

USER MANUAL

3 inches Facial & Fingerprint Recognition Serial

Version: V3.3

Date: May 2012

About This Manual

- This document introduces the user interface and menu operations of 3 inches Facial & Fingerprint Recognition Series product. For installation, please refer to the Installation Guide or Quick Guide.
- Not all the devices have the function with ★.The real product prevails.
- The photograph in this manual may be different from that of the real product. The real product prevails.

Important Claim

Firstly thank you for purchasing this facial and fingerprint hybrid terminal, before use, please read this manual carefully to avoid the unnecessary damage! The company reminds you that the proper user will improve the use affect and authentication speed.

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Due to the constant renewal of products, the company cannot undertake the actual product in consistence with the information in the document, also any dispute caused by the difference between the actual technical parameters and the information in this document. Please forgive any change without notice.

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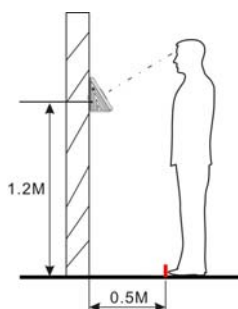
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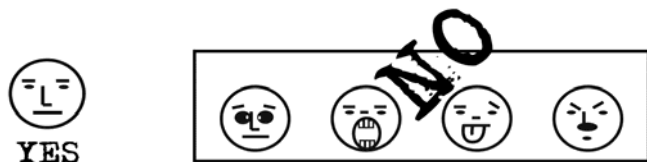
1. Instruction for Use

1.1 The Distance, Facial Expression and Stand Pose

1) The recommended distance: The recommended distance between person and device is 0.5m (applied to height range 1.5~1.85m). According to the obtained face image from device to adjust, when the face image is comparatively bright, please move backwards appropriately; when the face image is comparatively dark, please move forwards appropriately.



2) The recommended facial expression and several poor-effect facial expressions:

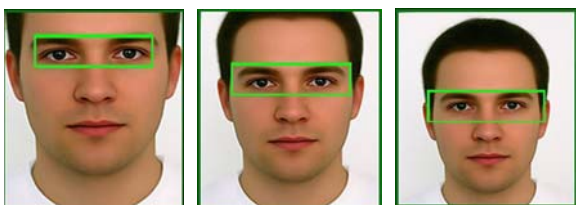


3) The recommended stand pose and several poor-effect stand poses: During the enrollment and verification, please remain the normal facial expression and stand pose.



1.2 Enrollment Face Expressions

During the enrollment, display the face in the centre of screen as possible. According to the device's voice prompts, do some small-scope head actions such as turn left, turn right, rise, bow and so on to ensure that the different parts of face are input into system to improve the verification accuracy. The enrollment poses are as follows:

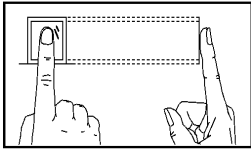


1.3 Finger Placement

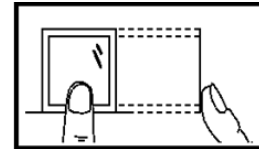
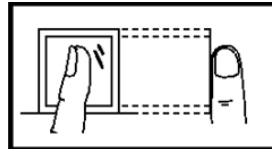
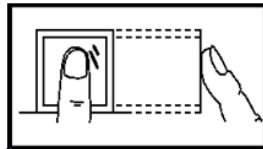
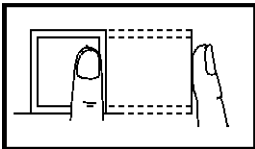
Recommended fingers: The index finger, middle finger or the ring finger; the thumb and little finger are not recommended (because they are usually clumsy on the fingerprint collection screen).

Pressing method

1) **Proper finger placement:** The finger is flat to the surface and centered in fingered guide.



2) **Improper finger placement:** Not flat to the surface, off-centre, slanting.



Notice: Please enroll and verify your fingerprint by using the proper finger placement mode. We shall not be held accountable for any consequences arising out of the degradation in verification performance due to improper user operations. We shall reserve the right of final interpretation and revision of this document.

1.4 Use of Touch Screen

Touch the screen with one of your fingertips or the top of the forward edge of a fingernail, as shown in the following figure. A broad point of contact may lead to inaccurate pointing.



When the touch screen is less sensitive to the touch, you can perform screen calibration through menu operations. Press [Menu] → [Calibration] on the screen and a cross icon will be displayed. After you touch the center of the cross at five locations on the screen correctly, the system automatically returns to the main menu. Press [Return] to return to the initial interface. For details, see “10 Screen Calibration” in this manual.

Smear or dust on the touch screen may affect the performance of the touch screen. Therefore, try to keep the screen clean and dust-free.

1.5 Touch Operations

- Enter numbers. Press the [User ID] key. The system automatically displays the number input interface. After entering the user ID, press [OK] to save and return to the previous interface.

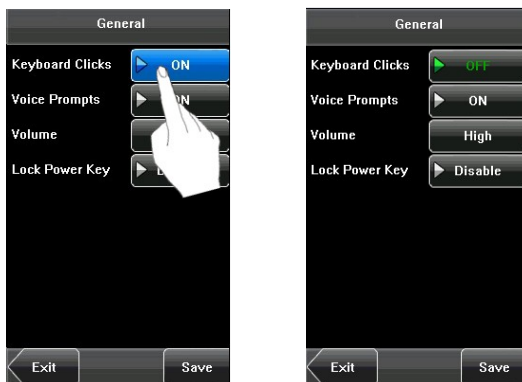


- Enter Text. Press the [Name] key. The system automatically displays the text input interface. After entering

the user name, press [X] to save and return to the previous interface.



- Modify parameters. Press the default value of a parameter and the system automatically switches to another value of this parameter.

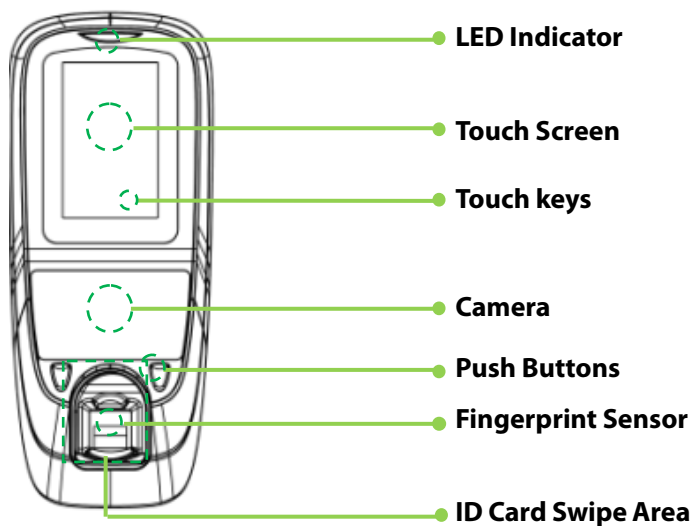


Note: The Enroll Fingerprint, User Access and 1: G is optional function, only some machines have.

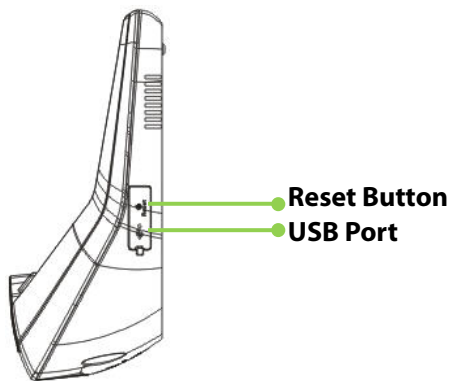
1.6 Appearance of the FFR Terminal

- Type 1

Front View

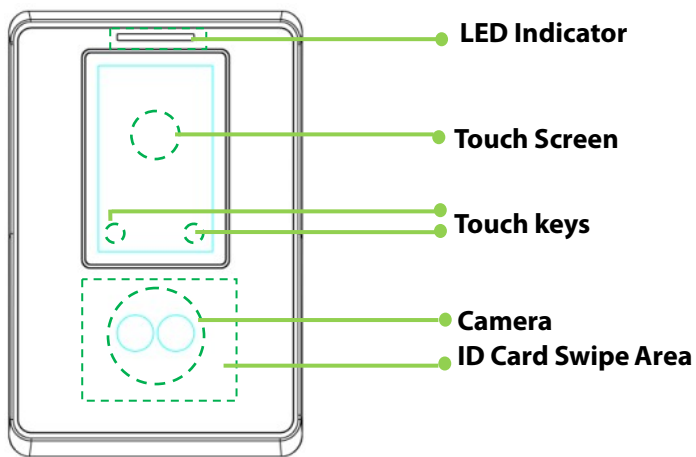


Side View

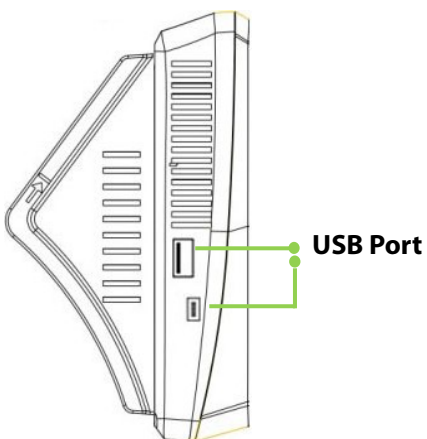


● Type 2

Front View

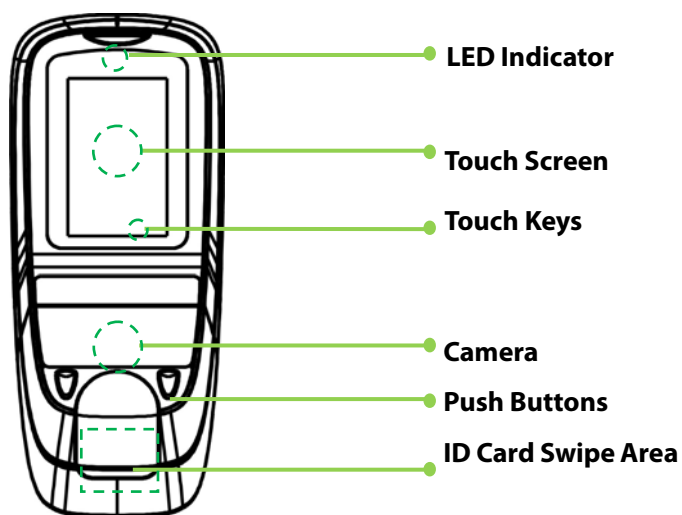


Side View

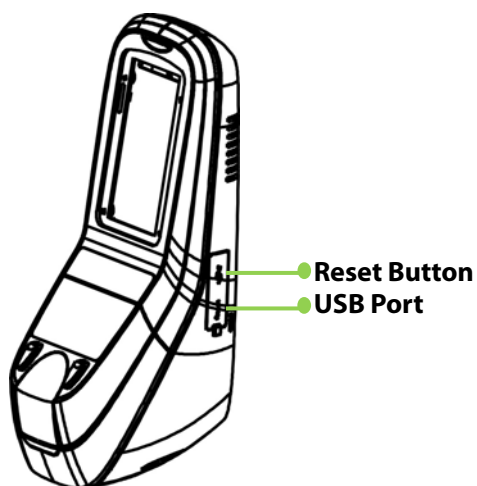


● Type 3

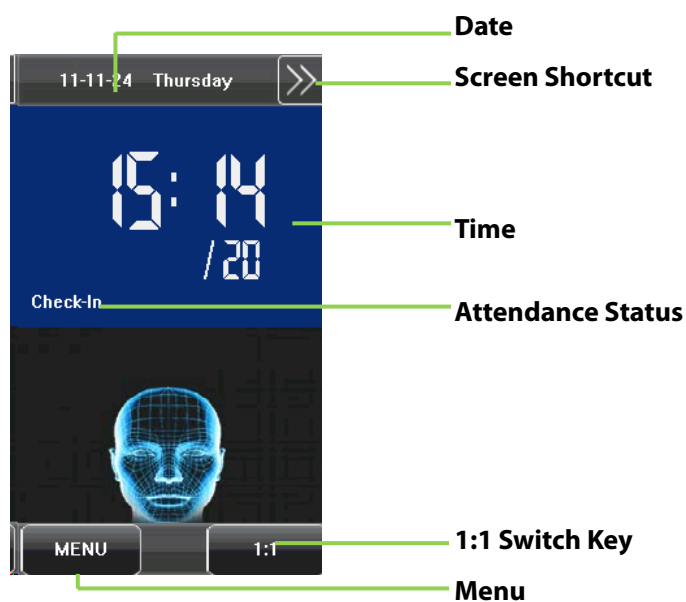
Front View



Side View



1.7 Main Interface



Date: The current date is displayed.

Screen Shortcut Keys: Press these shortcut keys to display the attendance status. Users can customize the function of each shortcut key. For details, see 6.6 Shortcut Definitions.

Time: The current time is displayed. Both 12-hour and 24-hour time systems are supported.

Attendance Status: The current attendance status is displayed.

1:1 Switch Key: By pressing this key, you can switch to the 1:1 verification modes, and enter the digital input interface.

Menu: You can enter the main menu by pressing this key.

Note:

1) The Enroll Fingerprint, User Access, Door Bell Button and 1:1 Switch Button is an optional function, some machines have these function.

2) The 1: G is an optional function. If you need this function, please consult our commercial representatives or fore-sale technical support personal.

1.8 Verification Modes

1.8.1 Fingerprint Verification ★

● 1: N fingerprint verification

The terminal compares current fingerprint collected by the fingerprint collector with all fingerprint data on the terminal.

(1) 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.

(2) Press your finger on the fingerprint sensor by adopting the proper finger placement. For details, see [1.3 Finger Placement](#).

(3) If the verification is successful, the device will prompt "Verified".

(4) If the verification is not successful, the device will prompt "Please try again".



● 1:1 fingerprint verification

In the 1:1 fingerprint verification mode, the device compares current fingerprint collected through the fingerprint sensor with that in relation to the user ID entered through the keyboard. Adopt this mode only when it is difficult to recognize the fingerprint.

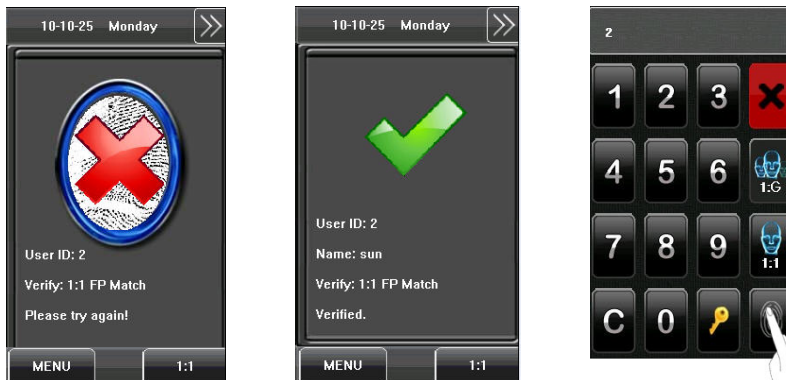
(1) Press [1:1] on the screen or [1:1] button to enter the 1:1 fingerprint recognition mode.

(2) Enter User ID or Group No., then press the "Fingerprint" icon to enter the 1:1 fingerprint recognition mode. If the prompt "Unregistered user!" is displayed, the user ID does not exist.

(3) Press your finger on the fingerprint sensor by adopting the proper finger placement. For details, see [1.3](#)

[Finger Placement.](#)

(4) If the verification is successful, the device will prompt “Verified”, otherwise the device will prompt “Please try again”.



1.8.2 Face Verification

● 1: N facial verification ★

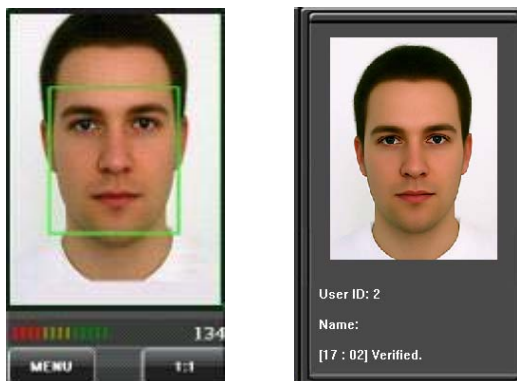
The terminal compares current face image collected by the camera with all face data on the terminal.

(1) The device automatically distinguishes face and fingerprint verification.

(2) Compare the facial in a proper way. For details, see [1.1 Standing Position, Posture and Face Expressions](#).

Comparison of interface display the current image collected by the camera, an interface as shown in Figure 1 on the right will be displayed.

(3) If the verification is successful, an interface as shown in Figure 2 on the right will be displayed.



● 1:1 facial verification

In the 1:1 face verification mode, the device compares current face collected through the camera with that in relation to the user ID entered through the keyboard. Adopt this mode only when it is difficult to recognize the face.

(1) Press [1:1] on the screen button to enter the 1:1 recognition mode.

(2) Enter User ID, then press the "1:1 Face" icon to enter 1:1 face recognition mode. If the prompt "Unregistered user!" is displayed, the user ID does not exist.

(3) Compare the face in a proper way. For details, see [1.1 Standing Position, Posture and Face Expressions](#).

(4) If the verification is successful, the device will prompt "Verified". The system will return to the main interface if the verification is not passed within 20 seconds.



● 1: G facial verification

When you open the 1: G Verify function, then you can make 1: G facial verification. For detail please see [6.5 Log Settings](#). Current group No. (Valid group number is 1-5) is displayed on the facial recognition interface. Users in current group can perform facial comparison directly. Users of another group can perform facial comparison only after entering the group No. or selecting it using the shortcut key. And the system will set the group entered or selected by users to be the current group instantly.

(1) Press [1:1/1: G] on the screen to enter the 1: G recognition mode.

(2) Enter user Group No. and then press the "1: G" icon (shown as following figure 1) to enter 1: G facial recognition mode.

(3) Compare the facial in a proper way. For details, see [1.1 Standing Position, Posture and Face Expressions](#). Current Group No. is displayed on the comparison interface, shown as following figure 2.

Note: Check whether you are in current group; if not, return to Step 1.

(4) If the verification is successful, shown as following figure 3.



Note: The 1: G Face group is an optional function. Some machines have this function. But some have not. Face group function is untapped by Factory default, users can set in **System--Log Settings--1: G Verify** to open this function.

1.8.3 Password Verification

In the password verification mode, the device compares the password entered with that in relation to the user ID.

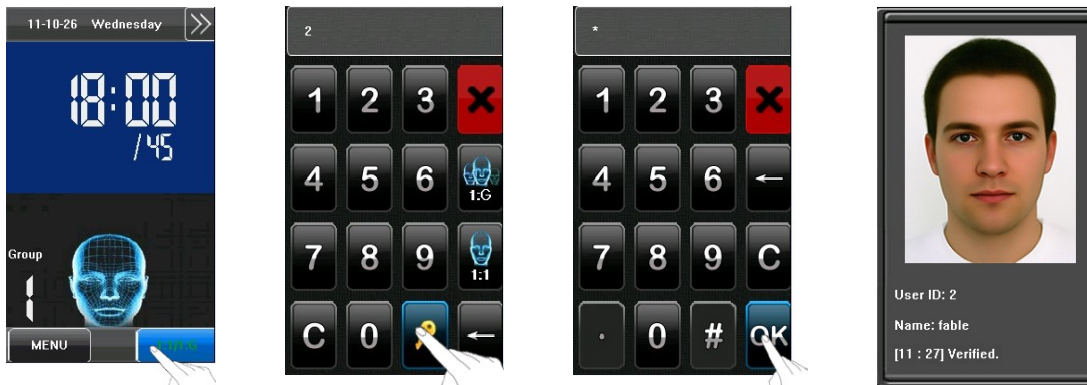
1. Press [1:1] on the screen or [1:1] button to enter the password verification mode.

2. Enter the user ID and then press the "Key" icon to enter the password verification mode. If the prompt "Unregistered user!" is displayed, the user ID does not exist.

3. Enter the password and press the "OK" icon to start the password comparison.

4. If the verification is successful, the device will prompt "Verified", otherwise the device will prompt "Verify fail"

and return to password input interface.



1.8.4 ID Card Verification ★

Only the products with a built-in ID card module support the ID card verification. The products with a built-in ID card module support the following two verification modes:

ID Card Only: Users only need to swipe their ID cards for verification.

ID + Facial Verification: After passing the ID card verification, you also need to perform facial verification.

- **ID Card Only**

- 1) Swipe your ID card on the card swipe area by adopting the proper way. For the card swipe area, see [1.6 Appearance of Device](#).
- 2) If the verification is successful, the device will prompt "Verified".
- 3) If the verification is not successful, the device will prompt "Not Enrolled".

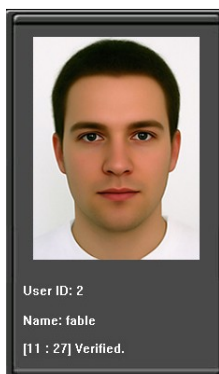


Note:

- 1) The machines that have Photo ID function's successful verification interface is shown as figure 1 above;
- 2) The machines that don't have Photo ID function's successful verification interface is shown as figure 2 above.

- **ID + Facial Verification**

- (1) Swipe your ID card properly at the swiping area to enter the 1:1 facial verification mode.
- (2) Compare the facial in a proper way. For details, see [1.1 Standing Position, Posture and Face Expressions](#).
- (3) If the verification is successful, an interface as shown in Figure 3 on the right will be displayed. The system will return to the main interface if the verification is not passed within 20 seconds.



1.8.5 Combination Verification ★

The device supports up to 20 verification modes, including FACE&PIN/FP/RF/PW、FP&PW、FP&RF、FACE&FP、FACE&PW、FACE&RF、FP、PW、RF、FACE&PIN、FP/RF、PW/RF、FP/PW、PW&RF、PIN&FP、FP&PW&RF、PIN&FP&PW、FP&RF/PIN、FACE&FP&RF、FACE&FP&PW etc. For the detail, please refer to [12.7 Multi-combination Authentication Mode](#).

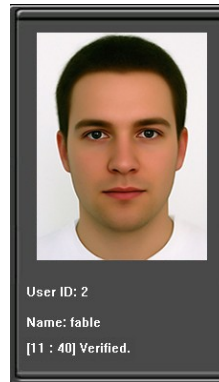
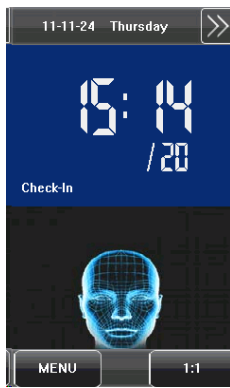
Note: RF means ID card verification. Only the products with the built-in ID card module support the ID card verification.



Here is the combination verification operation; we will use the FACE&FP verification for an example.

If you verify the fingerprint first and then the face, the operations are as follows.

1. The default main interface is the fingerprint verification mode, see the figure below.
2. Press your finger on the fingerprint sensor by adopting the proper finger placement. For details, see [1.3 Finger Placement](#).
3. If the verification is successful, the device will enter the 1:1 face recognition mode. Compare the face in a proper way. For details, see [1.1 Standing Position, Posture and Face Expressions](#).
4. If the verification is successful, the device will prompt "Verified". The system will return to the main interface if the verification is not passed within 20 seconds.

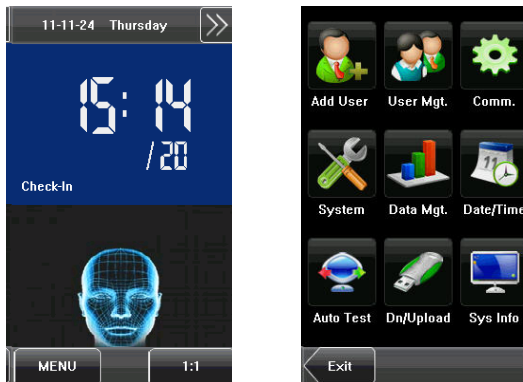


Otherwise, the FACE&FP combination verification can perform such as FACE (1: N) + FP, PIN + FACE (1:1) + FP, PIN + FP (1:1) + FACE etc. The operation is similar to the procedure introduced before.

2. Main Menu

There are two types of rights respectively granted to two types of users: the **Ordinary users** and **administrators**. Ordinary users are only granted the rights of face, fingerprint, password or card verification, while administrators are granted access to the main menu for various operations apart from having all the privileges granted to ordinary users.

Press [**Menu**] on the initial interface to access the main menu, as shown in the following figure:



The main menu includes nine sub menus:

Add User: Through this submenu, you can add a new user and input the information on the device, including the user ID★, name, fingerprint★, face, card★, password, rights, group No. ★ and user access★.

User Mgt.: Through this submenu, you can browse the user information stored on the device, including the user ID, name, fingerprint★, face, card★, password, rights, group No★. and user access★. Here you can also add, modify or delete a user's information.

Comm.: Through this submenu, you can set related parameters for communication between the device and PC, including the IP address, gateway, subnet mask, baud rate★, device No. and communication password.

System: Through this submenu, you can set system-related parameters, including the basic parameters, interface parameters, fingerprint★, face and attendance parameters, Keyboard definitions, Access settings★, firmware update etc. to enable the device to meet the user's requirements to the greatest extent in terms of functionality and display.

Data Mgt.: Through this submenu, you can perform management of data stored on the device, for example, deleting the attendance records, all data, clear administrator, restore to factory settings and query records.

Date/Time: Through this submenu, you can set the alarm time and duration, or set the Bell.

Auto Test: This submenu enables the system to automatically test whether functions of various modules are normal, including the screen, sensor, voice, face, keyboard, clock tests and screen calibration.

Dn/Upload: Through this submenu, you can download user information and attendance data stored in the device through a USB disk to related software or other fingerprint recognition equipment.

Sys Info.: Through this submenu, you can browse the records and device information.

Note: Any user can access the main menu by pressing the [**Menu**] key if the system does not have an administrator. After administrators are configured on the device, the device needs to verify the administrators' identity before granting them access to the main menu. To ensure device security, it is recommended to set an administrator when using the terminal initially. For detailed operations, see **3.8 Modifying User Right**.

3. Add User

Press [Add] on the [User Mgt.] interface to display the [Add User] interface as shown below.



User ID: Enter a user ID. 1 to 9 digits user IDs are supported by default.

Name: Enter a user name. 12 characters user names are supported by default.

Fingerprint★: Enroll a user's fingerprint and the device displays the number of enrolled fingerprints. A user can enroll 10 fingerprints at maximum.

Password: Enroll a user's password. The device supports 1-8 digit passwords by default.

Face: Enroll a user's face.

Group No.★: Setting in the group of user.

Role: Set the rights of a user. A user is set to **ordinary user** by default and can also be set to **administrator**. Ordinary users are only granted the rights of face, fingerprint or password verification, while administrators are granted access to the main menu for various operations apart from having all the privileges granted to ordinary users.

Photo★: Enroll a user's photo. During user verification is success; the user's photo is displayed on screen.

User Access★: Set the lock control and access control parameters.

3.1 Entering a User ID

The device automatically allocates an ID starting from 1 for every user in sequence. If you use the ID allocated by the device, you may skip this section.

1. Press [User ID] on the [Add User] interface to display the user ID management interface.

 **Tip: The user ID can be modified during initial enrollment, but once enrolled, it cannot be modified.**

2. On the displayed keyboard interface, enter a user ID and press [OK]. If the message "The user ID already exists!" is displayed, enter another ID.

 **Tip: The device supports 1 to 9 digits user IDs by default. If you need to extend the length of current user ID numbers, please consult our commercial representatives or technical pre-sales.**

3. After the user ID is entered, press [Save] to save the current information and return to the previous interface. Press [Exit] to return to the previous interface without saving the current information.



3.2 Entering a Name

Use T9 input method to enter the user name through the keyboard.

1. Press [Name] on the [Add User] interface to display the name input interface.
2. On the displayed keyboard interface, enter a user name and press [X].

For details of operations on the keyboard interface, see [12.1 T9 Input Instructions](#).

3. After the user name is entered, press [Save] to save the current information and return to the previous interface. Press [Exit] to return to the previous interface without saving the current information.



 **Tip:** The device supports the 1 to 12 characters names by default.

3.3 Enrolling a Fingerprint ★

1. Press [Fingerprint] on the [Add User] interface to display the [Enroll Fingerprint] interface.
2. On the displayed [Enroll Fingerprint] interface, place your finger on the fingerprint sensor properly according to the system prompt. For details, see [1.3 Finger Placement](#).
3. Place the same finger on the fingerprint sensor for three consecutive times correctly. If the enrollment succeeds, the system will display a prompt message and automatically return to the [Add User] interface. If the enrollment fails, the system will display a prompt message and return to the [Enroll Fingerprint] interface. In this case, you need to repeat the operations of step 2.
4. You can enroll the backup fingerprint by pressing [Fingerprint] again. A user can enroll 10 fingerprints at maximum.
5. Press [Save] to save the current information and return to the previous interface. Press [Exit] to return to the previous interface without saving the current information.

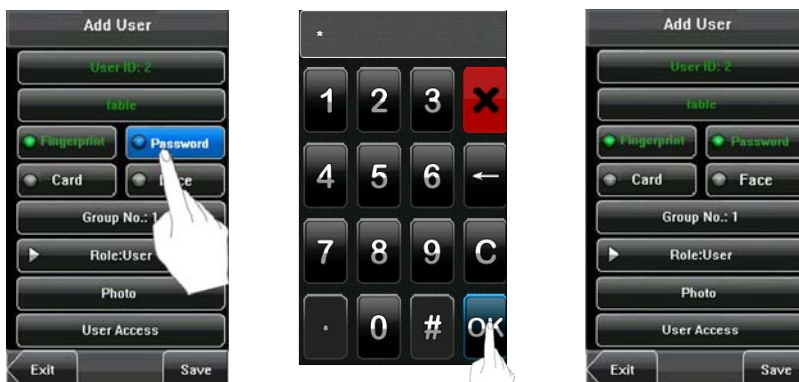


3.4 Enrolling a Password

1. Press [**Password**] on the [**Add User**] interface to display the password management interface.
2. On the displayed keyboard interface, enter a password and press [**OK**]. Re-enter the password according to the system prompt and then press [**OK**].

 **Tip: The device supports 1-8 digit passwords by default.**

3. After the password is entered, an interface is displayed as shown below. Press [Save] to save the current information and return to the previous interface. Press [Exit] to return to the previous interface without saving the current information.



3.5 Enrolling an ID card★

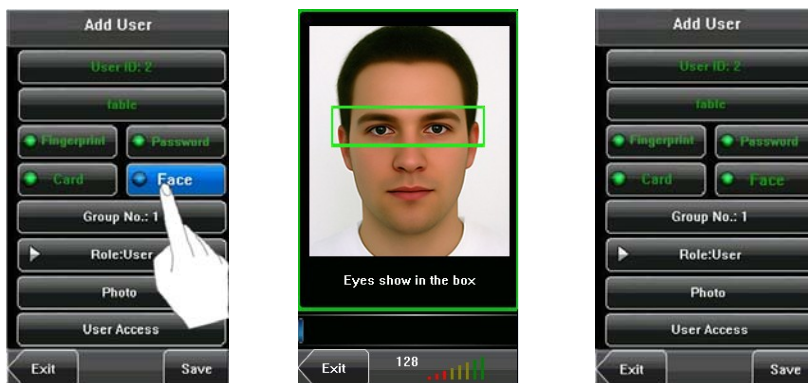
1. Press [Card] on the [Add User] interface to display the [Enroll Card] interface.
2. The [Punch Card!] interface pops up as shown below. Swipe your ID card properly in the swiping area. For details, see [1.6 Appearance of Device](#).
3. If the card passes the verification, the device will display a prompt message "Read Successfully! Card No.: *****", and returns to the [Add User] interface.
4. Press [Save] to save the current information and return to the previous interface. Press [Exit] to return to the previous interface without saving the current information.



Note: 3 inches Facial & Fingerprint Recognition support Mifare card function. It is an option function, if you want to customize the Mifare card function, please consult our commercial representatives or pre-sales technical support engineers.

3.6 Enrolling a Face

1. Press [Face] on the [Add User] interface to display the face enrollment interface.
2. On the displayed face enrollment interface, turn your head to the left and right slightly, raise and lower your head according to the voice prompts, so as to enroll different parts of your face into the system to assure the accurate verification. See [1.2 Enrollment Face Expressions](#).
3. If your face image is enrolled successfully, the system will display a prompt message and automatically return to the [Add User] interface.
4. Press [Save] to save the current information and return to the previous interface. Press [Exit] to return to the previous interface without saving the current information.



3.7 Entering a Group No.★

1. Press [Group No.] on the [Add User] interface to display the group No. management interface.
2. On the displayed keyboard interface, enter your group No. and press [OK].
3. After the group No. is entered, an interface is displayed as shown below. Press [Save] to save the current information and return to the previous interface. Press [Exit] to return to the previous interface without saving the current information.



3.8 Modifying User Rights

Note: There are two types of rights respectively granted to two types of users: the **ordinary users** and **administrators**. Ordinary users are only granted the rights of face, fingerprint, or password verification, while administrators are granted the access to the main menu for various operations apart from having all the privileges granted to ordinary users.

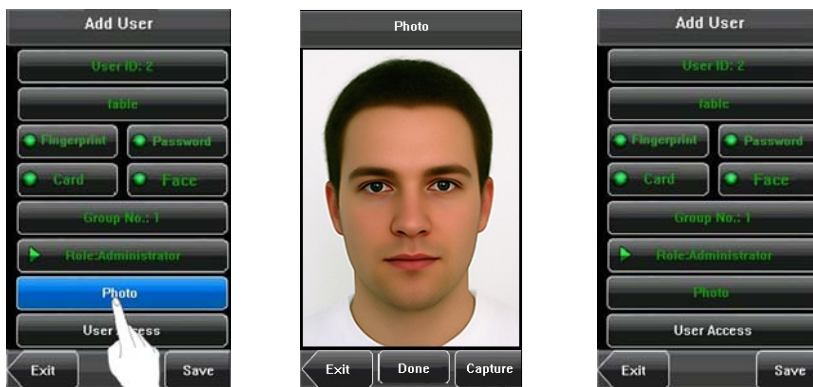
1. On the [Add User] interface, press [Role: User] to change the user to an administrator.
2. After the modification is done, the interface is as shown below. Press [Save] to save the current information and return to the previous interface; press [Exit] to return to the previous interface without saving the current information.



3.9 Enroll Photo★

If you had enrolled your photo in the system, the system will display your enrolled photo in addition to your ID and name after you pass the verification.

1. Press [Photo] on the [Add User] interface to display the photo enrollment interface.
2. On the photo enrollment interface, stand naturally in front of the screen. For details, see [1.1 Standing Position, Posture and Face Expressions](#). Press [Capture] to capture the photo.
3. After taking the photo, press [Exit] to return to the previous interface.
4. After the photo is taken, press [Save] to save the current information and return to the previous interface; press [Exit] to return to the previous interface without saving the current information.



3.10 User Access Settings★

Press [User Access] on the [Add User] interface to display the user access settings interface.

User Access settings are to set the user's rights to verify and open the door, such as the Verify Type, Time Zone and Duress FP management.



● Verify Type

(1) **Group Verify Mode:** If the user uses the group verify mode that he belong to.

(2) **Individual verify mode:** Select the verification mode for this user instead of the group verify mode. That will not affect other users in this group.



Note:

1) Only the products with the built-in ID card module support the ID card verification.

2) For the verify type, please refer to [12.7 Multi-combination Authentication Mode★](#). Only some types of devices support Multi-combination authentication mode.

● Time Zone

(1) Group Time Zone: If the user uses the group time zone that he belong to.

(2) Individual time zone: Select the time zone of this user instead of the group time zone. That will not affect other users in the group.

● Duress FP

User can register a new duress fingerprint or cancel registered duress fingerprints. If a finger is registered duress fingerprints. When compare it, will trigger the duress alarm signal.

If cancel the duress fingerprints, does not delete the fingerprints data, still can use the fingerprints process normal comparison.

Duress FP management:

(1) Register Duress FP

Press [Reg. Duress FP] on the [User Access] interface to display the [Enroll Fingerprint] interface. On the displayed [Enroll Fingerprint] interface, place your finger on the fingerprint sensor properly according to the system prompt. For details, see [1.3 Finger Placement](#).



(2) Cancel duress FP

Press [Can. Duress FP] on the [User Access] interface to pop-up the confirm message. Select [YES] to delete the enrolled duress FP, otherwise select [NO] to cancel the operation.



4. User Management

Browse the user information, including the user ID, name, fingerprint★, face, ID card★, password, rights, group No.★ and user access settings★ through this interface. To add, edit or delete the basic information of users.

Press [User Management] on the main menu interface to display the user management interface.



The user is an administrator.

Note: The users are listed in alphabetical order by last name. If you press a user name, you can access the editing interface of this user to edit or delete the related user's information.



4.1 Edit a User

Press a user name from the list to enter the [User Info] interface.

The User ID cannot be modified, and the other operations are similar to those performed in add a user. You can re-enroll your fingerprint★ and face, change your password, modify the management rights and Group No.★

For example: Change the user rights from Administrator to ordinary user. As shown below.



4.2 Delete a User

On the [User Info] interface, you can delete all or partial user information.

1. Press [Delete] to delete a user.
2. On the displayed interface, click [YES] to delete the current user or [NO] to return to the previous interface.
3. On the [User Info] interface, press [Name], [Fingerprint], [Face] or [Password] to delete the related user information and to re-enroll the new information follow the device prompt.



4.3 Query a User

To facilitate administrators to locate a user quickly from a large number of enrolled users, the device enables to query by "User ID".

User ID Query:

1. Press [Query] on the [User Management] interface to display the User ID query interface.
2. Enter the user ID on the displayed interface, and click [OK] to locate the cursor on the desired user.



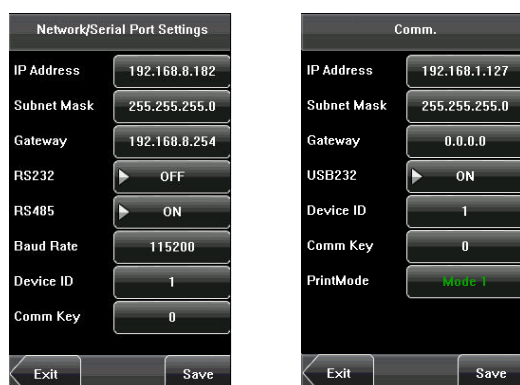
5. Communication Settings

You can set related parameters for the communication between the device and PC, including the **IP address**, **Gateway**, **Subnet Mask**, **Baud Rate**★, **Device ID**, and **Comm Key**.



Note: The comm. (RS232/RS485), WIFI、Wiegand In and Wiegand Out are optional function, only some machines have these functions.

5.1 Communication Settings



IP Address: The IP address is 192.168.1.201 by default and can be changed as required.

Subnet Mask: The subnet mask is 255.255.255.0 by default and can be changed as required.

Gateway: The gateway is 0.0.0.0 by default and can be changed as required.

(RS232/RS485)★, you need to check the following settings:

RS232★: This parameter is used to enable or disable the RS232 communication. If the RS232 communication cables are used, set this parameter to "ON".

RS485★: This parameter is used to enable or disable the RS485 communication. If the RS485 communication cables are used, set this parameter to "ON".

Baud Rate★: This parameter is used to set the baud rate for the communication between the device and the PC. It includes five options: 9600, 19200, 38400, 57600, and 115200. The higher baud rate is recommended for the RS232 communication to achieve high speed communication, while the lower baud rate is recommended for the RS485 communication to achieve stable low-speed communication.

USB232★: Decide whether use USB to communicate or not, that is to say if you use the USB communication, and then selected the item as "Yes". Otherwise as "No".

Device ID: This parameter is used to set the ID of device from 1 to 254. If the RS232/RS485 communication is adopted, you need to enter the device ID on the software communication interface.

Comm. Key: To enhance the security of attendance data, you can set a password for the connection between the device and PC. Once the password is set, you can connect the PC with the device to access the attendance data only after entering the correct password. The default password is 0 (that is, no password). Once a password is set, you need to enter this password before connecting the PC software with the device; otherwise, the connection is unsuccessful. 1 to 6 digits passwords are supported.

PrintMode★: When user authentication is successful, you can choose whether to print attendance information. Print mode can be set. In all, there are 6 print modes available. See [12.7 Print function](#)

Note: Considering the massive data including the fingerprint and face templates stored in the device, it is recommended to transfer the data between the device and PC over network to enhance the transfer speed.

5.2 WIFI Configuration★

● Available WLANs

Available WLANs around a mobile phone can be searched. Select **Available WLAN** to enter the **Available WLAN** interface and click **Refresh**, then the available WLANs around the mobile phone are listed on the interface, as well as their signal strength.

As shown in the third of the preceding figures, a user can search its wireless route and set a password. For other settings, see the "WIFI Configuration" in the following section. The password must be the same as that of the wireless route so that the mobile phone can access to the WLAN. Complete setting and click save button, the machine will connect to the software automatically. The following figure shows the initial interface when the mobile phone accesses to the WLAN:



● WIFI Configuration

Before the mobile phone is accessed to the WLAN, other physical components of the 802.11 network are required, including access points, distribute systems, and wireless media. In addition, the service set identifier (ESSID) must be available.

Network ID: specifies the network identification of the wireless network to be accessed. (Letters are case-sensitive.)

Local IP address: If the 802.11 wireless network is not configured with the function of dynamic host configuration protocol (DHCP), enter the **Manual IP Designation** interface and input an IP address, subnet mask, and gateway address. Otherwise, dynamically designate an IP address.

Password: The password must be the same as that of the router so that the mobile phone can access to the WIFI. (Only support key1 in WEP model.)

IP address: When the setting of a local IP address is in manual mode, designate and input a correct IP address, subnet mask, and gateway address on the **Manual IP Designation** interface. The designated IP address is the IP address of a mobile phone in the wireless network, and does not have any relationship with comm. WIFI IP can not share the same network segment with the machine IP.

Subnet mask and gateway: The subnet mask and gateway address of the designated IP address must be

designated and input.

Operation Description:



1) Set SSID

Select **WIFI Configuration** to enter the **WIFI Configuration** interface. Click the inputting button of the Network ID and input the network ID after starting the **T9 inputting method editor (IME)**. The network ID must be provided for identification.

2) Set a local IP address

Select a mode for designating a local IP address. The IP address is designated in manual or DHCP mode.

3) Set a password

Click the inputting button of the password and input a password after starting the **T9 IME**.

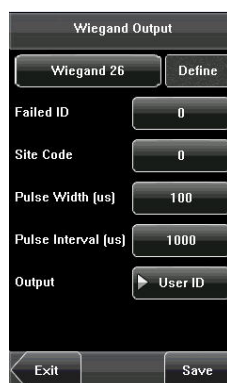
4) Designate an IP address

When the setting of local IP addresses is in manual mode, designate and input a correct IP address, subnet mask, and gateway address on the **Manual IP designation** interface. The designated IP address is the IP address of a mobile phone in the wireless network, and does not have any relationship with comm.

After an IP address is designated, click **Save** and return to the **WIFI Configuration** interface.

After performing the preceding procedures, click **Save** and goes back to the previous interface.

5.3 Wiegand Output★



Wiegand Format: The system has two built-in formats **Wiegand 26-bits** and **Wiegand 34-bits**, and also supports the format customization function to meet individualized requirements.

Failed ID: Refers to the value output by the system upon verification failure. The output format is subject to the setting of "**Wiegand Format**". The default value scope of **Failed ID** is 0-65535.

Site Code: The site code is used for a customized Wiegand format. The site code is similar to the device ID, but

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.

5.3.2 Wiegand 34-bits Output Description

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
Even parity bit	User ID/Card Number	Odd parity bit

Table 2 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 bits; otherwise, the even parity bit is 1.
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 bits; otherwise, the odd parity bit is 0.

For example, for a user with 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:

0000001110101101111001101000101011

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:

000000001100110000100011110100001

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

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

[illegible]

5.3.3 Customized Format

Apart from the two built-in formats **Wiegand 26-bits** and **Wiegand 34-bits**, the system also supports the format customization function to meet individualized requirements.

The customized format consists of two character strings: the **data bits** and **parity bits**. These two character strings need to be defined separately. **Data bits** define the number of binary bits output by Wiegand as well as the meaning of each bit. The data bits output by Wiegand can be a card number (C), site code (s), facility code (f), manufacturer code (m) and parity bits (p). **Parity bits** define the check mode of each bit in data bits and ensure the correctness of data bits during transfer through the parity check. The parity bits can be set to odd check (o), even check (e) and both odd check and even check (b). There exists a one-to-one correspondence relationship between the data bits and parity bits.

For example, the Wiegand26 can be customized as follows:

Definition of data bits: psssssssscccccccccccccccp

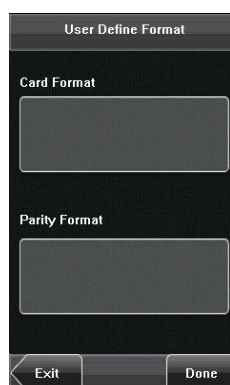
Definition of parity bits: eeeeeeeeeeeeeeoeeeeeeeeeeo

Note: Wiegand26 consists of 26 bits. The first bit is the even parity bit of bits 2 to 13; the 26th bit is the odd parity bit of bits 14 to 25; the second to the ninth bits are the site code; the 10th to the 25th bits are the card number.

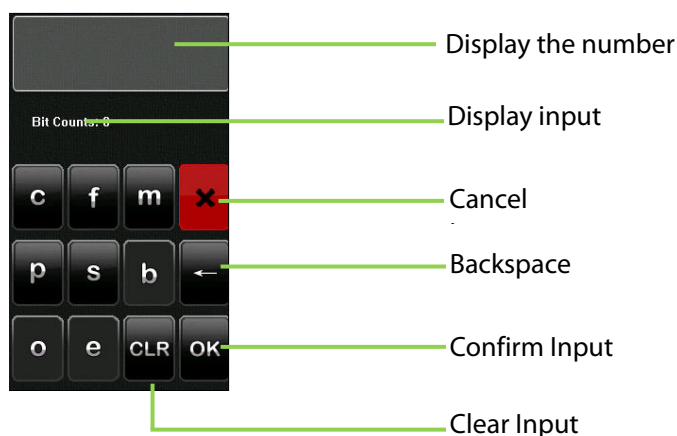
For details about the Wiegand protocol, see [Appendix 3 Introduction to Wiegand](#).

To customize Wiegand format, proceed as follows:

- 1) Select [Define Format] and the [Set] key is then enabled.
- 2) Press [Set] to display the [User Define Format] interface, as shown in the following figure:



- 3) Click the entry box below "Card Format" to display the following interface:



Characters used to define data bits and their meanings:

c: indicates the card number, that is, the output contents, it can be set to User ID/Card Number through menu

operations.

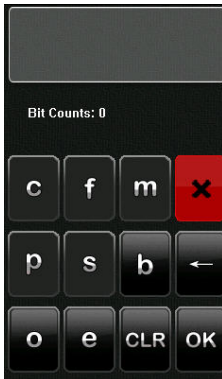
f: indicates the facility code which is 0 by default. It is not configurable. To modify it, please contact the equipment supplier.

m: indicates the manufacturer code which is 0 by default. It is not configurable. To modify it, please contact the equipment supplier.

p: indicates the parity position.

s: indicates the site code which can be set from 0 to 255 by default.

4) Click the entry box below “Parity Format” to display the following interface:



Characters used to define parity bits and their meanings:

o: indicates the odd check, that is, there is an odd number of 1's in the bit sequence (including one parity bit). For example, for 1000110(0), the parity bit is 0 and there are already three 1's. After 0 is suffixed to 1000110, there is still an odd number of 1's.

e: indicates the even check, that is, there is an even number of 1's in the bit sequence (including one parity bit). For example, for 1000110(1), the parity bit is 1 and there are already three 1's. After 1 is suffixed to 1000110, there is an even number of 1's.

b: indicates both odd check and even check.

For example: Definitions of several universal Wiegand formats.

Wiegand34

Data bits: pcccccccccccccccccccccccccccccccccp

Parity bits: eeeeeeeeeeeeeeeeeeoooooooooooooooooo

Note: Wiegand34 consists of 34 bits. The first bit is the even parity bit of bits 2 to 17; the 34th bit is the odd parity bit of bits 18 to 33; the second to the ninth bits are the site code; the 10th to the 25th bits are the card number.

Wiegand37a

Data bits: pmmmmsssssssssssscccccccccccccccccp

Parity bits: oeobeobeobeobeobeobeobeobeobeobeobe

Note: Wiegand37a consists of 37 bits. The first bit is the odd parity bit of bits 3, 4, 6, 7, 9, 10, 12, 13, 15, 16, 18, 19, 21, 22, 24, 25, 27, 28, 30, 31, 33, 34 and 36; the 37th bit is the odd parity bit of bits 2, 4, 5, 7, 8, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23, 25, 26, 28, 29, 31, 32, 34 and 35; bits 4, 7, 10, 13, 16, 19, 22, 25, 28, 31 and 34 participate in both odd and even parity check. Bits 2 to 5 are manufacturer code; bits 6 to 17 are the site code; bits 18 to 36 are the card number.

Wiegand37

Data bits: pmmmmffffffffffsssssscccccccccccccccccp

Parity bits: eeeeeeeeeeeeeeeeeeeoooooooooooooooooooo

Note: Wiegand37 consists of 37 bits. The first bit is the even parity bit of bits 2 to 18; the 34th bit is the odd parity bit of bits 19 to 36; the second to the fourth bits are the manufacturer code; the 5th to the 14th bits are facilitate code; the 15th to the 20th bits are the site code; the 21st to the 36th bits are the card number.

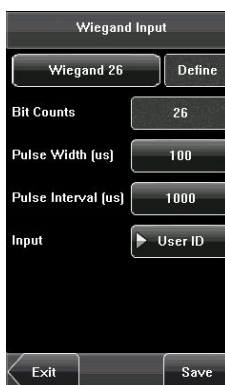
Wiegand50

Data bits: psssssssssssssscccccccccccccccccccccccccccccp

Parity bits: eeeeeeeeeeeeeeeeeeeoooooooooooooooooooo

Note: Wiegand50 consists of 50 bits. The first bit is the even parity bit of bits 2 to 25; the 50th bit is the odd parity bit of bits 26 to 49; the second to the 16th bits are the site code; the 17th to the 49th bits are the card number.

5.4 Wiegand Input★



Wiegand Format: The system has two built-in formats **Wiegand 26-bits** and **Wiegand 34-bits**, and also supports the format customization function to meet individualized requirements. About the Wiegand format, please refer to [5.3 Wiegand Output](#).

Bit counts: Wiegand data digit length.

Pulse width: Pulse width is 100 microseconds by default, which can be adjusted from 20 to 800.

Pulse interval: It is 900 microseconds by default, which can be adjusted between 200 and 20000.

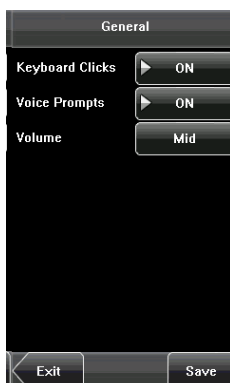
Input: Content contained in Wiegand input signal, including User ID or card number.

6. System Settings

Through the [System] menu, you can set system-related parameters, including the General, Display, Fingerprint★, Face, Log settings, Shortcut Def, Access Control Set★, and Firmware Update, to enable the device to meet user requirements to the greatest extent in terms of functionality and display.



6.1 General Parameters

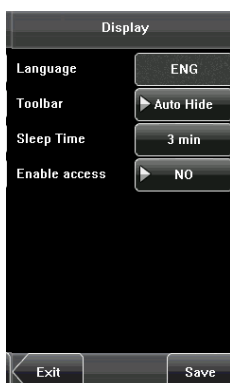


Keyboard Clicks: This parameter is used to set whether to generate beep sound in response to every keyboard touch. Select “ON” to enable the beep sound, and select “OFF” to mute.

Voice Prompts: This parameter is used to set whether to play voice prompts during the operation of the device. Select “ON” to enable the voice prompt, and select “OFF” to mute.

Volume: This parameter is used to adjust the volume of voice prompts.

6.2 Interface Parameters



Language: This parameter is used to display the current language used by the device. For multilingual-capable

devices, you can switch between different languages through this parameter. Then you should restart the device.

Toolbar: This parameter is used to display the style of the shortcut keys on the initial interface. It can be set to “Auto Hide” and “Permanent Display”. By selecting “Auto Hide”, you can manually display or hide the toolbar. By selecting “Permanent Display”, you can permanently display the toolbar on the initial interface.

Sleep Time (S): This parameter is used to specify a period after which the device is put in sleep mode if no operation within this period. You can wake up the device from sleep by pressing any key or touching the screen. Numerical range in 1 ~ 30 minutes, the factory default for 3 minutes.

6.3 Fingerprint Parameters ★



1: 1 Threshold: This parameter is used to set the threshold of matching between the current fingerprint and the fingerprint template enrolled in the device in the 1:1 verification mode. If the similarity between the current fingerprint and the fingerprint template enrolled in the device is larger than this threshold, the matching is successful; otherwise, the matching is not successful.

1: N Threshold: This parameter is used to set the threshold of matching between the current fingerprint and the fingerprint template enrolled in the device in the 1: N verification mode. If the similarity between the current fingerprint and the fingerprint template enrolled in the device is larger than this threshold, the matching is successful; otherwise, the matching is not successful.

The recommended thresholds are as follows:

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

Fingerprint Image: This parameter is used to set whether to display the fingerprint image on the screen during fingerprint enrollment or comparison. It has four options:

Show for Enroll: Display the fingerprint on the screen in enrolling process.

Show for Match: Display the fingerprint on the screen in verification process.

Always Show: Display the fingerprint on the screen in enrolling and verifying process.

Never Show: Never display the fingerprint on the screen in any case.

6.4 Face Parameters



1: 1 Threshold: This parameter is used to set the threshold of matching between the current face and the face template enrolled in the device in the 1:1 verification mode. If the similarity between the current face and the face template enrolled in the device is larger than this threshold, the matching is successful; otherwise, the matching is not successful. The valid value scope is 70-120. The higher the threshold, the lower the FAR and the higher the FRR are, and vice versa.

1: N Threshold: This parameter is used to set the threshold of matching between the current face and the face template enrolled in the device in the 1: N verification mode. If the similarity between the current face and the face template enrolled in the device is larger than this threshold, the matching is successful; otherwise, the matching is not successful. The valid value scope is 80-120. The higher the threshold, the lower the FAR and the higher the FRR are, and vice versa.

The recommended thresholds are as follows:

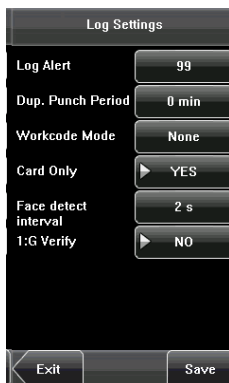
FRR	FAR	Threshold	
		1: N	1:1
High	Low	85	80
Medium	Medium	82	75
Low	High	80	70

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 face images obtained. The device accepts the face images and processes them by adopting the face algorithm when their quality is higher than the threshold; otherwise, it filters these face images.

Note: Improper adjustment of the Exposure and Quality parameters may severely affect the performance of the device. Please adjust the Exposure parameter only under the guidance of the after-sales service personnel from our company.

6.5 Log Settings



Log Alert: When the available space is insufficient to store the specified number of attendance records, the device will automatically generate an alarm (Value scope: 1-99).

Dup. Punch Period (m): If a user's attendance record already exists and the user punches in again within the specified period (unit: minute), the second attendance record will not be stored (Value scope: 1-60 minutes).

Workcode Mode: This parameter is used to select the work code input mode among Mode 1, Mode 2 and None during attendance verification. If you select Mode 1, the attendance verification starts after you input the work code on the initial interface; if you select Mode 2, the attendance verification starts before you input the work code on the initial interface; if you select None, you do not need to input the work code during attendance verification on the initial interface. For the input of the work code, see [7.3 Work Code](#).

Card Only★: If this parameter is set to "YES", you pass the verification only after card verification. If this parameter is set to "NO", you need to verify your face or fingerprint after card verification.

Face interval: According your need to set it. Then default value is 0, namely don't have interval.

1: G Verify★: Select it as **YES** or **NO**, namely set whether or not start this function.

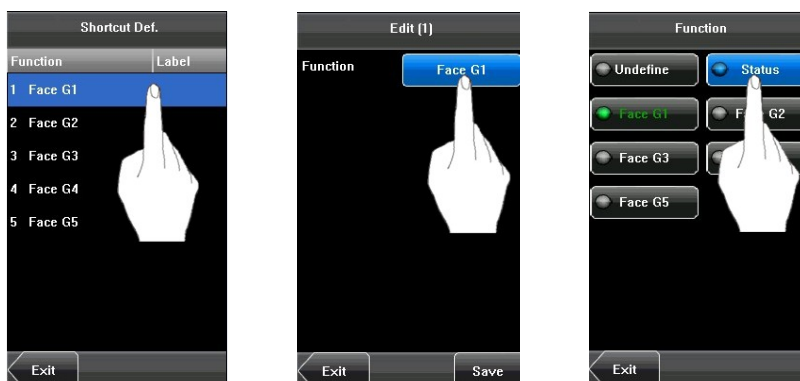
6.6 Shortcut Definitions

Define touch screen functional shortcut keys. For the device with face grouping function (MENU--System--Log Settings--1: G Verify), the definition method of shortcut keys is described as follows:

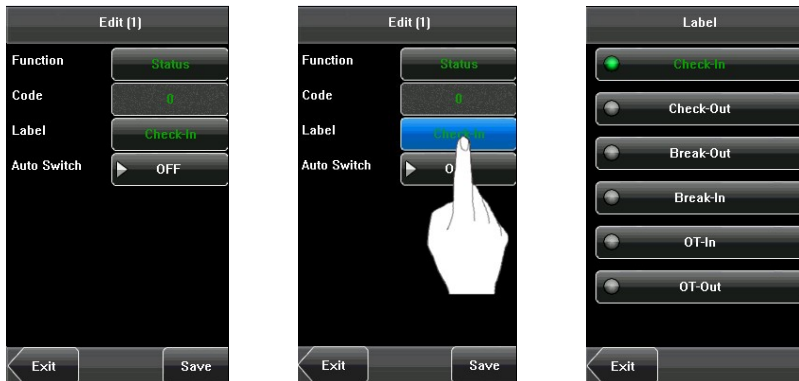
● Set shortcut keys

The method to set shortcut keys is described as follows:

(1) Click the **Shortcut Def.** item to display the list of the existing shortcut keys; click the shortcut key to modify, as shown in figure 1. Enter the edit screen, and click **Function** box, as shown in figure 2. Enter the **Function** screen, and the user can select desired settings for the type of the shortcut keys according to practical needs, such as 1-5 groups of faces(Enable Group Verify Function), undefined ,status ,workcode and SMS.



(2) The user can set the shortcut key as status key; click the **Status**, as shown in figure 3 above; enter the edit screen of the status key, as shown in figure 1 below; click the **Label** box, as shown in figure 2 below; enter the **Label** screen, as shown in figure 3 below; click the row of the label (six options for the status) to change it to the corresponding label; the user can modify the label of the status key according to practical needs.



(3) The **Code** cannot be modified; it is changed accordingly with the selected label of the status key. Select **Auto switch**, and select "On", as shown in figure 1 below.



(4) Click the time box after "week", as shown in figure 2 above, to enter the time setting screen, as shown in figure 3 above. Click the key on the touch screen to set the time; click **[OK]** to save and return to the edit screen.

(5) After the setting is completed, click **[Save]** to save the setting and return to the **Shortcut Def.** screen.

● Use shortcut keys

Click  on the initial interface, and the related status and function keys are displayed on the right corner of the interface for use.



6.8 Update

You can upgrade the device firmware by using the upgrade file in the USB disk through this function.



Note: If you need the firmware upgrade file, please contact our technical support personnel. Generally the firmware upgrade is not recommended.

7. Data Management

Through the [Data Mgt.] menu, you can perform management of data stored on the device, for example, delete the attendance records, delete all data, clear administrator, restore the device to factory settings, and query user records.



Notice: Short message services (SMS) and working number functions are not standard configuration specifications. They are supported only by these devices.

Delete Transactions: Delete all the attendance records.

Delete All Data: Delete all the information of enrolled personnel, including their fingerprints, face images and attendance records.

Clear Administrator: Change all administrators to ordinary users.

Restore to Factory Settings: Restore all parameters on the device to factory settings.

SMS★: Operators can write public or personal short messages and display them for designated persons at designated time. In addition, operators can prepare short messages in advance.

Working number★: Operators can set one or multiple working numbers for an employee according to the type of his job. The working numbers can be used to calculate his attendance and salary.

Notice: The employee information and attendance records will not be deleted during restoration to factory settings.

7.1 Query Record

After check-in successfully, the employee's attendance records are saved in the device. You can easily query these attendance records.

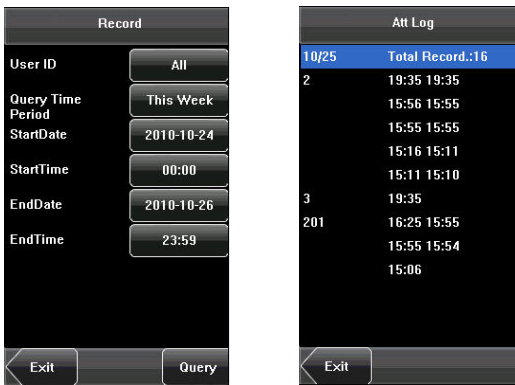
User ID: Enter the user ID of the employee to query. If this field is left blank, you can query the attendance records of all the employees. If you enter a user ID, you can query the attendance records of this employee.

Query Time Period: Select a time period to query, including the customized time period, yesterday, this week, last week, this month, last month, and all time periods.

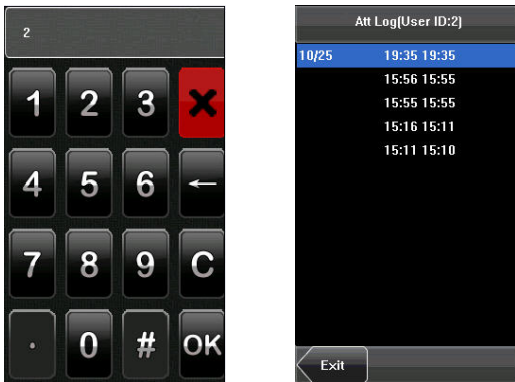
Start and End: When you select a customized time period, you need to input a start time and an end time. When you select other options for the time period, the start and end time will be automatically adjusted to the related time.

After setting the query conditions, press [Query] and the records that meet the specified query conditions will be displayed on screen.

Select the row where the desired record is located, you can query the detailed information of this record.



For example, press User ID and enter the edit interface, input the ID number and press [Query], the query result will display as below.



7.2 SMS★

Short messages are similar to announcements and notices. Operators can write a short message according to the contents to be announced in advance, and display the short message on the screen during a designated period. Short messages are classified into public and personal short messages. If a short message is configured as public, it will be automatically displayed on the minutes within a designated period; alternatively, users can use the shortcut keys (can be set in the keyboard definition) to view it. If a short message is configured as personal, the employee who receives it can view it after his attendance information is verified.

7.2.1 Set a Short Message

● Add a short message

Select **Short Message** > **Add** on the **Data Management** interface to enter the interface shown in the following figure:



Start: means the time when the short message takes effect.

Valid: means that the short message is only displayed within a validity period.

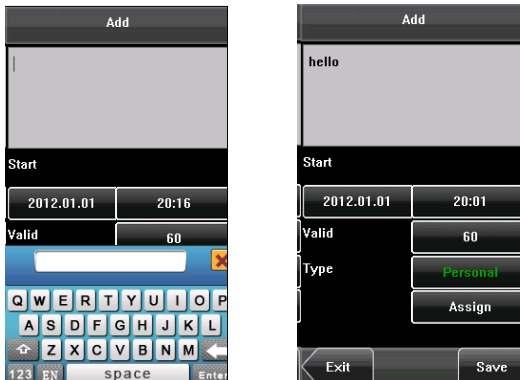
Type:

Reserved: means that the short message is prepared in advance but not configured as personal or public.

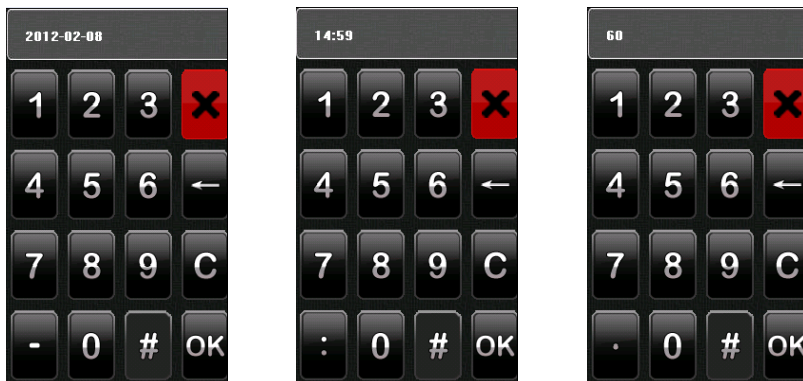
Personal: means that the short message can only be read by a specific person.

Public: means that the short message can be read by all people.

(1) As shown in the following figures, click the short message input area, start the **T9 IME**, and input SMS contents. For the inputting method, see the attachment 1 "Operation Description of T9 Inputting Method".

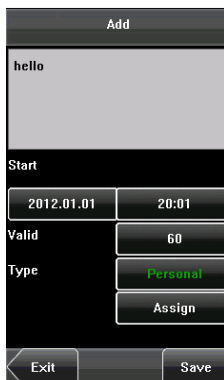


(2) Click **Start** or **Valid** to start the configuration interface shown in the following figures:

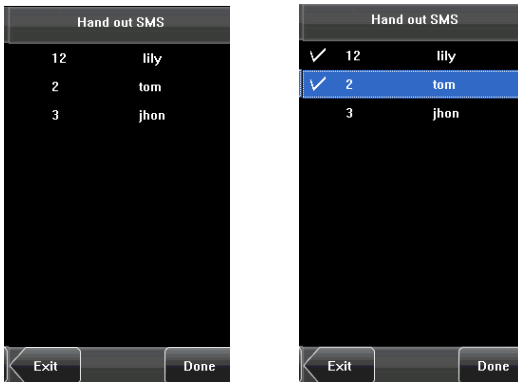


Press the number key to input values to be set, and click **OK** to save the settings and return to the previous interface.

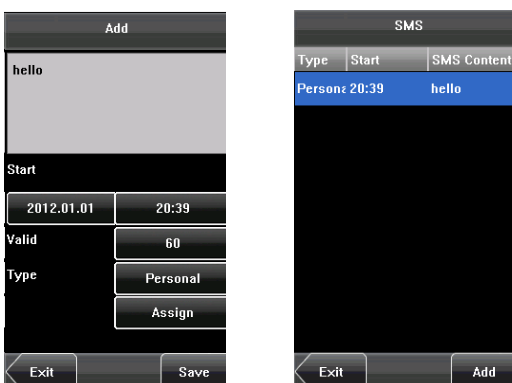
(3) Click **Type** to switch the types of a short message, including personal, public, and reserved. The following figure shows the personal type:



(4) Click **Hand out SMS** to start the **Hand out SMS** interface. As shown in the following figures, by clicking the name of an employee, the employee is **Checked** and the short message will be handed out to him:



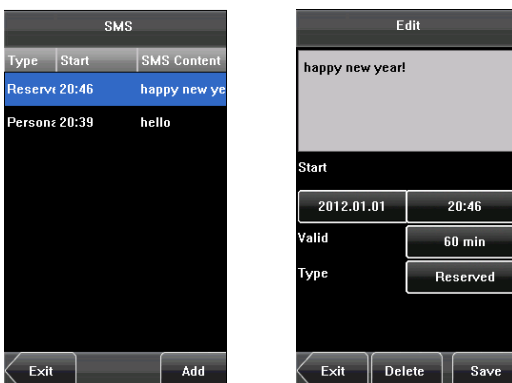
(5) As shown in the following figures, click **Done** to save the settings and return the previous interface. After that, click **Save** to store the short message and goes back to the previous interface. Then the new short message is displayed on the interface.



● Edit a short message

Click the message to be edited in the **SMS** interface.

The procedure of editing a short message is the same as that of adding a short message.



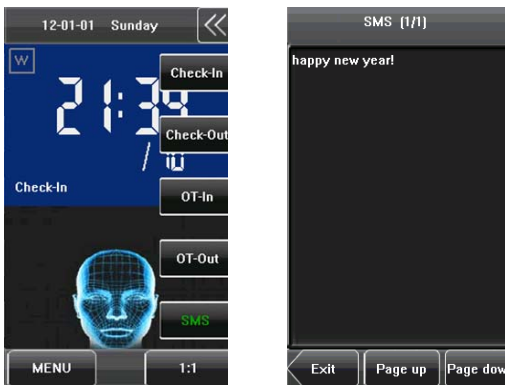
● Delete a short message

By clicking **Delete** on the **Edit** interface, the short message to be deleted is removed. In addition, any information related to the message is deleted at the same time.

7.2.2 View a Short Message

● View a public short message

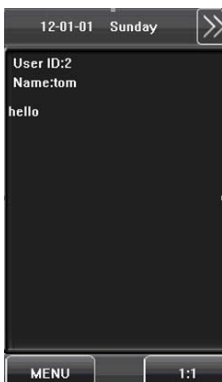
On the initial interface, public short messages are automatically displayed on the minutes. Alternatively, the public short messages can be viewed by clicking the shortcut keys on the interface, as shown in the following figures. For detailed setting methods, see [6.6 Shortcut Definitions](#).



After the viewing is finished, click **Return** to exit the **View** interface and return the initial interface.

- **View a personal short message**

After a user is authorized, his short message will be displayed, as shown in the following figure:



7.3 Work Code

Easy for users quickly deal with data of distinguish different situation. Please click **[System]--[Shortcut Definitions]--[Undefine]**, select **[Workcode]** and save, can opening working code function. For detail operation in **[Data Management]--[Workcode]**. Can edit, add, delete and query.

7.3.1 Add a work code

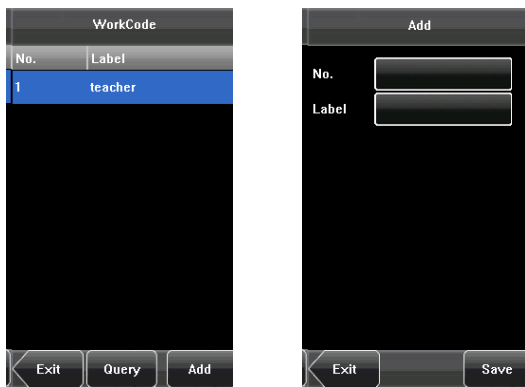
1. Press **[Add]** on the **WorkCode** interface to display the [Add] interface as figures below:

No.: A digital code of the work code.

Label: The meaning of the work code.

2. Press the corresponding entry button of **[No.]** on the [Add] interface display the No. entry interface. On this interface, enter a No.

3. Press the corresponding entry button of **[Label]** on the **Workacode** interface to display the text entry interface. On this interface, enter a label of work code. (See [12.1 T9 Input Instructions](#))



7.3.2 Edit and delete a work code

1. Press the row of a work code on the **WorkCode** interface to display the [**Edit**] interface.
2. To edit this work code, enter a new No. and label with the same operation steps as described in “**Add a work code**”.
3. To delete this work code, press [**Delete**].
4. On the displayed prompt interface, press <**YES**> to confirm the deletion of this work code, and press <**NO**> to cancel the deletion operation.

7.3.3. Edit and delete a work code

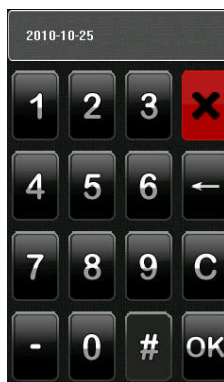
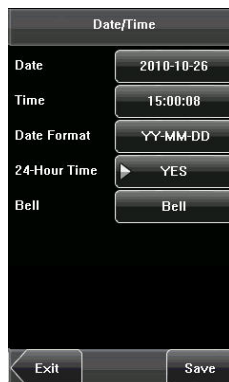
Press [**Delete**] on the **WorkCode** interface, display the **keyboard** interface, prompt you want to query code, to enter the Number, and then click OK.

8. Date/Time Setting

8.1 Set Date/Time

The date and time of the device must be set accurately to ensure the accuracy of attendance time.

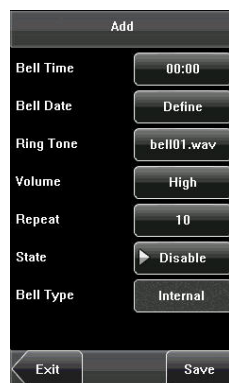
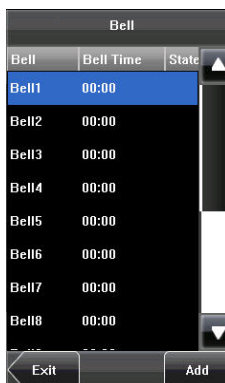
1. Press [**Menu**] on the initial interface to display the main menu interface.
2. Press [**Time/Date**] on the main menu interface to display the time setting interface.
3. Select the desired date and time by pressing the parameter. For the time format, there are 10 formats to select from. Both 12-hour and 24-hour time systems are supported.
4. Press [**Save**] to save the current information and return to the previous interface. Press [**Exit**] to return to the previous interface without saving the current information.



8.2 Bell Setting ★

Lots of companies need to ring their bells to signal the start and end of work shifts, and they usually manually ring their bells or use electric bells. To lower costs and facilitate management, we integrated the time bell function into the device. You can set the alarm time and duration for ringing the bell based on your requirements, so that the device will automatically play the selected ring tone and triggers the relay at the alarm time, and stop playing the ring tone after the set duration. Each device can be added with 15 alarm bells at most.

Press [**Bell**] on the [Date/Time] menu to display the bell setting interface, as shown in figure below.



● Add a bell

- 1) The displayed bell setting interface lists all the bells. Click [Add] to display the [Add] interface.
- 2) On the [Add] interface, set the following parameters:

Bell Time: This parameter is used to set a time point when the device automatically plays a bell ring tone

every day.

Bell Date: This parameter is used to set which day the device automatically plays a bell ring tone.

Ring Tone: This parameter is used to set the bell ring tone.

Volume: This parameter is used to set the volume of ring tone.

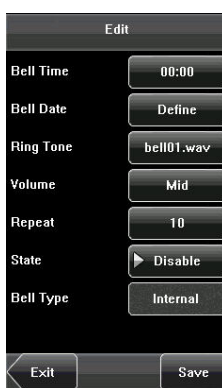
Repeat: This parameter is used to set the alarm times.

State: This parameter is used to set whether to enable the bell.

Bell Type: You can select between internal ringing and external ringing. For internal ringing, the ring tone is played by the loudspeaker of the device. For external ringing, the ring tone is played by an external electric bell that is connected with the device.

● Edit and delete a bell

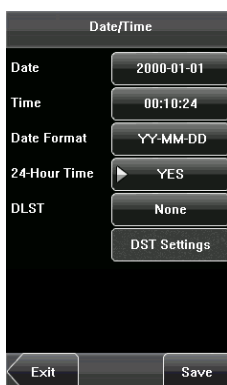
Press a bell in the list on the bell setting interface to display the **[Edit]** interface, with the similar operation as “Add a bell”.



Notice: Only some models have this function. If you need it, please contact our business representative or technician.

8.3 Daylight Saving Time (DLST) ★

DLST, also called Daylight Saving Time, is a system to prescribe local time in order to save energy. The unified time adopted during the system date is called “DLST”. Usually, the time will be one hour forward in summer. It can make people sleep early and get up early. It can also reduce lighting to save power. In autumn, the time will be recovered. The regulations are different in different countries. At present, nearly 110 countries adopt DLST.



To meet the demand of DLST, a special option can be customized on our RF Card Time & Attendance recorder. Make the time one hour forward at XX (minute) XX (hour) XX (day) XX (month), and make the time one hour backward at XX (minute) XX (hour) XX (day) XX (month) if necessary.

Operation:

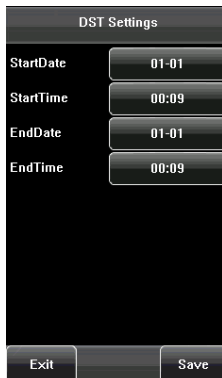
Select the DLST mode first. Including Mode 1, Mode 2 and None, the default setting is None.

1. Click [None] to display the DLST mode selecting interface.
2. Select the DLST mode and return to the Date/Time interface:



3. Click [DST settings], enter the DLST edit interface.

Mode1



Mode2



4. After setting, click [Save] to complete and return.

9. Auto Test

The auto test enables the system to automatically test whether functions of various modules are normal, including the screen, sensor, voice, face, keyboard and clock tests.



1. Test Screen: The device automatically tests the display effect of the color TFT display by displaying full color, pure white and pure black and checks whether the screen displays properly. You can continue the test by touching the screen or exit it by pressing [Exit].

2. Test Fingerprint★: The device automatically tests whether the fingerprint sensor works properly by checking whether the fingerprint images are clear and acceptable. When the user places his/her finger on the sensor, the collected fingerprint image is displayed on the screen in real-time. Press [Exit] to exit the test.

3. Test Voice: The device automatically tests whether the voice files are complete and the voice quality is good by playing the voice files stored in the device. You can continue the test by touching the screen,

4. Test Face: The device automatically tests whether the camera works properly by checking whether the collected face images are clear and acceptable. Press [Exit] to exit the test.

5. Test Keyboard★: The device tests whether every key on the keyboard works normally. Press any key on the [Keyboard Test] interface to check whether the pressed key matches the key displayed on screen. The keys are dark-gray before pressed, and turn blue after pressed. Press [Exit] to exit the test.

6. Test Time: The device tests whether its clock works properly by checking the stopwatch of the clock. Touch the screen to start counting, and touch it again to stop to check whether the counting is accurate. Press [Exit] to exit the test.

7. Screen Calibration:

You can perform all the menu operations by touching the screen with one of your fingers or a touch pen. When the touch screen is less sensitive to the touch, you can perform a screen calibration through menu operations.

The Screen Calibration Operation:

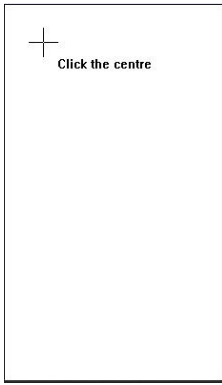
(1) Press [Menu] on the initial interface to display the main menu interface.

(2) Press [Calibration] on the [Auto Test] interface to display the screen calibration interface.

(3) Touch the center of the cross “+”.

(4) Repeat Step 3 following the move of the “+” icon to different locations on the screen.

(5) Touch the center of the cross at five locations on the screen correctly. When the message “Calibrating screen, pls wait.....” is displayed on screen, the calibration succeeds and the system automatically returns to the main menu. If the calibration fails, the system recalibration will start from Step 3.



10. USB Disk Management

Through the [Dn/Upload] menu, you can download user information and attendance data stored in a USB disk to related software or other fingerprint recognition equipment.



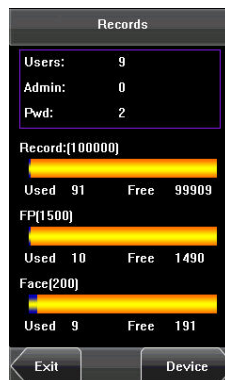
- 1. Download Transactions:** Download all the attendance data from the device to a USB disk.
- 2. Download User:** Download all the user information, fingerprints and face images from the device to a USB disk.
- 3. Download user photos★:** Download the employees' photos from the device to a USB disk.
- 4. Upload User:** Upload the user information, fingerprints and face images stored in a USB disk to the device.
- 5. Upload User Photo★:** Upload the JPG documents that are named after the user IDs and stored in a USB disk to the device, so that user photos can be displayed after the employee passes the verification. See [12.5 Photo ID Function](#).

11. System Information

You can check the storage status as well as version information of the device through the [System Information] option.

Records: The number of enrolled users, administrators and passwords are displayed on the [Records] interface; the total fingerprint storage capacity and occupied capacity as well as the total attendance storage capacity and occupied capacity are graphically displayed respectively.

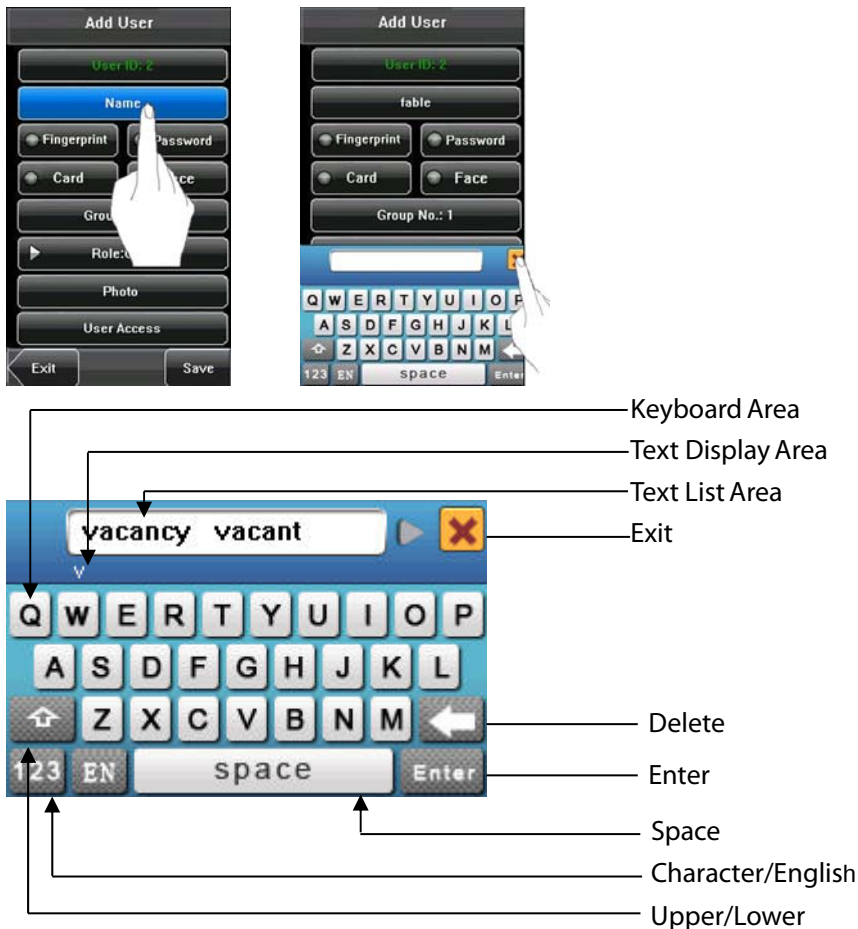
Device: The device name, serial number, version information, vendor and date of manufacture are displayed on the [Device] interface.



12. Appendix

12.1 T9 Input Instructions

The device supports to input English characters, numbers and symbols. Press related button to input text. For example, press [Name] to display the text input interface, as shown in the figure:



To enter a name, proceed as follows:

1. Press [Name] on the [Add] interface, as shown in figure below.
2. Enter the letter characters, and a list of characters in relation to the letter is presented in the text display area.
3. If the desired character is displayed in the text display area, press this character. And this character is at the same time displayed on the [Name] button. Enter next character by repeating Step 2.
4. After finishing the entry of name, press [X] to exit the keyboard interface and return to the previous interface.



12.2 USB

● USB Host

Fingerprint device may be used as USB host to exchange data with external U-disk.

The data transmission speed is quick, the traditional fingerprint device only supports the RS232, RS485 or Ethernet way for data transmission, when as a result of physical condition limit, data quantity big, and the data transmission cost quite long time. But the USB data transmission is quicker than any of the former transmission mode, may complete downloading data by U disk in a short period of time, like this greatly enhances the efficiency.

The operational steps of USB Host equipment please refer to [10. USB Disk Management](#).

● USB Client

Fingerprint device will be as removable storage devices and fingerprint device data will transfer to a PC via connectedly USB cable.

When the fingerprint device is as a USB Client, the fingerprint device communication settings menu will have USB communications options. Please refer to [5. Communication Settings](#) for details.

12.3 Introduction of Wiegand★

Wiegand26 is an access control standard protocol established by the Access Control Standard Subcommittee affiliated to the Security Industry Association (SIA). It is a non-contact IC card reader interface and output protocol.

Wiegand26 defines the interface between the card reader and controller used in the access control, security and other related industrial fields. Wiegand26 helps standardize the work of the card reader designers and controller manufacturers. The access control products manufactured by our company are also designed by following this protocol.

Digital Signals

The figure below is a sequence diagram in which the card reader sends digital signals in bit format to the access controller. In this sequence diagram, Wiegand follows the SIA's access control standard protocol for the 26-bit Wiegand card reader (one pulse time ranges between 20 μ s and 100 μ s, and the pulse jump time ranges between 200 μ s and 20ms). Data1 and Data0 are high level (larger than V_{ol}) signals till the card reader prepares to send a data stream. The asynchronous low-level pulse (smaller than V_{ol}) generated by the card reader is sent to the access control panel (The saw-tooth wave as shown in Figure below) through Data1 or Data0. Data1 and Data0 pulses will neither overlap nor be generated synchronously. The table below lists the maximum and minimum pulse width (a consecutive pulse) and pulse jump time (time between pulses) allowed by the F series fingerprint access control device.

Figure: Sequence Diagram

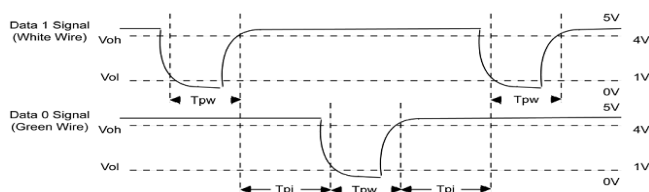
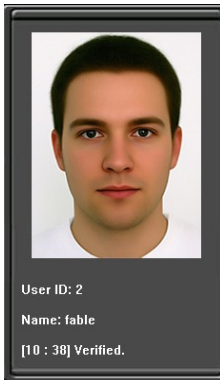


Table: Pulse Time

Symbol	Definition	Typical Value of Reader
T_{pw}	Pulse Width	100 μ s
T_{pi}	Pulse Interval	1 ms

12.4 Photo ID Function★

The Photo ID function is used to display the photo enrolled by a user or stored in a USB disk on the screen in addition to such information as the user ID and name.



Operation Steps:

1. When the photo taken by the device is used, the photo can be displayed upon successful verification.
2. To use a photo stored in a USB disk, proceed as follows:
 - 1) Create a folder with the name of "photo" in the USB disk, and store users' photos under this folder.
 - 2) The user photos must be in JPG format and named after their IDs. For example, for the user with the user ID of 154, the photo name must be 154.jpg.
 - 3) Insert the USB disk into USB slot on the device, and select USB Disk Management -> Upload -> Upload Photos. Then user photos can be displayed upon successful verification.

Note:

- 1) The length of a user name cannot exceed 24 digits.
- 2) The recommended size of a user photo is less than 64k bit.
- 3) The uploaded new user photo will overwrite the existing photo in related to the user ID.
- 4) To download user photos, select USB Disk Management -> Download -> Download User Photos. A folder with the name of "photo" will be automatically created on the USB disk, and all downloaded user photos are stored under this folder.

12.5 Work Code ★

Function Description:

The concept of work code is introduced to facilitate the software to handle the verification records according to different cases. For example, we define "1" for eating, "2" for seeing a doctor and "3" for smoking, and input corresponding value when performing a specific action. In this way, the software can easily differentiate among events 1, 2 and 3.

Operation Description:

You can set the "Work Code" by selecting Menu → Data Management. For details, please refer to [7.3 Work Code](#).

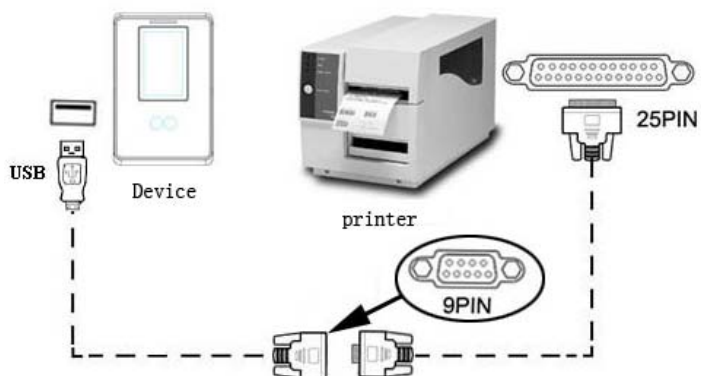
12.6 Print function ★

● External printer

Explain

This device is available only for USB interface export. To connect serial port printer, first use USB cable to transport to RS232. After the printer is connected, direct printing is available. The output content can be viewed through hyperterminal.

Connection



Use USB cable to transport to RS232 and connect the printer to RS232.	Device printer	
	2 TXD	<-----> 3 RXD
	3 RXD	<-----> 2 TXD
	5 GND	<-----> 7 FG
RS232 Pin-line order		

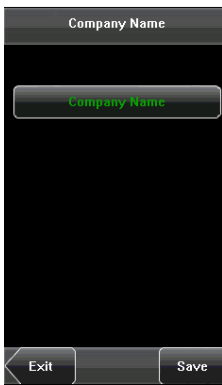
Instructions

In the device menu, enter Menu->Comm. -> Comm. and select the print mode. There are 6 print modes to choose.



Note:

1) When print mode is mode 4, can enter the set company name interface.



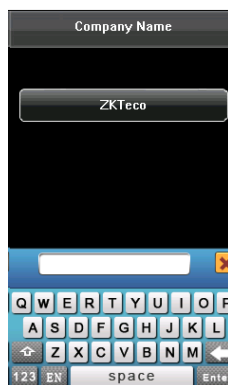
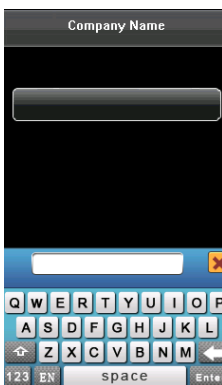
Company name★: Set the company name. The company name can be printed together with attendance records in mode 4.

Operation:

(1) Press [company name], on the displayed keyboard interface, enter a company name and press [X].

For details of operations on the keyboard interface, see [12.1 T9 Input Instructions](#).

(2) After the company name is entered, press [Save] to save the current information and return to the comm. interface. Press [Exit] to return to the comm. interface without saving the current information.



2. When print mode is mode 5, it will prompt as the follows after attendance verification.



Press YES to print record in mode 5. Press "NO" to not print record.

For example: San punched the card at 11:02:42 on June 11, 2012, there are different print formats to select, shown as below:

Version 1

```
000000001    1    12-06-11    11:02:42    I
```

Version 2

ID. NO: 000000001

Date Check-In
12-06-11 11:02:42

Version 3

1 000000001 San
12-06-11 11:02:42

Version 4

Control Asistencia

=====

Check-In

11:02.....11/06/2012

ID.NO..... 000000001

=====Thanks! =====

Version 5

000000001 12-06-11 11:02 Check-In

Version 6

ID.NO: 000000001

Name: San

Check-In

12-06-11 11:02:42

Notice:

- 1) In mode 2, paper will be changed automatically after printing.
- 2) If you want to customize other print modes, please contact our commercial representatives or pre-sales technical supporters.

12.7 Multi-combination Authentication Mode★

Besides this function only is owned by the fingerprint access control machine that has been appointed, most of the fingerprint machines only have two ways to verify by fingerprint and password, we provide a personal or group Multi-combination Authentication Mode for high security Access control area, verification type main include five elements that are User Number (PIN), Fingerprint (FP), Face (FACE), Password (PW) and RF card (RF), which can combine into multi-combination.

Note: The RF card is used for ID card verification, the function of ID card verification only is validity in the machine which ID card function is provided with.

These symbols illustrate what follow the table different means.

- "/" is or
- "&" is and
- FP (fingerprint)
- RF (RF card)
- "+" follow next operation
- FACE (Face)
- PWD (Password)
- PIN (user ID)

If Fingerprint, Face, Password and Card have been enrolled for the user, the verification procedure is follow.

Type	What you do
FACE&PIN/FP/PW/RF	FACE+PIN or RF or PW or RF are verified
	1) PIN++FACE(1:1) 2) FP(1:N) 3) PIN+PW+"OK" 4) RF(1:N)
FP&PW	FP + PW are verified
	1) FP(1:N)+PW+"OK" 2) PIN+FP(1:1)+PW+"OK" 3) PIN+PW+"OK"+FP
FP&RF	FP + RF are verified
	1) RF+FP(1:1) 2) FP(1:N)+RF 3) PIN+FP(1:1)+RF
FACE&FP	FACE + FP are verified
	1) FP(1:N)+FACE 2) FACE(1:N)+FP 3) PIN+FACE(1:1)+FP 4) PIN+FP(1:1)+FACE
FACE&PW	FACE + PW are verified

	1) FACE(1:N)+PW+“OK” 2) PIN+FACE(1:1)+PW 3) PIN+PW+FACE
FACE&RF	FACE + RF are verified
	1) FACE(1:N)+RF 2) PIN+FACE(1:1)+RF 3) RF(1:N)+FACE
FP	Only FP is verified.
	1) PIN+FP(1:1) 2) FP(1:N)
PW	Only PW is verified
	PIN+PW+“OK”
RF	Only RF is verified
	RF(1:N)
FACE&PIN	FACE + PIN are verified
	PIN+FACE(1:1)
FP/RF	FP or RF is verified
	1) PIN+FP(1:1) 2) RF(1:N) 3) FP(1:N)
PW/RF	FP or RF is verified
	1) PIN+PW+“OK” 2) RF(1:N)
FP/PW	FP or PW is verified
	1) PIN+FP(1:1) 2) FP(1:N) 3) PIN+PW+“OK”
PIN&FP	PIN + FP are verified
	PIN+FP(1:1)
FP&PW&RF	FP + PW + RF are verified

	1) FP(1:N)+PW+"OK"+RF 2) PIN+FP(1:1)+PW+"OK"+RF 3) RF(1:N)+PW+"OK"+FP 4) PIN+ PW+"OK"+FP(1:1)+RF
PIN&FP& PW	PIN + FP + PW are verified
	1) PIN+PW+"OK"+FP(1:1) 2) PIN+FP(1:1)+PW+"OK"
FP & RF/PIN	FP + PIN, or FP + RF are verified
	1) RF+FP(1:1) 2) FP(1:N)+RF 3) PIN+FP(1:1)
FACE&FP&RF	FACE + FP + RF are verified
	1) FACE(1:N)+FP+RF 2) FP+FACE(1:1)+RF 3) RF(1:N)+FACE+FP 4) PIN+FP(1:1)+FACE+RF 5) PIN+FACE(1:1)+FP+RF
FACE&FP&PW	FACE + FP + PW are verified
	1) FACE(1:N) +PW+"OK"+FP 2) FP+PW+"OK"+FACE(1:1) 3) PIN+FP(1:1) +PW+"OK"+FACE 4) PIN+FACE(1:1) +PW+"OK"+FP 5) PIN+PW+"OK"+FP+FACE

Note: For combined verification, it is better to enroll all the elements in need for using verification mode, or verification will fail.

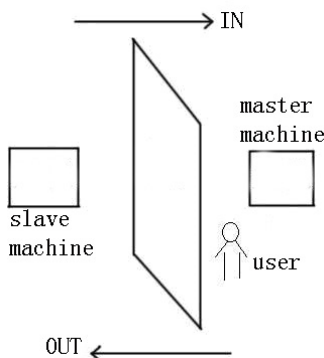
For example: User "A" use fingerprint for enrollment, while password is used for verification, then the user cannot pass the verification.

12.8 Anti-Pass Back★

Overview:

Sometimes, some illegal people follow the other one into the gate, which will cause the security problems. To prevent such risks, this function is enabled. The In record must match the Out record, or the gate won't open.

This function needs two machines to work together. One is installed inside of the door (master machine hereinafter), the other is installed outside of the door (slave machine hereinafter). Wiegand signal communication is adopted between the two machines.



Working principle:

The master machine has Wiegand In and slave machine has Wiegand Out functions. Connect Wiegand Out of slave machine to Wiegand In of master machine. Wiegand output from slave machine must not own machine ID. The number sent to master machine from slave machine must be found in the master machine.

Function:

Judge whether it is anti-pass back according to user's recent in-out record. In record and out record must be matched. This machine supports out, in, or out-in anti-pass back.

When the master machine is set as "out anti-pass back", if user wants to come in and go out normally, his recent record must be "in", or he cannot go out. Any "out" attempt will be refused by "anti-pass back" function. For example, a user's recent record is "in", his second record can be "out" or "in". His third record is based on his second record. Out record and in record must match. (Notice: If customer has no record before, then he can come in but cannot go out).

When the master machine is set as "in anti-pass back", if the user wants to come in and go out normally, his recent record must be "out", or he cannot go out. Any out record will be "anti-pass back refused" by the system. (Notice: If the customer has no former record, then he can go out, but cannot come in).

When the master machine is set as "out-in anti-pass back", if the user wants to come in and go out normally, if his recent record is "out" and "in", then his next record must be "in" and "out".

Operation:

1. Select model

Master machine: The machine with Wiegand in function, except for F10 reader.

Slave machine: The machine with Wiegand Out function.

2. Menu setting

Anti-pass back

There are four options: in/out anti-pass back, out anti-pass back, in anti-pass back, and none.

Out anti-pass back: Only user's last record is in-record, can the door be open.

In anti-pass back: Only user's last record is out-record, can the door be open.

Device status: There are three options: Control-in, control-out and none

Control-in: When it is set, the verified records on the device are in-records.

Control-out: When it is set, the verified records on the device are out-records.

None: When it is set, close the device's anti-pass back function.

3. Modify device's Wiegand output format

When the two devices are communicating, only the Wiegand signals without device ID are received. Enter device menu-> communication option->Wiegand option or enter software -> basic setting -> device management -> Wiegand, to modify "defined format" as "wiegand26 without device ID".

4. Enroll user

The user must be on master machine and slave machine at the same time, and user PIN must be the same. Therefore, it is necessary to enroll user on master machine and slave machine at the same time.

5. Connection instruction

Wiegand communication is adopted for master machine and slave machine. Refer to the following for connection:

Master		Slave
IND0	<----->	WD0
IND1	<----->	WD1
GND	<----->	GND

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 other police fingerprint equipment or development tools will provide the function of collecting the original fingerprint image of citizens. 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.

Note: 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 fingerprint recognition actually provides adequate protection for your identity under a high security environment.

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.

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