

Intelligent face recognition terminal

VF205 Product Manual



Disclaimer

Please read all contents of this document carefully before using the product to ensure safe and effective use of the product. Do not disassemble the product or tear off the seal on the device by yourself, otherwise our company will not be responsible for warranty or product replacement.

The pictures in this manual are for reference only. If some pictures are inconsistent with the actual product, please refer to the actual product. For the upgrade and update of this product, our company reserves the right to modify the document at any time without prior notice.

The risk of using this product is borne by the user. To the maximum extent permitted by applicable law, our company does not assume any responsibility for any damages and risks arising from the use or inability to use this product, including but not limited to direct or indirect personal damages, loss of business profits, trade interruption, loss of business information or any other economic loss.

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Table of contents

Disclaimer	2
1. Preface	5
1.1. Product Introduction	5
1.2. Product Features	5
2. Product Appearance	6
2.1. Appearance	6
2.2. Dimensions	7
2.3. Appearance	8
2.4. Reading area diagram	9
3. Installation	10
3.1. Equipment Installation	10
3.2. Equipment wiring	12
Port Description	12
Equipment wiring diagram	15
4. Technical Parameters	16
5. Device working mode description	18
5.1. Transparent mode	18
5.2. Protocol Mode	18
5.3. Development Mode	18
5.4. Whitelist authentication mode	19
6. Device Configuration	20
6.1. Device networking configuration	20
6.2. Log in to the face recognition device backend	20
7. Face Registration	26
7.1. Scene 1	26
Scenario Description	26
Setup Process	26
7.2. Scene 2	27
Scenario Description	错误！未定义书签。
Setup Process	错误！未定义书签。
7.3. Scene 3	错误！未定义书签。
Scenario Description	错误！未定义书签。
Setup Process	错误！未定义书签。

8.	Configuration Tool Instructions	29
8.1.	Configuration Tool Function Overview	错误！未定义书签。
8.2.	Instructions	错误！未定义书签。
	Network Configuration	错误！未定义书签。
	Staffing	错误！未定义书签。
	MQTT Configuration	错误！未定义书签。
9.	Device background description	35
9.1.	Basic Settings	错误！未定义书签。
	Basic Configuration	错误！未定义书签。
	Pass record related configuration	错误！未定义书签。
	Voice and output related configuration	错误！未定义书签。
	Alarm related settings	错误！未定义书签。
	Device anti-removal settings	错误！未定义书签。
	Fill light related settings	错误！未定义书签。
	Face related configuration	错误！未定义书签。
	Channel related configuration	错误！未定义书签。
	Authentication Mode	错误！未定义书签。
	Network Configuration	错误！未定义书签。
	MQTT related configuration	错误！未定义书签。
	Camera Calibration	错误！未定义书签。
	Set device time	错误！未定义书签。
	Disable Enable	错误！未定义书签。
	Password Change	错误！未定义书签。
	Device restart	错误！未定义书签。
9.2.	Whitelist settings	错误！未定义书签。
9.3.	Firmware Information	错误！未定义书签。
	Firmware Upgrade	错误！未定义书签。
	Reset the device	错误！未定义书签。
9.4.	Staffing	错误！未定义书签。
	Add people	错误！未定义书签。
9.5.	Pass record	错误！未定义书签。
10.	Precautions	35
	Face Registration Photo Requirements	51
	Face recognition registration requirements	52
	Wiring requirements:	52
	Installation environment requirements	52

1. Preface

Thank you for using the VF205 face recognition device. Carefully reading this document can help you understand the functions and features of this device, and quickly master the use and installation methods of the device.

1.1. Product Introduction

VF205 uses Linux operating system and has a storage capacity of 8GB, expandable to 16GB/32GB. Storage, RS485, Wiegand, Ethernet and other communication methods (expandable 4G and GPS). Face recognition uses local verification. The face database is stored locally on the device. After successful verification, the person ID can be output. The output method can also use one of the above three methods.

The product features an 8-inch touch screen, voice broadcast, a reserved microphone, and good interactivity and ease of use.

VF205 device can support protocol mode, user can root. Carry out secondary development according to the "Communication Protocol" provided by our company.

1.2. Product Features

- ✓ 8-inch high-brightness LCD touch screen, real-person voice broadcast prompts, and 200W pixel binocular camera.
- ✓ The recognition accuracy rate of the full database is over 97%, and the recognition time is less than 0.3S/person.
- ✓ The recognition distance is 0.3m-1.5m, and it supports a maximum of 50,000 face libraries and 50,000 records.
- ✓ People wearing masks, glasses, or hats can be effectively identified, and mask detection is supported.
- ✓ Built-in silent liveness detection can effectively block photo, video and mask attacks.
- ✓ Support TCP/IP, MQTT, and HTTP protocols.
- ✓ External alarm input, door magnetic status input, exit switch input.

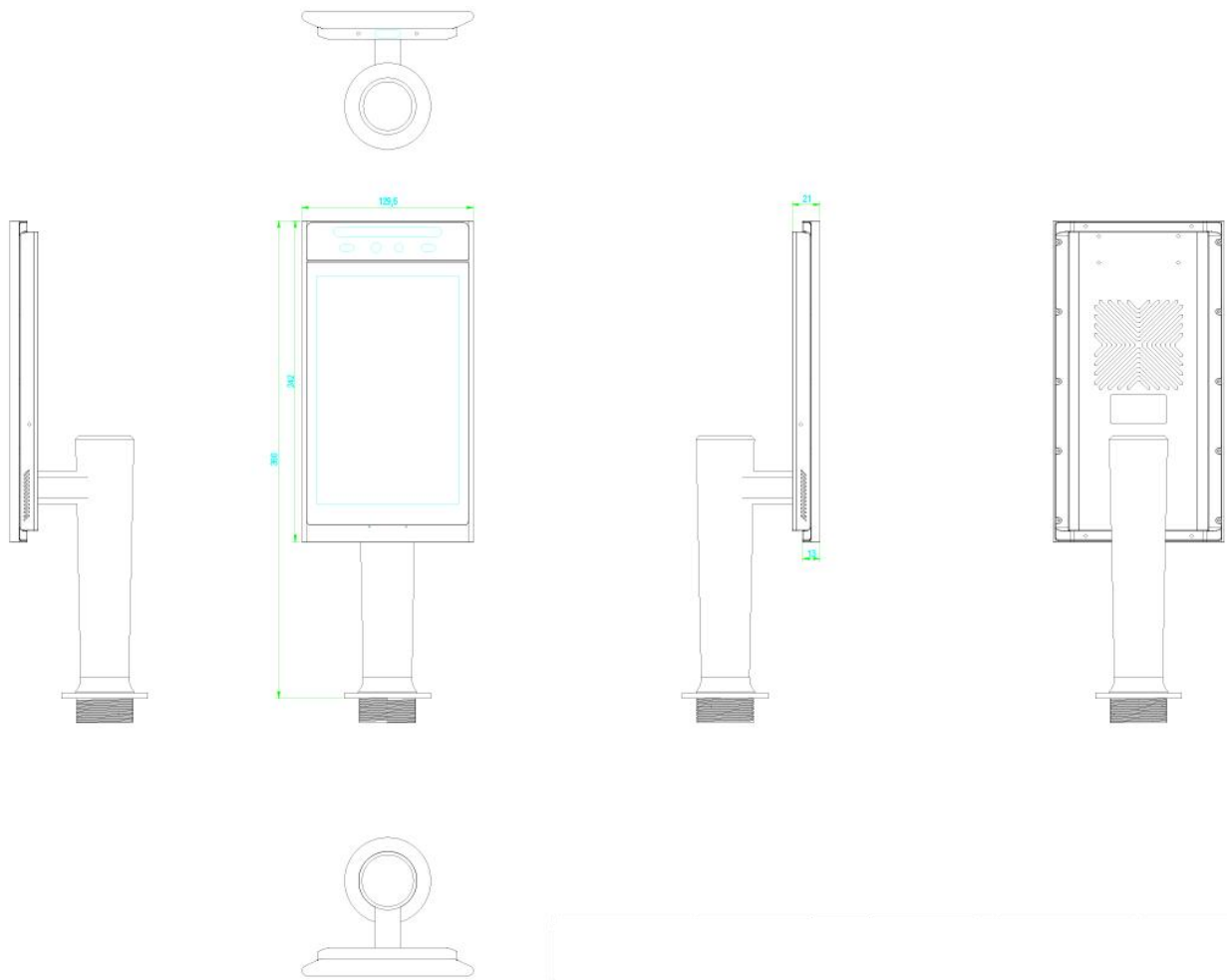
- ✓ RS485, Wiegand output face ID number.
- ✓ Built-in high-precision clock chip and RTC battery, can save time when power is off.
- ✓ Electrostatic protection: contact 8KV, air 12KV.
- ✓ The waterproof and dustproof level of non-4G facial recognition devices without temperature measurement modules can reach IP66.
- ✓ Support logo customization, protocol customization, and OEM.
- ✓ Support gate machine, 86 box, flat wall and column installation

2. Product Appearance

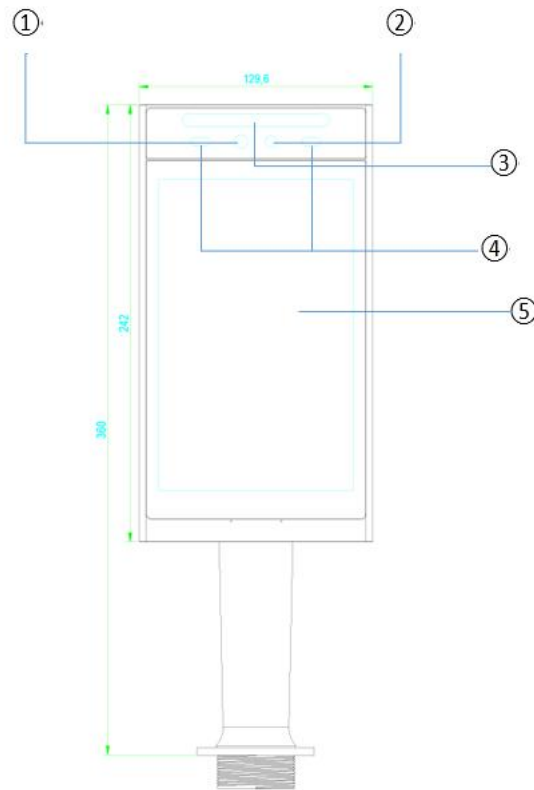
2.1. Appearance



2.2. Dimensions

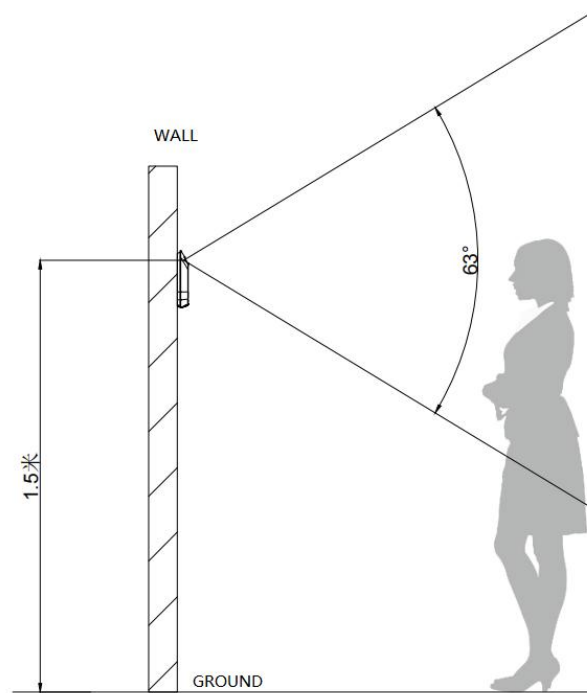


2.3. Appearance

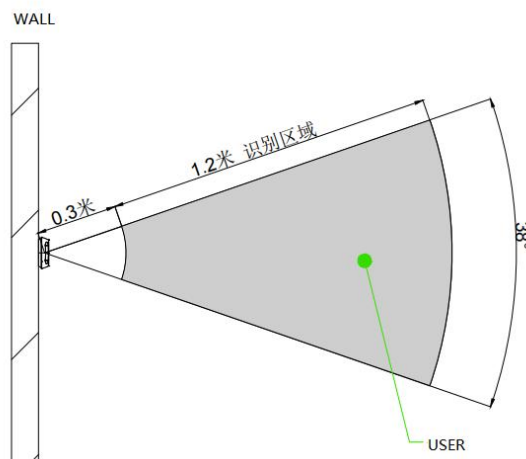


Number	Name
①	Infrared Camera
②	RGB Camera
③	White Fill Light
④	Infrared Fill Light
⑤	8 - inch High - brightness LCD Touch - screen

2.4. Reading area diagram



side view

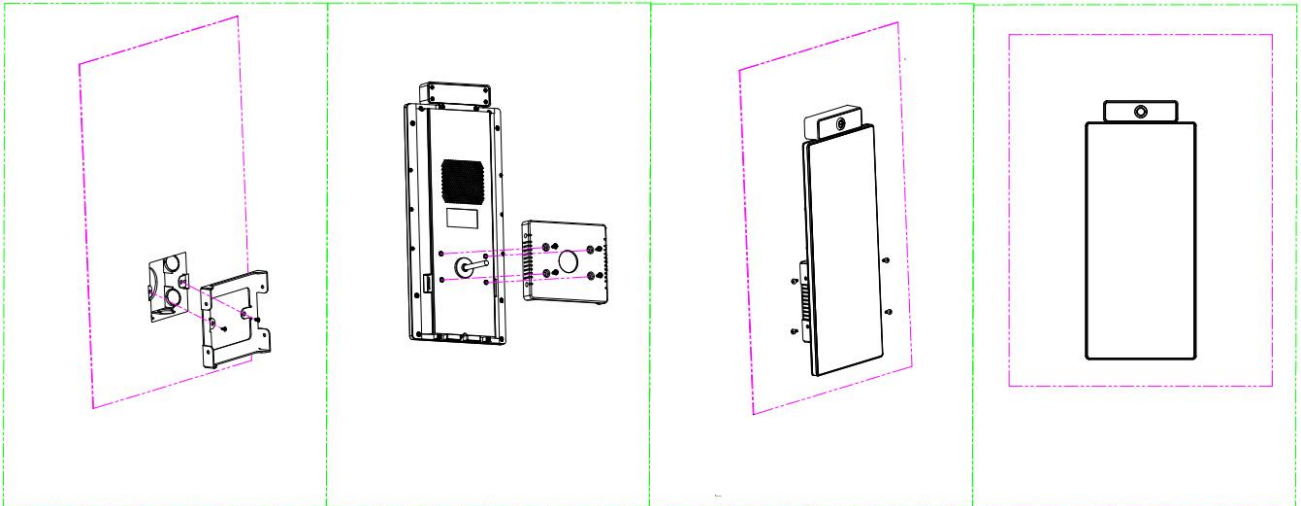


Top view

3. Installation

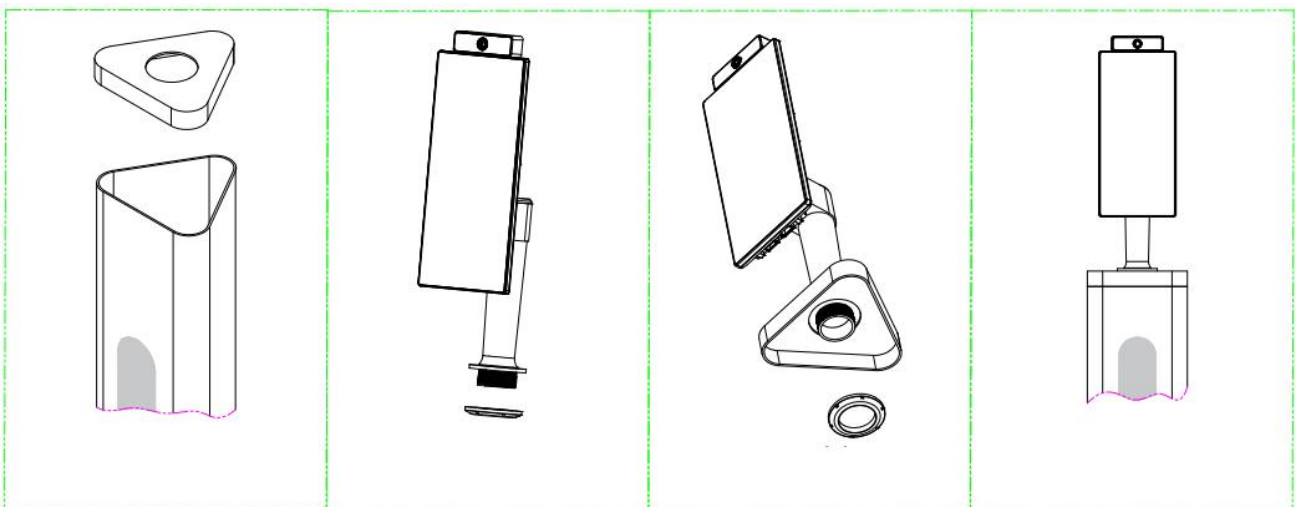
3.1. Equipment Installation

86 box installation



1. Connect the sheet metal bracket to the 86 box with screws.
2. Connect the adapter bracket to the equipment with screws.
3. Install the equipment into the 86 box and connect it with screws on the side.
4. Finish the installation.

Column installation

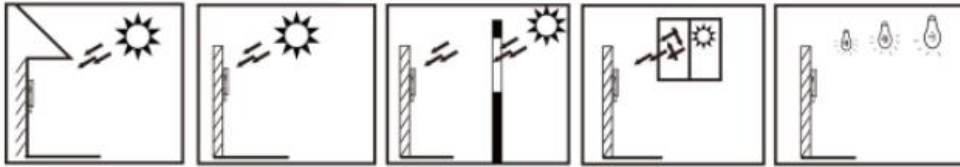


1. Remove the upper cover plate of the upright column.

2. Remove the bracket nut.
3. Fix the upper cover plate to the bracket.
4. Complete the installation.

Installation Notes:

Avoid backlight, direct sunlight, direct sunlight through windows, oblique sunlight through windows, and close exposure to light.



Backlight

Direct sunlight **Sunlight through** **Sunlight through** **Light close up**

Direct sunlight from windows

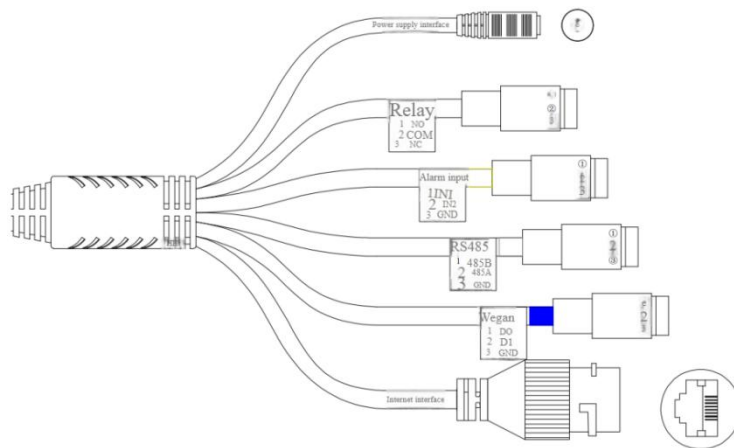
Window Slant

3.2. Equipment wiring

Port Description

Screw terminal version

The facial recognition device leads to six wiring terminals, and the wiring is defined according to the terminal line labels..



Port Name	Pin number	Pin Definition
Power interface	DC round head	12V power supply
Relay interface	1	NO: Relay normally open
	2	COM: relay common terminal
	3	NC: Relay normally closed terminal
Alarm input	1	IN1: Alarm input 1
	2	IN2: Alarm input 2
	3	GND: Ground
RS485	1	485B: 485B line
	2	485A: 485A line

	3	GND: Ground
Wiegand	1	D0: Wiegand 0
	2	D1: Wiegand 1
	3	GND: Ground
Network cable interface	RJ45	Connect the network cable

Bare wire version

PIN#	Harness Color	Pin Definition	Pin Description
PIN1	red	VCC	Power positive
PIN2	black	GND	Power Ground
PIN3	White	485B	485-B Line
PIN4	blue	485A	485-A Line
PIN5	brown	GND	Power Ground
PIN6	orange color	D0	Wiegand 0
PIN7	yellow	D1	Wiegand 1
PIN8	green	IN1	Alarm input 1
PIN9	Purple	IN2	Alarm input 2
PIN10	grey	NO	Relay normally open
PIN11	pink	COM	Relay common terminal
PIN12	blue	NC	Relay normally closed

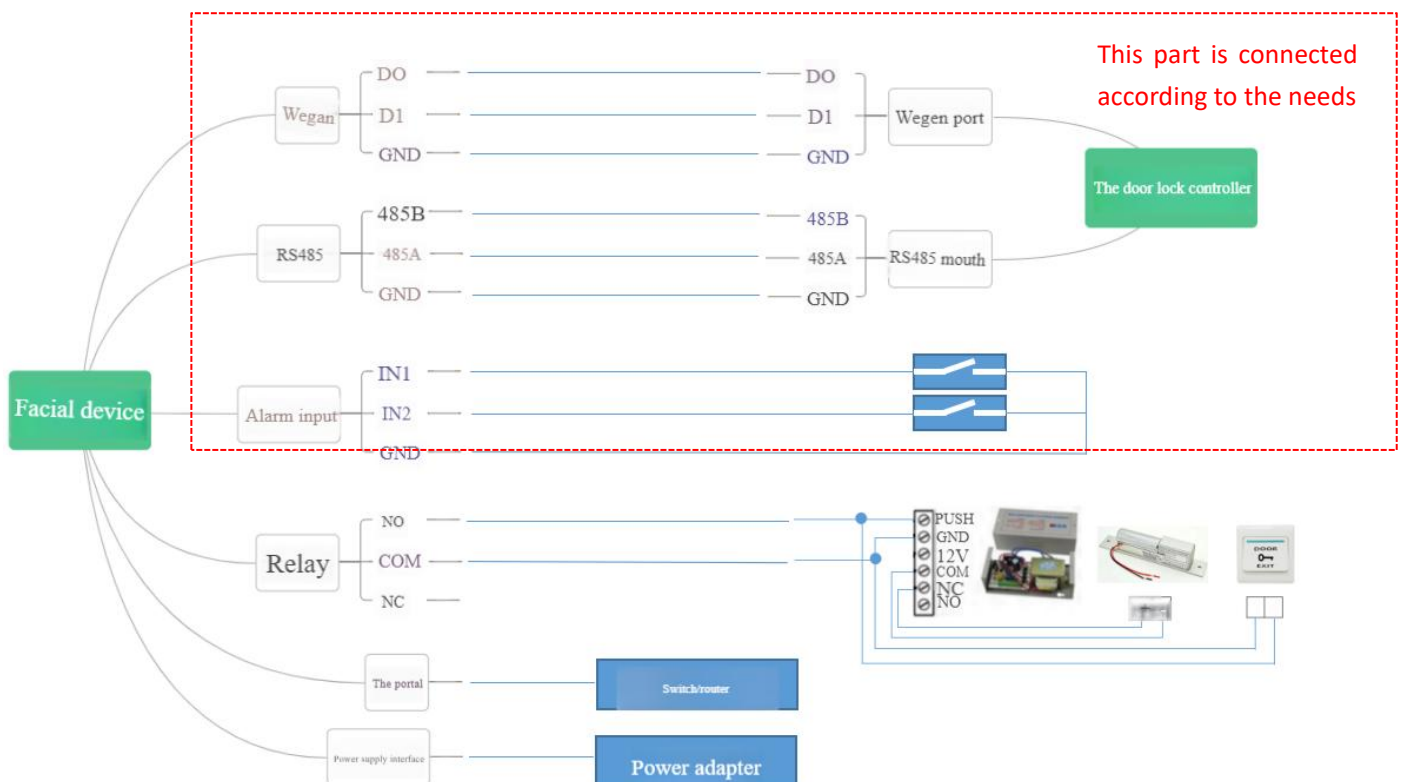
Note:

Unused pins must be insulated!

If the equipment is damaged by short circuit due to lack of insulation treatment, the user shall bear the responsibility!

Equipment wiring diagram

The electric bolt lock mechanism in the figure is unlocked when power is off and locked when power is on (two-core wire lock head). If the user uses other types of electric bolt locks, they need to connect according to the characteristics of the electric bolt lock.



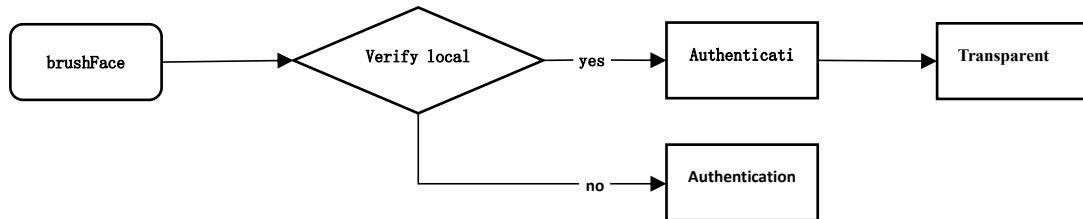
4. Technical Parameters

Product Parameters		
System Parameters	Operating system: Linux	
	Storage capacity: 8GB (16G & 32G expandable)	
	Processor: ARM Cortex A7 MP2 1GHz	
Display	Size: 8-inch LCD touch screen	
	Resolution: 800*1280	
Communication	Wired: 1 10/100M adaptive network port	
	Wireless: 2.4G WiFi	
	1-way RS485	
	1 Road Wiegand 26/Wiegand 34	
	Expandable to support 4G	
Physical Interface	Relay: 30V1A	
	2-way alarm signal input interface	
Power supply	Power supply voltage: 9~24V(DC) (12V power supply recommended)	
	Max.16W	
Camera	RGB Camera	Field of view: D=65° H=59° V=38°
		Aperture: 2.0
		Resolution: 1920*1080
		Focal length: 4.35MM
	Infrared camera	Field of view D=68° H=60° V=40°
		Aperture: 2.2
		Resolution 1616*1232
		Focal length 2.35MM
speaker	Built-in 4Ω 2W speaker	
Material	Fireproof ABS+Organic glass	
Operating	-20℃~55℃	

temperature	
Operating humidity	10%~90% (no condensation)
Protection level	Electrostatic protection: contact 8KV, air 12KV
	Dust and water resistance rating for non-4G and non-temperature measurement versions: IP66 (other versions are not waterproof)
Face recognition performance parameters	
Support mask detection	
1:N algorithm dynamic face detection (anti-photo, video attack)	
Hardware infrared liveness detection (anti-photo, video attack)	
Portrait capacity: 50,000 photos	
Identification distance 0.3-1.5M	
Pass rate: $\geq 97\%$ (when the capacity reaches 50,000 sheets)	
False recognition rate $\leq 0.01\%$ (when the capacity reaches 50,000 sheets)	
Recognition time $< 0.3s$	

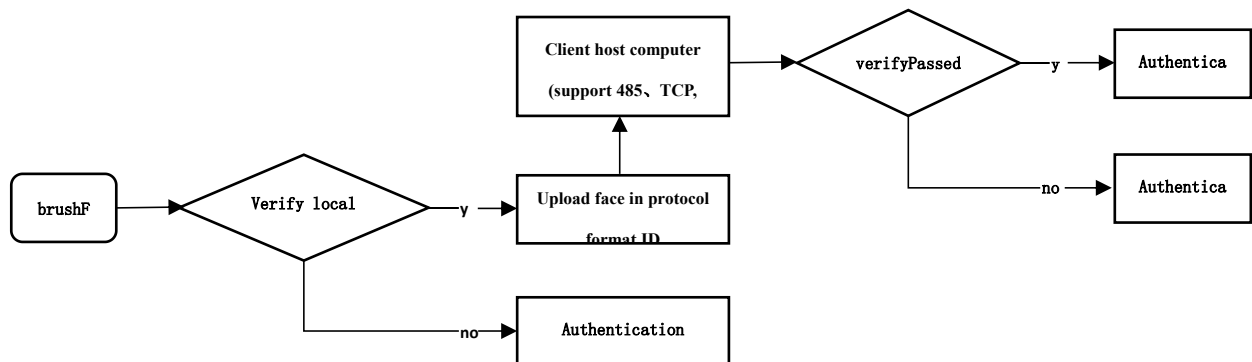
5. Device working mode description

5.1. Transparent mode



In transparent transmission mode, face scanning is only compared with the local face database, and there is no authentication process.

5.2. Protocol Mode



In protocol mode, users need to build a host computer to receive data and return authentication results through 485 or TCP, HTTP protocol.

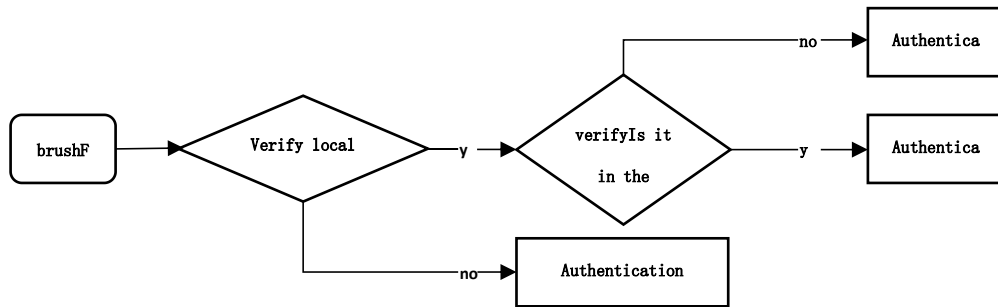
The agreement document is available on the official website.

5.3. Development Mode

The development mode is currently only used for card reading and writing operations, and other

functions are not supported yet.

5.4. Whitelist authentication mode



6. Device Configuration

6.1. Device networking configuration

Please use the face device terminal to log in to the device background and configure the network. The operation steps are as follows: Long - press the device screen to bring up the background settings button, then you can enter the login interface. Enter the password (the default is "password"). After entering the settings interface, select "Network Configuration" and fill in the relevant network information according to your actual network situation.

Note: If the WiFi is an open (password - free) network, you can fill in "123456" in the device password field to connect normally. However, it is not recommended to use an open WiFi as the network stability may be poor.



The screenshot shows the 'Network Settings' (网络设置) interface with the 'Network Type' (网络类型) set to 'Wired Network' (有线网). The configuration fields are as follows:

Field	Value
配置IP (DHCP)	自动 (DHCP)
IP地址	10.102.106.44
子网掩码	255.255.255.0
网关	10.102.106.124
DNS	10.102.106.124

Current network status: 网络已连接 (Network connected)

Network test: 10.102.106.124 (PI)

Save button: 保存



The screenshot shows the 'Network Settings' (网络设置) interface with the 'Network Type' (网络类型) set to 'WiFi'. The configuration fields are as follows:

Field	Value
WiFi名称	Vguang_RJ
WiFi密码	vguangrj_o0
配置IP (DHCP)	自动 (DHCP)
IP地址	10.102.106.44
子网掩码	255.255.255.0
网关	10.102.106.124
DNS	10.102.106.124

Current network status: 网络已连接 (Network connected)

Network test: 10.102.106.124 (PI)

Save button: 保存

6.2. Log in to the face recognition device backend

When the face recognition device is successfully connected to the Internet, the network icon is displayed in the upper right corner of the screen, the device IP is displayed in the lower right corner, the system time is displayed in the upper left corner, and the device SN number is displayed in the

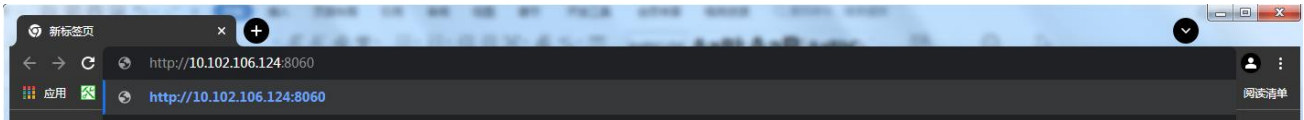
lower left corner.



Connect the computer and the facial recognition device to the same network. Open the browser, enter `http://device ip address:8060/` in the address bar, press Enter, and you can enter the backend management interface.

Assume that the IP address obtained by the device is 10.102.106.124.

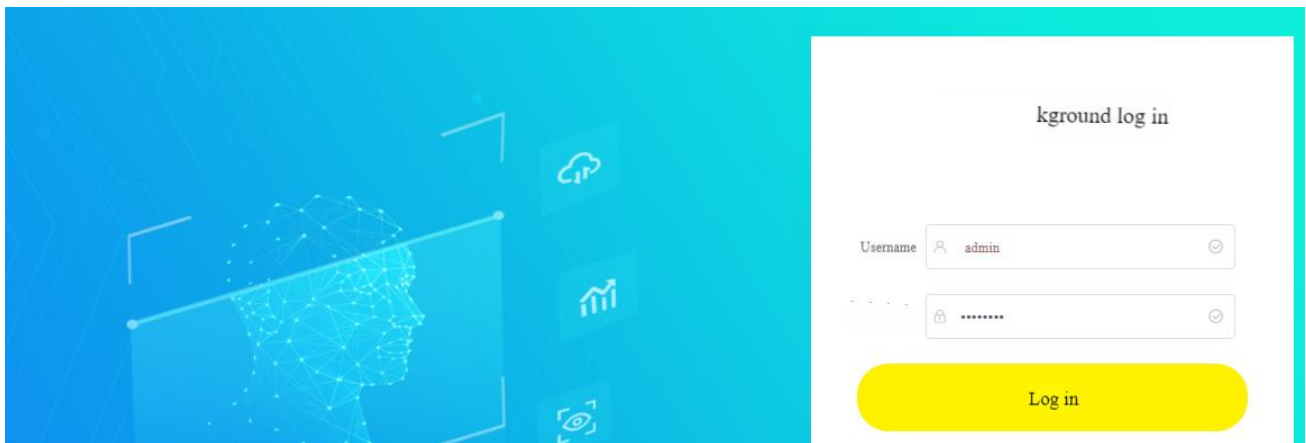
Enter the device address as follows and press Enter.



Enter the backend login interface. The login interface is as follows.

The default username is: admin.

The default login password is: password. (This password is the device password in the "Face register offline v1.2.3" tool.)



After successful login, the background prompts you to set the "Device Configuration Password".

Please set the device configuration password

Please set the password:

Please confirm the password:

To ensure the security of the system, please change the password first.

Confirmed

This configuration password is mainly used to set the scanner working mode, as well as

equipment upgrades, factory resets, etc. Click OK to enter the following device background system.

Equipment management system

Help Administrator 退出

Basic settings

8 white list setting

Fixed information

Personal setting

Passage records

Basic configuration

Personnel record related configuration

Speech, output related configuration

Police related configuration

Device removal setting

Add lighting related settings

Facial related configuration

Brush card related configuration

Searching related configuration

Channel related configuration

Authentication result

Network configuration

MQTT related configuration

Camera is calibrated

Set the device time

Automatically adjust the screen brightness	☒ Shut down ☐ 打开
Screen brightness	
Automatically Hovered	☐ Shut down ☒ open
Automatically close time on the screen	300 s
Automatically shaded	☐ Shut down ☒ open
Automatically save time	30 s
shows SN	☐ not showing ☒ is shown
Displays the IP	☐ not showing ☒ is shown
The volume	

7.Face Registration

Users can refer to the following scenarios for quick settings.

7.1. Scene 1

Scenario Description

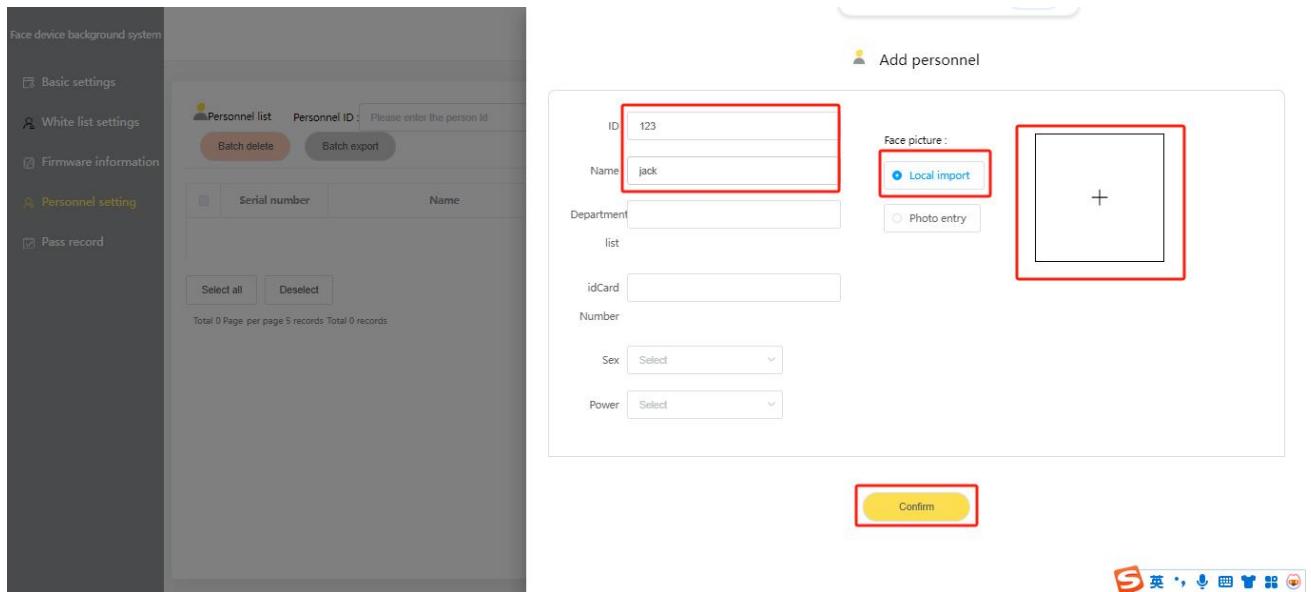
- 1, Can connect devices to the Internet.
- 2, Just register your face and you can move freely.

Setup Process

- 1, Refer to the instructions in Chapter 5 and log in to the device management backend.
- 2, Select Add Personnel in Personnel Settings.



- 3, Fill in the person ID, such as 123, fill in the person's name, such as "Zhang San", click the "+" sign, select a local photo, and click Confirm; or take a photo directly and enter it.



4, The platform prompts that the entry is successful.

5After saving successfully, you can scan your face for authentication

7.2. Scene 2

Scenario Description

1. The face device cannot be connected to the network.
2. Only face registration is required, and people can pass by face - brushing.
3. The face - brushing working mode is set to the "transparent transmission mode" by default when the device leaves the factory.

Setup Procedure

- 1.Log in to the device background as described in Chapter 5.
- 2.Select "Personnel Registration".
- 3.Select "New".
- 4.Enter the personnel ID.
- 5.Wait for the device to take a photo to obtain the face registration information.

7.3. Scenario Three

Scenario Description

- 1.The device can be connected to the network.
- 2.Code - scanning/card - swiping operates in the whitelist mode, that is, the authentication per missions for code - scanning/card - swiping are pre - entered into the device, and people can open the door by code - scanning or card - swiping.
- 3.Face - brushing can operate in any mode.

Setup Procedure

- 1, Log in to the device management background as described in Chapter 5.
- 2, Select "Whitelist Settings".
- 3, Select "New".
- 4, Enter the personnel ID.

The screenshot shows the 'Add' form in the 'White list settings' section. The form has the following fields:

- Person ID:** A text input field with a red border and a red asterisk, labeled 'Please enter user ID'.
- Personnel type:** A dropdown menu with a blue border and a blue asterisk, labeled 'Please choose personnel type'. The selected option is 'Face'.
- Start time:** A text input field with a blue border, labeled 'Please enter start time'.
- End time:** A text input field with a blue border, labeled 'Please enter end time'.
- Repetition type:** A dropdown menu with a blue border, labeled 'Please choose repetition type'.
- Name:** A text input field with a blue border, labeled 'Please enter your name'.
- Department:** A text input field with a blue border, labeled 'Please enter the Department'.

The background shows the 'White list settings' section with a table of user records. The table has columns for 'Serial number', 'Personnel type', 'Start time', 'Repeat end time', and 'Operate'. The 'Operate' column has 'Change' and 'Delete' buttons. The 'Add' button is highlighted in the top right corner.

When the user type is "Face", enter the personnel ID used during face registration.

When the user type is "Card", the ID is the hexadecimal positive - order card number, with letters in lowercase, e.g., a9decad1.

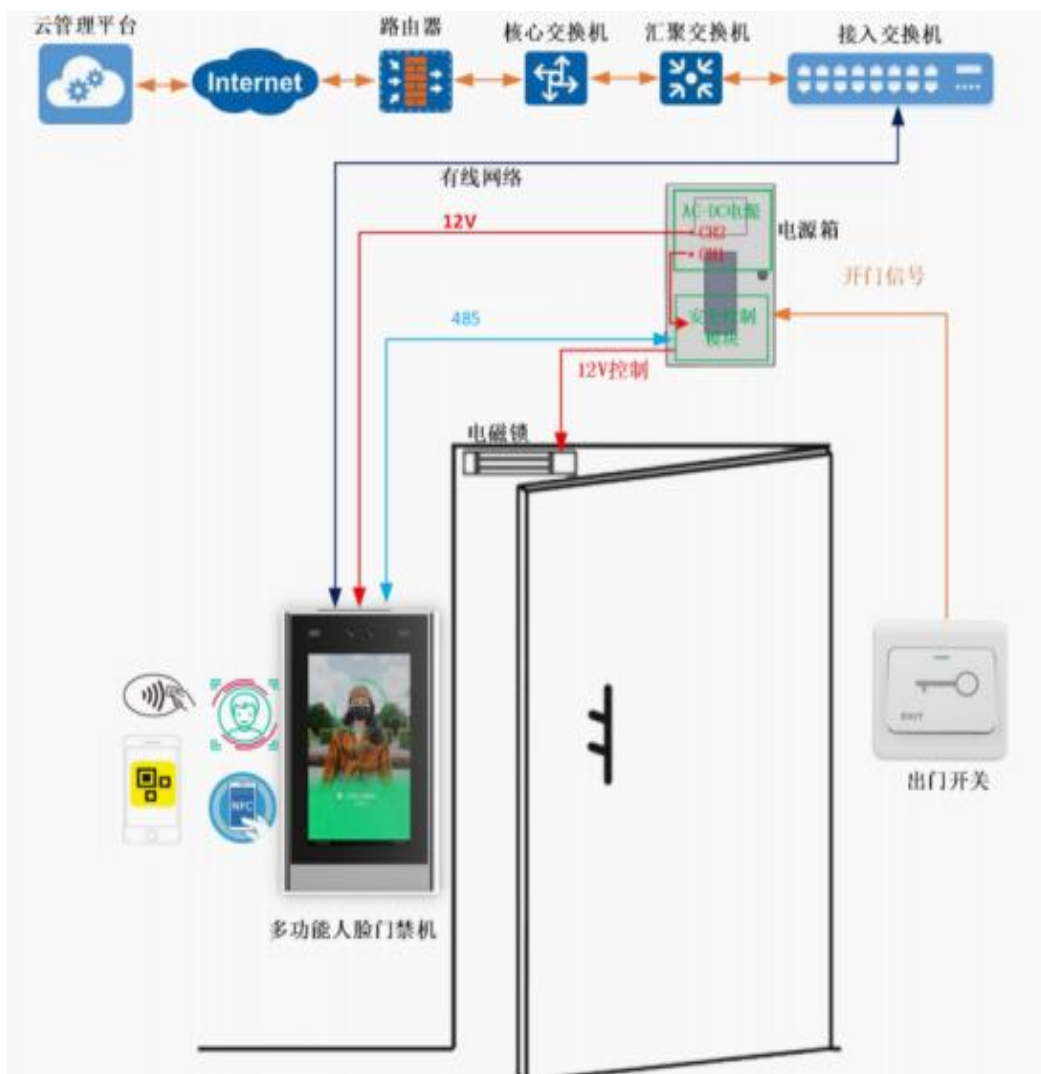
When the user type is "QR Code", the ID is a custom - defined card number. Users need to generate a QR code image according to the "Authorization Pass Code Mechanism User Manual_V1.0", and they can use this image to scan the code and open the door.

- 5.Select the start time and end time to specify the valid period of the whitelist.
- 6.Select "Non - repeating" for the repetition type.
- 7.Click "OK" to complete the setup.

8. Application Scenario Introduction

8.1. Standalone use

This scenario mainly relies on the network and connects to the server through the network to achieve online verification.



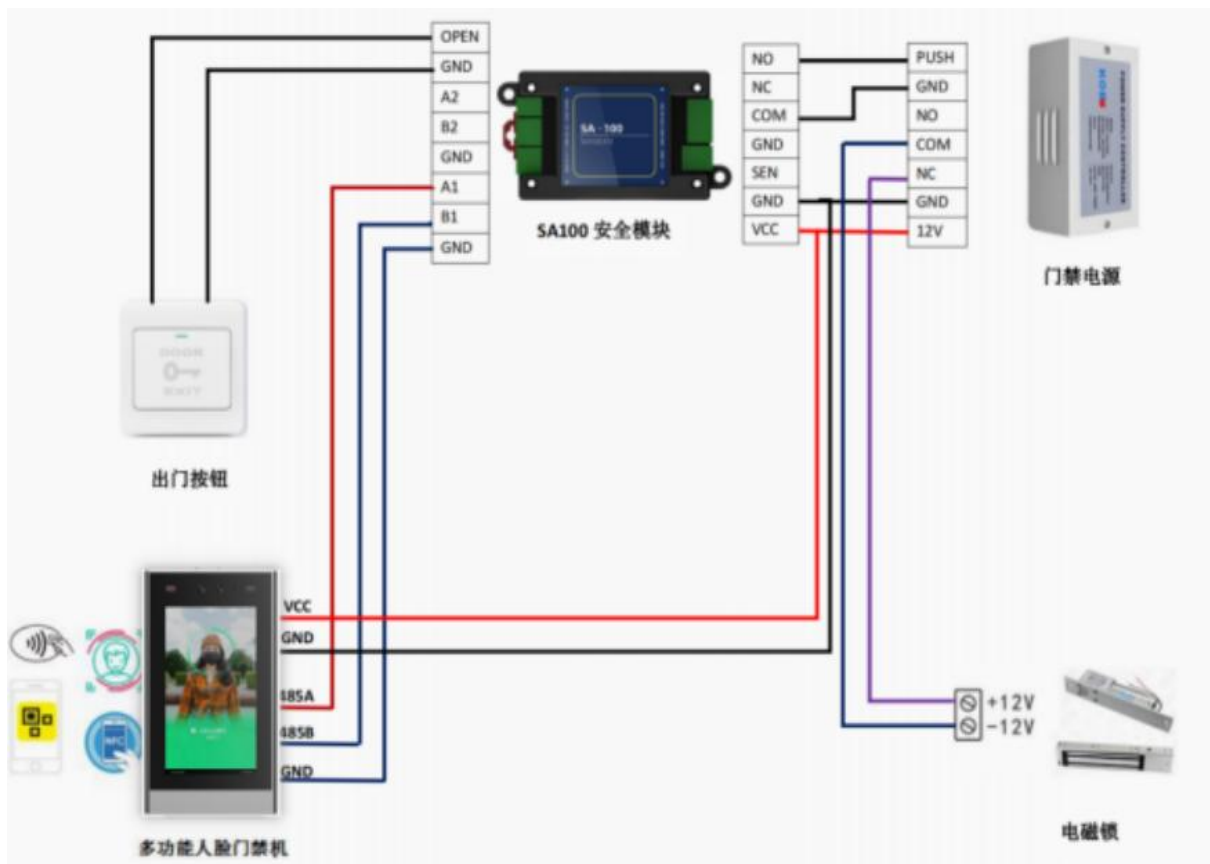
Operation analysis:

- ① The device is connected to the server management software through the network port, and online verification of permissions is required;

- ②Connect the exit switch to a professional access control power supply (or choose to connect it to a device) to open the door by pressing it indoors;
- ③The equipment is connected to a professional access control power supply;
- ④The electromagnetic lock is connected to a professional access control power supply, and the door lock opens after the access personnel's authority is verified.

8.2. With safety module

In this scenario, the VF203 facial recognition integrated machine and the security module form a more secure access control system. VF203 connects to the server through the network to achieve online verification, and then communicates with the security module through the encrypted 485 protocol to achieve door lock control. The typical application is shown in the figure below. For more security applications, please refer to the SA100 product manual.



9. Configuration Tool Instructions

9.1. Device Networking Configuration

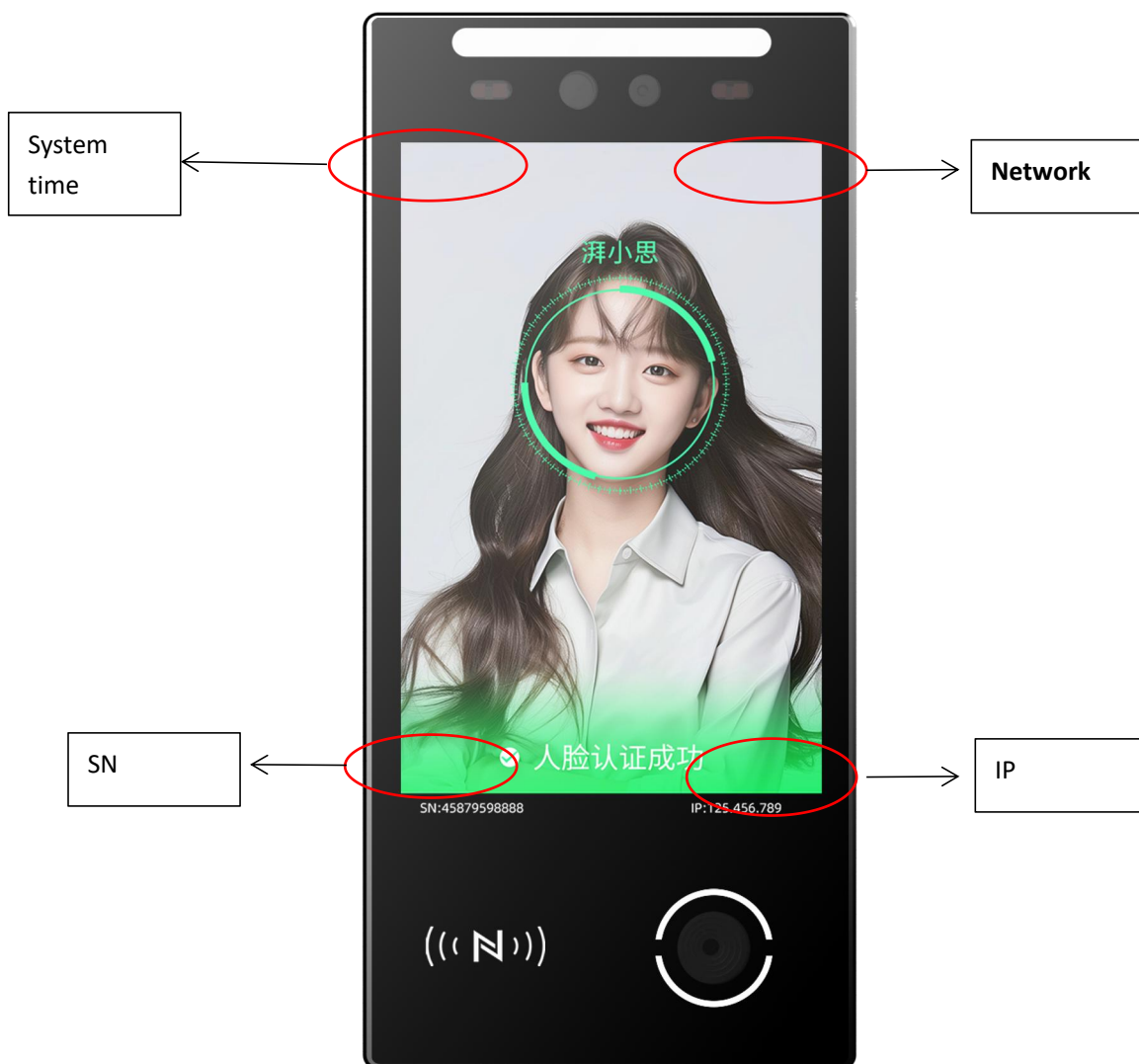
Please use the face device terminal to log in to the device background and configure the network. The operation steps are as follows: Long - press the device screen to bring up the background settings button, then you can enter the login interface. Enter the password (the default is "password"). After entering the settings interface, select "Network Configuration" and fill in the relevant network information according to your actual network situation.

Note: If the WiFi is an open (password - free) network, you can fill in "123456" in the device password field to connect normally. However, it is not recommended to use an open WiFi as the network stability may be poor.

网络设置	网络设置
网络类型 ☒ 有线网 ☐ WIFI ☐ 4G	网络类型 ☐ 有线网 ☒ WIFI ☐ 4G
配置IP 自动 (DHCP)	WiFi名称 Vguang_RJ
IP地址 10.102.106.44	WiFi密码 vguangrj_o0
子网掩码 255.255.255.0	配置IP 自动 (DHCP)
网关 10.102.106.124	IP地址 10.102.106.44
DNS 10.102.106.124	子网掩码 255.255.255.0
当前网络状态: 网络已连接	网关 10.102.106.124
网络测试 10.102.106.124 Ping	DNS 10.102.106.124
保存	当前网络状态: 网络已连接
	网络测试 10.102.106.124 Ping
	保存

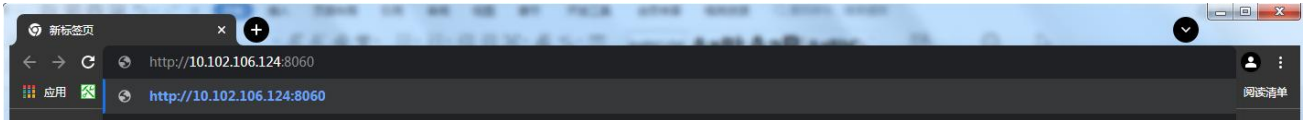
9.2. Logging in to the Face DeviceBackground

After the face device is successfully connected to the network, a network connection icon will be displayed in the upper - right corner of the screen, the device IP address will be shown in the lower - right corner, the system time will be presented in the upper - left corner, and the device SN number will be displayed in the lower - left corner.

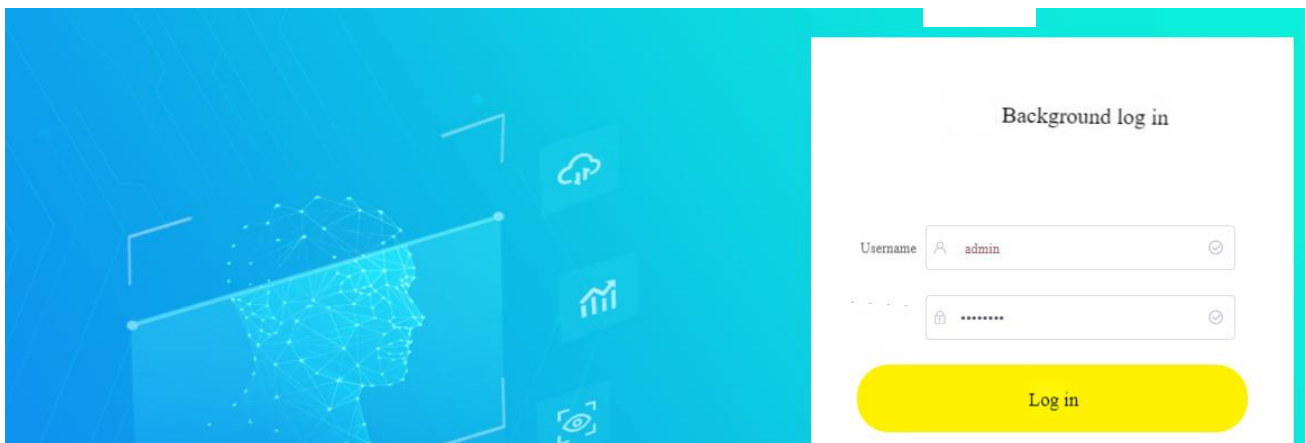


Connect your computer to the same network as the face device. Open a browser, enter "http://device IP address:8060/" in the address bar, and press Enter to enter the background management interface.

Suppose the device obtains an IP address of 10.102.106.124. Enter the device address in the following way and press Enter.。



Then you will enter the background login interface, which is as follows. The default username is "admin", and the default login password is "password" (this password is the same as the device password in the "Face register offlinev1.2.3" tool).



After successful login, the background will prompt you to set the "Device Configuration Password".

Please set the device configuration password

Please set the password

Please confirm the password

To ensure the security of the system, please change the password first.

Confirmed

This configuration password is mainly used for setting the QR code scanner working mode, device upgrade, factory reset, and other operations. Click "Confirm" to enter the following device background system.。

Equipment management system

Help Administrator 退出

Basic settings

8 white list setting

Fixed information

Personal setting

Passage records

Basic configuration

Person record related configuration

Speech output related configuration

Police related configuration

Device removal setting

Add lighting related settings

Facial related configuration

Brush card related configuration

Searching related configuration

Channel related configuration

Authentication result

Network configuration

MQTT related configuration

Camera is calibrated

Set the device time

Automatically adjust the screen brightness

Screen brightness

Automatically Hovered

Automatic close time of the screen

Automatically shaded

Automatically save time

shows SN

Displays the IP

The volume

☒ Shut down ☐ 打开

☐ Shut down ☒ open

300

s

☐ Shut down ☒ open

30

s

☐ not showing ☒ is shown

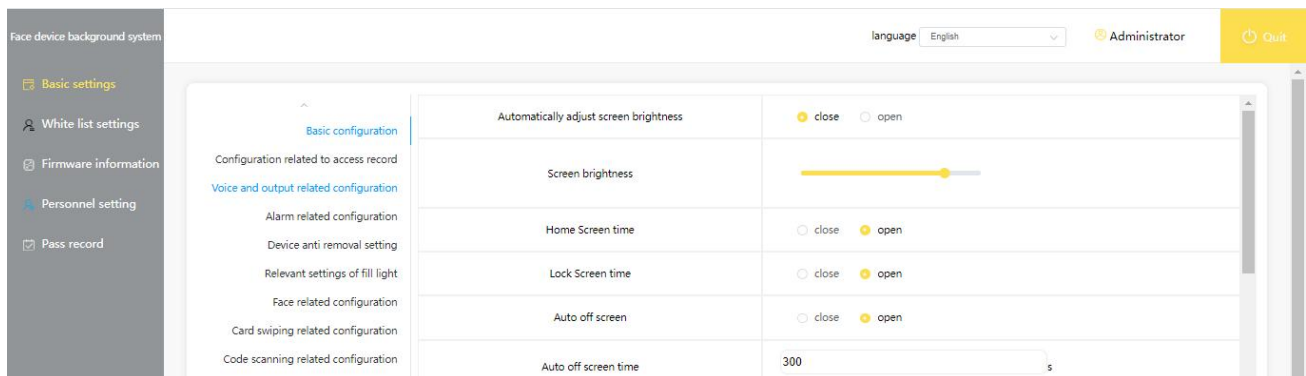
☐ not showing ☒ is shown

10. Device background description

10.1. Basic Settings

Basic

Configuration

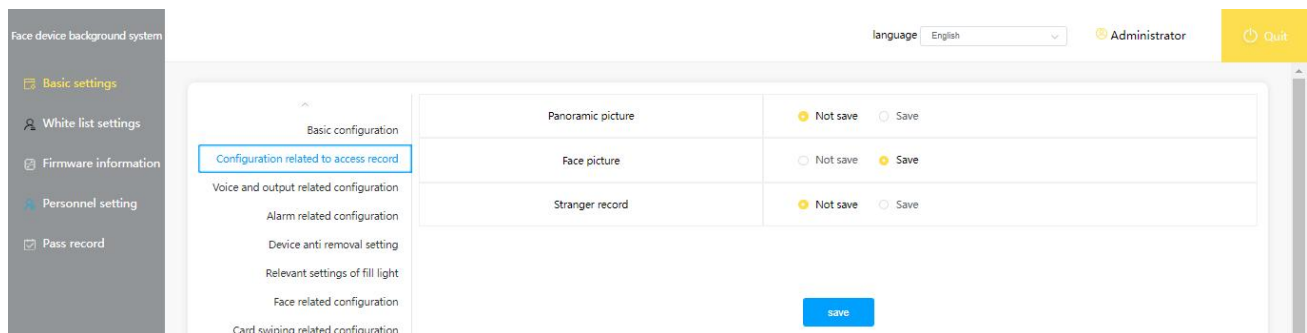


The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Auto adjust Screen Brightness	Off	Turn on/off the device's auto - adjust screen brightness function
Screen Brightness	80	Set the screen brightness value
Auto - screen Off	On	The screen turns off after a period of standby
Auto - screen Off Time	300s	Standby time before the screen turns off
Auto - screen Saver	On	Enter the screen saver screen after a certain period of standby
Auto screen Saver Time	30s	Standby time before entering the screen saver
Display SN	Display	Whether to display the SN number in the lower - right corner of the screen
Display IP	Display	Whether to display the device IP address in the lower - right corner of the screen
Display logo	NotDisplay	Logo image in the upper - left corner of the face - brushing interface or in the middle of the screen saver
Upload logo Image		Select an image to set the logo image (PNG format, 100x70 pixels)
Screen Saver Image		Select an image to set the screen saver image (JPG format, 1280x800 pixels)
Volume	60	Adjust the volume level

Auto - update Time	On	Automatically update the device time when connected to the network
Auto - set Time Zone	On	Automatically set the device time zone when connected to the network
Device Name	\	Name the device

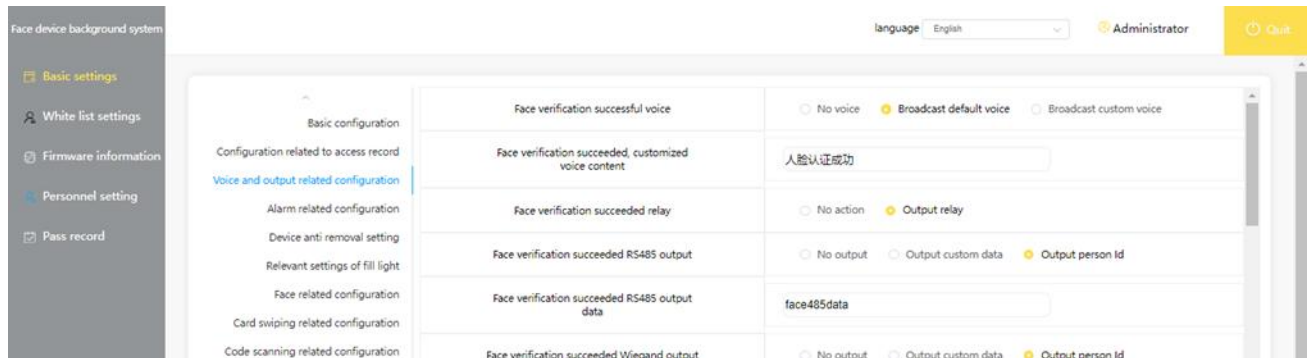
Pass Record - related Configuration



The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Panoramic Image	Not Saved	Set whether to save the panoramic image during face - brushing
Face Image	Saved	Only save the face photo during face - brushing, with a higher priority than the panoramic image
Stranger Record	Not Saved	Set whether to save the face - brushing records of strangers

Voice and Output - related Configuration



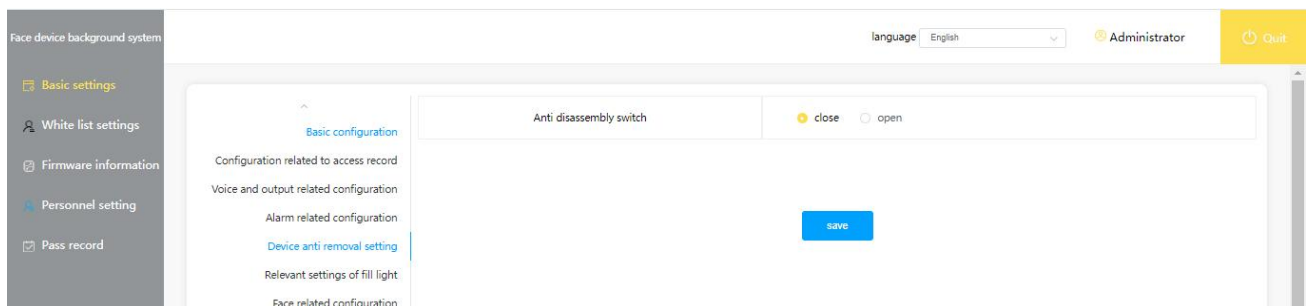
The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Voice Prompt for Successful Face Verification	Play Voice	Set the voice feedback action when the face device successfully recognizes a face. Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Successful Face Verification	"Face verification successful"	Set the custom voice content
Relay Action for Successful Face Verification	Output Relay	Set the relay action when face recognition is successful
485 Output for Successful Face Verification	Output Personnel ID	Set the data content output by the 485 port when face recognition is successful
485 Output Data for Successful Face Verification	face485data	Takes effect when the previous item is set to "Output Custom Data"
Wiegand Output for Successful Face Verification	Output Personnel ID	Set the data content output by the Wiegand port when face recognition is successful. The personnel ID must comply with the Wiegand 26 or Wiegand 34 standard
Wiegand Output Data for Successful Face Verification	1234567890	Takes effect when the previous item is set to "Output Custom Data"
Voice Prompt for Failed Face Verification	Play Voice	Set the voice feedback action when the face device fails to recognize a face. Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Failed Face Verification	"Face verification failed"	Set the custom voice content
Voice Prompt for Failed Face Verification	Play Voice	Set the voice feedback action when the face device fails to recognize a face. Play Custom Voice: Does not take effect in the protocol mode and development mode

Custom Voice Content for Successful Card - swiping Verification	"Card - swiping successful"	Set the custom voice content
Relay Action for Successful Card - swiping Verification	Output Relay	Set the relay action when card - swiping is successful
485 Output for Successful Card - swiping Verification	Output Card Number	Set the data content output by the 485 port when card - swiping is successful
485 Custom Output Data for Successful Card - swiping Verification	card485data	Takes effect when the previous item is set to "Output Custom Data"
Wiegand Output for Successful Card - swiping Verification	Output Card Number	Set the data content output by the Wiegand port when card - swiping is successful
Wiegand Output Data for Successful Card - swiping Verification	1233211230	Takes effect when the previous item is set to "Output Custom Data"
Voice Prompt for failed Code - scanning Verification	Play Default Voice	Set the voice feedback action when card - scanning is successful.
		Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Successful Card - swiping Verification	"card- scanning failed"	Set the custom voice content
Voice Prompt for Successful Code - scanning Verification	Play Default Voice	Set the voice feedback action when code - scanning is successful.
		Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Successful Code - scanning Verification	"Code - scanning successful"	Set the custom voice content
Relay Action for Successful Code - scanning Verification	Output Relay	Set the relay action when code - scanning is successful
485 Output for Successful Code - scanning Verification	Output Card Number	Set the data content output by the 485 port when code - scanning is successful
485 Output Data for Successful Code - scanning Verification	qr485data	Takes effect when the previous item is set to "Output Custom Data"
Wiegand Output for Successful Code - scanning Verification	Output Card Number	Set the data content output by the Wiegand port when code - scanning is successful
Wiegand Output Data for	9876543210	Takes effect when the previous item is set to

Successful Code - scanning Verification		"Output Custom Data"
Voice Prompt for Failed Code - scanning Verification	Play Default Voice	Set the voice feedback action when code - scanning fails. Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Failed Code - scanning Verification	"Code - scanning failed"	Set the custom voice content

Alarm - related Settings



The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Alarm Service Switch	Off	Set to turn on/off the alarm signal triggering function of the face device
Alarm Delay	3s	The alarm trigger signal needs to last for 3 seconds to trigger the alarm voice
Alarm Signal Trigger Type	Not Triggered	Set the alarm trigger method
Alarm Trigger Output Switch	On	Set the feedback action of the device after the alarm signal is triggered
Alarm Output Relay	On	The relay acts immediately when the alarm signal is triggered
Alarm Wiegand Output	Off	The Wiegand data is output immediately when the alarm signal is triggered
485 Output	Off	The 485 data is output immediately when the alarm signal is triggered
Voice Playback	Default Voice	The voice played when the alarm signal is triggered

Device Anti - removal Settings

By default, it is turned off. When turned on, the device will alarm when it is removed or when it is powered on but not installed. (This function is not supported by the 105 device for the time being)

Fill Light - related Settings

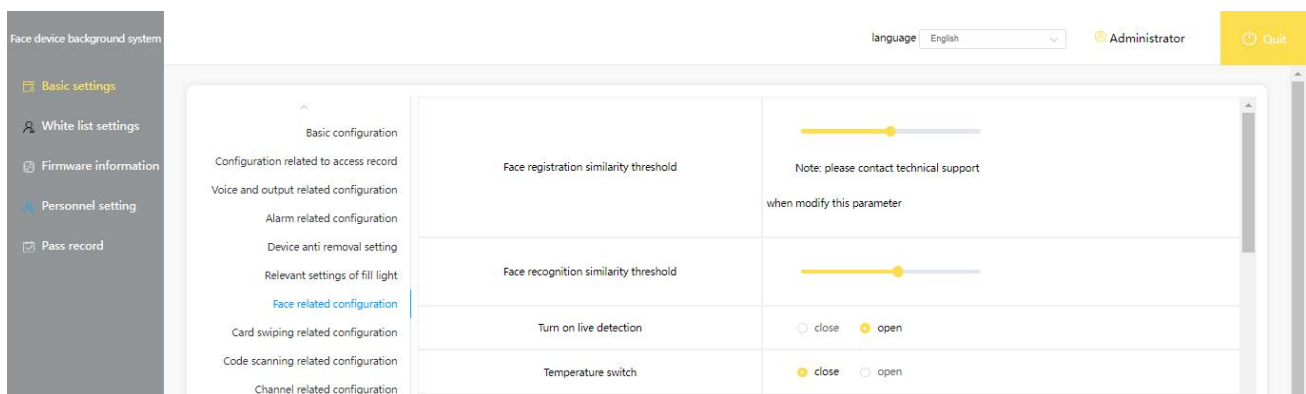
The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Fill Light Mode	Auto Mode	Set the fill light working mode. In the auto mode, the fill light turns on or off automatically according to the face - brushing needs
Photosensitive Control	On	This item does not take effect for the time being
Ambient Light Higher Than This Value	1100	Takes effect in the auto mode: The fill light turns off when the ambient light is higher than this value
Ambient Light Lower Than This Value	500	Takes effect in the auto mode: The fill light turns on when the ambient light is lower than this value
Ambient Light Detection Interval	1	The device detects the ambient light intensity every second

Fill Light Delay Time in Auto Mode	10	The delay time for the fill light to turn on in the auto mode
Fill Light Brightness	80	Set the fill light brightness

Precautions: It is recommended to keep the default values for the high and low ambient light values. If it is necessary to adjust due to environmental limitations, the high value should be at least 600 greater than the low value. Otherwise, the device's backlight will behave abnormally.

Face - related Configuration

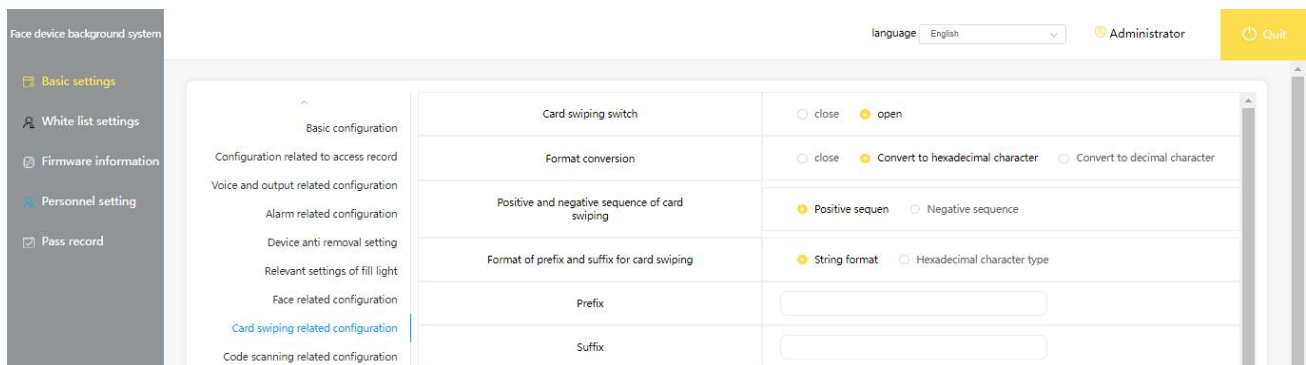


The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Face Registration Similarity Threshold	50	Set the face detection standard during registration. It is recommended to keep the default value. The larger the value, the stricter the detection
Face Recognition Similarity Threshold	54	Set the face detection standard during face - brushing. It is recommended to keep the default value. The larger the value, the stricter the detection
Enable Liveness Detection	On	Set whether to turn on the liveness detection function
Temperature Switch	Off	Set whether to turn on the temperature measurement function
Alarm Temperature	37.299	Set the body temperature alarm threshold
Number of Faces for Recognition Configuration	1	Only supports recognizing 1 person at a time
Face Recognition	On	Set whether to turn on the face recognition function
Infrared Image	Off	Set whether to turn on the infrared image. It is recommended to keep it off
Liveness Detection Threshold	10	Set the liveness detection standard. It is recommended to keep the default value. The larger the value, the

		stricter the detection
Mask Detection	Off	Detect whether the person is wearing a mask
Mask Recognition	On	When the person wearing a mask is face - brushing, turning on this item helps with successful recognition
Mask Threshold	53	Set the detection standard for recognizing the face of a person wearing a mask. It is recommended to keep the default value. The larger the value, the stricter the detection
Recognition Distance	150cm	Set the maximum face recognition distance
Repeated Broadcast Interval	5s	Set the repeated broadcast time interval
Repeated Recognition Time Interval	1.5s	Set the face repeated recognition interval time
Recognition Timeout	1s	Set the face recognition timeout
Repeated Recognition Switch	On	Set whether to turn on the function of detecting repeated face recognition
Stranger Voice	"Hello, stranger"	The voice played when an unregistered face is recognized
Voice Mode	No Voice	Set the voice played when face verification is successful
Greeting	No Voice	When the previous item is set to play a greeting, select the greeting type

Card - swiping - related Configuration

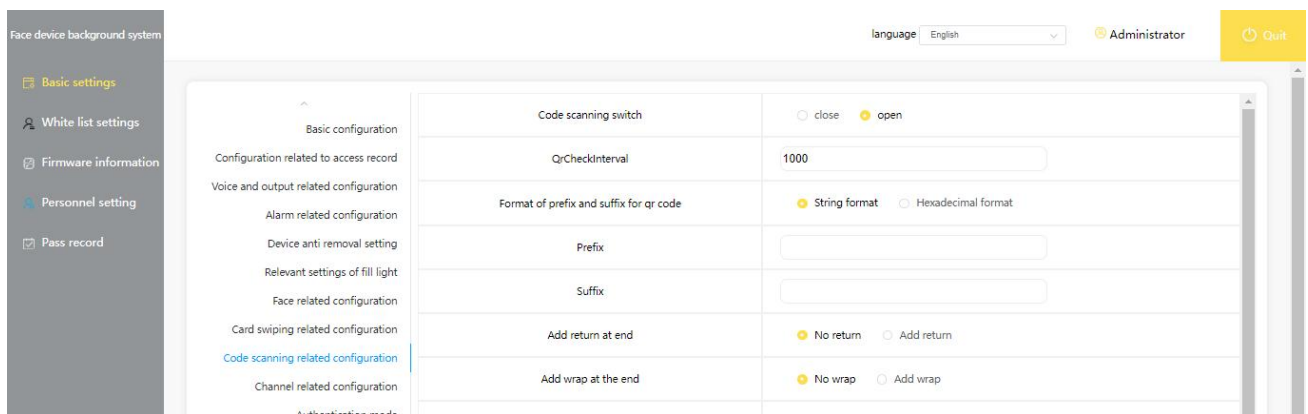


The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Card - swiping	On	Set whether to turn on the card - swiping function

Switch		
Format Conversion	Off	Set the card - swiping output format
Card - swiping Order	Positive Order	Set the positive/negative order format of the card - swiping output
Card - swiping Prefix and Suffix Format	Hexadecimal	Set the prefix and suffix format of the card number
Prefix		Prefix
Suffix		Suffix
Add Carriage Return at the End	Off	Add Carriage Return at the End
Add Carriage Return at the End	Off	Add Carriage Return at the End

Code - scanning - related Configuration



The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Code - scanning Switch	On	Set whether to turn on the code - scanning function
QR Code Prefix and Suffix Format	String Format	Set the prefix and suffix format of the QR code
Code - scanning Prefix		Code - scanning Prefix
Code - scanning Suffix		Code - scanning Suffix
Add Carriage Return at the End	Off	Add Carriage Return at the End
Add Line Feed at the End	Off	Add Line Feed at the End
Wiegand Output Format Conversion	No Conversion	Takes effect when the code - scanning output channel is set to Wiegand

Channel - related Configuration

Face device background system

language: English Administrator Quit

Basic settings
White list settings
Firmware information
Personnel setting
Pass record

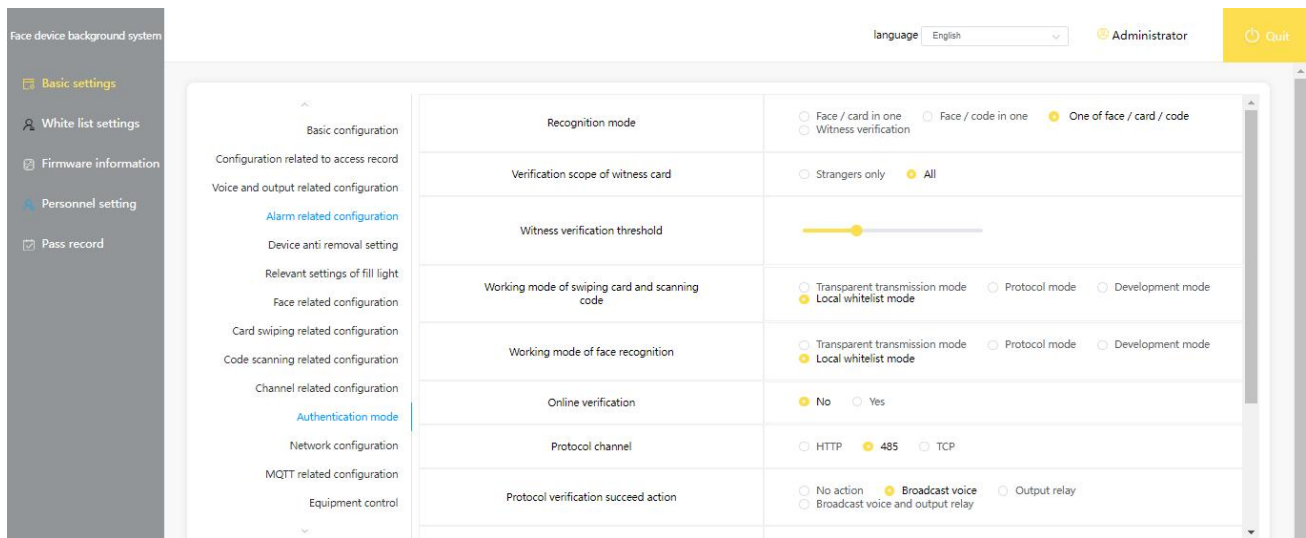
Basic configuration
Configuration related to access record
Voice and output related configuration
Alarm related configuration
Device anti removal setting
Relevant settings of fill light
Face related configuration
Card swiping related configuration
Code scanning related configuration
Channel related configuration

TCP switch	☒ close ☐ open
TCP server IP	10.102.106.116
TCP server port number	8060
RS485 baud rate	115200-8-N-1
Wiegand	☐ Wiegand 26 ☒ Wiegand 34
Relay delay time	7000 ms
Relay operation mode	☒ Equipment's own relay ☐ SA100 Security Module

Channel - related Configuration

Configuration Item	Default Value	Description
TCP Switch	Off	Set whether to enable the TCP transmission channel
TCP Server IP	\	Set TCP Server IP
TCP Server Port Number	\	Set TCP Server Port Number
RS485 Baud Rate	115200-8-N-1	Set RS485 Baud Rate
Wiegand	Wiegand 34	Set Wiegand
Relay Delay Time	2000ms	Set the holding time of the relay action when the authentication is successful

Authentication Mode



Channel - related Configuration

Configuration Item	Default Value	Description
Recognition Mode	Any of Person/Card/Code	The other two items are not supported yet
Card - swiping and Code - scanning Working Mode	Protocol Mode	Working mode (for card - swiping/code - scanning: 1. Transparent Transmission Mode, 2. Protocol Mode, 3. Development Mode, 4. Local Whitelist Mode). Note: When it is in the development mode, the face - brushing working mode will also change to the development mode simultaneously
Face - brushing Working Mode	Transparent Transmission Mode	Working mode (for card - swiping/code - scanning: 1. Transparent Transmission Mode, 2. Protocol Mode, 3. Development Mode, 4. Local Whitelist Mode). Note: When it is in the development mode, the face - brushing working mode will also change to the development mode simultaneously
Online Verification	No	Valid when card - swiping/code - scanning or face - brushing is in the whitelist mode. "Yes": Prioritize offline; "No": Only offline
Protocol Channel		Protocol channels (1. HTTP, 2. 485, 3. TCP). Note: In the development mode, the channel in this configuration does not support HTTP. If HTTP is configured, it will default to TCP
Actions for Successful		Actions for successful protocol verification

Protocol Verification		(corresponding bit positions with 1 are valid, bit1: Play voice, bit2: Output relay)
Actions for Failed Protocol Verification		Actions for failed protocol verification (bit1: Play voice, bit2)
HTTP Protocol Callback Address		HTTP protocol callback address
HTTP Request Timeout		HTTP Request Timeout

Network Configuration

The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Device Password	Default is the device password set during initial system login	The device password set when initially logging into the system.
Network Type	Subject to the configuration in the configuration tool	Set the networking method.
Wi - Fi Name	\	Wi - Fi Name
Wi - Fi Password	\	Wifi Password
DHCP Mode Selection	DHCP	DHCP Mode Selection
IP Address	\	Configure when "Custom Network Configuration" is selected.
Gateway	\	Configure when "Custom Network Configuration" is selected.
Subnet Mask	\	Configure when "Custom Network Configuration" is selected.

DNS Server	\	Configure when "Custom Network Configuration" is selected.
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MQTT - related Configuration

The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Server Address	0.0.0.0	Set Server Address
Client ID	123456788	Set Client ID
Username	admin	Set Username
User Password	password	Set User Password
Topic Prefix	\	Set Topic Prefix
Qos	Qos2	Set qos

Camera Calibration

This is a device debugging item, and users are prohibited from using this function.

Set Device Time

Set the system time of the face device.

Disable/Enable

Disable or enable the device.

Password Modification

Modify the background login password and the device configuration password.

Device Restart

- Restart the face device.

10.2. Whitelist Settings

When the card - swiping/code - scanning or face - brushing working mode is set to the whitelist working mode, the personnel IDs set in the whitelist can pass normally.

The screenshot displays the 'White list settings' interface. On the left is a sidebar with navigation options: Basic settings, White list settings (selected), Firmware information, Personnel setting, and Pass record. The main area shows a table of personnel with columns: Serial number, Person ID, Name, Personnel type, Start time, End time, Repetition type, Repeat start time, Repeat end time, and Operate. Two rows are visible, both with Person ID '9sqhbijsko26eh7x'. The first row has Personnel type 'Face' and the second has '103'. Above the table are search filters for User type, User ID, and Time. The 'Add' button is highlighted with a red box. Below the table, an 'Add' dialog box is open, containing fields for: Person ID, Personnel type, Start time, End time, Repetition type, Name, Department, Sex, MobilePhone, and JobNum. The dialog has 'Cancel' and 'Confirm' buttons at the bottom.

Serial number	Person ID	Name	Personnel type	Start time	End time	Repetition type	Repeat start time	Repeat end time	Operate
1	9sqhbijsko26eh7x		Face	2020-08-01 18:28:48	2032-10-26 18:01:58	No repetition	0	0	Change Delete
2	9sqhbijsko26eh7x		103	2020-08-01 18:28:48	2032-10-26 18:01:58	No repetition	0	0	Change Delete

Select the personnel ID, user type, start and end times of the whitelist, and the repetition type to be set in the whitelist.

When the user type is selected as "QR Code", a QR code needs to be generated according to the "Authorization Pass Code Mechanism User Manual".

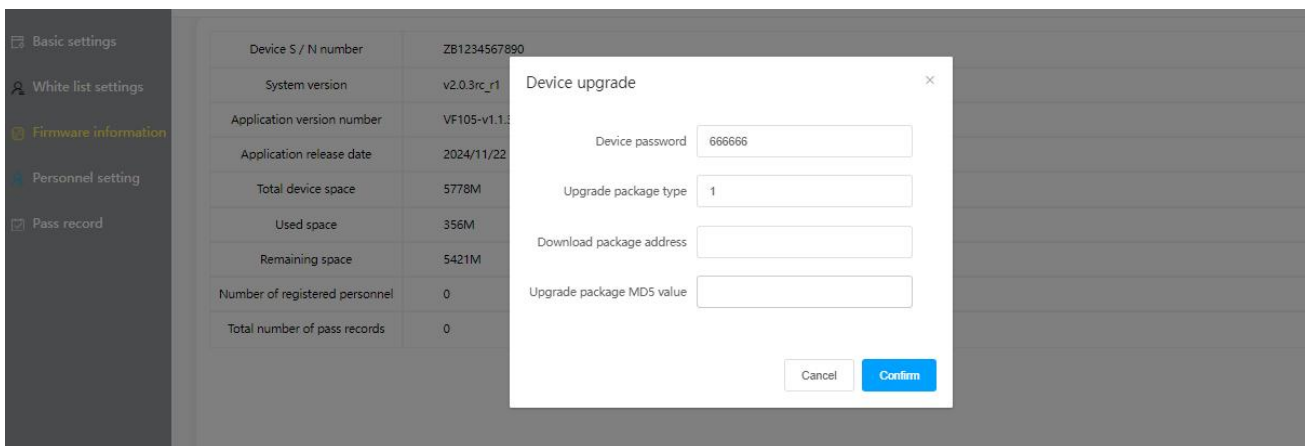
When the user type is selected as "Face", the user ID is the personnel ID set during face registration.

When the user type is selected as "Card", the user ID is the card number.

10.3. Firmware Information

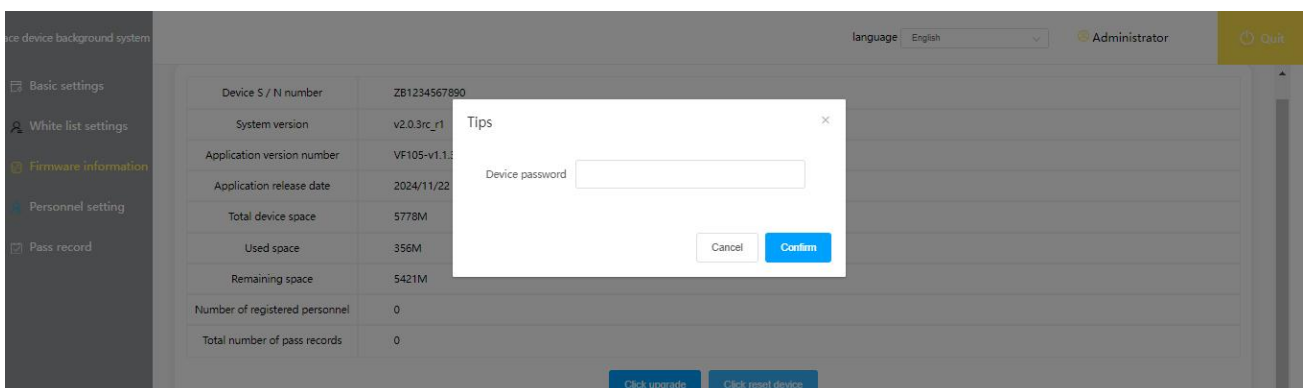
This part is mainly used to upgrade the device or restore the device to its factory settings.

Firmware Upgrade



Contact the manufacturer to obtain the upgrade address and MD5 value.

Reset Device



Enter the device password and click "OK". The device will be restored to its factory settings.

10.4. Personnel Settings

Add Personnel

Face device background system

Basic settings
White list settings
Firmware information
Personnel setting
Pass record

Personnel list Personnel ID: Please enter the person ID

Batch delete Batch export

Serial number	Name
Select all Deselect	

Total 0 Page: per page 5 records Total 0 records

Add personnel

ID

Name

Department

list

idCard

Number

Sex

Power

Face picture:

☒ Local import

☐ Photo entry

Confirm

Local Import

After filling in the personnel ID and name (department, gender, and permission are optional), click "Local Import", and then click the plus sign in the right box to import the face photo.

Take Photo and Import

After filling in the personnel ID and name (department, gender, and permission are optional), click "Take Photo and Import", and the device will enter the photo - taking mode. When an employee brushes their face, the device will complete the registration successfully.

Batch Import

Download the form template, fill it out, and then import the form.

11. Precautions

Face Registration Photo Requirements

Face pixels: minimum 80, maximum 512

Image size: 50~300K

Image height and width: width 512 ~ 800, height 640 ~ 1024

Image format: JPG

Background requirements: Lifestyle photos, no beauty filters, no heavy makeup, no sunglasses, scarves, masks, etc.

Face recognition registration requirements

When registering by face recognition, the face needs to be in the registration box, preferably occupying the entire registration box, and stare at the registration box for 2-3 seconds, waiting for the device to complete the registration.

Wiring requirements:

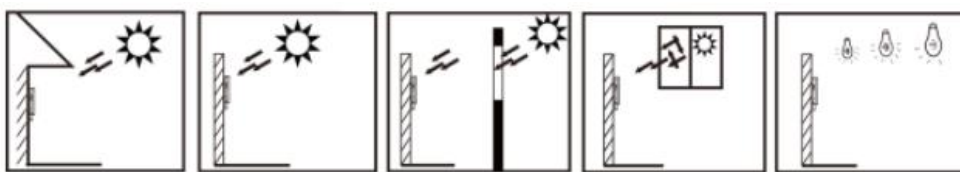
Unused pins must be insulated!

If the equipment is damaged by short circuit due to lack of insulation treatment, the user shall bear the responsibility!

Installation environment requirements

Avoid backlight, direct sunlight, direct sunlight through windows, oblique sunlight through windows, and close-range lighting. The above environments will affect the face recognition effect.

Equipment DepartmentIn bright lighthour,SunlightmeetinginterferenceTemperature measurement module.



Backlight

Direct sunlight Sunlight through Sunlight through Light close up

Direct sunlight from windows

Window Slant