USER MANUAL

4.3-inch Touch Screen & Palm Attendance Terminal

Version: 1.0

Date: August, 2017

Important Statement

Thank you for choosing our product. Please read this manual carefully to avoid damage to the device before use. We remind you that through proper use, you may experience good effect and verification speed.

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Due to product update, our company does not promise the consistency of the manual with actual products, and not assume responsibilities for any dispute arising from the discrepancy between actual technical parameters and this manual. The manual is subject to change without prior notification.

About This Manual

- This manual introduces the operation of user interfaces and menu functions of *4.3-inch Palm Attendance Terminal*. For the installation， Please refer to *4.3-inch Palm Attendance Terminal Quick Start Guide*.
- Not all the devices have the function with ★, the real product prevails.
- The pictures in this manual may not be exactly consistent with those of your product; the actual product's display shall prevail.

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1. Introduction

This product is a multi-biometric identification time & attendance and access control terminal, which can connect with electric lock, door sensor, Alarm and exit button etc.

With the latest palm/fingerprint identification algorithm and streamlined technology, it can hold 600 palm templates and up to 2,000 fingerprint templates without dividing into groups.

Communicating via Wi-Fi , TCP/IP, and USB client, it ensures a smooth connection and data transfer. Amazing verification speed and intuitive operation process make it popular. Elaborately designed and finely processed, it matches your slap-up office perfectly.

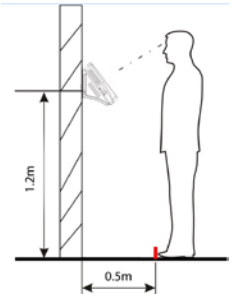
Specifications:

Display	4.3-inch touch screen
Capacity	Palm Capacity:600(Standard) Fingerprint Capacity: 2,000 Face Capacity: 1200
ID Card Capacity	10,000(Optional)
Logs Capacity	100,000
Communication	TCP/IP, USB, Wi-Fi
Standard Functions	Automatic Status Switch, Self-Service Query, Exit Button, Door Lock,12V OUT, Alarm, Work Code, T9 Input, 9 Digit User ID, DST, Scheduled-bell and SMS, Door Sensor, Wiegand OUT
Optional Functions	ID Card, Mifare, HID Card, 3G, Battery Module, ADMS, RS485 reader, RS232 Printer
Power Supply	12V/3A
Verification Speed	≤1 sec
Operating Temperature	0-45 °C
Operating Humidity	20%-80%

2 Guidance Notes

2.1 Standing Position, Facial Expression and Stance

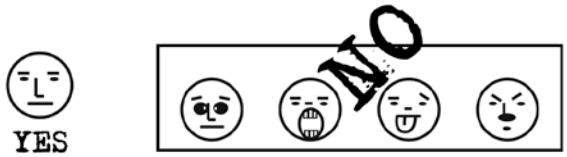
- Recommended Standing Position

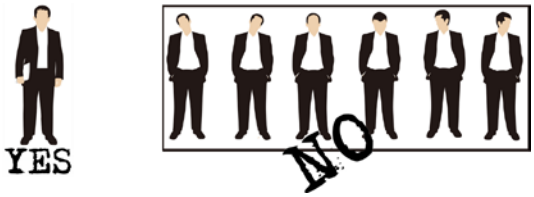


√ The distance between a person and the device is recommended

to be 0.5 meters (applicable height range from 1.5–1.8 meters).

- **Facial Expression and Stance**



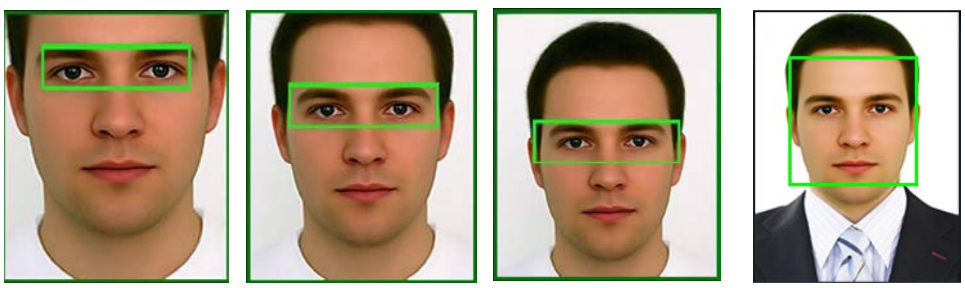


Note: During enrollment and verification, keep the facial expression and stance natural.

2.2 Posture for Enrollment and Comparison

During enrollment, you need to move forward or backward to ensure that your eyes are within the green frame.

During comparison, ensure that the face is displayed in the center of the screen and is within the green frame.



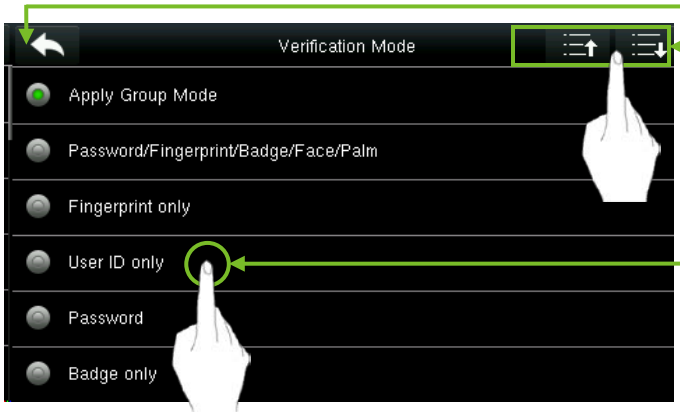
It is recommended that display the face in the middle of the screen, and focus eyes inside the green box according to the pronounce.

2.3 Status of Icons

Status Icon	Name	Description
	Cell signal	The status icons indicate whether you are within the coverage of the cellular mobile network, with more green bars indicating stronger signal. G: indicates that the current mobile network is GPRS network, over which the device accesses the Internet. E: indicates that the operator's EDGE (GSM) network is available, over which the device accesses the Internet. W: indicates that the current mobile network is WCDMA network, over which the device accesses the Internet. H: indicates that the current mobile network is HSDPA network, over which the device accesses the Internet. T: indicates that the current mobile network is TD-SCDMA network, over which the device accesses the Internet. 1X: indicates that the current mobile network is CDMA 1X network, over which the device accesses the Internet. 3G: indicates that the operator's 3G UMTS (GSM) or EV-DO (CDMA) network is available.
		Indicates that no mobile network is available.
	Bell	Indicates that you have set the bell.
		Indicates that a disassembly alarm.
	Ethernet	Indicates that the connection to Ethernet has been established.
		Indicates that the Ethernet is disconnected.
	ADMS Server	The connection between device and ADMS server is successful.
		The connection between device and ADMS server is failed.
		The communication data of ADMS are transmitting.
	Short Messages	There are public short messages.
	Wi-Fi signal	The Wi-Fi connection is normal.
		The Wi-Fi connection fails.

2.4 Touch Operations

2.4.1 Basic Operations



Return and Save

Page Up and Page Down

Note: If the list does not have much content and the menu can be completely displayed when you press **Page Down** just once, only the **Page Down** key is displayed here.

You can select an option by only taping the line where this menu option is, and the system automatically returns to the previous interface.

Note: During operations, after registering or modifying user information or setting parameters, you need to tap **Return/Save** to make the settings take effect. If timeout and no operations on the interface, the system returns to the main interface without saving registration, user information modification or parameter settings.

2.4.2 Soft Keypad

- **Digital Keypad**

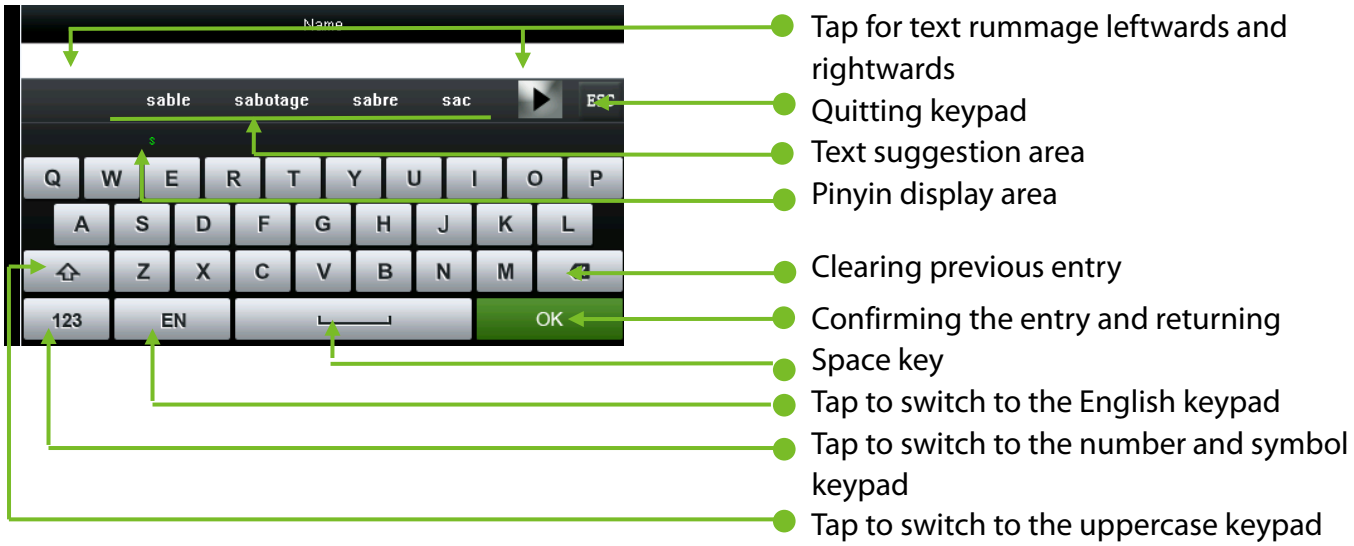
Content display area

Clearing previous entry

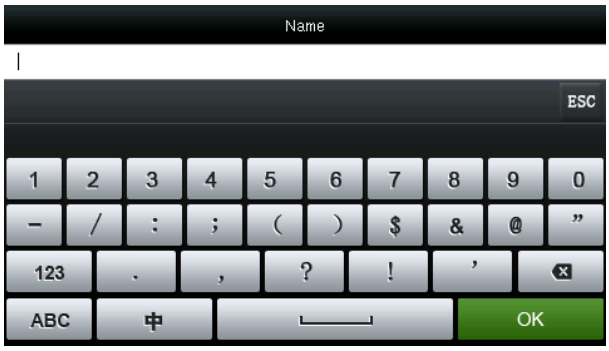
Confirming the entry

Return key

- **Letter Keypad**



- **Digital and Letter Keypad**



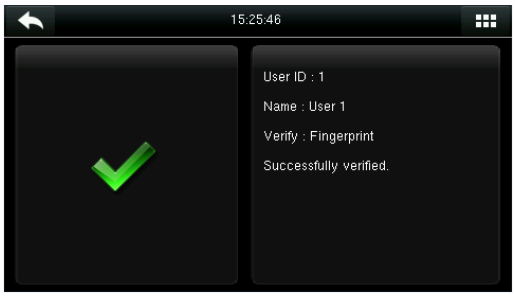
2.5 Verification

2.5.1 Fingerprint Verification

- **1:N Fingerprint Verification**

Under this fingerprint verification method, a fingerprint collected by the sensor is verified with all fingerprints stored in the device.

- To enter the fingerprint verification mode. The device automatically distinguishes face and fingerprint verification, just pressing finger on the collector. Shall be fingerprint authentication mode.
- Please use the correct way to press fingerprint onto the fingerprint sensor (for detailed instruction.



Verification Succeeds

Verification Fails

- **1:1 Fingerprint Verification**

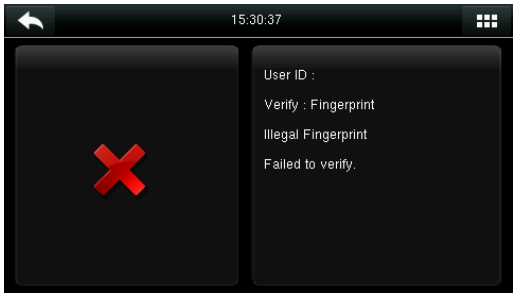
Under this fingerprint verification method, a fingerprint collected by the sensor is verified with the fingerprint corresponding to the entered user ID. Please use this method when difficulty is encountered in 1:N fingerprint verification.

◆ Press on the screen to enter 1:1 Verify Mode.

1. Enter your ID and tap [**OK**].

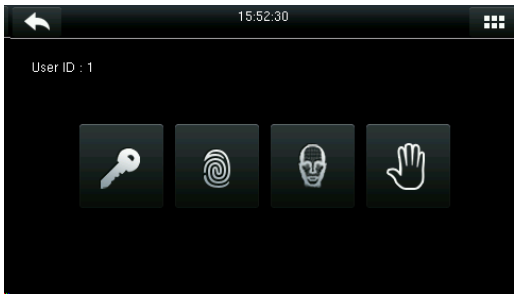
2. Press your fingerprint for verification.

3. Verification succeeds.



4. Verification fails.

If you have registered multiple verification modes, the following interface appears after you enter your ID and tap [**OK**].



Tap the Fingerprint icon to access the fingerprint verification interface.

Press your finger onto the fingerprint scanner to scan your fingerprint for verification. The result is displayed as above.

Note: If you have registered only your fingerprint, you will access the fingerprint verification interface directly after entering your ID. If you have registered in multiple verification modes, the icons of registered verification modes are displayed, as the above figure with Password, Fingerprint, Face and Palm displayed.

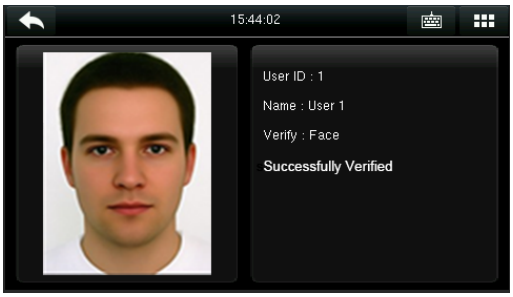
2.5.2 Face-based Attendance

- **1:N Face-based Attendance**

  Compare the facial image captured by the camera with all facial data in the device.

  - The device automatically differentiates between face and fingerprint verification modes. Place your face within the capture area of the camera (without your finger being placed at the fingerprint scanner), and the device automatically performs detection in face verification mode.

Conduct comparison in the correct way on the main interface.



Verification passed.

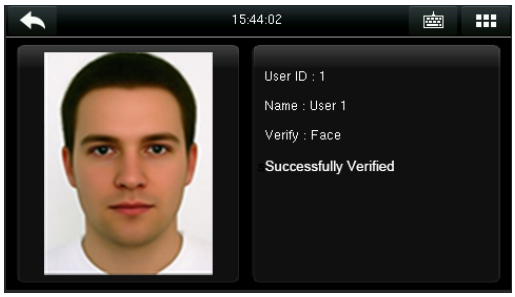
- **1:1 Face-based Attendance**

Compare the captured facial image with the facial image associated with the entered user ID.

Note: If "No data registered" is prompted after a user enter the ID and press [**OK**], the user corresponding to this ID does not exist.

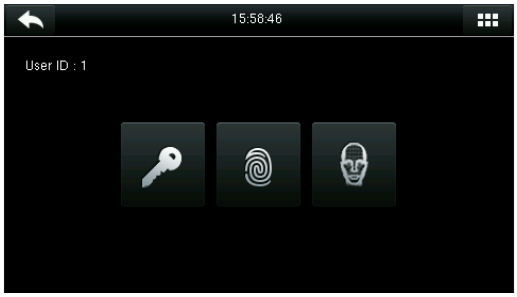
1. Enter the user ID into the main interface by using the keypad and then press [**OK**].

2. Compare the faces in the right way.



3. Verification passed. If the verification fails for 20 consecutive seconds, the system returns to the main interface.

If you have registered multiple verification modes, the following interface appears after you enter your ID and tap [**OK**].



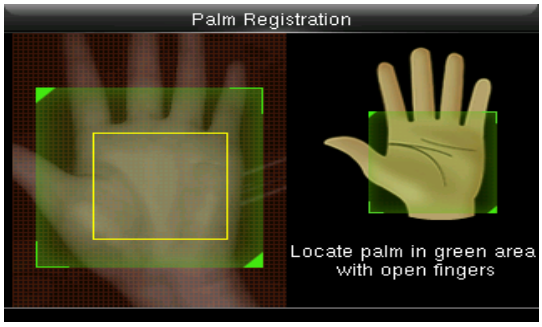
Tap the **Face** icon to access face verification.

The verification result is displayed as above.

Note: If you have registered only your face, you will access the face verification interface directly after entering your ID. If you have registered in multiple verification modes, the icons of registered verification modes are displayed, as shown in the above figure with Password, Fingerprint and Face displayed.

2.5.3 Palm verification mode

The device compares the current palm with users' palm in the device. Use the proper way to enroll and verify.

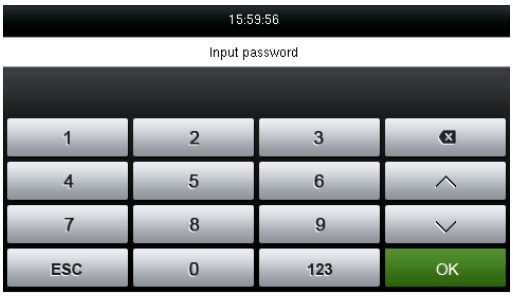


2.6.4 Password Verification

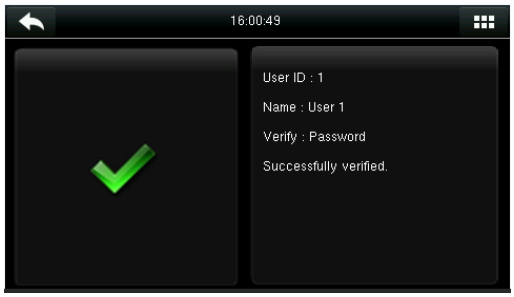
Under this verification method, the entered password is verified with the password of the entered user ID.

◆ Tap the [**1:1**] button on the main interface to enter 1:1 verification mode.

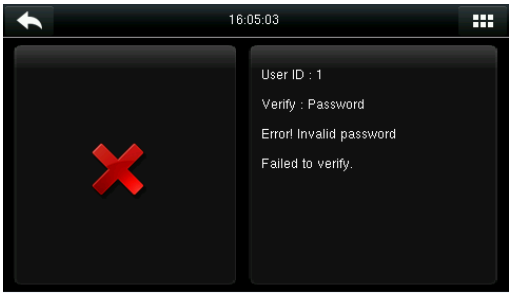
1. Input the user ID and press [**OK**].



2. Input the Password and press [**OK**].

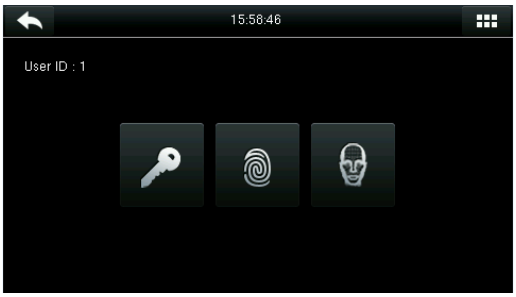


3. Verification succeeds.

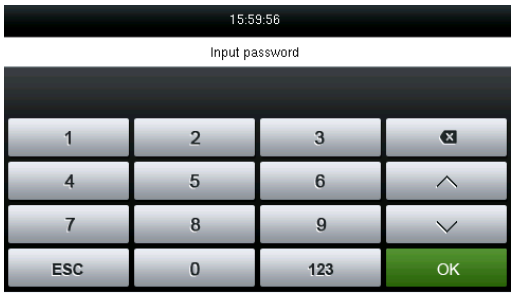


4. Verification fails.

If you have registered multiple verification modes, the following interface appears after you enter your ID and tap [**OK**].



Tap the Key icon to access password verification.



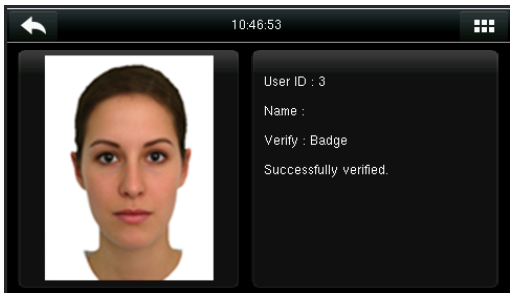
The verification result is displayed as above.

Note: If you have registered only the password, you will access the password verification interface directly after entering your ID. If you have registered in multiple verification modes, the icons of registered verification modes are displayed, just as the above figure showing that Password, Fingerprint and Face have been registered.

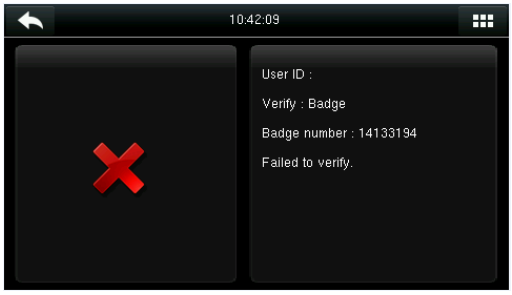
2.6.5 Card Verification ★

Card function is optional, only products with a built-in card module are equipped with card verification function.

◆ Swipe the card above the card area (the card must be registered first)



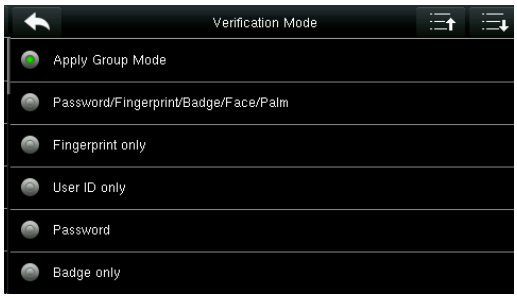
Verification succeeds.

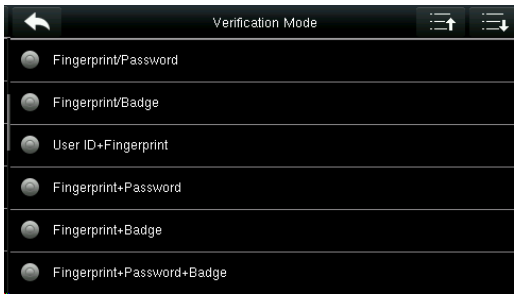


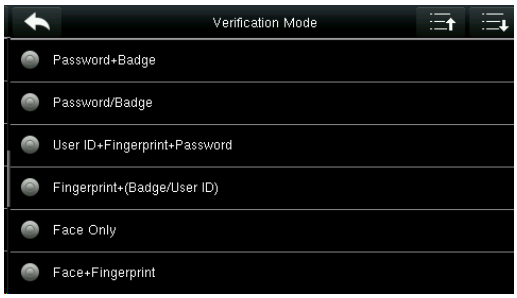
If the card is not registered, "Failed to verify" is prompted.

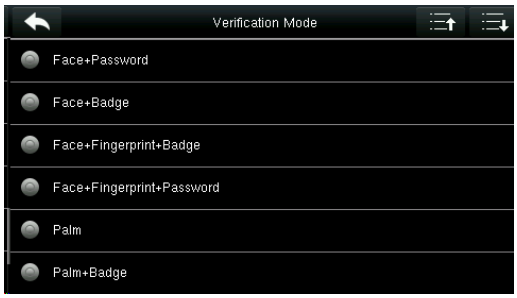
2.6.6 Combined Verification

In order to meet the needs of some access control occasions with high security and in consideration of the diversity of access control, the device provides a wide range of verification modes, which can be combined as required for individual users and user groups. The device supports 21 combinations verification modes, as shown in the following figure.









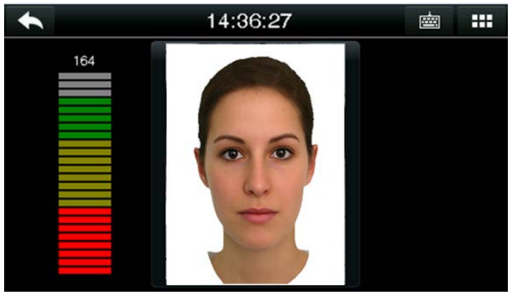
Note:

"/" means Or, and "&" means And.

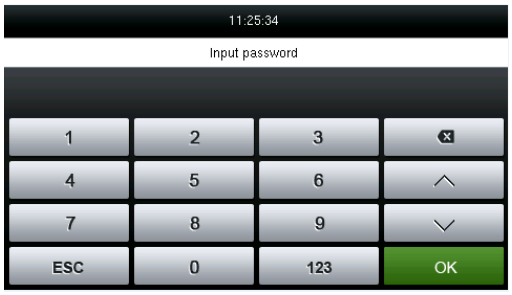
In combination verification mode, you must register required verification information, otherwise the verification may fail. For example, if user A uses **Fingerprint Registration** but the verification mode is **PW**, this user will never pass verification.

The following takes **Face&Password** as an example to introduce the combination verification mode.

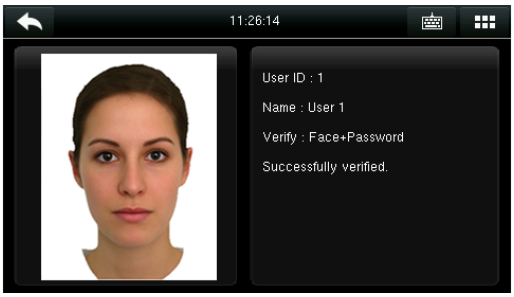
- Place your face within the capture area of the camera, and the device automatically performs detection in face verification mode.



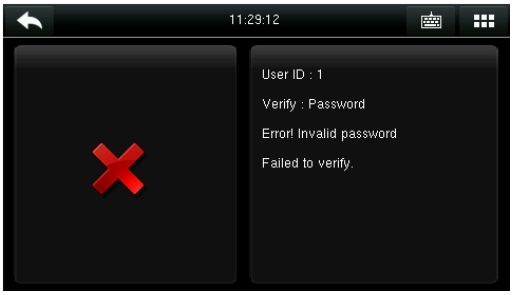
1. The face verification proceeds.



2. The password entry interface pops up after verification passes. Enter the password and tap [**OK**].



3. Face&Password verification succeeds.

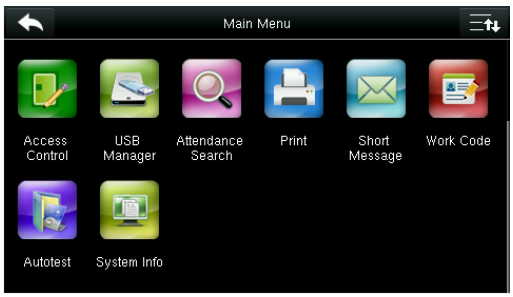


4. Face&Password verification fails.

Note: The combination verification is available only if corresponding verification modes are selected during user registration.

3 Main Menu

When the device is in standby mode, press ⋮⋮⋮ to open the main menu.



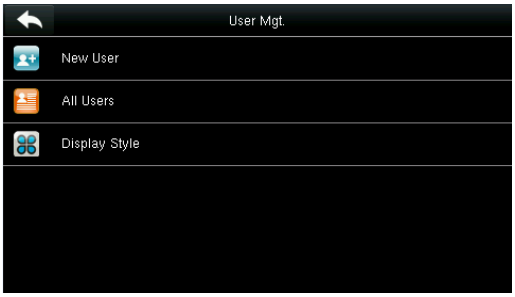
Menu Item	Description
User Mgt.	Basic information of registered users, including user ID, user role, fingerprint, badge ★ (ID, MiFare and HID card are optional), password, face, palm and access control role.
User Role	To set user roles for accessing into the menu and changing settings.
Comm.	To set the related parameters of the communication between the device and PC, including Ethernet parameters such as IP address etc., serial Comm., PC connection, Wireless Network, Cloud Sever Setting and Wiegand out settings.
System	To set related parameters of the system and upgrade firmware, including setting date & time, attendance, face, palm parameter and fingerprint parameters and resetting to factory settings.
Personalize	This includes interface display, voice, bell, punch state key mode and shortcut key settings.
Data Mgt.	delete data, backup data, restore data etc.
Access Control:	This includes setting the parameters of the lock.
USB Manager	To transfer data such as user data and attendance logs from the USB disk to the supporting software or other devices.
Attendance Search	To search for the records stored in the device after successful verification.
Print	To set printing information and functions (if printer is connected to the device).

Short Message	To set public or private short messages, which are read by specified objects within the specified time after attendance, facilitating information transmission.
Work Code	To mark different work categories, facilitating user attendance check.
Auto test	To automatically test different module's functions, including the LCD, voice, keyboard, fingerprint sensor, face and clock RTC test.
System Info	To check device capacity, device and firmware information.

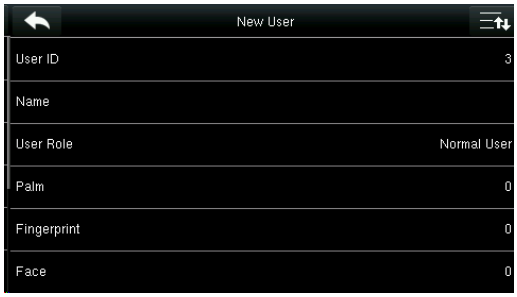
Note: If no super administrator is available on the device, anyone can access the menu for operations by pressing After an administrator is set on the device, identity authentication needs to be conducted by the administrator for menu access. A user can access the menu only after successful identity authentication. For device security purposes, it is recommended that an administrator be registered when the device is used for the first time. For specific operations, see section 3.3 Setting the User Role.

4 Adding User

Tap **New User** on the main menu interface.



Tap **New User**.



Tap Page Down to view other options.

3.1 Enter a User ID

The device automatically assigns user IDs for personnel, starting from 1 and so on. The user ID can also be entered manually.

Select **User ID**

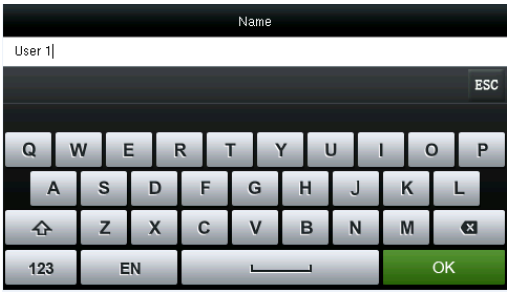
press **OK** for confirmation.

Note:

1. By default, a user ID contains 1-9 digits. To extend the length, consult our pre-sales technical support personnel.
2. During the initial registration, you can modify your ID, which cannot be modified after registration.
3. If "ID Already Exists" is prompted, this ID has been used. Please enter another ID.

3.2 Enter User Name

Select **User Role**



Enter your name and tap **ok** to save and return.

The name entry is completed.

Note: By default, a user name contains 1-12 characters. For details, see section **1.7.2 Soft Keypad.**

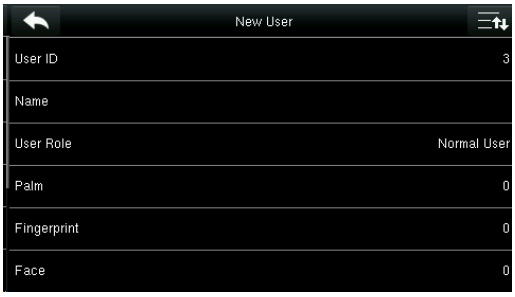
3.3 Set the User Role

There are two types of Roles respectively granted to two types of users: the User and Administrator. User are only granted the rights of facial, fingerprint, palm or password

verification, while Administrator are granted the access to the main menu for various operations apart from having all the privileges granted to User.

Tap **User Role**.

Select a user role.



The user role selection is completed.

If the selected user role is **Super Admin**, identity authentication needs to be conducted for main menu access. The authentication process depends on the authentication mode that the super administrator has registered. The following is an example of accessing the main menu as the super administrator by face authentication.

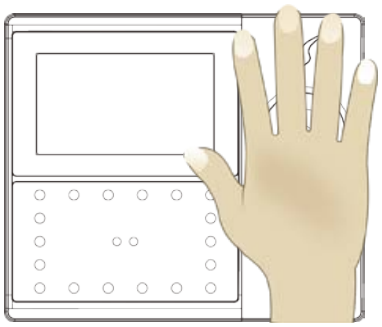
Press on the main interface.

Place your face in front of the camera for authentication.

You can access the main menu interface directly after passing authentication.

3.4 Enroll a Palm

How to correctly enroll the palm

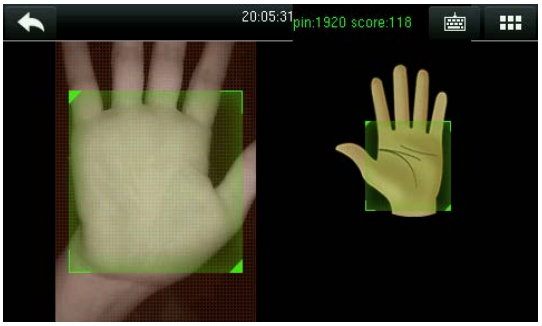


Place your palm in the palm multi-mode collection area, such that the palm is placed parallel to the device.

Make sure to keep space between your fingers.

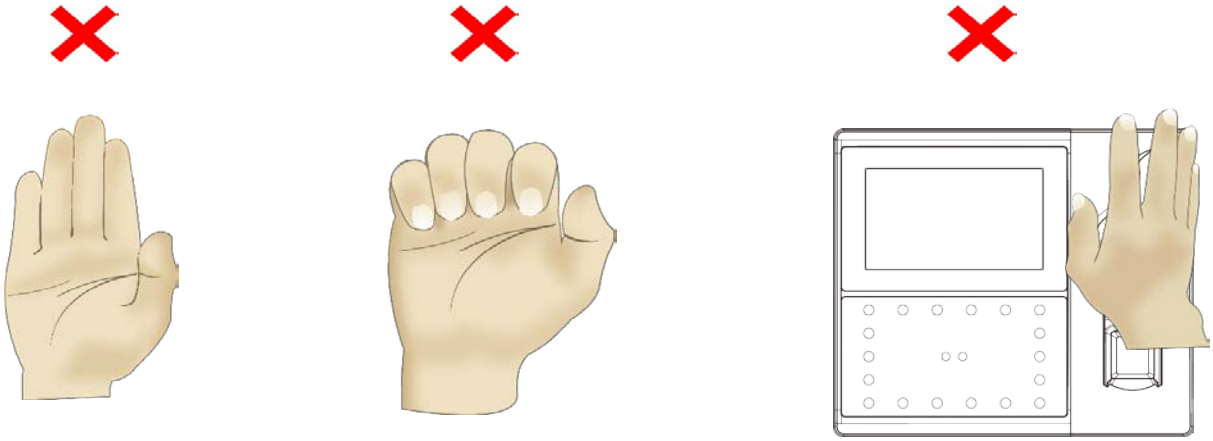
During enrollment locate your palm at the center of the screen, and follow the voice prompts "Focus the center of the palm inside the green box". The user needs to move forward and backward to adjust the palm position during the palm registration.

Verification



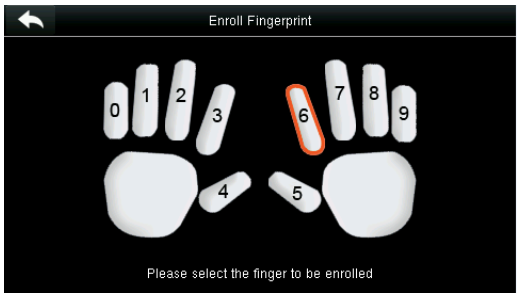
Place your palm in the green area parallel to the device with space between the fingers.

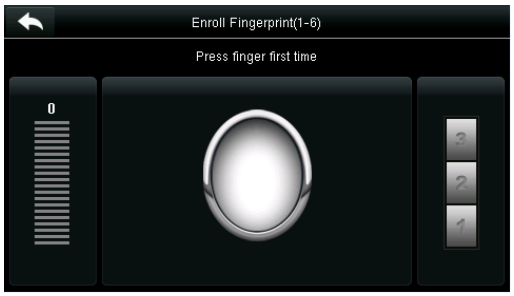
- Incorrect palm gestures



3.5 Enroll a Fingerprint

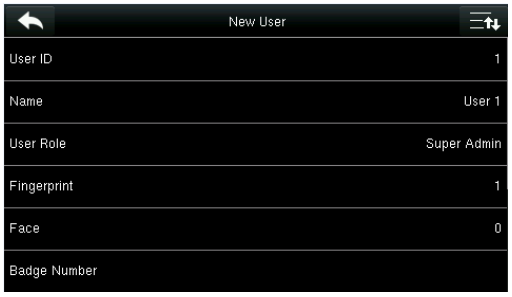
Press [**Fingerprint**]





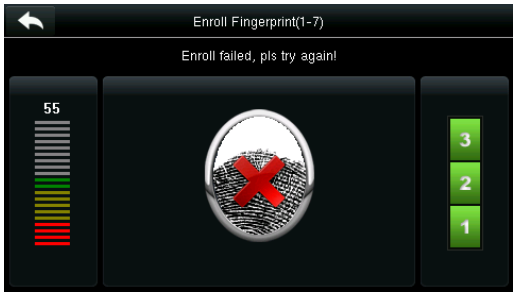
1. Tap to select a finger for fingerprint registration. 2. Press the same finger onto the fingerprint scanner for three consecutive times as prompted.

3. The fingerprint registration succeeds.

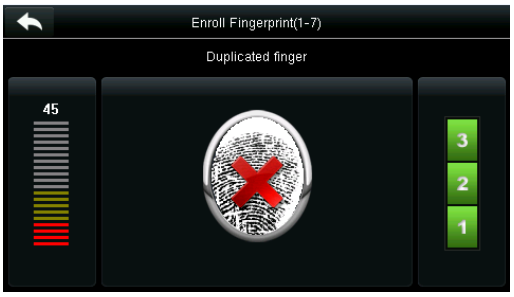


4. The system automatically returns to the **New User** interface.

If the fingerprint registration fails, the following prompt appears.



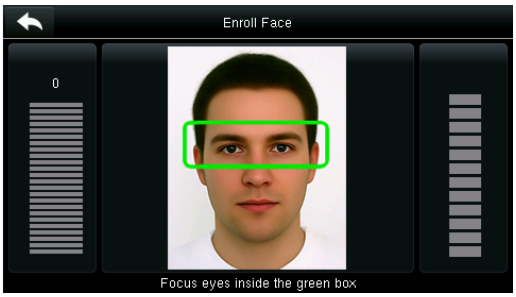
The fingerprint registration fails. You need to register a fingerprint again.



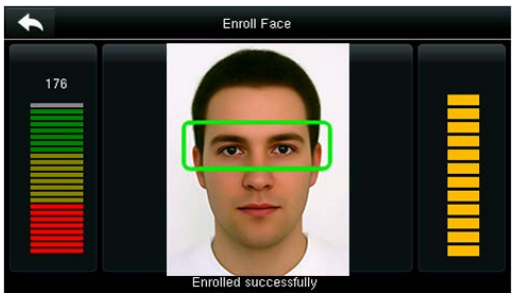
If "Duplicated fingerprint" is prompted, this fingerprint has already been registered.

Note: To register another fingerprint, return to the **New User** interface, tap **Fingerprint** again and repeat the above steps to select another finger for fingerprint registration.

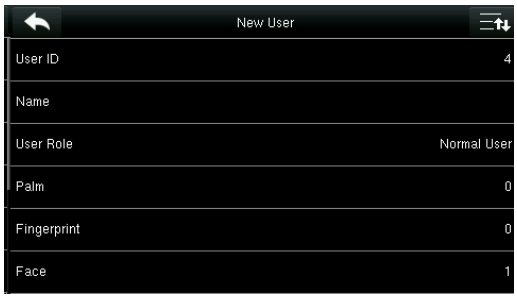
3.6 Enroll a Face



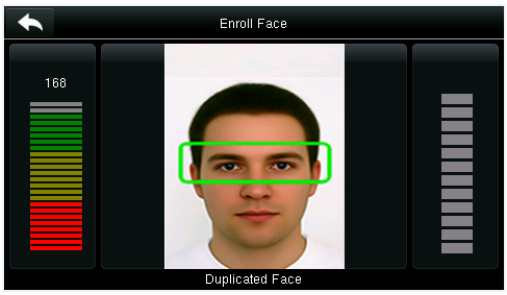
Follow the voice and interface prompts to move back and forth to place your eyes within the green frame.



The face registration succeeds.



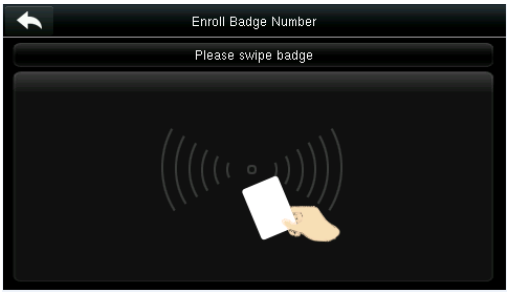
The system automatically returns to the **New User** interface.



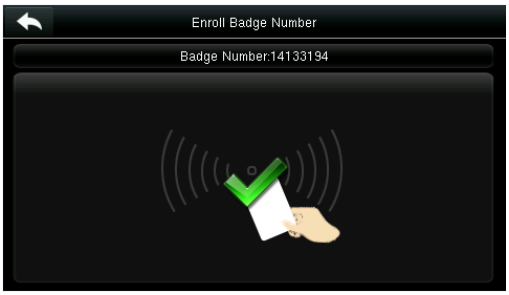
If a duplicate face is registered, the system prompts: "Duplicated Face".

3.7 Enroll a Badge Number ★

Tap **Badge Number**.



1. Press your badge close underneath the fingerprint collector.



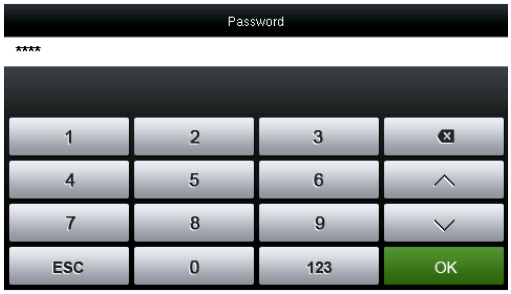
2. The badge number registration succeeds.

3. The system automatically returns to the **New User** interface.

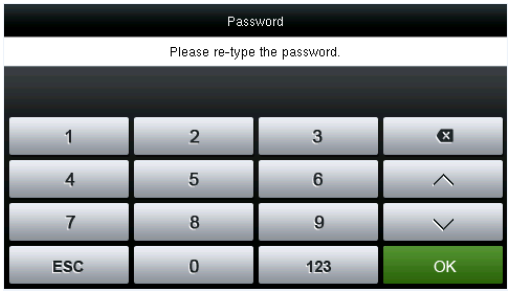
Note: If the badge has already been registered, "Error! Badge already enrolled" is prompted.

3.8 Enroll Password

Tap **Password**.

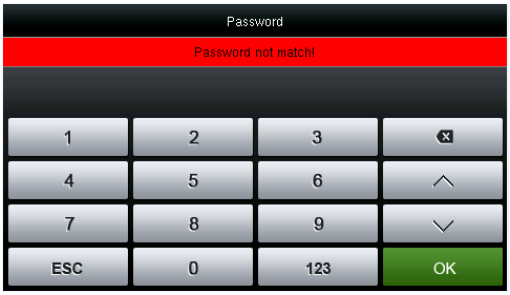


1. Enter your password and tap **OK**.



2. Enter the password again and tap **OK**.

3. The password registration succeeds and the system returns to the New User interface.



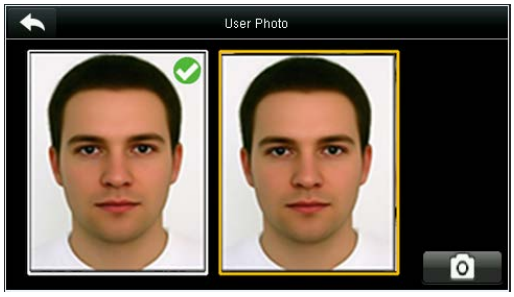
4. If the two entered passwords are different, "Password not match" is prompted.

Note: By default, a password contains 1-8 digits.

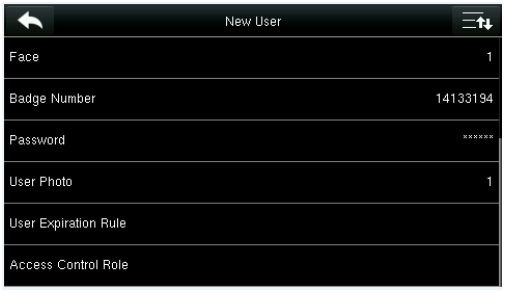
3.9 Enroll a Picture

When a user registered with a picture passes the authentication, the registered user picture is displayed.

Tap **User Picture**.



Tap the camera icon to take a picture.



The picture taking is completed, and the system returns to the **New User** interface.

Note: After face registration is completed, the system automatically takes a picture. If you do not want to register a user picture, the picture automatically taken by the system is used by default.

3.10 Setting the Access Control Rights

You can set which group a user belongs to, access verification mode, whether to register a duress fingerprint, and whether to use the group time period. By default, the unlocking permission is granted to newly enrolled users.

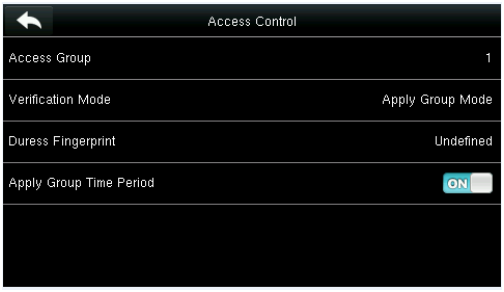
Tap **Access Control Role**.

3.10.1 Access Group

Access Group: Select the belonged group. By default, a newly enrolled user belongs to group one.

Tap **Access Group**.

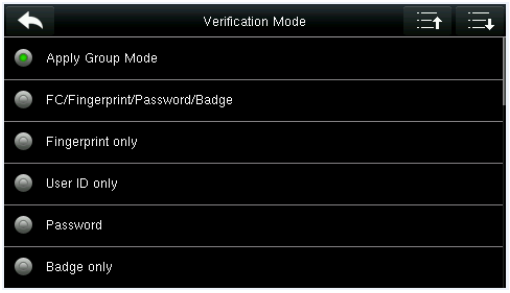
Enter the belonged group and tap **OK**.



The system returns to the **Access Control** interface.

3.10.2 Verification Mode

Tap **Verification Mode**.



Select a verification mode.

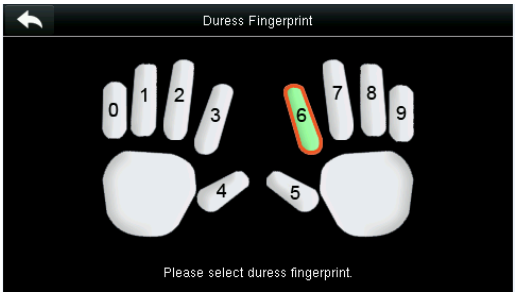
The system automatically returns to the **Access Control** interface.

Note: A user can select **Apply Group Mode**, That is, the user can be verified by using the verification mode of the group to which this user belongs, or by using an individual verification mode. For details on group settings, see section **10.4 Access Group Settings.**

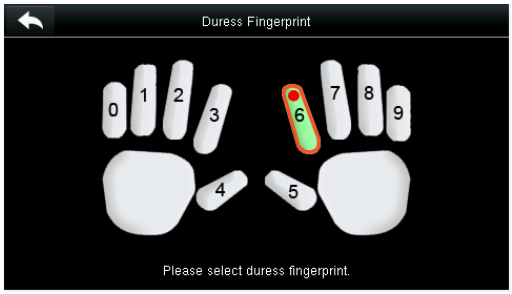
3.10.3 Duress Fingerprint

A fingerprint registered in the device is specially specified as a duress fingerprint. In any case, a duress alarm is generated when a fingerprint matches a duress fingerprint. After a duress fingerprint is cancelled, the fingerprint is not deleted and the corresponding finger can still be used for normal comparison.

Tap **Duress Fingerprint**.



1. Select a duress fingerprint.



2. The selection succeeds. Tap the **Return** button.

Note:

1. The selected duress fingerprint must be a registered fingerprint.
2. If you do not want to use a duress fingerprint, access the same menu during user editing

3. The system returns to the Access Control interface.

3.10.4 Apply Group Time Period

Choose whether to apply the group time period for this user, yes by default. If the group time period is not applied, you need to set the unlocking time for this user. At this time, the time period of this user does not affect the time period of any other member in this group.

When you set the unlocking time for this user, tap **Apply Group Time Period**.

1. Tap **Time Period 1**.

2. Enter the time period number and tap **OK**.

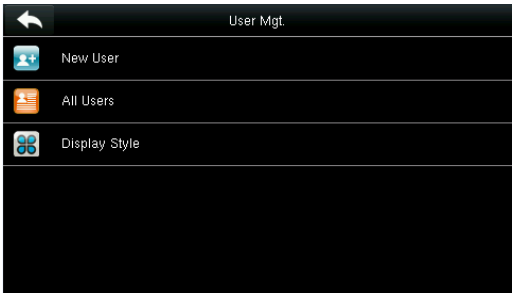
3. Select time period 2 and 3 in the same way, and enter the time period numbers.

Note: A total of 50 time periods can be set in the device and three time periods can be set for each user. For details, see 10.2 Time Schedule Settings.

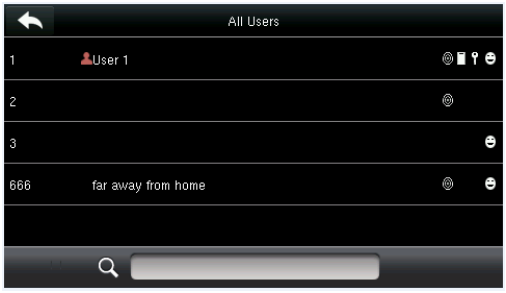
Note: After the above data is registered, tap to return to the New User interface. To modify registered data, tap the corresponding menu for re-registration. To save the registered data, tap . If the menu is left unattended within the timeout time, the system returns to the main interface, and the registered information is not saved.

5 User Management

Press **User Mgt.** on the main menu interface.



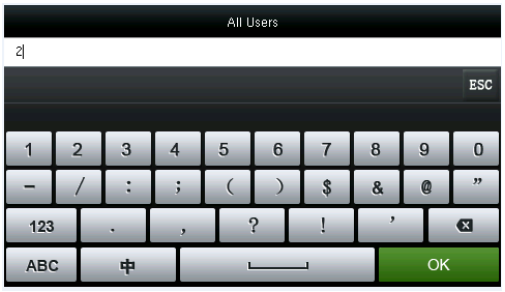
Tap **All Users**.



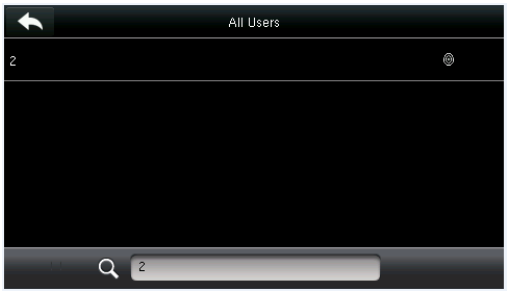
The **All Users** interface is displayed.

Note: The users are sorted by name, with indicating the super administrator.

5.1 Search User



Tap the search bar on user list and enter the retrieval keyword.



The system automatically finds the users related to entered keyword.

Note: The retrieval keyword can be ID, surname, given name or full name.

5.2 Edit User

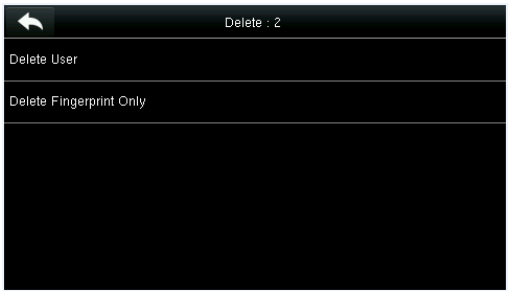
Choose a user from the list and tap **Edit**.

The **Edit User** interface is displayed.

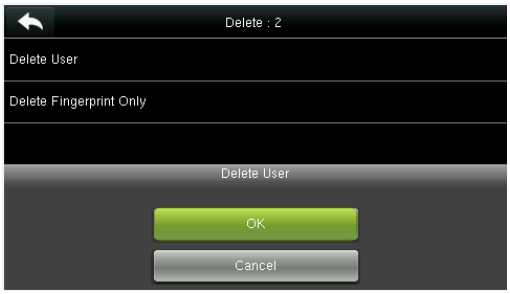
Note: The operation of editing a user is the same as that of adding a user except that the ID cannot be modified in editing a user.

5.3 Delete a User

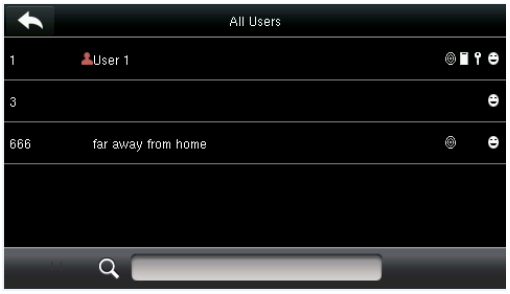
Choose a user from the list and tap **Delete**.



The **Delete User** interface is displayed. (Press Page Down to view other information.)



Select the user information to be deleted and tap **OK**.

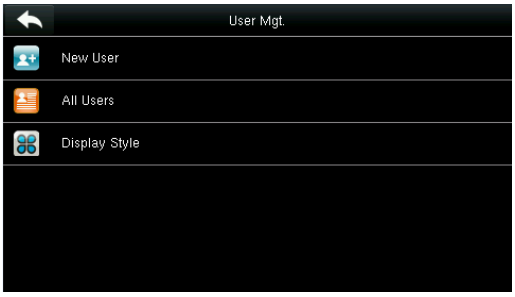


The user is deleted successfully and no longer displayed in the list.

Note: 1. When deleting a user, you can choose to delete partial information such as the privilege or fingerprint of the user. If you select **Delete User**, all information of this user is deleted.

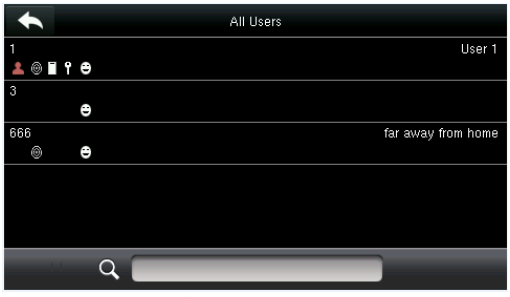
2. After the privileges of the super administrator is deleted, the super administrator becomes a common user, without super administrator privileges any more.

5.4 User Display Style

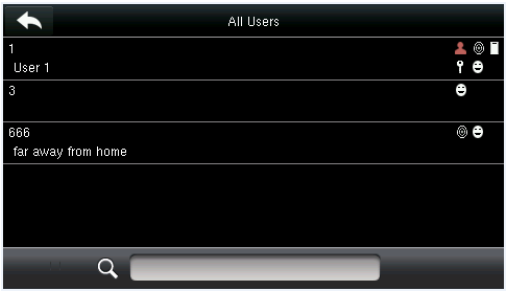


1. Tap **Display Style** on the **User Mgt.** interface.

2. The default style is **Single Line**.



3. The above figure shows all users in the **Multiple Line** style.



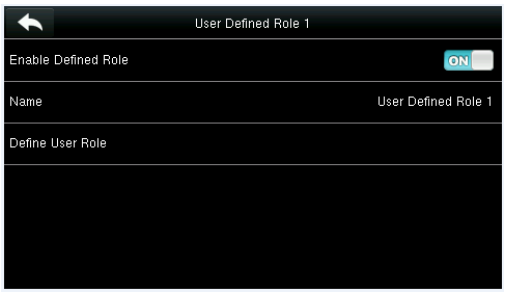
4. The above figure shows all users in the **Mixed Line** style.

6 User Role

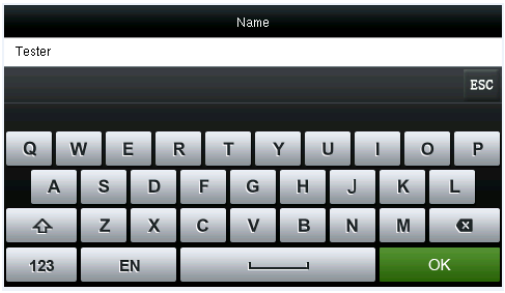
Setting user rights of operating the menu (a maximum of 3 roles can be set).

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

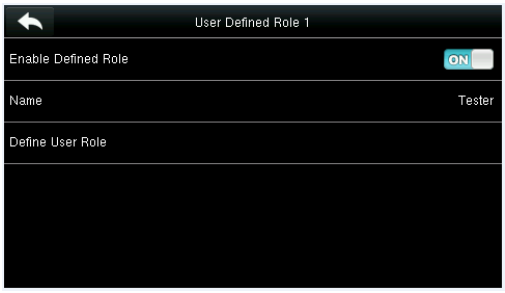
1. Tap any item to set a defined role.



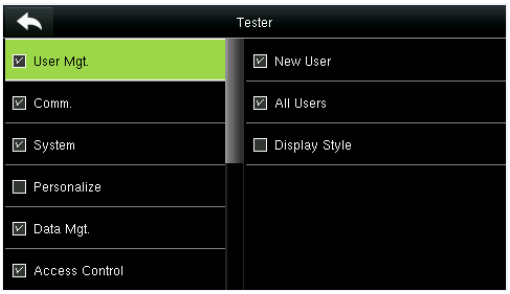
2. Tap **Enable Defined Role** to enable this defined role.



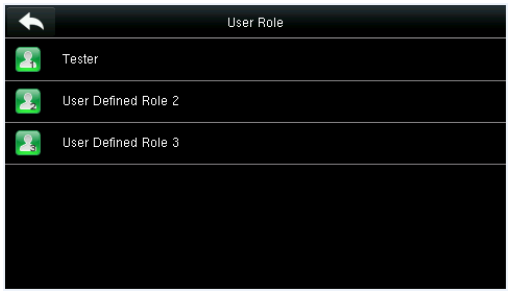
3. Tap **Name** to enter the role name.



4. The system returns to the **User Defined Role** interface.



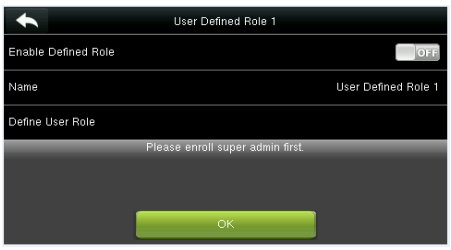
5. Tap **Define User Role** to assign privileges to the role.



6. The role definition is completed.

The privilege assignment is completed. Tap **Return**.

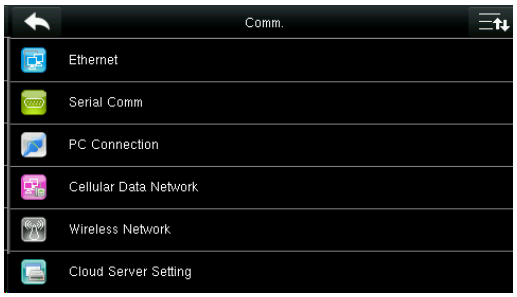
Note: During privilege assignment, the main menu is on the left and its sub-menus on the right. You only need to select the features in sub-menus. If no super administrator is registered in the device, the following prompt appears after you tap **Enable Defined Role**.



7 Comm. Settings

Including Ethernet parameters such as IP address, serial Comm., PC connection, ADMS★ and Wiegand settings etc..

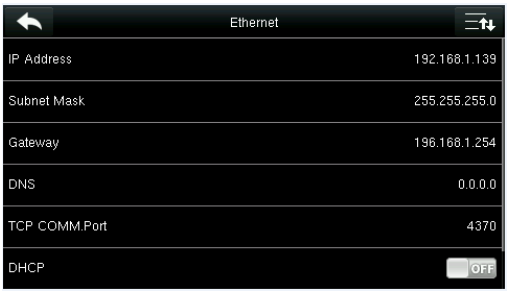
Tap [**Comm.**] on the main menu interface.

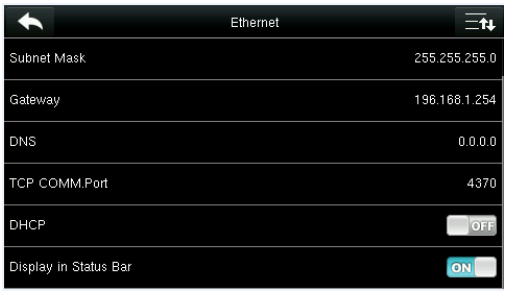


7.1 Ethernet Settings

When the device communicates with a PC over the Ethernet, you need to conduct network settings.

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





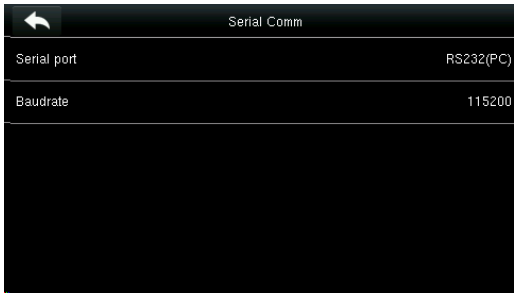
Menu Item	Description
IP Address	The factory default value is192.168.1.201, please adjust them according to the actual network situation.
Subnet Mask	The factory default value is 255.255.255.0, please adjust them according to the actual network situation.
Gateway	The factory default value is 0.0.0.0, please adjust them according to the actual network situation.
DNS	The factory default value is 0.0.0.0, please adjust them according to the actual network situation.
TCP COMM. Port	The factory default value is 4370, please adjust them according to the actual network situation.

DHCP	Dynamic Host Configuration Protocol, which is to dynamically allocate IP addresses for clients via server. **If DHCP is enabled, IP cannot be set manually.**
Display in Status Bar	To set whether to display the network icon on the status bar.

7.2 Serial Comm. Settings

To establish communication with the device through a serial port (RS232/RS485), you need to conduct serial port settings.

Tap **Serial Comm.** on the **Comm. Settings** interface.



Menu Item	Description
RS232	To connect the printer.
RS485	To connect the 485 reader.
Baudrate	The rate of the communication with PC; there are 5 options of baud rate: 115200 (default), 57600, 38400, 19200 and 9600. The higher is the baud rate, the faster is the communication speed, but also the less reliable. In general, a higher baud rate can be used when the communication distance is short; when the communication distance is long, choosing a lower baud rate would be more reliable.

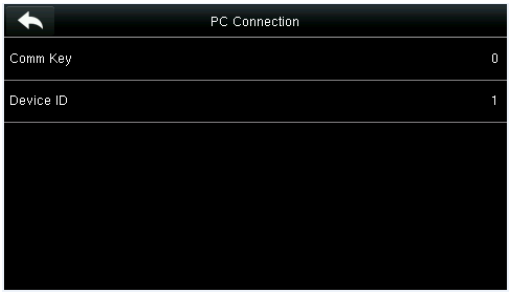
Note: If an RS485 serial port is used for communication with the device, the baud rate of the serial port should not be 9600 bps.

7.3 PC Connection

To improve security of data, **Comm Key** for communication between the device and PC needs to be set.

If a **Comm Key** is set in the device, the correct connection password needs to be entered when the device is connected to the PC software, so that the device and software can communicate.

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

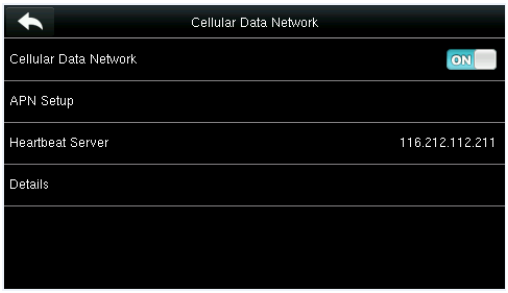


Menu Item	Description
Comm Key	**Comm Key:** The default password is 0 (no password). **Comm Key** can be 1~6 digits and ranges between 0~999999.
Device ID	Identity number of the device, which ranges between 1~254. If the communication method is RS232/RS485, inputting this device ID in the software communication interface is required.

7.4 Cellular Data Network ★

When the device is applied on a dial-up network, ensure that the device is within the coverage of the mobile network signals (GPRS/3G). In addition, you must know the used APN and access number.

Tap **Cellular Data Network** on the **Comm. Settings** interface.

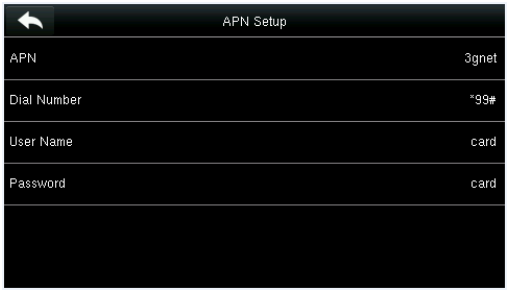


Menu Item	Description
Cellular Data Network	Whether to enable the mobile network.

APN Setup	To set APN information, such as the access number, user name and password.
Heartbeat server	To detect the connection status of the mobile network. The terminal periodically sends ICMP packets to the heartbeat server to detect whether the terminal is online. When the terminal is offline, the device automatically performs dial-up connection again. Therefore, when setting the heartbeat server, ensure that the heartbeat server can be pinged and remain online stably for a long term. **Note: Generally, the customer can set the heartbeat server address as the ADMS server address.**
Details	To view the information about mobile network connection, such as network mode, operator, IP address, received data, and sent data.

7.4.1 APN Setup

Tap **APN Setup** on the **Cellular Data Network** interface.



Menu Item	Description
APN	Access Point Name, provided by the operator and not supported in the CDMA network.
Dial Number	Number of the cellular data network.
User Name and Password	To verify whether the user has the privilege to use this network.

7.4.2 Details

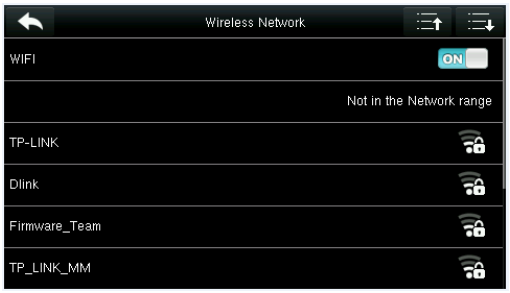
Tap **Details** on the **Cellular Data Network** interface.

The information about device connection is displayed.

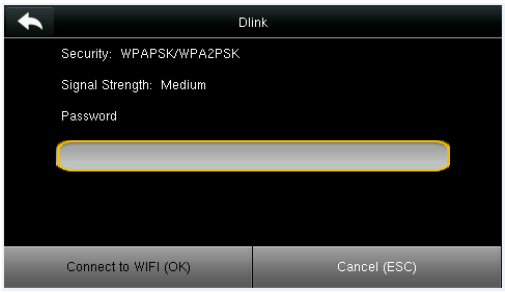
7.5 Wi-Fi Setting

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.

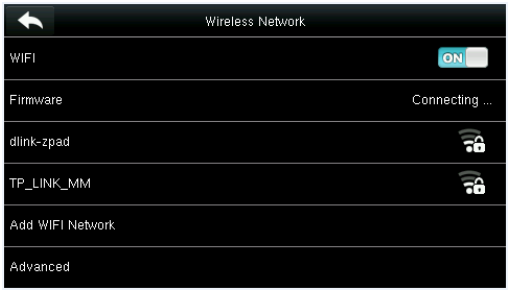
Wi-Fi is enabled in the system by default. If the Wi-Fi network does not need to be used, you can tap the ON button to disable Wi-Fi.



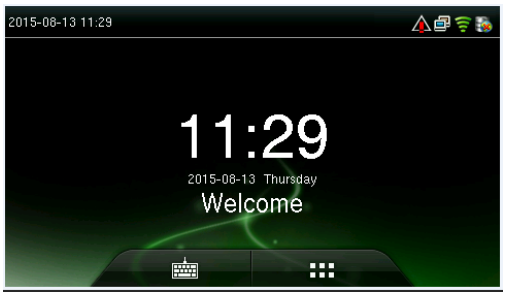
1. When Wi-Fi is enabled, tap the searched network.



2. Tap the password entry text box to enter the password, and tap **Connect to Wi-Fi (OK)**.



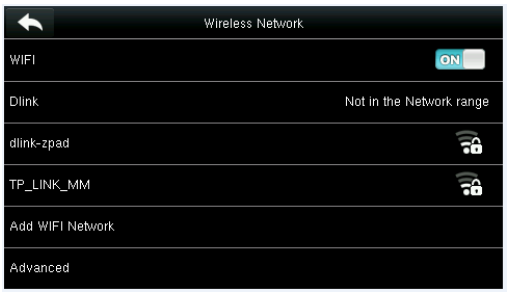
3. Connecting



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

7.5.1 Adding Wi-Fi Network

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



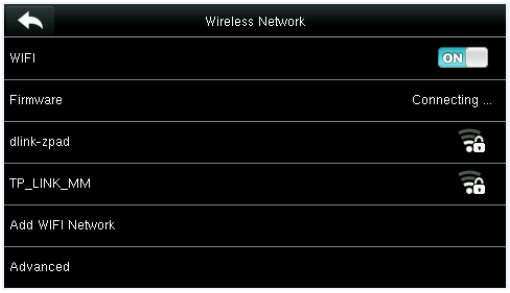
Tap **Page Down** and **Add Wi-Fi Network**.

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.

7.5.2 Advanced Options

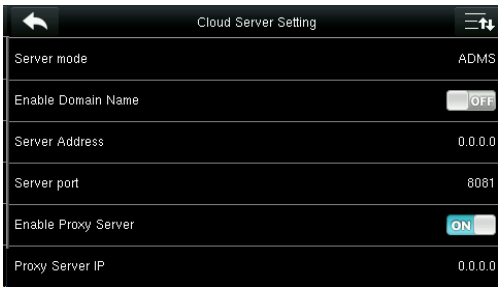
This is used to set Wi-Fi network parameters.



Menu Item	Description
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 Address	Gateway address of the Wi-Fi network.

7.6 Cloud Server Setting

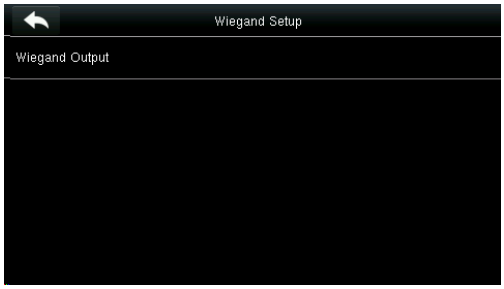
Settings used for connecting with Cloud server. Tap **PC Connection** on the **Comm. Settings** interface.



Menu Item	Description
Enable Domain Name	When this function is enabled, the domain name mode http://... will be used, such as http://www.XXX.com. XXX denotes the domain name when this mode is on; when this mode is off, enter the IP address format in XXX.
Server Address	IP address of the ADMS server.
Server Port	Port used by the ADMS server.
Enable Proxy Server	Method of enabling proxy. To enable proxy, please set the IP address and port number of the proxy server.

7.7 Wiegand Setup

To set the Wiegand output parameters, tap **Wiegand Setup** on the **Comm. Settings** interface.



Tap **Wiegand Output** on the **Wiegand Setup** interface.

Menu Item	Description
Wiegand Format	Users can select the standard Wiegand formats built in the system. Although multiple choices are supported, the actual format is determined by **Wiegand output bits**.
Wiegand output bits	Number of bits of Wiegand data. After choosing **[Wiegand output bits]**, the device will use the set number of bits to find the suitable Wiegand format in **[Wiegand Format]**. For example, If Wiegand26, Wiegand34a, Wiegand36, Wiegand37a or Wiegand50 is selected in Wiegand Format but Wiegand output bits is set to 36, the Wiegand36 format takes effect.
Failed ID	It is defined as the output value of failed user verification. The output format depends on the **[Wiegand Format]** setting. The default value ranges from 0 to 65535.
Site Code	It is similar to device ID except that it can be set manually and repeatable with different devices. The default value ranges from 0 to 256.
Pulse Width (us)	The width of pulse sent by Wiegand. The default value is 100 microseconds, which can be adjusted within the range of 20 to 100 microseconds.
Pulse Interval	The default value is 1000 microseconds, which can be adjusted within the

Menu Item	Description
(us)	range of 200 to 20000 microseconds.
ID Type	Output content after successful verification. User ID or card number can be chosen.

Definitions of Various General Wiegand Formats:

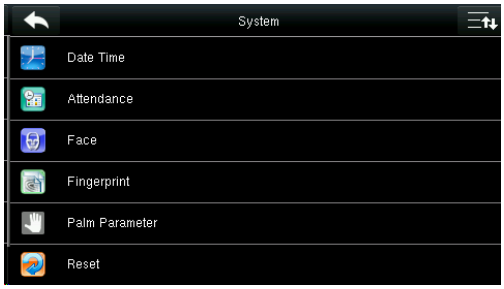
Wiegand Format	Definition
Wiegand26	ECCCCCCCCCCCCCCCCCCCCCCCCO Consists of 26 bits of binary code. The 1st bit is the even parity bit of the 2nd to 13th bits, while the 26th bit is the odd parity bit of the 14th to 25th bits. The 2nd to 25th bits are the card number.
Wiegand26a	ESSSSSSSSCCCCCCCCCCCCCCCCO 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 code, while the 10th to 25th bits are the card number.
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 number.
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 code, while the 10th to 25th bits are the card number.
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 code, the 18th to 33rd bits are the card number,

	and the 34th to 35th bits are the manufacturer code.
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 code, and the 20th to 35th bits are the card number.
Wiegand37	OMMMMSSSSSSSSSSSCCCCCCCCCCCCCCCCCCE 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 code, the 5th to 16th bits are the site code, and the 21st to 36th bits are the card number.
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 35th bits. The 2nd to 4th bits are the manufacturer code, 5th to 14th bits are the device code, 15th to 20th bits are the site code, and the 21st to 36th bits are the card number.
Wiegand50	ESSSSSSSSSSSSSSSSCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCO 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 code, and 18th to 49th bits are the card number.
C denotes card number, **E** denotes even parity bit, **O** denotes odd parity bit, **F** denotes device code, **M** denotes manufacturer code, **P** denotes parity bit, and **S** denotes site code.	

8 System Settings

Set related system parameters to maximize the performance of the device.

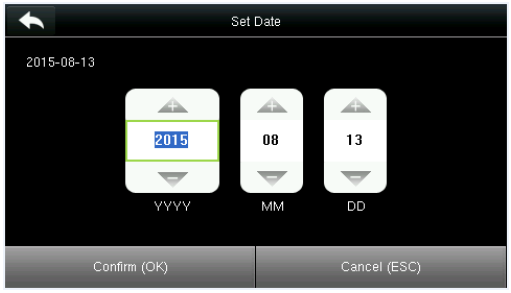
Tap [**System**] on the main menu interface.



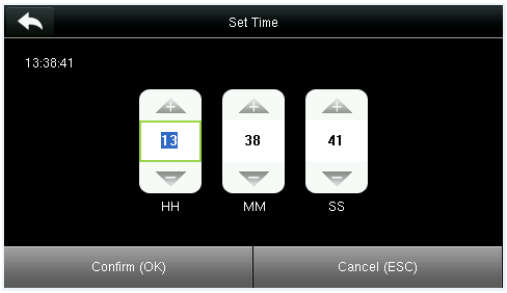
8.1 Date/Time Settings

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

1. Tap **Set Date**.



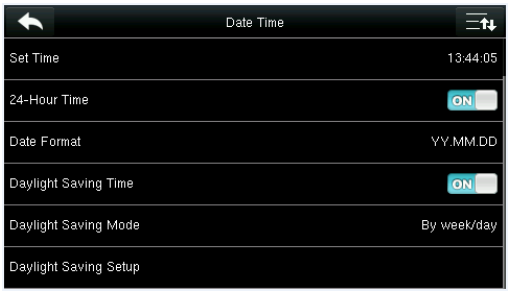
2. Press **Page Up** and **Page Down** to set the year, month and day, and then press **Confirm (OK)**.



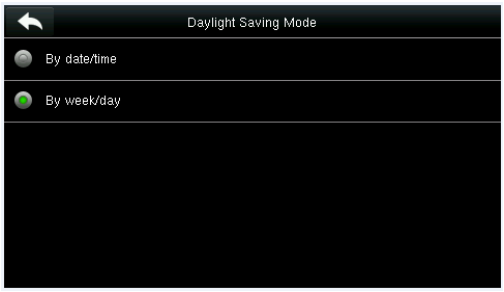
3. Tap **Set Time** on the Date Time interface and press **Page Up** and **Page Down** to set the hour, minute and second.

4. Tap **24-Hour Time** to choose whether to enable this format.

5. Tap **Date Format** on the **Date Time** interface to select the date display format.



6. Tap **Daylight Saving Time** to choose whether to enable the daylight saving time.

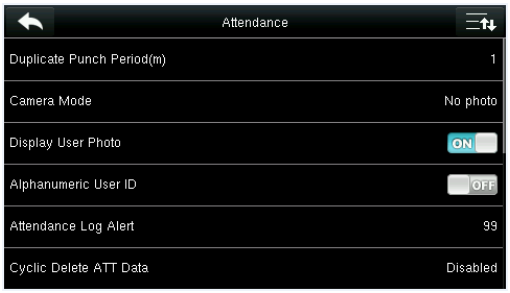


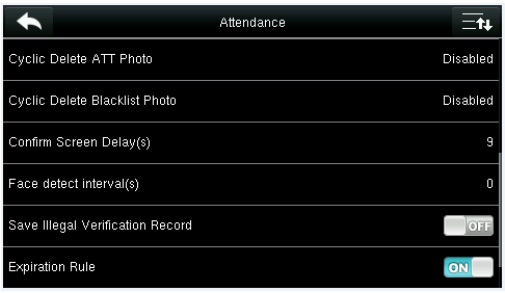
7. Select a daylight saving mode.

8. Set when to start and end the daylight saving time.

8.2 Attendance Parameters

Tap **Attendance** on the **System** interface.



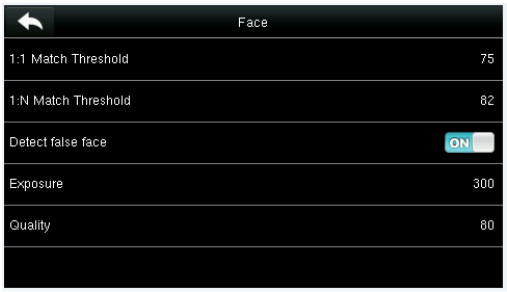


Menu Item	Description
Duplicate Punch Period (m)	Within a set time period (unit: minutes), the duplicated attendance logs will not be reserved (value ranges from 1 to 999999 minutes).
Camera Mode	To set whether to take and save pictures in verification; applicable to all users. The following 5 modes are included: **No Picture:** No picture is taken in user verification. **Take picture, no save:** Picture is taken but not saved in verification. **Take picture and save:** Picture is taken and saved in verification.

Menu Item	Description
	Save on successful verification: Picture is taken and saved in successful verification. **Save on failed verification:** Picture is taken and saved in failed verification.
Display User Picture	To set user picture to be displayed when a user passes verification. Turn it **[ON]** to display user picture and **[OFF]** to disable it.
Alphanumeric User ID	Whether to support letters in employee ID.
Attendance Log Alert	When the remaining storage is smaller than the set value, the device will automatically alert users to the remaining storage information. It can be disabled or set to a value ranged from 1 to 9999.
Cyclic Delete ATT Data	The number of attendance logs allowed to be deleted in one time when the maximum storage is attained. It can be disabled or set to a value ranged from 1 to 999.
Cyclic Delete ATT Picture	The number of attendance pictures allowed to be deleted in one time when the maximum storage is attained. It can be disabled or set to a value ranged from 1 to 99.
Confirm Screen Delay(s)	The display of the verification information interface after verification. Value ranges from 1 to 9 seconds.
Face Detect Interval (s)	To set the face comparison interval as required, within the range of 0-9 s.
Save Illegal Verification Record	To set if failed verifications, such as those caused by access in invalid Time Schedules or illegal Combined Verification, will be saved when the advanced access control function is turned on.
Expiration Rule	Whether to enable the expiration rule. If yes, conduct the expiration settings, including: retaining user information, and not saving attendance record; retaining user information, and saving attendance record; and deleting user information.

8.3 Face Parameters

Tap **Face** on the **System** interface.

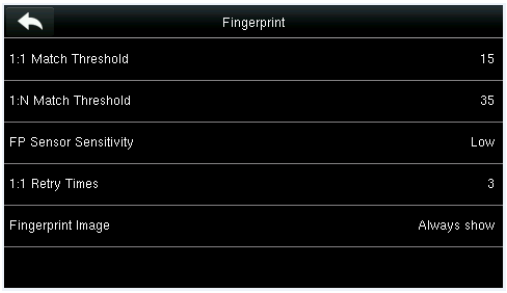


FRR	FAR	Match Threshold	
		1:N	1:1
High	Low	85	80
Medium	Medium	82	75
Low	High	80	70

Menu Item	Description
1:1 Match Threshold	Under 1:1 Verification Method, only when the similarity between the verifying face and the user's registered faces is greater than this value can the verification succeed. The valid value range is 70-120, with larger threshold leading to lower misjudgment rate and higher rejection rate, and vice versa.
1:N Match Threshold	Under 1:N Verification Method, only when the similarity between the verifying face and all registered faces is greater than this value can the verification succeed. The valid value range is 80-120, with larger threshold leading to lower misjudgment rate and higher rejection rate, and vice versa.
Detect False Face	When this function is enabled, the device automatically deletes the false face.
Exposure	This parameter is used to set the exposure value of the camera.
Quality	This parameter is used to set a quality threshold for the facial images obtained. The FFR terminal accepts the facial images and processes them by adopting the facial algorithm when their quality is higher than the threshold; otherwise, it filters these facial images.
Note	Improper adjustment of the Exposure and Quality parameters may severely affect the performance of the FFR terminal. Please adjust the Exposure parameter only under the guidance of the after-sales service personnel from our company.

8.4 Fingerprint Parameters

Tap **Fingerprint** on the **System** interface.



FRR	FAR	Match Threshold	
		1:N	1:1
High	Low	45	25
Medium	Medium	35	15
Low	High	25	10

Menu Item	Description
1:1 Match Threshold	Under 1:1 Verification Method, only when the similarity between the verifying fingerprint and the user's registered fingerprint is greater than this value can the verification succeed.
1:N Match Threshold	Under 1:N Verification Method, only when the similarity between the verifying fingerprint and all registered fingerprints is greater than this value can the verification succeed.
FP Sensor Sensitivity	To set the sensibility of fingerprint collection. It is recommended to use the default level "**Medium** (When the environment is dry, resulting in slow fingerprint detection, you can set the level to "**High** (to raise the sensibility; when the environment is humid, making it hard to identify the fingerprint, you can set the level to "**Low**).
1:1 Retry Times	**1:1 Retry Times:** In 1:1 Verification or Password Verification, users might forget the registered fingerprint or password, or press the finger improperly. To reduce the process of re-entering user ID, retry is allowed.
Fingerprint Image	To set whether to display the fingerprint image on the screen in registration or verification. Four choices are available: Show for enroll**: to display the fingerprint image on the screen only during registration.** Show for match: **to display the fingerprint image on the screen only during comparison.** Show for enroll and match: to display the fingerprint image on screen both

Menu Item	Description
	during registration and comparison. Not show for enroll or match: not to display the fingerprint image in any case.

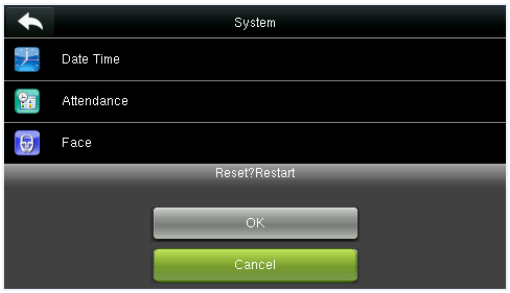
8.5 Palm Parameters

Tap **Palm Parameter** on the **System** interface, and select matching threshold, only when the similarity between the verifying face and all registered faces is greater than this value can the verification succeed and the larger threshold leading to lower misjudgment rate and higher rejection rate

8.6 Reset to Factory Settings

Reset data such as communication settings and system settings to factory settings.

Tap **Reset** on the **System** interface.



press **[OK]** to finish the reset setting.

8.7 USB Upgrade

With this option, the device firmware can be upgraded by using the upgrade file in a USB disk. Before conducting this operation, ensure that the USB disk is properly inserted into the device and contains the correct upgrade file.

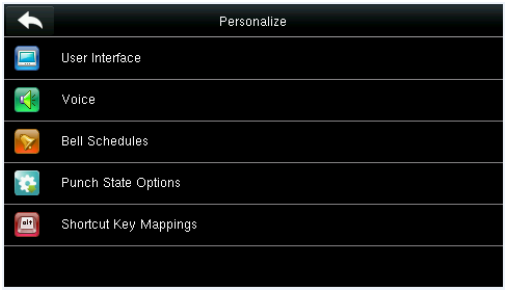
If no USB disk is inserted in, the system gives the following prompt after you tap **USB Upgrade** on the **System** interface.

NOTE: If upgrade file is needed, please contact out technical support. Firmware upgrade is not recommenced under normal circumstances.

9 Personalize Settings

Conduct related settings of user interface, voice, bell schedule and punch state options, and customize shortcut keys.

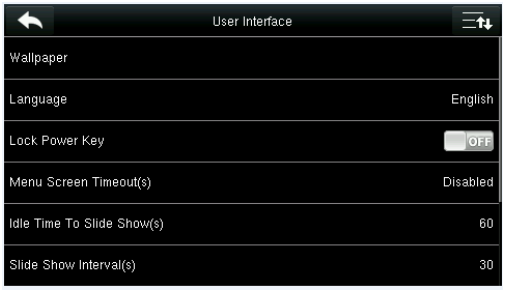
Tap [**Personalize**] on the main menu interface.

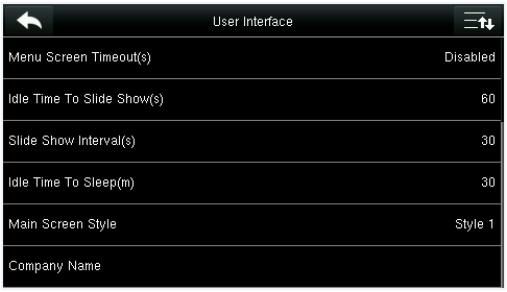


9.1 User Interface Settings

You can customize the display style of the home interface.

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





Menu Item	Description
Wallpaper	Select the wallpaper of main screen as required, you can find wallpapers of various styles in the device.
Language	Select the language of device as required.
Lock Power Key	To set whether to lock the power key. When this function is enabled, pressing the power key does not work. When this function is disabled, the system shuts down after you press the power key for three seconds.
Menu Screen Timeout (s)	When there is no operation in the menu interface and the time exceeds the set value, the device will automatically exit to the initial interface. You can disable it or set the value to 60~99999 seconds.
Idle Time To Slide Show (s)	When there is no operation in the initial interface and the time exceeds the set value, a slide show will be shown. It can be disabled (set to "**None** or set to 3~999 seconds.

Slide Show Interval (s)	This refers to the interval between displaying different slide show pictures. It can be disabled or set to 3~999 s.
Idle Time To Sleep (m)	When there is no operation in the device and the set Sleep Time is attained, the device will enter standby mode. Press any key or finger to cancel standby mode. You can disable this function, or set the value to 1~999 minutes. If this function is turned to **[Disabled]**, the device will not enter standby mode.
Main Screen Style	Choosing the position and ways of the clock and status key.

9.2 Voice Settings

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

Menu Item	Description
Voice Prompt	Select whether to enable voice prompts during operating, press **[ON]** to enable it.
Touch Prompt	Select whether to enable keyboard voice while pressing keyboard, press **[ON]** to enable it.
Volume	Set the volume of device.

9.3 Bells Settings

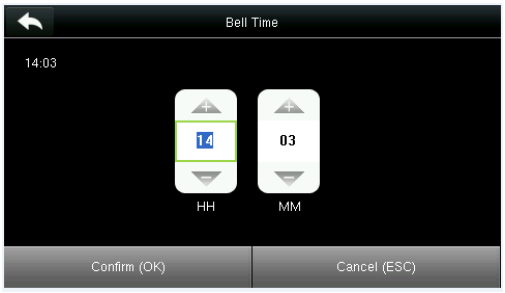
Many companies choose to use bell to signify on-duty and off-duty time. When reaching the scheduled time for bell, the device will play the selected ringtone automatically until the ringing duration is passed.

9.3.1 Add a Bell

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

1. Tap **New Bell Schedule**.

2. Tap **Bell Status** to enable the bell status.

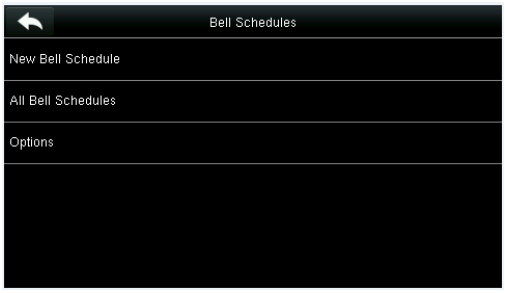


3. Set **Bell Time**.

4. Set **Repeat**.

5. Select a ring tone.

6. Select the internal bell delay.



7. Return to the **Bell Schedules** interface and tap **All Bell Schedules**.

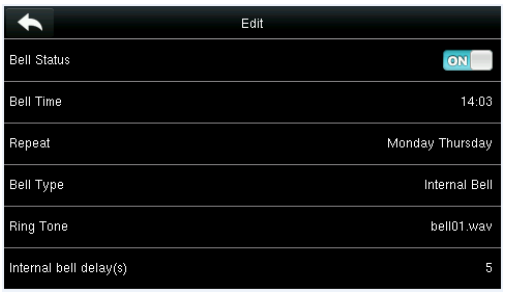
8. The added bells are displayed in a list.

9.3.2 Edit a Bell

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

Tap **Edit**

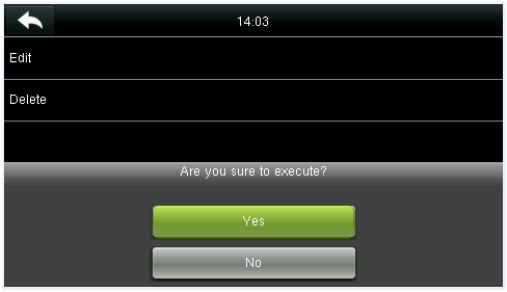
.



The editing method is the same as that of a new bell, and not described here.

9.3.3 Delete a Bell

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

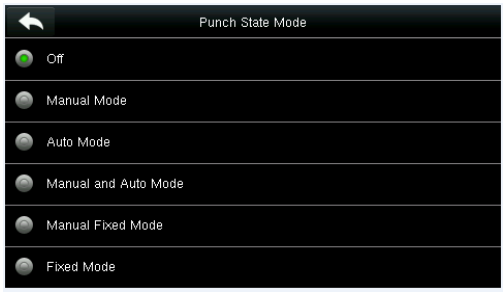


Tap **Delete** and select [**Yes**] to delete the bell.

The bell is deleted successfully.

9.4 Punch States Settings

Tap **Punch State Options** on the **Personalize** interface.



Menu Item	Description
Punch State	Select a punch state mode, which can be:

Menu Item	Description
Mode	**Off:** To disable the punch state key function. The punch state key set under **Shortcut Key Mappings** menu will become invalid. 1. **Manual Mode:** To switch the punch state key manually, and the punch state key will disappear after **Punch State Timeout**. 2. **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 timeout, the manually switching punch state key will become auto-switching punch state key. **Manual Fixed Mode:** After 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)	The timeout time of the display of punch state. The value ranges from 5~999 seconds.
Mandatory Attendance State	Whether an attendance state must be selected during verification.

9.5 Shortcut Keys Settings

Shortcut keys can be defined as punch state keys or menu function key. When the device is on the main interface, pressing the set shortcut key will display the attendance state or enter the menu operation interface.

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

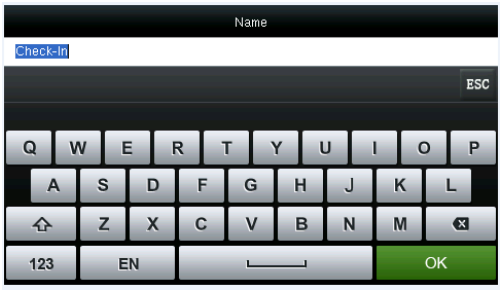
1. Tap the shortcut key to be set (For the

2. The shortcut key setting interface is displayed. name of corresponding key, see section 1.5 Initial Interface).

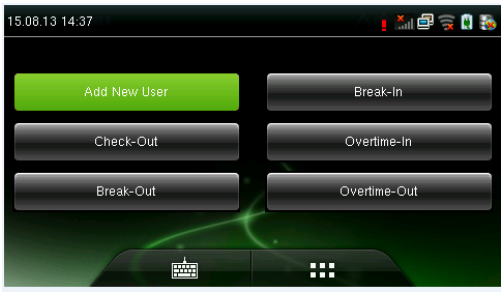
3. Set the state value (value range 0-250).

4. Set corresponding function for this touch key.

6. Set the state key name.



7. Customize and enter a name.



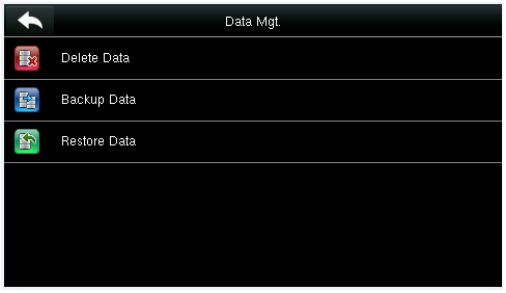
8. Tap the main interface to show the shortcut menu.

Tap the attendance state to make a switch. Tap the function to rapidly access the function settings. (Tap F1 **New User** to rapidly access this menu.)

10 Data Mgt.

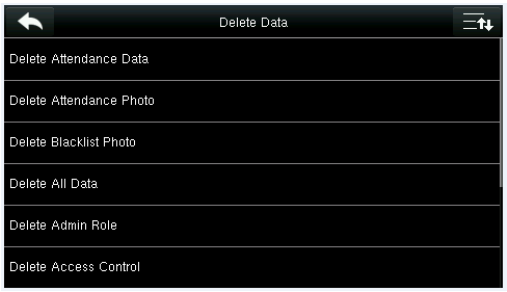
To manage data in the device, which includes delete data, backup data and restore data.

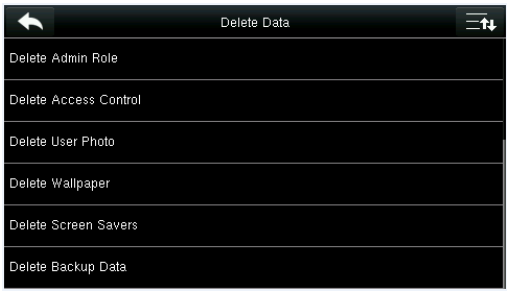
Tap **Data Mgt.** on the main menu interface.



10.1 Delete Data

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

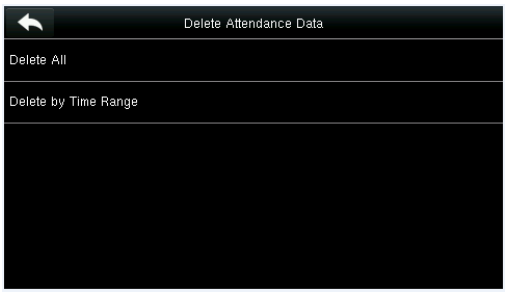




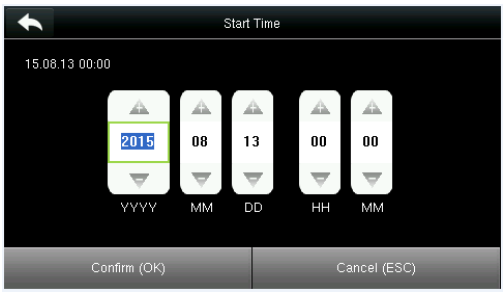
Menu Item	Description
Delete Attendance Data	To delete all attendance data in the device.
Delete Attendance Picture	To delete all users' attendance pictures in the device.
Delete Blacklist Picture	To delete all blacklisted pictures in the device, which means the pictures taken after failed verifications.
Delete All Data	To delete all user information, fingerprints and attendance logs etc.
Delete Admin Role	To make all Administrators become Normal Users.
Delete Access Control	To delete all access data.
Delete User Picture	To delete all user pictures in the device.

Delete Wallpaper	To delete all wallpapers in the device.
Delete Screen Savers	To delete all screen savers in the device.
Delete Backup Data	To delete all backup data.

Note: When deleting the attendance record, attendance picture or blacklist picture, you can select Delete All or Delete by Time Range. When Delete by Time Range is selected, you need to set the time range for data deletion.



Select **Delete by Time Range**.



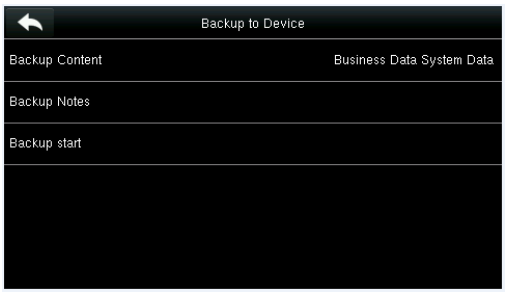
Set the time range and tap **Confirm (OK)**.

10.2 Data Backup

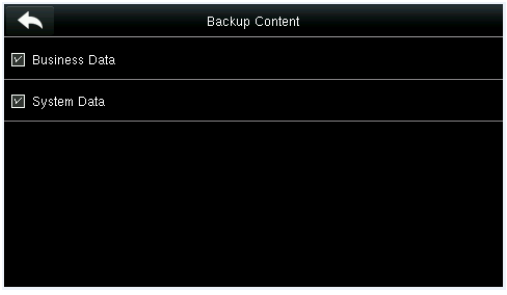
To backup the business data, or configuration data to the device or U disk.

Tap **Backup Data** on the **Data Mgt.** interface.

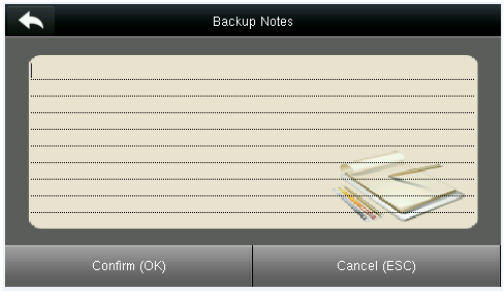
1. Select **Backup to Device**.



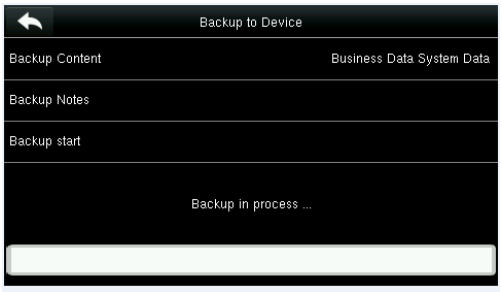
2. Tap **Backup Content**.



3. Select the content to be backed up.



4. Make a backup remark. (This step is optional.)



5. Tap **Backup Start**, and the backup succeeds.

✍ **NOTE:** The operations of **Backup to Device** are the same as that of **Backup to USB Disk**.

When you choose to save data in a USB disk, ensure that the USB disk is properly plugged into the device.

10.3 Data Restoration

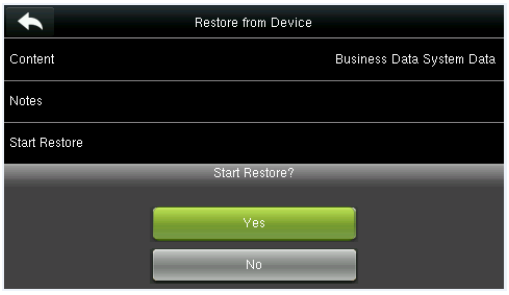
To restore the data in the device or U disk to the device.

Tap **Restore Data** on the **Data Mgt.** interface.

1. Tap **Restore from Device**.

2. Tap **Content**.

3. Select the data content to be restored.



4. Tap **Start Restore** and select **Yes** to confirm restoration.

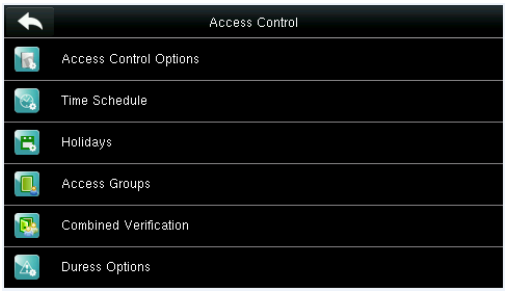
✍ **NOTE:**The operations of **Restore from Device** are the same as that of **Restore from USB Disk**.

When you choose to save data to a USB disk, ensure that the USB disk is properly plugged into the device and contains corresponding data to be restored.

11 Access Control

Access Control option is used to set the Time Schedule, Holidays, Access Groups, Combined Verification etc., the related parameters for the device to control the lock and other devices.

Tap [**Access Control**] on the main menu interface.



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

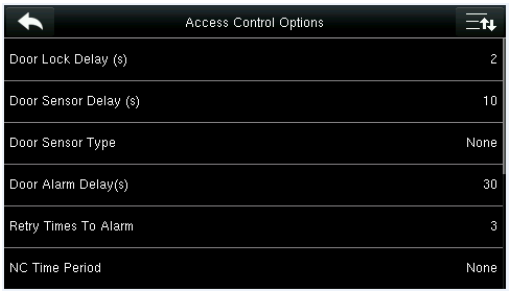
1. User's access time falls within either user's personal time zone or group time zone.
2. User's group must be in the access combo (when there are other groups in the same access combo, verification of members of those groups are also required to unlock the door).

   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.

11.1 Access Control Options Settings

To set the parameters of the equipment control lock and related equipment.

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



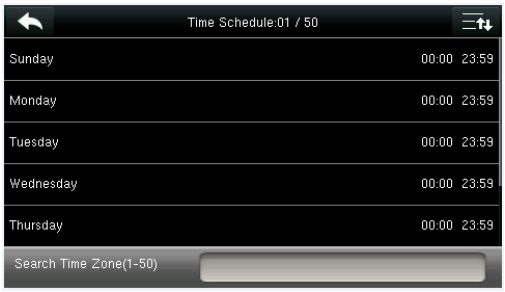
Menu Item	Description
Door Lock Delay (s)	The period of time of unlocking (from door opening to closing automatically) after the electronic lock receives an open signal sent from the device (value ranges from 0 to 10 seconds).s
Door Sensor Delay (s)	When the door is opened, the door sensor will be checked after a time period; if the state of the door sensor is inconsistent with that of the door sensor mode, alarm will be triggered. The time period is the **Door Sensor Delay** (value ranges from 0 to 255 seconds).

Menu Item	Description
Door Sensor Type	It includes **Normally Open**, **Normally Closed** and **No**. **No** means door sensor is not in use; **Normally Open** means the door is opened when electricity is on; **Normally Closed** means the door is closed when electricity is on.
Door Alarm Delay (s)	When the state of the door sensor is inconsistent with that of the door sensor type, alarm will be triggered after a time period; this time period is the **Door Alarm Delay** (the value ranges from 1 to 999 seconds).
Retry Times To Alarm	When the number of failed verification reaches the set value (value ranges from 1 to 9 times), the alarm will be triggered. If the set value is None, the alarm will not be triggered after failed verification.
NC Time Period	To set time period for Normally Closed mode, so that no one can gain access during this period.
NO Time Period	To set time period for Normally Open, so that the door is always unlocked during this period.
RS485 Reader	
Valid holidays	To set if **NC Time Period** or **NO Time Period** settings are valid in set holiday time period. Choose **[ON]** to enable the set **NC** or **NO** time period in holiday.
Speaker Alarm	When the **[Speaker Alarm]** is enabled, the speaker will raise an alarm when the device is being dismantled.
Reset Access Setting	To restore access control parameters.
Remarks	After setting **NC Time Period**, please lock the door well, otherwise alarm might be triggered during **NC Time Period**.

11.2 Time Schedule Settings

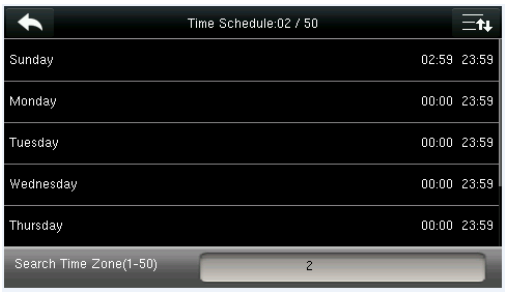
Time Schedule is the minimum time unit of access control settings; at most 50 **Time Schedules** can be set for the system. Each **Time Schedule** consists of 7 time sections (a week), and each time section is the valid time within 24 hrs.

Tap **Time Schedule** on the **Access Control** interface.

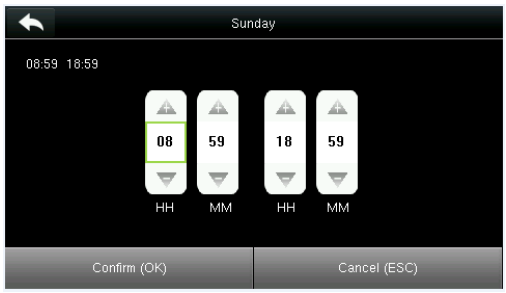


1. Tap the input box of Search Time Zone.

2. Enter the number of the time zone (50 in total) to be searched.



3. Tap the date on which time zone setting is required.



4. Press **Up and Down** to set the start and end time, and then press **Confirm (OK)**.

Note:

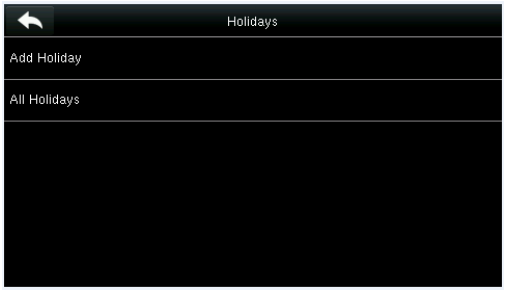
1. **Valid Time Schedule:** 00:00 ~ 23:59 (Whole-day valid) or when the end time is greater than the start time.
2. **Invalid Time Schedule:** When the end time is smaller than the start time.
3. The default time zone 1 indicates that system is open all day long.

11.3 Holidays Settings

The concept of holiday and festival is introduced into access control. On holidays or festivals, special access control time may be required, but changing everyone's access control time is very tedious. Therefore, the access control time on holidays and festivals, which applies to all staff, can be set.

If the access control time on holidays and festivals is set, the opening period of time on holidays and festivals subjects to the time period set here.

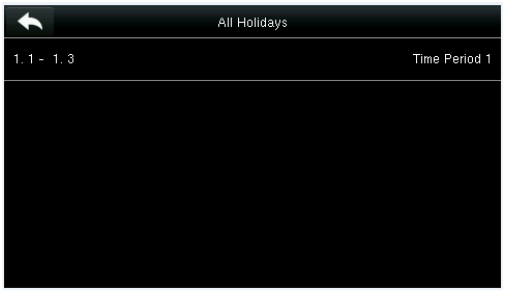
Tap **Holidays** on the **Access Control** interface.



11.3.1 Add New Holiday

Tap **Add Holiday** on the **Holidays** interface.

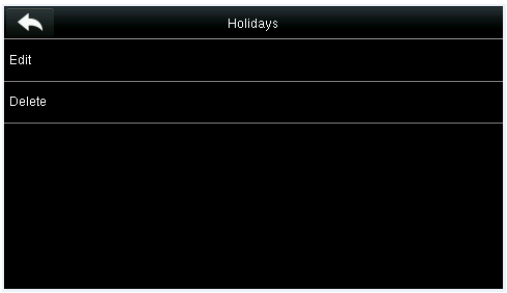
Set holiday parameters.



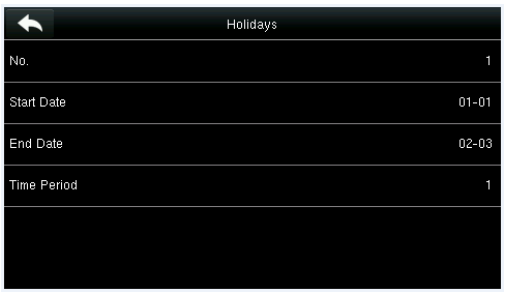
The added holidays are displayed in a list.

11.3.2 Edit Holiday

On the Holidays interface, tap to select an item to be modified.



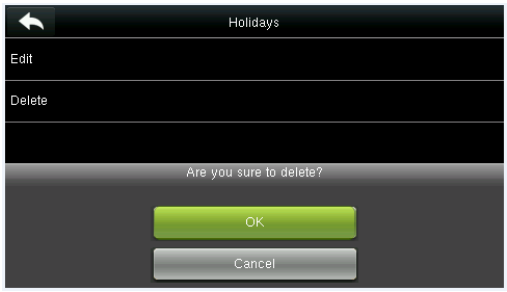
Tap [**Edit**].



Modify holiday parameters.

11.3.3 Delete a Holiday

On the **Holidays** interface, tap to select a holiday item to be modified, and tap **Delete**.



Tap **OK** to confirm deletion.

After deletion, this holiday is no longer displayed in All Holidays.

11.4 Access Groups Settings

Grouping is to manage users in groups.

Group users' default time zone is set to be the group time zone, while users can set their personal time zone. When the group verification mode overlaps the user verification mode, the

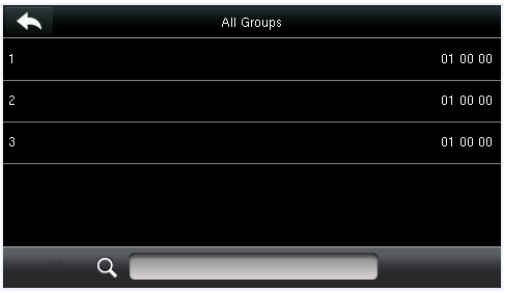
user verification modes prevails. Each group can set 3 time zones at most, as long as one of them is valid, the group can be verified successfully. By default, the newly enrolled user belongs to Access Group 1, and can also be allocated to other access group.

Tap **Access Groups** on the **Access Control** interface.

11.4.1 Add New Group

Tap **New Group** on the **Access Groups** interface.

Set access group parameters.



The added access groups are displayed in a list. You can rapidly search for groups by number.

Note:

1. The system has a default access group numbered 1, which cannot be deleted but can be modified.
2. A number cannot be modified again after being set.
3. When the holiday is set to be valid, the personnel in a group can open the door only when group time period overlaps with the holiday time period.
4. When the holiday is set to be invalid, the access control time of the personnel in this group is not affected by holidays.

11.4.2 Edit Group

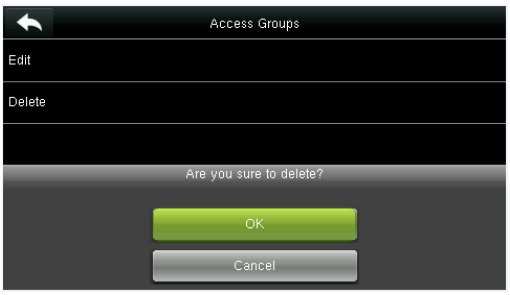
On the **All Groups** interface, tap to select the access group item to be modified.

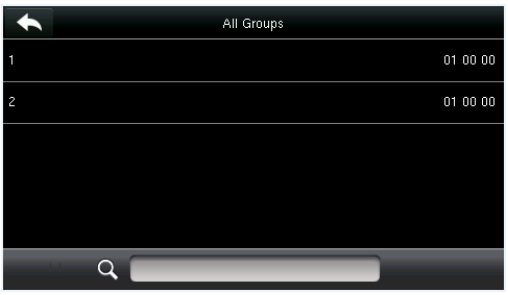
Tap **Edit**.

Modify access group parameters.

11.4.3 Delete a Group

On the **All Groups** interface, tap to select the access group item to be modified, and tap **Delete**.





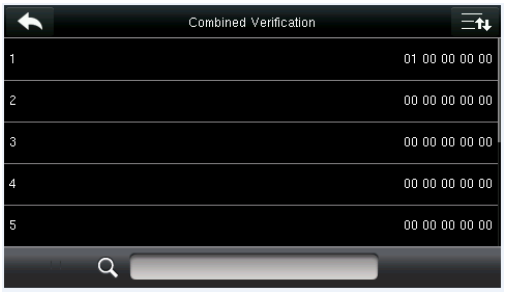
Tap **OK** to confirm deletion.

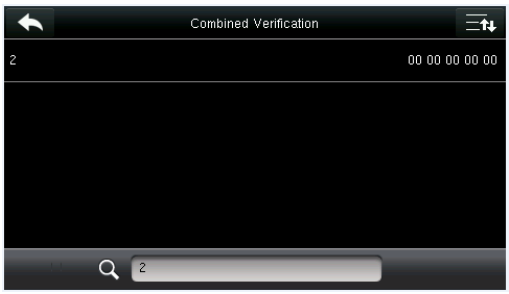
The deleted access group is no longer displayed in **All Groups**.

11.5 Combined Verification Settings

Combine two or more members to achieve multi-verification and improve security.

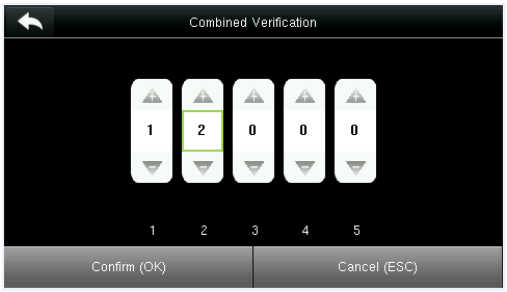
Tap **Combined Verification** on the **Access Control** interface.





1. Tap the unlocking combination to be set or tap the search bar and enter a unlocking combination number to find the specific combination.

2. Tap this unlocking combination item.



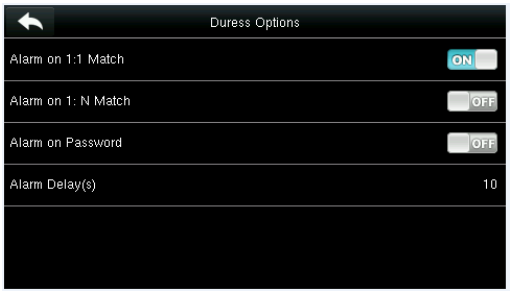
Note: In a Combined Verification, the range of user number is: 0 ≤ N ≤ 5. If you need to delete a unlocking combination, directly set all digits of the combination number to 0. If you need to modify a combination, directly tap corresponding combination item to conduct setting again.

3. Tap **Up** and **Down** to enter the combination number, and then press [**Confirm (OK)**].

11.6 Duress Options Settings

When users come across duress, select duress alarm mode, the device will then open the door as usual and send the alarm signal to the backstage alarm.

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



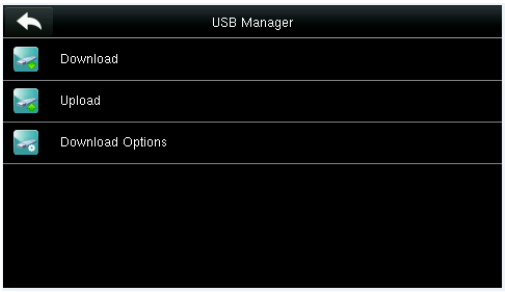
Menu Item	Description
Alarm on 1:1 Match	In **[ON]** state, when a user uses 1:1 Verification Method to verify any registered fingerprint, alarm will be triggered. In **[OFF]** state, no alarm signal will be triggered.
Alarm on 1: N Match	In **[ON]** state, when a user uses 1:N Verification Method to verify any registered fingerprint, alarm will be triggered. In **[OFF]** state, no alarm signal will be triggered.
Alarm on Password	In **[ON]** state, when a user uses password verification method, alarm will be triggered. In **[OFF]** state, no alarm signal will be triggered.
Alarm Delay (s)	When duress alarm is triggered, the device will send out alarm signal after 10 seconds (default); the alarm delay time can be changed (value ranges from 1 to 999 seconds).

12 USB Manager

You can import the user information, fingerprint template and attendance data in the machine to matching attendance software for processing by using a USB disk, or import the user information and fingerprints to other fingerprint devices for backup.

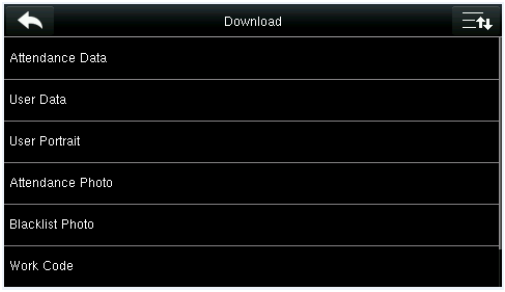
Before uploading/downloading data from/to the USB disk, insert the USB disk into the USB slot first.

Tap **USB Manager** on the main menu interface.



12.1 USB Download

On the **USB Manager** interface, tap **Download**.



Menu Item	Description
Attendance Data	To download attendance data in specified time period into USB disk.
User Data	To download all user information and fingerprints from the device into USB disk.
User Portrait	To download all user pictures from the device into a USB disk.
Attendance Picture	To download all attendance pictures from the device into USB disk.
Blacklist Picture	To download all blacklisted pictures (pictures taken after failed verifications)

	from the device into USB disk.
Work Code	To save the work code in the device to a USB disk.
Short Message	To download the short message set in the device to a USB disk.

12.2 USB Upload

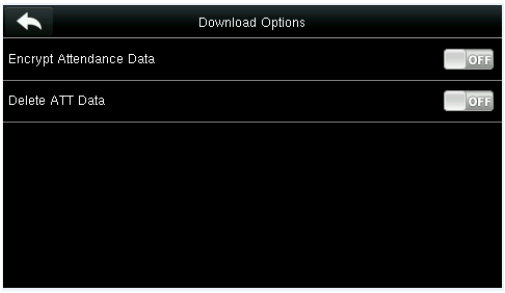
On the **USB Manager** interface, tap **Upload**.

Menu Item	Description
Upload User Data	To upload all the user information and fingerprints from USB disk into the device.
Upload User Picture	To upload the JPG picture named after a work code in the USB disk to the device. During uploading, you can select **Upload Current Picture** or **Upload All Pictures**. The picture is displayed after successful authentication. During uploading, you need to create a folder named "**picture**" in the root directory of the USB disk, and put the user picture in this directory. A maximum of 2000 pictures are supported and each picture cannot exceed 20 KB. Pictures are named in the format of X.jpg, of which X indicates the actual user ID and must be in JPG format.
Upload Work Code	To upload work codes in the USB disk to the device.
Upload Short Message	To upload short messages saved in the USB disk to the device.
Upload Screen Saver	To upload all screen savers from USB disk into the device. You can choose **Upload selected picture** or **Upload all pictures**. The images will be displayed on the device's main interface after upload. During uploading, you need to create a folder named "**advertise**" in the root directory of the USB disk, and put the advertising pictures in this directory. A maximum of

	20 pictures are supported and each picture cannot exceed 30 KB. The picture name and format are not limited, with formats such as jpg, png and bmp supported.
Upload Wallpaper	To upload all wallpapers from USB disk into the device. You can choose **Upload selected picture** or **Upload all pictures**. The images will be displayed on the screen after upload. During uploading, you need to create a folder named "**wallpaper**" in the root directory of the USB disk, and put the wallpaper pictures in this directory. A maximum of 20 pictures are supported and each picture cannot exceed 30 KB. The picture name and format are not limited, with formats such as jpg, png and bmp supported.
Note	The size of a single user picture or attendance picture does not exceed 10 KB, and the device can save a total of 10,000 user pictures and attendance pictures. The optimal size of an advertising picture or wallpaper is 640*480.

12.3 Download Options Settings

On the USB Manager interface, tap **Download Options**.

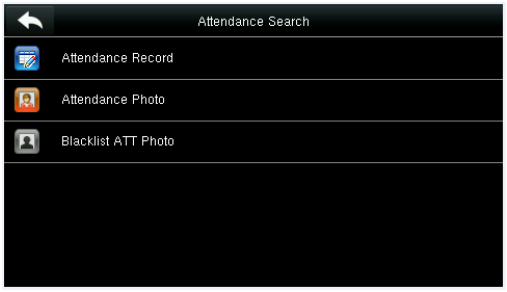


Menu Item	Description
Encrypt Attendance Data	During uploading and downloading, the attendance data is encrypted.
Delete ATT Data	After successful downloading, the attendance data on the device is deleted.

13 Attendance Search

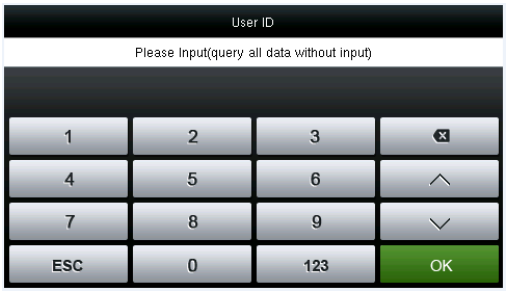
When users verify successfully, attendance records are saved in the device. This function enables users to check attendance logs.

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

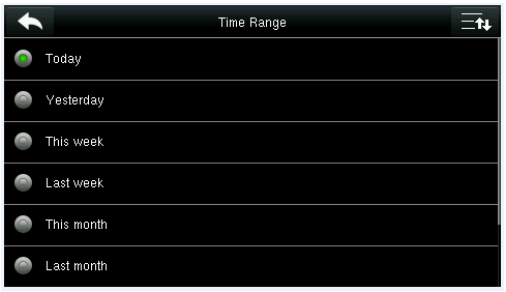


The process of querying attendance pictures and blacklist pictures is the same as that of querying attendance records. The following is an example of querying attendance records.

On the **Attendance Record** interface, tap **Attendance Record**.

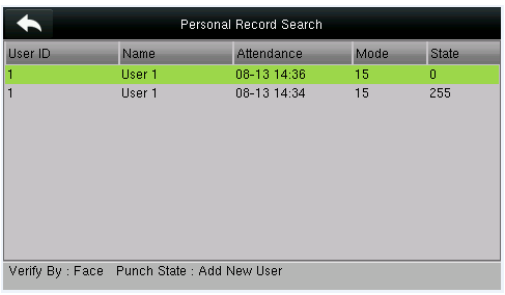


1. Enter the user ID to be searched and tap **OK**. Taping **OK** without entering a user ID searches the attendance records of all employees.



2. Select the time range for attendance record query.

3. The record search succeeds. Tap the record.

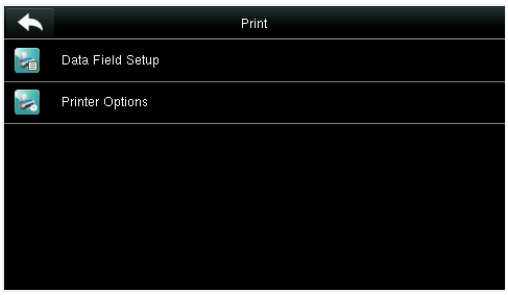


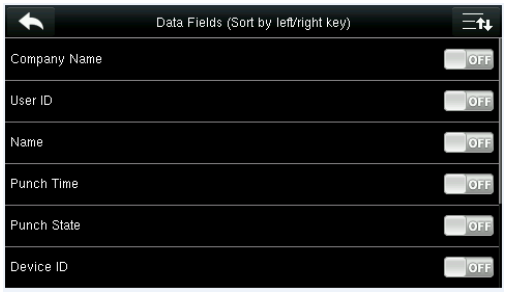
4. The above figure shows the details of this record

14 Print Settings

Devices with printing function can print attendance records out when a printer is connected (this function is optional and only be equipped in some products).

Tap [**Print**] on the main menu interface.





Tap **Data Field Setup** on the Print interface. Press **ON/OFF** to turn on / off the fields needing to be printed.

Press **ON/OFF** to turn on / off the **Paper Cut** function.

✍ **Remarks:** To turn on the **Paper Cut** function, it is required to connect the device with a printer with paper cutting function, so that the printer will cut papers according to the selected printing information when printing.

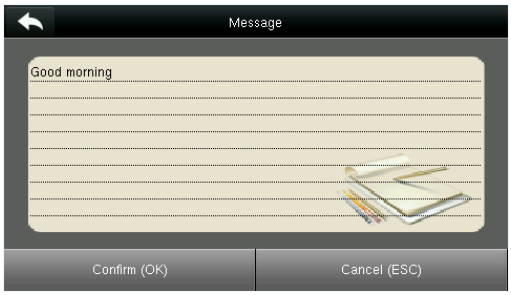
15 Short Message

SMS is similar to notice. The operator can edit the notice content in advance and make it into SMS displayed on the screen. SMS includes common SMS and individual SMS. If common SMS is set, will be displayed in information column at the top of standby interface in the specified time. If individual SMS is set, the employee who can receive SMS can see SMS after successful attendance.

15.1 Add a New Short Message

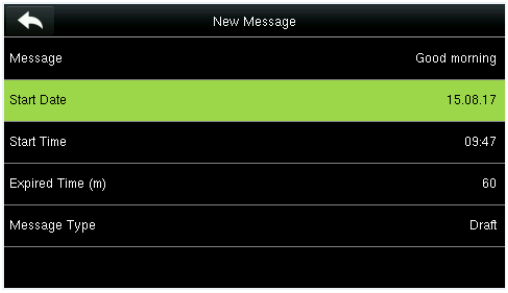
1. Entering the content: Enter the content of a short message with an input method.

Tap **Message**.

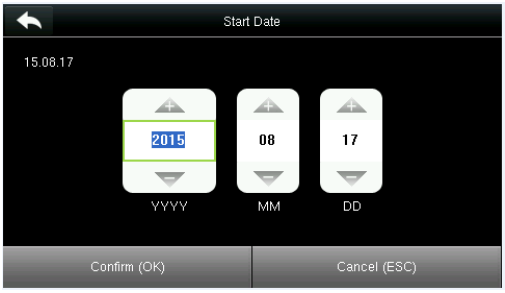


Enter the content and press **OK** to save the entered content and quit.

2. Setting the start date and time: the date and time when the short message becomes valid.



Select **Start Date** and press **OK**.



Press the numeric keys on the keypad to enter the date and press **OK**.

3. Set Expired time(m)SMS appears in the effective time. After the effective time, it won't appear.

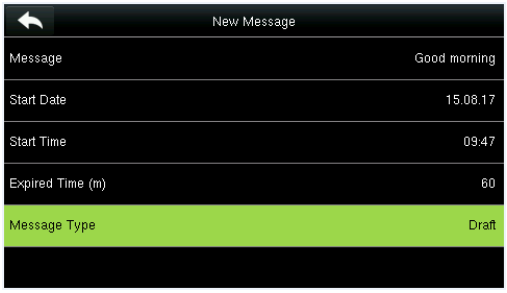
Notes: For public short messages, the effective period is also the display period. For private short messages, you need to set a display period after setting an effective period. That is, the display period of a private short message can be viewed when you punch in or out during the effective period of the message.

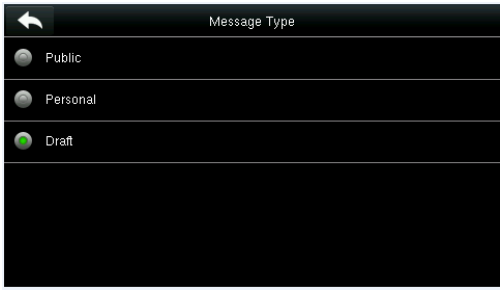
4. Set Message type

Public: SMS able to be seen by all employees.

Personal: SMS aimed at individual only.

Draft: Preset SMS, no difference of individual SMS or common SMS.



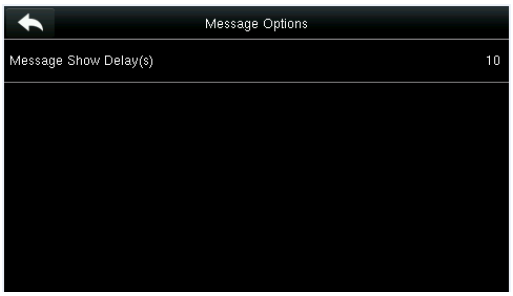


Select **Message** Type and press **OK**.

Press ▼ to select a type and press **OK** for confirmation.

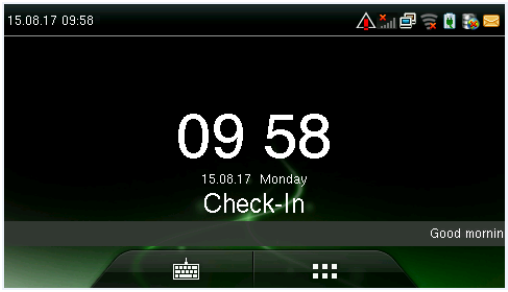
15.2 Message Options

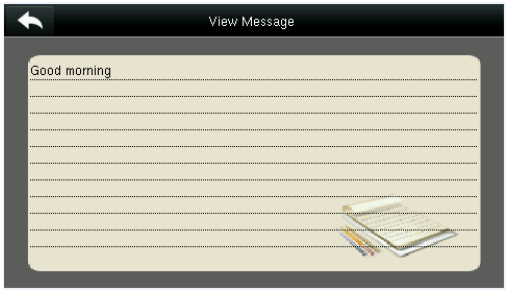
Set the personal Message Show Delay time on the initial interface.



15.3 View the Public Messages and Personal Message

After a public short message is set, the short message icon is displayed on the upper right of the main interface, and the public short message content is displayed in scroll mode below. The content of a personal short message is displayed after successful user authentication.



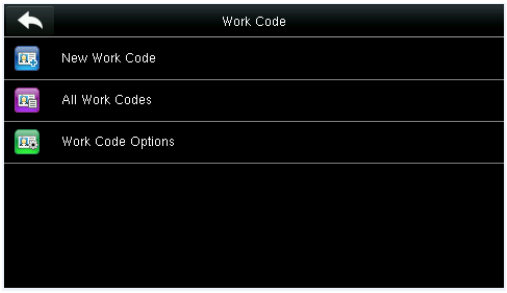


The public short message is displayed in the lower part of the interface.

The personal short message is displayed after successful user authentication.

16 Work Code

Employees' salaries are subject to their attendance records. Employees may be engaged in different types of work which may vary with time periods. Considering the salaries vary with work types, the FFR terminal provides a parameter to indicate the corresponding work type for every attendance record to facilitate rapid understanding of different attendance situations during the handling of attendance data.

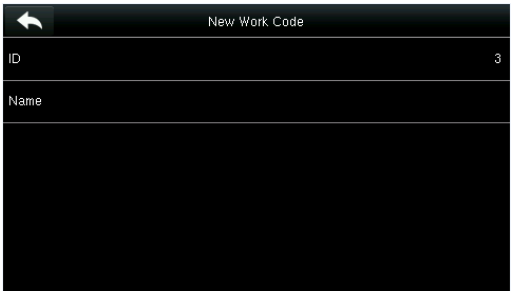


16.1 Add a Work Code

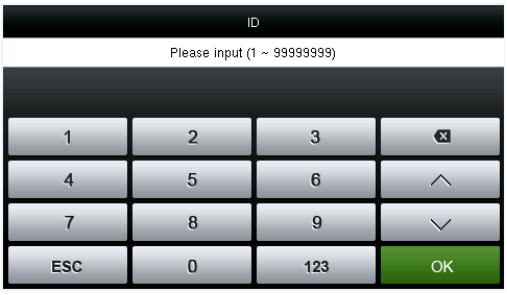
No.: A digital code of the work code.

Label: The meaning of the work code.

1. Editing an ID



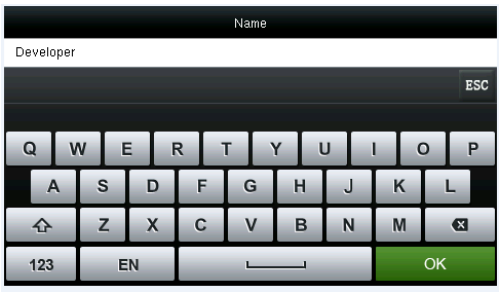
Select **ID**.



Press the numeric keys to assign a number between 1~99999999.

2. Editing a name

Select **Name**.

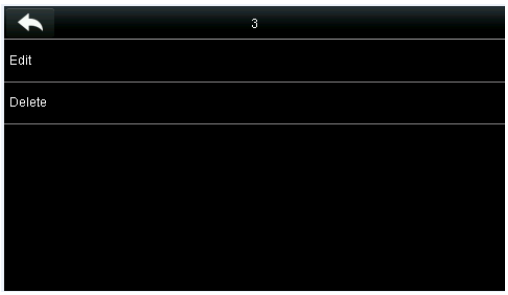


Press * to select an input method and enter a name.

16.2 All Work Codes List

You can view, edit and delete work codes in All Work Codes. The process of editing a work code is the same as that of adding a work code except that the ID is not allowed to be modified.

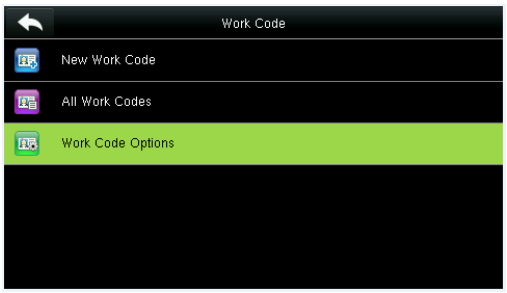
View the information about all work codes.



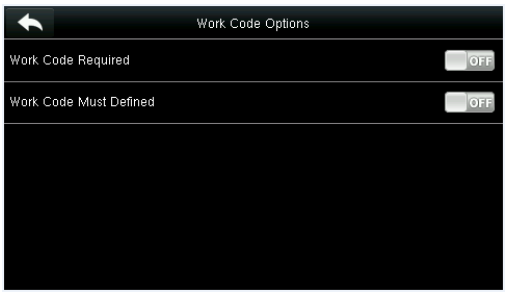
Edit or delete a work code.

16.3 Work Code Options

To set whether the work code must be entered and whether the entered work code must exist during authentication.



Select **Work Code Options**.

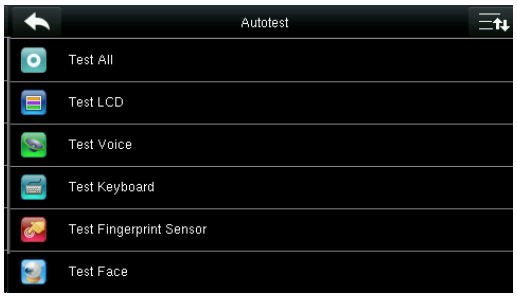


Press **ON/OFF** to turn on or off.

17 Autotest

To automatically test whether all modules in the device function properly, which include the LCD, voice, keyboard, fingerprint sensor, camera and RTC (Real-Time Clock).

In the initial interface, press **[Autotest]** to enter the **Autotest** interface.

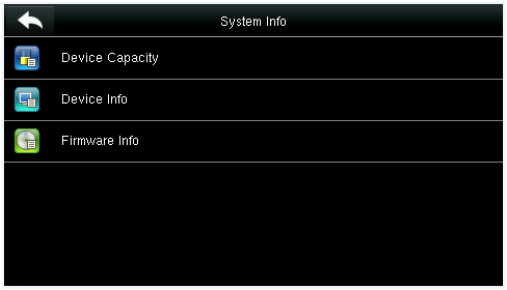


Menu Item	Description
Test LCD	To test the display effect of LCD screen by displaying full color, pure white, and pure black to check whether the screen displays colors properly.
Test Voice	The device automatically tests whether the voice files stored in the device are complete and the voice quality is good.
Test Fingerprint Sensor★	To test the fingerprint sensor by pressing fingerprint to check if the collected fingerprint image is clear. When pressing fingerprint on the sensor, the image will be displayed on the screen.
Camera testing	To test if the camera functions properly by checking the pictures taken are clear for use.
Test Clock RTC	To test the Real-Time Clock. The device tests whether the clock works properly and accurately by checking the stopwatch. Touch the screen to start counting time, and press it again to stop counting, to see if the stopwatch counts time accurately.

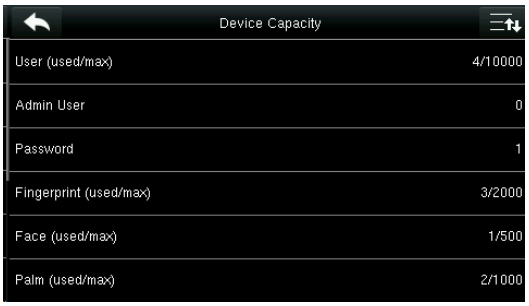
18 System Information

Check data capacity, device and firmware information.

Tap [**System Info**] on the main menu interface.

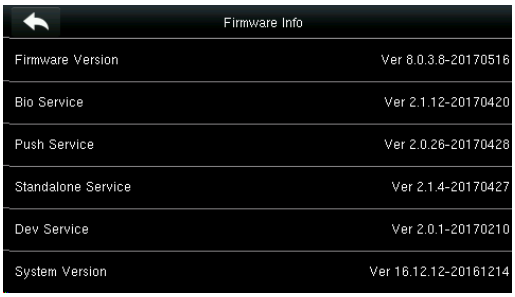


1. On the System Info interface, tap an information item to be browsed.



2. View the data capacity information, and press **Page Down** to view other information.

3. View the device information, and press **Page Down** to view other information.



4. View the device firmware information.

Appendix 1 Wiegand Introduction

Wiegand26 Protocol is a standard protocol on access control developed by the Access Control Standard Subcommittee affiliated to the Security Industry Association (SIA). It is a protocol used for contactless IC card reader port and output.

The protocol defines the port between the card reader and controller which are widely used in access control, security and other related industries. This has standardized the work of card reader designers and controller manufacturers. The access control devices produced by our company also apply this protocol.

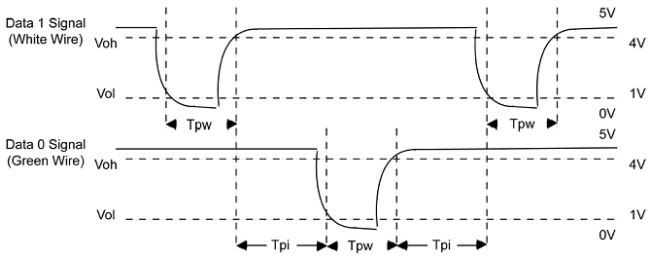
Digital Signal

Figure 1 shows the sequence diagram of the card reader sending digital signal in bits to the access controller. The Wiegand in this diagram follows the SIA access control standard protocol, which targets at 26-bit Wiegand card reader (with a pulse time within 20us to 100us and pulse hopping time within 200us and 20ms). Data1 and Data0 signals are high level (greater than Voh) until the card reader is ready to send a data stream. The card reader send out asynchronous low level pulse (less than vol), transmitting data stream via Data1 or Data0 wire to access control box (as the sawtooth wave in figure 1). Data1 and Data0 pulses do not overlap or synchronize. Figure 1 shows the maximum and minimum pulse width (successive pulses) and pulse hopping time (the time between two pulses) allowed by the F series fingerprint access control terminals.

Table1: Pulse Time

Sign	Definition	Card Reader Typical Value
Tpw	Pulse Width	100 μs
Tpi	Pulse Interval	1 ms

Figure1: Sequence Diagram



The 26-bit and 34-bit Wiegand formats are described as follows:

- **Wiegand 26**

The system has a built-in Wiegand 26-bits format. Press [**Wiegand Format**], and select "Standard Wiegand 26-bits".

The composition of the Wiegand 26-bits format contains 2 parity bits and 24 bits for output contents ("User ID" or "Card Number"). The binary code of 24-bits represent up to 16,777,216 (0–16,777,215) different values.

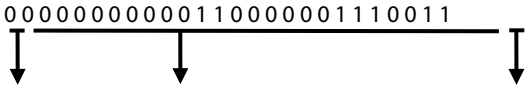
1	**2**	**25 26**
ven parity	User ID/Card Number	Odd parity bit

Definition of Fields:

Field	**Meaning**
Even parity bit	Judged from bit 2 to bit 13. The **even parity bit** is 1 if the character has an even number of 1 bit; otherwise, the even parity bit is 0.
User ID/ Card Number (bit 2-bit 25)	User ID/Card Number (Card Code, 0–16777215) Bit 2 is the Most Significant Bit (MSB).
Odd parity bit	Judged from bit 14 to bit 25. The **odd parity bit** is 1 if the character has an even number of 1 bit; otherwise, the odd parity bit is 0.

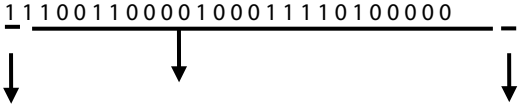
For example, for a user with the user ID of 12345, the enrolled card number is 0013378512 and the failed ID is set to 1.

1. When the output is set to "User ID", the Wiegand output is as follows upon successful verification:



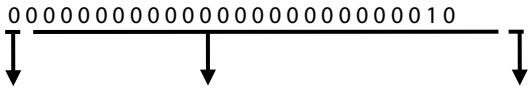
Even parity bit User ID = Binary code of 12345 Odd parity bit

2. When the output is set to "Card Number", the Wiegand output is as follows upon successful verification:



Even parity bit User ID = Binary code of 0013378512 Odd parity bit

3. The Wiegand output is as follows upon verification failure:



Even parity bit Failed ID = Binary code of 1 Odd parity bit

Note: If the output contents exceed the scope allowed for the Wiegand format, the last several bits will be adopted and first several bits are automatically discarded. For example, the user ID 888 888 888 is 110 100 111 110 110 101 111 000 111 000 in binary format. Wiegand26 only supports 24 bits, that is, it only outputs the last 24 bits, and first 6 bits "110 100" are automatically discarded.

● Wiegand 34

The system has a built-in Wiegand 34-bits format. Press [**Wiegand Format**], and select "Standard Wiegand 34-bits".

The composition of the Wiegand 34-bits format contains 2 parity bits and 32 bits for output contents ("User ID" or "Card Number"). The binary code of 32-bits represent up to 4,294,967,296 (0–4,294,967,295) different values.

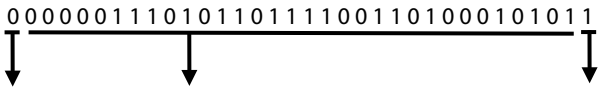
1	**2**	**33 34**
venParityBit	User ID/Card Number	Odd parity bit

Definition of Fields

Field	Meaning
Even parity bit	Judged from bit 2 to bit 17. The **even parity bit** is 1 if the character has an even number of 1 bit; otherwise, the even parity bit is 0.
User ID/Card Number (bit 2-bit 33)	User ID/Card Number (Card Code, 0–4,294,967,295) Bit 2 is the Most Significant Bit (MSB).
Odd parity bit	Judged from bit 18 to bit 33. The **odd parity bit** is 1 if the character has an even number of 1 bit; otherwise, the odd parity bit is 0.

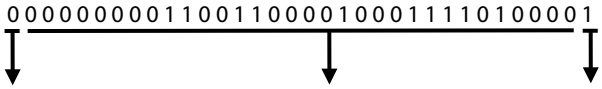
For example, for a user with the user ID of 123456789, the enrolled card number is 0013378512 and the failed ID is set to 1.

1. When the output is set to "User ID", the Wiegand output is as follows upon successful verification:



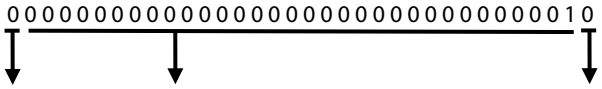
Even parity bit User ID = Binary code of 123456789 Odd parity bit

2. When the output is set to "Card Number", the Wiegand output is as follows upon successful verification:



Even parity bit User ID = Binary code of 0013378512 Odd parity bit

3. The Wiegand output is as follows upon verification failure:



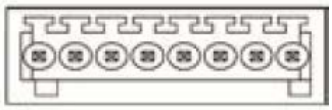
Even parity bit Failed ID = Binary code of 1 Odd parity bit

Appendix 2 Printing Function

☺ **Remarks: Only some models support printing function.**

Function Instruction

This function only supports serial port but not parallel port printing. Printing content is output via RS232 format; verification information will be output every time to the serial port. Printing is available if a printer is connected, or a hyper terminal can be used to read output content.

Connection between the device and printer	**Device** **Printer** TXD <-----> RXD RXD <-----> TXD GND <-----> FG
RS232 Pin-line order	

[Operation]

1. In the initial interface, press **[M/OK]** > **Comm.** > **Serial Comm** > **Baudrate**, and choose 19200 as the baud rate.

2. In the initial interface, press **[M/OK]** > **Print**.

Note:

1. The baud rate of the device and printer (hyper terminal) should be consistent.

2. If the default printing format is not satisfactory, you may contact our company to customize other formats.

Appendix 3 Statement on Human Rights and Privacy

Dear Customers:

Thank you for choosing the hybrid biometric products designed and manufactured by us. As a world-renowned provider of biometric technologies and services, we pay much attention to the compliance with the laws related to human rights and privacy in every country while constantly performing research and development.

We hereby make the following statements:

1. All of our fingerprint recognition devices for civil use only collect the characteristic points of fingerprints instead of the fingerprint images, and therefore no privacy issues are involved.
2. The characteristic points of fingerprints collected by our products cannot be used to restore the original fingerprint images, and therefore no privacy issues are involved.
3. We, as the equipment provider, shall not be held legally accountable, directly or indirectly, for any consequences arising due to the use of our products.
4. For any dispute involving the human rights or privacy when using our products, please contact your employer directly.

Our fingerprint products for police use, or development tools support the collection of the original fingerprint images. As for whether such a type of fingerprint collection constitutes an infringement of your privacy, please contact the government or the final equipment provider. We, as the original equipment manufacturer, shall not be held legally accountable for any infringement arising thereof.

The law of the People's Republic of China has the following regulations regarding the personal freedom:

1. Unlawful arrest, detention or search of citizens of the People's Republic of China is prohibited; infringement of individual privacy is prohibited.
2. The personal dignity of citizens of the People's Republic of China is inviolable.
3. The home of citizens of the People's Republic of China is inviolable.
4. The freedom and privacy of correspondence of citizens of the People's Republic of China are protected by law.

At last we stress once again that biometrics, as an advanced recognition technology, will be applied in a lot of sectors including e-commerce, banking, insurance and legal affairs. Every year people around the globe suffer from great loss due to the insecurity of passwords. The biometric products actually provide adequate protection for your identity under a high security environment.

Appendix 4 Environment-Friendly Use Description

- The Environment Friendly Use Period (EFUP) marked on this product refers to the safety period of time in which the product is used under the conditions specified in the product instructions without leakage of noxious and harmful substances.
- The EFUP of this product does not cover the consumable parts that need to be replaced on a regular basis such as batteries and so on. The EFUP of batteries is 5 years.

Names and Concentration of Toxic and Hazardous Substances or Elements

Parts Name	Toxic and Hazardous Substances or Elements					
	Pb	Hg	Cd	Cr6+	PBB	PBDE
Chip resistor	×	○	○	○	○	○
Chip capacitor	×	○	○	○	○	○
Chip inductor	×	○	○	○	○	○
Chip diode	×	○	○	○	○	○
ESD components	×	○	○	○	○	○
Buzzer	×	○	○	○	○	○
Adapter	×	○	○	○	○	○
Screws	○	○	○	×	○	○

○: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

×: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006.

Note: 80% of the parts in this product are manufactured with non-hazardous environment-friendly materials. The hazardous substances or elements contained cannot be replaced with environment-friendly materials at present due to technical or economical constraints.