eSSL®
Security at Fingertips

User Manual

AiFace-Venus

www.esslsecurity.com

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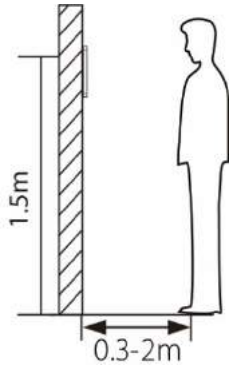
1 Instructions to use

1.1 Standing Position, Facial Expression and Standing Posture

Recommended distance



The distance between the device and a user whose height is within 1.55m-1.85m is recommended to be 0.3 to 2m. Users may slightly move forwards and backwards to improve the quality of facial images captured.

Facial expression and standing posture

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

1.2 Palm Registration

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

Make sure to keep space between your fingers.

Note:

1） Place your palm within 30-50 cm of the device.

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

3） Make sure to keep space between your fingers.

1.3 Face Registration

Try to keep the 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, drawn, 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 display two faces on the screen. Register only one person at a time.
- It is recommended for a user wearing glasses to register both 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.

1.4 Standby Interface

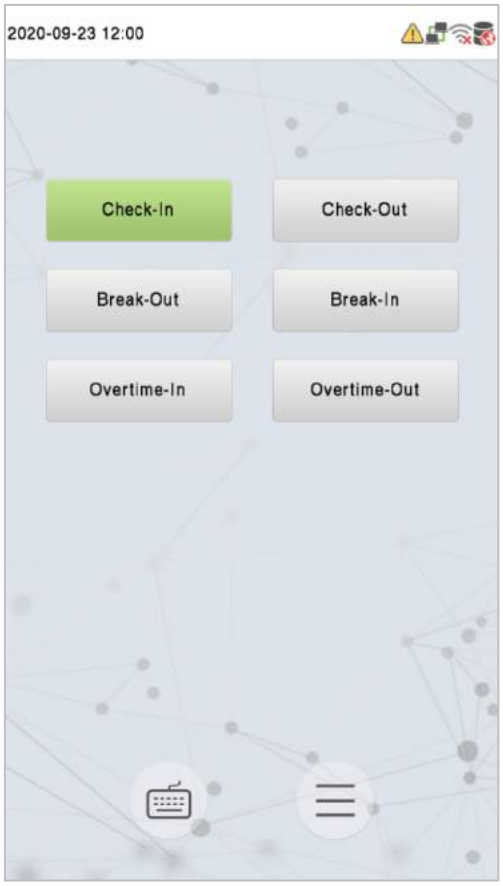
After connecting the power supply, the interface appears as shown below:

Note:

1) Click to open the interface to enter the User ID.

2) When there is no super administrator registered 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 the security of the device, it is recommended to register a super administrator the first time you use the device.

3) ★The switch of punch state can be done directly by using the screen shortcut keys. Click anywhere on the screen without icons, and six shortcut keys appear, as shown in the figure below:



Press the corresponding shortcut key to select the current punch state, which is shown in green. Please refer to "7.5 Shortcut Key Mappings" below for the specific operation method.

1.5 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 the virtual keyboard appears. Click [**ESC**] to exit the keyboard screen.

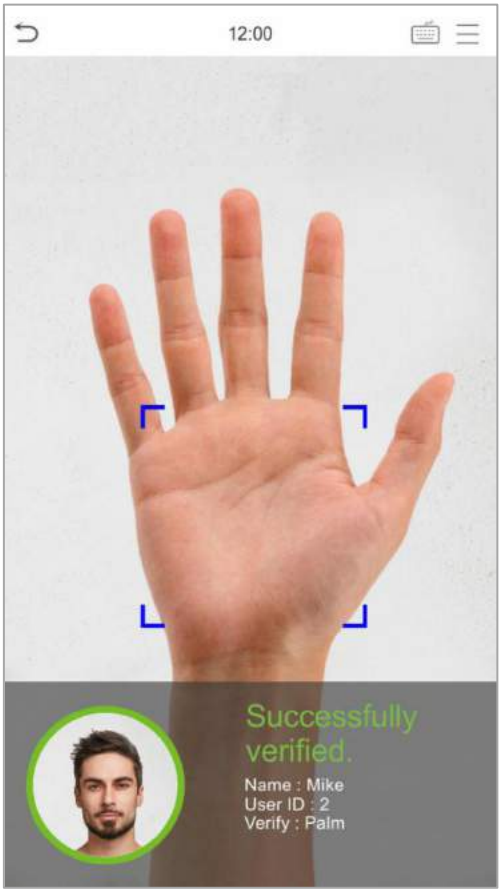
1.6 Verification Mode

1.6.1 Palm Verification

1:N (One to Many) Palm Verification mode

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

The device will automatically distinguish between the palm and face verification mode. Place the palm in the area that can be collected by the palm module, so that the device will automatically switch to palm verification mode.



1:1 (One to One) Palm Verification mode

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

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

If the user has registered the badge, face and password in addition to palm, and the verification method is set to Password/Badge/Face/Palm, the following screen will appear. Select the palm icon to enter palm verification mode.

1.6.2 Facial Verification

1:N (One to Many)Facial Verification

1. Conventional verification

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

2. Enable mask detection★

When the user enabled the **Enable mask detection** function, the device will identify whether the user is wearing a mask or not. The following is the popup of the comparison result prompt interface.

Note: This function is only applicable to products with mask detection function.

1:1 (One to One) Facial Verification

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

Press on the main interface and enter the 1:1 (One to One) facial verification mode.

Enter the User ID and click [OK].

If an employee registers palm, badge and password in addition to the face, and the verification method is set to Password/Badge/Face/Palm, the following screen will appear. Select the icon to enter the face verification mode.

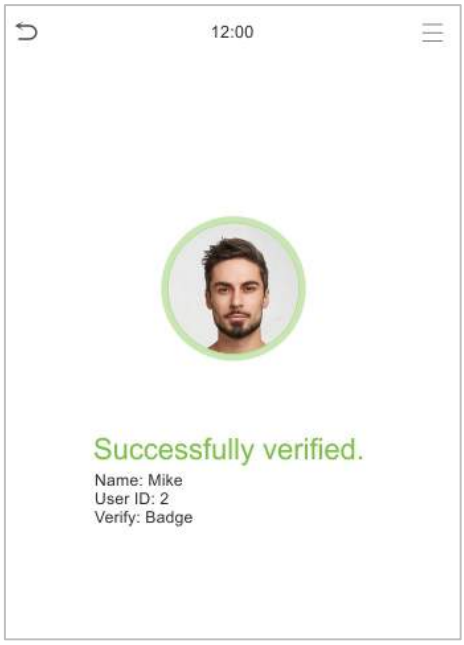
After successful verification, the prompt box "successfully verified" will appear.

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

1.6.3 Badge Verification

1:N (One to Many)Badge Verification

This verification mode compares the badge number in the badge induction area with all the badge number data registered in the device; The following is the badge verification screen.



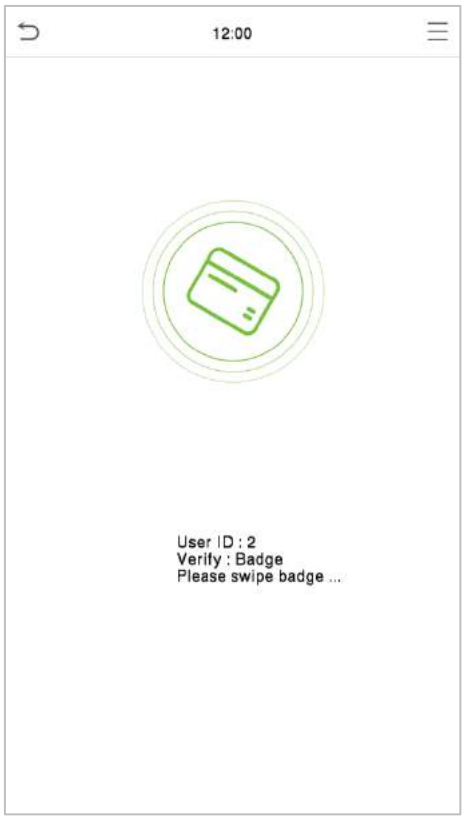
1:1 (One to One) Badge Verification

Click the button on the main screen to open the 1:1 (One to One) badge verification mode.

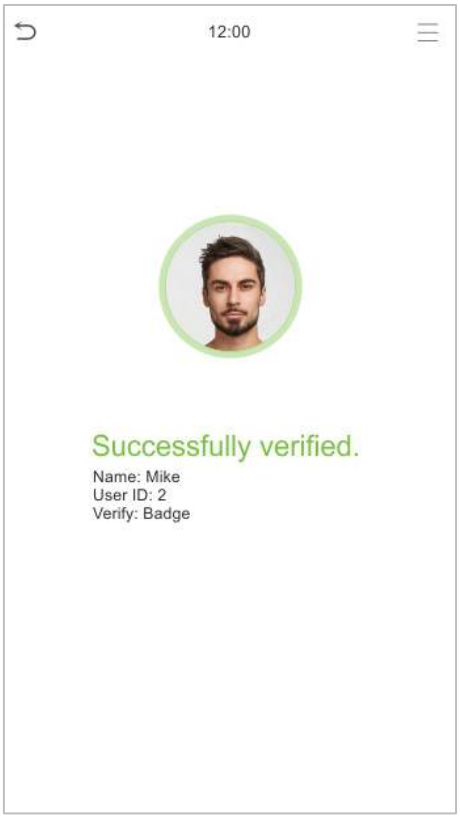
1. Input the user ID and press [OK].

If an employee registers palm, face and password in addition to badge, and the verification method is set to Password/Badge/Face/Palm, the following screen will appear. Select the icon to enter the badge verification mode.

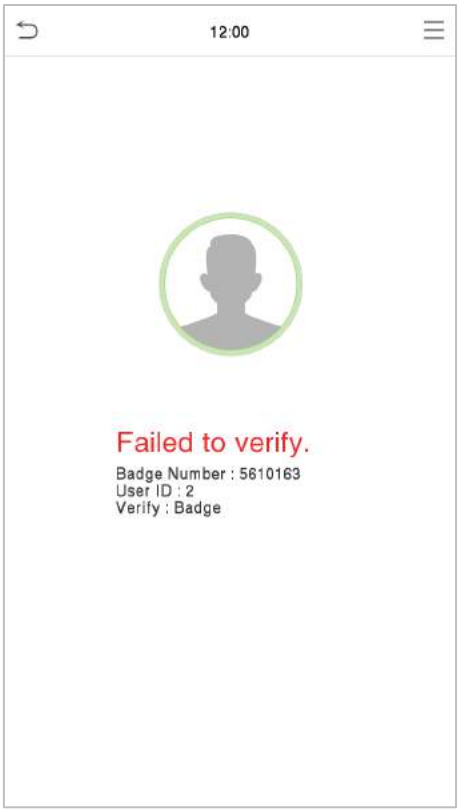
2. Swipe the badge above the badge area (the badge must be registered first).



Successful Verification:



Failed Verification:



1.6.4 Password Verification

The Password Verification mode compares the entered password with the registered User ID and Password.

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

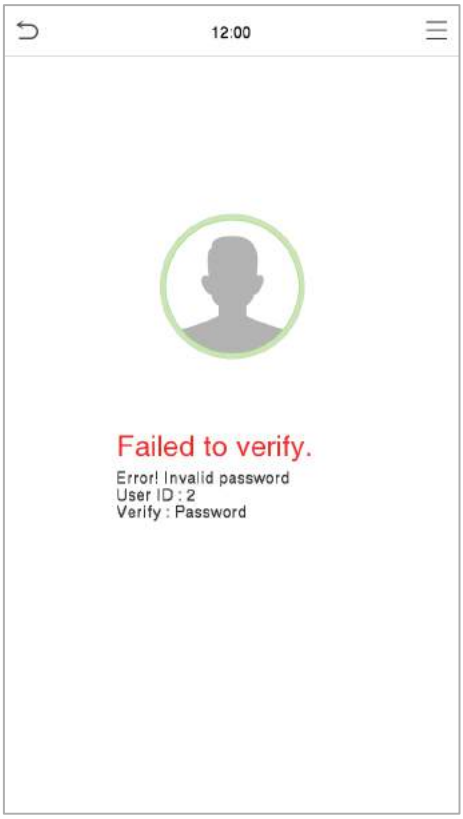
1. Input the user ID and press [OK].

If an employee registers palm, badge and face in addition to password, and the verification method is set to Password/Badge/Face/Palm, the following screen will appear. Select the icon to enter the password verification mode.

2. Input the password and press [OK].

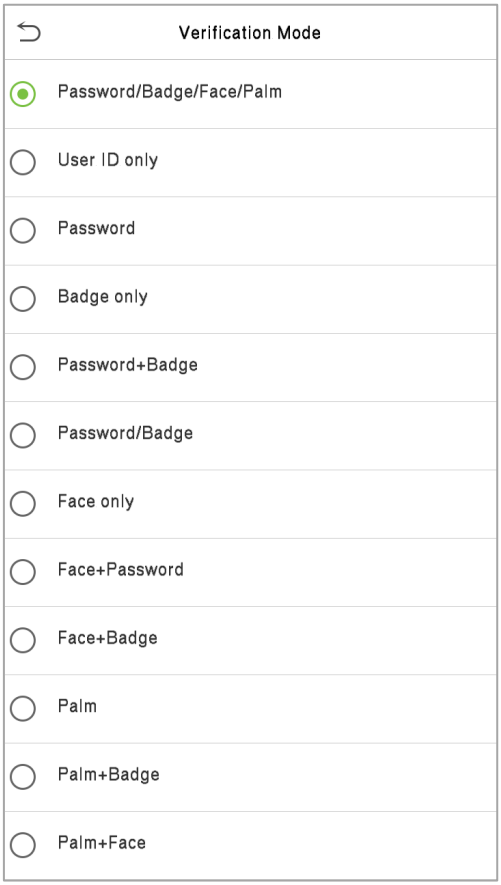
Successful Verification:

Failed Verification:



1.6.5 Combined Verification

To increase the security, this device offers the option of using multiple forms of verification methods. A total of 12 different verification combinations can be used, as shown below:



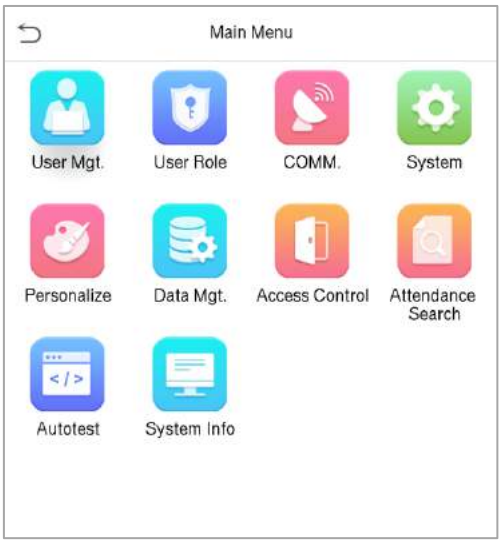
Note:

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 verification.

2 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 the 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, Attendance, Facial templates, Palm templates, Resetting to factory settings, and Detection management.
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 the relevant access control device.
Attendance Search	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 the data capacity, device, and firmware information of the current device.

3 User Management

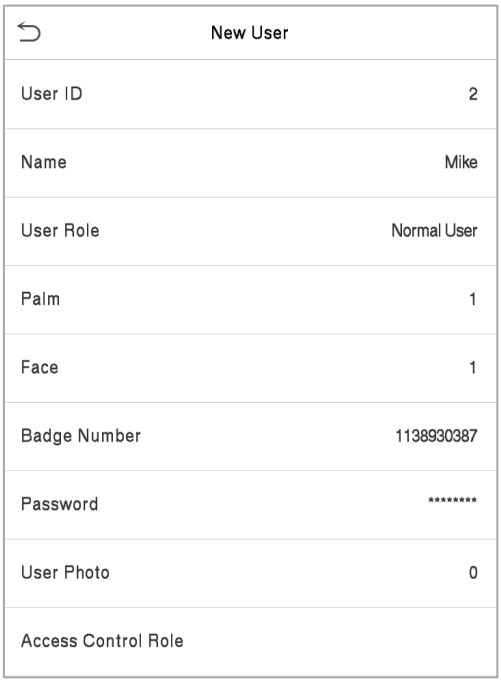
3.1 Add Users

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

Click **New User.**

Register a User ID and Name

Enter the User ID and Name.



Notes:

1) A username 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

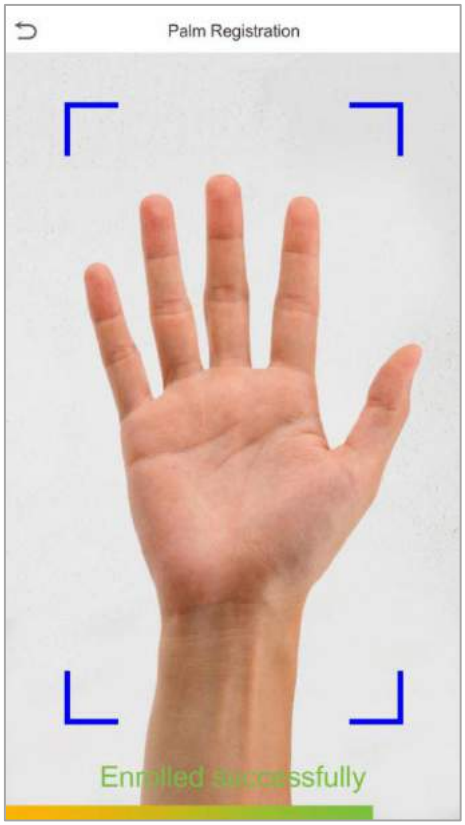
There are two types of user accounts: **Normal user** and **Super admin**. If there is already a registered administrator, the normal users have no rights to manage the system and may only access authentication verifications. The Administrator owns all the management privileges. If a custom role is set,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

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

Note: If the selected user role is the Super Admin, the user must pass the identity authentication to access the main menu.

Register palm

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



Register face

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

Register badge

Press your **badge** above the badge area. The badge number registration will be successful.

Register password

Click **Password** to open the password registration page. Enter a password and re-enter it. 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 passes the authentication, 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.

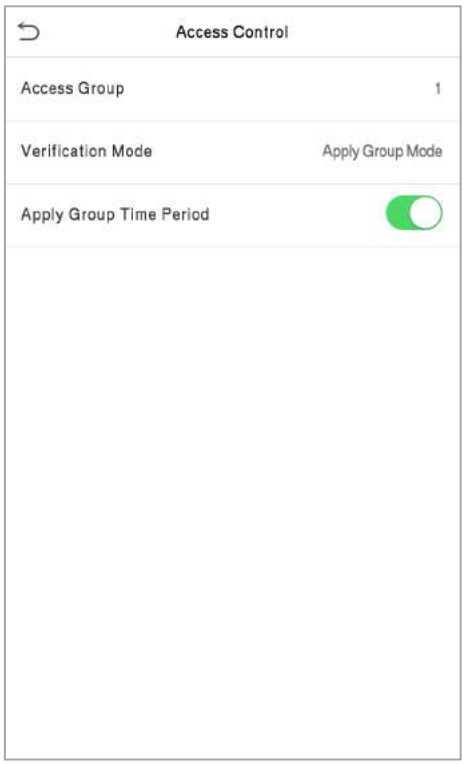
Note: While registering a face, the system will automatically capture a picture as the user photo. If you do not want to register a user photo, the system will automatically set the picture captured as the default photo.

Access Control Role

User access control sets the door unlocking rights of each person, including the group and the 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.

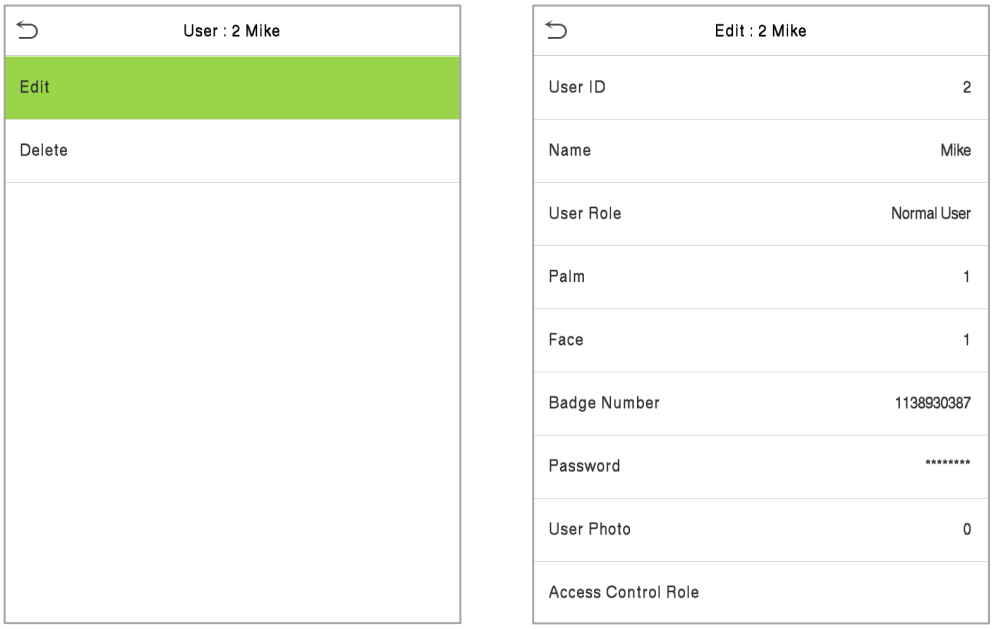


3.2 Search for Users

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.

3.3 Edit Users

Select a user from the list and click **Edit** to enter the edit user interface.

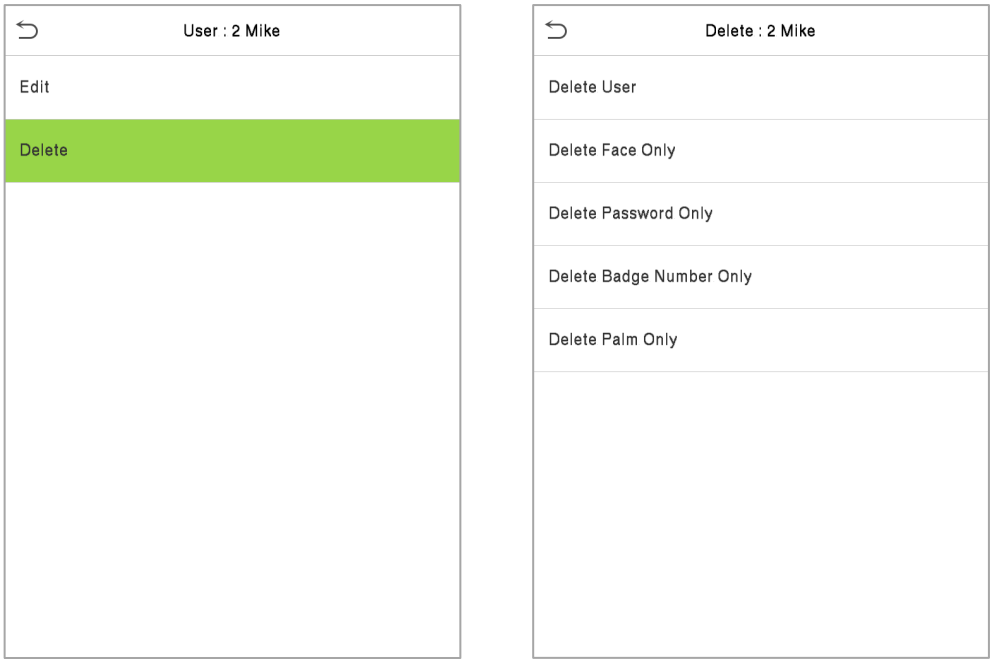


Note: The operation of editing a user is the same as that of adding a user, except that the user ID cannot be modified when editing a user. For further details, refers "3.1 Add users".

3.4 Delete Users

Select 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 information of the user will be deleted.

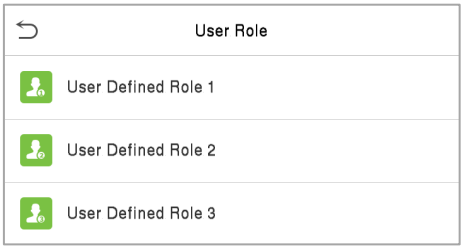


4 User Role

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

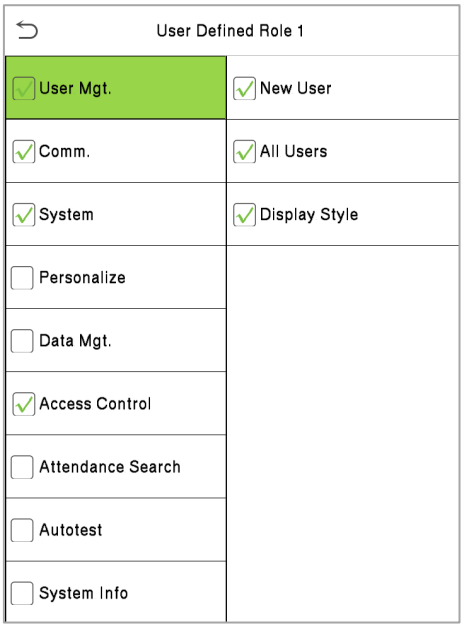
You may set the permission scope of the custom role (up to 3 roles) and enroller, that is, the permission scope of the operation menu.

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

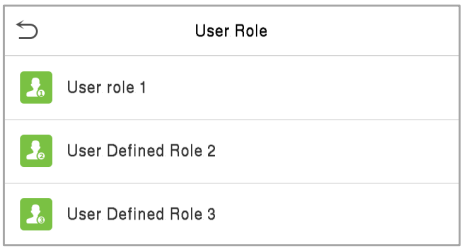


1. Click any user role to set a defined role. Toggle the **Enable Defined Role** button to enable this defined role. Click **Name** and enter the name of the role.

2. Click **Define User Role** to assign privileges to the role. Once the privilege assignment is completed, click **Return**.



Note: During the 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**.

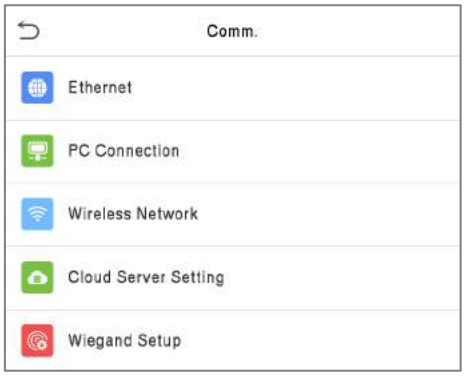


If no super administrator is registered, the device will prompt "Please enroll super admin first!" after clicking the enable bar, as shown below.

5 Communication Settings

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

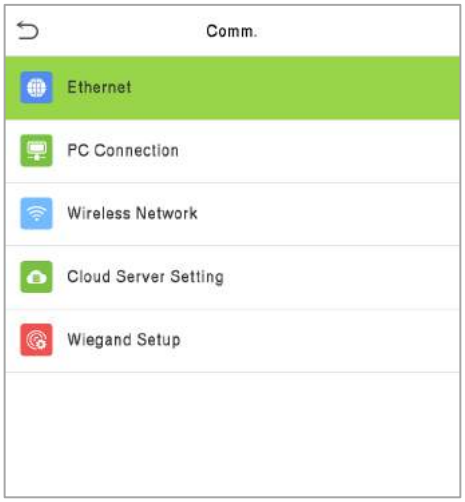
Tap **COMM.** on the main menu.

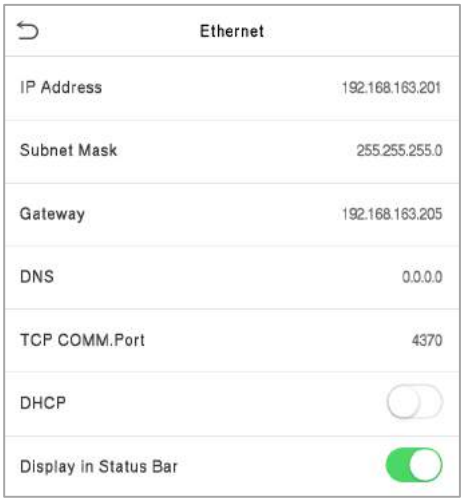


5.1 Network Settings

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 IP Address as per the requirements.
Subnet Mask	The factory default value is 255.255.255.0. Please set the value as per the requirements.
Gateway	The factory default address is 0.0.0.0. Please set the value as per the requirements.

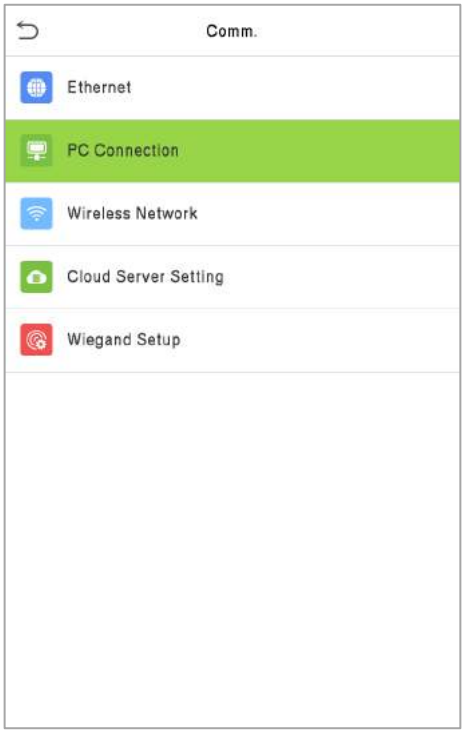
DNS	The factory default address is 0.0.0.0. Please set the value as per the requirements.
TCP COMM. Port	The factory default value is 4370. Please set the value as per the requirements.
DHCP	Dynamic Host Configuration Protocol, which is to dynamically allocate IP addresses for clients via server.
Display in Status Bar	To set whether to display the network icon on the status bar.

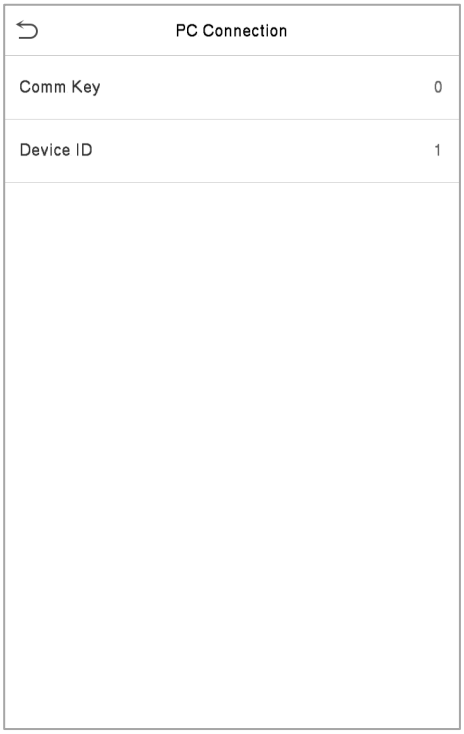
5.2 PC Connection

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.



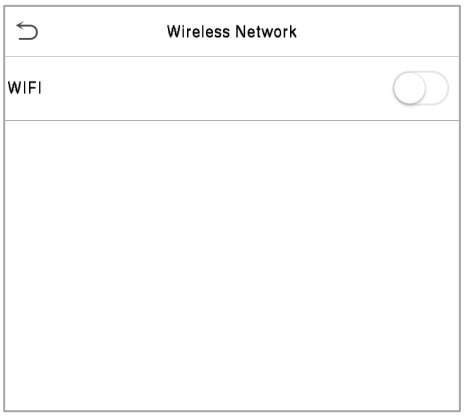


Menu	Description
Comm Key	Comm Key: The default password is 0, which can be changed. The Comm Key may contain 1 to 6 digits.
Device ID	The identity number of the device, which ranges between 1 and 254. If the communication method is RS232/RS485, you need to input this device ID in the software communication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

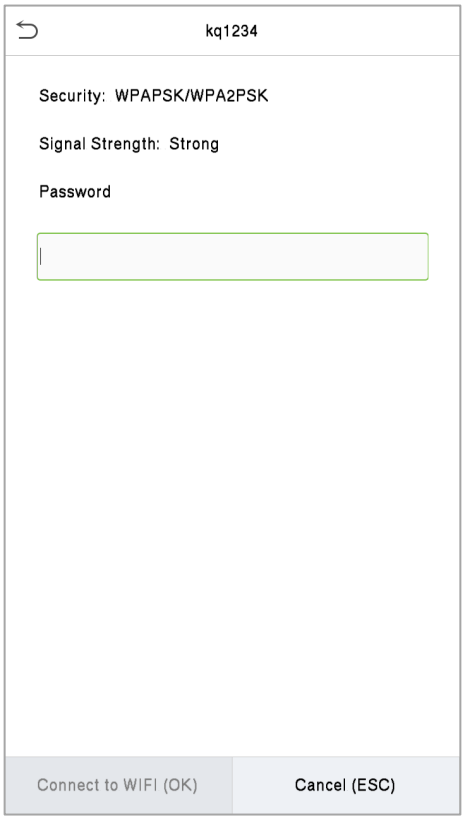
5.3 Wireless Network ★

Wi-Fi is short for Wireless Fidelity. The device provides a Wi-Fi module, which can be built in the device mould or externally connected, to enable data transmission via Wi-Fi and establish a wireless network environment.

Wi-Fi is enabled in the system by default. If the Wi-Fi network does not need to be used, you can click the button to disable Wi-Fi.



When Wi-Fi is enabled, click the searched network. Click the password entry text box to enter the password, and click **Connect to Wi-Fi (OK)**.

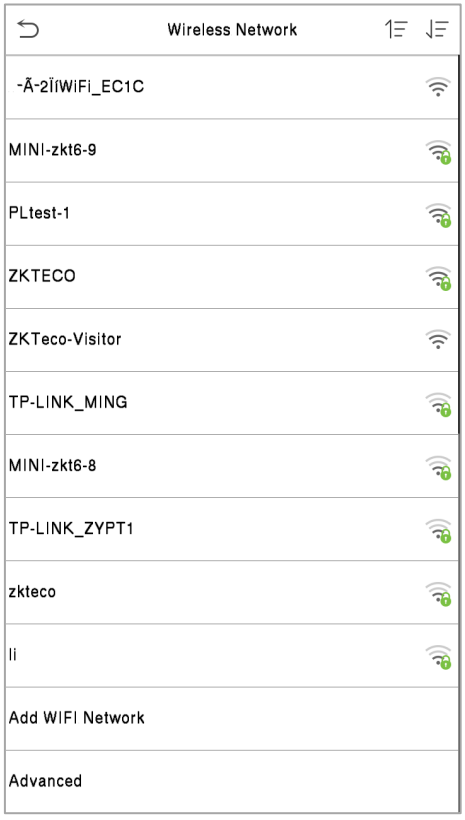


The connection succeeds, with status displayed on the icon bar.

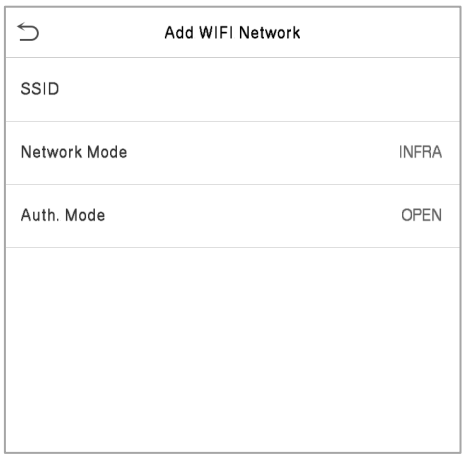
5.3.1 Adding Wi-Fi Network

If the desired Wi-Fi network is not in the list, you can add the Wi-Fi network manually.

Tap **Page Down** and **Add Wi-Fi Network**.



Enter the parameters of Wi-Fi network. (The added network must exist.)



After adding, find the added Wi-Fi network in list and connect to the network in the above way.

5.3.2 Advanced Options

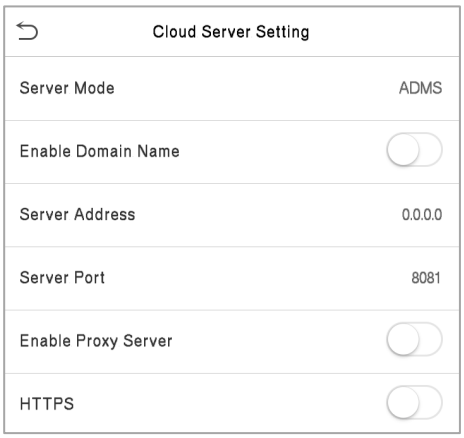
This is used to set Wi-Fi network parameters.

Menu	Descriptions
DHCP	Short for 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.

5.4 Cloud Server Setting

This represents the settings used for connecting the ADMS server.

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



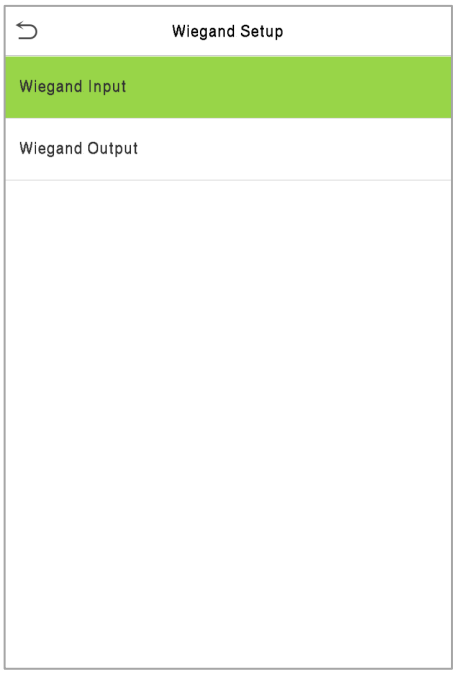
Menu		Description
Enable Domain Name	**Server Address**	When this function is enabled, the domain name mode "http://..." will be used, such as http://www.XYZ.com, while "XYZ" denotes the domain name when this mode is turned ON.
Disable Domain Name	**Server Address**	IP address of the ADMS server.
	Server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

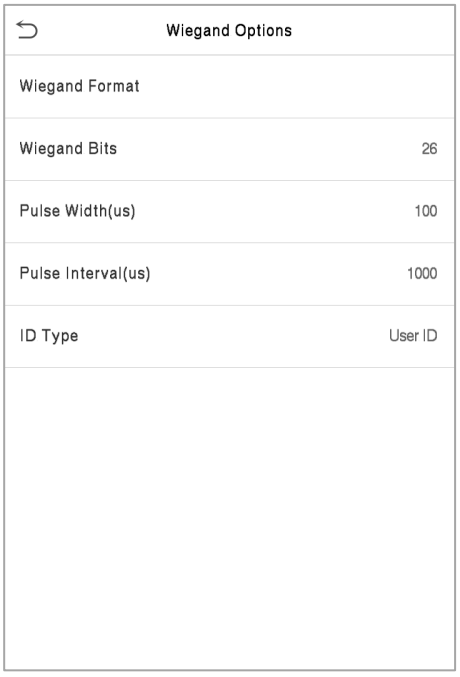
5.5 Wiegand Setup

The menu is used to set the Wiegand Input & Output parameters.

Click **Wiegand Setup** on the Comm. Settings interface.

Wiegand Input





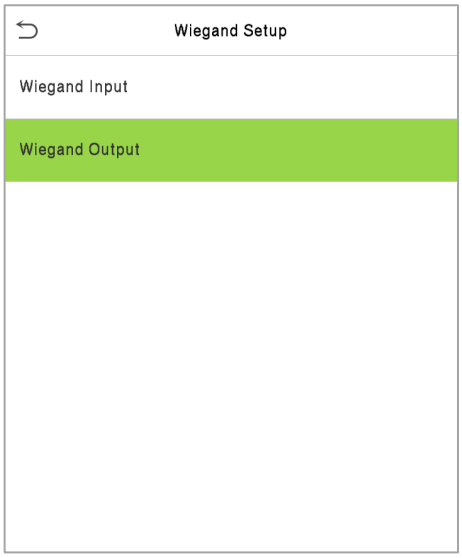
Menu	Descriptions
Wiegand Format	Values range from 26 bits, 34 bits, 36 bits, 37 bits, and 50 bits.
Wiegand Bits	Number of bits of Wiegand data.
Pulse Width(us)	The value of the pulse width sent by Wiegand is 100 microseconds by default, which can be adjusted within the range of 20 to 100 microseconds.
Pulse Interval(us)	The default value is 1000 microseconds, which can be adjusted within the range of 200 to 20000 microseconds.
ID Type	Select between the User ID and Badge number.

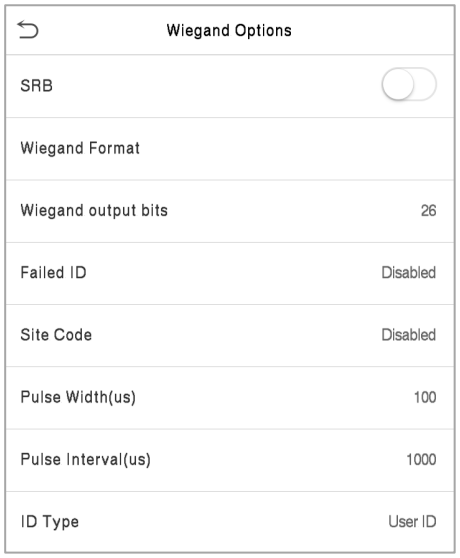
Definitions of various common Wiegand formats:

Wiegand Format	Definitions
Wiegand26	ECCCCCCCCCCCCCCCCCCCCCCCCO Consists of 26 bits of binary code. The 1st bit is the even parity bit of the 2nd to 13th bits, while the 26th bit is the odd parity bit of the 14th to 25th bits. The 2nd to 25th bits are the card numbers.
Wiegand26a	ESSSSSSSSCCCCCCCCCCCCCCCCO Consists of 26 bits of binary code. The 1st bit is the even parity bit of the 2nd to 13th bits, while the 26th bit is the odd parity bit of the 14th to 25th bits. The 2nd to 9th bits are the site codes, while the 10th to 25th bits are the card numbers.
Wiegand34	ECCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCO Consists of 34 bits of binary code. The 1st bit is the even parity bit of the 2nd to 17th bits, while the 34th bit is the odd parity bit of the 18th to 33rd bits. The 2nd to 25th bits are the card numbers.
Wiegand34a	ESSSSSSSSCCCCCCCCCCCCCCCCCCCCCCCCO Consists of 34 bits of binary code. The 1st bit is the even parity bit of the 2nd to 17th bits, while the 34th bit is the odd parity bit of the 18th to 33rd bits. The 2nd to 9th bits are the site codes, while the 10th to 25th bits are the card numbers.
Wiegand36	OFFFFFFFFFFFFFFFFCCCCCCCCCCCCCCCCMME Consists of 36 bits of binary code. The 1st bit is the odd parity bit of the 2nd to 18th bits, while the 36th bit is the even parity bit of the 19th to 35th bits. The 2nd to 17th bits are the device codes. The 18th to 33rd bits are the card numbers, and the 34th to 35th bits are the manufacturer codes.
Wiegand36a	EFFFFFFFFFFFFFFFFFCCCCCCCCCCCCCCCCO Consists of 36 bits of binary code. The 1st bit is the even parity bit of the 2nd to 18th bits, while the 36th bit is the odd parity bit of the 19th to 35th bits. The 2nd to 19th bits are the device codes, and the 20th to 35th bits are the card numbers.
Wiegand37	OMMMMSSSSSSSSSSSCCCCCCCCCCCCCCCCCCCE Consists of 37 bits of binary code. The 1st bit is the odd parity bit of the 2nd to 18th bits, while the 37th bit is the even parity bit of the 19th to 36th bits. The 2nd to 4th bits are the manufacturer codes. The 5th to 16th bits are the site codes, and the 21st to 36th bits are the card numbers.
Wiegand37a	EMMMFFFFFFFFFSSSSSSCCCCCCCCCCCCCCCCO Consists of 37 bits of binary code. The 1st bit is the even parity bit of the 2nd to 18th bits, while the 37th bit is the odd parity bit of the 19th to 36th bits. The 2nd to 4th bits are the manufacturer codes. The 5th to 14th bits are the device codes, and15th to 20th bits are the site codes, and the 21st to 36th bits are the card numbers.

Wiegand50	ESSSSSSSSSSSSSSSCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCO Consists of 50 bits of binary code. The 1st bit is the even parity bit of the 2nd to 25th bits, while the 50th bit is the odd parity bit of the 26th to 49th bits. The 2nd to 17th bits are the site codes, and the 18th to 49th bits are the card numbers.
"C "denotes the card number; "**E"** denotes the even parity bit; "**O"** denotes the odd parity bit; **"F**" denotes the facility code; "**M"** denotes the manufacturer code; "**P"** denotes the parity bit; and "**S"** denotes the site code.	

Wiegand output



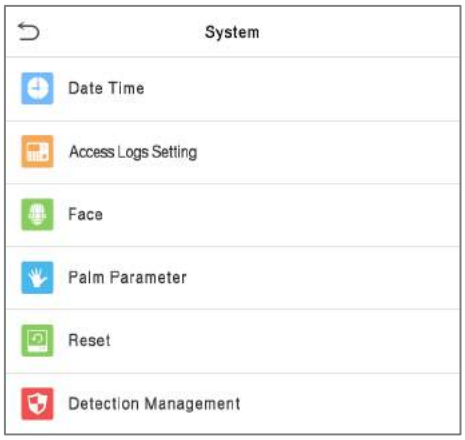


Menu	Descriptions
SRB	When SRB is enabled, the lock is controlled by the SRB to prevent the lock from being opened due to device removal.
Wiegand Format	Values range from 26 bits, 34 bits, 36 bits, 37 bits, and 50 bits.
Wiegand output bits	After choosing the Wiegand format, you can select one of the corresponding output digits in the Wiegand format
Failed ID	If the verification is failed, the system will send the failed ID to the device and replace the card number or personnel ID with the new ones.
Site Code	It is similar to the Device ID. The difference is that a site code can be set manually, and is repeatable in a different device. The valid value ranges from 0 to 256 by default.
Pulse Width(us)	The pulse width represents the changes in the quantity of electric charge with high-frequency capacitance regularly within a specified time.
Pulse Interval(us)	The time interval between pulses.
ID Type	Select between the User ID and Badge number.

6 System Settings

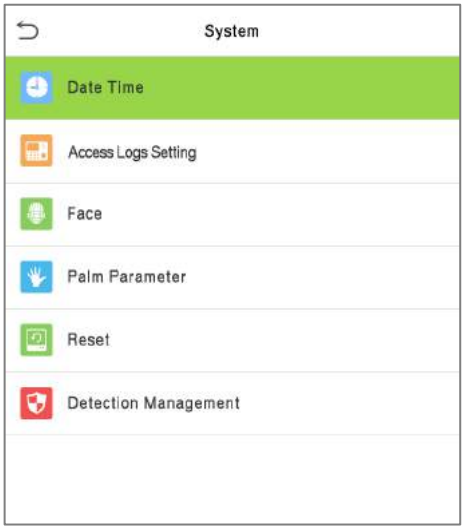
The System Settings is used to set the related system parameters to optimize the performance of the device.

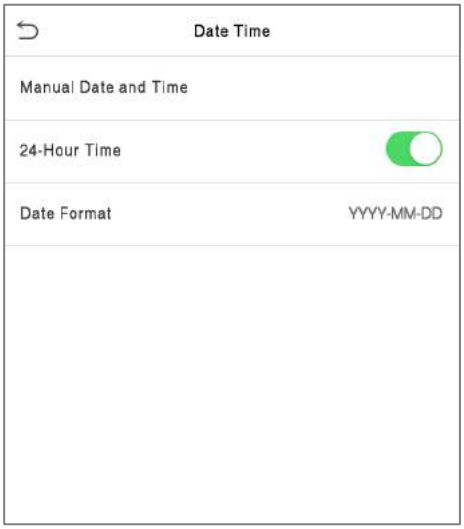
Click **System** on the main menu interface.



6.1 Date and Time

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





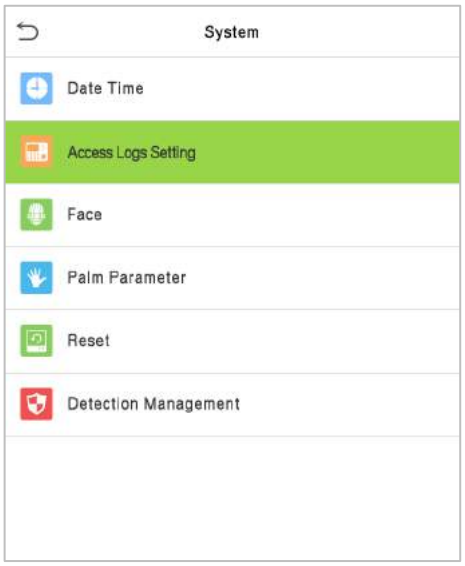
1. You can manually set date and time and click **Confirm** to save.
2. Click 24-Hour Time to enable or disable this format and select the date format.

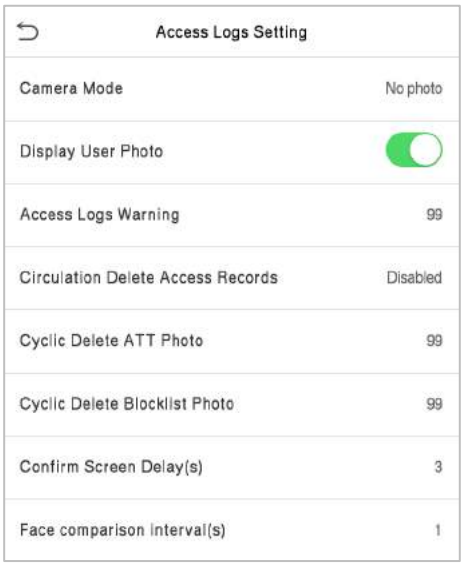
When restoring the factory settings, the time (24-hour) and date format (YYYY-MM-DD) can be restored, but the device date and time cannot be restored.

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 device will change to 18:30, January 1, 2020.

6.2 Access Logs Setting

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



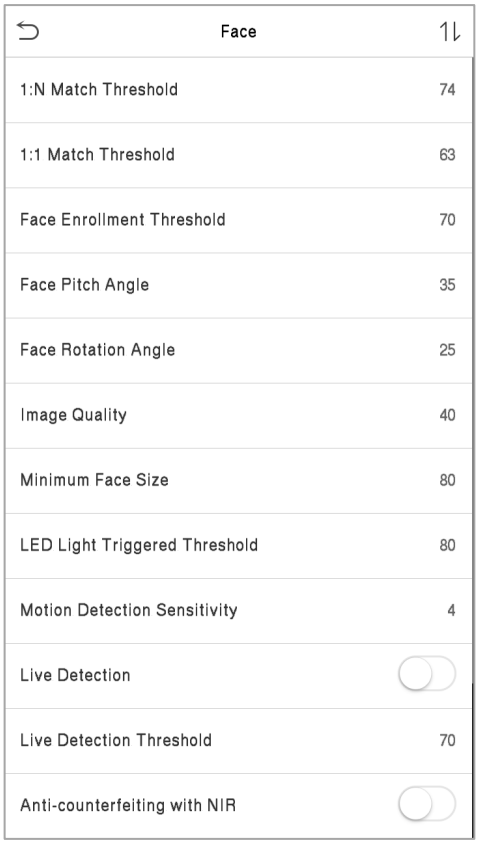


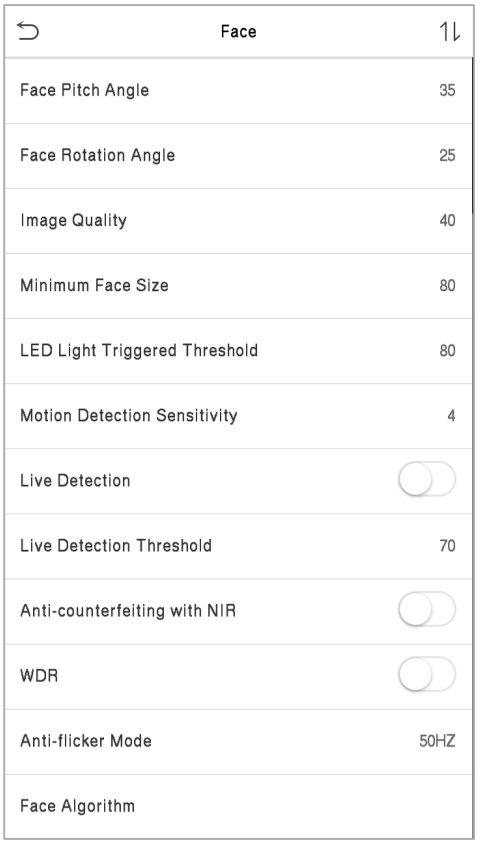
Menu	Description
Camera Mode	Whether to capture and save the current snapshot image during verification. There are 5 modes: **No Photo:** No photo is taken during user verification. **Take photo, no save:** Photo is taken but is not saved during verification. **Take photo and save:** Photo is taken and saved during verification. **Save on successful verification:** Photo is taken and saved for each successful verification. **Save on failed verification:** Photo is taken and saved during each failed verification.
Display User Photo	Whether to display the user photo when the user passes verification.
Access Logs Warning	When the remaining record space reaches a preset value, the device will automatically display a warning. Users may disable the function or set a valid value between 1 and 9999.
Circulation Delete Access Records	When access records have reached the 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 attendance photos have reached the 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.
Confirm Screen Delay(s)	The time duration that the success message is displayed on the screen. The valid range is1 to 9 seconds.

Face comparison Interval (s)	To set the facial template matching time interval as needed. The valid time range is 0~9 seconds.

6.3 Face Parameters

Click **Face** on the System interface.





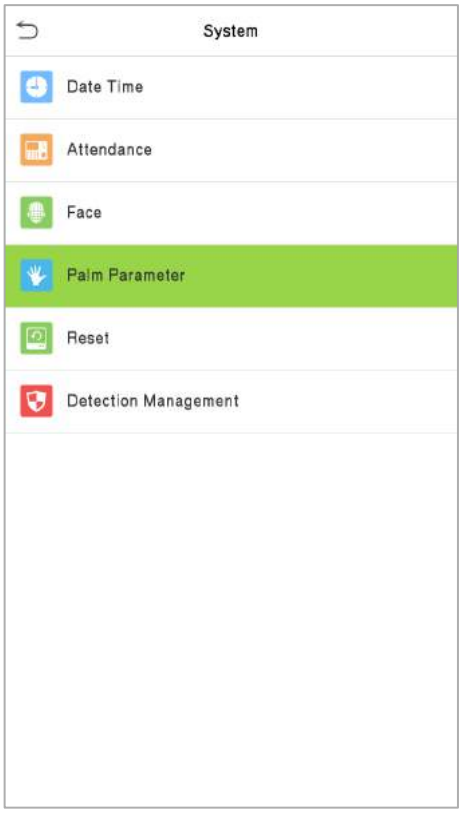
Menu	Description
1:N (One to Many) Match Threshold	Under 1:N (One to Many) verification mode, the verification will only be successful when the similarity between the acquired facial image and all registered facial templates is greater than the set value. The valid value ranges from 65 to 120. The higher the thresholds, the lower the misjudgment rate, the higher the rejection rate, and vice versa. The default value of 75 is recommended.
1:1 (One to One) Match Threshold	Under 1:1 (One to One) 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. 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.

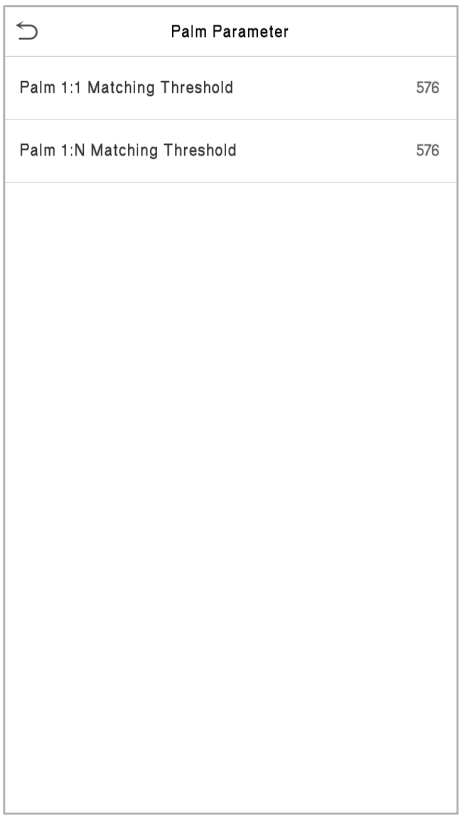
Face Enrollment Threshold	During face enrollment, 1:N (One to Many) comparison is used to determine whether the user has already registered before. When the similarity between the acquired facial image and all registered facial templates is greater than this threshold, it indicates that the face has already been registered.
Face Pitch Angle	The pitch angle tolerance of a face for facial registration and comparison. 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.
Face Rotation Angle	The rotation angle tolerance of a face for facial template registration and comparison. 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.
Image Quality	Image quality for facial registration and comparison. The higher the value, the clearer the image will be.
Minimum Face Size	Required for facial registration and comparison. If an object's size is smaller than this set value, the object will be filtered and not recognized as a face. This value can be understood as the face comparison distance. The farther the person is, the smaller the face is, and the smaller face pixel will be obtained by the algorithm. Therefore, adjusting this parameter can adjust the farthest comparison distance of faces. When the value is 0, the face comparison distance is not limited.
LED Light Triggered Threshold	This value controls turn on and off of 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	Helping to judge 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 environments.

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	Used to update or view the Major Version and Minor Version of the face algorithm, and to pause the update of the facial template .
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.

6.4 Palm Parameters

Click **Palm** on the System interface.



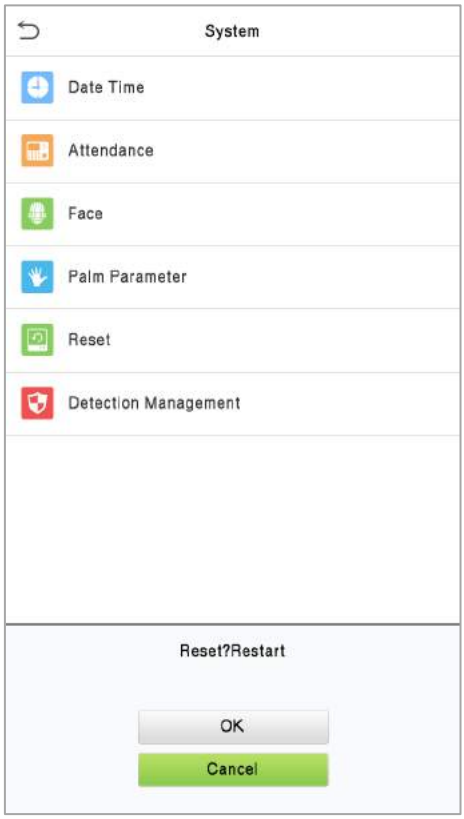


Menu	Description
Palm 1:1 (One to One) Matching Threshold	Under 1:1 (One to One) Verification Method, only when the similarity between the verifying palm and the user's registered palm is greater than this value, the verification succeeds.
Palm 1:N (One to Many) Matching Threshold	Under 1:N (One to Many) Verification Method, only when the similarity between the verifying palm and all registered palm is greater than this value, the verification succeeds.

6.5 Factory Reset

This option restores the device, such as communication settings and system settings, to factory settings (does not clear registered user data).

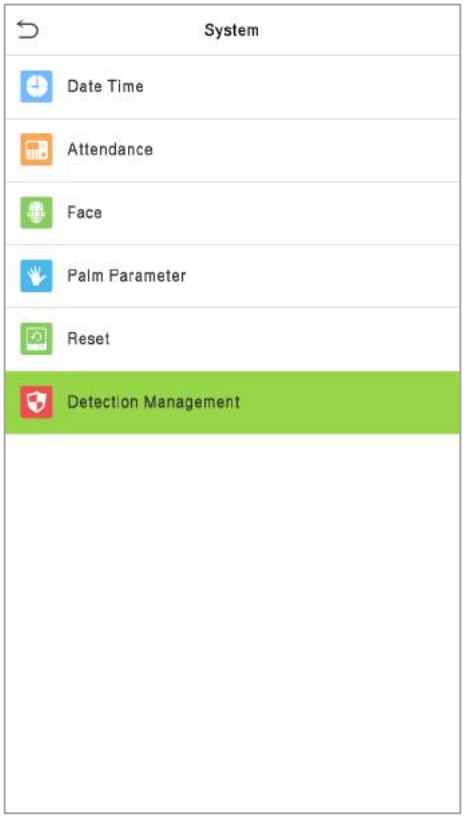
Click **Reset** on the System interface.

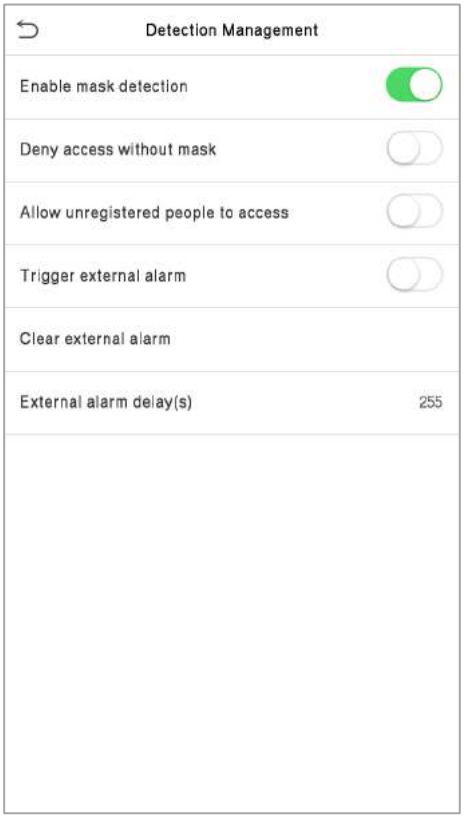


Click **OK** to reset.

6.6 Detection Management

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





Menu	Description
Enable mask detection	To enable or disable the mask detection function. When it's enabled, the device will identify whether the user is wearing a mask or not during verification.
Deny access without mask	To enable or disable the deny access without mask function. When it's enabled, even if the body temperature is normal, the person who does not wear a mask will not allow the person to enter.
Allow unregistered people to access	To enable or disable the unregistered people to access function. When enabled, as long as the person who passes the detection, the device allows the personnel to enter without registration.
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.

7 Personalize Settings

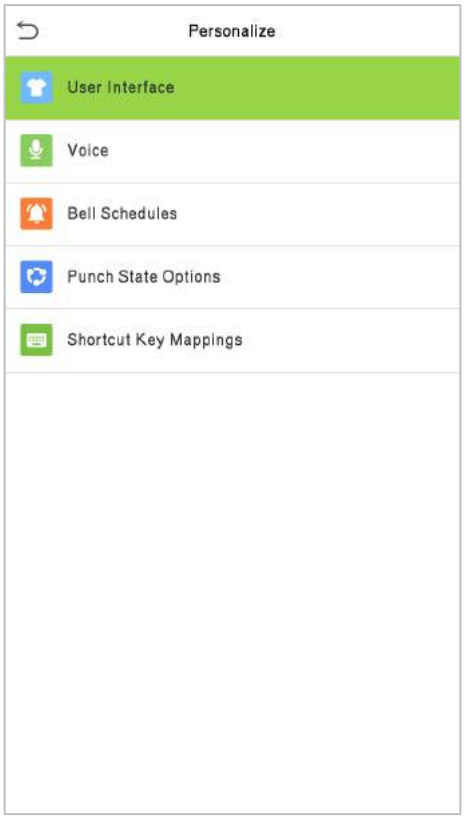
You may customize the interface settings, audio, and bell.

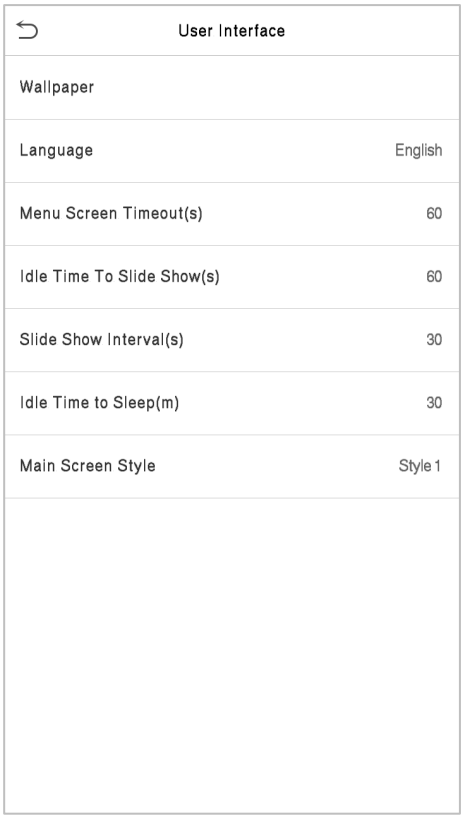
Click **Personalize** on the main menu interface.

7.1 Interface Settings

You can customize the display style of the main interface.

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



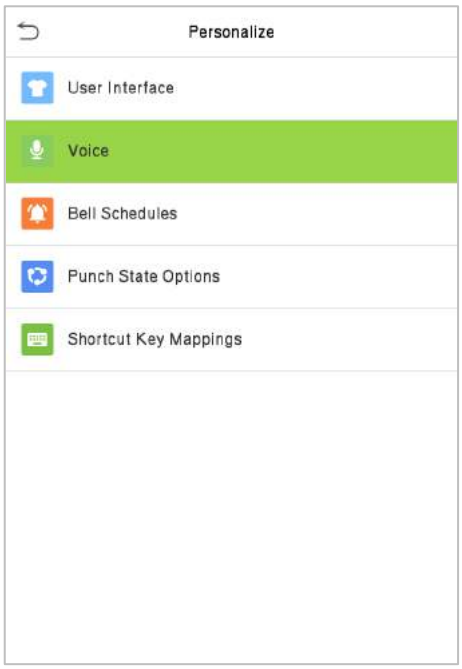


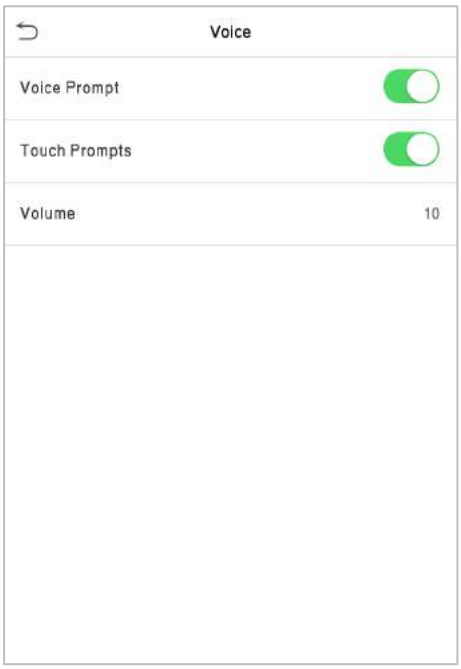
Menu	Description
Wallpaper	To select the main screen wallpaper according to your personal preference.

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 the standby mode. Press any key or finger to resume the normal working mode. You can disable this function or set a value within 1-999 minutes.
Main Screen Style	To select the main screen style according to your personal preference.

7.2 Voice Settings

Click **Voice** on the Personalize interface.

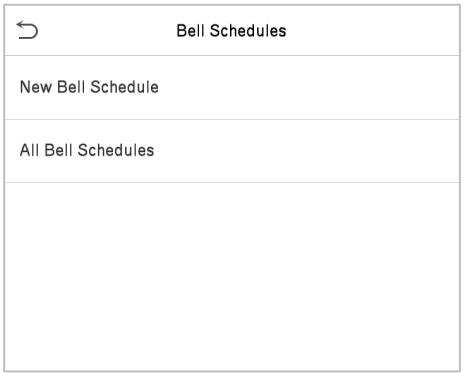




Menu	Description
Voice Prompt	Select whether to enable voice prompts during operation.
Touch Prompt	Select whether to enable keypad sounds.
Volume	Adjust the volume of the device; valid value: 0 to 100.

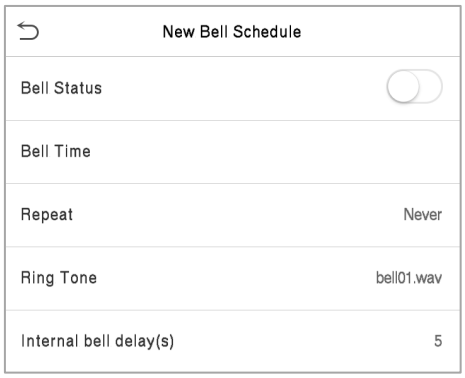
7.3 Bell Schedules

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



Add a bell

1. Click **New Bell Schedule** to enter the adding 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. Valid values range from 1 to 999 seconds.

2. 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.

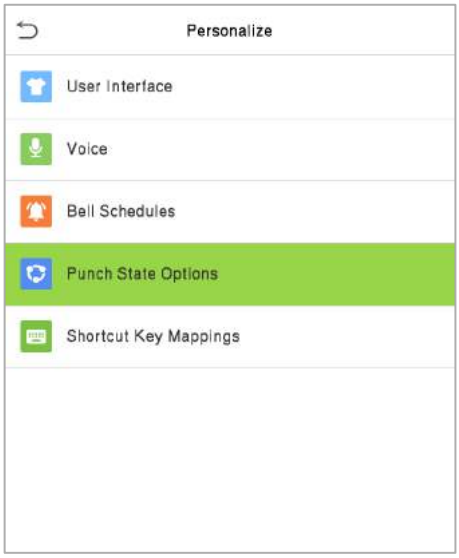
Delete a bell

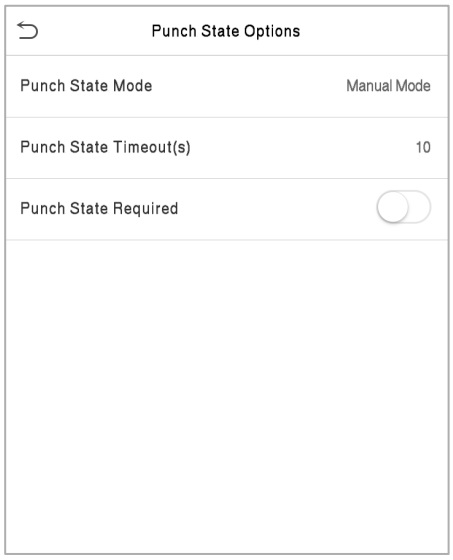
On the All Bell Schedules interface, tap the bell to be deleted.

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

7.4 Punch States Options

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



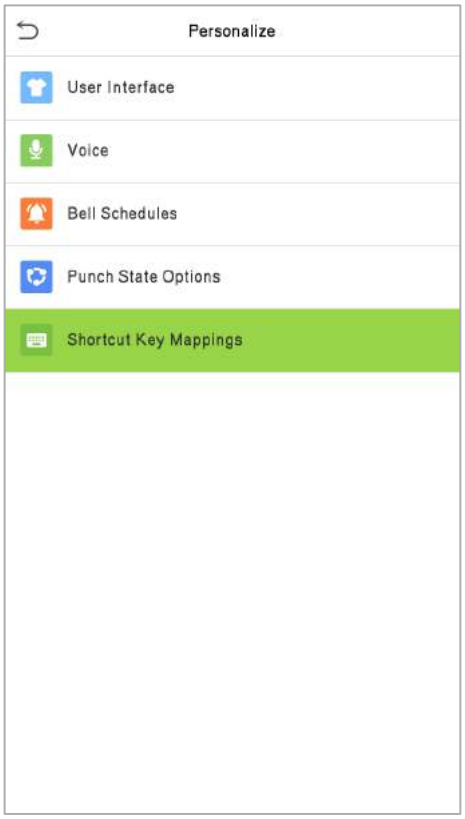


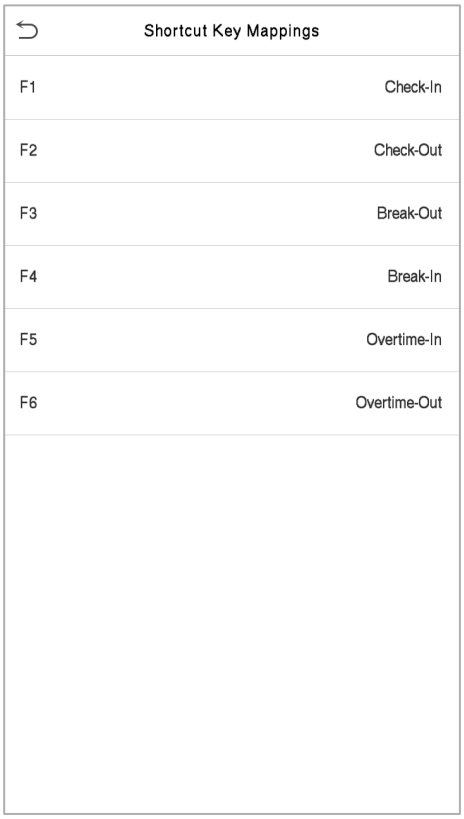
Menu	Description
Punch State Mode	Select a punch state mode, which can be: **Off:** To disable the punch state key function. The punch state key set under **Shortcut Key Mappings** menu will become invalid. **Manual Mode:** To switch the punch state key manually, and the punch state key will disappear after **Punch State Timeout**. **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. **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 the timeout, the manually switching punch state key will become an auto-switching punch state key. **Manual Fixed Mode:** After the punch state key is manually switched, the punch state key will remain unchanged until being manually switched next time. **Fixed Mode:** Only the fixed punch state key will be shown, and it cannot be switched.
Punch State Timeout(s)	Is the timeout which of the punch state key displays in the main interface.
Punch State Required	Used to set whether the punch status must be selected during verification.

7.5 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 quickly display.

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

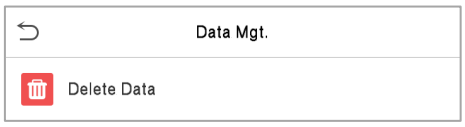




8 Data Management

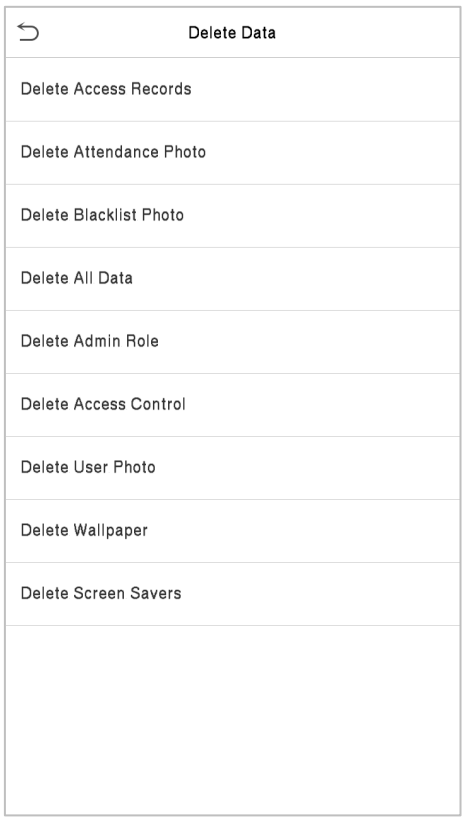
The Data Management is used to delete the relevant data in the device.

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



8.1 Delete Data

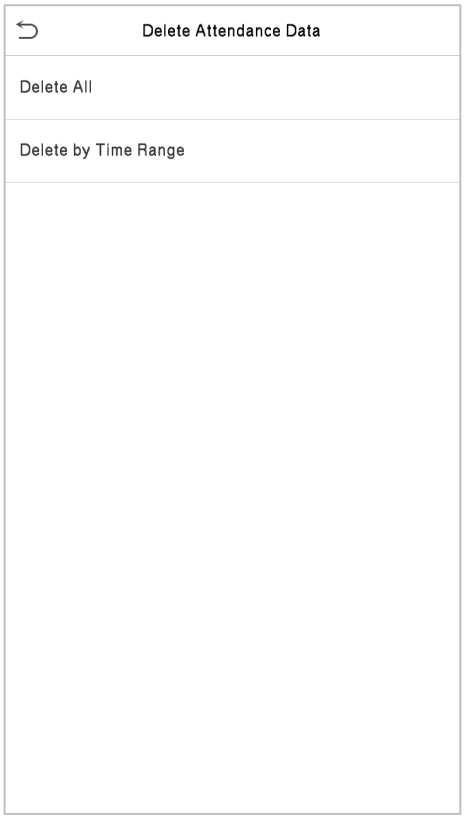
Click **Delete Data** on the Data Mgt. interface.



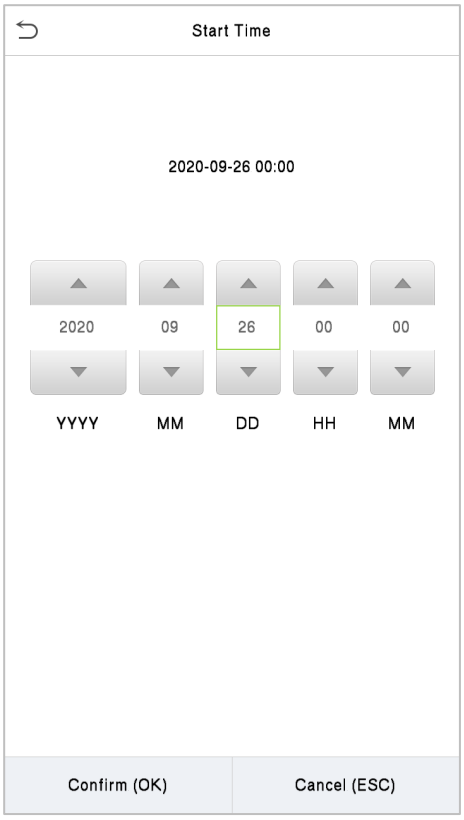
Menu	Description
Delete Access Records	To delete the attendance data/access records conditionally.
Delete Attendance Photo	To delete the attendance photos of the designated personnel.
Delete Blocklist Photo	To delete the photos taken during verifications those failed.
Delete All Data	To delete information and attendance logs/access records of all registered users.
Delete Admin Role	To remove the 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 block listed photos, you may select Delete All or Delete by Time Range. If you select Delete by Time Range, you need to set a specific time range to delete all data with the period.



Select Delete by Time Range

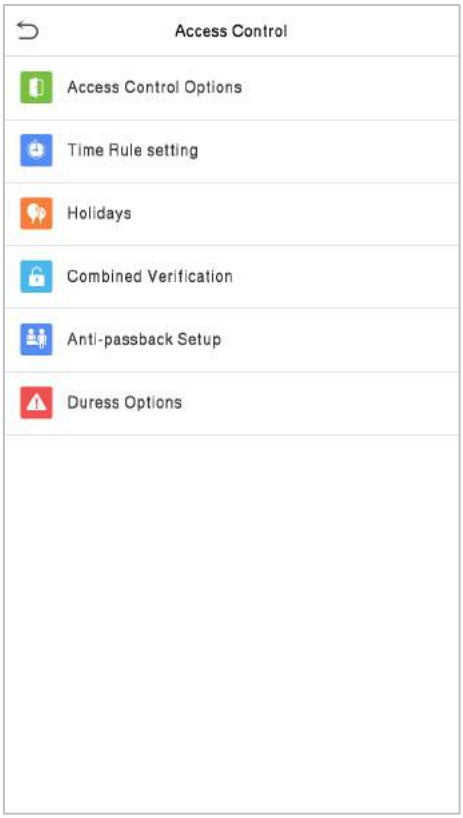


Set the time range and click OK

9 Access Control

Access Control is used to set the schedule of a door opening, locks control and other parameter settings related to access control.

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



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

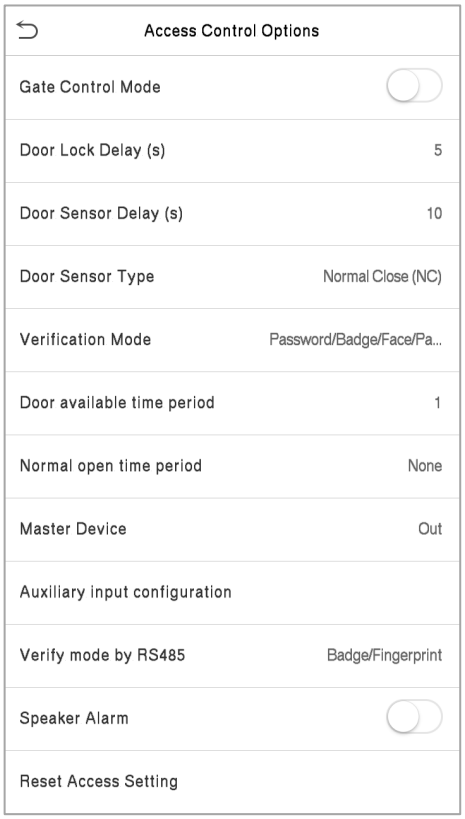
1. The current door unlock time should be within any valid time zone of the user time period.
2. The user's group must be in the door unlock combination (when there are other groups in the same access combo, verification of members of those groups are also required to unlock the door).

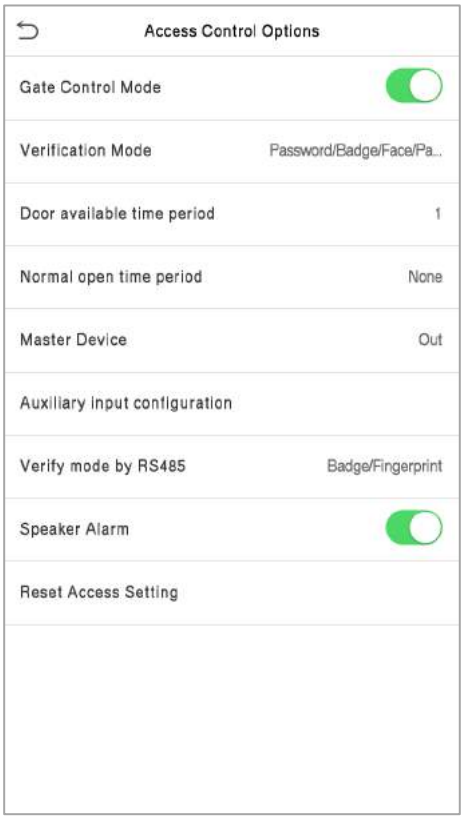
In default settings, new users are allocated into the first group with the default group time zone and access combo as "1" and set in an unlocking state.

9.1 Access Control Options

This option is used to set the parameters of the control lock of the device and the related parameters.

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, on this interface will remove Door lock relay, Door sensor relay and Door sensor type function.
Door Lock Delay (s)	The length of time that the device controls the electric lock to be unlocked. Valid value: 1 to10 second; 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/Badge/Face/Palm, User ID only, Password, Badge only, Password+Badge, Password/Badge, Face only, Face+Password, Face+Badge, Palm, Palm+Badge, and Palm+Face.

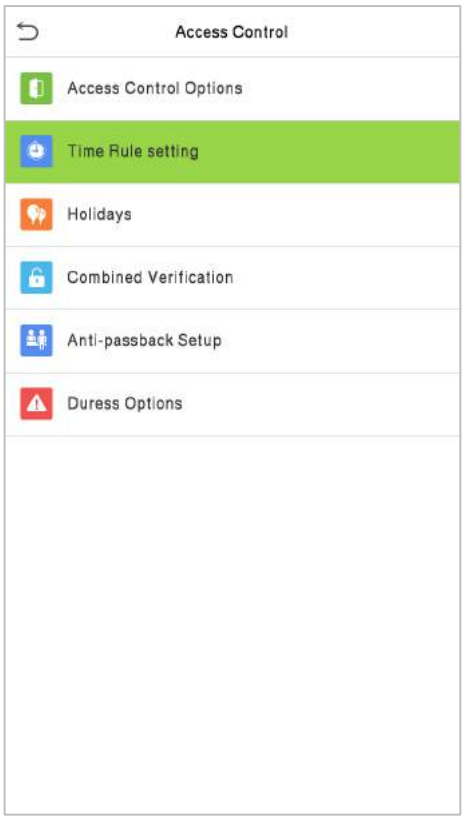
Door available time period	To set a time period for the door, so that the door is accessible only during this time period.
Master Device	When setting up the master and slave, the status of the master can be set to out or in. **Out:** The record verified on the host is the exit record. **In:** The record 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.
Verify mode by RS485	To set the verify mode by RS485. Optional for Badge only, Badge+Password.
Speaker Alarm	To transmit a sound alarm or disassembly 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, a master device, and alarm. However, erased access control data in Data Mgt. is excluded.

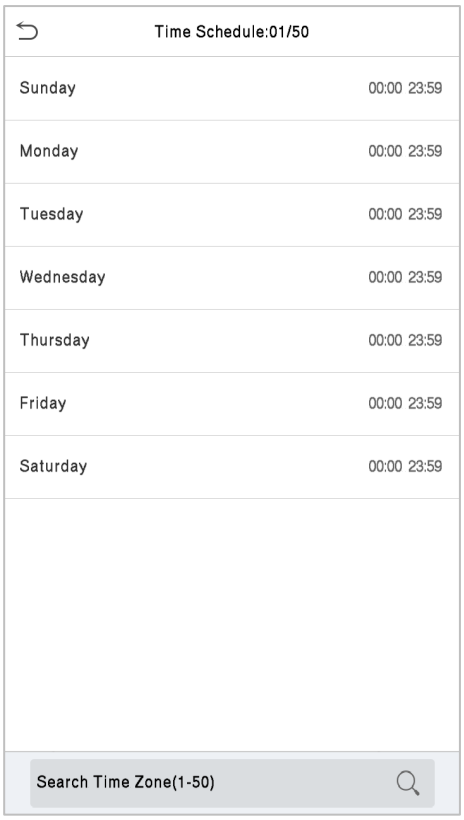
9.2 Time Schedule

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.

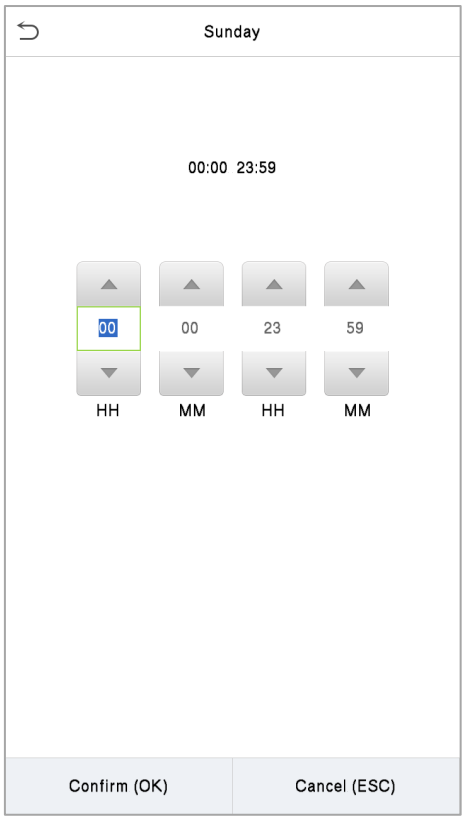
Click **Time Rule Setting** on the Access Control interface.

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 are 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.

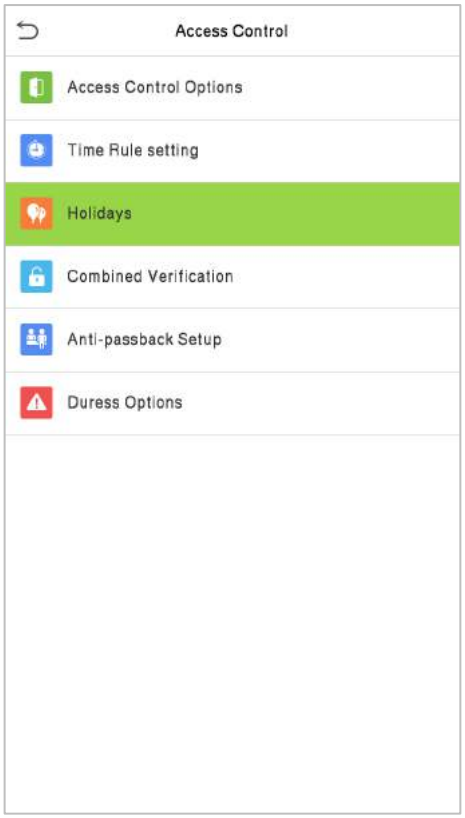
2) The effective time period to unlock the door: open all day (00:00~23:59) or when the ending time is later than the starting time, such as 08:00~23:59.

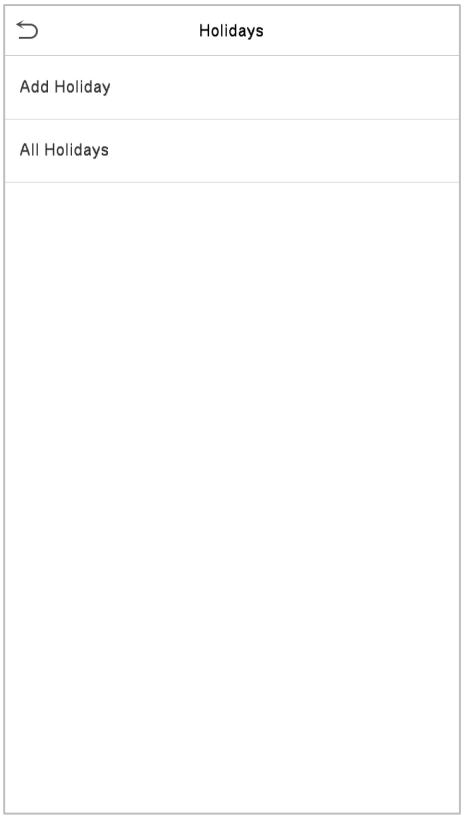
3) The default time zone 1 indicates that the door is open all day long.

9.3 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 applies to all the employees, and the user will be able to open the door during the holidays.

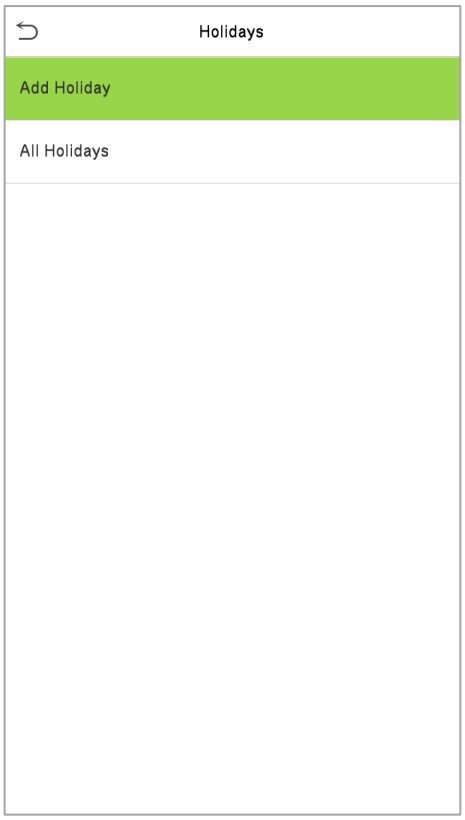
Click **Holidays** on the Access Control interface.

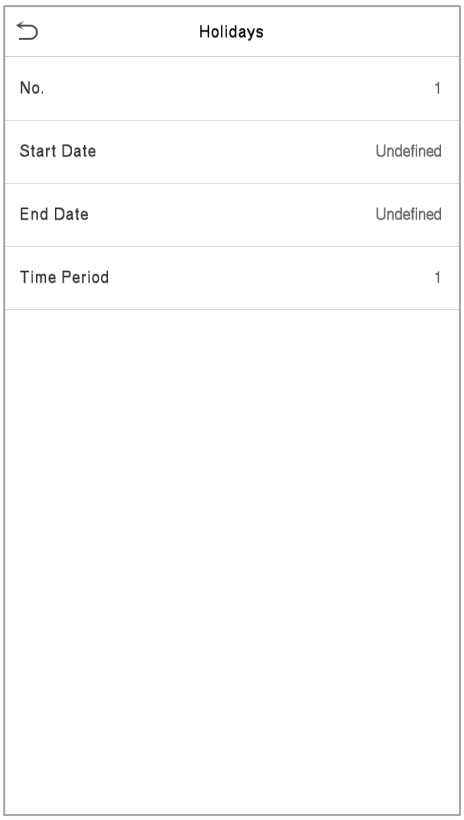




Add a New Holiday

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

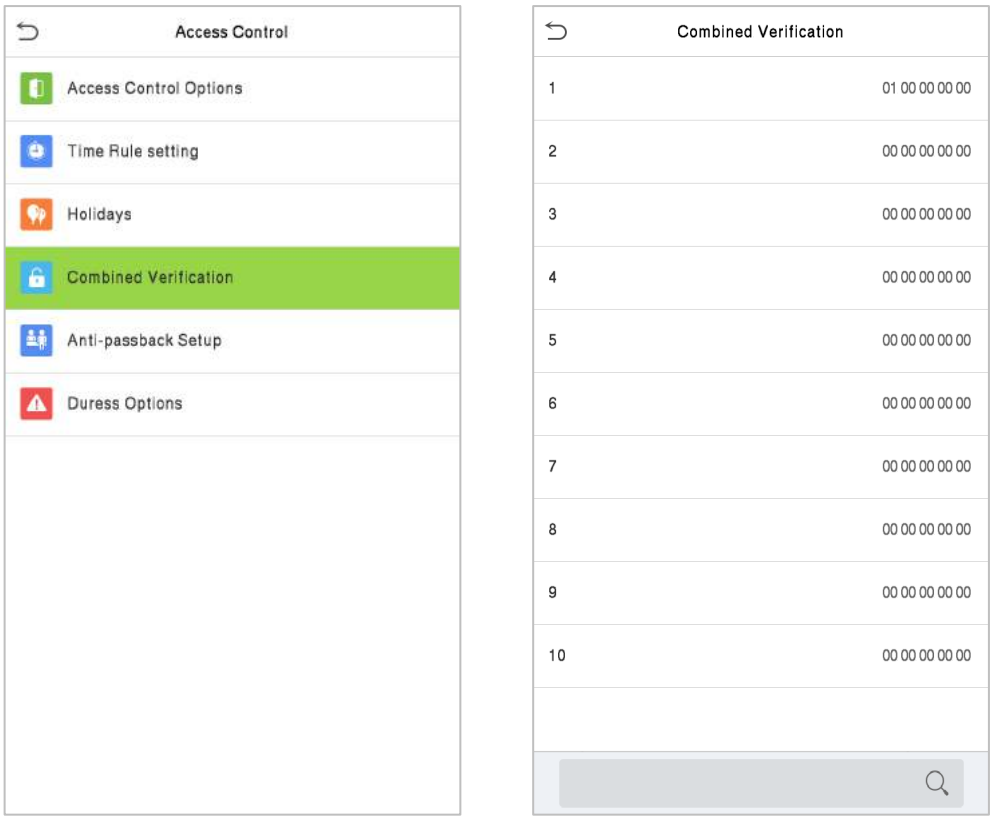
On the Holidays interface, select a holiday item to be deleted and click **Delete**. Click **OK** to confirm the deletion. After deletion, this holiday is no longer displayed on All Holidays interface.

9.4 Combined Verification Settings

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

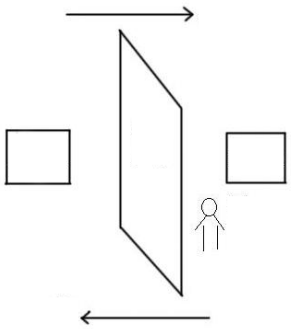
Delete a door-unlocking combination

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

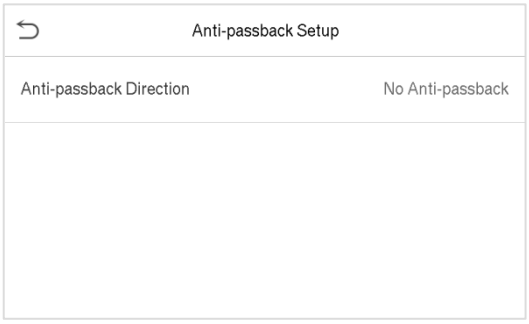
9.5 Anti-Passback Setup

It is possible that users may be followed by some 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.

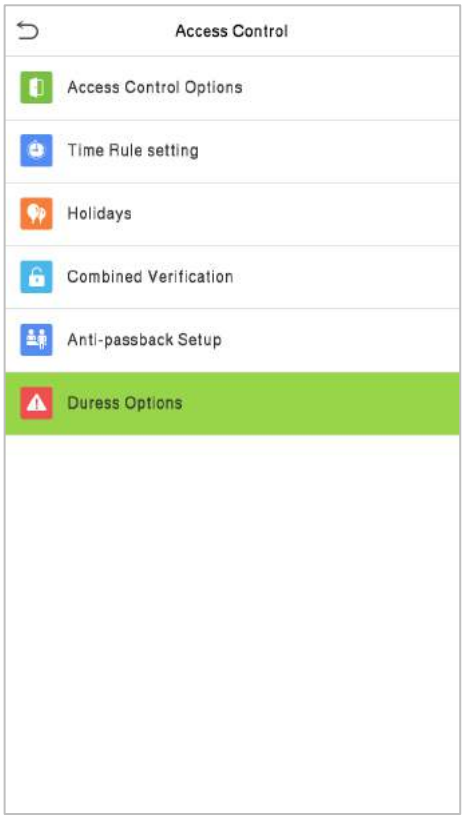


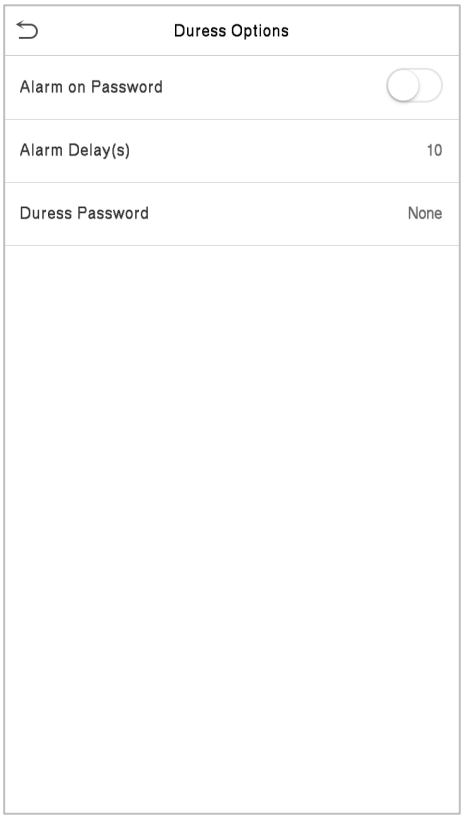
Menu Name	Description
Anti-passback direction	**No Anti-passback:** Anti-passback function is disabled, which means successful verification through either master device or slave device can unlock the door. Attendance state is not saved. **Out Anti-passback:** After a user checks out, only if the last 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. **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. **In/Out Anti-passsback:** 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.

9.6 Duress Options Settings

If a user activated the duress verification function with specific authentication method(s), when he/she is under coercion 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.



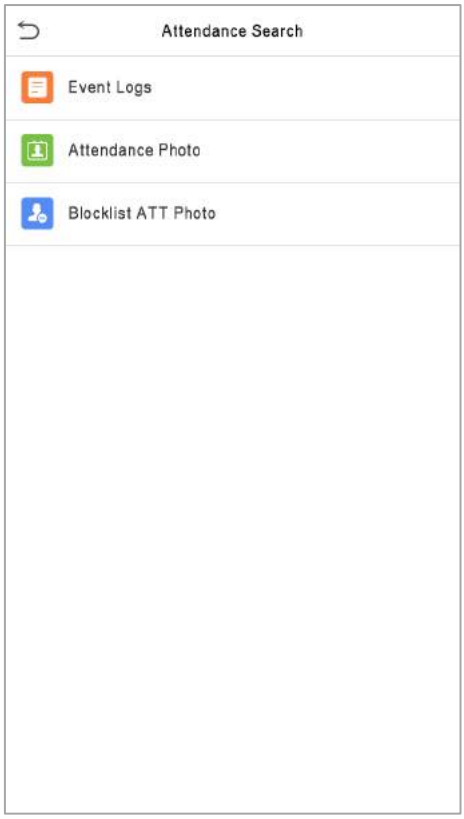


Menu	Description
Alarm on Password	When a user uses the password verification method, an alarm signal will be generated; otherwise there will be no alarm signal.
Alarm Delay (s)	Alarm signal will not be transmitted until the alarm delay time is elapsed. The value ranges from 1 to 999 seconds.
Duress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

10 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.

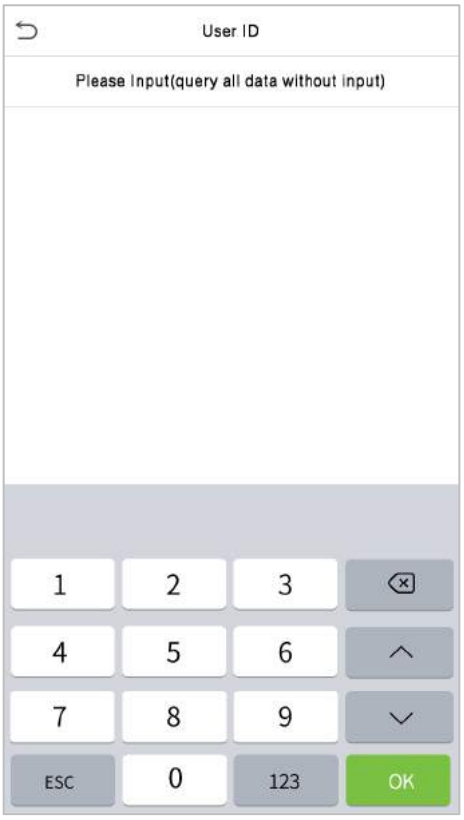
Click **Attendance Search** on the main menu interface.



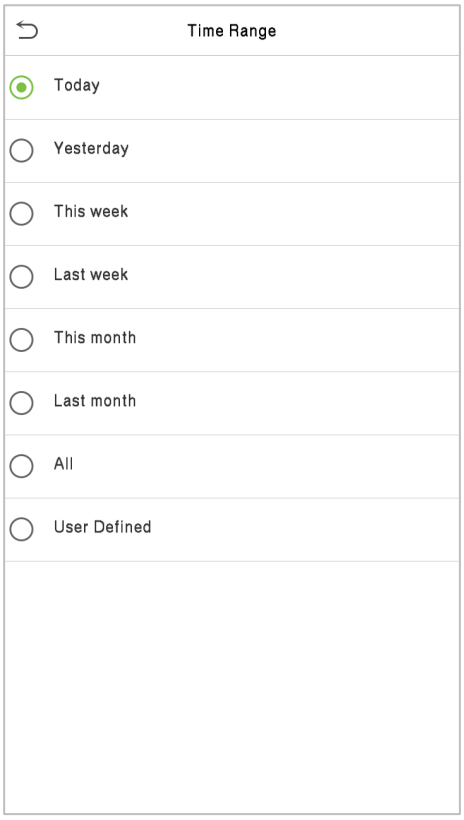
The process of searching for attendance and blocklist photos is similar to that of searching for event logs. The following is an example of searching for event logs.

On the Attendance Search interface, click **Event Logs**.

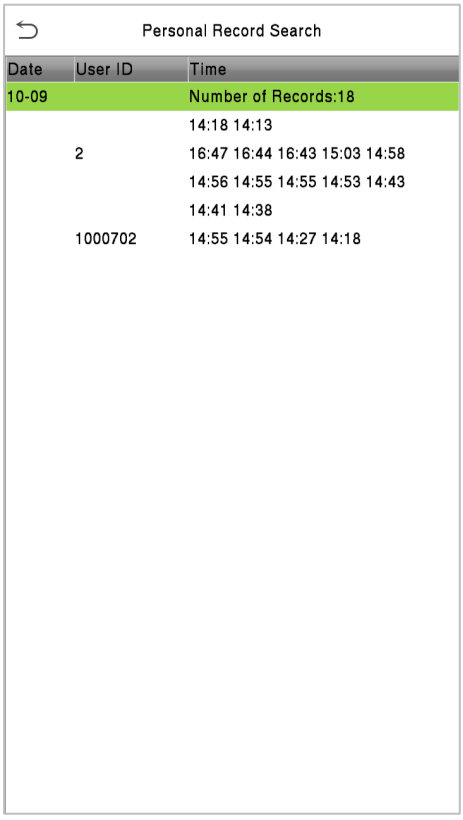
1. Enter the user ID to be searched and click OK. If you want to search for records of all users, click OK without entering any user ID.



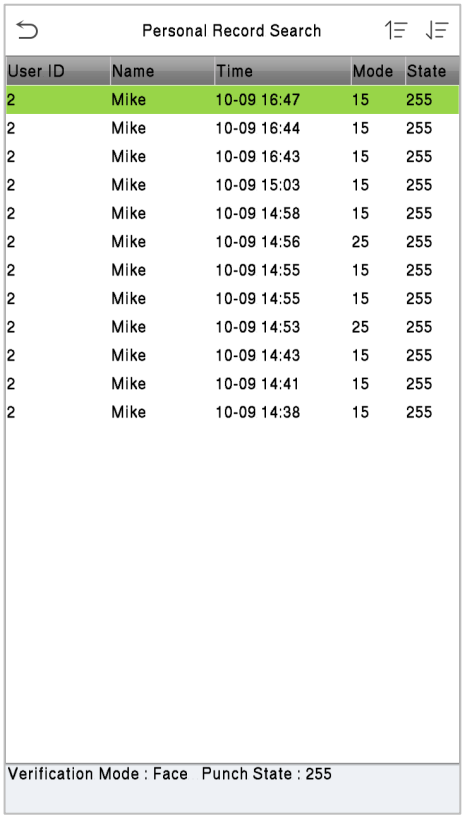
2. Select the time range in which the records you want to search for.



3. The record search succeeds. Click the record in green to view its details.



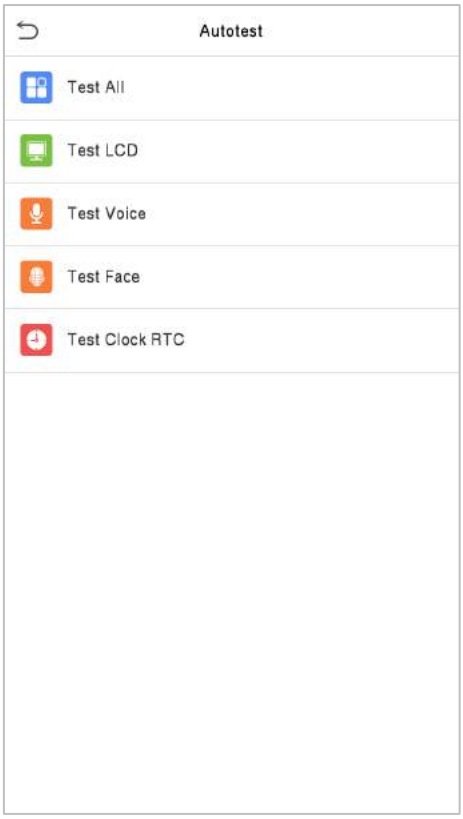
4. The below figure shows the details of the selected record.



11 Autotest

To automatically test whether all modules in the device function properly, which include the LCD, Audio, Camera and real-time clock (RTC).

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

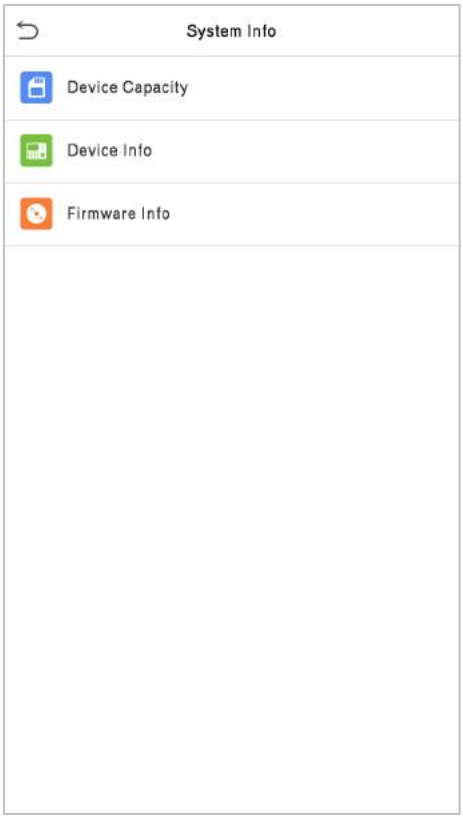


Menu	Description
Test All	To automatically test whether the LCD, audio, camera and RTC are normal.
Test LCD	To automatically test the display effect of LCD screen by displaying full-color, pure white, and pure black to check whether the screen displays the colors normally.
Test Voice	To automatically test whether the audio files stored in the device are complete and the voice quality is good.
Test Face	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.

12 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.
Firmware Info	Displays the Firmware version and other version information of the device.

13 Connect to ZKBioAccess Software

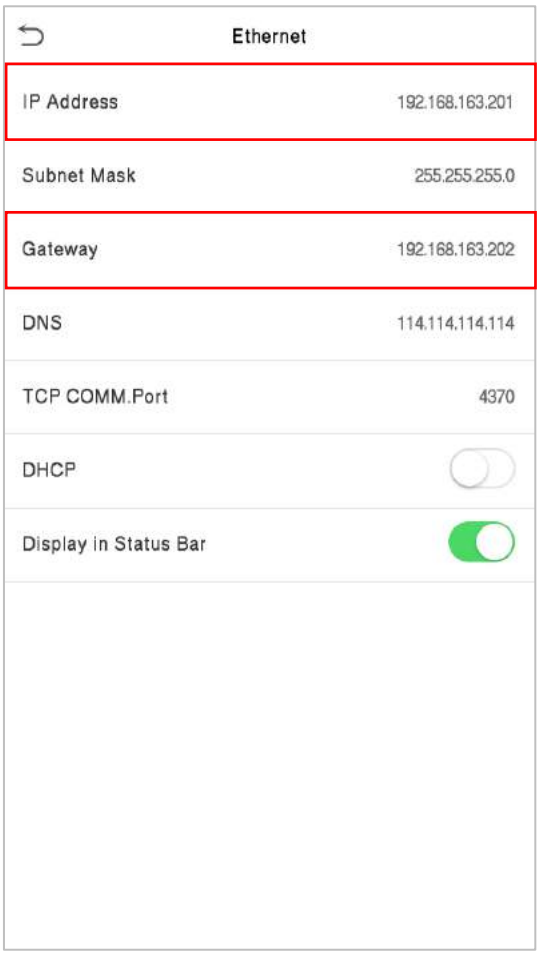
13.1 Set the Communication Address

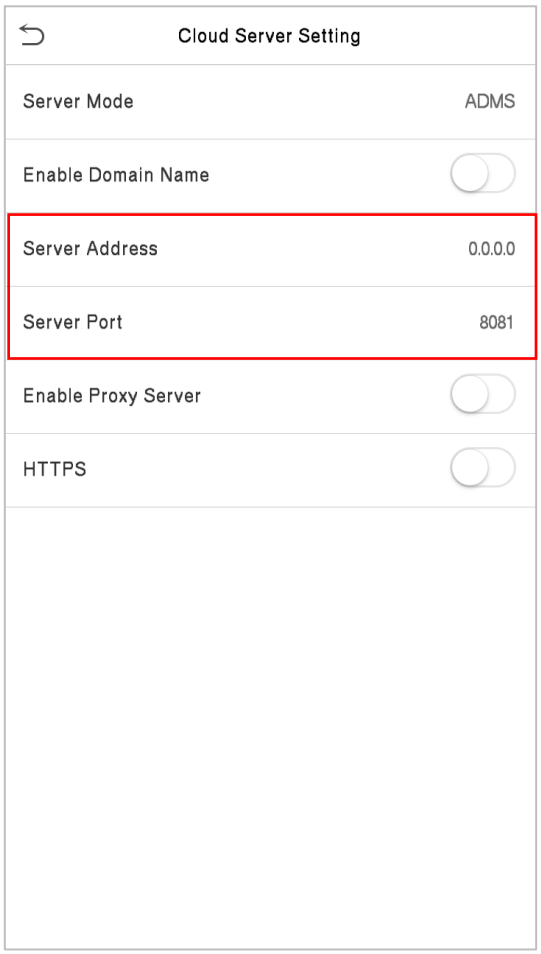
Device side

1. Click **COMM.**> **Ethernet** in the main menu to set the IP address and Gateway of the device. (**Note:** The IP address should be able to communicate with the ZKBioAccess 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 ZKBioAcess server.

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





Software side

Login to ZKBioAccess software, click **System**>**Communication**>**Communication Monitor** to set the ADMS Service Port, as shown in the figure below:

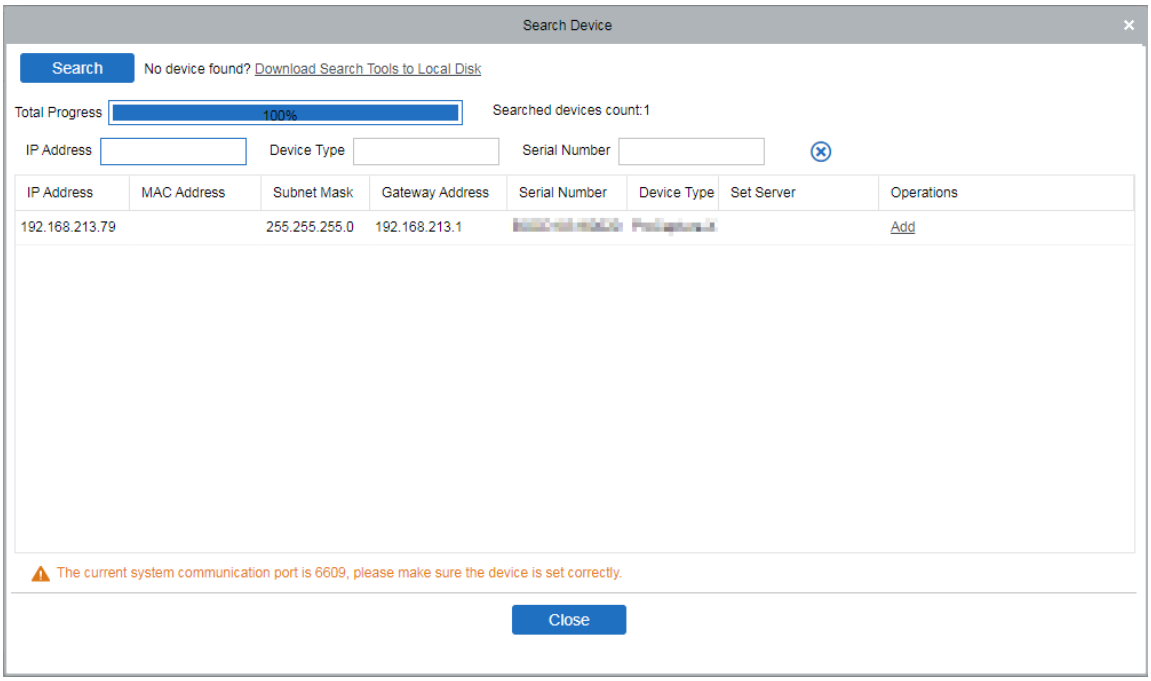
13.2 Add Device to the Software

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**……].

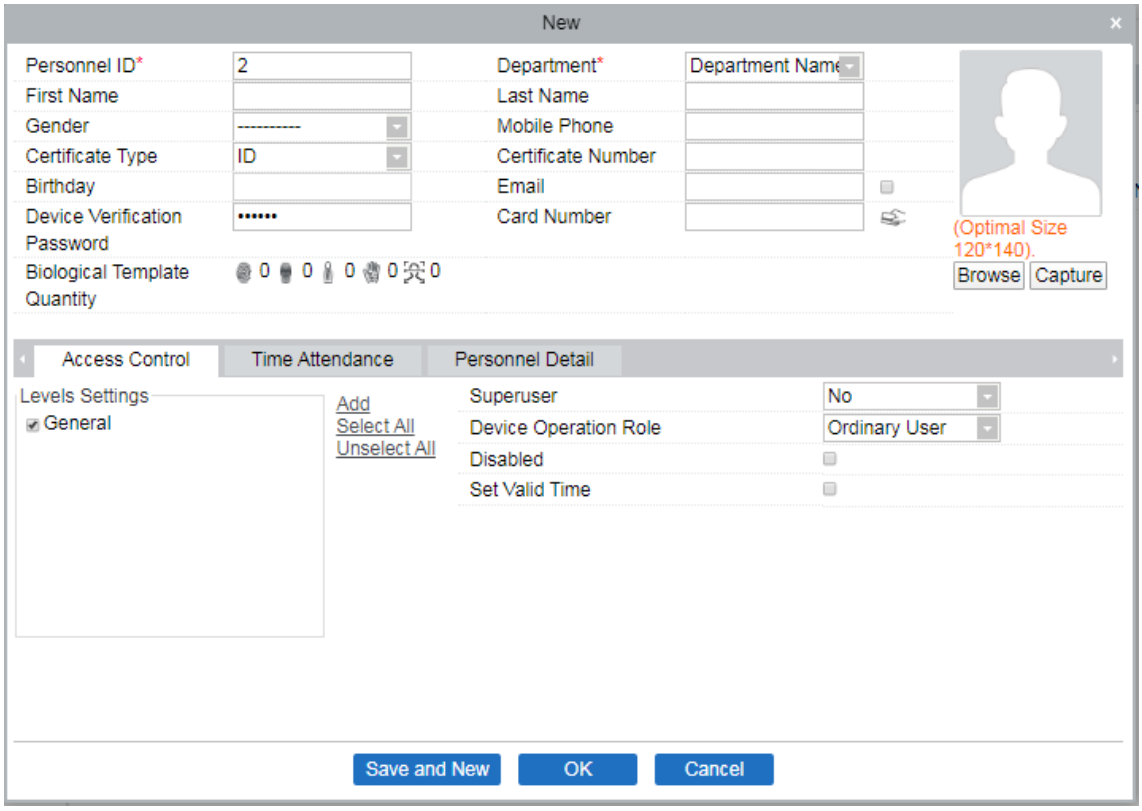
3) After searching, the list and the total number of access controllers will be displayed.



4) Click **Add** to add the specific device to the software.

13.3 Add Personnel on the Software

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



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

Appendix 1

Requirements for 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 point 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 eyeglasses.
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 to 80cm is recommended as a capturing distance, adjustable subject to body height.

Image1 Face Capture Area

Requirements for Visible Light Digital Face Image Data

The digital photo should be straight-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

A plain face or smile with eyes naturally open is recommended.

Gesture and Angle

The horizontal rotating angle should not exceed ±10°, elevation should not exceed ±10°, and the depression angle should not exceed ±10°.

Accessories

Masks and colored eyeglasses are not allowed. The frame of the eyeglasses should not shield the 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 eyeglasses.

Face

The image must have 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) 24-bit true-color mode.
3) JPG format compressed image with not more than 20 KB size.
4) Definition rate between 358 x 441 to 1080 x 1920.
5) The vertical scale of the 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 have eyes-open and with clearly seen iris.
8) A 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.

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