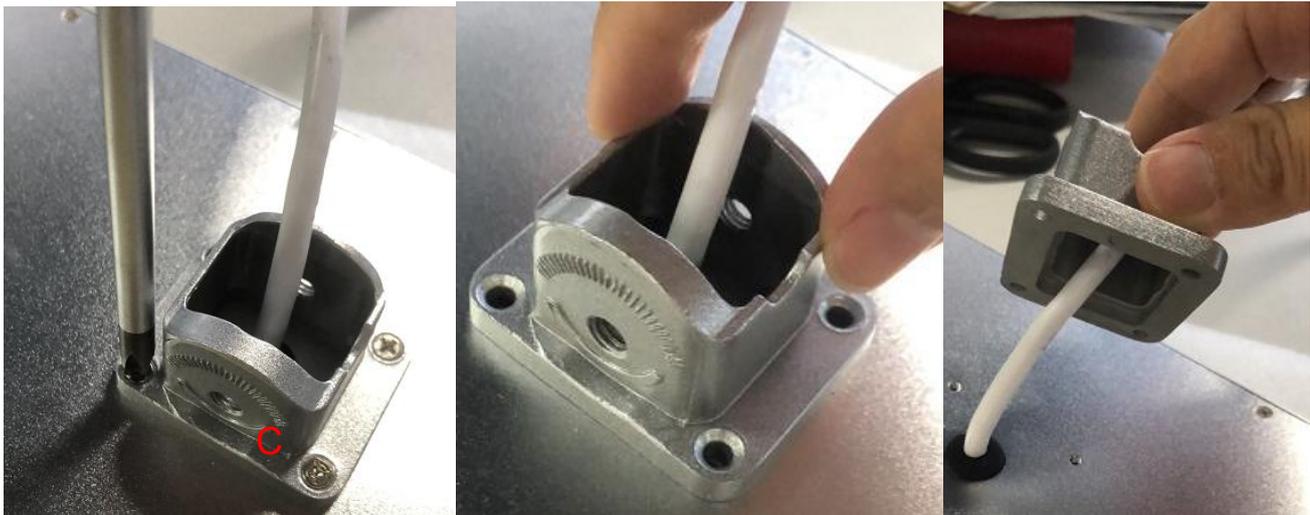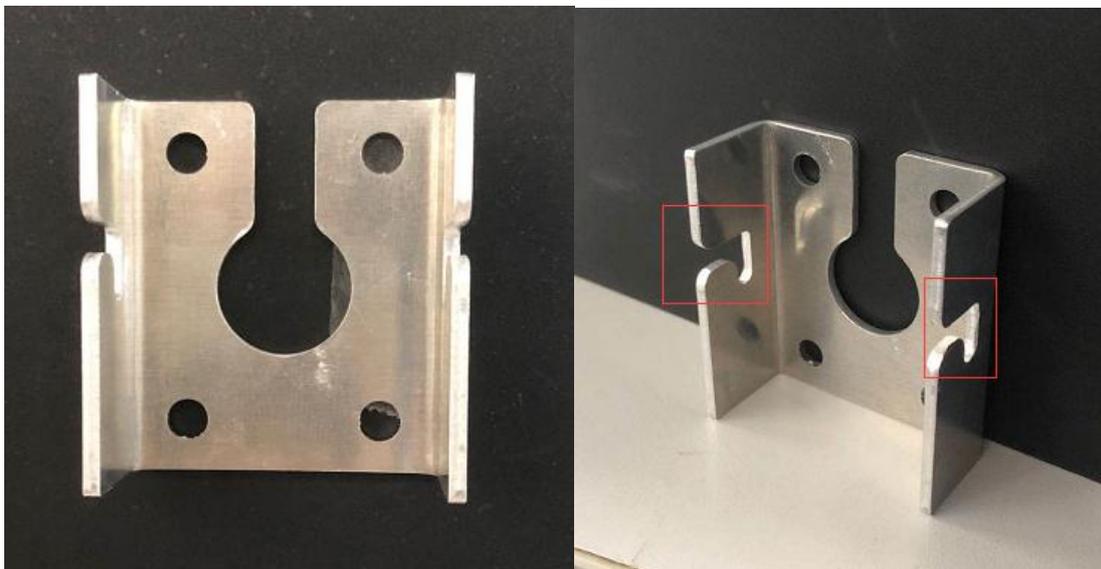

4. Pull out the interface wires one by one.

Note: Here must be pulled out one by one.

5. Use a screwdriver to unscrew the 4 screws on bracket C, and then pull out the interface cables one by one as in step 4.

6. Screw the mount on the wall with the four screws provided.
Note: The direction inside the red box.

7. Secure the mounting bracket to the back of the tablet with the four screws provided.

8. Then use 2 screws to screw on the side screw holes, as shown below

9. Hang the bracket on the back of the machine on the bracket fixed on the wall, as shown below.


10. Finally, use a screwdriver to tighten the side screws to prevent falling.

2.2 Installation location

The camera shall be set in front of the channel to capture the face
1. The camera shall be set in front of the channel to capture the face.
2. It is suggested that the height h is about 1.4~1.6 meters, and the top view angle of the camera is 0~5. degrees.
3. In order to ensure the effect of temperature detection, it is better to keep the equipment 0.4m away from the personnel collection point (with the range of 0.3~0.5m), and the face pixels are not less than 100 pixels.
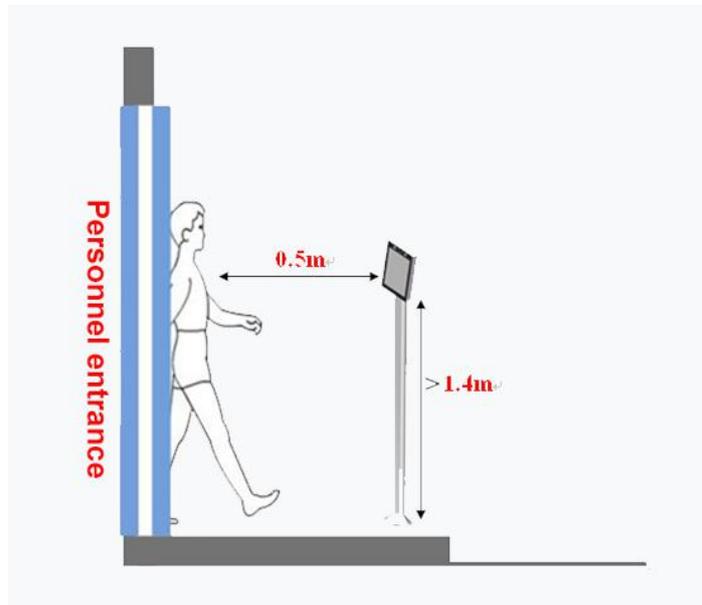

2.3 Installation environment

1. Requirements for illumination: no backlight, no obvious reflection on the face, uniform light and no shadow. In addition, in order to ensure that the scene lighting is sufficient during face capturing, it is suggested that if the face in the lens image is not bright enough, lighting equipment should be added accordingly to supplement the light on the face of the personnel (generally up to 250-800 Lux).
2. Requirements for light and wind: recommend to install the equipment indoors, ensure that there is no wind or direct sunlight between the equipment and personnel, and to avoid too low or too high temperature measurement caused by blowing heat and direct sunlight.

2.4 Wiegand interface use

2.4.1 Wiegand output

2.4.1.1 Process introduction
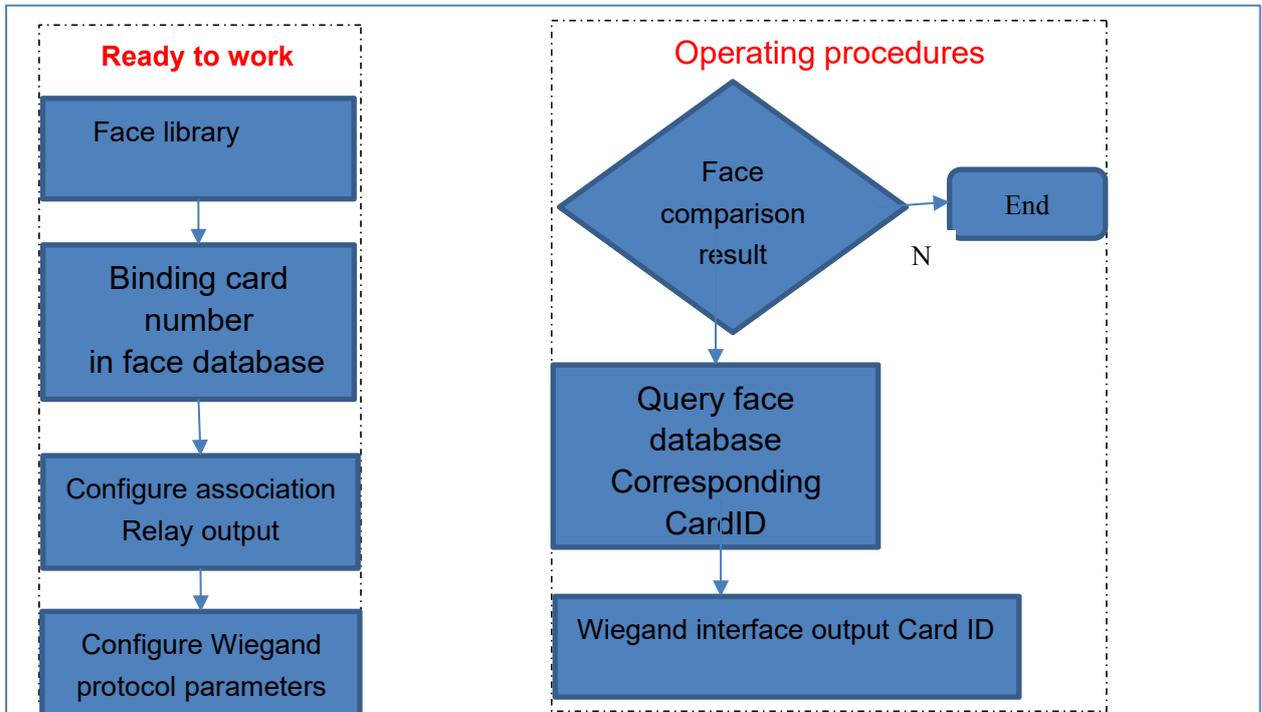
2.4.1.2 Wiring diagram

No.	Interface name	Interface description
1	Power interface	12VDC
2	Network interface	RJ45 network interface
3	Relay interface	+: NO Normally open port -: COM Common end
4	Wiegand interface	1: 12VDC 2: Wiegand protocol data port D1 3: Wiegand protocol data port D0 4: Signal ground

Connect D0, D1 and GND of the Wiegand interface to the Wiegand input interface of the access control board in order.

2.4.1.3 Steps

Step 1: Add the face database, bind the Wiegand card number Card ID, as shown in the figure 12345678, click Confirm;

Step 2: Configure the interface, turn on the Black / White list comparison switch and Face Recognition + Relay;

Step 3: WEB web page configuration Wiegand output:

Enter the IP address of the device in the IE browser to log in, enter the Settings—Network—WIEGAND interface, and configure according to the parameters of the Wiegand control panel

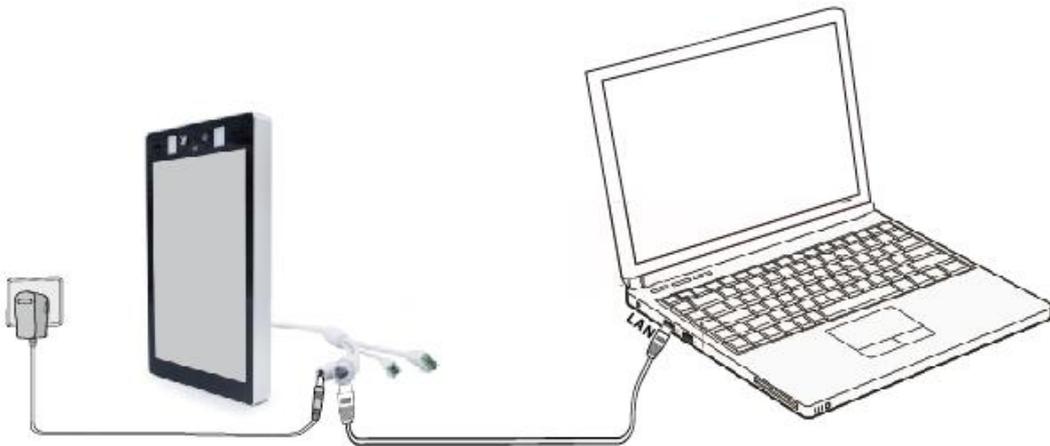**MODE**：26-bit or 34-bit； **Card Number**：DET or HET
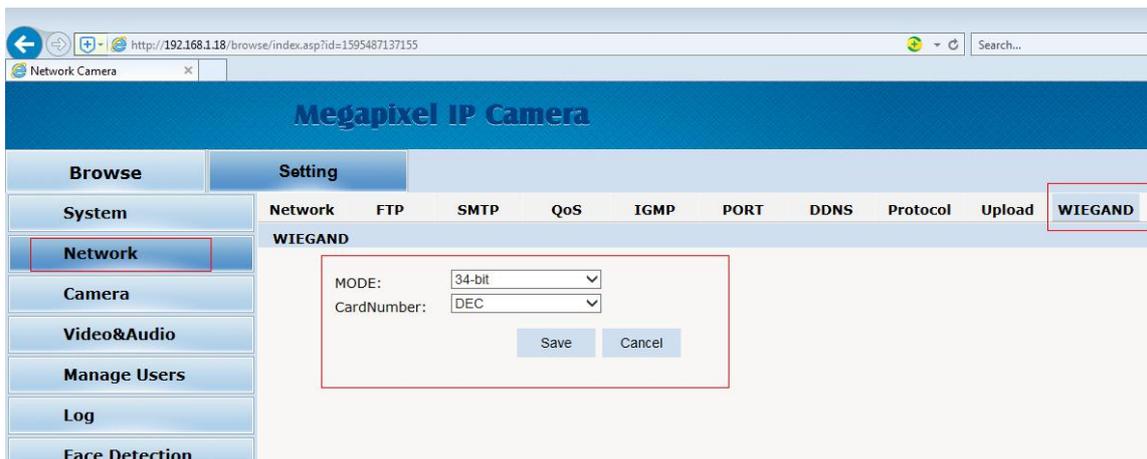
Step 4: Align the face with the device identification frame, and after the comparison is successful, the Wiegand interface outputs the signal to the control board.
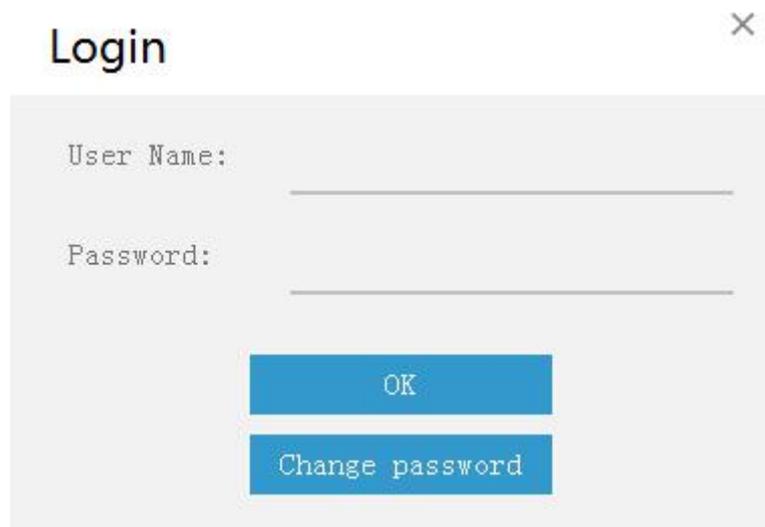
3 Quick instructions

3.1 Equipment connection

The equipment can be connected to the PC through the network cable. After the equipment is powered on, Download the "Access Control Software for FFT-02 / Access_control_software" from foscam.com/tools to your computer, open the smart access control management software, input user name and password to login. **The default username and password is admin/123456,** You can click the **Change Password** button to modify the password.

NOTES:
Access_control_software only supports Windows system.
Factory equipment default IP address is 192.168.1.18, your computer IP address needs to be on the same network segment as the equipment.

How to modify the IP address of a windows computer?
If your computer is directly connected to the network cable, not through the router, the setting method is as follows:

1. Right-click the network icon on the computer desktop and select "Properties", enter to Network and sharing center, then click "Local Area Connection"
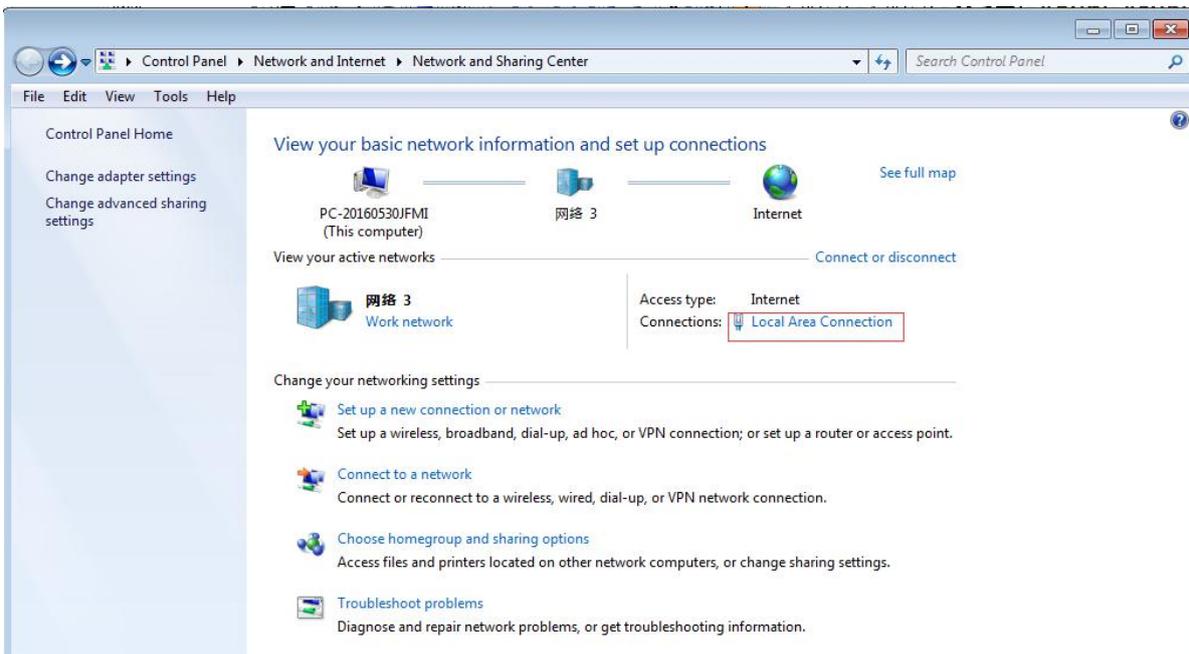
2. After entering the Local Area Connection Status interface, click "**Properties**", enter to Local Area Connection Properties interface, then Double click "**Internet Protocol Version 4(TCP/IPv4)**"
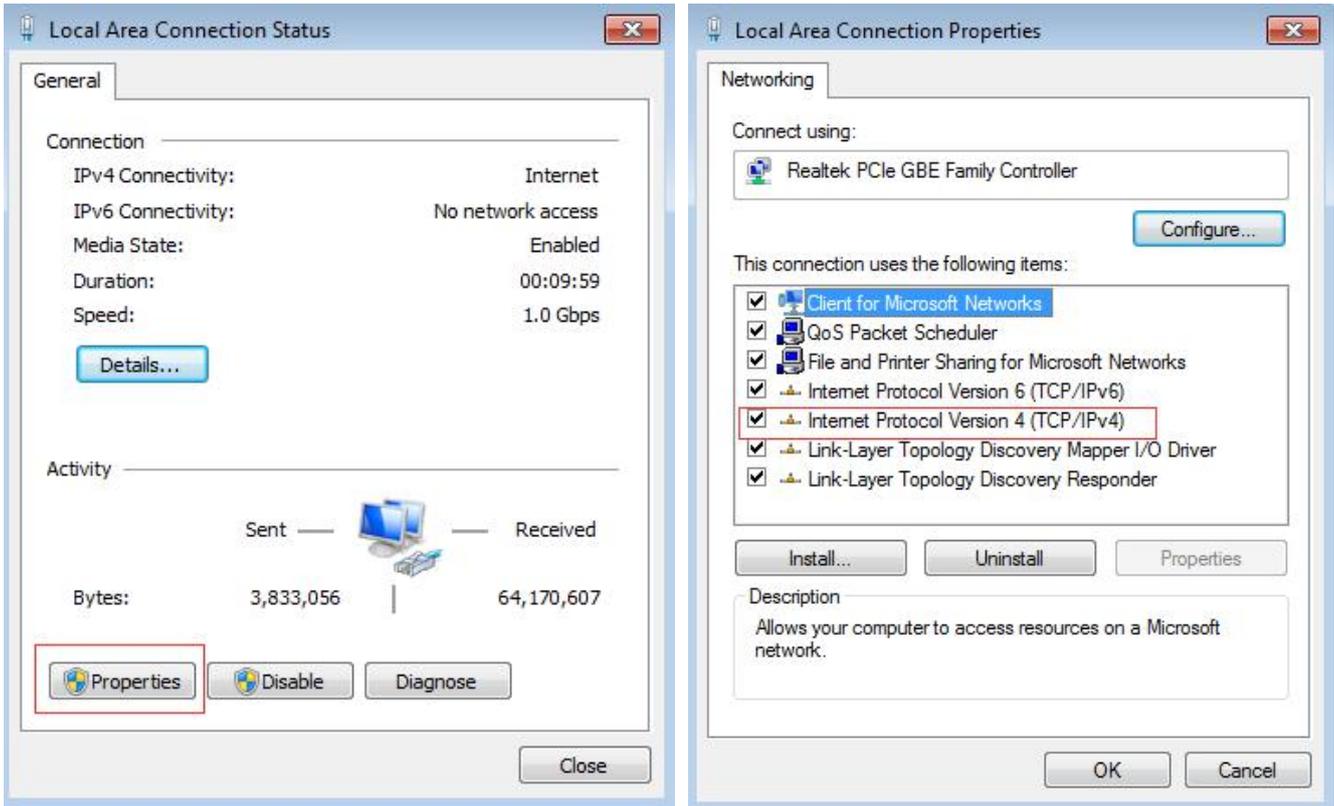
3.Enter to Internet Protocol Version 4(TCP/IPv4) Properties interface, select "**Use the following IP address**"
You can enter the IP address as 192.168.1.(2~254), Except 192.168.1.18, click "OK" to take effect.

If your computer is connected to the router through the network and then connected to your computer by the

router, the setting method is as follows:
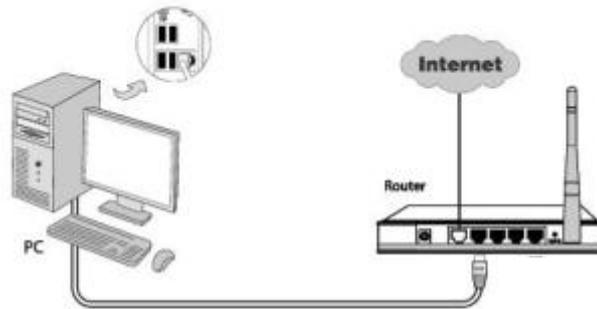
1. You can enter 192.168.1.1 in IE browser to enter your router settings page, if it is not 192.168.1.1, please check the management account information marked on your router, You must set the IP address to 192.168.1. (1~254), Except 192.168.1.18, click "OK" to take effect.

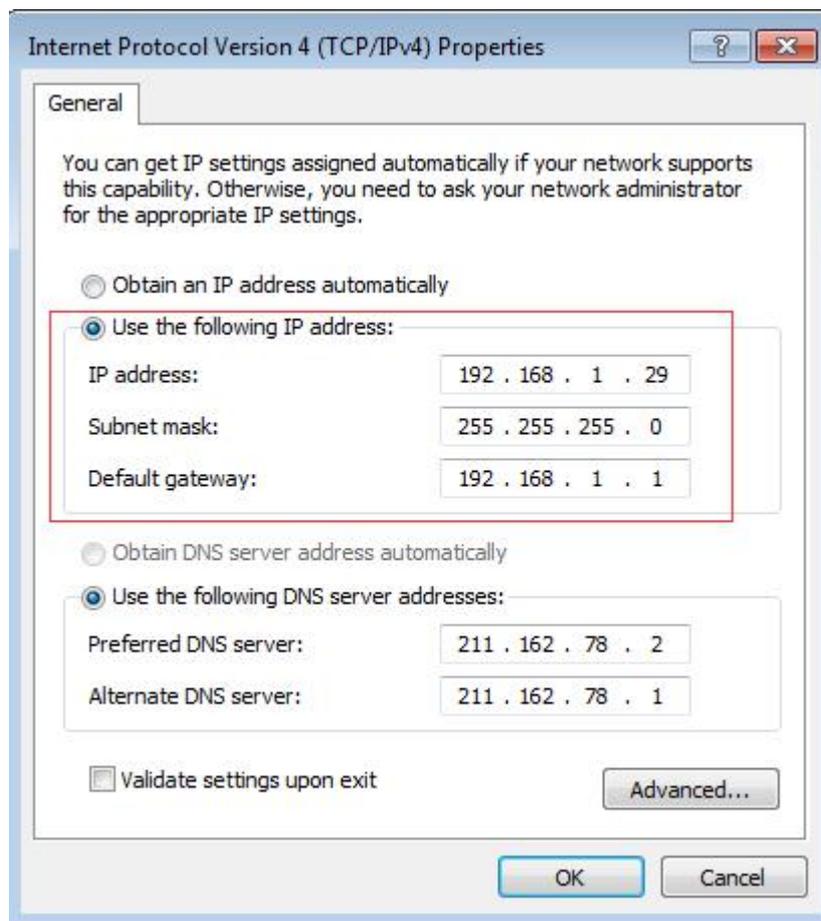2. Right-click the network icon on the computer desktop and select "Properties", enter to Network and sharing center, then click "Local Area Connection"
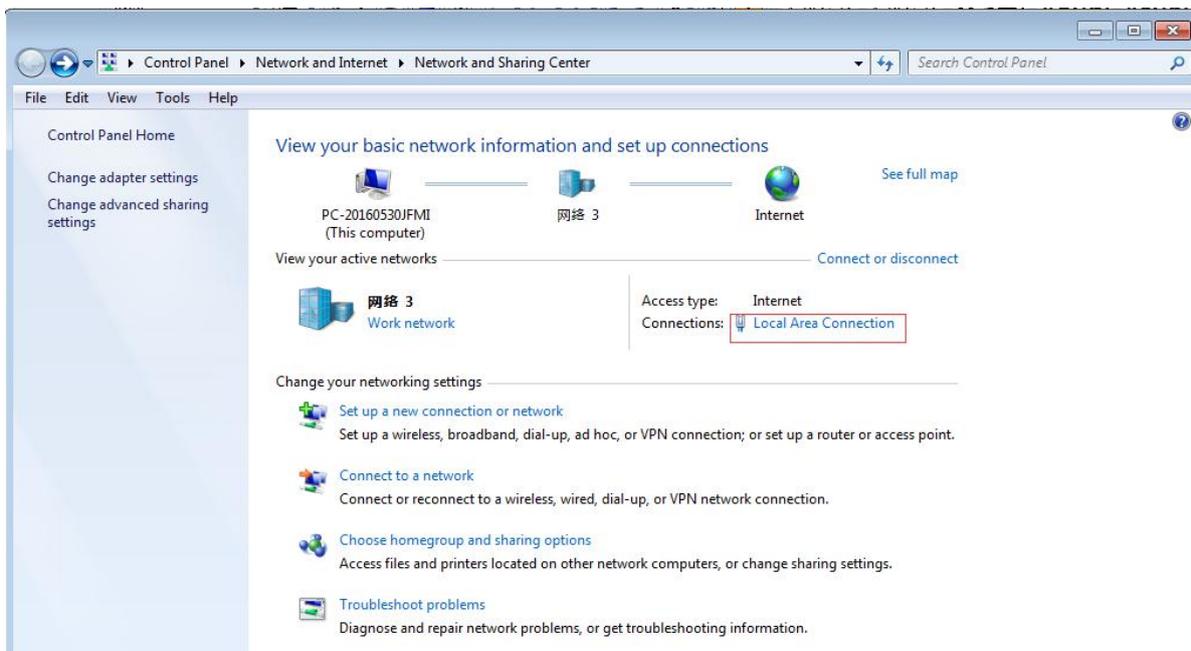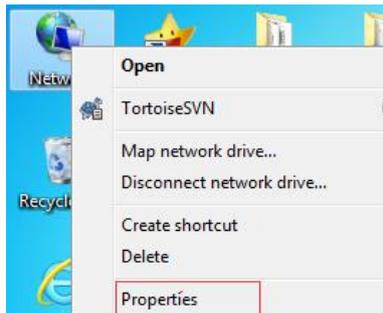
3. After entering the Local Area Connection Status interface, click "**Properties**", enter to Local Area Connection Properties interface, then Double click "**Internet Protocol Version 4(TCP/IPv4)**"
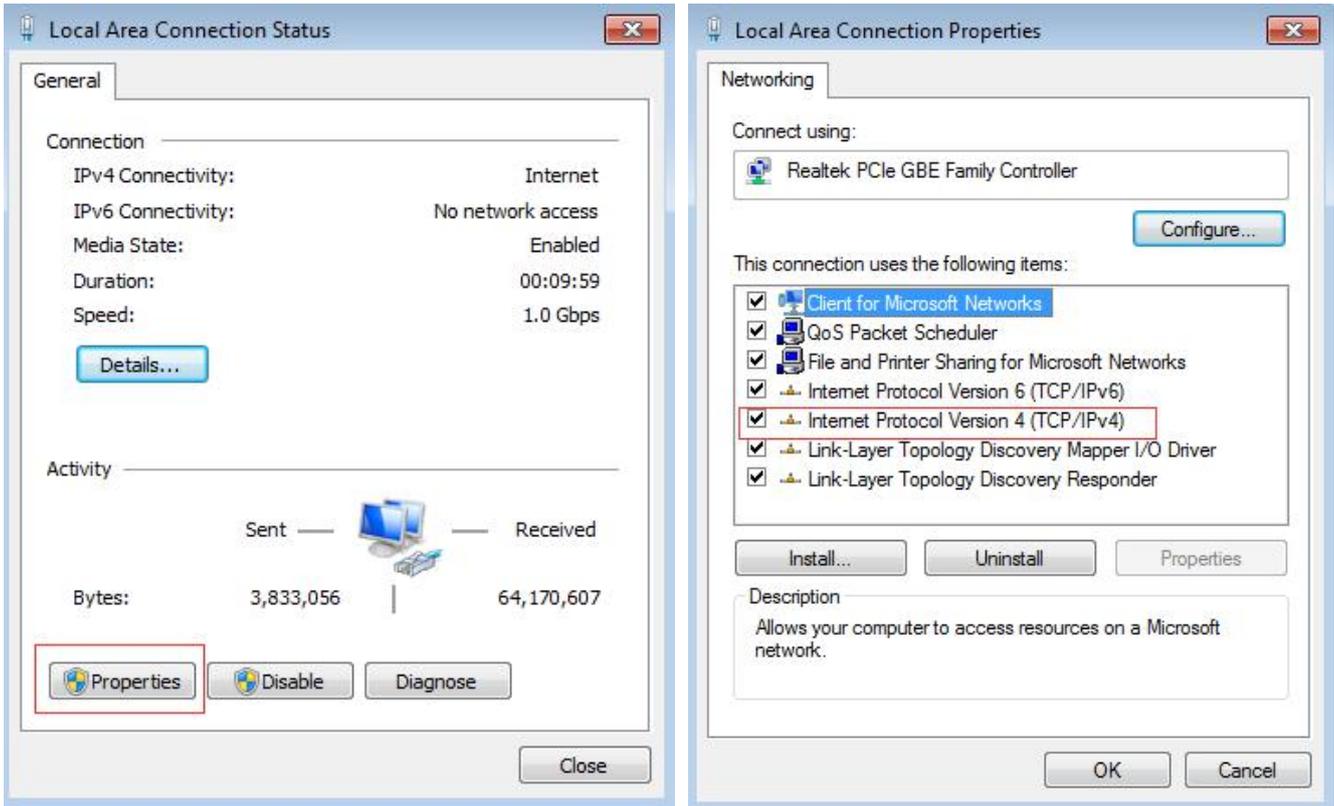
4.Enter to Internet Protocol Version 4(TCP/IPv4) Properties interface, select "**Obtain an IP address automatically**" and" **Obtain DNS server address automatically** ", click "OK" to take effect.
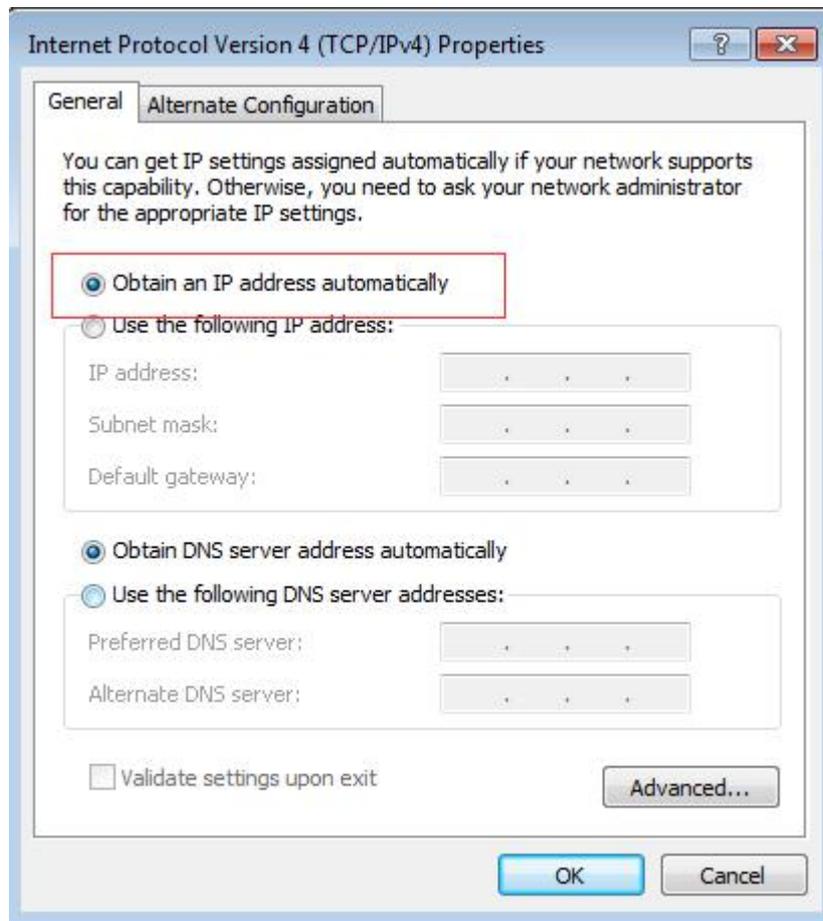
3.2 Smart access control management software

After the device is powered on, the smart access control management software can be employed to set up a face library, preview real-time video, display real-time comparison results, read device logs, and configure device parameters. etc.

3.2.1 Introduction to main interface
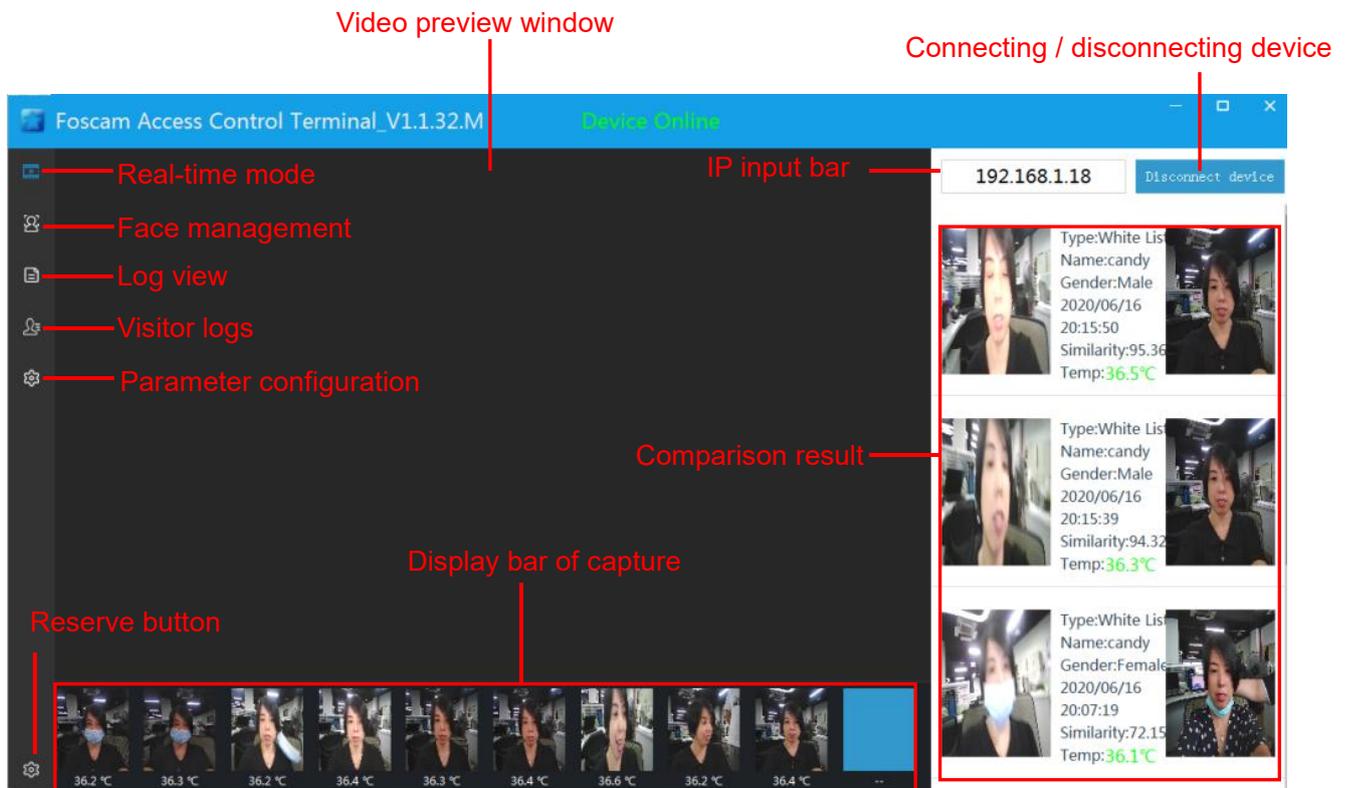
Video preview window: After the device is connected, play the real-time video of the camera.

IP input bar: The IP address of the device can be input here.

Button for connecting / disconnecting device:

Click [connect device] to connect to the device, it can be used to view real-time video, upload real-time snapshot pictures, display the recognition results, etc.

Click [disconnect device] to disconnect and close preview.

Comparison result: When the captured face matches with the face library in the device, it will be displayed here. The basic information, similarity, temperature and other information of the face will be displayed, if the face library is not matched, it will not be displayed.

Display bar of capture: In the mode of video preview, it can be used to display the captured face pictures and body surface temperature under the current screen.

Face management: Click to enter the face library management interface, it can be used to perform operations such as adding, subtracting, deleting, checking, and modifying the face librar

Log View: View and export the face recognition record information saved by the device, and generate the personnel attendance record table.

Parameter configuration: The interface of key parameter configuration of face recognition of the device, parameters are able to be modified on this interface.

Reservation button: No function is defined yet, software setting function will be added later.

3.2.2 Face database management

Users are able to perform operations such as adding, subtracting, deleting, checking, and modifying the face library in this interface.
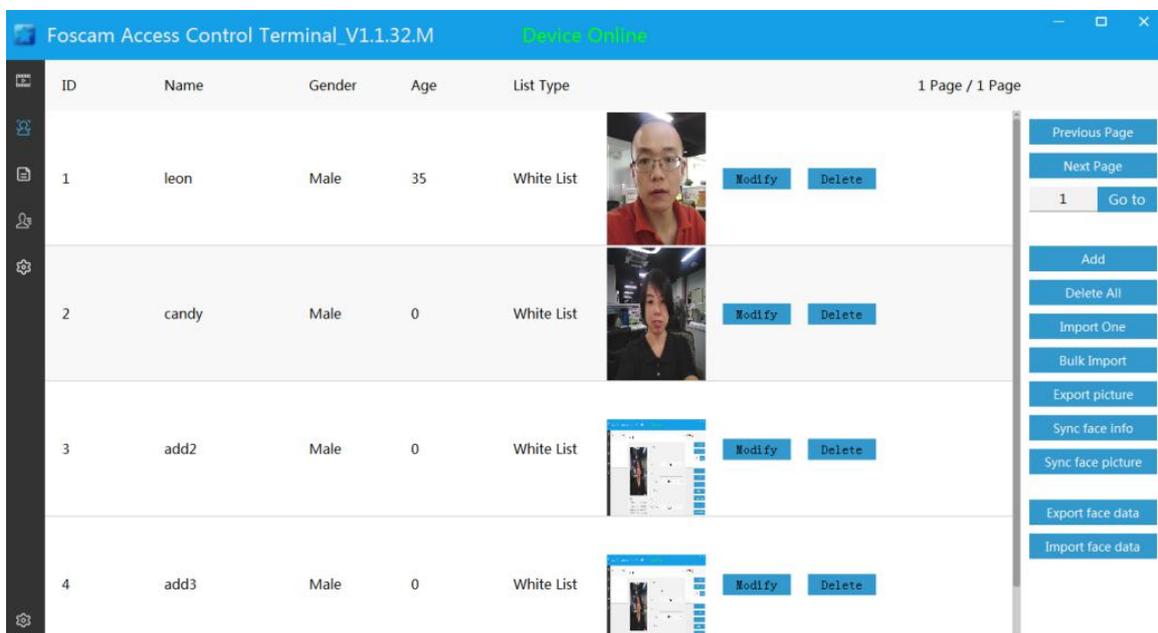
Previous Page / Next Page: Previous / Next page switching button

Go to: Enter the specified page, click jump to quickly enter the corresponding page

Add: Snap to add face library to the device

Delete All: Click the button to delete all face libraries in the device

Import One: Import one single picture to the device face library

Bulk Import: Batch import multiple pictures to the device face library

Export picture: Export and backup the face library saved in the local software as a picture

Sync face info: Click to automatically upload the basic information of the device's face library personnel, such as the name, number, gender, age, etc.

Sync face picture: The device uploads the face library to the PC software

Export face data: Export and backup photos of face library which was saved locally

Import face data: Export and backup the information of the face library moved out to be backed up

Modify: Modify the personal information of the current face

Delete: Delete the current face library information from the device

3.2.2.1 Add

Click the **Add** button to enter the interface ➔ the face is facing the camera ➔ click the **Snap** button, capture the face picture ➔ enter the personnel information, and click the **Confirm** button ➔ the official face entry is successfully completed.
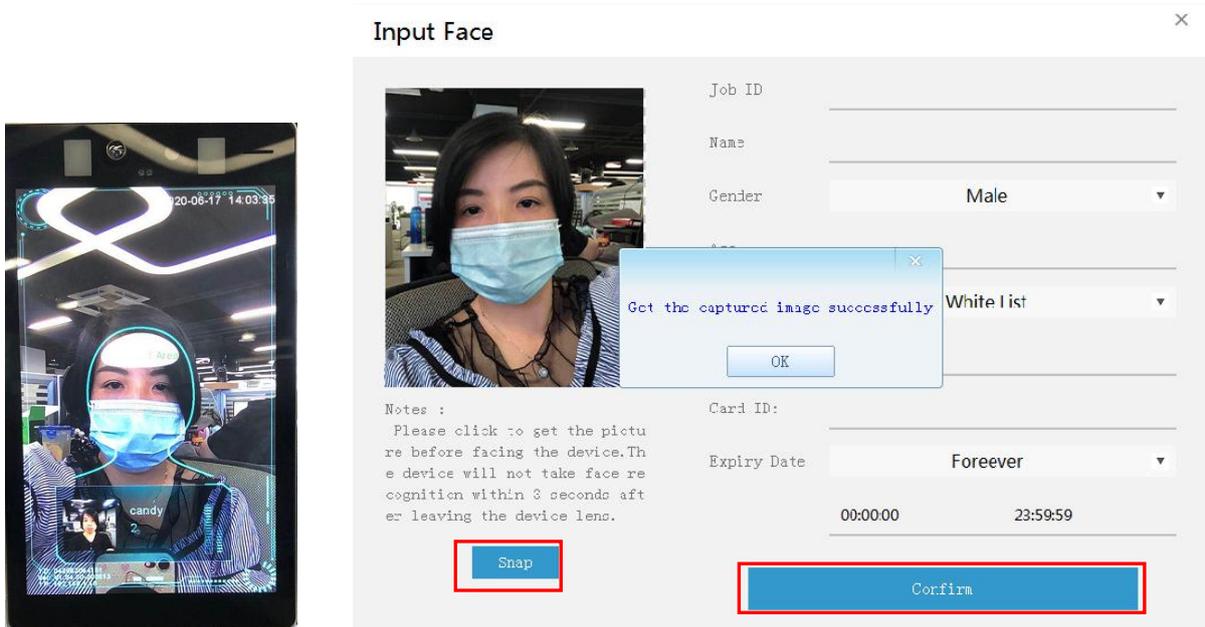
3.2.2.2 Import one face library

Click I**mport one**, the face input interface will be popped up ➔ click **PIC**, select the face image file ➔ enter the person information ➔ click **confirm to enter** to complete the single face import.
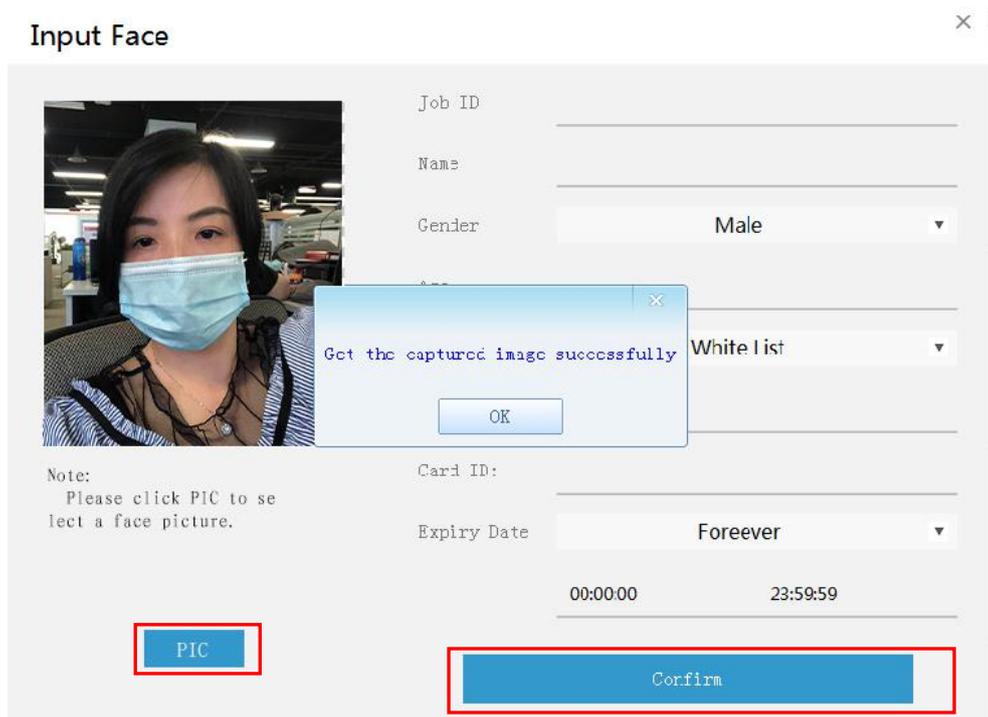
3.2.2.3 Bulk import face library operation

Click **Bulk Import,** the interface pops up ➔ click **Select File**, select the face picture folder ➔ click **Start Importing**, and the import progress bar is completed to complete the batch import face operation.
Note: The user are able to save the personnel information in the name according to the rules, import the picture name in batches will import the personnel information into the device synchronously.

Bulk Import Faces   ×

Rules:

1."name.jpg"

2."ID_name.jpg"

3."ID_name_gender.jpg"

4."ID_name_gender_age.jpg"

5."ID_name_gender_age_phonenumber.jpg"

6."ID_name_gender_age_phonenumber_IdNumber.jpg"

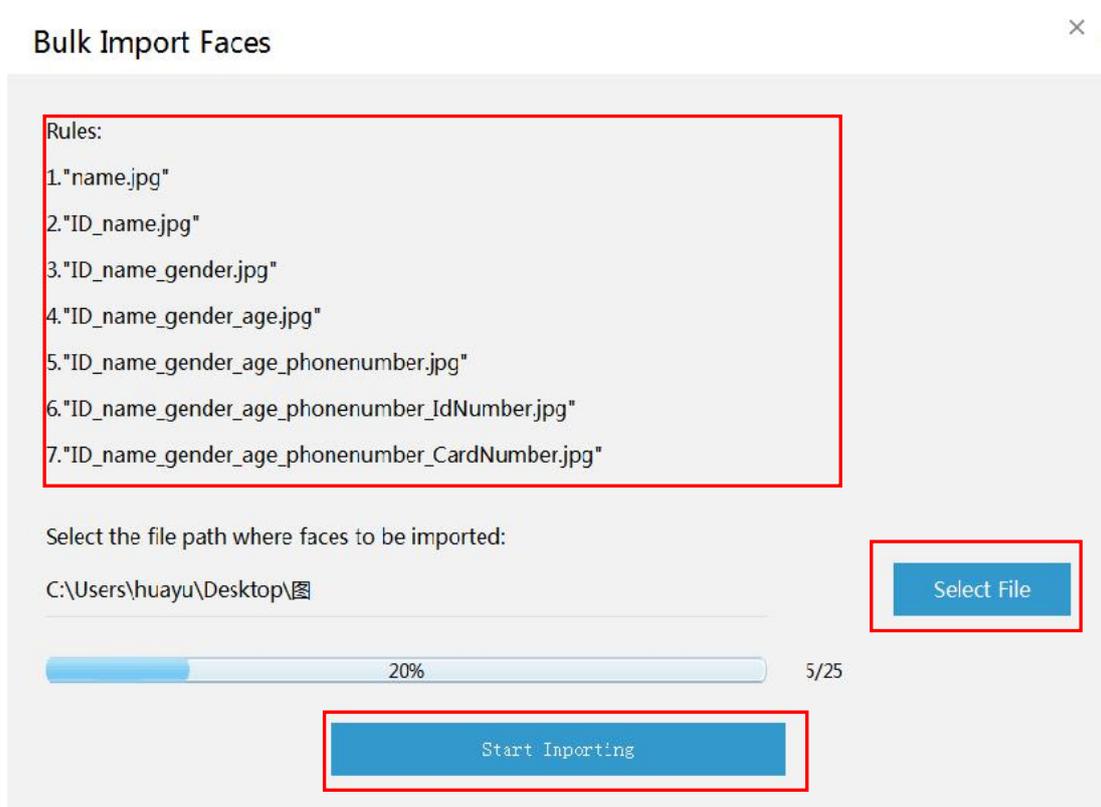7."ID_name_gender_age_phonenumber_CardNumber.jpg"

Select the file path where faces to be imported:

C:\Users\huayu\Desktop\图

[20%   ]   5/25

Select File

Start Inporting

3.2.2.4 Operation of Export picture

Click the **Export picture** button ➔ select the picture naming rules in the pop-up box ➔ select the directory and click the start export button to perform the export action ➔ after the export is completed, a folder named by date will be generated.

Before exporting, please make sure that the local is synchronied with the device. If not, please click "synchronize face photos" to synchronize.

OK
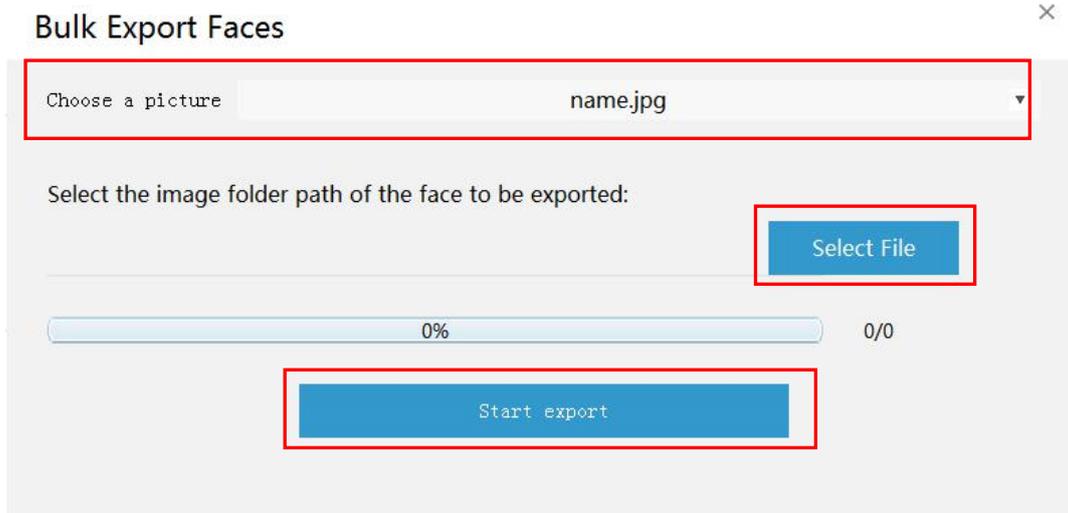
3.2.2.5 Sync face info

Click the **Sync face info** button to synchronize the basic information of the face library, after synchronizing the basic information of the face library, you can view the face information on the page.
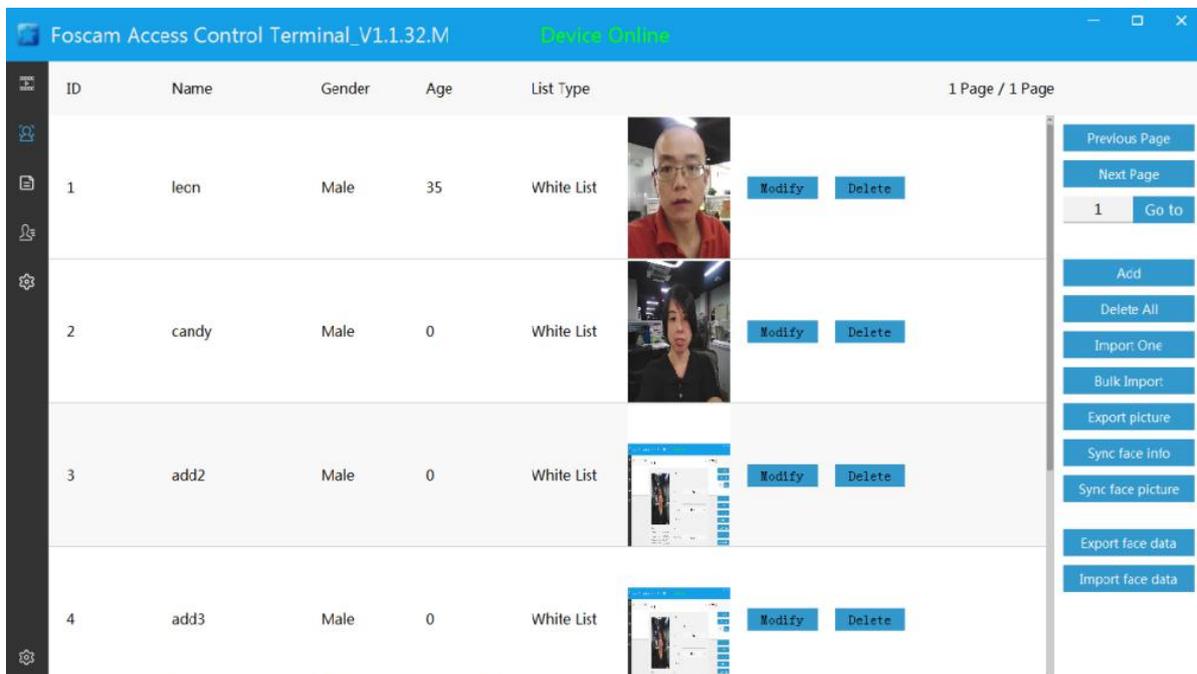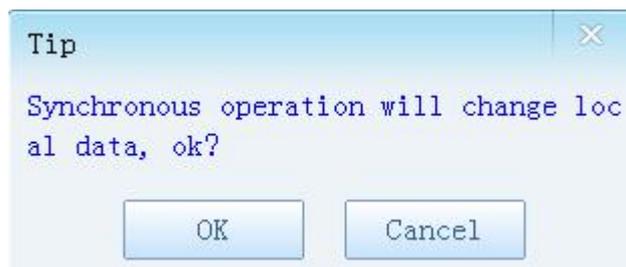
3.2.2.6 Synchronous face picture

Upload the face library in the device to the management software. After replacing a new device, the face library

has to be manually synchronized first, otherwise, the personnel information on the management software and the device's face library may be inconsistent, which may result in incorrect display of the identification and comparison information.
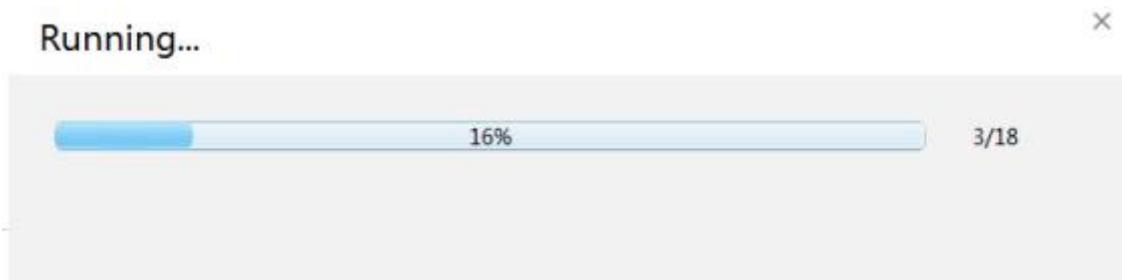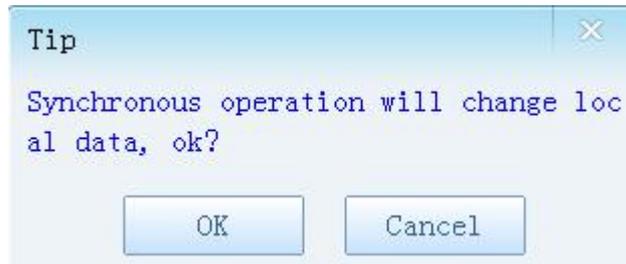
3.2.3 Log viewing & attendance record

Click [icon] button to enter the interface ➔ select the search start and end time➔click [icon] button to search the log.

Export attendance record: Click button ➔ select save path ➔ automatically export attendance record to save EXCEL.

A	B	C	D	E	F	G	H	I	J	K	L
DATE	FACEINDEX	ID	NAME	Working hours	Working temperature	Working wear a mask	Minutes late	after work time	after work temperature	after work wear a mask	Minutes early
2020-06-16	1	100	leon	--	36.2	yes	1	--	36.3	yes	OK
2020-06-16	2	2	candy	9:00:42	36.3	no	0	20:10:53	36.5	yes	OK
2020-06-16	3	3	add2	--	36.4	yes	2	--	36.3	yes	OK
2020-06-16	4	4	add3	--	36.1	yes	0	--	36.1	yes	OK
2020-06-16	5	5	add4	--	36.6	yes	0	--	36.3	yes	OK

3.2.4 Visitor logs

Click button enter to the interface ➔ select the search start and end time➔click button to search the log.
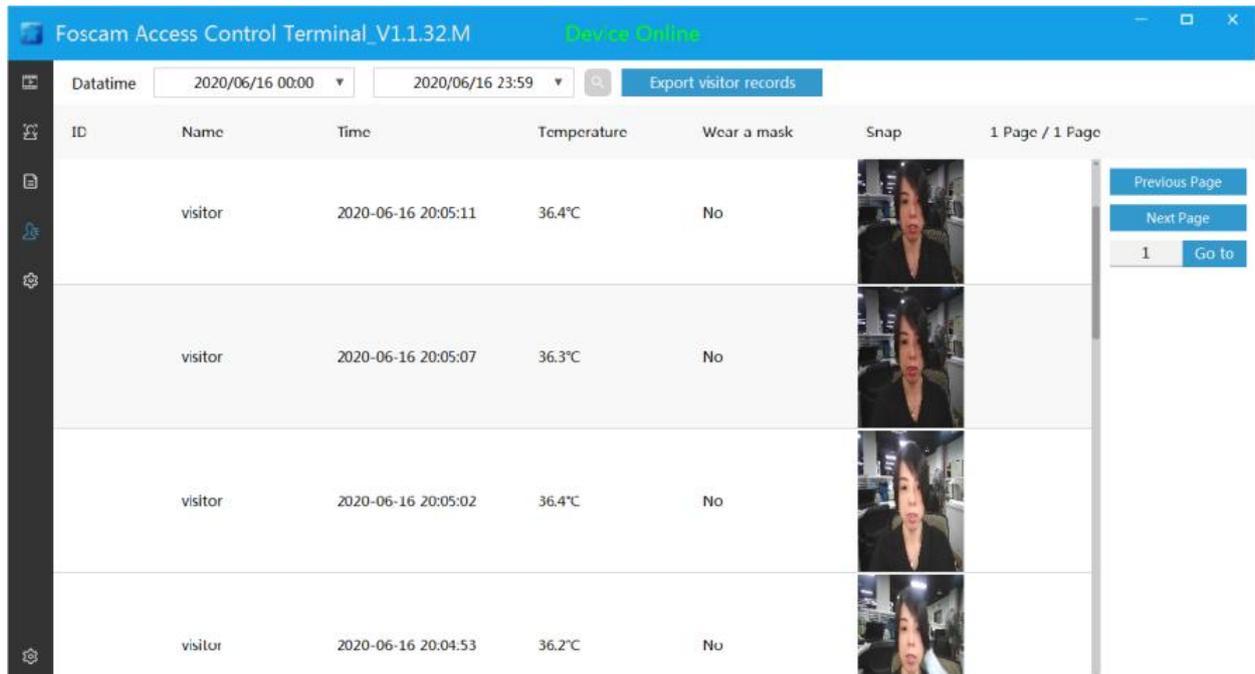
Click the **Export visitor record** button ➜ select the save path ➜ automatically export the attendance record to save EXCEL.

ID	name	date	time	temperature	wear a mask	image
	visitor	2020-06-16	17:40:49	36.6	yes	
	visitor	2020-06-16	17:40:53	36.6	yes	
	visitor	2020-06-16	17:40:57	36.6	yes	
	visitor	2020-06-16	17:41:01	36.6	yes	
	visitor	2020-06-16	17:41:06	36.5	yes	

3.2.5 Parameter configuration

Users can set the key parameters of the face capture and device switch functions. The device supports the three major functions of face recognition comparison, body temperature detection, and mask detection. Users are able to freely configure the switch function, whether or not to associate with control relay, and whether or not to broadcast voice reminders, etc. For example, if the user requires the door can be opened when the body temperature is normal, to realize this, the body temperature detection function needs to be turned on and the rest closed; if the user requires the door can be opened when the specified person, those with normal body temperature and are wearing mask, the face recognition comparison, body temperature detection, and mask detection need to be enabled at the same time, and when all three of these tests are normal, the relay will be controlled to open the door. The configuration interface and specific details are as follows.

Snap Interval: set the face capture time interval to avoid repeated capture of pictures in a short time.

Face Anti-Spoofing Parameter: Set the Face Anti-Spoofing Parameter, 0-1, the larger the value, the stricter the living body detection and the safer it is.

Snap Picture Quality Parameters: Set the Snap Picture Quality Parameters, 0 is the worst, 1 is the best.

Face Recognition Parameter: Set the Face Recognition Parameter, compare the captured face pictures with the face library, if the similarity exceeds this threshold, it would be recognized as the same person.

The threshold is recommended to be set above 70, the greater the matching similarity, the higher the requirement and the safer it is

Snap Picture Blur Parameter: Set the Snap Picture Blur Parameter, range 0-1, the smaller the value, the clearer

Same Person Identified Time: Set the Same Person Identified Time, if it exceeds the number of times, there will no longer be any recognition, only by exiting the camera's field of view and re-entering the screen can it be continued to recognition.

Recognition distance parameter: 0.5m, 1m, 1.5m, 2m, 2.5m are optionally to be configured. The default is 1 meter. Since the distance limit of the temperature measurement module is within 1 meter, this option is limited

and cannot be set.

Face exposure parameter (0-100): Set the brightness of the captured picture of the face, the default is 50.

Software version: the factory default configuration version number is displayed for no revise.

Temperature compensation setting: In the case of harsh environment, increase the compensation temperature to improve the accuracy of temperature measurement

Normal Temperature t parameter: Set the temperature alarm temperature value, if it is higher than the set value, abnormal body temperature will be warned, if it is lower than the set value, the body temperature is normal.

switch delay time: The pulse time (unit 100ms) of the switch output, the default configuration is 2 or 200ms.

Black / white list comparison switch: Turn on and off the face recognition comparison function, if it is off, the face comparison will not be performed.

Face Recognition + Relay: Switching the face recognition result associated relay action, after turning on, if face comparison is successful, and switched to the white list, the relay will be controlled to close.

Face recognition voice prompt: Configure the voice broadcast mode of the recognition result, including three modes: on, off and on only for abnormal.

> **On:** When the comparison result is a white list, "please pass through" will be broadcast in voice, if the comparison result is not in the list library, u, then the voice broadcast will not be recognized;

> **Off:** no comparison and identification results will be broadcast;

Temperature Detection On / Off: turn on and off the temperature detection function.

Temperature- Detection + Relay: Configure whether to associate the relay. Configure to be related, if the body temperature is normal, the relay is controlled to open and close, and the default control relay mode is closed.

Temperature detection voice prompt: Configure the temperature test result voice broadcast mode to: Off, Only for abnormal and TEMP vice prompt.

> **Only for abnormal**: If the temperature measurement value is higher than the high temperature threshold, "abnormal body temperature" will be voice broadcast, and the temperature is not broadcast when normal;

> **Off:** Broadcast no temperature measurement results;

TEMP vice prompt: Broadcast the measured temperature value, if it is higher than the high temperature threshold, broadcast "temperature xx℃, abnormal body temperature"

Mask detection On / Off: Turn on and off the mask detection function.

Mask detection mode: It can be configured as two modes: the epidemic mode and the non-epidemic mode. Epidemic mode: In this mode, the voice will prompt "Please wear a mask "when detecting a mask is not worn; Non-epidemic mode: In this mode, when a person is detected wearing a mask, the voice will prompt "Please remove the mask" to improve the recognition accuracy.

Mask-+ relay: Turn on and off the mask-associated relay. In epidemic mode, when the mask is worn correctly, the relay is controlled to operate, otherwise the relay is not controlled.

Mask detection voice prompt: Configure the mask reminder broadcast mode to only for abnormal, Off.

> **Only for abnormal:** in epidemic mode, "please wear a mask" will be broadcast if a mask is not worn, otherwise no reminder will be broadcast;

> in **Off** mode, "please remove the mask" will be broadcast if a mask is worn, otherwise there will be no broadcast.

Overlay time: When it selects stacking time, the device's current time is displayed on the screen, and when it is No stack, the device's time is not displayed on the screen.

Temperature format: Configure the temperature unit. It can be configured as two temperature units of Celsius and Fahrenheit.

Relay On / Off State: There are two modes: Normal and Abnormal

Temperature measuring mode: There are two modes: Indoor and outdoor, you can choose according to your installation environment

IO output mode: There are two modes: Wiegand output and lamp control output, you can choose according to your needs modes.

Face recognition mode: There are three modes: Local recognition, Local and online recognition and Online recognition
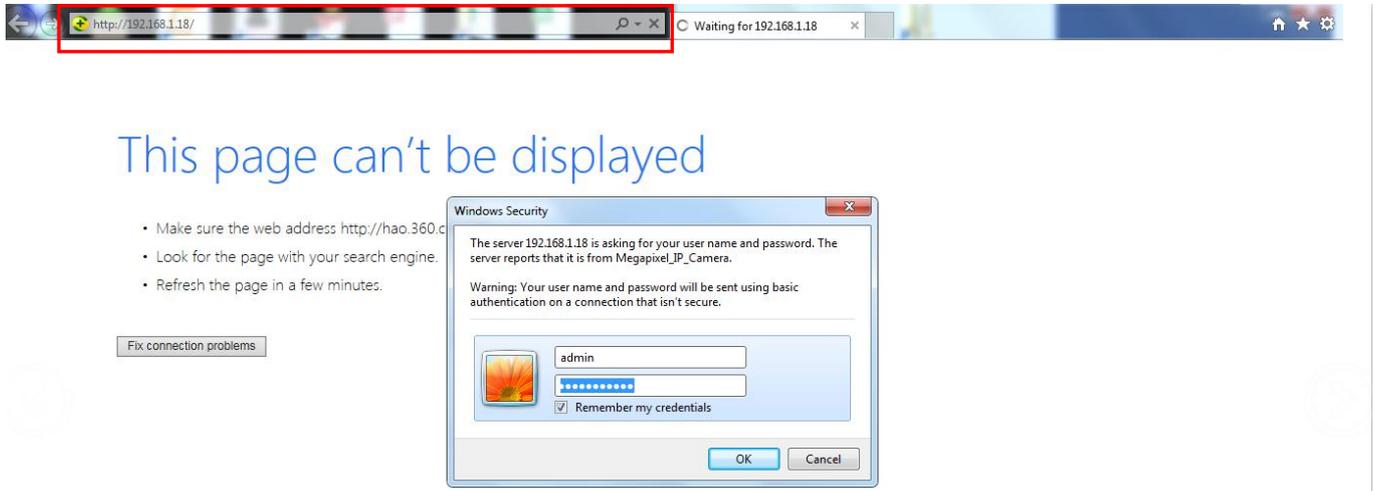
Refresh: Click the button to get the configuration on the device.

Save configuration: Click the button to send the configuration information to the device to save and take effect.

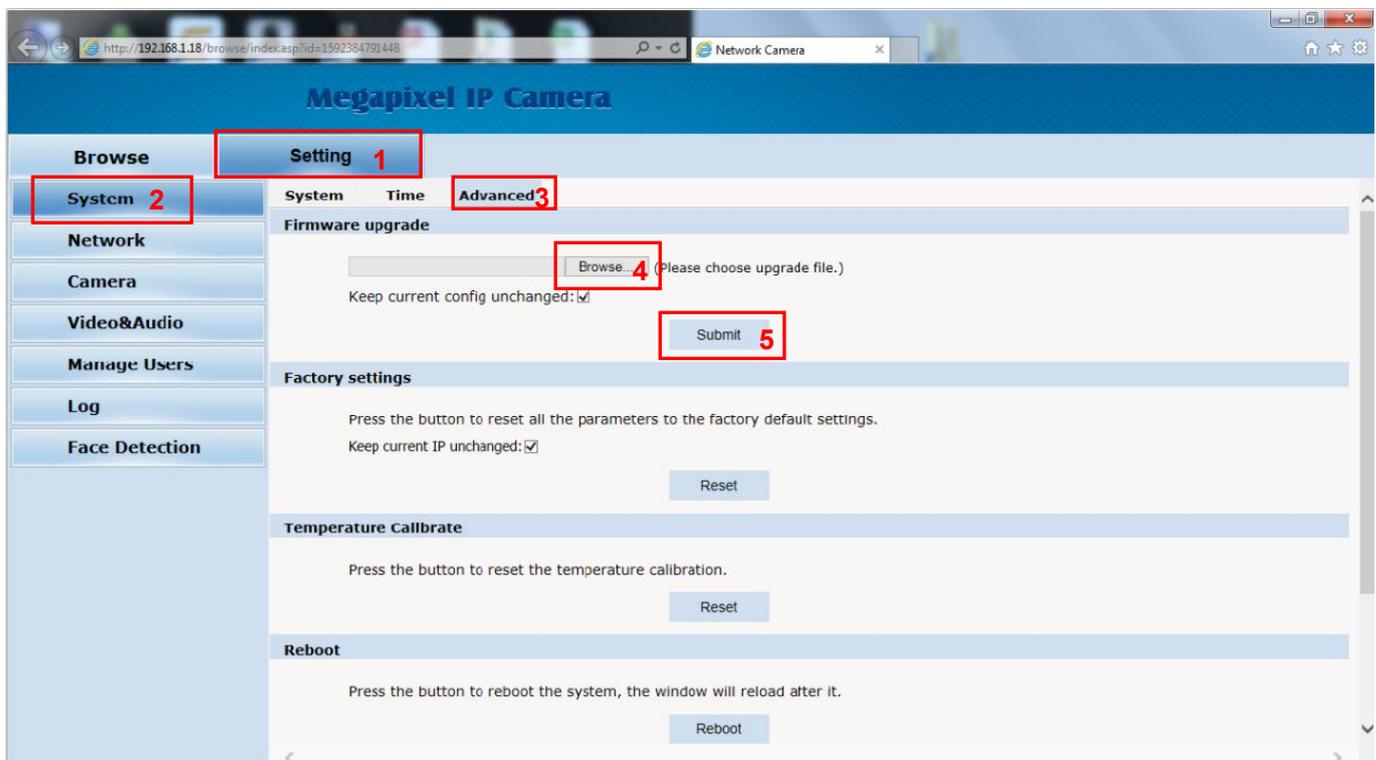# 4 Program upgrade

Note: Only support IE browse.

Step 1: Open the browser, input the equipment IP address, and input the user name(default: admin) and password (default: **blank**)

Step 2: Click **Settings-> System-> Maintenance** in sequence to enter the upgrade interface.

Step 3: Click browse to select the app.ifu upgrade package.

Step 4: Click the [Upload] button to start the upgrade. Wait for the upgrade to complete and the web page will automatically refresh.

CE Certificate statement Website:
https://www.foscam.com/company/ce-certificate.html

Exporter and Importer Information Opened to Public:
https://www.foscam.com/company/open-information.html

Manufacturer: Shenzhen Foscam Intelligent Technology Co., Ltd
Addr: Room 901, Unit B, Building 7, Xingke 1st Street Vanke Cloud City Phase 1,
Nanshan Dist., Shenzhen, 518055, China