

User Manual

ProFace X [TI]

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English

Thank you for choosing our product. Please read the instructions carefully before operation. Follow these instructions to ensure that the product is functioning properly. The images shown in this manual are for illustrative purposes only.



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About the Company

ZKTeco is one of the world's largest manufacturer of RFID and Biometric (Fingerprint, Facial, Finger-vein) readers. Product offerings include Access Control readers and panels, Near & Far-range Facial Recognition Cameras, Elevator/floor access controllers, Turnstiles, License Plate Recognition (LPR) gate controllers and Consumer products including battery-operated fingerprint and face-reader Door Locks. Our security solutions are multi-lingual and localized in over 18 different languages. At the ZKTeco state-of-the-art 700,000 square foot ISO9001-certified manufacturing facility, we control manufacturing, product design, component assembly, and logistics/shipping, all under one roof.

The founders of ZKTeco have been determined for independent research and development of biometric verification procedures and the productization of biometric verification SDK, which was initially widely applied in PC security and identity authentication fields. With the continuous enhancement of the development and plenty of market applications, the team has gradually constructed an identity authentication ecosystem and smart security ecosystem, which are based on biometric verification techniques. With years of experience in the industrialization of biometric verifications, ZKTeco was officially established in 2007 and now has been one of the globally leading enterprises in the biometric verification industry owning various patents and being selected as the National High-tech Enterprise for 6 consecutive years. Its products are protected by intellectual property rights.

About the Manual

This manual introduces the operations of ProFace X [TI] Product.

All figures displayed are for illustration purposes only. Figures in this manual may not be exactly consistent with the actual products.

Document Conventions

Conventions used in this manual are listed below:

GUI Conventions

For Device	
Convention	Description
< >	Button or key names for devices. For example, press <OK>
[]	Window names, menu items, data table, and field names are inside square brackets. For example, pop up the [New User] window
/	Multi-level menus are separated by forwarding slashes. For example, [File/Create/Folder].

Symbols






Convention	Description
	This implies about the notice or pays attention to, in the manual
	The general information which helps in performing the operations faster
	The information which is significant
	Care taken to avoid danger or mistakes
	The statement or event that warns of something or that serves as a cautionary example.

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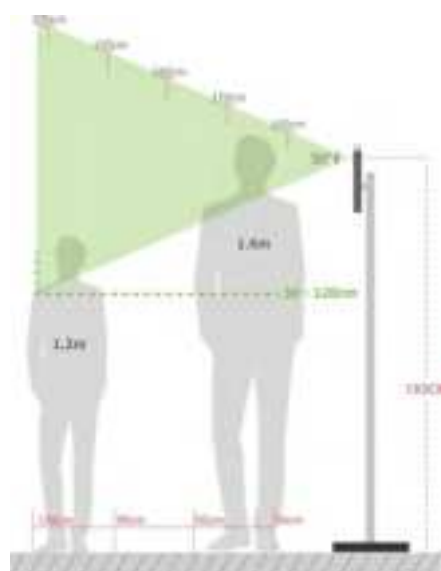
1 Overview

This document describes the operating procedure of **ProFace X [Thermal Imaging]** device. The operating modules of the device include User management, User role assignment, Device communication, Temperature detection, Access control, and so on. The device supports hassle-free access of users into the premises without compromising any security aspect thus ensuring protection.

2 Instructions to use

2.1 Standing Position, Facial Expression and Standing Posture

Recommended distance



The distance between the device and a user whose height is within 1.55m to 1.85m is recommended to be 0.3 to 2.5m. Users may slightly move forwards and backwards to improve the quality of the facial images captured.

Facial expression and standing posture



Note: During enrollment and verification, please keep natural facial expression and standing posture.

2.2 Palm Registration

Place your palm in the palm collection area, such that the palm is placed parallel to the device.

Make sure to keep space between your fingers.



2.3 Face Registration

Try to keep your face in the center of the screen during registration. Please face the camera and stay still during face registration. The page looks like shown below:



Face registration and authentication methods

Instructions to register a face

- When registering a face, maintain a distance of 40cm to 80cm between the device and the face.
- Be careful not to change the facial expression. (smiling face, drawn face, wink, etc.)
- If you do not follow the instructions on the screen, the face registration may take a longer time or may fail.
- Be careful to not cover the eyes or eyebrows.
- Do not wear hats, masks, sunglasses, or eyeglasses.
- Be careful to not show two faces on the screen. Register one person at a time.
- It is recommended for a user wearing glasses to register both the faces with and without glasses.



Instructions to authenticate a face

- Ensure that the face appears inside the detection area displayed on the device screen.
- If eyeglasses have been changed, authentication may fail. If the face without glasses has been registered, authenticate the face without glasses. If only the face with glasses has been registered, authenticate the face with the previously worn glasses again.
- If a part of the face is covered with a hat, a mask, an eye patch, or sunglasses authentication may fail. Do not cover the face; allow the device to recognize both the eyebrows and the face.

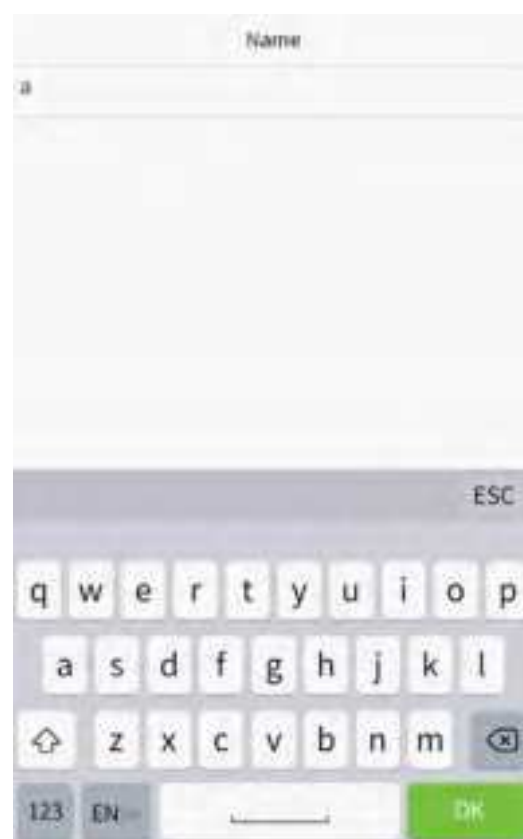
2.4 Home Screen

After connecting the power supply, the home screen appears as shown below:

**Note:**

- 1) Click  to open the interface to enter the User ID.
- 2) When there is no Super Administrator set in the device, click  to enter the menu. After setting the Super Administrator, it requires the Super Administrator's verification before entering the menu operation. For ensured security of the device, it is recommended to register a Super Administrator the first time you use the device.

2.5 Virtual Keyboard



Note: The device supports the input of Chinese and English characters, numbers, and symbols. Click [En] to switch to the English keyboard. Press [123] to switch to the numeric and special character keyboard, and click [ABC] to return to the alphabetic keyboard. Click the input box, and virtual keyboard appears. Click [ESC] to delete the entered characters.

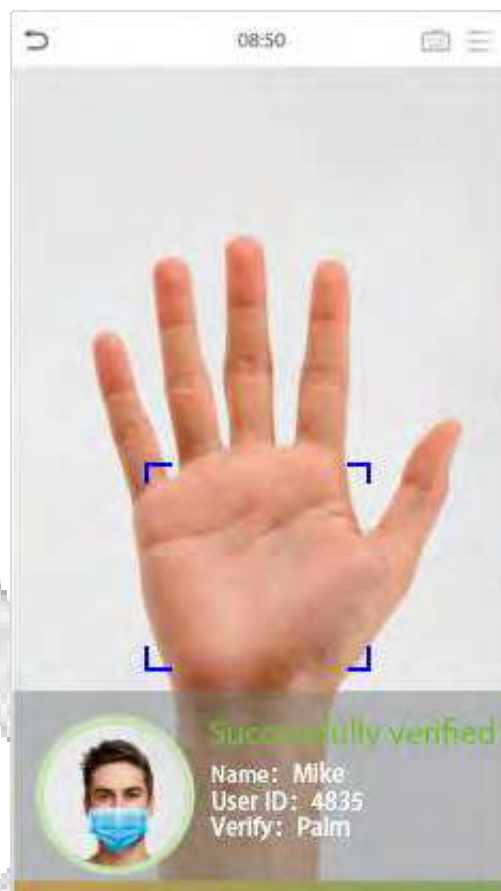
2.6 Verification Mode

2.6.1 Palm Verification

1:N (One-to-Many) Palm Verification mode

This Verification mode compares the palm template collected by the palm module with all the palm data template in the device.

The device will automatically distinguish between the palm and the face verification mode. Place the palm in the detection area, and the device will automatically detect the palm verification mode.




1:1 (One-to-One) Palm Verification mode

Click the  button on the main screen to open the 1:1 palm verification mode.

1. Input the user ID and press [OK].




If the user has registered the face and password in addition to his/her palm, and the verification method is set to palm/face/password verification, the following screen will appear. Select the palm icon  to open the palm verification mode.




2.6.2 Password Verification

The Password verification method compares the entered password with the registered User ID and password.

Click the  button on the main screen to open the 1:1 password verification mode.

1. Input the user ID and press [OK].

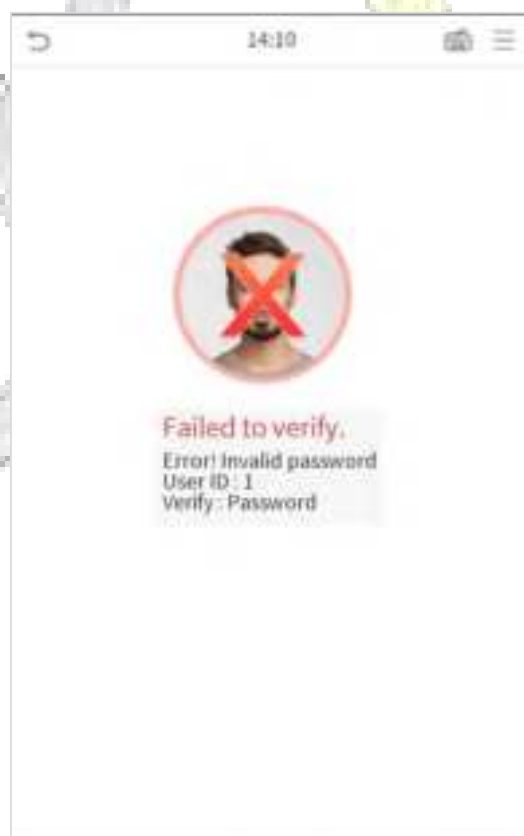


If an employee registered palm and face in addition to password, the following screen will appear. Select the  icon to open the password verification mode.



2. Input the password and press [OK].



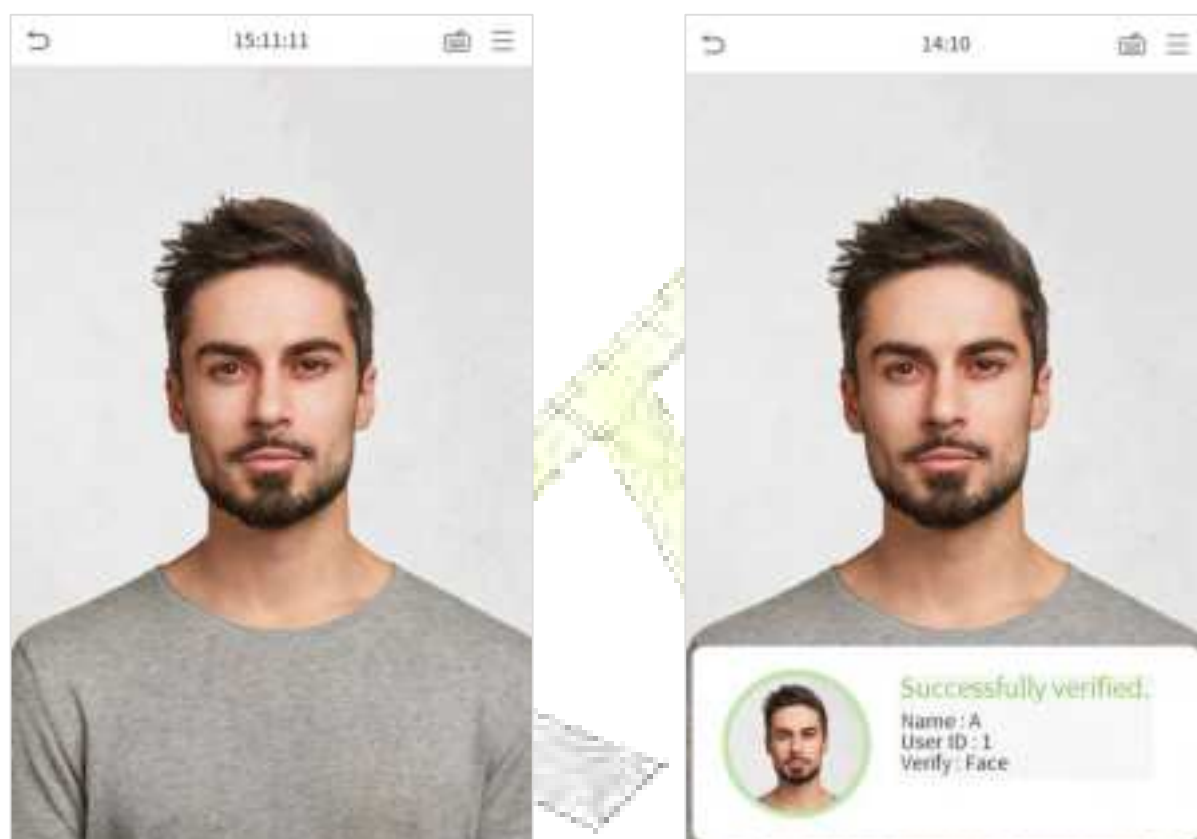
Successful Verification**Failed Verification**

2.6.3 Facial Verification

1:N (One-to-Many) Facial Verification

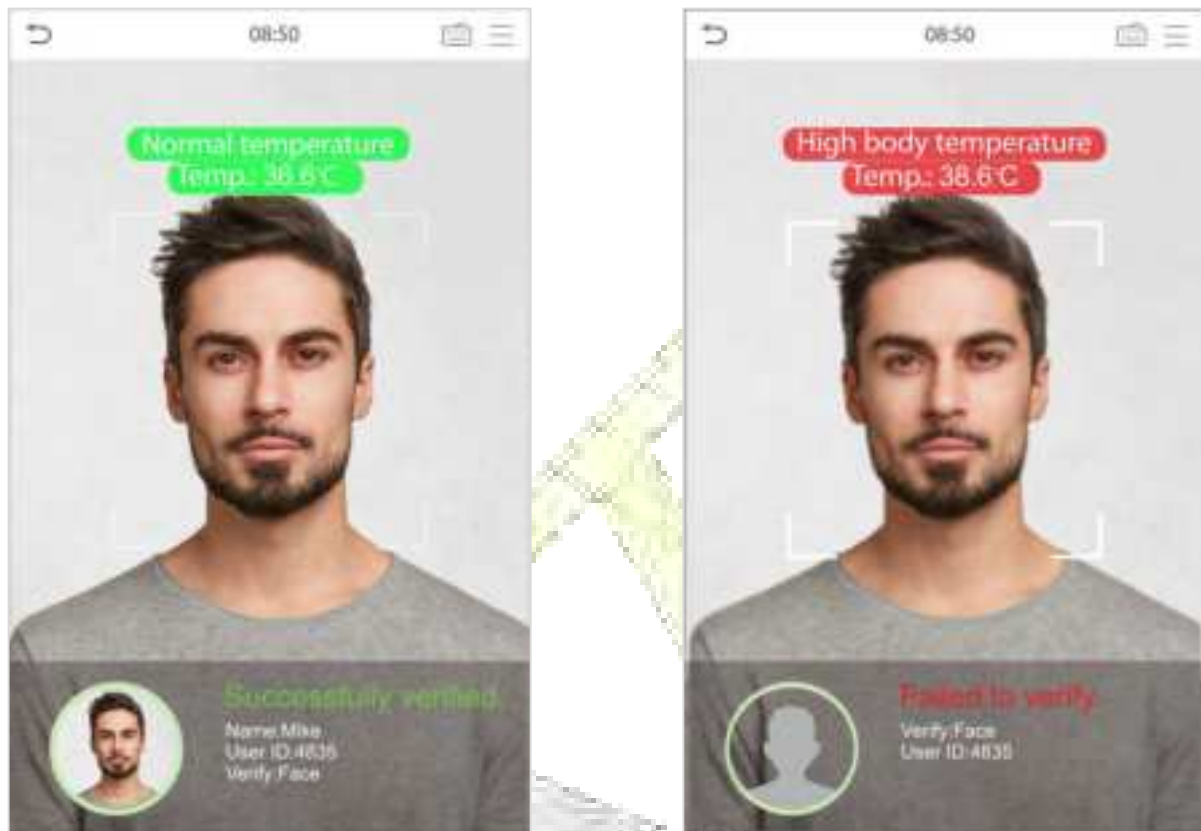
1. Conventional verification

The conventional method compares the acquired facial images with all the face data templates registered in the device. The following is the pop-up prompt box of comparison result.



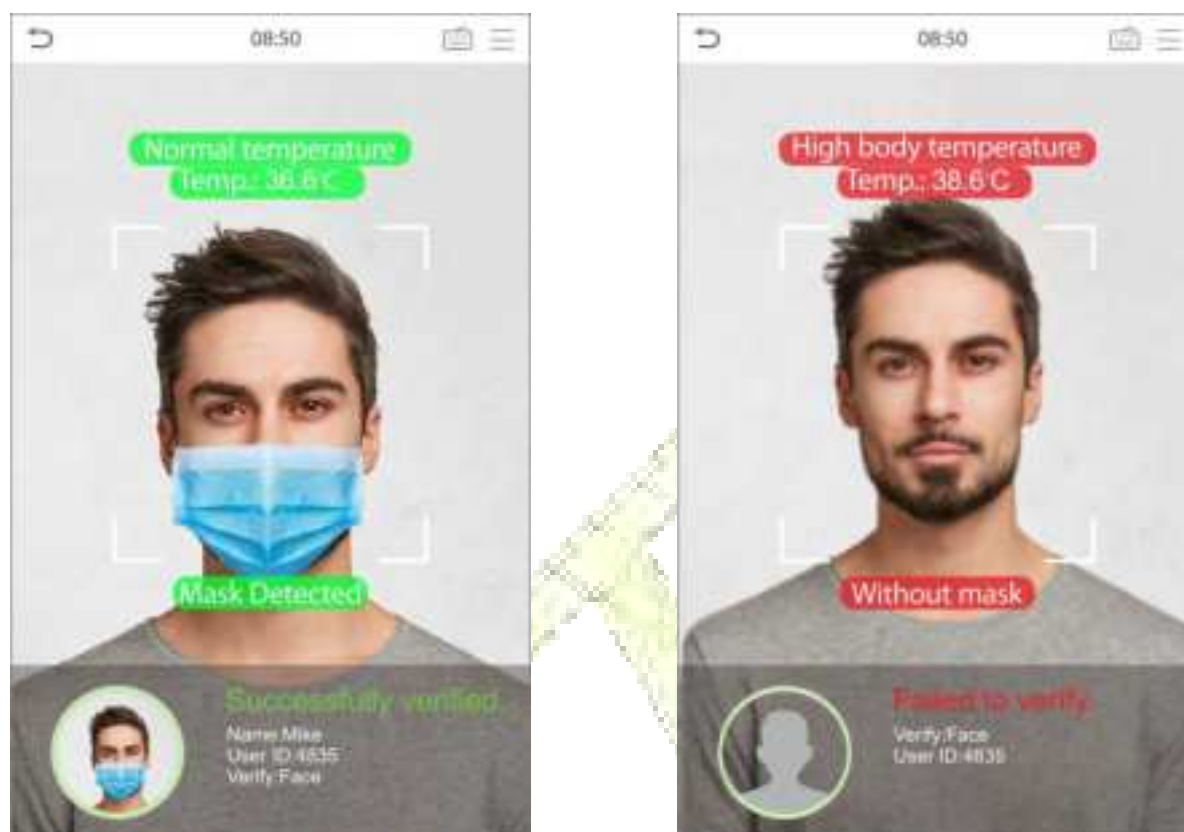
2. Temperature screening with infrared

When the user enabled temperature screening with infrared function, during user verification, in addition to the conventional verification method, the user's face must be aligned with the temperature detection area to detect the body temperature before the conventional verification is conducted. The following is the verification interface.



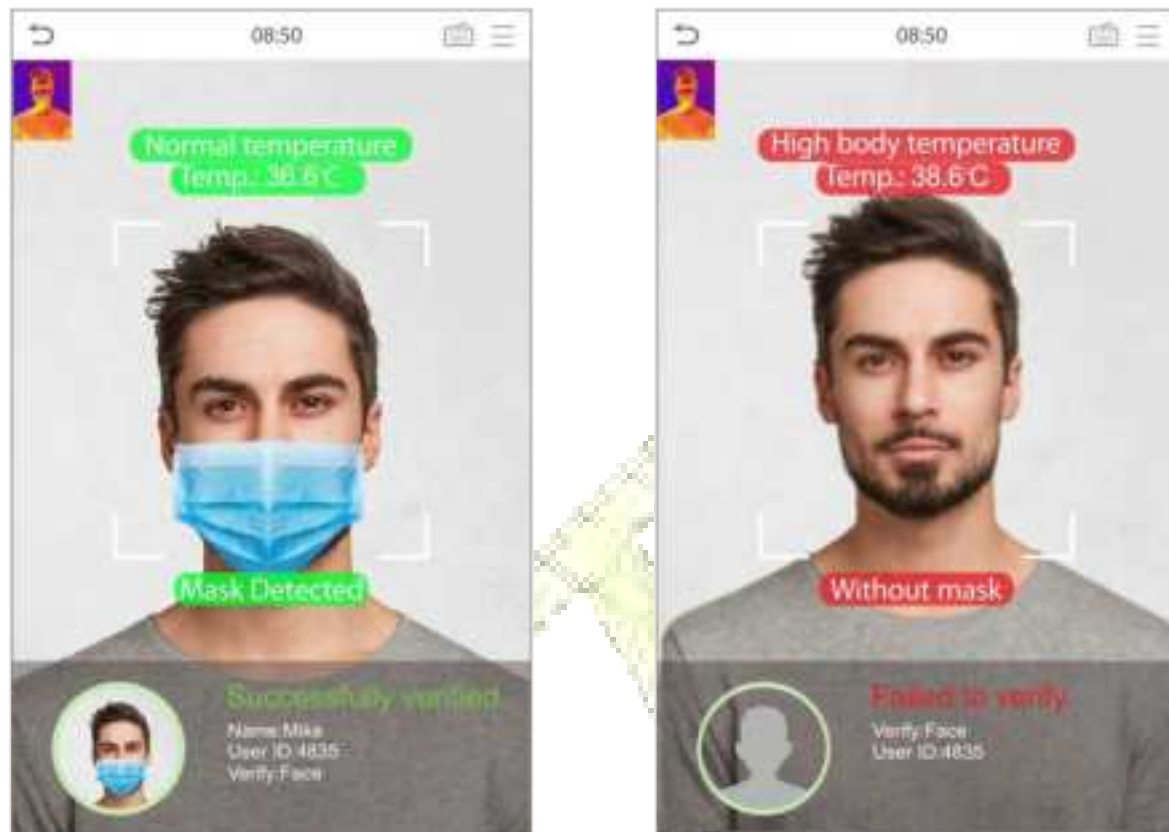
3. Mask detection

When the user enabled the **Mask detection** function, the device will identify whether the user is wearing a mask or not. The following is the verification interface.



4. Display Thermodynamics Figure

When the user enabled the **Display Thermodynamics Figure** function, during the detection process, the thermal image of the person will be displayed in the top left corner of the device.




1:1 (One-to-One) Facial Verification

This verification method compares the face captured by the camera with the facial template related to the entered user ID.

Press  on the main interface to open the 1:1 facial verification mode.

Enter the User ID and click [OK].



If an employee registered palm and password in addition to face, the following screen will appear. Select the  icon to open the face verification mode.



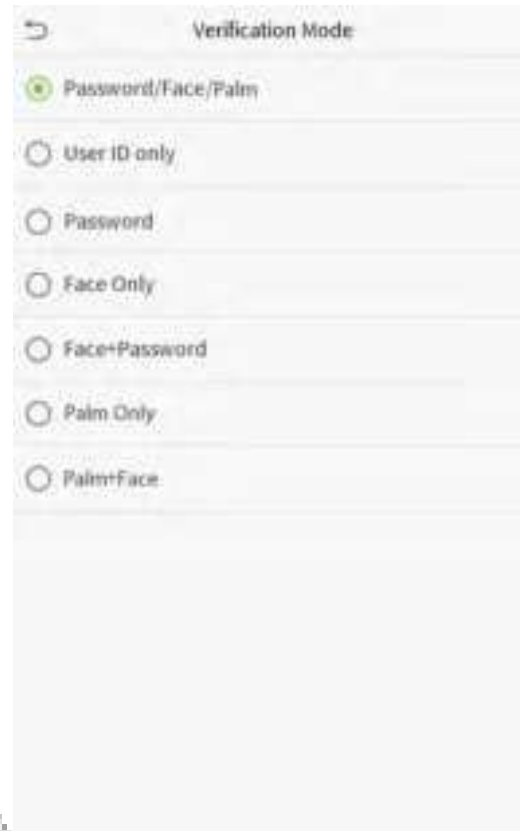
After successful verification, the prompt 'successfully verified' will appear.



If the verification is failed, it will prompt "Please adjust your position!".

2.6.4 Combined Verification


To ensure security, this device offers multiple verification methods. A total of 7 different verification combinations can be used, as shown below:



Note:

- 1) '/' means "or", and "+" means "and".
- 2) You must register the required verification information before using the combination verification mode, otherwise the verification may fail. For example, if a user uses Face Registration but the verification mode is Face + Password, this user will never pass the verification.

3 Main Menu

Press  on the initial interface to enter the main menu, as shown below:



Menu	Description
User Mgt.	To add, edit, view, and delete basic information about a user.
User Role	To set the permission scope of the custom role and enroller, that is, the rights to operate the system.
COMM.	To set the relevant parameters of the network, PC connection, wireless network, cloud server and Wiegand.
System	To set the parameters related to the system, including date & time, access records, facial templates, palm templates, resetting to factory settings, temperature management and detection.
Personalize	This includes user interface, voice, bell, punch state options and shortcut key mappings settings.
Data Mgt.	To delete all the relevant data in the device.
Access Control	To set the parameters of the lock and access control device.
Attendance Search	To query the specified access record, check attendance photos and blocklist photos.
Autotest	To automatically test whether each module functions properly, including the screen, audio, camera, and real-time clock.
System Info	To view data capacity, device, and firmware information of the current device.

4 User Management

4.1 Add Users

Click **User Mgt.** on the main menu.



Click **New User**.

Register a User ID and Name

Enter the User ID and Name.



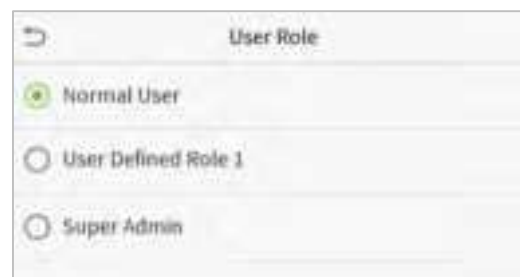
Note:

- 1) A User Name may contain 17 characters.
- 2) The User ID may contain 1 to 9 digits by default.
- 3) During the initial registration, you can modify your ID, which cannot be modified after registration.
- 4) If a message 'Duplicated ID' pops up, you must choose another ID.

Setting the User Role

There are two types of user accounts namely **Normal User** and **Super Admin**. If there is already a registered administrator, the normal users have no rights to manage the system and may only access the verification module. The administrator owns all the management privileges. If a custom role is set, you can also select **user defined role** permissions for the user.

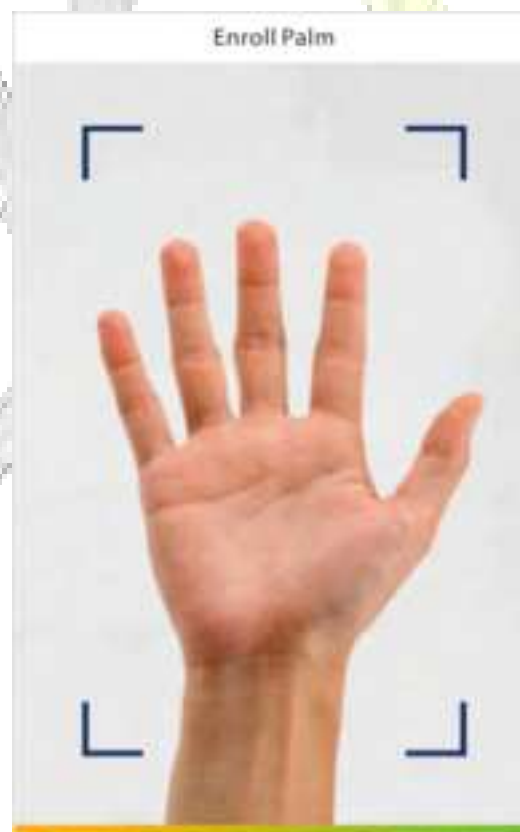
Click **User Role** to select a Normal User or Super Admin.



Note: If the selected user role is Super Admin, the user must pass the identity authentication to access the main menu. The authentication is based on the authentication method(s) that the super administrator has registered. Please refer [1.6 Verification Method](#).

Register Palm

Click **Palm** to open the palm registration page. Select the palm to be enrolled.



Register Face

Click **Face** to open the face registration page. Please face the camera and stay still during face registration. The registration interface is as follows:



Register Password

Click **Password** to open the password registration page. Enter a password and re-enter it for confirmation. Click **OK**. If the two entered passwords are different, the prompt 'Password not match' will appear.



Note: The password may contain one to eight digits by default.

Register User Photo

When a user registered with a photo is verified successfully, the registered photo will be displayed.

Click **User Photo**, click the camera icon to take a photo. The system will return to the New User interface after taking a photo.

Note: While registering a face, the system will automatically capture a picture as the user photo. If you do not want to register a user photo, the system will automatically set the picture captured as the default photo.

Access Control Role

User access control sets the door unlocking rights of each person, including the group and time period that the user belongs to.

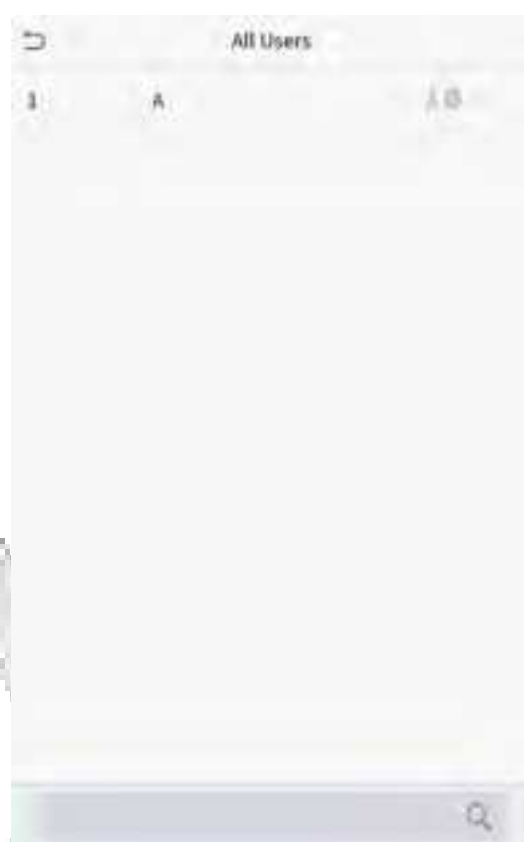
Click **Access Control Role > Access Group**, assign the registered users to different groups for better management. New users belong to Group 1 by default, and can be reassigned to other groups. The device supports up to 99 access control groups.

Click **Time Period**, select the time period to use.



4.2 Search for Users

Click the search bar on the user list and enter the retrieval keyword (The keyword may be an ID, surname, or full name). The system will search for the users related to the information.



4.3 Edit Users

Choose a user from the list and click **Edit** to open the edit user interface:

The image displays two side-by-side screenshots of a user management interface. The left screenshot, titled 'User: 1 A', shows a list of users with 'Edit' and 'Delete' buttons. The right screenshot, titled 'Edit: 1 A', shows the edit user interface with the following fields:

Field	Value
User ID	1
Name	A
User Role	Normal User
Palm	1
Face	1
Password	*****
User Photo	0
Access Control Role	

Note: The operation of editing a user is the same as that of adding a user, except that the user ID cannot be modified when editing a user. Operation method refers to '[3.1 Adding users](#)'.

4.4 Deleting Users

Choose a user from the list and click **Delete** to enter the delete user interface. Select the user information to be deleted and click **OK**.

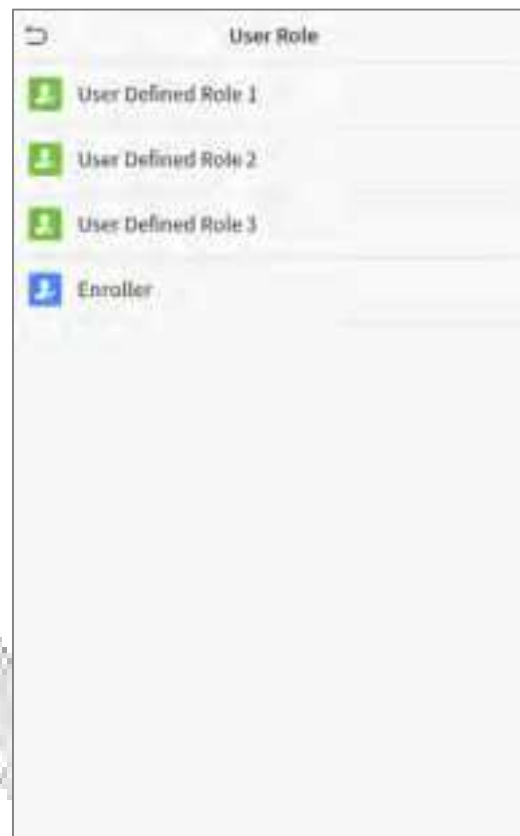
Note: If you select **Delete User**, all the information of the user will be deleted.

5 User Role

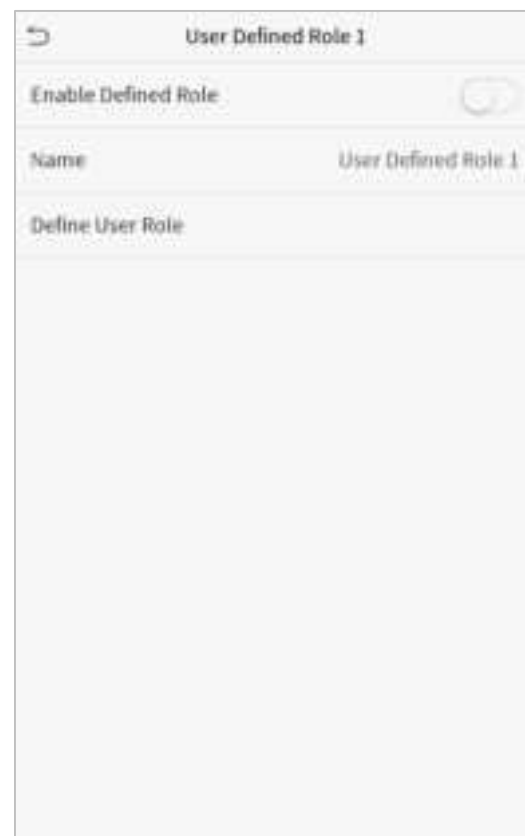
If you need to assign some specific permissions to certain users, you may edit the "User Defined Role" under the **User Role** menu.

You may set the permission scope of the custom role (up to 3 roles) and enroller, that is, the permission scope of the operation menu.

Click **User Role** on the main menu interface.



1. Click any role to set a defined role. Toggle the **Enable Defined Role** button to enable this defined role. Click **Name** and enter the name of the role.



User Defined Role 1

Enable Defined Role ☐

Name User Defined Role 1

Define User Role

2. Click **Define User Role** to assign the privileges to the role. Click **Return** after assigning privileges.



User Defined Role 1

<input type="checkbox"/> User Mgt.	<input checked="" type="checkbox"/> New User
<input checked="" type="checkbox"/> Comm.	<input checked="" type="checkbox"/> All Users
<input checked="" type="checkbox"/> System	<input checked="" type="checkbox"/> Display Style
<input type="checkbox"/> Personalize	
<input type="checkbox"/> Data Mgt.	
<input checked="" type="checkbox"/> Access Control	
<input type="checkbox"/> Attendance Search	
<input type="checkbox"/> Autotest	
<input type="checkbox"/> System Info	

Note: During privilege assignment, the main menu is on the left and its sub-menus are on the right. You only need to select the features in sub-menus. If the device has a role enabled, you may assign the roles you set to users by clicking User Mgt. > New User > User Role.

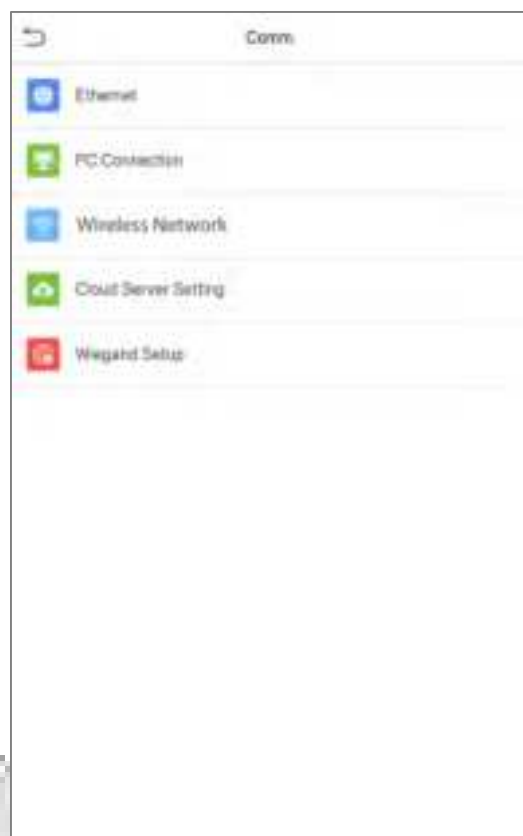


If no super administrator is registered, the device will prompt 'Please register super administrator user first!' after clicking the enable bar.

6 Communication Settings

The Communication Settings are used to set the parameters of the Network, PC connection, Wireless network, Cloud server and Wiegand.

Tap **COMM.** on the main menu.



6.1 Network Settings

When the device needs to communicate with a PC over the Ethernet, you need to configure network settings and ensure that the device and the PC are connecting to the same network segment.

Click **Ethernet** on the Comm. Settings interface.

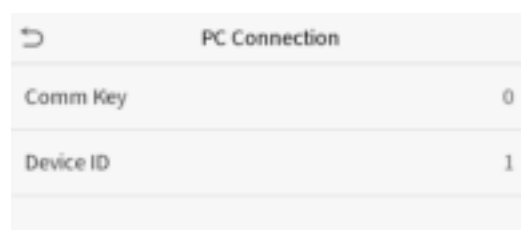


Menu	Description
IP Address	The factory default value is 192.168.1.201. Please set the value according to the actual network situation.
Subnet Mask	The factory default value is 255.255.255.0. Please set the value according to the actual network situation.
Gateway	The factory default address is 0.0.0.0. Please set the value according to the actual network situation.
DNS	The factory default address is 0.0.0.0. Please set the value according to the actual network situation.
TCP COMM. Port	The factory default value is 4370. Please set the value according to the actual network situation.
DHCP	Dynamic Host Configuration Protocol, which is to dynamically allocate IP addresses for clients via server.
Display in Status Bar	To set whether to display the network icon on the status bar.

6.2 PC Connection

To improve the security of data, please set a Comm Key for communication between the device and the PC. If a Comm Key is set, this connection password must be entered before the device can be connected to the PC software.

Click **PC Connection** on the Comm. Settings interface.



Menu	Description
Comm Key	Comm Key: The default password is 0, which can be changed. The Comm Key may contain 1 to 6 digits.
Device ID	Identity number of the device, which ranges between 1 and 254. If the communication method is RS232/RS485, you need to input this device ID in the software communication interface.

6.3 Wireless Network

It is used for network connection, wireless data transmission and communication.

Click **Wireless Network** on the Comm. Settings interface.



Wi-Fi is enabled in the Device by default. Toggle on  button to enable or disable Wi-Fi.

When Wi-Fi is enabled, tap on the required network from the searched network list.



Wi-Fi Enabled: Tap on the required network from the searched network list.



Tap on the password field to enter the password, and then tap on **Connect to Wi-Fi (OK)**.

Add Wi-Fi Network Manually



Tap on **Add Wi-Fi Network** to add the Wi-Fi manually.



On this interface, enter the Wi-Fi network parameters. (The added network must exist.)

Once added, find the added Wi-Fi network in the list and connect to the network by following the same procedure.

Advanced Options

This interface is used to set the network parameters.



Menu	Description
DHCP	Dynamic Host Configuration Protocol, which involves allocating dynamic IP addresses to network clients.
IP Address	IP address of the Wi-Fi network.
Subnet Mask	Subnet mask of the Wi-Fi network.
Gateway	Gateway address of the Wi-Fi network.

6.4 Cloud Server Setting

This represents settings used for connecting the ADMS server.

Click **Cloud Server Setting** on the Comm. Settings interface.



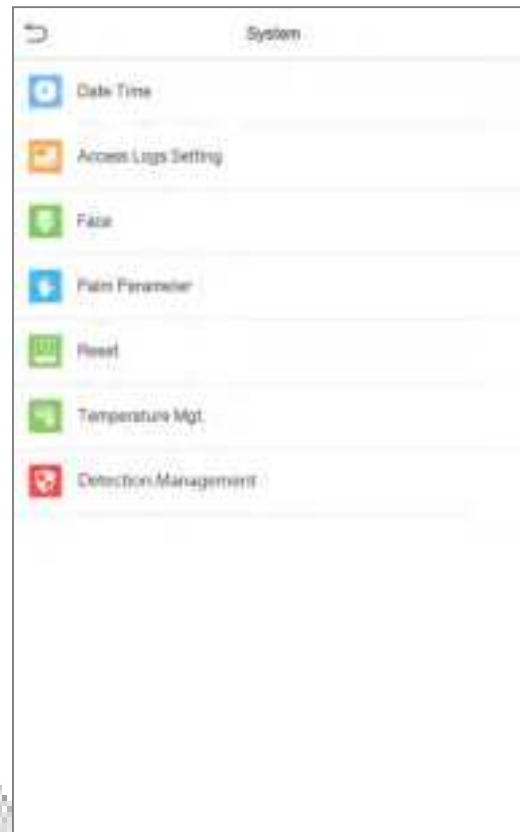
Menu	Description
Enable Domain Name	When this function is enabled, the domain name mode "http://..." will be used, such as http://www.XYZ.com, while "XYZ" denotes the domain name when this mode is turned ON.
Server Address	

Disable Domain Name	Server Address	IP address of the ADMS server.
	Server Port	Port used by the ADMS server.
Enable Proxy Server		When you choose to enable the proxy, you need to set the IP address and port number of the proxy server.
HTTPS		It is an HTTP channel with security as its goal. Based on HTTP, transmission encryption and identity authentication ensure the security of the transmission process.

7 System Settings

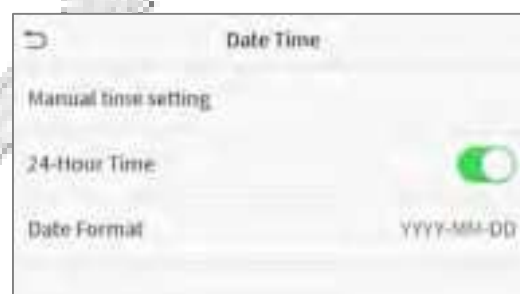
Here, you can set the related system parameters to optimize the performance of the device.

Click **System** on the main menu interface.



7.1 Date and Time

Click **Date Time** on the System interface.



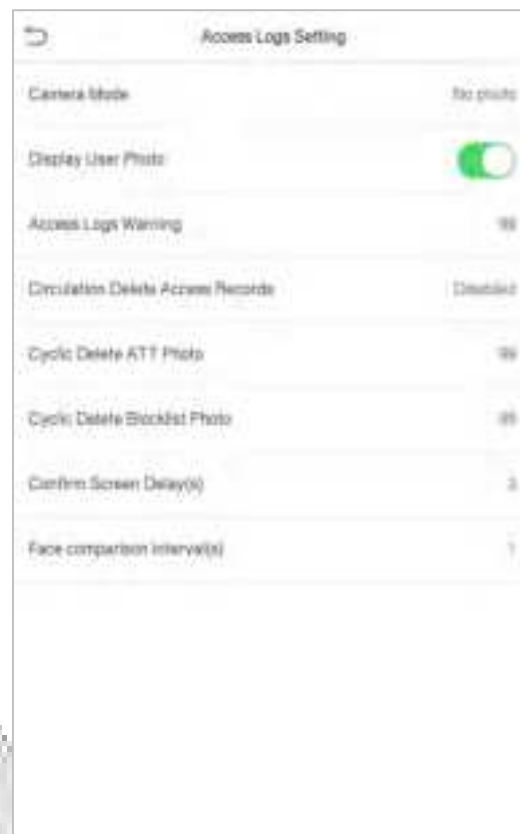
1. You can manually set the date and time and click **Confirm** to save.
2. Toggle the button to enable or disable the 24-Hour time format and select the date format.

When restoring the factory settings, the time (24-hour) and date format (YYYY-MM-DD) can be restored, but the device date and time cannot be restored.

Note: For example, the user sets the time of the device (18:35 on March 15, 2019) to 18:30 on January 1, 2020. After restoring the factory settings, the time of the equipment will change to 18:30 on January 1, 2020.

7.2 Access Logs Setting

Click **Access Logs Setting** on the System interface.

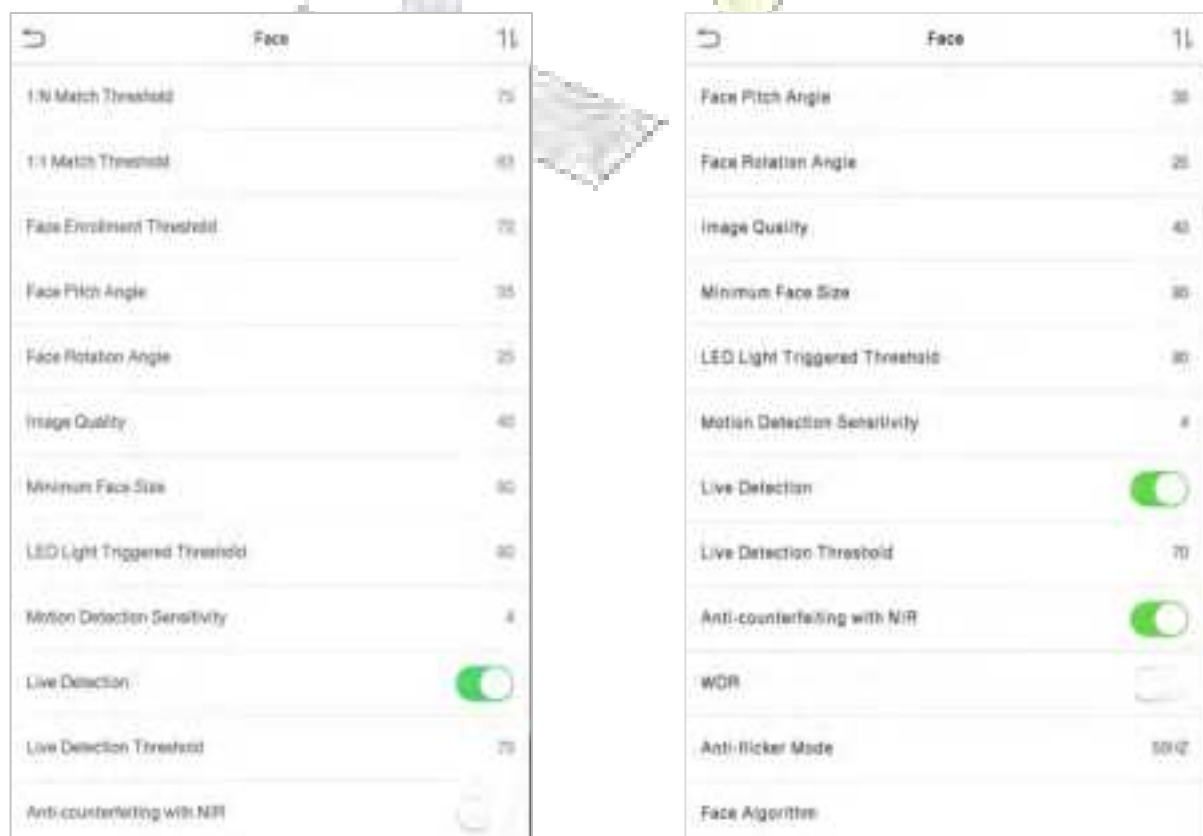


Menu	Description
Camera Mode	<p>It decides whether to capture and save the current snapshot image during verification. There are 5 modes:</p> <p>No Photo: No photo is taken during user verification.</p> <p>Take photo, no save: Photo is taken but is not saved during verification.</p> <p>Take photo and save: Photo is taken and saved during verification.</p> <p>Save on successful verification: Photo is taken and saved for each successful verification.</p> <p>Save on failed verification: Photo is taken and saved during each failed verification.</p>
Display User Photo	Whether to display the user photo when the user verification is successful.

Access Logs Warning	When the record space reaches a set value, the device will automatically display an alert. Users may disable the function or set a valid value between 1 and 9999.
Circulation Delete Access Records	When the access records have reached full capacity, the device will automatically delete a set value of old access records. Users may disable the function or set a valid value between 1 and 999.
Cyclic Delete ATT Photo	When the attendance photos have reached full capacity, the device will automatically delete a set value of old attendance photos. Users may disable the function or set a valid value between 1 and 99.
Cyclic Delete Blocklist Photo	When the blocklisted photos have reached full capacity, the device will automatically delete a set value of old blocklisted photos. Users may disable the function or set a valid value between 1 and 99.
Confirm Screen Delay(s)	The time duration to display the success verification message. The valid value is 1 to 9 seconds.
Face comparison Interval (s)	To set the facial template matching time interval as needed. The valid value is 0 to 9 seconds.

7.3 Face Parameters

Click **Face** on the System interface.



Item	Description
1:N Match Threshold	<p>In 1:N verification mode, the verification will only be successful when the similarity between the acquired facial image and all the registered facial templates is greater than the set value.</p> <p>The valid value ranges from 65 to 120. The higher the thresholds, the lower the misjudgment rate, the higher the rejection rate, and vice versa. The default value of 75 is recommended.</p>
1:1 Match Threshold	<p>In 1:1 verification mode, the verification will only be successful when the similarity between the acquired facial image and the facial templates enrolled in the device is greater than the set value.</p> <p>The valid value ranges from 55 to 120. The higher the thresholds, the lower the misjudgment rate, the higher the rejection rate, and vice versa. The default value of 63 is recommended.</p>
Face Enrollment Threshold	<p>During face enrollment, 1:N comparison is used to determine whether the user has already registered before.</p> <p>When the similarity between the acquired facial image and all the registered facial templates is greater than this threshold, it indicates that the face has already been registered.</p>
Face Pitch Angle	<p>The pitch angle tolerance of a face for facial registration and comparison.</p> <p>If a face's pitch angle exceeds this set value, it will be filtered by the algorithm, i.e. ignored by the terminal thus no registration and comparison interface will be triggered.</p>
Face Rotation Angle	<p>The rotation angle tolerance of a face for facial template registration and comparison.</p> <p>If a face's rotation angle exceeds this set value, it will be filtered by the algorithm, i.e. ignored by the terminal thus no registration and comparison interface will be triggered.</p>
Image Quality	<p>Image quality for facial registration and comparison. The higher the value, the clearer the image.</p>

Minimum Face Size	<p>Required for facial registration and comparison.</p> <p>If an object's size is smaller than this set value, the object will be filtered and not recognized as a face.</p> <p>This value can be taken as the face comparison distance. The farther the person is, the smaller the face is, and the smaller the face pixel will be obtained by the algorithm. Therefore, adjusting this parameter can adjust the furthest comparison distance of faces. When the value is 0, the face comparison distance is not limited.</p>
LED Light Triggered Threshold	This value controls to turn on and off the LED light. The larger the value, the more frequently the LED light will be turned on.
Motion Detection Sensitivity	A measurement of the amount of change in a camera's field of view that qualifies as potential motion detection that wakes up the terminal from standby to the comparison interface. The larger the value, the more sensitive the system would be. i.e. if a larger value is set, the comparison interface is much easier and frequently triggered.
Live Detection	Detecting a spoof attempt by determining whether the source of a biometric sample is a live human being or a fake representation using visible light images.
Live Detection Threshold	Judges whether the visible image comes from an alive body. The larger the value, the better the visible light anti-spoofing performance.
Anti-counterfeiting with NIR	Using near-infrared spectra imaging to identify and prevent fake photos and videos attack.
WDR	Wide Dynamic Range (WDR), which balances light and extends image visibility for surveillance videos under high contrast lighting scenes and improves object identification under bright and dark environment.
Anti-flicker Mode	Used when WDR is turned off. This helps reduce flicker when the device's screen flashes at the same frequency as the light.
Face Algorithm	Facial algorithm related information and pause the facial template update.
Notes	Improper adjustment of the exposure and quality parameters may severely affect the performance of the device. Please adjust the exposure parameter only under the guidance of the after-sales service personnel of our company.

7.4 Palm Parameters

Click **Palm** on the System interface.

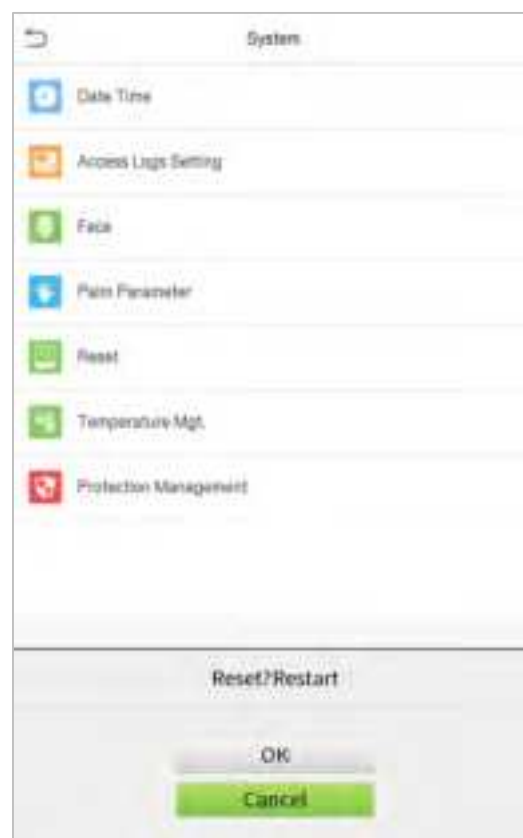
Palm Parameter	
Palm 1:1 Matching Threshold	576
Palm 1:N Matching Threshold	576

Menu	Description
Palm 1:1 Matching Threshold	In 1:1 Verification Method, only when the similarity between the verifying palm and the user's registered palm is greater than this value can the verification succeed.
Palm 1:N Matching Threshold	In 1:N Verification Method, only when the similarity between the verifying palm and all the registered palm is greater than this value can the verification succeed.

7.5 Factory Reset

The Factory reset module restores the device, such as communication settings and system settings, to factory settings (does not clear the registered user data).

Click **Reset** on the System interface.



Click **OK** to reset.

7.6 Temperature Management

The device has a built-in temperature sensor, and when the environment temperature is too low or too high, it will trigger self-heating or shut down.

Click **Temperature Mgt.** on the System interface.

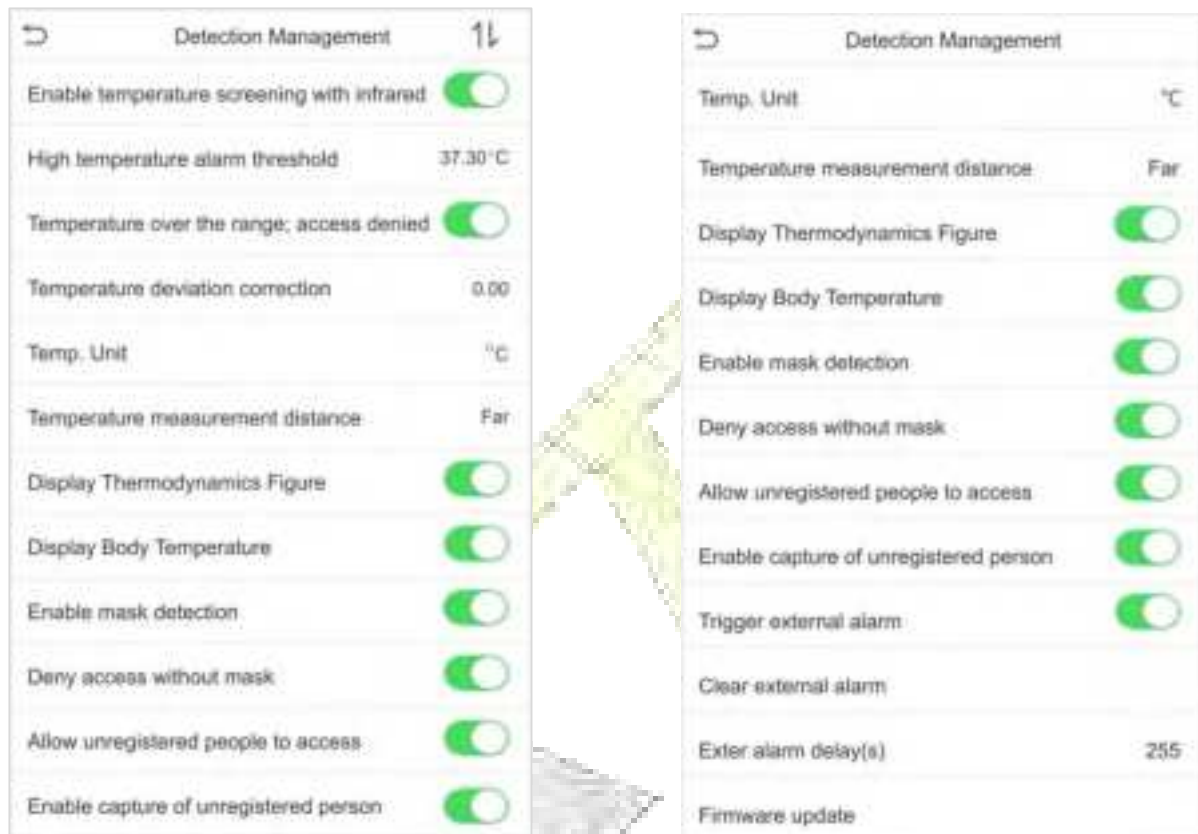


Item	Description
Current Device Temperature	This column shows the real-time temperature of the device.
Low Temp. to Heat	Once the device temperature is lower than the set value, the device will start self-heating, the range is 0 to 10°C.
High Temp. to Reset	When the device temperature is lower than the set value, it will shut down

automatically to protect the hardware, the range is 60 to 80 (°C).

7.7 Detection Management

Click **Detection Management** on the System interface.



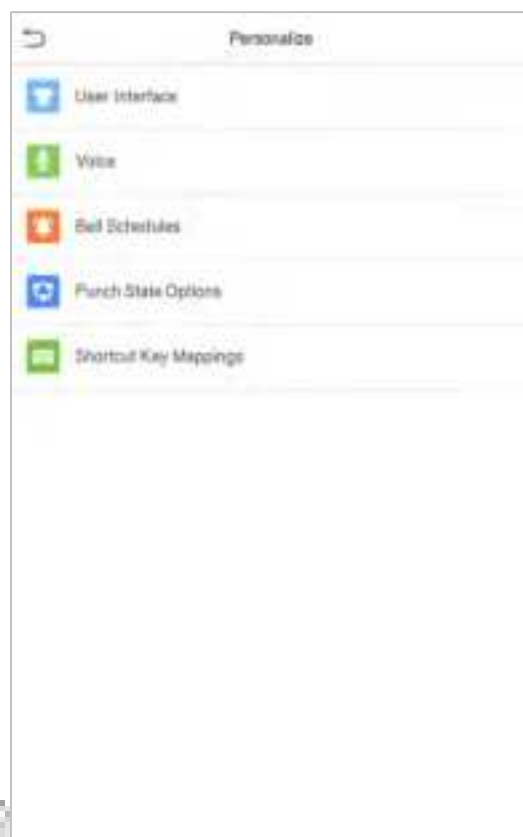
Menu	Description
Enable temperature screening with infrared	<p>To enable or disable the infrared temperature measurement function.</p> <p>When this function is enabled, before the access granted, users must pass the temperature screening in addition to identity verification.</p> <p>To measure body temperature, users' faces must be aligned with the temperature detection area.</p>
High temperature alarm threshold	<p>To set the value of the alarm threshold of high body temperature.</p> <p>When the temperature detected during verification is higher than the set value, the device will give a prompt and audio alarm.</p> <p>The default alarm threshold is 37.30°C.</p>

Temperature over the range; access denied	<p>When this's enabled, if the user's detected body temperature is above (or below) the alarm threshold, the user will not be granted access even if his/her identity is verified.</p> <p>If this's disabled, the user is allowed to access the restricted area when his/her identity is verified, regardless of his/her body temperature.</p>
Temperature deviation correction	As the temperature measurement module allows a small range of errors (disturbance) of an observed value under different environments (humidity, room temperature and such), users may set the deviation value here.
Temp. Unit	The unit of body temperature can be switched between Celsius (°C) and Fahrenheit (°F).
Temperature measurement distance	When detecting the temperature during the verification process, there are three modes: Near, Close and Far.
Display Thermodynamics Figure	<p>To enable or disable the display thermodynamics figure function.</p> <p>When enabled, during the detection process, the thermal image of the person will be displayed in the upper left corner of the device.</p>
Display Body Temperature	<p>To enable or disable the display body temperature function.</p> <p>When enabled, the device will display the user's specific temperature value during the verification process.</p>
Enable mask detection	<p>To enable or disable the mask detection function.</p> <p>When it's enabled, the device will identify whether the user is wearing a mask or not during verification.</p>
Allow unregistered people to access	<p>To enable or disable the unregistered people to access function.</p> <p>When enabled, the device allows the personnel to enter without registration.</p>
Enable capture of unregistered person	<p>To enable or disable the capture of unregistered person function.</p> <p>When enabled, the device will automatically capture the photo of the unregistered person, enabling this feature requires to enable Allow unregistered people to access.</p>
Trigger external alarm	When enabled, if the user's temperature is higher than the set value or the mask detection is enabled, but the mask is not worn, it will trigger an alarm.
Clear external alarm	Clear the triggered alarm records of the device.
External alarm delay(s)	The delay (s) time for triggering an external alarm can be set in seconds, users may disable the function or set a valid value between 1 to 255.
Firmware update	Choose whether to update the thermal imaging temperature detection module software version.

8 Personalize Settings

You may customize the interface settings, audio and bell.

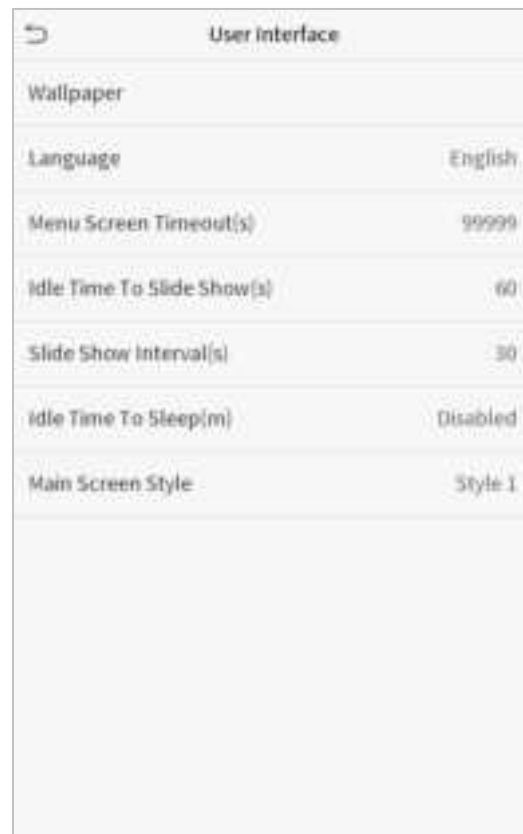
Click **Personalize** on the main menu interface.



8.1 Interface Settings

You can customize the display style of the main interface.

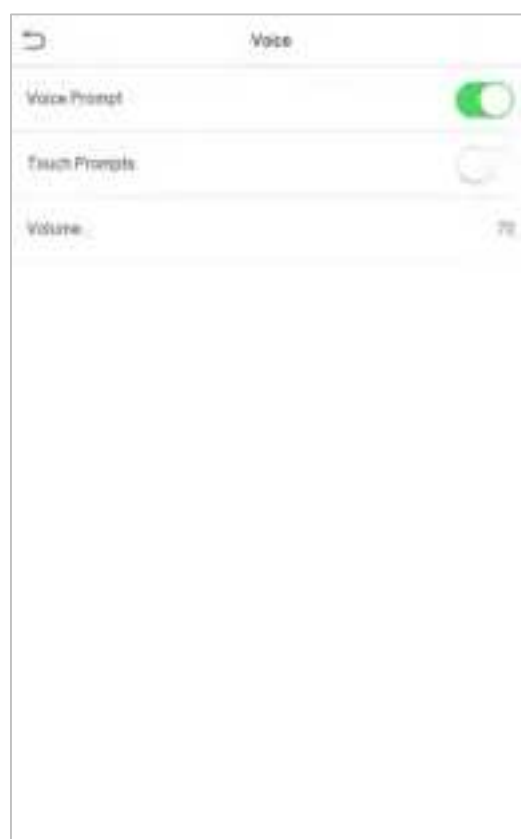
Click **User Interface** on the Personalize interface.



Menu	Description
Wallpaper	To select the main screen wallpaper according to your personal preference.
Language	To select the language of the device.
Menu Screen Timeout (s)	When there is no operation, and the time exceeds the set value, the device will automatically go back to the initial interface. You can disable the function or set the value between 60 and 99999 seconds.
Idle Time To Slide Show (s)	When there is no operation, and the time exceeds the set value, a slide show will be played. It can be disabled, or you may set the value between 3 and 999 seconds.
Slide Show Interval (s)	This refers to the time interval switching different slide show pictures. The function can be disabled, or you may set the interval between 3 and 999 seconds.
Idle Time To Sleep (m)	If you have activated the sleep mode, when there is no operation, the device will enter standby mode. Press any key or finger to resume normal working mode. You can disable this function or set a value within 1 to 999 minutes.
Main Screen Style	To select the main screen style according to your personal preference.

8.2 Voice Settings

Click **Voice** on the Personalize interface.



Menu	Description
Voice Prompt	Select whether to enable voice prompts during operating.
Touch Prompt	Select whether to enable keypad sounds.
Volume	Adjust the volume of the device and the valid value is 0 to 100.

8.3 Bell Schedules

Click **Bell Schedules** on the Personalize interface.



Add a bell

1. Click **New Bell Schedule** to open the interface.

Menu	Description
Bell Status	Set whether to enable the bell status.
Bell Time	At this time of day, the device automatically rings the bell.
Repeat	Set the repetition cycle of the bell.
Ring Tone	Select a ring tone.
Internal bell delay(s)	Set the duration of the internal bell. The valid value ranges from 1 to 999 seconds.

2. Go back to the Bell Schedules interface, click **All Bell Schedules** to view the newly added bell.

Edit a bell

On the All Bell Schedules interface, tap the bell to be edited.

Click **Edit**, the editing method is the same as the operations of adding a bell.

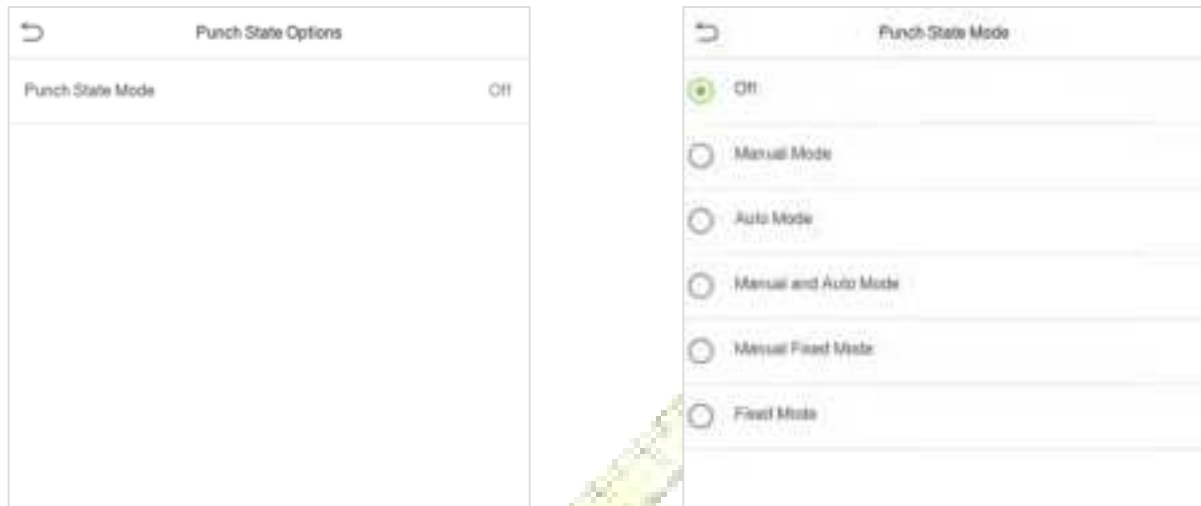
Delete a bell

On the All Bell Schedules interface, tap the bell to be deleted.

Tap **Delete** and select **Yes** to delete the bell.

8.4 Punch States Options

Click **Punch States Options** on the Personalize interface.

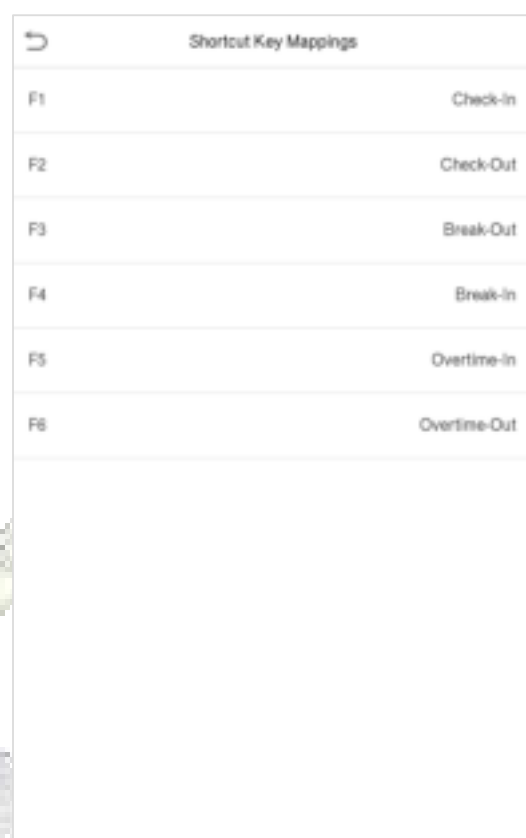


Menu	Description
Punch State Mode	<p>Select a punch state mode, which can be:</p> <p>Off: To disable the punch state key function. The punch state key set under the Shortcut Key Mappings menu will become invalid.</p> <p>Manual Mode: To switch the punch state key manually, and the punch state key will disappear after Punch State Timeout.</p> <p>Auto Mode: After this mode is chosen, set the switching time of punch state key in Shortcut Key Mappings; when the switching time is reached, the set punch state key will be switched automatically.</p> <p>Manual and Auto Mode: Under this mode, the main interface will display the auto-switching punch state key, meanwhile supports manually switching punch state key. After timeout, the manually switching punch state key will become auto-switching punch state key.</p> <p>Manual Fixed Mode: After punch state key is manually switched, the punch state key will remain unchanged until being manually switched next time.</p> <p>Fixed Mode: Only the fixed punch state key will be shown and it cannot be switched.</p>

8.5 Shortcut Keys Mappings

Users may define shortcuts as attendance status or functional keys. On the main interface, when the shortcut keys are pressed, the corresponding attendance status or function interface will be displayed quickly.

Click **Shortcut Key Mappings** on the Personalize interface.

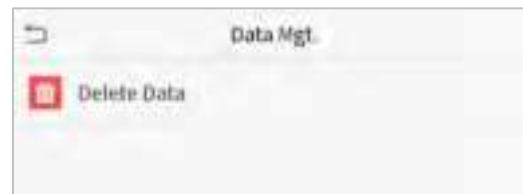


Shortcut Key Mappings	
F1	Check-In
F2	Check-Out
F3	Break-Out
F4	Break-In
F5	Overtime-In
F6	Overtime-Out

9 Data Management

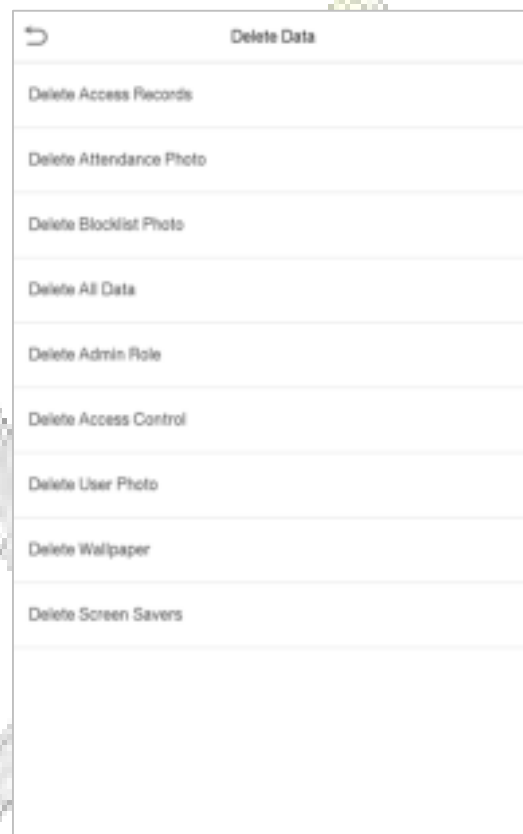
The Data Management interface is used to delete the relevant data in the device.

Click **Data Mgt.** on the main menu interface.



9.1 Delete Data

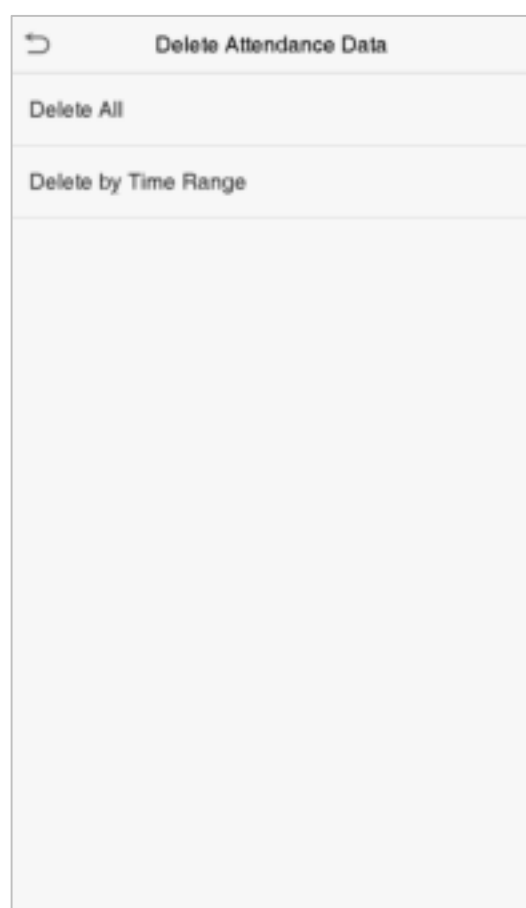
Click **Delete Data** on the Data Mgt. interface.



Menu	Description
Delete Access Records	To delete attendance data/access records conditionally.
Delete Attendance Photo	To delete attendance photos of designated personnel.
Delete Blocklist Photo	To delete the photos taken during verifications which are failed.

Delete All Data	To delete information and attendance logs/access records of all registered users.
Delete Admin Role	To remove administrator privileges.
Delete Access Control	To delete all the access data.
Delete User Photo	To delete all the user photos in the device.
Delete Wallpaper	To delete all the wallpapers in the device.
Delete Screen Savers	To delete the screen savers in the device.

Note: When deleting the access records, attendance photos or blocklisted photos, you may select Delete All or Delete by Time Range. Selecting Delete by Time Range, you need to set a specific time range to delete all data with the period.



Select Delete by Time Range.

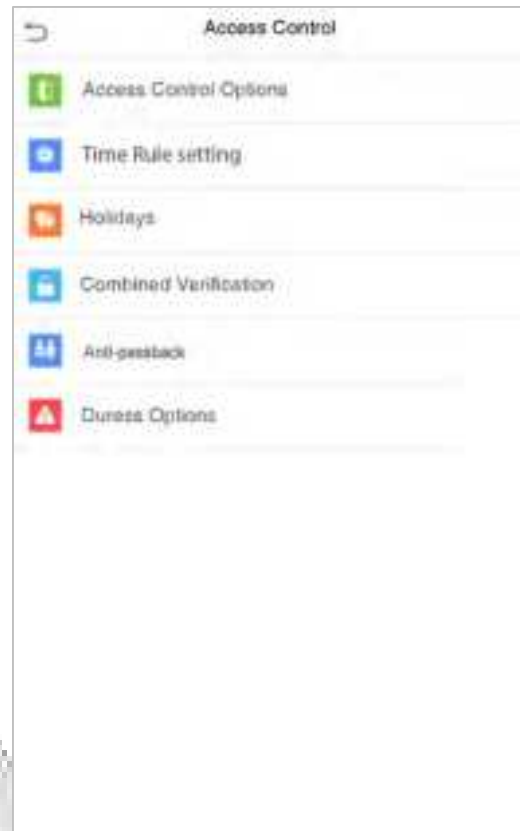


Set the time range and click OK.

10 Access Control

Access Control is used to set the schedule of door opening, lock control and other parameters settings related to access control.

Click **Access Control** on the main menu interface.



To gain access, the registered user must meet the following conditions:

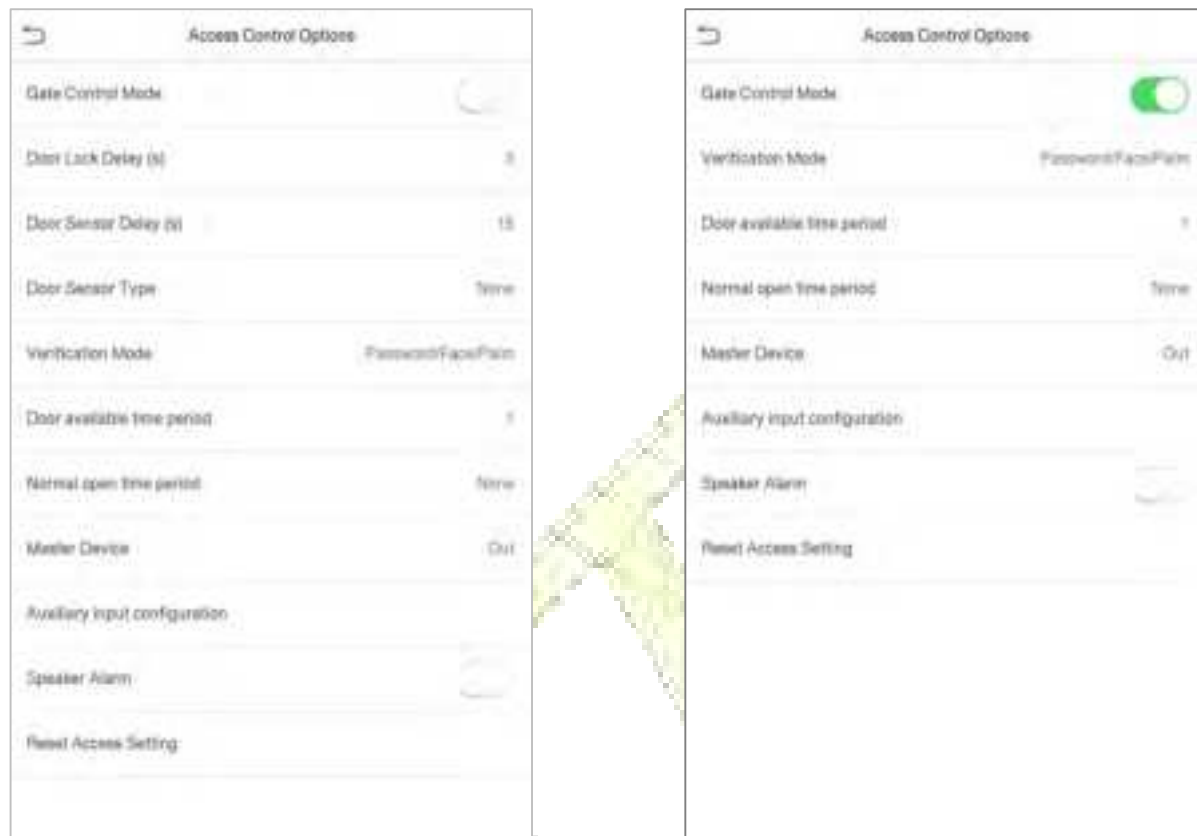
1. The current door unlock time should be within any valid time zone of the user time period.
2. The user's group must be in the door unlock combination (when there are other groups in the same access combo, verification of members of those groups are also required to unlock the door).

In default settings, new users are allocated into the first group with the default group time zone and access combo as "1" and set in unlocking state.

10.1 Access Control Options

To set the parameters of the control lock of the terminal and related devices.

Click **Access Control Options** on the Access Control interface.



Menu	Description
Gate Control Mode	Whether to turn on the gate control mode or not, when set to ON, this interface will remove Door lock relay, Door sensor relay and Door sensor type function.
Door Lock Delay (s)	The time duration that the device controls the electric lock to be unlocked. The valid range is 1 to 10 seconds; 0 second represents disabling the function.
Door Sensor Delay (s)	If the door is not closed and locked after opening for a certain duration (Door Sensor Delay), an alarm will be triggered. The valid value of Door Sensor Delay ranges from 1 to 255 seconds.
Door Sensor Type	There are three types: None, Normal Open, and Normal Closed. None means door sensor is not in use; Normal Open means the door is always opened when electricity is on; Normal Closed means the door is always closed when electricity is on.

Verification Mode	The supported verification mode includes Password/Face, User ID only, Password, Face only, and Face + Password.
Door available time period	To set time period for door, so that the door is accessible only during this time period.
Normal open time Period	Scheduled time period for "Normal Open" mode, so that the door is always unlocked during this period.
Master Device	When setting up the master and slave, the status of the master can be set to exit on enter. Exit: The record verified on the host is the exit record. Enter: The record verified on the host is the entry record.
Auxiliary input configuration	Set the door unlock time period and auxiliary output type of the auxiliary terminal device. Auxiliary output types include None, Trigger door open, Trigger Alarm, Trigger door open and Alarm.
Speaker Alarm	To transmit a sound alarm or disable the alarm from the local. When the door is closed or the verification is successful, the system will cancel the alarm from the local.
Reset Access Setting	The restored access control parameters include door lock delay, door sensor delay, door sensor type, verification mode, door available time period, normal open time period, master device, and alarm. However, the erased access control data in Data Mgt. is excluded.

10.2 Time Rule setting

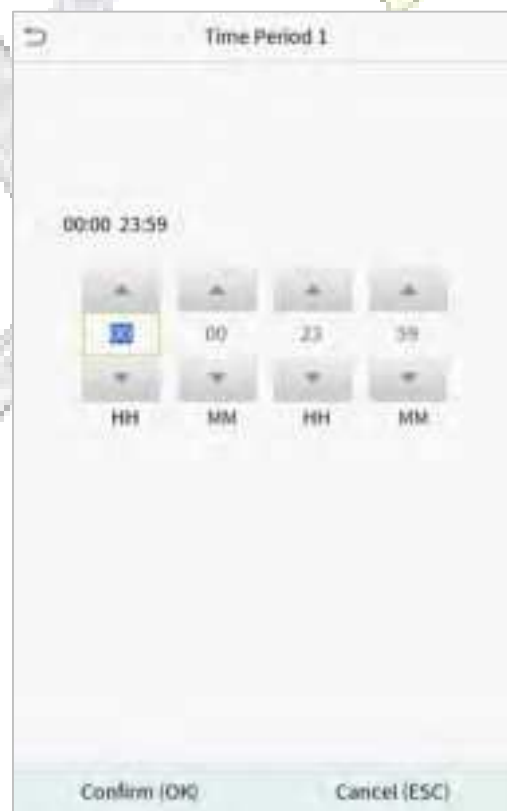
The entire system can define up to 50 time rules. Each time rule represents ten time zones, i.e. one week and 3 holidays, and each time zone is a valid time period within 24 hours per day. You may set a maximum of 3 time periods for every time zone. The relationship among these time periods is "or". When the verification time falls in any one of these time periods, the verification is valid. Each time period format of the time zone: HH MM-HH MM, which is accurate to minutes according to the 24-hour clock.

Click **Time Rule Setting** on the Access Control interface.

1. Click the grey box to input a time zone to search. Enter the number of time zone (maximum: 50 zones).



2. Click the date on which time zone settings is required. Enter the starting and ending time, and then press OK.



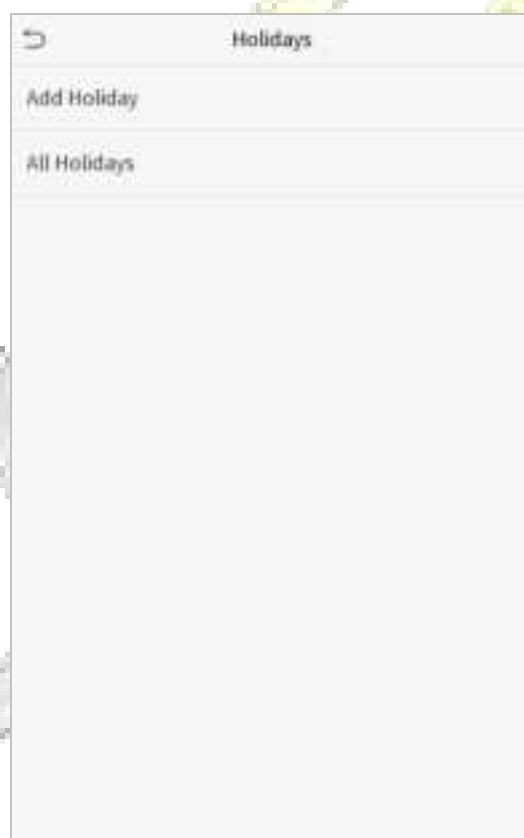
Notes:

- 1) When the ending time is earlier than the starting time, such as 23:57~23:56, it indicates that access is prohibited all day; when the ending time is later than the starting time, such as 00:00~23:59, it indicates that the interval is valid.
- 2) The effective time period to unlock the door: open all day (00:00~23:59) or when the ending time is later than the starting time, such as 08:00~23:59.
- 3) The default time zone 1 indicates that door is open all day long.

10.3 Holiday Settings

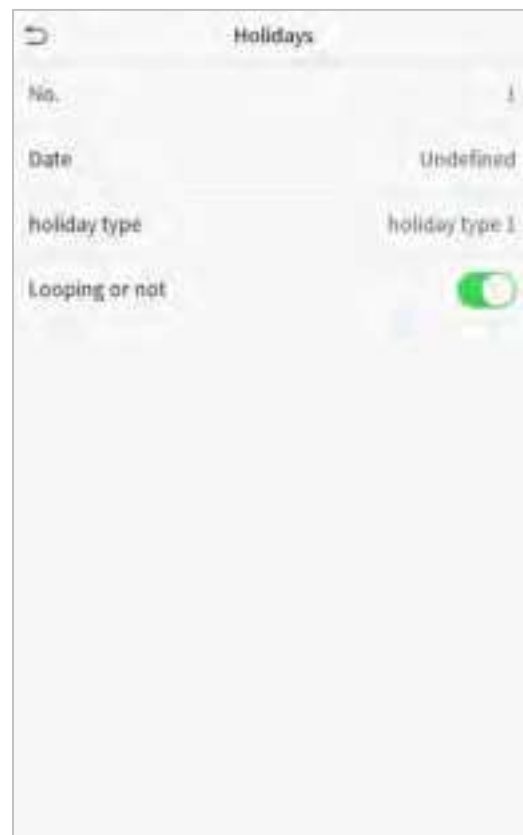
Whenever there is a holiday, you may need a special access time; but changing everyone's access time one by one is extremely cumbersome, so you can set a holiday access time which is applicable to all employees, and the user will be able to open the door during the holidays.

Click **Holidays** on the Access Control interface.



Add a New Holiday

Click Add Holiday on the Holidays interface and set the holiday parameters.



Edit a Holiday

On the Holidays interface, select a holiday item to be modified. Click Edit to modify holiday parameters.

Delete a Holiday

On the Holidays interface, select a holiday item to be deleted and click Delete. Click OK to confirm deletion. After deletion, this holiday is no longer displayed on All Holidays interface.

10.4 Combined Verification Settings

Access groups are arranged into different door-unlocking combinations to achieve multiple verifications and strengthen the security.

In a door-unlocking combination, the range of the combined number N is: $0 \leq N \leq 5$, and the number of members N may all belong to one access group or may belong to five different access groups.

Click **Combined Verification** on the Access Control interface.



Click the door-unlocking combination to be set. Click the up and down arrows to input the combination number, then press OK.

Examples:

The door-unlocking combination 1 is set as (01 03 05 06 08), indicating that the unlocking combination 1 consists of 5 people, and the 5 individuals are from 5 groups, namely, access control group 1 (AC group 1), AC group 3, AC group 5, AC group 6, and AC group 8, respectively.

The door-unlocking combination 2 is set as (02 02 04 04 07), indicating that the unlocking combination 2 consists of 5 people; the first two are from AC group 2, the next two are from AC group 4, and the last person is from AC group 7.

The door-unlocking combination 3 is set as (09 09 09 09 09), indicating that there are 5 people in this combination: all of which are from AC group 9.

The door-unlocking combination 4 is set as (03 05 08 00 00), indicating that the unlocking combination 4 consists of three people. The first person is from AC group 3, the second person is from AC group 5, and the third person is from AC group 8.

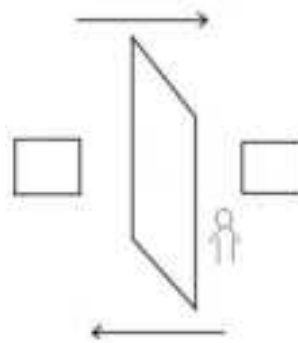
Delete a door-unlocking combination

Set all the group number as 0 if you want to delete door-unlocking combinations.

10.5 Anti-passback Setup

It is possible that users may be followed by some unauthorized persons to enter the door without verification, resulting in security problem. So, to avoid this situation, anti-passback option is developed. Once it is enabled, the check-in record must match with check-out record so as to open the door.

This function requires two devices to work together: one is installed inside the door (master device), the other one is installed outside the door (slave device). The two devices communicate via Wiegand signal. The Wiegand format and Output type (User ID / Badge Number) adopted by the master device and slave device must be consistent.



Click **Anti-passback Setup** on the Access Control interface.



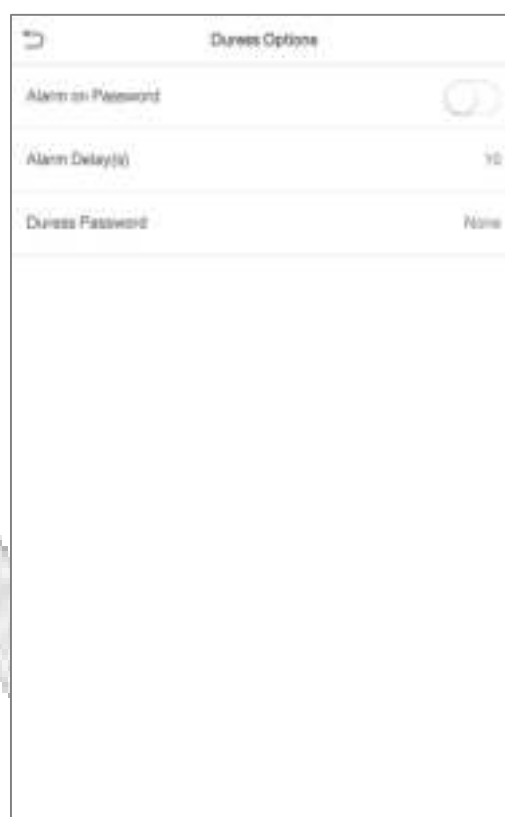
Item	Description
Anti-passback direction	<p>No Anti-passback: Anti-passback function is disabled, which means successful verification through either master device or slave device can unlock the door. Attendance state is not saved.</p> <p>Out Anti-passback: After a user checks out, only if the last record is a check-in record, the user can check out again; otherwise, the alarm will be triggered. However, the user can check in freely.</p> <p>In Anti-passback: After a user checks in, only if the last record is a check-out record, the user can check in again; otherwise, the alarm will be triggered. However, the user can check out freely.</p>

	In/Out Anti-passback: After a user checks in/out, only if the last record is a check-out record, the user can check in again; or a check-in record, the user can check out again; otherwise, the alarm will be triggered.
--	--

10.6 Duress Options Settings

If a user activated the duress verification function with specific authentication method(s), when he/she is in emergency during authentication with such method, the device will unlock the door as usual, but at the same time a signal will be sent to trigger the alarm.

Click **Duress Options** on the Access Control interface.

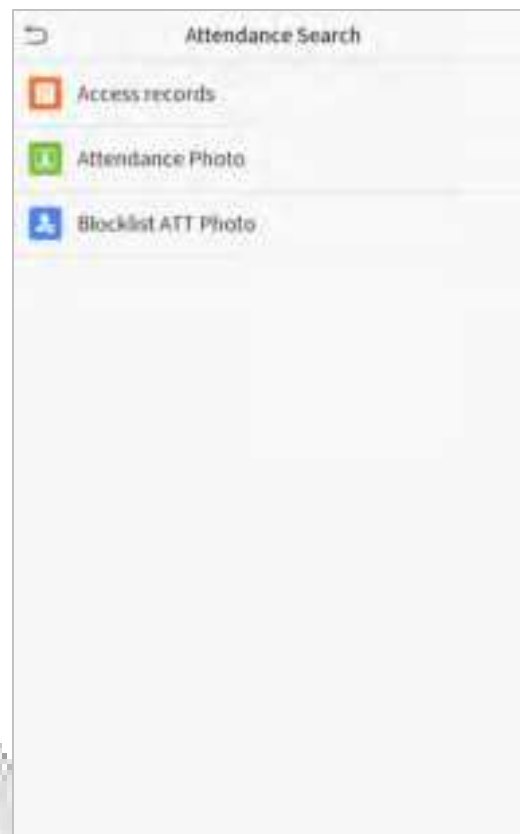


Menu	Description
Alarm on Password	When a user uses the password verification method, an alarm signal will be generated, otherwise there will be no alarm signal.
Alarm Delay (s)	Alarm signal will not be transmitted until the alarm delay time is elapsed. The value ranges from 1 to 999 seconds.
Duress Password	Set the 6-digit duress password. When the user enters this duress password for verification, an alarm signal will be generated.

11 Attendance Search

When the identity of a user is verified, the record will be saved in the device. This function enables users to check their access records.

Click **Attendance Search** on the main menu interface.



The process of searching for attendance and blocklist photos is similar to that of searching for access records. The following is an example of searching for access records.

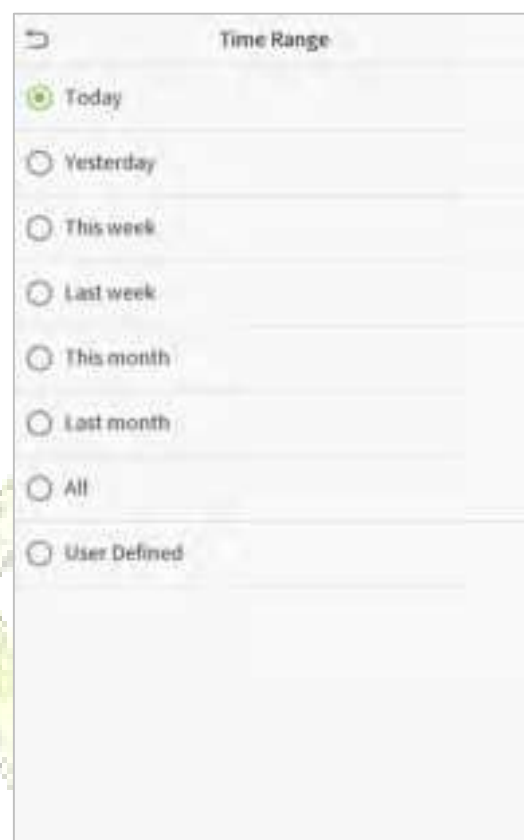
On the Attendance Search interface, click **Access Records**.

1. Enter the user ID to be searched and click OK. If you want to search for records of all users, click OK without entering any user ID.



A dialog box titled "User ID" with a subtitle "Please Input(query all data without input)". It features a numeric keypad with buttons for digits 1-9, 0, and a "123" button. There are also buttons for backspace, up arrow, down arrow, "ESC", and a green "OK" button.

2. Select the time range in which the records you want to search for.

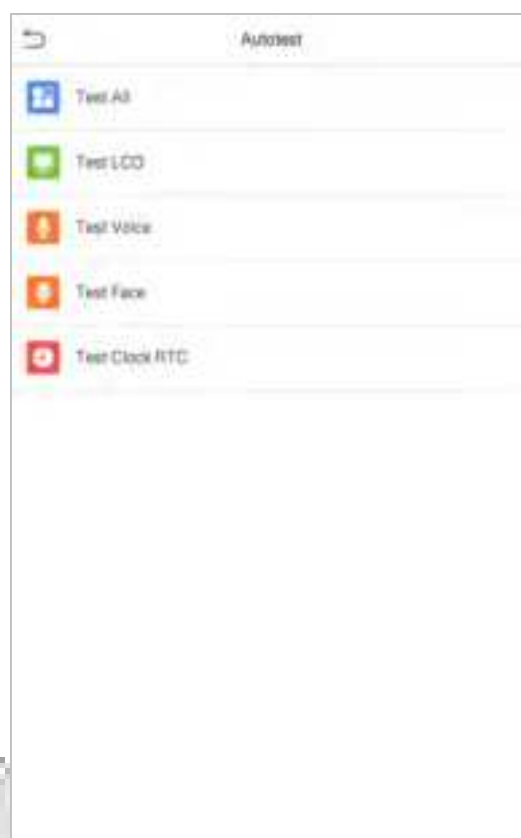


A dialog box titled "Time Range" with a list of radio button options: "Today" (selected), "Yesterday", "This week", "Last week", "This month", "Last month", "All", and "User Defined".

12 Autotest

This function automatically tests whether all the modules in the device function properly, which include the LCD, audio, camera and real-time clock (RTC).

Click **Autotest** on the main menu interface.



Menu	Description
Test All	To automatically test whether the LCD, audio, camera and RTC are normal.
Test LCD	To automatically test the display effect of LCD screen by displaying full-color, pure white, and pure black to check whether the screen displays colors normally.
Test Voice	To automatically test whether the audio files stored in the device are complete and the voice quality is good.
Camera testing	To test if the camera functions properly by checking the pictures taken to see if they are clear enough.
Test Clock RTC	To test the RTC. The device tests whether the clock works normally and accurately with a stopwatch. Touch the screen to start counting and press it again to stop counting.

13 System Information

With the system information option, you can view the storage status, the version information of the device, and so on.

Click **System Info** on the main menu interface.



Menu	Description
Device Capacity	Displays the current device's user storage, palm, password and face storage, administrators, access records, attendance and blocklist photos, and user photos.
Device Info	Displays the Device's name, Serial number, MAC address, Face algorithm version information, Platform information, and Manufacturer details.
Firmware Info	Displays the firmware version and other version information of the device.

14 Connect to ZKBioSecurity MTD Software

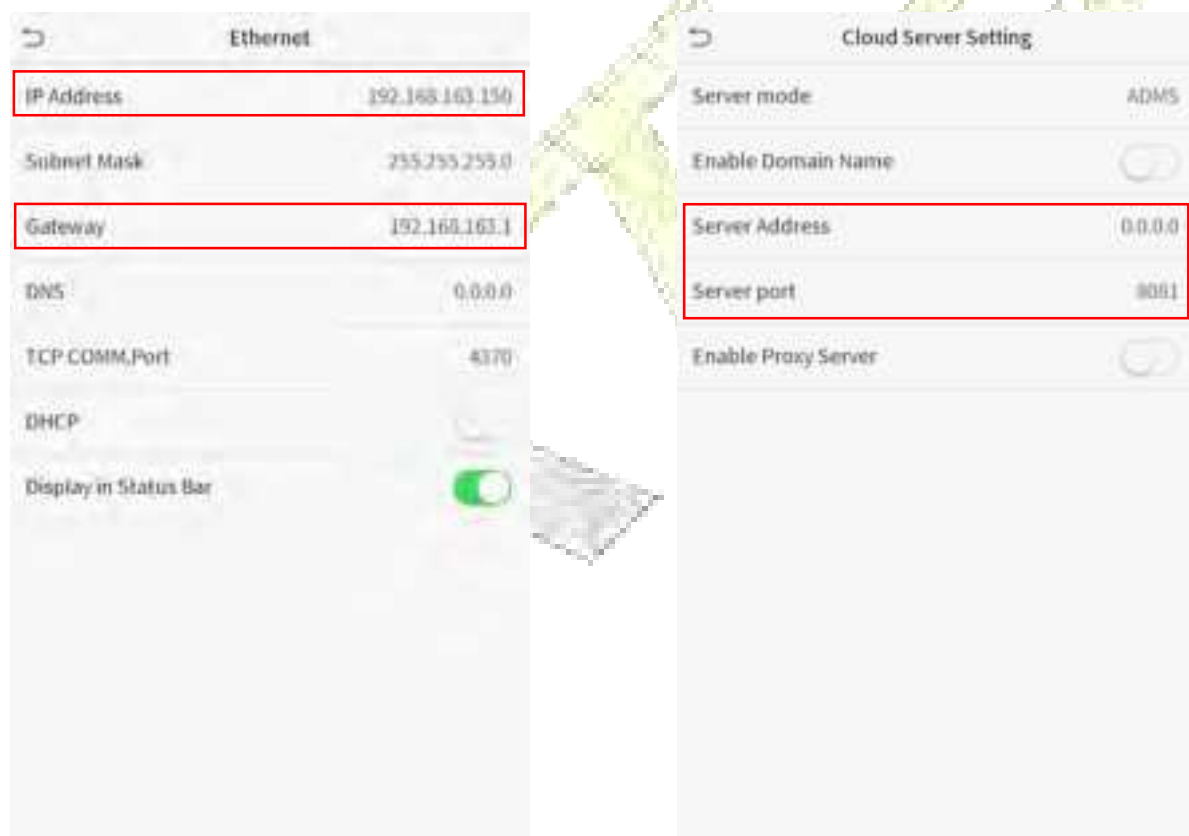
14.1 Set the Communication Address

Device side

1. Click **COMM. > Ethernet** in the main menu to set IP address and gateway of the device. (**Note:** The IP address should be able to communicate with the ZKBioSecurity MTD server, preferably in the same network segment with the server address).
2. In the main menu, click **COMM. > Cloud Server Setting** to set the server address and server port.

Server address: Set as the IP address of ZKBioSecurity MTD server.

Server port: Set as the service port of ZKBioSecurity MTD (The default is 8088).



Software side

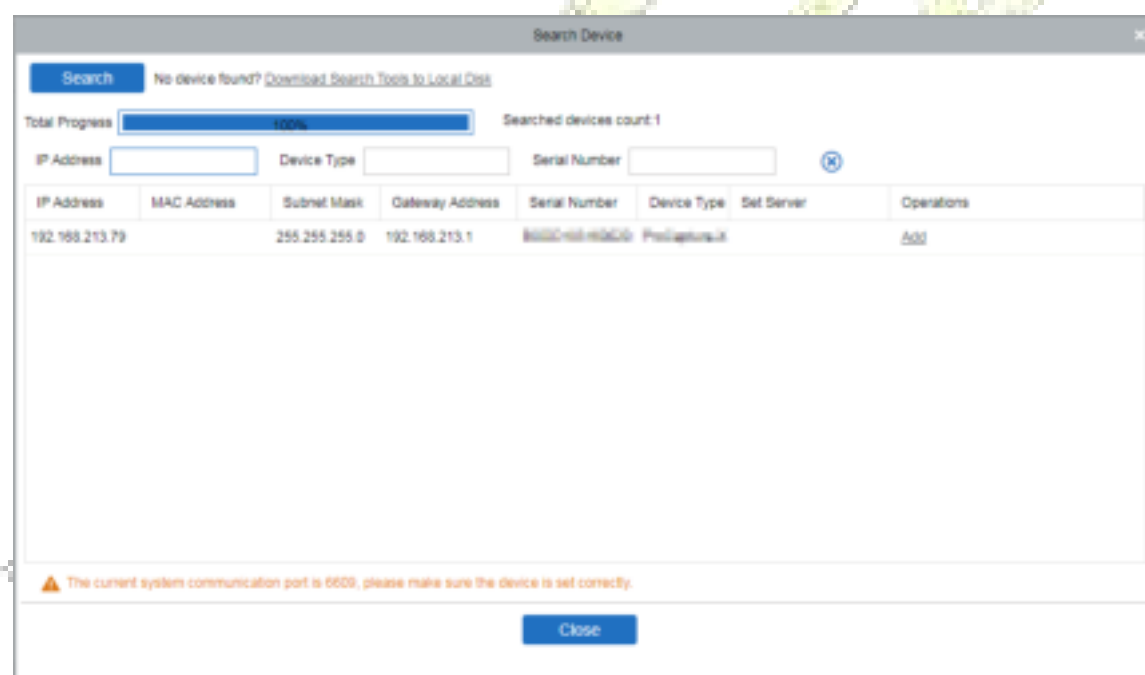
Login to ZKBioSecurity MTD software, click **System > Communication > Communication Device** to set the ADMS service port, as shown in the figure below:



14.2 Add Device on the Software

You can add a device by searching. The process is as follows:

- 1) Click **Access Control** > **Device** > **Search Device**, to open the Search interface.
- 2) Click **Search**, and it will prompt [Searching.....].
- 3) After searching, the list and total number of access controllers will be displayed.



- 4) Click **Add** after the device to complete adding.

14.3 Add Personnel on the Software

1. Click **Personnel > Person > New**.

2. After setting all the parameters, click **OK**.

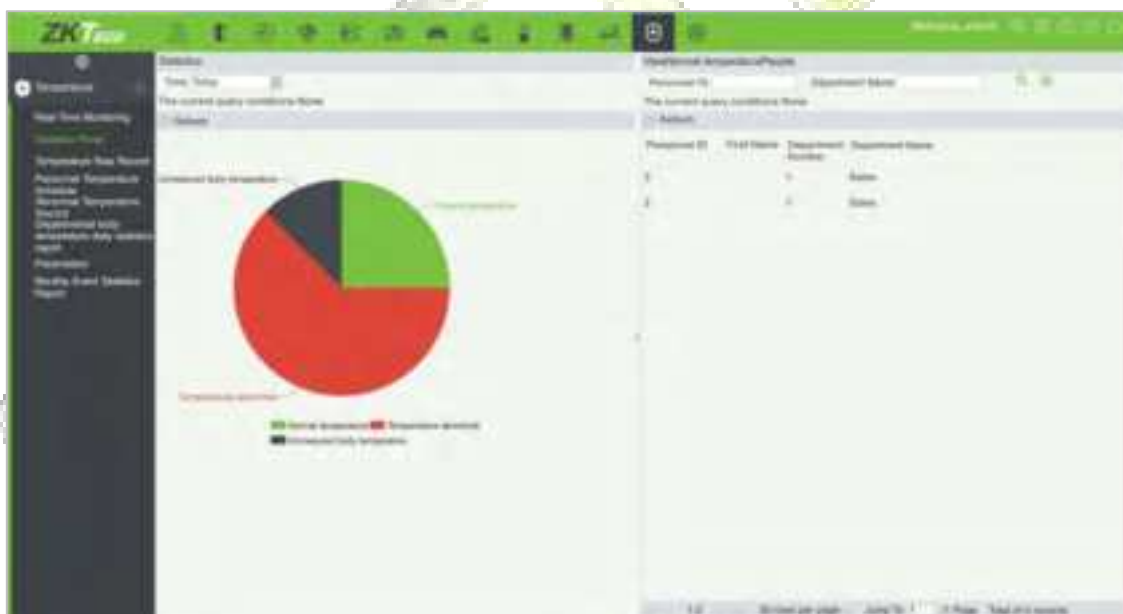
14.4 Real-time monitoring on the Software

1. Click **Prevention > Epidemic > Real-time monitoring** to view all the events include the user whose temperature is over the range:



When the **Alarm temperature setting** has set, the abnormal body temperature will be marked red automatically.

2. Click **Epidemic > Statistics panel** to view the analysis of statistical data and view the personnels with normal temperature.



Note: For other specific operations, please refer *ZKBioSecurity MTD User Manual*.

Appendix 1

Requirements of Live Collection and Registration of Visible

Light Face Images

- 1) It is recommended to perform registration in an indoor environment with an appropriate light source without underexposure or overexposure.
- 2) Do not shoot towards outdoor light sources like door or window or other strong light sources.
- 3) Dark-color apparels which are different from the background color are recommended for registration.
- 4) Please show your face and forehead, and do not cover your face and eyebrows with your hair.
- 5) It is recommended to show a plain facial expression. Smile is acceptable, but do not close your eyes, or incline your head to any orientation. Two images are required for persons with eyeglasses, one image with eyeglasses and one other without.
- 6) Do not wear accessories like scarf or mask that may cover your mouth or chin.
- 7) Please face right towards the capturing device, and locate your face in the image capturing area as shown in Image 1.
- 8) Do not include more than one face in the capturing area.
- 9) 50cm- 80cm is recommended for capturing distance adjustable subject to body height.



Image1 Face Capture Area

Requirements for Visible Light Digital Face Image Data

Digital photo should be straightly edged, colored, half-portrayed with only one person, and the person should be uncharted and not in uniform. Persons who wear eyeglasses should remain to put on eyeglasses for photo capturing.

- **Eye Distance**

200 pixels or above are recommended with no less than 115 pixels of distance.

- **Facial Expression**

Plain face or smile with eyes naturally open are recommended.

- **Gesture and Angel**

Horizontal rotating angle should not exceed $\pm 10^\circ$, elevation should not exceed $\pm 10^\circ$, and depression angle should not exceed $\pm 10^\circ$.

- **Accessories**

Masks and colored eyeglasses are not allowed. The frame of the eyeglasses should not shield eyes and should not reflect light. For persons with thick eyeglasses frame, it is recommended to capture two images, one with eyeglasses and the other one without.

- **Face**

Complete face with clear contour, real scale, evenly distributed light, and no shadow.

- **Image Format**

Should be in BMP, JPG or JPEG.

- **Data Requirement**

Should comply with the following requirements:

- 1) White background with dark-colored apparel.
- 2) 24bit true color mode.
- 3) JPG format compressed image with not more than 20kb size.
- 4) Definition rate between 358 x 441 to 1080 x 1920.
- 5) The vertical scale of head and body should be 2:1.
- 6) The photo should include the captured person's shoulders at the same horizontal level.
- 7) The captured person should be eyes-open and with clearly seen iris.
- 8) Plain face or smile is preferred, showing teeth is not preferred.
- 9) The captured person should be clearly seen, natural in color, and without image obvious twist, no shadow, light spot or reflection in face or background, and appropriate contrast and lightness level.

Appendix 2

Statement on the Right to Privacy

Dear Customers:

Thank you for choosing this hybrid biometric recognition product, which was designed and manufactured by ZKTeco. As a world-renowned provider of core biometric recognition technologies, we are constantly developing and researching new products, and strive to follow the privacy laws of each country in which our products are sold.

We Declare That:

1. All of our civilian fingerprint recognition devices capture only characteristics, not fingerprint images, and do not involve privacy protection.
2. None of the fingerprint characteristics that we capture can be used to reconstruct an image of the original fingerprint, and do not involve privacy protection.
3. As the provider of this device, we will assume no direct or indirect responsibility for any consequences that may result from your use of this device.
4. If you would like to dispute human rights or privacy issues concerning your use of our product, please directly contact your dealer.

Our other law-enforcement fingerprint devices or development tools can capture the original images of citizen's fingerprints. As to whether or not this constitutes an infringement of your rights, please contact your Government or the final supplier of the device. As the manufacturer of the device, we will assume no legal liability.

Note:

The Chinese law includes the following provisions on the personal freedom of its citizens:

1. There shall be no illegal arrest, detention, search, or infringement of persons;
2. Personal dignity is related to personal freedom and shall not be infringed upon;
3. A citizen's house may not be infringed upon;
4. A citizen's right to communication and the confidentiality of that communication is protected by the law.

As a final point, we would like to further emphasize that biometric recognition is an advanced technology that will be certainly used in E-commerce, banking, insurance, judicial, and other sectors in the future. Every year the world is subjected to major losses due to the insecure nature of passwords. The Biometric products serve to protect your identity in high-security environments.

Eco-friendly Operation



The product's 'eco-friendly operational period' refers to the time period during which this product will not discharge any toxic or hazardous substances when used in accordance with the prerequisites in this manual.

The eco-friendly operational period specified for this product does not include batteries or other components that are easily worn down and must be periodically replaced. The battery's eco-friendly operational period is 5 years.

Hazardous or Toxic substances and their quantities

Component Name	Hazardous/Toxic Substance/Element					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr6+)	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Chip Resistor	×	○	○	○	○	○
Chip Capacitor	×	○	○	○	○	○
Chip Inductor	×	○	○	○	○	○
Diode	×	○	○	○	○	○
ESD component	×	○	○	○	○	○
Buzzer	×	○	○	○	○	○
Adapter	×	○	○	○	○	○
Screws	○	○	○	×	○	○

○ indicates that the total amount of toxic content in all the homogeneous materials is below the limit as specified in SJ/T 11363—2006.

× indicates that the total amount of toxic content in all the homogeneous materials exceeds the limit as specified in SJ/T 11363—2006.

Note: 80% of this product's components are manufactured using non-toxic and eco-friendly materials. The components which contain toxins or harmful elements are included due to the current economic or technical limitations which prevent their replacement with non-toxic materials or elements.

Appendix 3

Hereby, ZKTECO CO., LTD. declares that this Product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

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