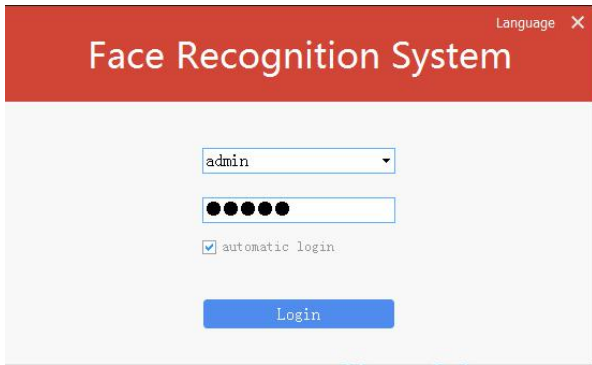


# Face Recognition System User Manual

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# Chapter 1 Face Recognition System



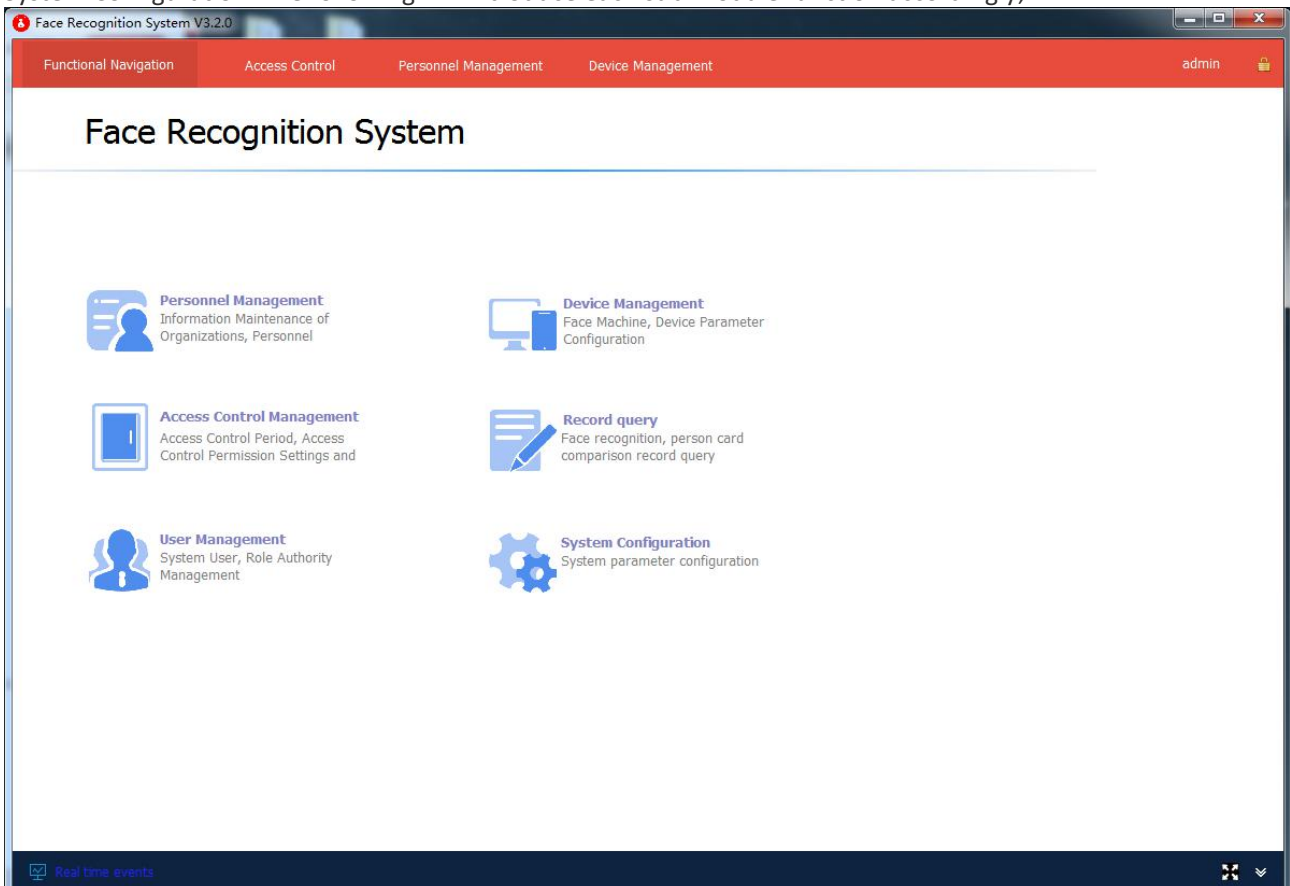
Account: admin Password: admin

**Notice:**

1. After login, please read [1.2 Device Management] to connect the face device firstly.
2. The face recognition system screen will be in white for every successful setting.

## 1. Software Function Introduction

**[Function Navigation]** The function navigation is the software main interface, where you can quickly enter Personnel Management, Device Management, Access Control Management, Record Query, User Management, System Configuration. The following will introduce each sub-module function accordingly;

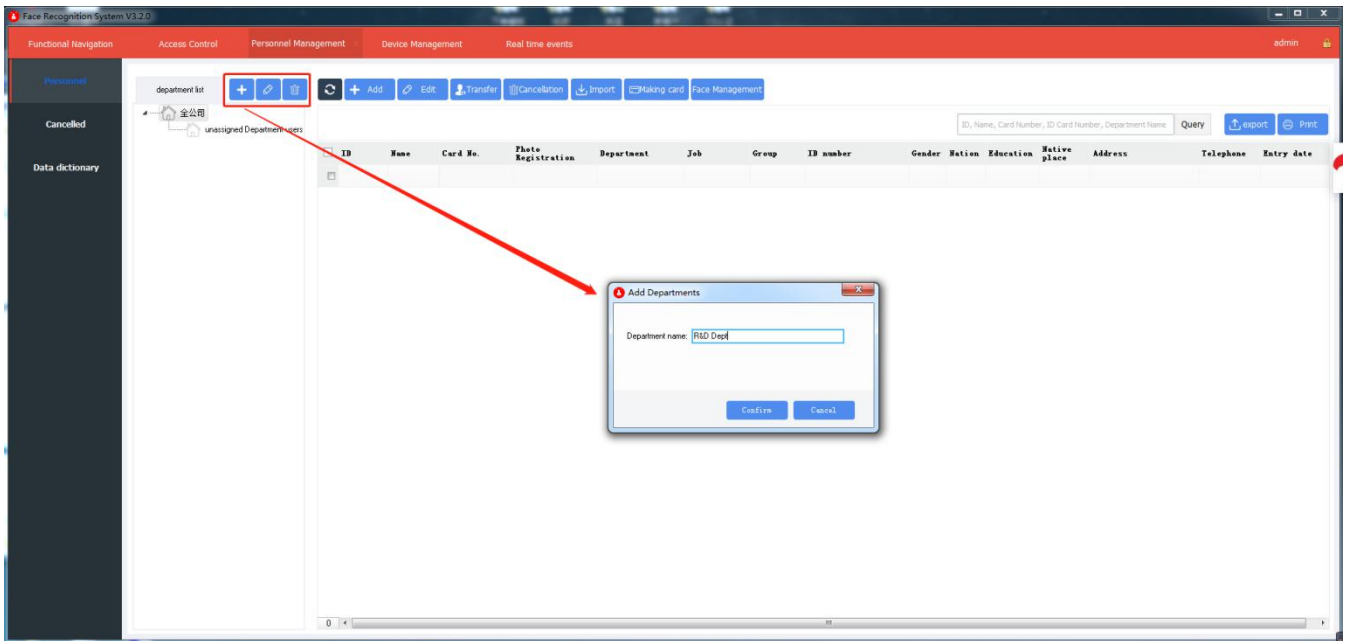


### 1.1. Personnel Management

**[Personnel Management]** is for management of personnel information, face/staff information, and other data management, including department adding, editing, deleting, staff turnover, staff transfer, face registration, and other related operations. It is divided into three sub-modules: employee managements, resignation personnel, and classified managements.

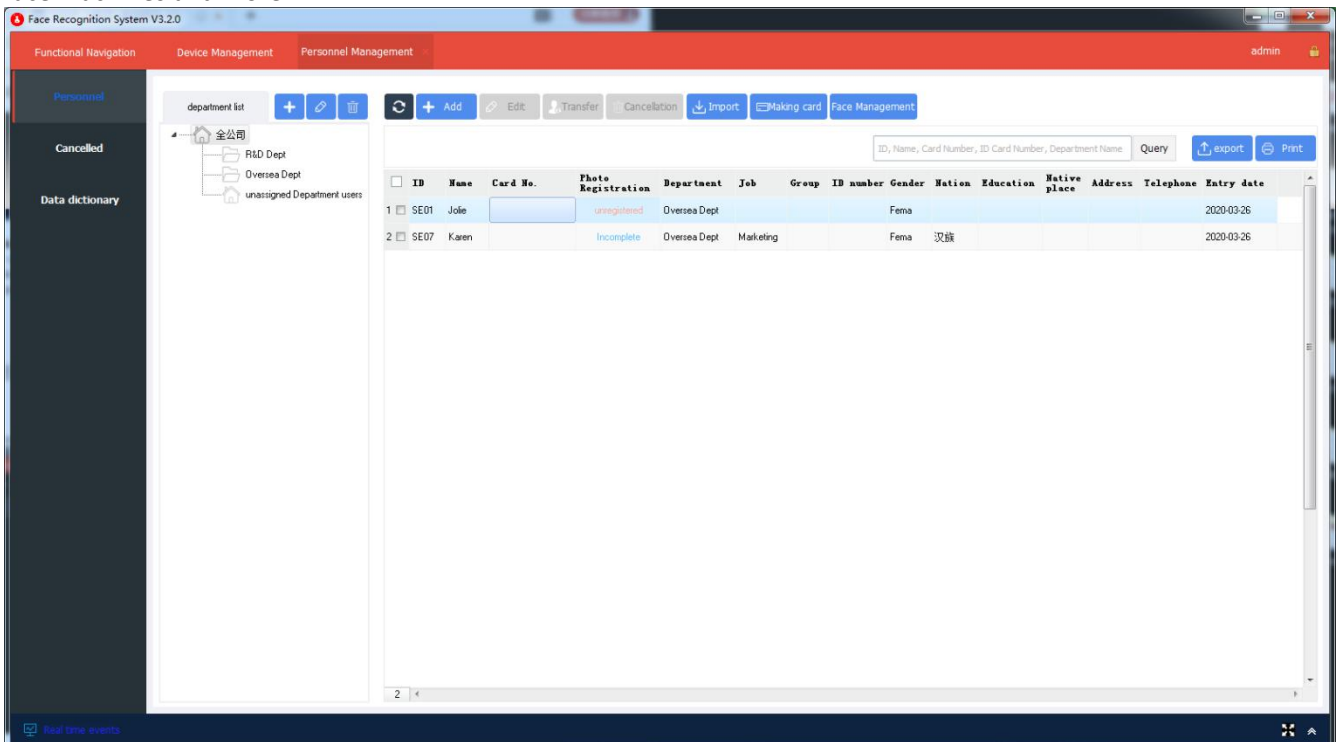
### 1.1.1. Department Definition

Before entering the employee information, you need to define the department. The department list is represented by a tree structure. It supports the subordinate department structure and supports unlimited levels.



### 1.1.2. Employee Management

**Employee Management** is the maintenance of employee information, including check, add, delete, transfer, dimission, etc. Employee data can be manually entered or imported from Excel forms. Staff information and staff profile photos all support batch import. You can also add staff quickly by face photo entry, Sync face photos to face machines and more.

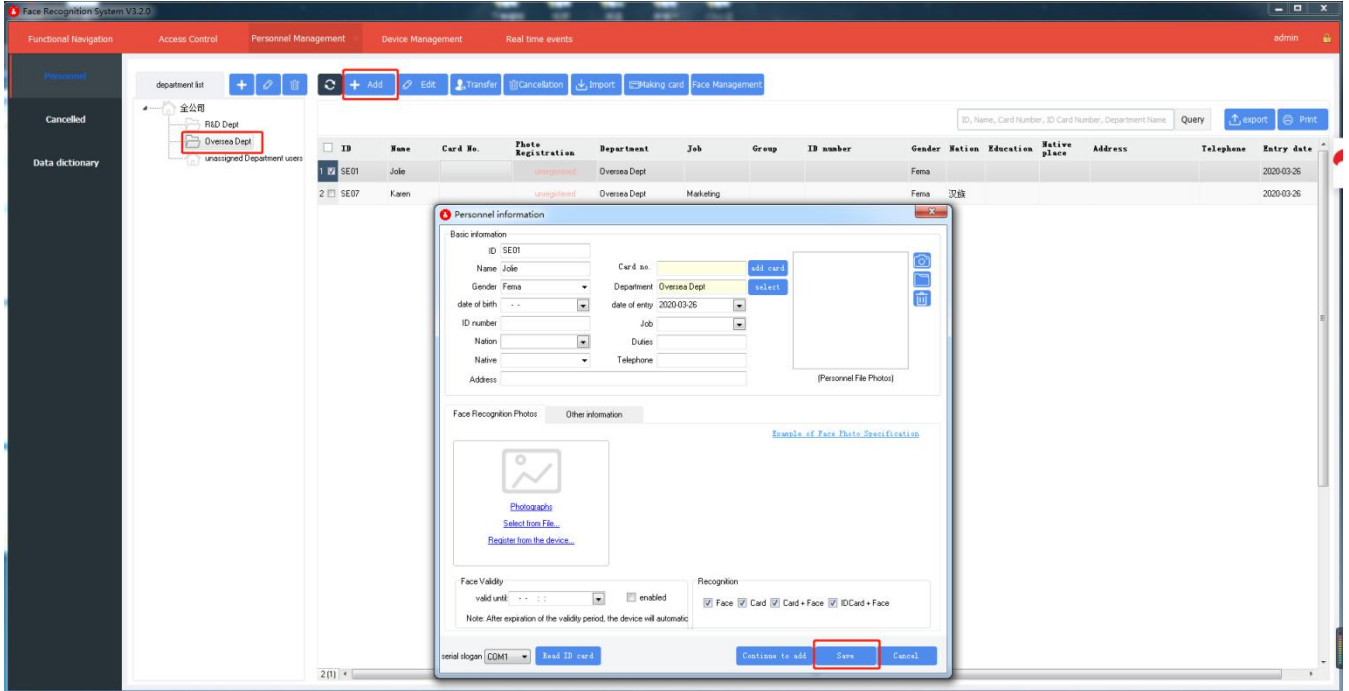


### 1.1.2.1. Entry of Personnel Information

Personnel information can be input or imported in two ways. Select the corresponding department to enter or import employee information.

#### (A) Enter:

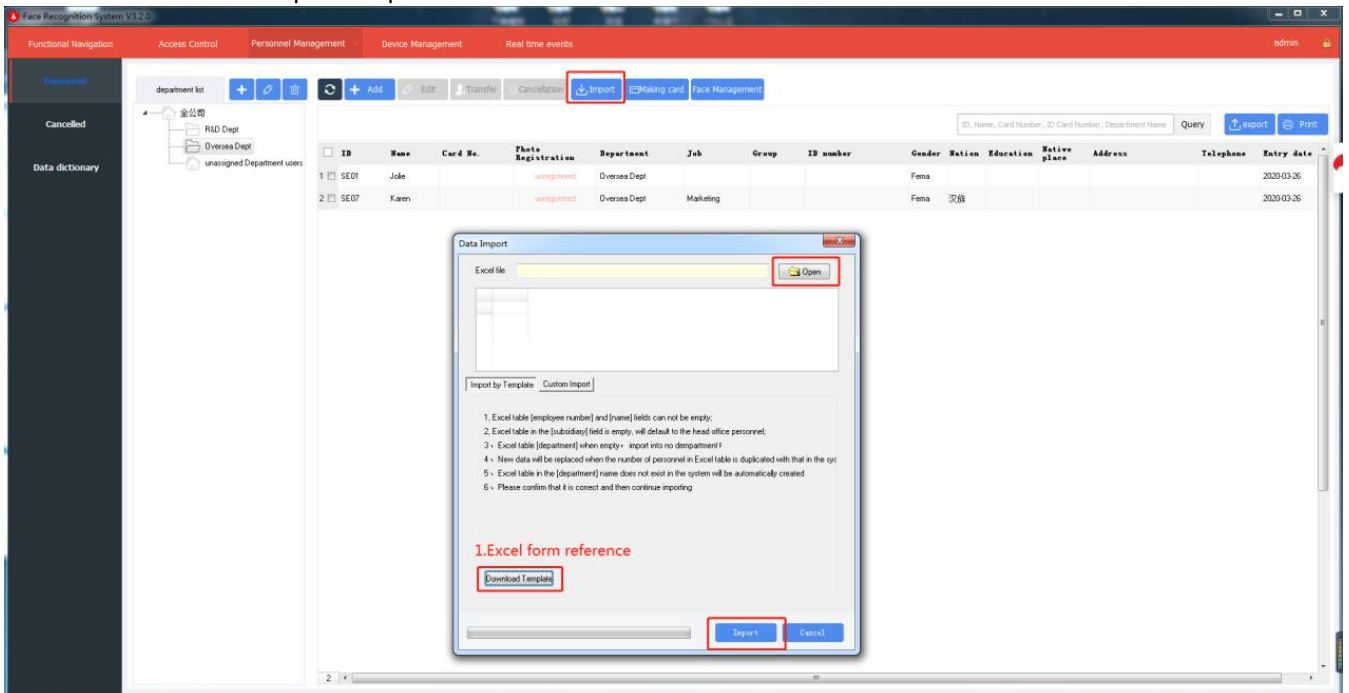
Firstly select the department in the department list, and click the **[Add]** in the toolbar. In the pop-up personnel information form, you can read the personnel information by manual input.



#### (B) Import:

Import personnel information through Excel spreadsheet; As shown in the figure below, click the **[Import]** in the toolbar, click the [Import Personnel Data from Excel Table], select the file to be imported in the [Data Import] form, and click the **[Import]**.

Please download the template of personnel information Excel for reference.

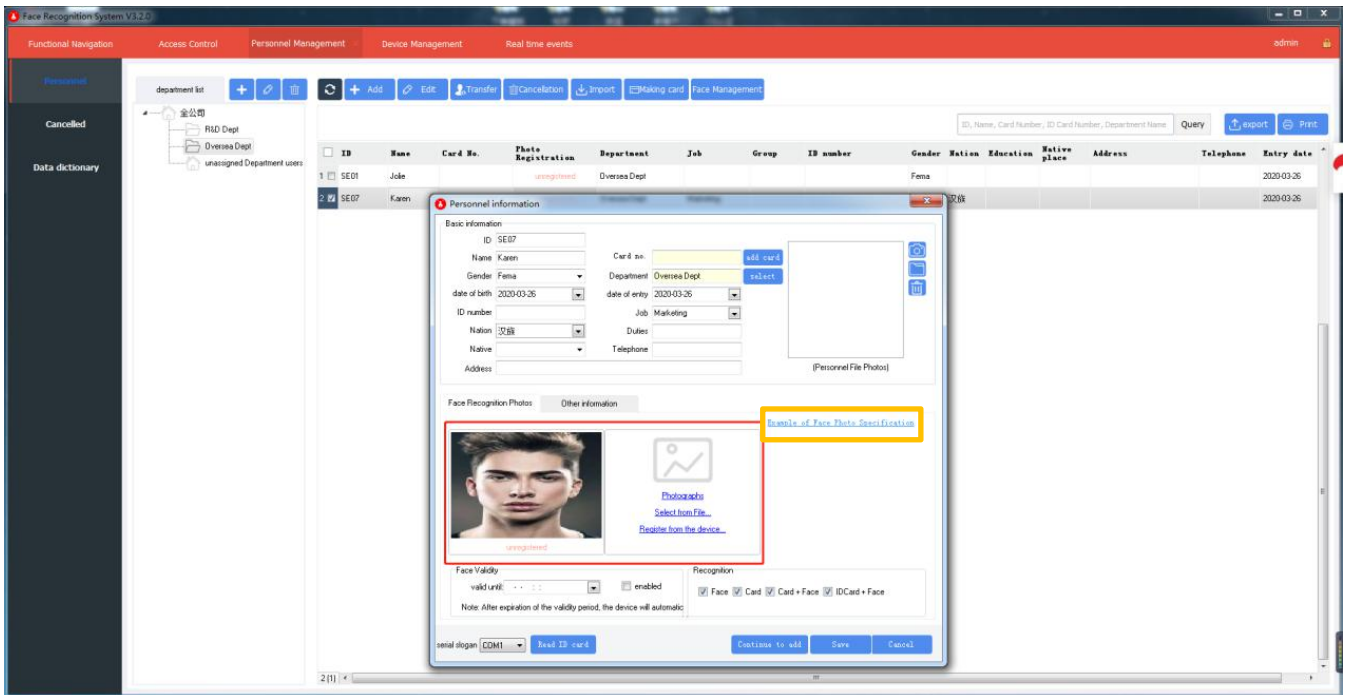


### 1.1.2.2. Face Photo Entry

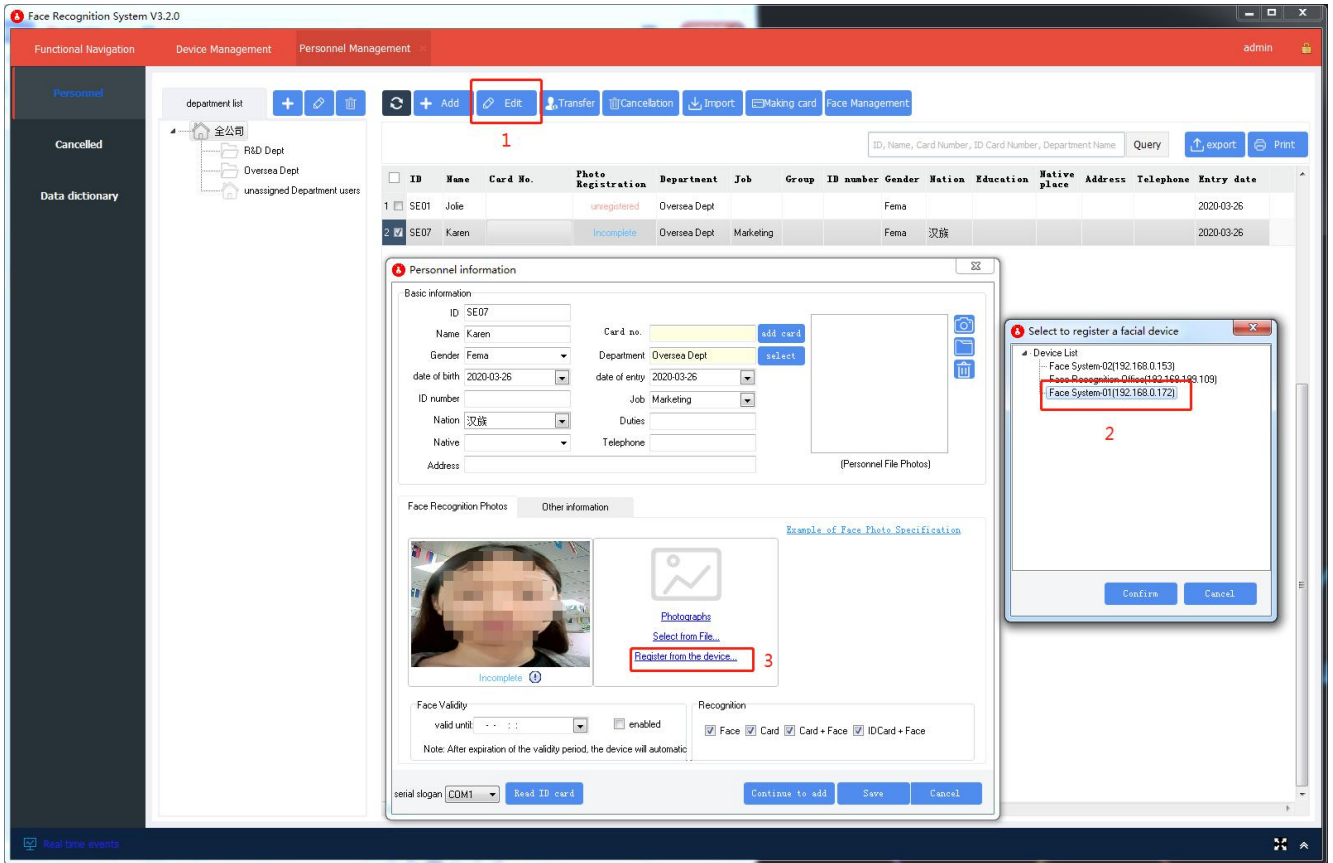
Open the personnel details window and click **[Face Recognition Photos]**. There are three ways to enter a face photo:

- 1) Photographs: take a picture with a USB camera
- 2) Select from File
- 3) Register from the Device
- 4) Batch import. Choose your most convenient way to enter face photos

**Notice: Please click “Example of Face Photo Specification” to study the correct face in below yellow box.**

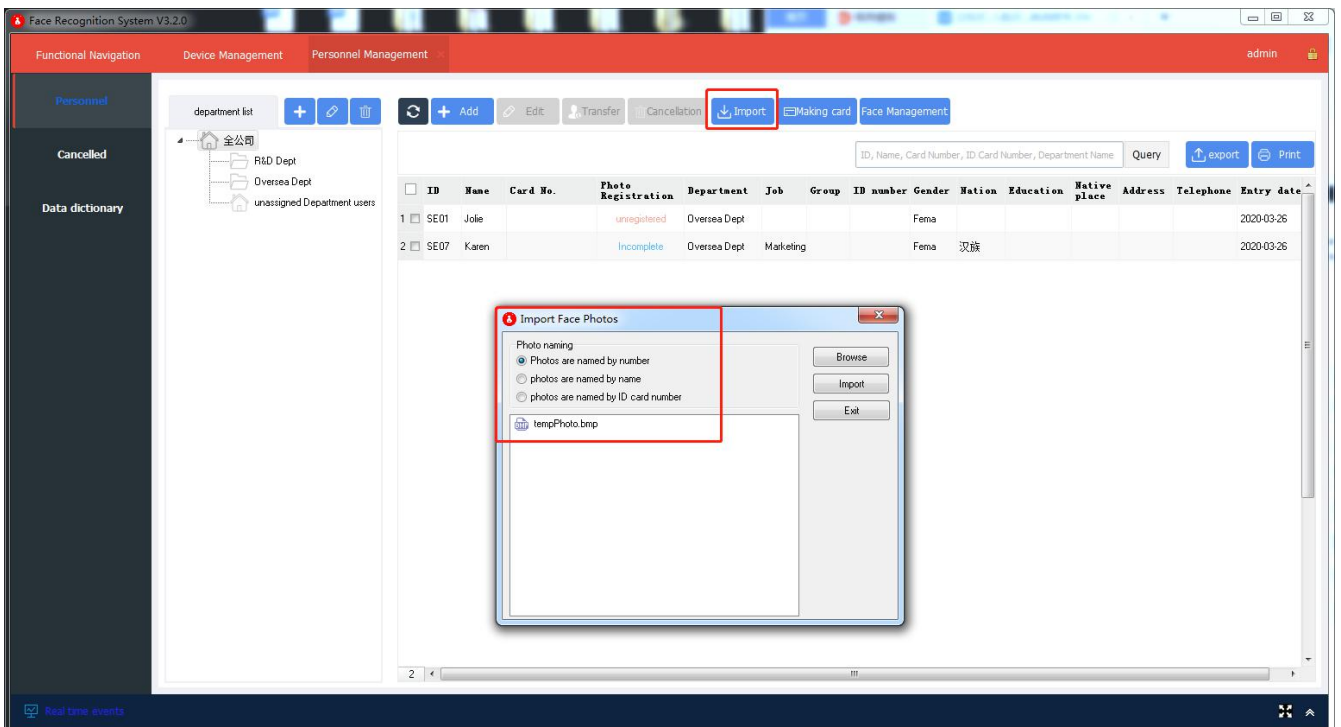


1. **Photographs:** The system supports taking photos with a USB camera. An external USB camera is required.
2. **Select from Files:** You can use your camera or mobile phone to take photos and transfer them to your computer, then click **Select from files** to select your photos.
3. **Register from the Device:**
  - 1) To register a slave device, you must first register the facial system in the device management, and ensure that the facial system network is connected, keep both the PC and facial system device with same WIFI.
  - 2) After filling in the employee information,click **[Register from the device]**, and the pop up window **[Select to register a facial device]** appeared, then select the corresponding **[face system name+IP address]** and click the **[Confirm]**.
  - 3) At this time, the Face System Device interface enters the registration interface**[go to take a photo] - [facing the camera please] - [save photo success]**. According to the device's voice prompt, stand at a distance more than one arm directly in front of the device, maintain a calm expression, face to face it, and ensure the face wait for registration in the middle of the screen.
  - 4) Registration finished, the Photo Registration state will become **[Incomplete]** in blue.
  - 5) Then when the registered staff (i.e. Karen)scan their face, the voice broadcast content will be "Karen, normal +temperature".



4. **Batch Import:** In the employee management form, click the [Import] button on the toolbar, click the [Import face photos from file] menu, select the directory where the face photos are stored in the import window, and select the corresponding face photo names. Method, click [Import].

**\* Note: Face photo files need to be named by number or person's name or ID number. The photo format supports two formats, JPG and PNG, and the file size should not exceed 300K.**



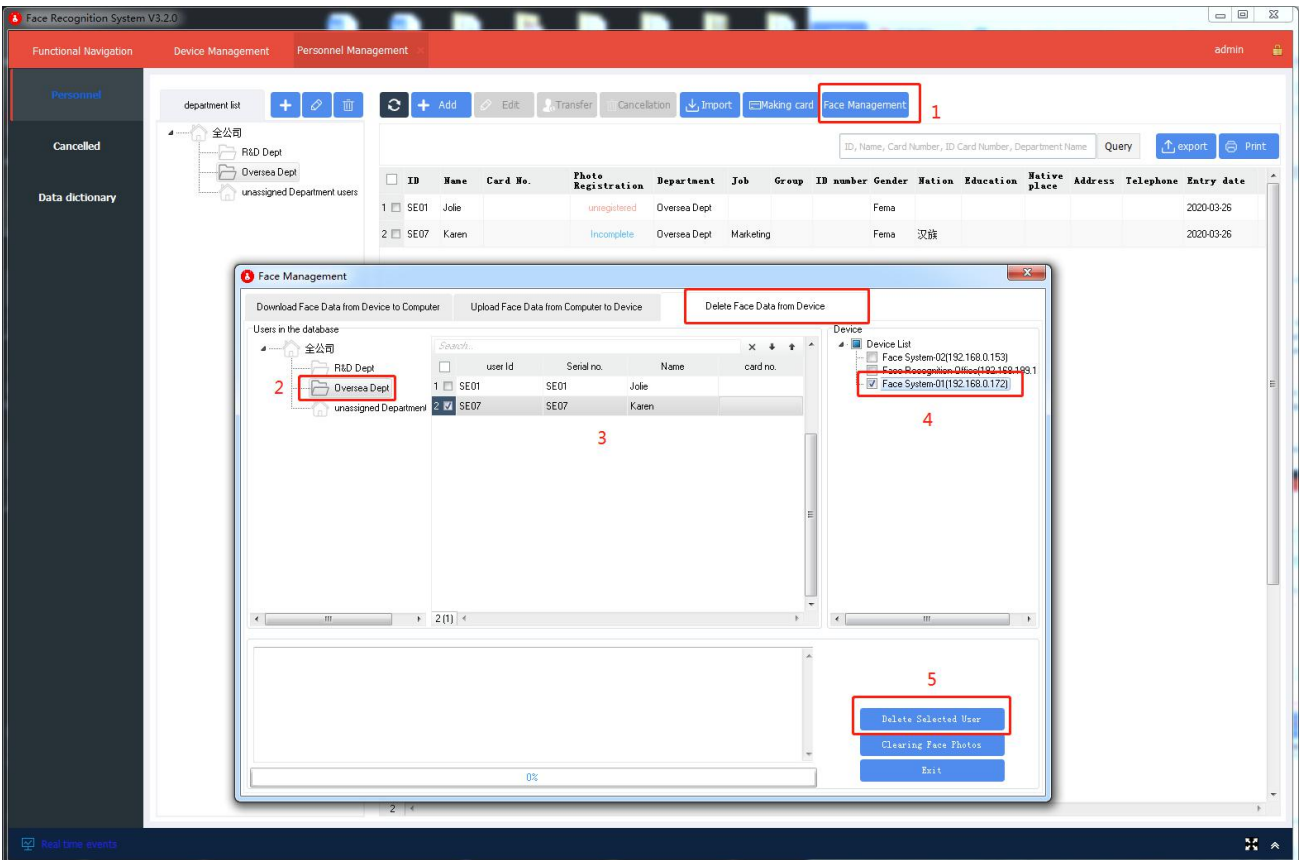
### 1.1.2.3. Face Management

Face management is divided into [Download Face Data from Device to Computer]; [Upload Face Date from Computer to Device]; [Delete Face Data from Device].

1. **Download Face Data from Device to Computer:** 1-Select the entire company or department in the department list, 2-select the person in the personnel information form, 3-then select the face device under the device list, 4-and click [Upload Selected User] to synchronize the face photo to the face device, and then you can recognize it on the face device;

2. **Upload Face Date from Computer to Device:** If software failure occurs due to a computer failure or other reasons, you need to re-install the software, you can restore face data by downloading face data from the device to the computer function;

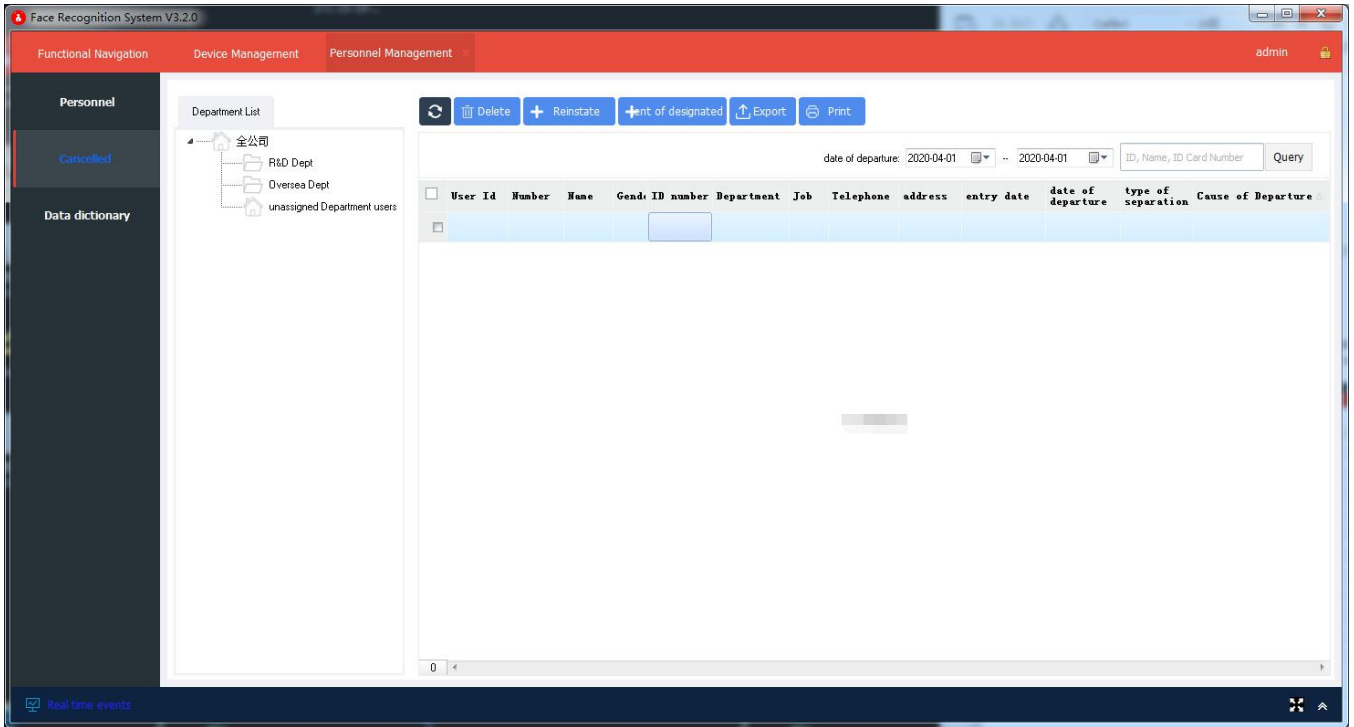
3. **Delete Face Data from Device:** If you need to log out The face on the face machine can be realized by deleting the face data from the device.



### 1.1.3. Separating Employee

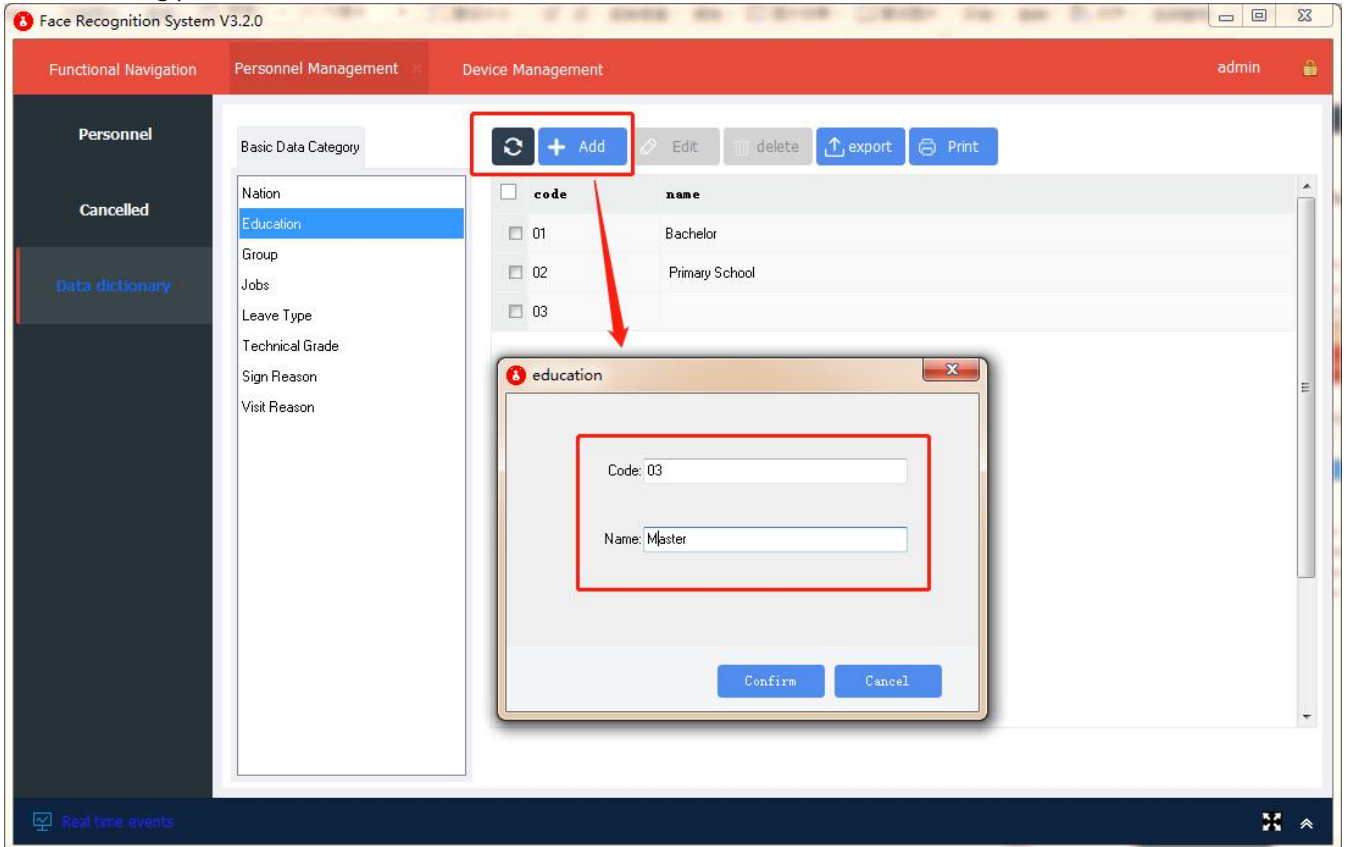
It can view the information of those who have left, and they can also reinstate or delete the personnel. After deletion, they cannot be recovered.





### 1.1.4. Classification Management

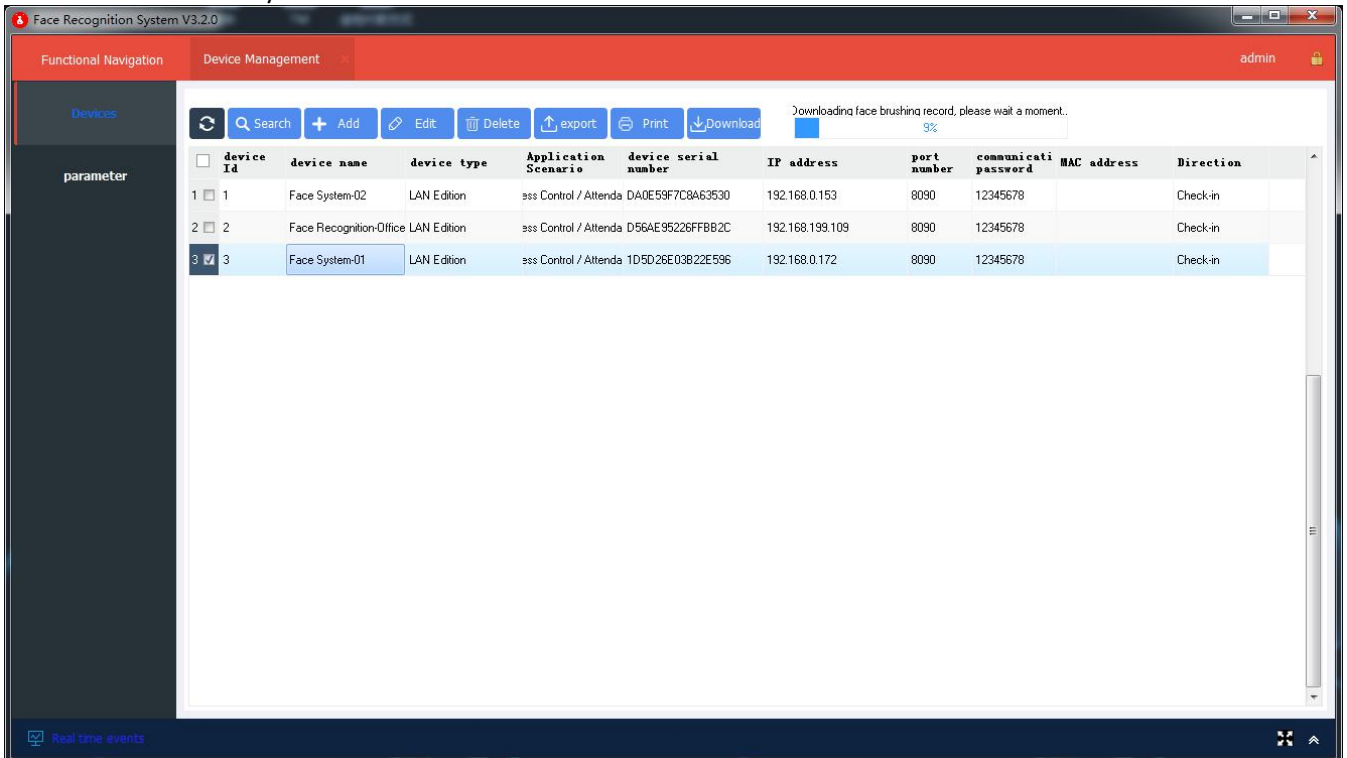
Classification management is the maintenance for data dictionaries such as ethnicity, education, grouping, position, type of departure, and technical level. Set the corresponding data in advance to facilitate the selection when entering personnel information.





## 1.2. Device Management

[Device Management] is to maintain the facial device used by the system, set equipment parameters, collect identification records, etc. Generally, when the system is used for the first time, the first operation is to register all face devices in the system.

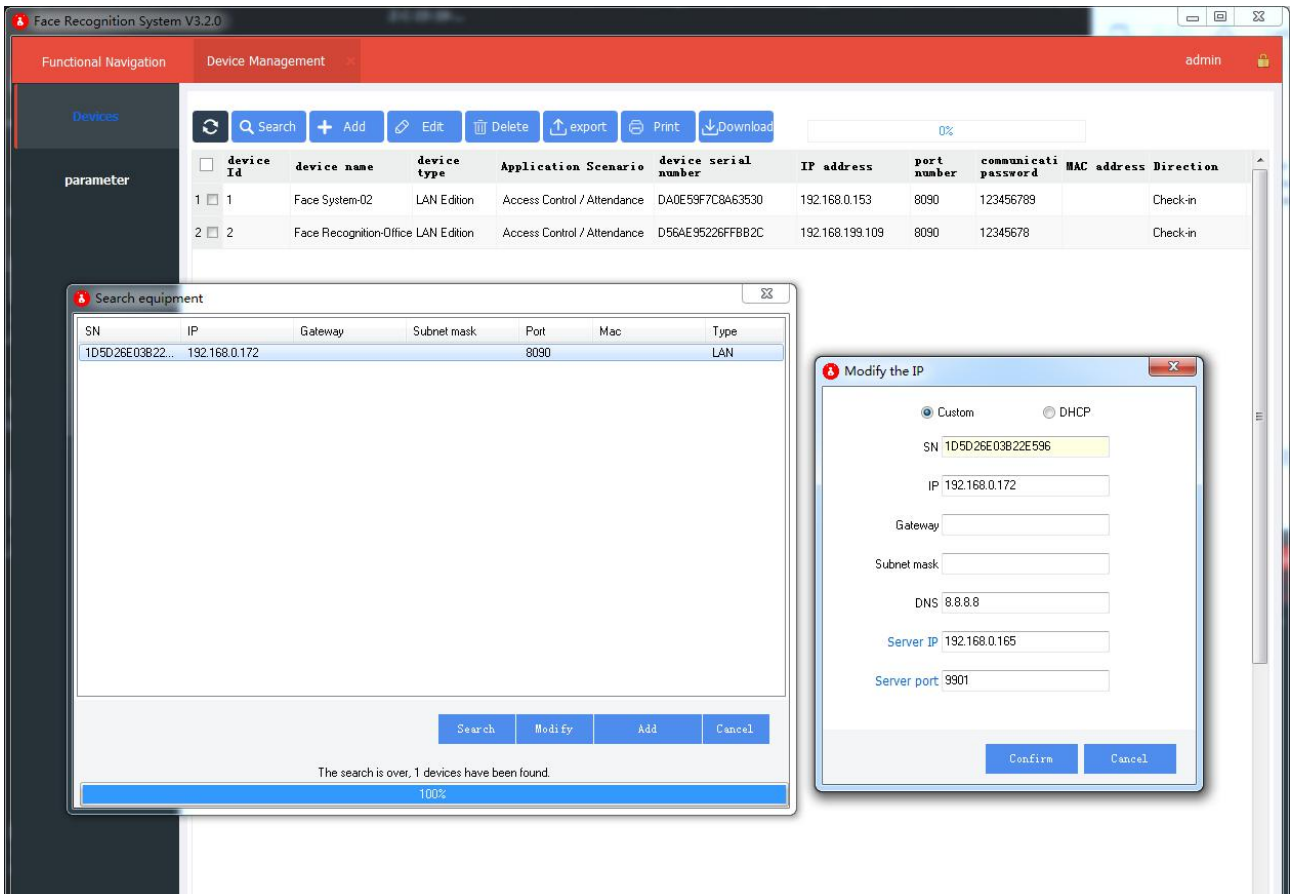
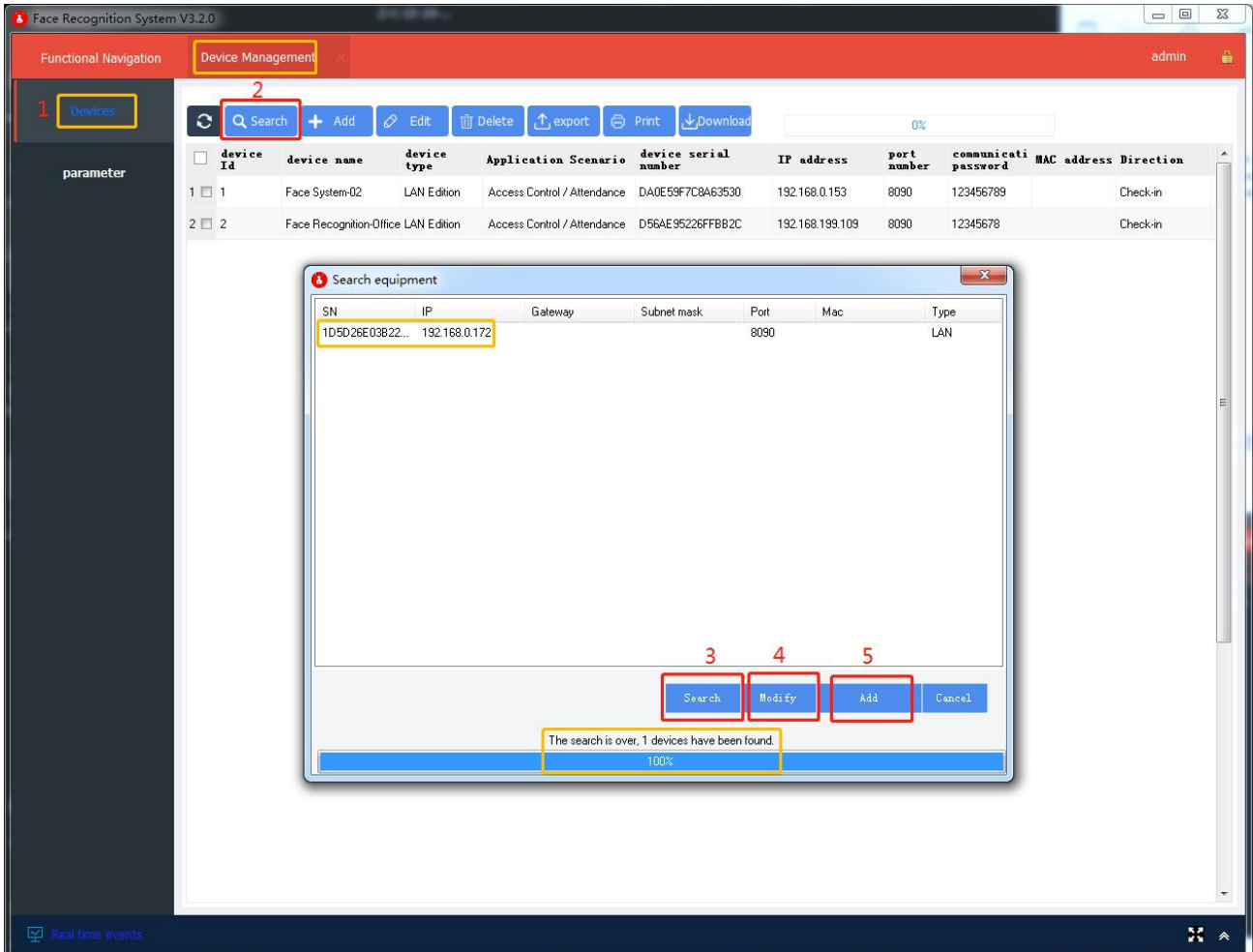


### 1.2.1. Add Device

Adding a face device can be done in two ways: search or enter manually. The device ID, device name, device type, device serial number, IP address, port number, and communication password are required. If these information is incorrect, it will affect the interaction between the face recognition system and the face device. The device ID must be a number. The device name can be arbitrarily chosen. The device type can be **FaceOpen** offline version. The model and port number can be the default. The communication password is 12345678 by default, if the Face Device password in [Device Management] - [Device] - [Edit] changed, please also keep the same with the Face Recognition System' password in [Device Management] - [parameter] - [Network parameter], otherwise the communicate will be cut.

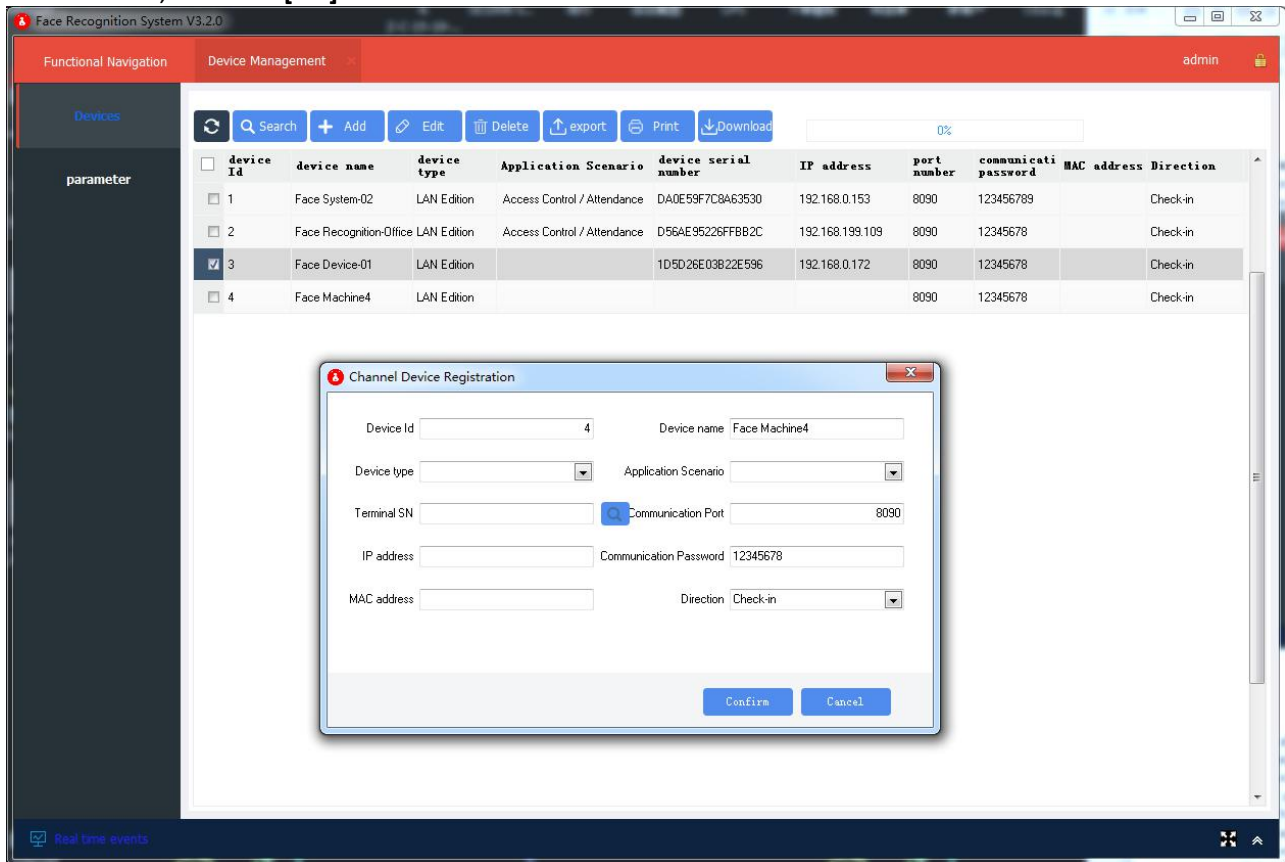
#### 1) Search Device

Connect the face device to the network by wire or wireless, click 2-[Search], and click 3-[Search] in the pop-up search device window. After the device is found, you can select the device and click 4-[Modify] to modify the IP and other related parameters. Click 5-[Add] to add the device to this system software.



## 2) Manual Entry

Click **[Add]**, select the device type, application scenario, device SN, IP address, communication password, access direction, control method and other contents in the pop-up device registration window, and click **[OK]** to save.



### 1.2.2. Parameter Configuration

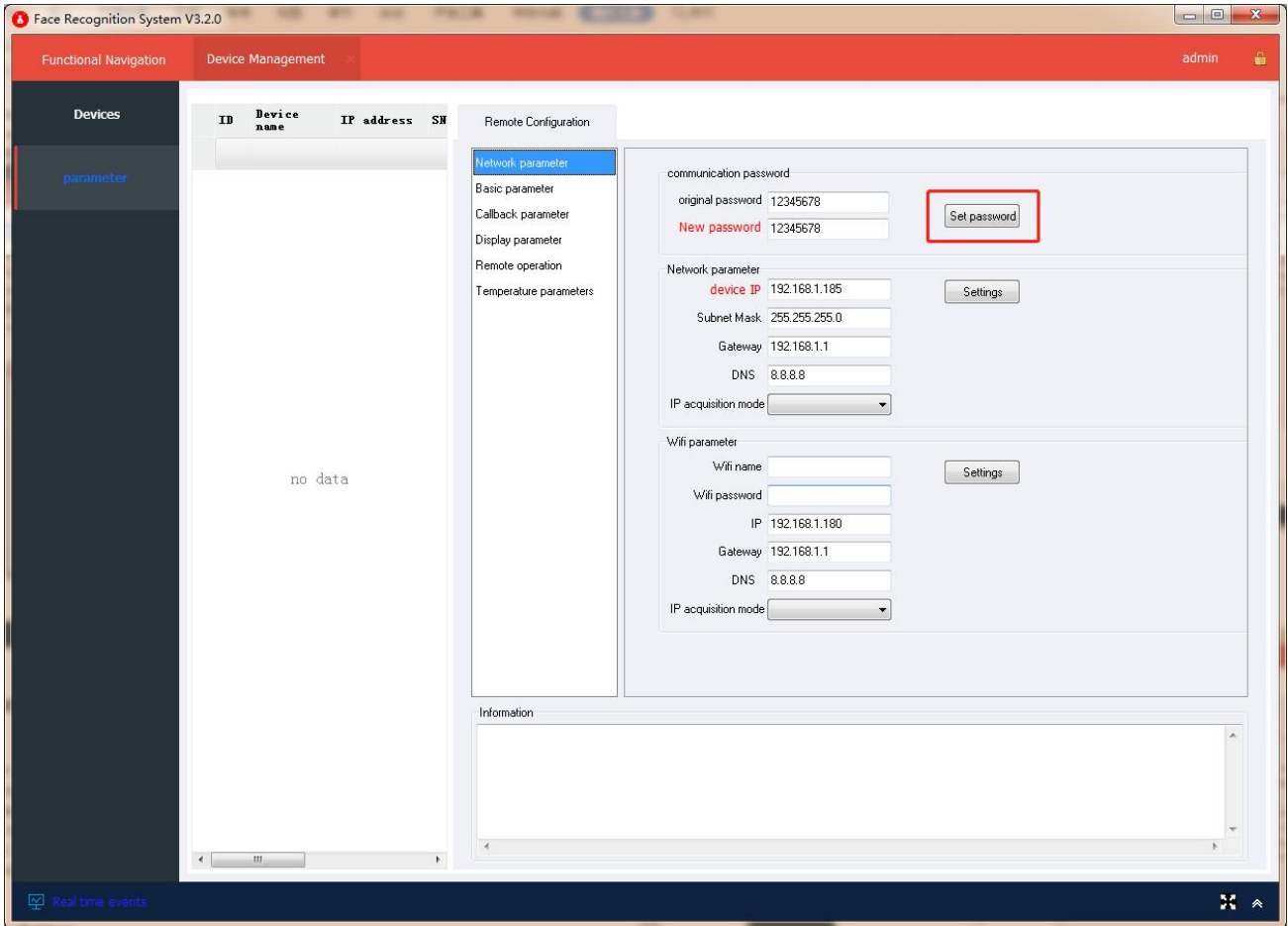
The face device must be correctly configured with parameters, such as communication password, IP address, basic parameters, callback parameters, etc.; including network parameters, basic parameters, callback parameters, display parameters, etc. The callback parameters are related to whether the system can display people in real time. Face recognition records, so be sure to set the callback server IP and port correctly. The server port is the computer IP of the system software. The default port is 9901. Remote operation can read the serial number of the device, restart the device remotely, reset the device, and open the door remotely.

#### 1) Network Parameter Settings:

Set parameters for facial communication password, IP address, gateway, etc.

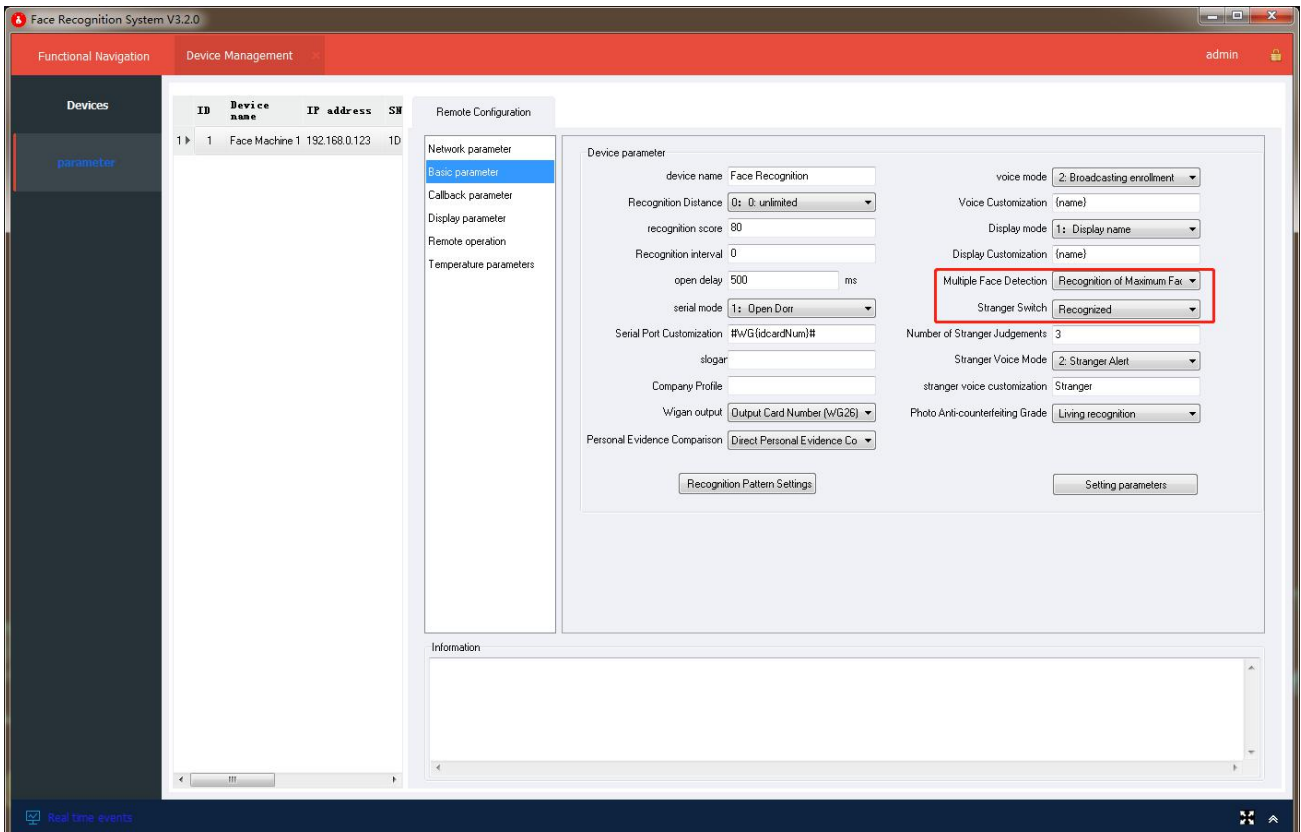
#### Important Notice:

**Before using and setting at the first time, please click the "Set Password" to activate.**



## 2) Basic Parameter Settings:

Set facial recognition threshold, recognition distance, detect for stranger or not, etc.

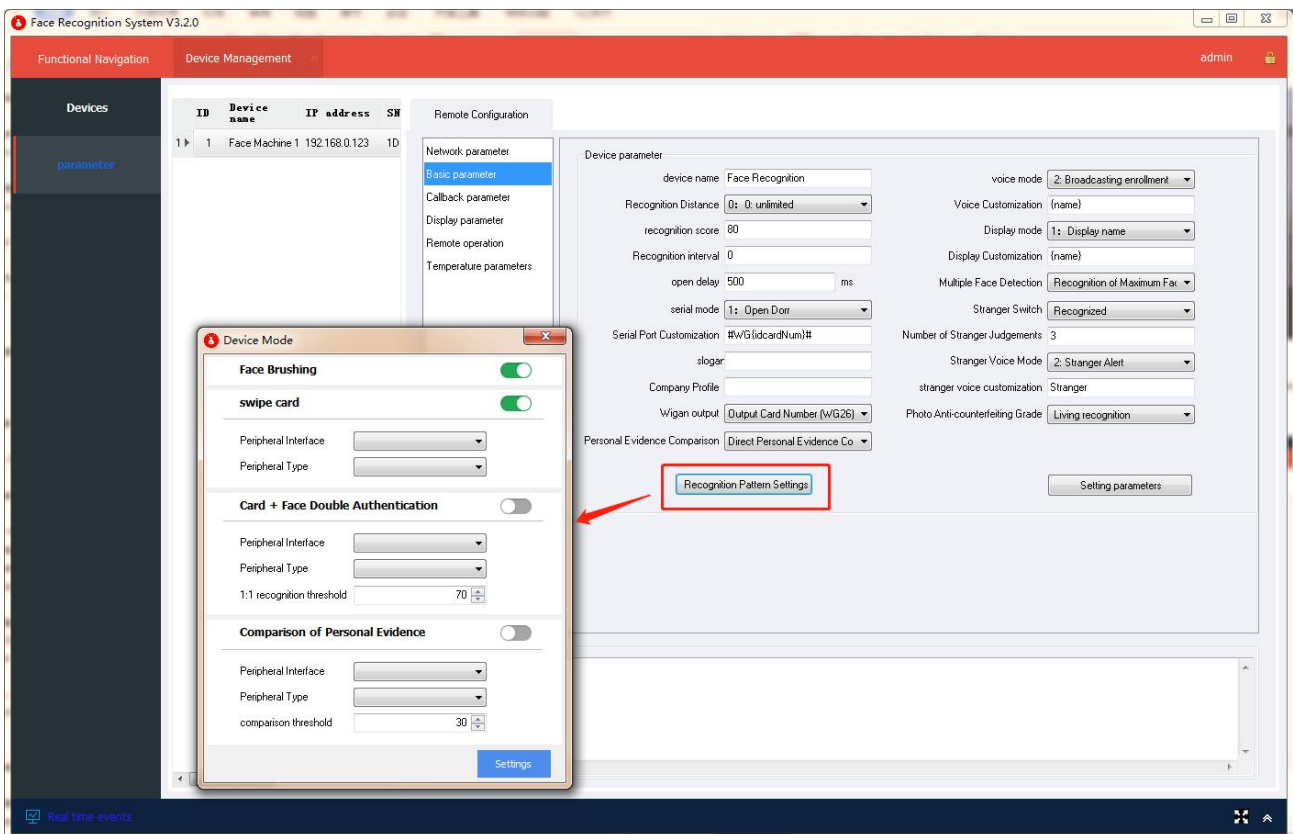


1. **Device Name:** The face device name displayed on the face recognition screen.
2. **Recognition Distance:** The distance to detect faces, 0 is unlimited, and the minimum is within 0.5 meters.
3. **Recognition Score:** Compare the face photos in the system library, and determine how many faces you have. You can set a range of 60-100.
4. **Recognition Interval:** The interval at which the device repeatedly recognizes the same face. The maximum is 60 seconds and the minimum is 0 seconds.
5. **Open Delay:** The time to connect the access control or gate to open the door, in MS milliseconds
6. **Serial Mode:** When the door is opened, the device recognizes the person and automatically enters the gate or turns the machine on. You can also customize other machines. Need to customize the serial command.
7. **Serial Port Customization:** NES
8. **Slogar:** NES
9. **Company Profile:** NES
10. **Wigan Output:** NES
11. **Personal Evidence Comparison:** NES
12. **Voice Mode:** 3 modes in total
  - 1: **No voice broadcasting**, after face detected, no voice broadcasting
  - 2: **Broadcasting enrollment**, after face detected, with voice broadcasting
  - 100: **Custom**, if need to add the customization content, select this mode firstly.
13. **Voice Customization:** After the customization content added, the voice broadcasting content will be "Registered name/no name + Normal/Abnormal + Temperature + Customization content". Maximum 255 characters. Chinese characters and uncommon characters, traditional characters are not supported.
14. **Display Mode:** After the device recognizes the person, it displays the name or customization on the screen. The customization can be printed with a customized word on the bottom line. Maximum 255 characters.
15. **Display Customization:** The word display on the face device screen when face detected, same as item13.
16. **Multi-face Detection:** Recognizing multiple faces can be recognized by multiple people together. Recognize the largest face, that is, the device selects only the largest face for recognition detection.
17. **Stranger Switch:** You can choose to turn on / off the recognition for stranger.
18. **Number of Stranger Judgments:** The times of the device failed to recognize the face as a stranger. 1 fast, low precision, 10 slowest, high precision.
19. **Stranger Voice Mode:** You can choose to turn on or off the stranger voice function.
20. **Stranger Video Customization:** NES
21. **Photo Anti-counterfeiting Grade:** Nes



● **Recognition Mode Setting:** (The card reader module is not supported in oversea)

Set the recognition mode of the face device: single or combined recognition mode such as face brushing, card swiping, card + face double authentication, comparison of personal evidence, etc.

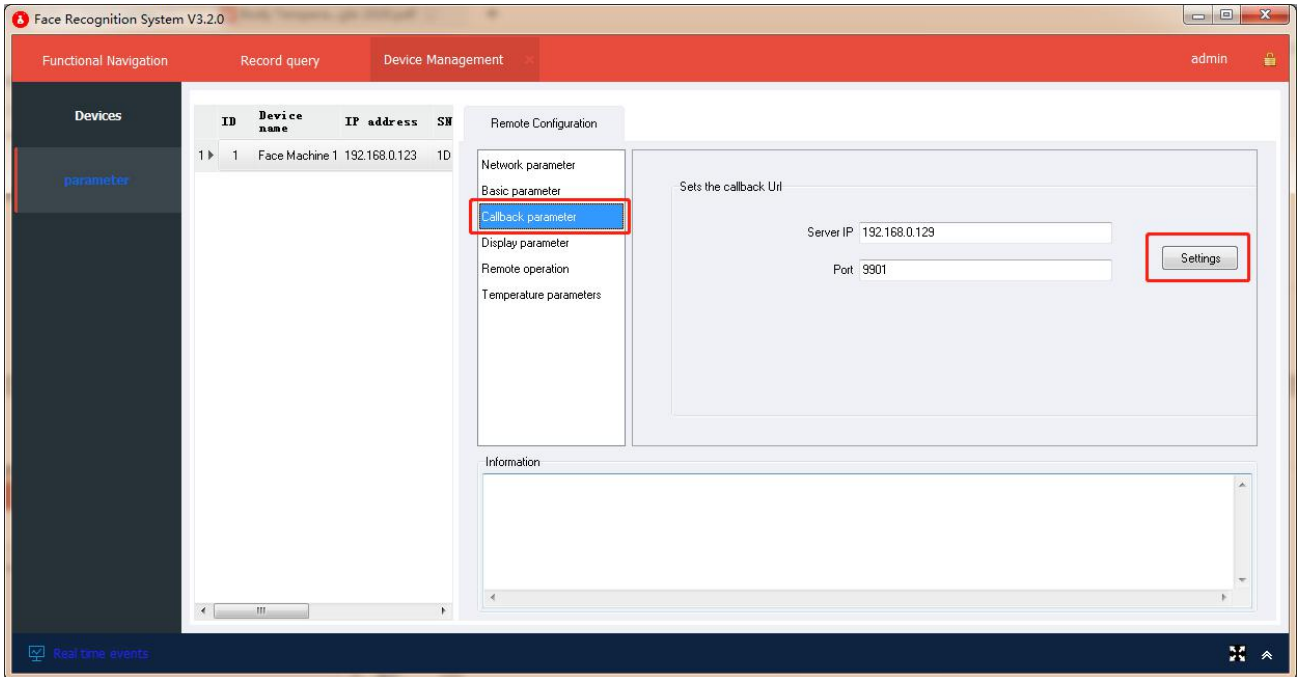


**3) Callback Parameter Settings:**

Set the correct recognition callback server IP address and port to display the real-time record of face recognition normally in the real-time event interface. The server IP is the local computer IP. The default port is 9901. If you change the port, please adjust the corresponding service port in the software system configuration and restart the software.(Suggest that no need to adjust.)

**Important Notice:**

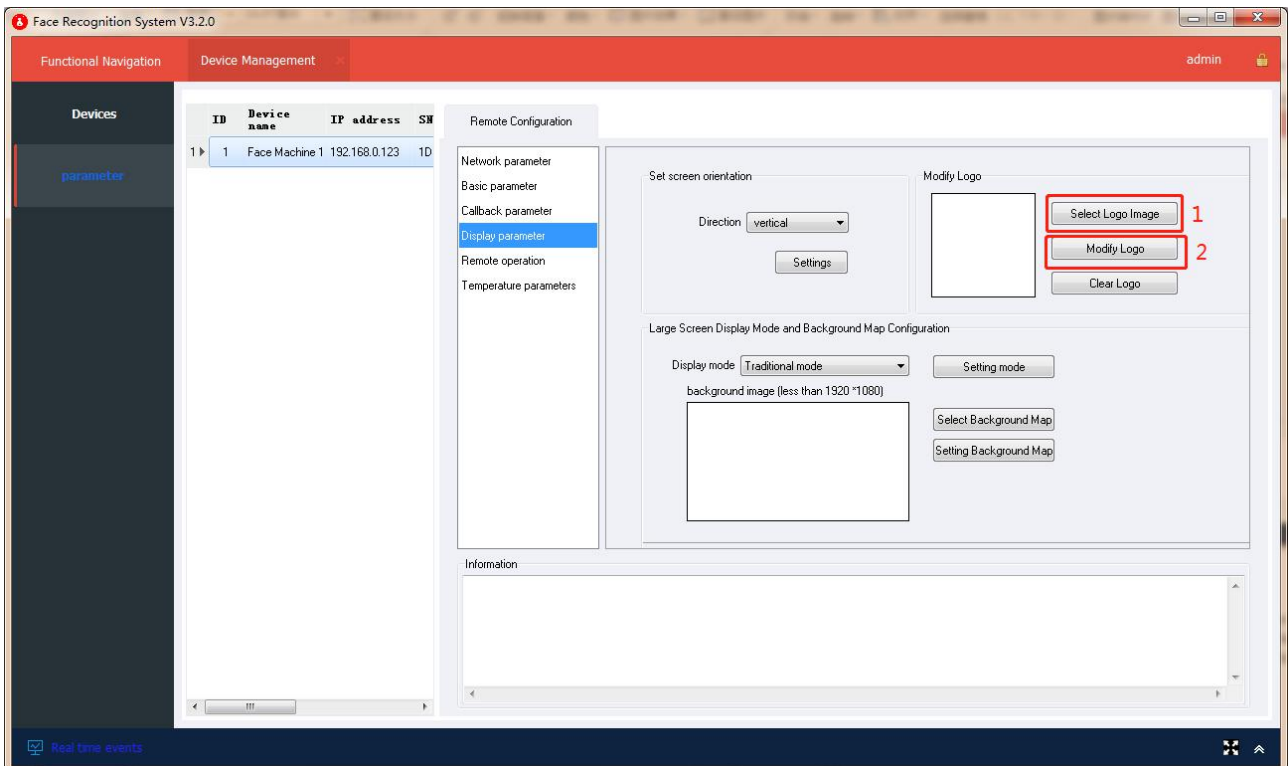
**Before using and setting at the first time, please click the "Setting" directly to activate.**



#### 4) Display Parameter

Click “Select Logo Image” firstly, then click “Modify Logo”.

Select the background image to replace the background displayed on the face recognition system screen.



#### 5) Remote Operation:

\* Read Serial Number:

You can judge whether the device communication is normal by reading the serial number;



**\* Setup Time:**

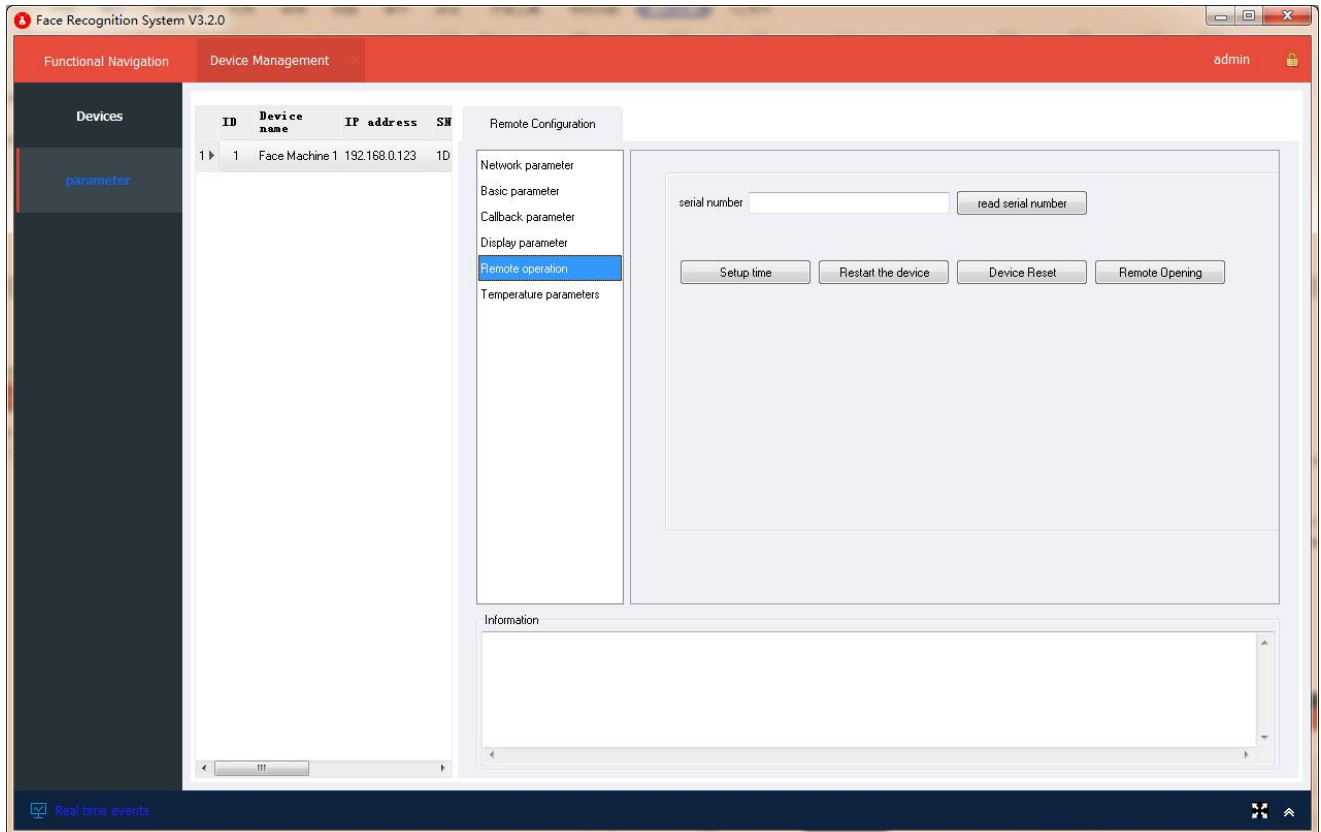
Use the computer time to synchronize the device time. The device time in the network must be consistent with the computer time, otherwise it may cause errors in the statistics of the personnel present.

**\* Restart the Device :**

clear all data in the device, including face data and related parameters;

**\* Remote Opening:**

control the facial machine to open the door through the computer.



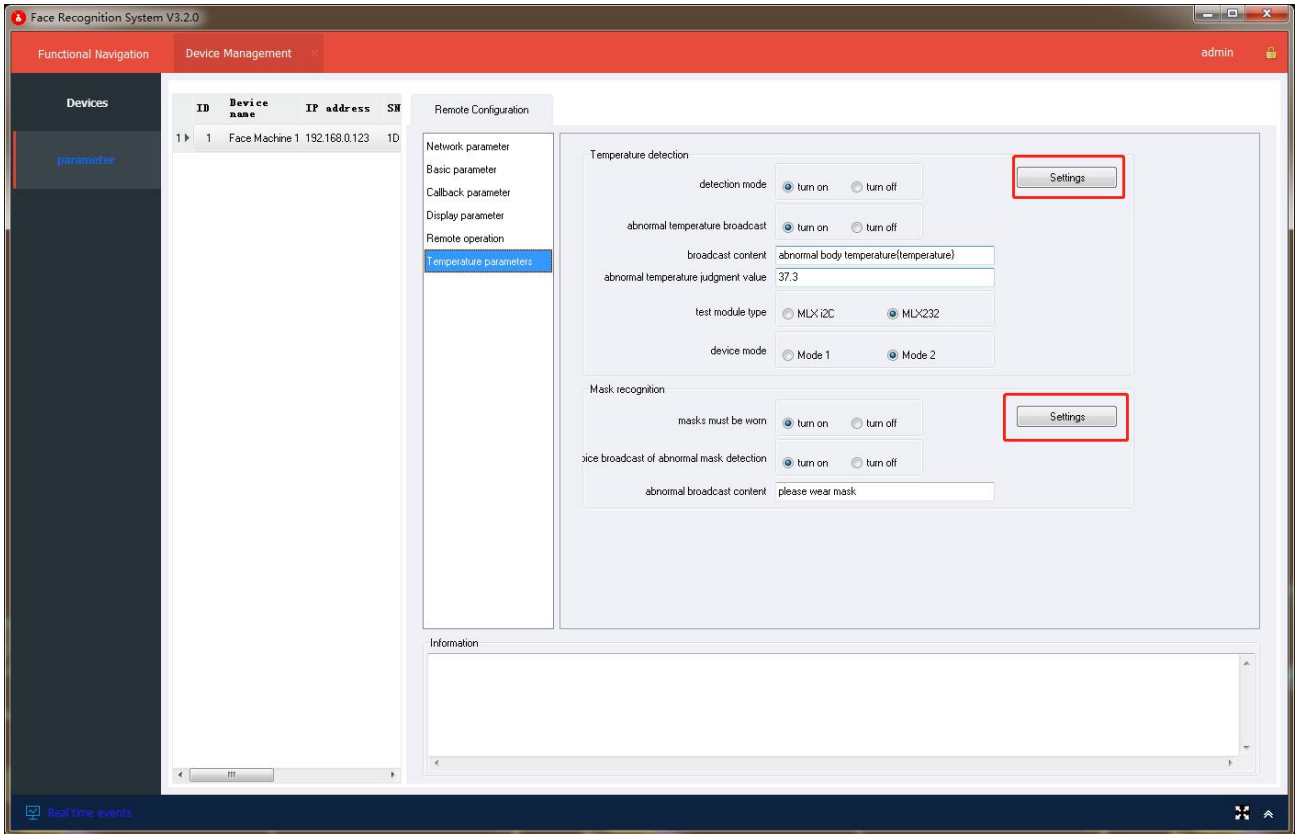
**6) Temperature Parameters Settings;**

Set whether the face device to turn on the Temperature Detection, Temperature Voice Broadcast and Mask Recognition; If you need to display body temperature data in real time, you need to check the system temperature in the system configuration and restart the software.

- \* **Detection Mode:** Can turn on and off.
- \* **Abnormal Temperature Broadcast:** Can turn on and off.
- \* **Broadcast Content:** Customize the content.(updating)
- \* **Abnormal Temperature Judgment Value:** Customize the alarm temperature threshold.
- \* **Mask must be worn:** Can turn on and off
- \* **Voice Broadcast of Abnormal Detection:** Can turn on and off
- \* **Abnormal Broadcast Content:** Customize the voice content.

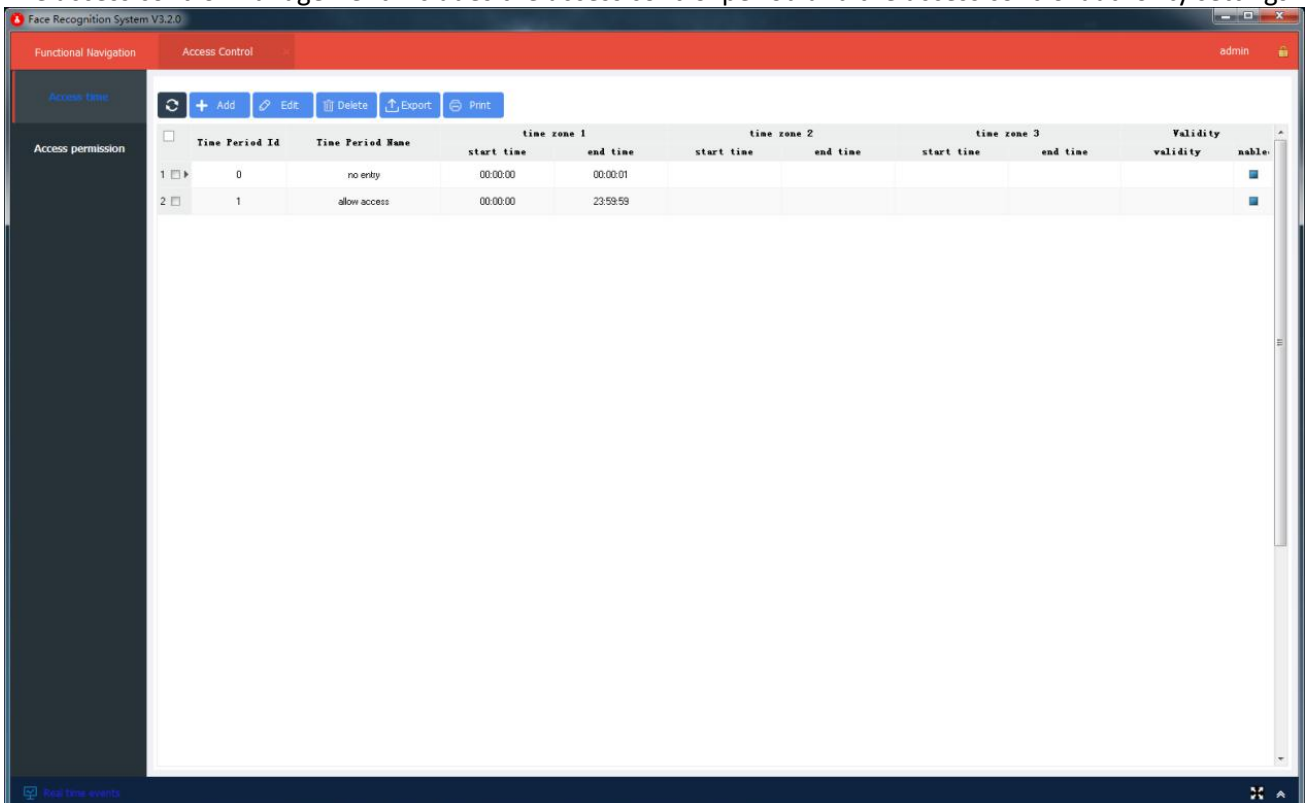
**Notice:**

Please click the "Settings" for every parameter changing.



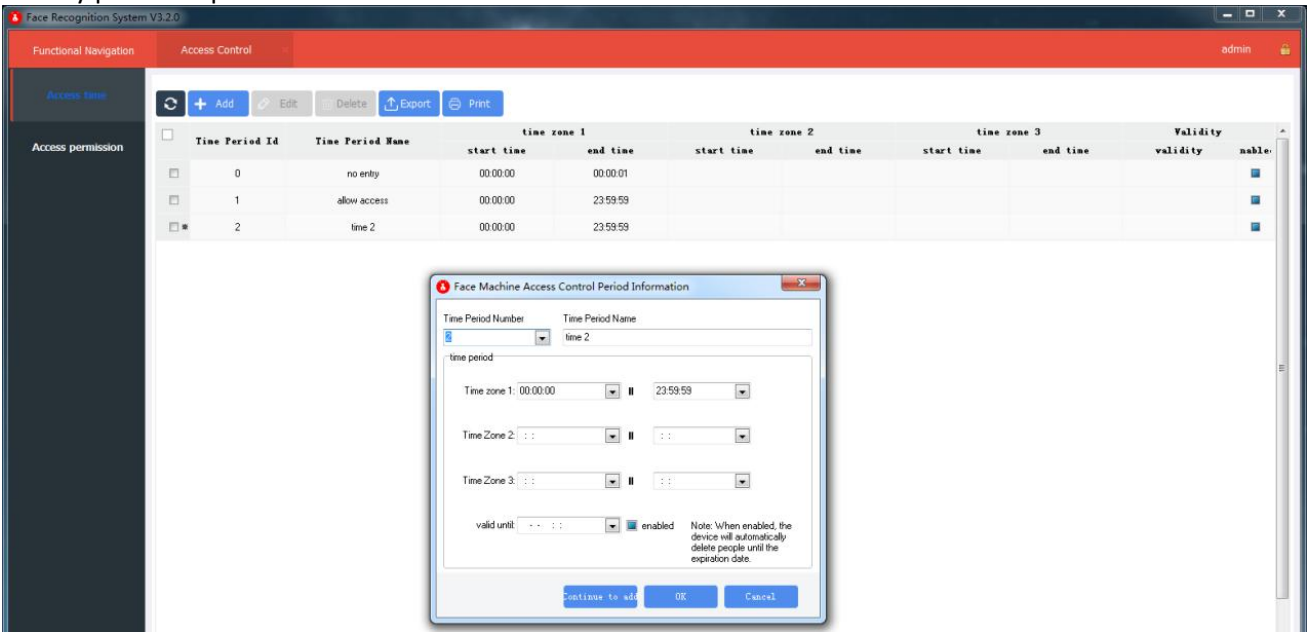
### 1.3. Access Control Management

The access control management includes the access control period and the access control authority settings.



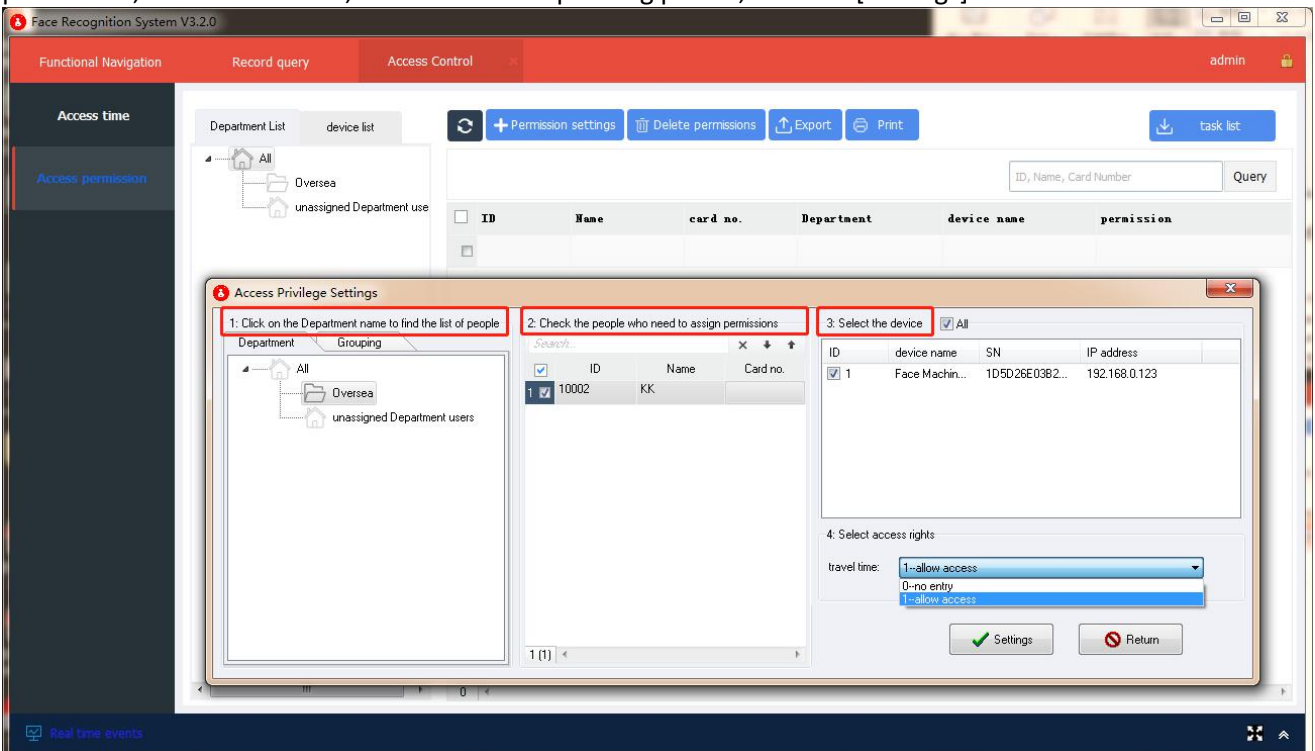
### 1.3.1. Access Control Period

A maximum of three time zones can be set for one access period. The system has two built-in periods of 0 forbidden and 1 for allowed passage. If necessary, you can add more time periods, and you can also add the validity period of personnel. To achieve strict access control.



### 1.3.2. Access Authority

Access control permission can be set the passable period from the specific personnel to the face device. If the permission is not set, it can be passed for 24 hours. The setting method is as follows: click [assign by permission], click the department name to query the list of personnel, check the personnel that need to set permission, check the device, select the corresponding period, and click [Settings].



## 1.4. Record Queries

The record query module includes the face recognition record query, the human identification comparison record query, the temperature detection record query; Record query can query the history recognition record and the scene pictures captured during the recognition, and can be compared with the archive photos, click the recognition photo to see a larger picture. According to the department or personnel, time period and other conditions for inquiry.

### 1.4.1. Recognition Record

Functional Navigation: Record query

Department List: All, Over sea, unassigned Department users

date: 2020-04-01 -- 2020-04-25

Id or name: ID \ Name

Buttons: Today, Nearly 3 days, this month, Yesterday, Last week, Last month, export, Print

Id	Name	Department	Job	card no.	Time	temp	temper status	Device	status
42	stranger				2020-04-25 13:08	36.0	1	Face Machine 1	stranger
43	stranger				2020-04-25 13:08	36.0	1	Face Machine 1	stranger
44	stranger				2020-04-25 13:08	36.0	1	Face Machine 1	stranger
45	stranger				2020-04-25 13:08	36.0	1	Face Machine 1	stranger
46	10001	KK	Over sea	Manager	2020-04-25 13:09	36.3	1	Face Machine 1	In
47	10001	KK	Over sea	Manager	2020-04-25 13:09	36.4	1	Face Machine 1	In
48	10001	KK	Over sea	Manager	2020-04-25 13:09	36.4	1	Face Machine 1	In
49	10001	KK	Over sea	Manager	2020-04-25 13:09	36.3	1	Face Machine 1	In
50	10004	Wk	Over sea		2020-04-25 13:10	35.9	1	Face Machine 1	In
51	10001	KK	Over sea	Manager	2020-04-25 13:11	36.3	1	Face Machine 1	In
52	10001	KK	Over sea	Manager	2020-04-25 13:11	36.2	1	Face Machine 1	In
53	10001	KK	Over sea	Manager	2020-04-25 13:12	36.4	1	Face Machine 1	In

File Photo: [Image]

Identifying Photo: [Image] 36.3°C

(double-click to display large image)

Real time events

Real Time Event Screen: Will display the detected face information within 3s.

Functional Navigation: Device Management, Real time events

UserId	Name	Department	Device	Time	status	temperature
			Face Machine 1	2020-04-22 18:53:31	In	36.7
			Face Machine 1	2020-04-22 18:52:51	In	36.6
			Face Machine 1	2020-04-22 18:53:31	In	36.7
			Face Machine 1	2020-04-22 18:52:51	In	36.6
			Face Machine 1	2020-04-22 18:53:31	In	36.7
			Face Machine 1	2020-04-22 18:52:51	In	36.6
			Face Machine 1	2020-04-22 18:52:51	In	36.6
			Face Machine 1	2020-04-22 18:52:51	In	36.6
			Face Machine 1	2020-04-22 18:48:00	In	37.3
	stranger		Face Machine 1	2020-04-22 18:52:38	stranger	36.4
			Face Machine 1	2020-04-22 18:51:56	In	36.7
			Face Machine 1	2020-04-22 18:51:56	In	36.7
			Face Machine 1	2020-04-22 18:51:56	In	36.7
	stranger		Face Machine 1	2020-04-22 18:52:38	stranger	36.4
	stranger		Face Machine 1	2020-04-22 18:52:38	stranger	36.4
			Face Machine 1	2020-04-22 18:48:31	In	36.9
			Face Machine 1	2020-04-22 18:48:00	In	37.3
			Face Machine 1	2020-04-22 18:51:56	In	36.7
			Face Machine 1	2020-04-22 18:49:00	In	37.2

Name: stranger  
time: 2020-04-22 19:17:24

Name: stranger  
time: 2020-04-22 19:17:27

Face Machine 1 (online)

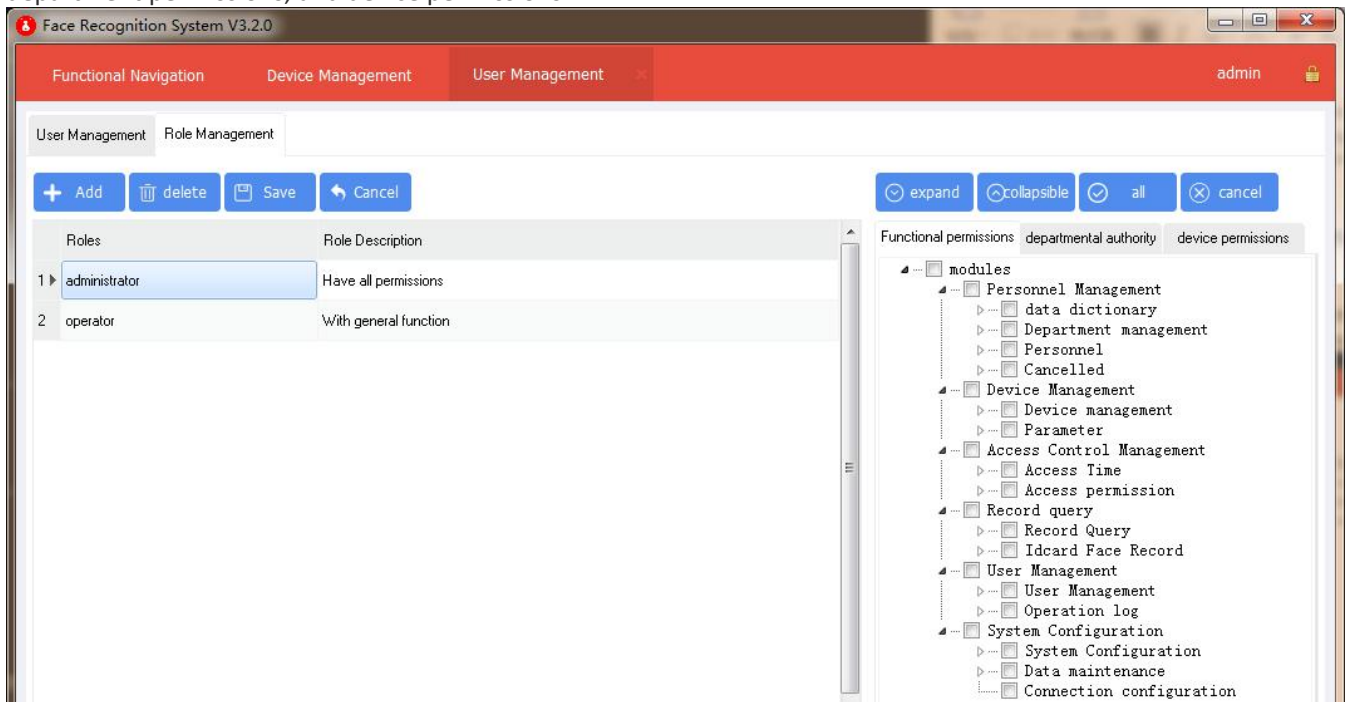
Event Record | device list

## 1.5. User Management

User management includes role management and operator management. Different roles have different operation permissions. Adding multiple operators and assigning different roles can realize multi-user management of the same system.

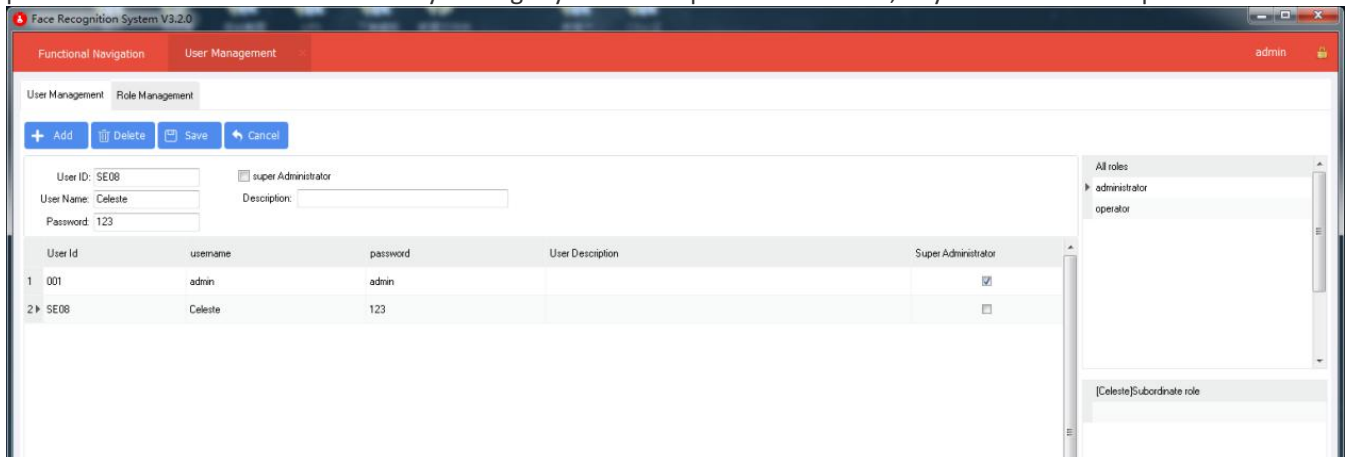
### 1.5.1. Role Management

Different roles can set different permissions, down to the button level, including function permissions, department permissions, and device permissions.



### 1.5.2. User Management

Different users can be set to different roles or have multiple role identities, which have the corresponding permissions of the roles to which they belong. If you are a super administrator, any role will have all permissions.

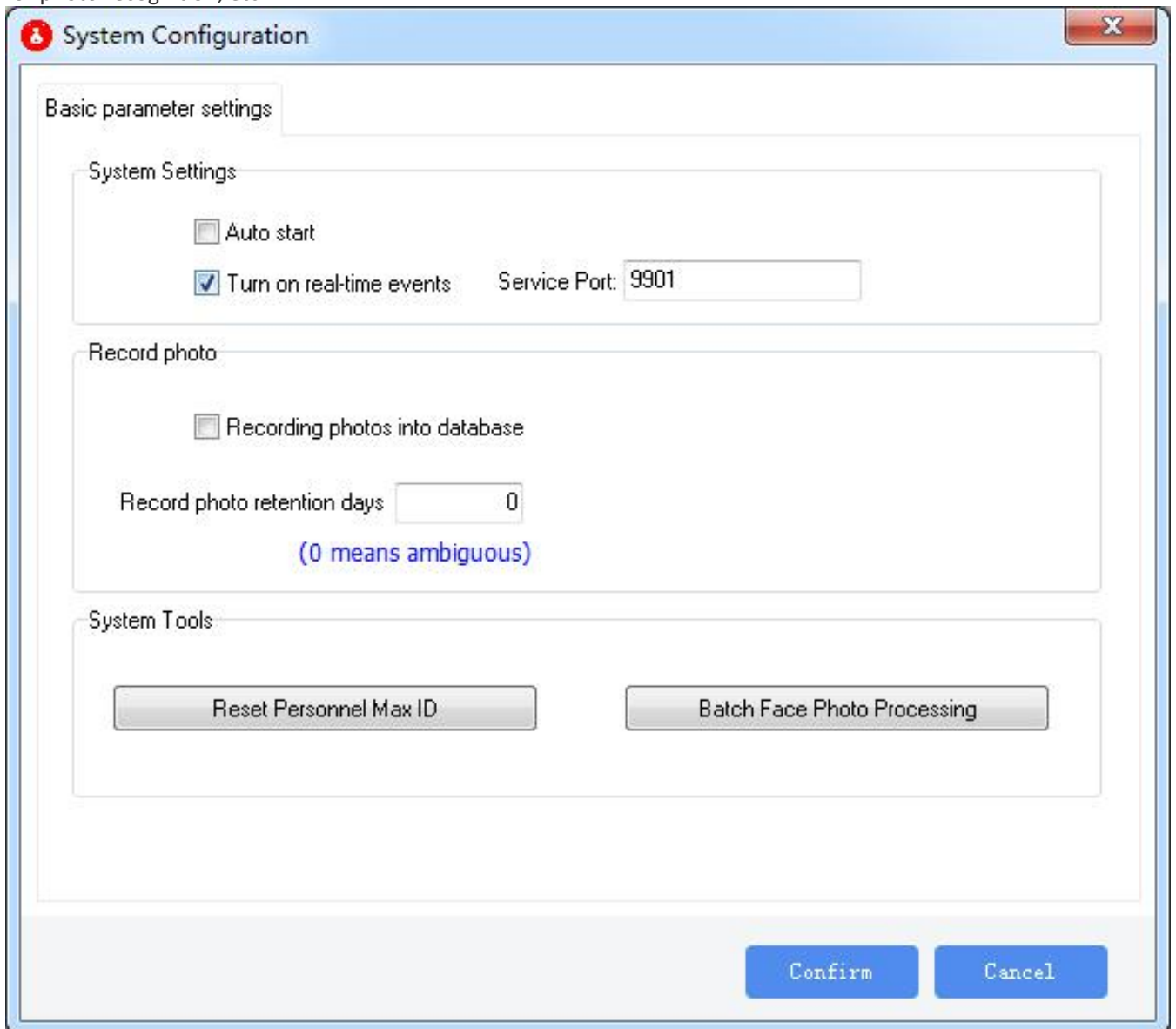


## 1.6. System Configuration

The system configuration is global system parameter setting, which can set whether the system is started or not, whether the system is automatically logged in, set the port number of the system service, identify the number of days for photo retention, and the policy of background automatic data analysis. After parameter setting, it will take effect after restarting the software.

### 1.6.1. Basic Parameter Settings

Set basic parameters such as starting the machine, service port, time interval of consumption, temperature display, automatic face cancellation without swiping the card for several consecutive days, and number of days for photo recognition, etc.



The screenshot shows a 'System Configuration' dialog box with a title bar containing a red close button. The main content area is titled 'Basic parameter settings' and is divided into three sections:

- System Settings:** Contains two checkboxes: 'Auto start' (unchecked) and 'Turn on real-time events' (checked). To the right of the second checkbox is a text input field labeled 'Service Port:' containing the value '9901'.
- Record photo:** Contains one checkbox: 'Recording photos into database' (unchecked). Below it is a text input field labeled 'Record photo retention days' containing the value '0'. A blue note below the field states '(0 means ambiguous)'.
- System Tools:** Contains two buttons: 'Reset Personnel Max ID' and 'Batch Face Photo Processing'.

At the bottom right of the dialog box are two buttons: 'Confirm' and 'Cancel'.

## Part 3 Appendix

### Technical Parameters

Name	Category	Parameter
<b>Hardware Specifications</b>	operating system	Android 7.1 and above
	processor	CPU 4 core RK3299
	display	8-inch, full-view IPS LCD screen
	Display resolution	800*1280,lightness 400cd
	Fill light	Infrared, LED Fill light
	Camera	200W
	Temperature measurement module	<b>Thermal imaging temperature detection module (Heimann, Germany)</b>
	Working environment	Indoor and semi-outdoor without sunlight
	Operating temperature	-10℃~60℃
	Power supply	DC12V
<b>Recognition Algorithm</b>	Face recognition algorithm	Deepse
	Face Detection	Support simultaneous detection and tracking of 5 people
	1: N face recognition	Support 1 in 10,000 misunderstanding rate, 99% pass rate
	Recognition speed	≤200ms
<b>Body Temperature Monitoring</b>	Temperature measurement distance	0.2-2 m(adjustable)
	Temperature measurement accuracy	±0.3℃
	Fever alarm	When the detected human body temperature exceeds 37.2 ℃ (adjustable), an alarm is issued
<b>User Management</b>	Face library	20,000 Local Face Library
	Personnel management	Add, delete, and modify personnel on local applications
	Recognition mode	Face recognition, temperature detection
	Settings management	Equipment management, rights management, personnel / photo management, record query, etc.
<b>The Internet</b>	Network module	Support wired, 2.4Gwifi, 4G network card
<b>Optional Module (reserved)</b>	Swipe module	Support IC / ID card reader
	ID module	Support ID card reader
	QR code module	Support QR code reader

(The End)