USER MANUAL

ProFAC

Version: 1.2

Date: September 2021

About This Manual

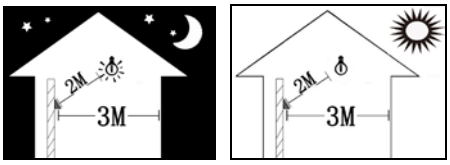
- This manual introduces the operation of user interfaces and menu functions of the facial Access Control terminal.
- The pictures in this manual may not be exactly consistent with those of your product; the actual product's display shall prevail.
- Not all the devices have the function with ★, the real product prevails.

Contents

1 Guidance Notes

1.1 Operating Environment of the Device

1) Recommended Installation Position:

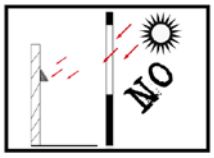


√ Recommended installation position (as shown in the left figure):

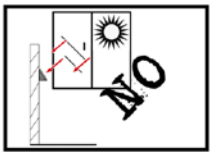
Install the device in an indoor position which is three meters far from the window and door, and two meters far from the lamp source, with illuminance of ambient light source being 0~800 LUX.

2) Several Installation Positions Affecting Application Effect:

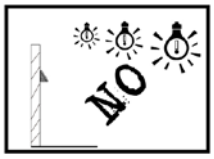
Direct sunlight (Outdoor)



Direct sunlight through the window (Indoor)



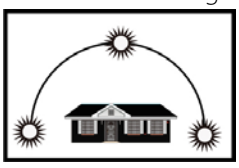
Oblique sunlight through the window (Indoor)



Exposure to close range lamp light (Indoor)

☺**NOTE:** Reference illuminance value of the ambient light source is 0~800 LUX.

10 Lux



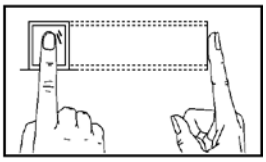
Larger than 1200 Lux

50-800 Lux

1.2 Method of Pressing Fingerprint★

It is recommended to use the **index finger, middle finger** or **ring finger**; avoid using the thumb or little finger.

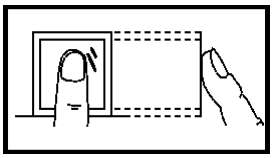
1. Correct way to press the fingerprint:



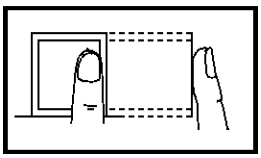
Press the finger horizontally onto the fingerprint sensor; the center of the fingerprint should be placed on that of the sensor.

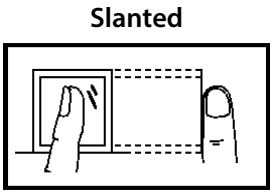
2. Wrong ways to press the fingerprint:

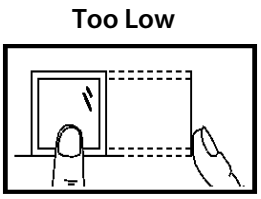
Vertical



Sides





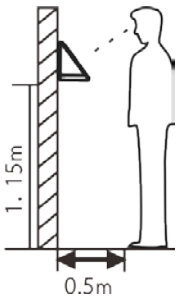


Please use the correct method of pressing fingerprint for registration and verification. Our company does not undertake the responsibility for the lowered verification performance caused by user's improper operation. The rights to final interpretation and amendment are reserved.

1.3 Cautions for Using Face Recognition Device

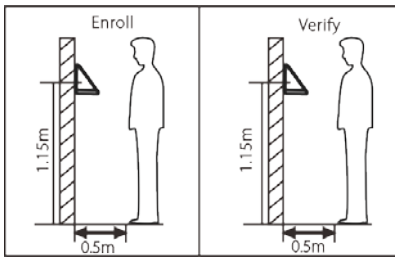
1. Recommended Standing Position

For user heights between 1.5m to 1.8m, it is recommended to install the device at 1.15m above ground (may be modified according to user average height).

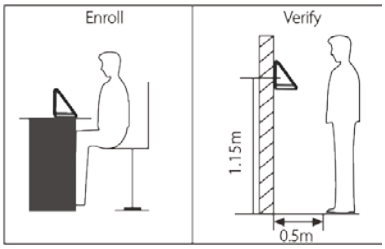


Recommended Registration and Verification Position

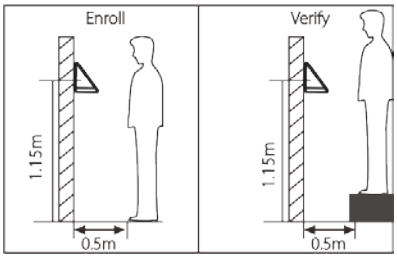
Recommended Procedures (as shown in the right image):
During registration and verification procedures, the position of device should not be changed to prevent deduction in verification preciseness. If it is necessary to move the device, its vertical height should not be changed.



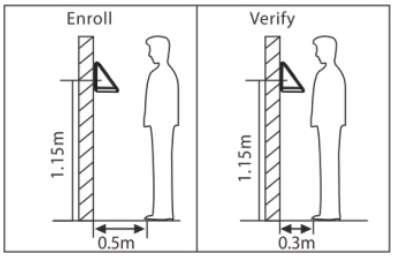
Factors Affecting the Preciseness of Verification



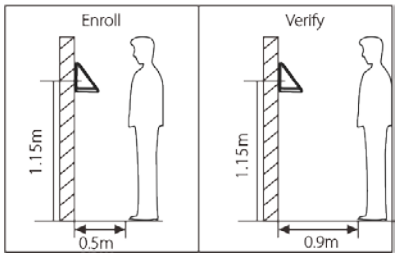
Non-identical registration and verification gestures



Non-identical registration and verification heights

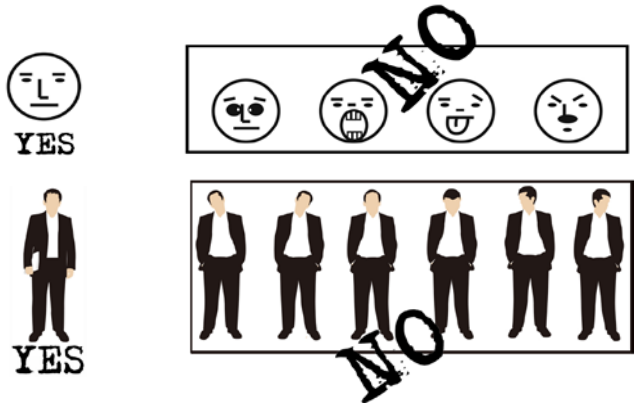


Non-identical registration and verification distances from device



Non-identical registration and verification distances from device

2. **Facial Expression and Stance**



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

3. **Registration and Verification**

a. During registration, it is required to adjust your upper body to fit your eyes into the green frame on the screen.

b. During verification, it is required to show your face in the center of the screen and fit your face into the green frame in the screen.

1.4 Verification Modes

1.4.1 1:N Fingerprint Verification

In 1:N fingerprint verification method, a fingerprint collected by the sensor is verified with all fingerprints stored in the device.

Note: Please use the correct way to press fingerprint onto the fingerprint sensor (for detailed instruction, please refer to 1.2 Method of Pressing Fingerprint ★.

Successfully verified

Verification Fails

1.4.2 1:1 Fingerprint Verification

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

Press  to Input the user ID

and press fingerprint

Successfully verified

Failed to verify

NOTES:

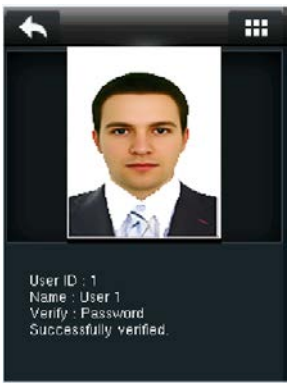
When the device displays “please press your finger again”, press your finger again onto the fingerprint sensor. If verification still fails after 2 attempts, it will return to the initial interface.

1.4.3 Password Verification

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

Press  to enter user ID

Press the key icon to enter the password

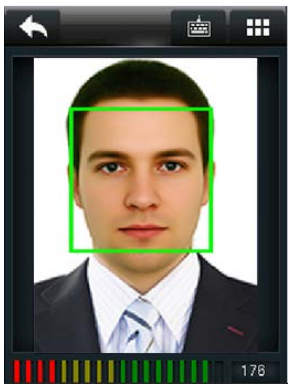


Successfully verified

Failed to verify

1.4.4 1:N Face Verification Attendance

In this method, the facial image captured by the camera is compared with all facial data in the device.



Conduct comparison in the correct way on the main interface

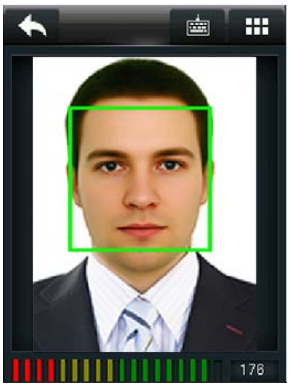
Successfully verified

1.4.5 1:1 Face Verification Attendance

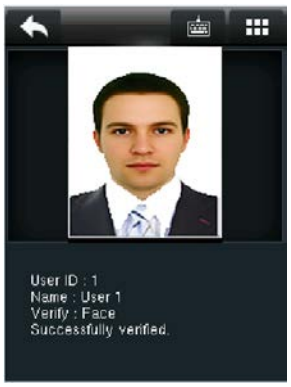
In this method, the captured facial image is compared with the facial image associated with the entered user ID.

Press  to enter the user ID

Press facial icon



Compare the faces in the right way



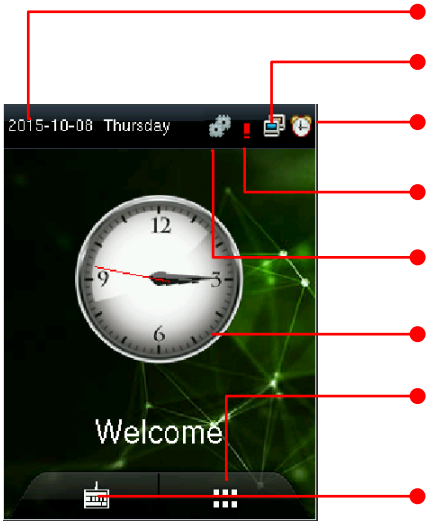
Successfully verified

1.4.6 Card Verification

NOTE: Card function is optional, only products with a built-in card module are equipped with card verification function. Please contact our technical support as required.

1. Swipe the card above the card reader (the card must be registered)
2. Verification succeeds
3. Verification fails

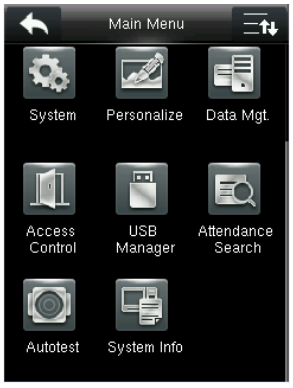
1.5 Initial Interface



1. Date and Time
2. Network Connection
3. Bell
4. Tamper Alarm
5. Auxillary Input
6. Time
7. Menu
8. 1:1 Verification mode

1. **Date and Time**: The current date of the device is displayed.
2. **Bell**: An alarm is set for the device if this icon is displayed.
3. **Network Connection**: The network connection status of the device is displayed.
4. **Tamper Alarm:** The tamper alarm button is up if this icon is displayed, and the possible cause is "improper installation" or "illegal disassembly".
5. **Auxiliary Input:** This icon is displayed when the auxiliary input terminal of the device is connected to an auxiliary device and the auxiliary input condition is triggered.
6. **Time:** The current time of the device is displayed. The 12-hour and 24-hour are supported. Users may customize the style of the main interface. For details, refer 8 Personalize Settings.
7. **Menu:** Press this icon to enter the main menu. If administrators are set for the device, you should pass the administrator verification before accessing the main menu.
8. **1:1 Verification (soft keyboard):** Press the key to enter the interface for inputting a user ID in 1:1 verification mode. After inputting a user ID, press [**OK**] and continue the 1:1 verification according to prompts on the interface.

2 Main Menu



User Mgt.: To manage basic information of registered users, including user ID, user name, user role, fingerprint★, face, badge ★ (ID and MiFare card are optional), password, user photo and access control role.

User Role: To set user roles for accessing into the menu and changing settings.

Comm.: To set the related parameters for enabling communication between the device and PC, including Ethernet parameters such as IP address etc., serial Comm, PC connection, ADMS and Wiegand settings.

System: To set related parameters of the system and upgrade firmware, including setting date & time, access logs, face parameters, fingerprint parameters and resetting to factory settings.

Personalize: This includes interface display, voice and bell settings.

Data Mgt.: To delete data including access records, admin role, screen savers and so on, to backup and restore data.delete access records, delete all data, delete admin role, delete screen savers and so on, to backup, restore data.

Access Control: To set the parameters of the control lock and access control devices, including parameters of access control, time rules, holidays, combined verification and anti-passback.

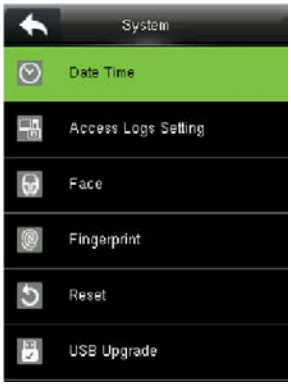
USB Manager: To transfer data such as user data and access records from the USB disk to the supporting software or other devices.

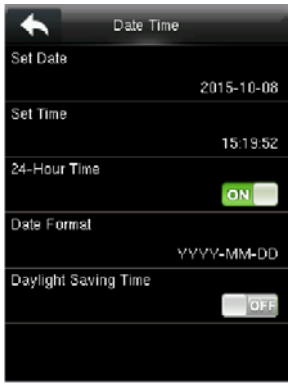
Attendance Search: To search for the records stored in the device after successful verification.

Autotest: To automatically test different module's functions, including the LCD, voice, fingerprint sensor, camera and clock RTC test.

System Info: To check device capacity, device and firmware information.

3 Date / Time Settings





In the initial interface, press > **System** > **Date Time** to enter the date/time setting interface. It includes setting date, time, 24-hour clock / 12-hour clock, date format and daylight saving time.

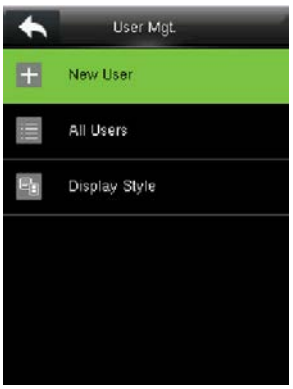
When resetting to factory settings, the date format can be restored (YYYY-MM-DD).

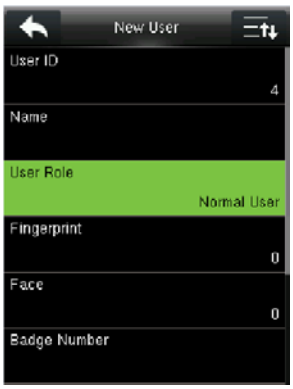
NOTE: When resetting to factory settings, the device's date/time will not be restored (if the date/time is set to 18:30 on January 1, 2020, after settings are reset, the date/time will stay at 18:30 on January 1, 2020.

4 User Management

4.1 Adding a User

Including adding super admin and normal user to user roles.

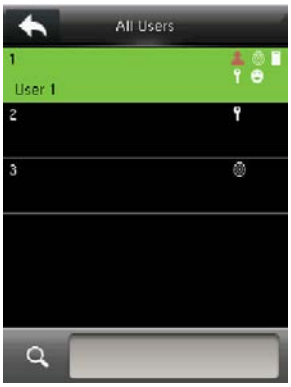




In the initial interface, press ▦ > **User Mgt.** > **New User** to enter **New User** setting interface. Settings include inputting User ID, name, choosing User Role (Normal User / Super Admin), registering Fingerprint, face and badge number ★(ID and Mifare card are optional), setting Password, taking User Photo and setting access control role.

Add a Super Admin: Choose "Super Admin" in [**User Role**], who is allowed to operate all the functions on the menu.

As shown below, the user with User ID 1 is a super admin:



Add a Normal User: Choose "Normal User" in **[User Role]**. When the Super Admin is set, Normal Users can only use fingerprint, password or card★ for verification; when the Super Admin is not yet set, Normal Users can operate all functions on the menu.

Password: 1 to 8 digits of password is accepted.

NOTES:

1. The device automatically allocates user ID for users in sequence, but user can set it manually as well.
2. The device supports user ID ranged from 1 to 9 digits.

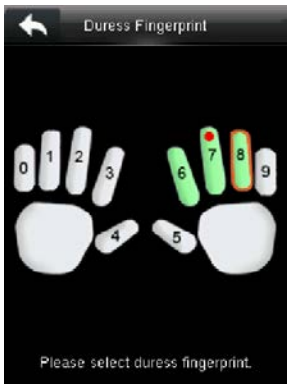
4.2 Setting Access Control

User access control option is to set open door access aimed at everybody, including access group setting, using time period, duress fingerprint management.

Access group: To allocate users to different access control groups for management. By default, new users belong to Group 1 and can be reallocate to other groups. A valid group number ranges from 1 to 99.

Time Period: Select time rules for the user. Time rules are set under the **Access Control** menu and a maximum of 50 time rules are supported. The effective door opening time period of the user is the sum of the selected time rules.

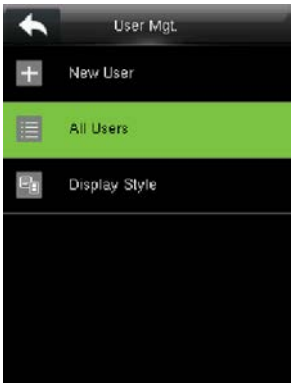
Duress Fingerprint: User can choose one or more registered fingerprint(s) as Duress Fingerprint. When that fingerprint is verified, duress alarm will be triggered.

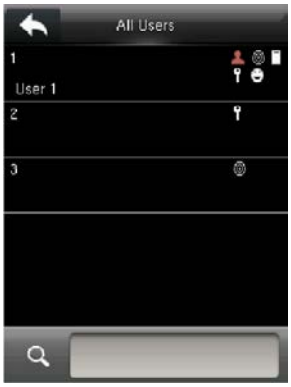


Example: Among those registered fingerprints (6, 7, 8), choose the 7th fingerprint as the duress fingerprint.

4.3 Searching User

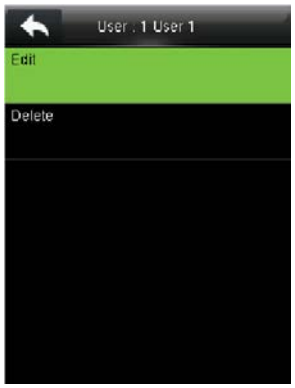
Enter user ID on the **[All Users]** List to search for a user.





In the initial interface, press ⊞ > **User Mgt.** > **All Users** to enter **All Users** interface. Input "User ID" in 🔍, the corresponding user will be shown. The above figure shows the search interfaces of an user with user ID "1".

4.4 Editing a User

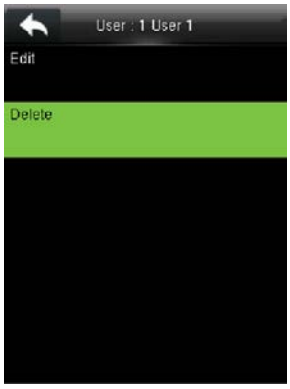


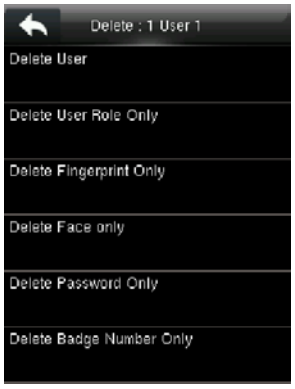
After a user is chosen through 4.3 Searching User, press ⊞ and **[Edit]** to enter user editing interface.

Or in the initial interface press ⊞ > **User Mgt.** > **All Users** > search a user > press ⊞ > **Edit** to enter **User Editing** interface.

The operation method of editing user is the same with that of adding user, but the user ID cannot be edited.

4.5 Deleting a User



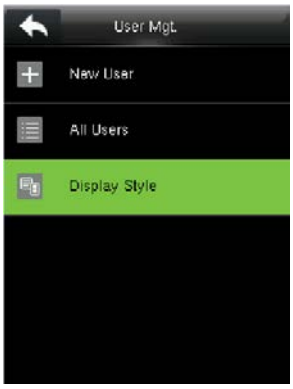


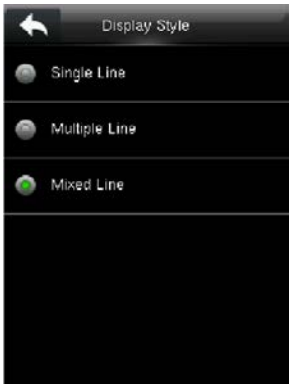
After a user is chosen through 4.3 Searching User, press **[M/OK]** and Press **[Delete]** to enter user deleting interface.

Or in the initial interface press ⊞ > **User Mgt.** > **All Users** > Search a user > **Delete** to enter user deleting interface. Select user information to be deleted or delete the whole user.

☺**NOTE:** The corresponding to-be-deleted item will be displayed only when the user has registered fingerprint, password, badge★ and user photo.

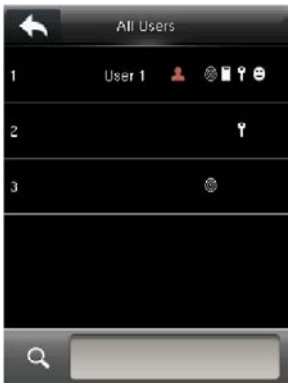
4.6 User Display Style



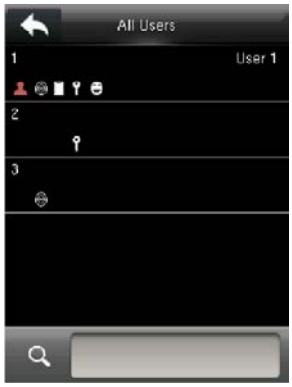


In the initial interface, press > **User Mgt.** > **Display Style** to enter **Display Style** setting interface.

Several Display Styles are shown as below:



Single Line Style



Multiple Line

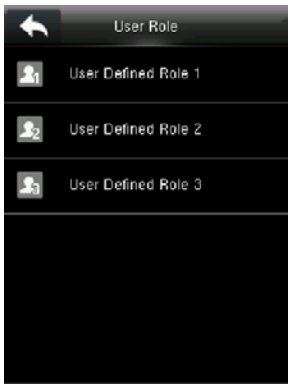
Mixed Line

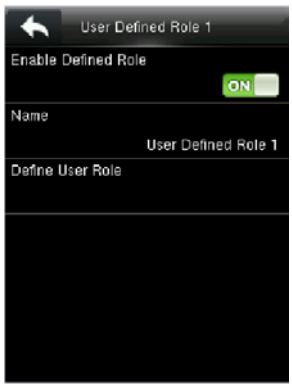
5 User Role

Setting user rights for operating the menu (a maximum of 3 roles can be set). When user role is enabled, in **[User Mgt.]** > **[New User]** > **[User Role]**, you can allocate suitable user role to each user.

Role: Super user needs to allocate different rights to new users. To avoid setting rights for each user one by one, you can set user roles to categorize different permission levels in user management.

5.1 Enabling User Role



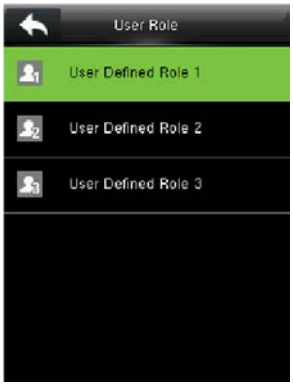


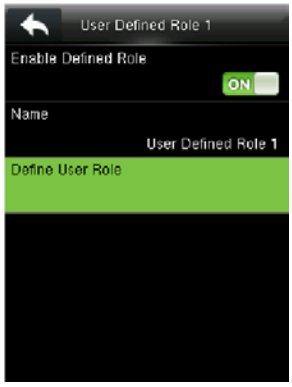
In the initial interface, press ⊞ > **User Role** > **User Defined Role 1 (2 / 3)** > **Enable Defined Role** to enable defined role.

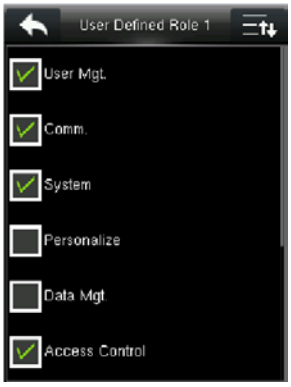
After enabling the defined roles, you can check the enabled user roles in **[User Mgt.]** > **[New User]** > **[User Role]**.

☺ **NOTE:** At least one registered administrator is required to enable user role, else the device will prompt "Please enroll super admin first".

5.2 Rights Allocation



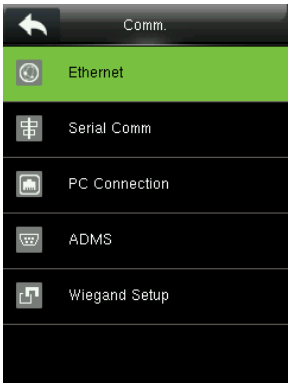


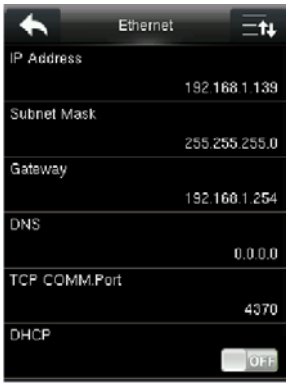


In the initial interface, press ⊞ > **User Role** > **User Defined Role 1 (2 / 3)** > **Define User Role** to enter **User Defined Role 1 (2 /3)** rights allocating interface.

6 Comm. Settings

6.1 Ethernet Settings





In the initial interface, press > **Comm.** > **Ethernet** to enter the **Ethernet** setting interface.

The parameters provided below are the factory default values, please adjust them according to the actual network situation.

IP Address: 192.168.1.201

Subnet Mask: 255.255.255.0

Gateway: 0.0.0.0

DNS: 0.0.0.0

TCP COMM. Port: 4370

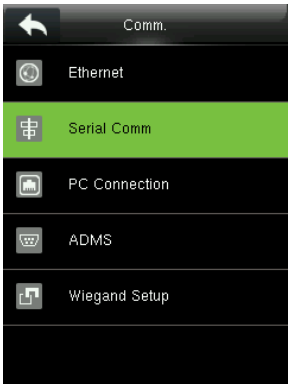
DHCP: Dynamic Host Configuration Protocol, which is to dynamically allocate IP addresses for clients via server. **If DHCP is enabled, IP cannot be set manually.**

Display in Status Bar: To set whether to display the network icon on the status bar.

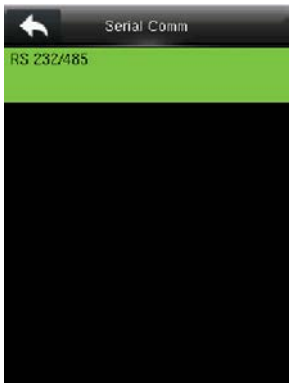
6.2 Serial Comm. Settings

- **Turning ON /OFF RS485 Function**

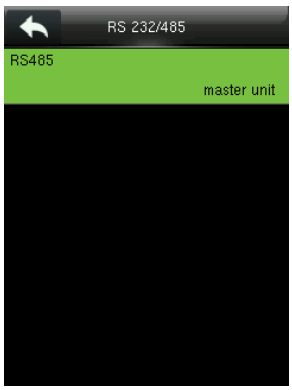
In the initial interface, press to enter main menu, and select **Comm.**



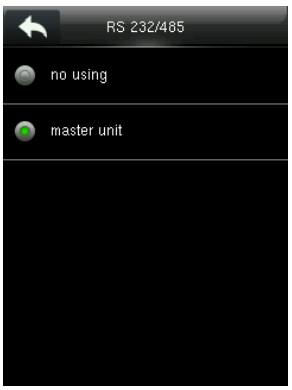
Select **Serial Comm**



Select **RS232/485**



Select **RS485**



Select RS485 as the function of "master unit" or choose to disable RS485

NOTES:

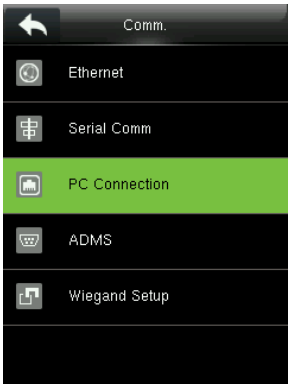
When RS485 is used as the function of "**master unit**", the device will act as "master unit", and it can be connected to RS485 fingerprint reader.

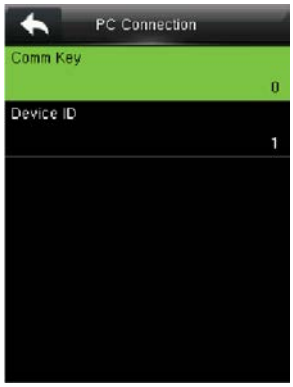
6.3 PC Connection

- **Comm key Settings**

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

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



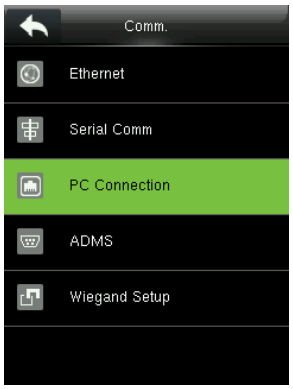


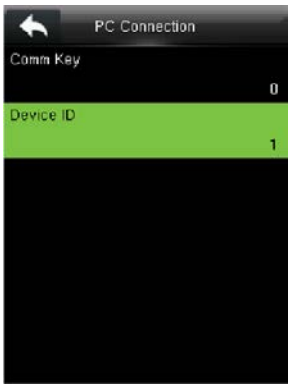
In the initial interface, press ⋮⋮⋮ > **Comm.** > **PC Connection** > **Comm Key** to enter the **Comm Key** setting interface.

Comm Key: The default password is 0 (no password). **Comm Key** can be 1~6 digits and ranges between 0~999999.

- **Device ID Settings**

If the communication method is RS232/RS485, inputting this device ID in the software communication interface is required.



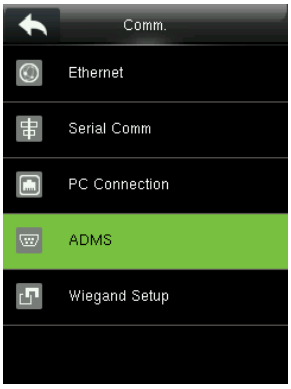


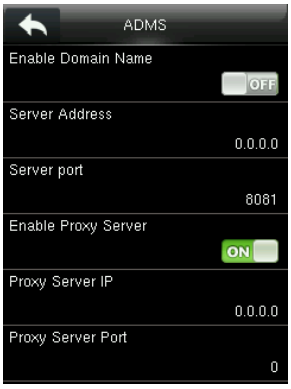
In the initial interface, press ⋮⋮⋮ > **Comm.** > **PC Connection** > **Device ID** to enter the **Device ID** setting interface.

Device ID: Identity number of the device, which ranges between 1~254.

6.4 ADMS Settings

Settings used for connecting with ADMS server, such as IP address and port settings, and whether to enable proxy server etc.





In the initial interface, press **[M/OK]** > **Comm.** > **ADMS** to enter the **ADMS** server setting interface. When the Webserver is connected successfully, the main interface will display the logo.

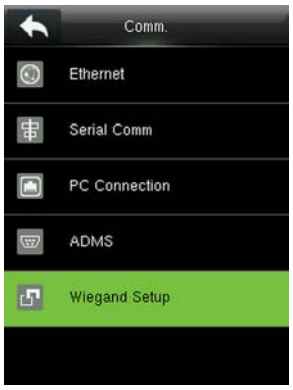
Enable Domain Name: When this function is turned on, the domain name mode http://... will be used, such as http://www.XXX.com. XXX denotes the domain name when this mode is on; when this mode is off, enter the IP address format in XXX.

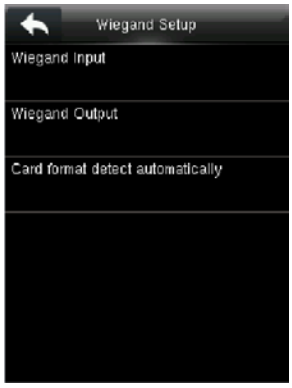
Server Address: IP address of the ADMS server.

Server Port: Port used by the ADMS server.

Enable Proxy Server: Method of enabling proxy. To enable proxy, please set the IP address and port number of the proxy server. Entering proxy IP and server address will be the same

6.5 Wiegand Setup

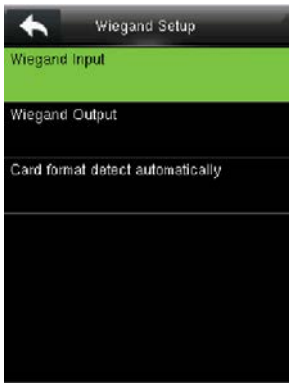


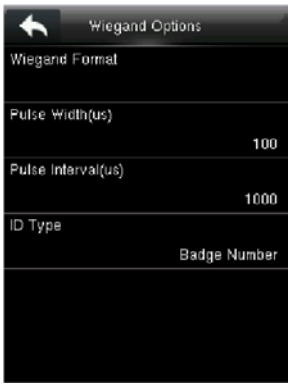


In the initial interface, press > **Comm.** > **Wiegand Setup** to enter the **Wiegand Setup** setting interface.

6.5.1 Wiegand Input

Wiegand Input connector supports card reader, or connects the device as a master device to another device (slave device), forming a master / slave system.





Press [Wiegand Input] to enter **Wiegand Input** interface.

Wiegand Format: User can choose among the following built-in Wiegand formats: Wiegand 26, Wiegand 26a, Wiegand 34, Wiegand 34a, Wiegand 36, Wiegand 36a, Wiegand 37, Wiegand 37a and Wiegand 50.

Pulse Width (us): The width of pulse sent by Wiegand card reader. The default value is 100 microseconds, which can be adjusted within the range of 20 to 100 microseconds.

Pulse Interval (us): The default value is 1000 microseconds, which can be adjusted within the range of 200 to 20000 microseconds.

ID Type: Input content included in Wiegand input signal. **User ID** or **Badge Number** can be chosen.

Definitions of Wiegand Formats:

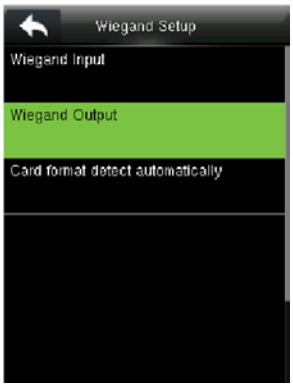
Wiegand Format	Definition
Wiegand26	ECCCCCCCCCCCCCCCCCCCCCCCCO Consists of 26 bits of binary code. The 1st bit is the even parity bit of the 2nd to 13th bits, while the 26th bit is the odd parity bit of the 14th to 25th bits. The 2nd to 25th bits are the card number.
Wiegand26a	ESSSSSSSSCCCCCCCCCCCCCCCCO Consists of 26 bits of binary code. The 1st bit is the even parity bit of the 2nd to 13th bits, while the 26th bit is the odd parity bit of the 14th to 25th bits. The 2nd to 9th bits are the site code, while the 10th to 25th bits are the card number.
Wiegand34	ECCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCO Consists of 34 bits of binary code. The 1st bit is the even parity bit of the 2nd to 17th bits, while the 34th bit is the odd parity bit of the 18th to 33rd bits. The 2nd to 25th bits are the card number.
Wiegand34a	ESSSSSSSSCCCCCCCCCCCCCCCCCCCCCCCCO Consists of 34 bits of binary code. The 1st bit is the even parity bit of the 2nd to 17th bits, while the 34th bit is the odd parity bit of the 18th to 33rd bits. The 2nd to 9th bits are the site code, while the 10th to 25th bits are the card number.
Wiegand36	OFFFFFFFFFFFFFFFCCCCCCCCCCCCCCCCMME Consists of 36 bits of binary code. The 1st bit is the odd parity bit of the

	2nd to 18th bits, while the 36th bit is the even parity bit of the 19th to 35th bits. The 2nd to 17th bits are the device code, the 18th to 33rd bits are the card number, and the 34th to 35th bits are the manufacturer code.
Wiegand36a	EFFFFFFFFFFFFFFFFFFCCCCCCCCCCCCCCCCO Consists of 36 bits of binary code. The 1st bit is the even parity bit of the 2nd to 18th bits, while the 36th bit is the odd parity bit of the 19th to 35th bits. The 2nd to 19th bits are the device code, and the 20th to 35th bits are the card number.
Wiegand37	OMMMMSSSSSSSSSSSCCCCCCCCCCCCCCCCCCCE Consists of 37 bits of binary code. The 1st bit is the odd parity bit of the 2nd to 18th bits, while the 37th bit is the even parity bit of the 19th to 36th bits. The 2nd to 4th bits are the manufacturer code, the 5th to 16th bits are the site code, and the 21st to 36th bits are the card number.
Wiegand37a	EMMMFFFFFFFFFSSSSSSCCCCCCCCCCCCCCCCCO Consists of 37 bits of binary code. The 1st bit is the even parity bit of the 2nd to 18th bits, while the 37th bit is the odd parity bit of the 19th to 35th bits. The 2nd to 4th bits are the manufacturer code, 5th to 14th bits are the device code, 15th to 20th bits are the site code, and the 21st to 36th bits are the card number.
Wiegand50	ESSSSSSSSSSSSSSSCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCO Consists of 50 bits of binary code. The 1st bit is the even parity bit of the 2nd to 25th bits, while the 50th bit is the odd parity bit of the 26th to 49th bits. The 2nd to 17th bits are the site code, and 18th to 49th bits are the card number.

NOTE: C denotes card number, **E** denotes even parity bit, **O** denotes odd parity bit, **F** denotes facility code, **M** denotes manufacturer code, **P** denotes parity position, and **S** denotes site code.

6.5.2 Wiegand Output

Wiegand Output connector supports SRB, or connects the device as a slave device to another device (master device), forming a master/slave system.



Press [Wiegand Output] to enter **Wiegand Output** interface.
SRB: Select **[ON]** to turn the SRB function on, while choosing **[OFF]** can disable the function.

Wiegand Format: User can choose among the following built-in Wiegand formats: Wiegand 26,

Wiegand 26a, Wiegand 34, Wiegand 34a, Wiegand 36, Wiegand 36a, Wiegand 37, Wiegand 37a and Wiegand 50. Multiple selections are available, but the actual **Wiegand format** will depend on the option in **[Wiegand output bits]**.

For Example: If the 26-bit Wiegand26, 34-bit Wiegand34a, 36-bit Wiegand36, 37-bit Wiegand37a and 50-bit Wiegand50 are chosen in **[Wiegand Format]**, but 36 bits is selected in **[Wiegand output bits]**, then the actual Wiegand format for use will be 36-bit Wiegand36.

Wiegand output bits: Number of bits of Wiegand data. After choosing **[Wiegand output bits]**, the device will use the set number of bits to find the suitable Wiegand format in **[Wiegand Format]**.

For Example: If the 26-bit Wiegand26, 34-bit Wiegand34a, 36-bit Wiegand36, 37-bit Wiegand37a and 50-bit Wiegand50 are chosen in **[Wiegand Format]**, but 36 bits is selected in **[Wiegand output bits]**, then the actual Wiegand format for use will be 36-bit Wiegand36.

Failed ID: It is defined as the output value of failed user verification. The output format depends on the **[Wiegand Format]** setting. The default value ranges from 0 to 65535.

Wiegand output bits: Number of bits of Wiegand data. After choosing **[Wiegand output bits]**, the device will use the set number of bits to find the suitable Wiegand format in **[Wiegand Format]**.

For Example: If the 26-bit Wiegand26, 34-bit Wiegand34a, 36-bit Wiegand36, 37-bit Wiegand37a and 50-bit Wiegand50 are chosen in **[Wiegand Format]**, but 36 bits is selected in **[Wiegand output bits]**, then the actual Wiegand format for use will be 36-bit Wiegand36.

Failed ID: It is defined as the output value of failed user verification. The output format depends on the **[Wiegand Format]** setting. The default value ranges from 0 to 65535.

Site Code: It is similar to device ID except that it can be set manually and repeatable with different devices. The default value ranges from 0 to 256.

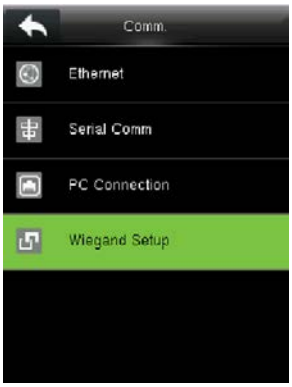
Pulse Width (us): The width of pulse sent by Wiegand card reader. The default value is 100 microseconds, which can be adjusted within the range of 20 to 100 microseconds.

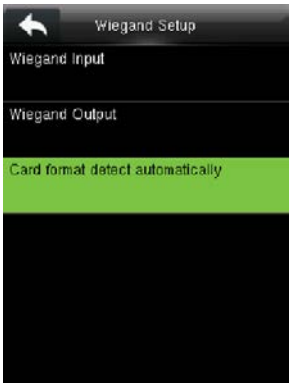
Pulse Interval (us): The default value is 1000 microseconds, which can be adjusted within the range of 200 to 20000 microseconds.

ID Type: Output content after successful verification. **User ID** or **Badge Number** can be chosen.

6.5.3 Card Format Detect Automatically

[Card Format Detect Automatically] aims at assisting user with quickly detecting the card type and its corresponding format. Various card formats are preset in the device. After card swiping, the system will read the card number and comapres te detected card format with different card formats. The user only need to choose the item equivalent to the actual card number, and set the format as the Wiegand format for the device. This function is also applicable to card reading function and auxiliary Wiegand reader.



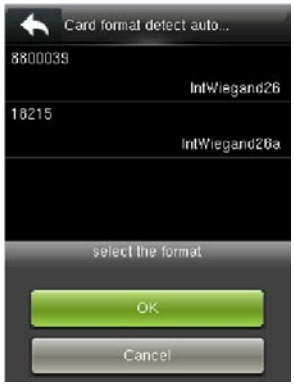


In the initial interface, press ⊞ > **Comm.** > **Wiegand Setup** > **Card format detect automatically** to enter the **Card format detect automatically** interface.

Operating Procedure:

1. After entering the **[Card Format Detect Automatically]** interface of an ID device, swipe the ID card above the card reader (on the local device or auxiliary card reader), the interface will show the automatically detected Wiegand formats and the analyzed card numbers.

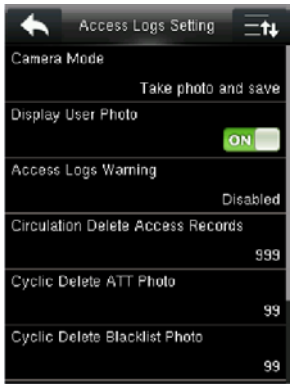
2. Choose the item corresponding to the actual card number as the device's **[Wiegand format]**, which is the Wiegand format for reading that type of card.



☺ **NOTE:** In the **[Card format detect automatically]** interface of an IC device, the device cannot detect the card number or Wiegand format only by swiping an IC card. For detecting the Wiegand format of an IC card, it is needed to connect an IC card reader with the device and swipe an IC card above the auxiliary card reader, so that the device will show the card number and the Wiegand format.

7 System Settings

7.1 Access Logs Settings



In the initial interface, press ⋮⋮⋮ > **System** > **Access Logs Setting** to enter **Access Logs Setting** interface.

Camera Mode: To set whether to take and save photos in verification; applicable to all users. The following 5 modes are included:

1. **No Photo:** No photo is taken in user verification.
2. **Take photo, no save:** Photo is taken but not saved in verification.
3. **Take photo and save:** Photo is taken and saved in verification.
4. **Save on successful verification:** Photo is taken and saved in successful verification.
5. **Save on failed verification:** Photo is taken and saved in failed verification.

Display User Photo: To set user photo to be displayed when a user passes verification. Turn it **[ON]** to display user photo and **[OFF]** to disable it.

Access Logs Warning: When the residual access record capacity is smaller than the preset value, the device automatically generates a message indicating residual record capacity. You can set it to **Disabled** or set to a value ranging from 1 to 9999.

Circulation Delete Access Records: Set the number of log entries that can be deleted at a time when existing records reach the allowed maximum log capacity. The default value is **Disabled**. You can set it to a value ranging from 1 to 999.

Cyclic Delete ATT Photo: The number of attendance photos allowed to be deleted in one time when the maximum storage is attained. It can be disabled or set to a value ranged from 1 to 99.

Cyclic Delete Blacklist Photo: The number of blacklist photos allowed to be deleted in one time when the maximum storage is attained. It can be disabled or set to a value ranged from 1 to 99.

Confirm Screen Delay(s): Set the duration to display messages of verification results. The valid value

range is 1-9 seconds.

7.2 Face Parameters

In the initial interface, press ⊞ > **System** > **Face** to enter the **Face** setting interface.

1:1 Match Threshold: Under 1:1 Verification Method, verification succeeds only when the similarity between the verifying face and the user's registered face is greater than threshold value.

1:N Match Threshold: Under 1:N Verification Method, verification succeeds only when the similarity between the verifying face and all registered faces is greater than threshold value.

Recommended Match Threshold:

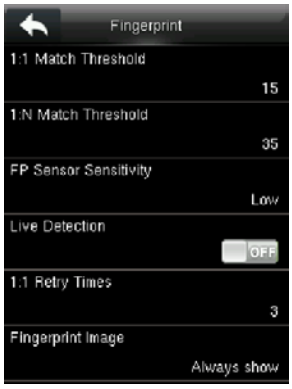
FRR	FAR	Match Threshold	
		1:N	1:1
High	Low	85	80
Medium	Medium	82	75
Low	High	80	70

Detect False Face: To set whether to detect the false face. Enable **[Detect False Face]**, the device will detect the false face during registration and verification, so that it cannot be registered or verified successfully.

Quality: The quality threshold for facial image acquisition. When the quality of an image is larger than this value, the device receives this facial image and starts algorithm processing. Otherwise, the device filters this facial image. The default value is 80 (within 50-150).

☺**NOTE:** Improper adjustments of **Exposure** and **Quality** seriously affect the device service effect. If you need to adjust the parameters, please follow the instructions of our after-sales service personnel for operations.

7.3 Fingerprint Parameters



In the initial interface, press > **System** > **Fingerprint** to enter the **Fingerprint** setting interface.

1:1 Match Threshold: Under 1:1 Verification Method, verification succeeds only when the similarity between the verifying fingerprint and the user's registered fingerprint is greater than threshold value.

1:N Match Threshold: Under 1:N Verification Method, verification succeeds only when the similarity between the verifying fingerprint and all registered fingerprints is greater than threshold value.

Recommended Match Threshold:

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

FP Sensor Sensitivity: To set the sensibility of fingerprint collection. It is recommended to use the default level "**Medium**". When the environment is dry, resulting in slow fingerprint detection, you can set the level to "**High**" to raise the sensibility; when the environment is humid, making it hard to identify the fingerprint, you can set the level to "**Low**".

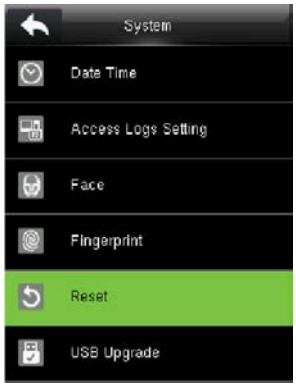
Live Detection: To set whether to detect the false fingerprint. Enable **[Live Detection]**, the device will detect the false fingerprint during registration and verification, so that it cannot be registered or verified successfully.

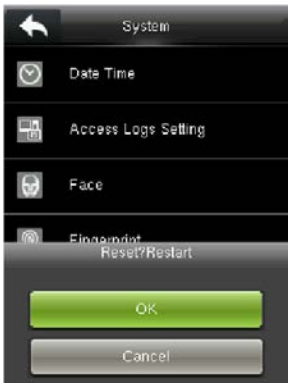
1:1 Retry Times: In 1:1 Verification or Password Verification, users might forget the registered fingerprint or password, or press the finger improperly. To reduce the process of re-entering user ID, retry is allowed; the number of retry can be within 1~9.

Fingerprint Image: To set whether to display the fingerprint image on the screen duringregistration or verification. Four choices are available: Show for enroll, Show for match, Always show, None.

7.4 Reset to Factory Settings

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





In the initial interface, press ⊞ > **System** > **Reset** > **OK** to finish the reset setting.

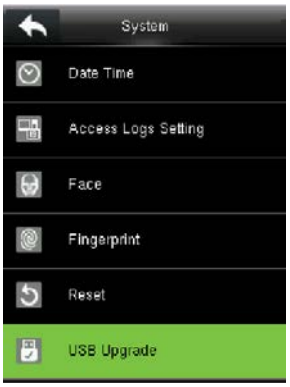
Reset parameters include Access Control Options, Anti-passback Setup, communication setting (namely, the setting of Ethernet, Serial Comm., PC Connection and Wiegand Setup), Personalize (such as Voice Prompt, Keyboard Prompt, Volume and Idle Time To Sleep) etc.

Parameters	**Factory Defaults**
Access Control Options	Door Lock Delay: 5 seconds Door Sensor Delay: 10 seconds Door Sensor Type: Normal Open (NO) Verification Mode: Password / Fingerprint / Badge / Face Door available time period: 1 NO Time Period : None Use as master: In Aux output / Lock open time: 255 seconds Aux output type setting: trigger door open Speaker Alarm: OFF
Anti-passback Direction	No anti-passback
Ethernet	IP Address: 192.168.1.201 Subnet Mask: 255.255.255.0 Gateway: 0.0.0.0
PC Connection	Comm Key: 0 Device ID: 1
Wiegand Setup	Wiegand Input / Output ID Type: User ID Pulse Width: 100 us Pulse interval: 1000 us
Idle Time To Slide Show	30 seconds
Idle Time To Sleep	30 minutes
Menu Screen Timeout	60 seconds
Keyboard Prompt	ON
Voice Prompt	ON
Volume	70

☺ **NOTE:** When resetting to factory settings, the user information, date and time will not be affected. For example, if the device date and time are set to 18:30 on January 1, 2020, the date and time will

remain unchanged after resetting to factory settings.

7.5 USB Upgrade

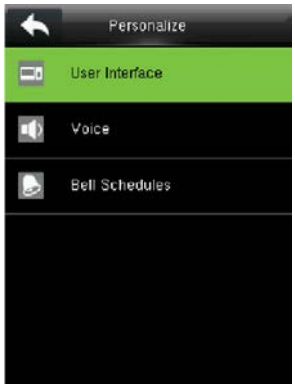


Insert the U disk with upgrade file into the device's USB port, and in the initial interface, press ⋮⋮ > **System** > **USB Upgrade** to complete firmware upgrade operation.

If upgrade file is needed, please contact our technical support. Firmware upgrade is not recommended under normal circumstances.

8 Personalization Settings

8.1 User Interface Settings



In the initial interface, press ⊞ > **Personalize** > **User Interface** to set **User Interface.**

Wallpaper: Select the wallpaper of main screen as required, you can find wallpapers of various styles in the device.

Language: Select the language of device as required.

Menu Screen Timeout (s): When there is no operation in the menu interface and the time exceeds the set value, the device will automatically return to the initial interface. You can disable it or set the value to 60~99999 seconds.

☺**NOTE:** If **[Disabled]** option is chosen, the system will not return to the menu interface even when there is no operation. **Disabling this function is not recommended due to great power used and insecurity.**

Idle Time to Slide Show (s): When there is no operation in the initial interface and the time exceeds the set value, a slide show will be shown. It can be disabled (set to "**None**") or set to 3~999 seconds.

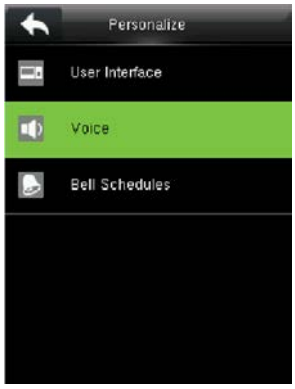
Slide Show Interval (s): This refers to the interval between displaying different slide show pictures. It can be disabled or set to 3~999 s.

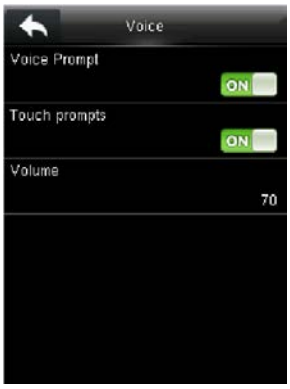
Idle Time to Sleep (m): When there is no operation in the device and the set Sleep Time is attained, the device will enter standby mode. Press any key or finger to cancel standby mode. You can disable this function, or set the value to 1~999 minutes. If this function is turned to **[Disabled]**, the device will not enter standby mode.

☺ **NOTE:** Disabling this function is not recommended due to great power used.

Main Screen Style: Choosing the position and ways of the clock and status key.

8.2 Voice Settings





In the initial interface, press ⊞ > **Personalize** > **Voice** to enter the **Voice** settings interface.

Voice Prompt: Select whether to enable voice prompts during operation. The default value is **[ON]**, indicating that voice prompt is enabled. And the icon **[OFF]** indicates that voice prompt is disabled.

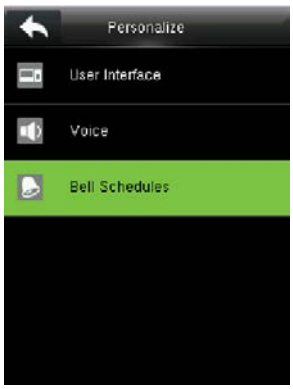
Touch Prompt: Select whether to enable voice while touching the screen. The default value is **[ON]**, indicating that touch prompt is enabled. The icon **[OFF]** indicating that touch prompt is disabled.

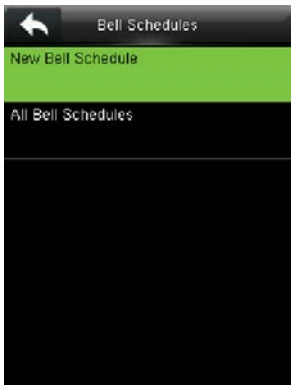
Volume: Set the prompt volume of device. The default value is 70. Press [+] key to increase the volume, press [-] key to decrease the volume.

8.3 Bell Settings

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

8.3.1 Adding a New Bell





In the initial interface, press ⊞ > **Personalize** > **Bell Schedules** > **New Bell Schedule** to enter the **New Bell Schedule** adding interface.

Bell Status: **[ON]** is to enable the bell, while **[OFF]** is to disable it.

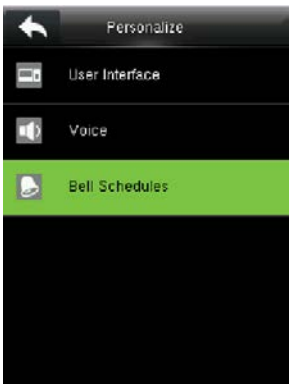
Bell Time: The bell rings automatically when reaching the specified time.

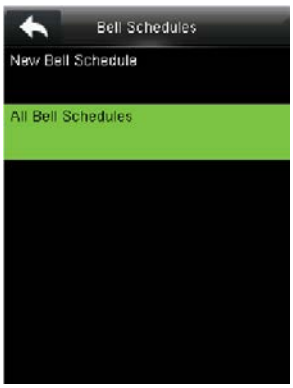
Repeat: To set whether to repeat the bell from Monday to Sunday.

Ring Tone: Ringtone played for bell.

Interval bell delay (s): To set the ringing length. The value ranges from 1 to 999 seconds.

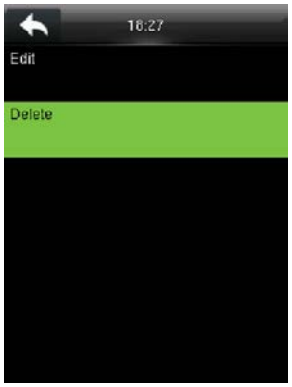
8.3.2 Editing a Bell

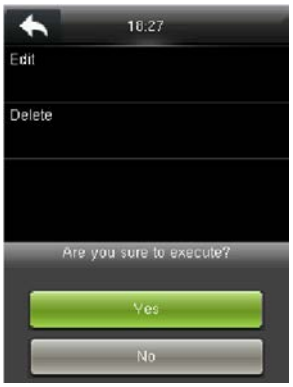




In the initial interface, press ⊞ > **Personalize** > **Bell Schedules** > **All Bell Schedules** > choose a bell > **Edit** to enter the bell editing interface.

8.3.3 Deleting a Bell



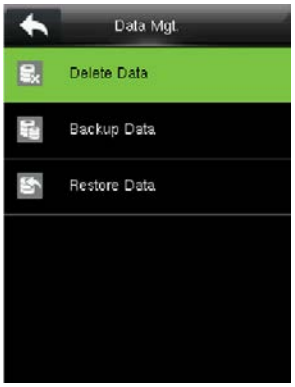


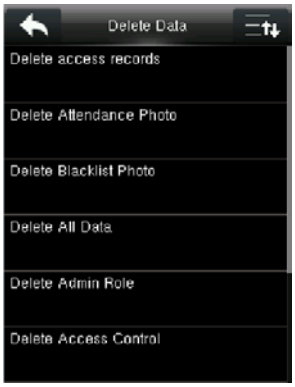
In the initial interface, press ⊞ > **Personalize** > **Bell Schedules** > **All Bell Schedules** > choose a bell > **Delete** to enter the bell **Deleting** interface.

9 Data Management

9.1 Deleting Data

To manage data in the device, which includes delete access records, delete all data, delete admin role and delete screen savers etc.





In the initial interface, press > **Data Mgt.** > **Delete Data** to enter the **Delete Data** settings interface.

Delete access records: To delete all access records saved in the device or delete access records in specified time range.

Delete Attendance Photo: To delete all attendance photos saved in the device or delete attendance photos in specified time range.

NOTES:

1. Only if **[Camera Mode]** is selected as "Take photo and save" or "Save on successful verification", the attendance photos will be be saved in the device after successful verification.
2. In the initial interface, press > **System** > **Access Logs Setting > Camera Mode** to select it as "Take photo and save" or "Save on successful verification".

Delete Blacklist Photo: To delete all blacklist photos saved in the device or delete blacklist photos in specified time range, which means the photos taken after failed verifications.

NOTES:

1. Only if **[Camera Mode]** is selected as "Take photo and save" or "Save on failed verification" will blacklist photos be saved in the device after failed verification.
2. In the initial interface, press > **System** > **Access Logs Setting > Camera Mode** to select it as "Take photo and save" or "Save on failed verification".

Delete All Data: To delete all user information, fingerprints, face and access records etc.

Delete Admin Role: To make all Administrators become Normal Users.

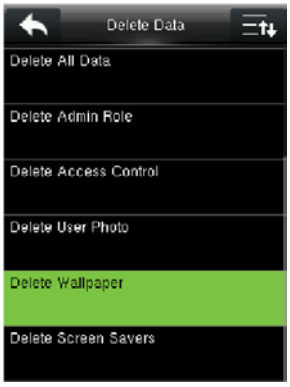
Delete Access Control: To delete all access records.

Delete User Photo: To delete all user photos in the device. For details of uploading user photo, please refer to 16.3 Image Uploading Rule.

Delete Wallpaper: To delete selected or all wallpapers in the device.

Operating Procedure:

1. Press [Delete Wallpaper] to enter **Delete Wallpaper** interface.

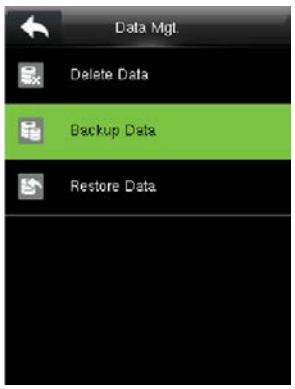


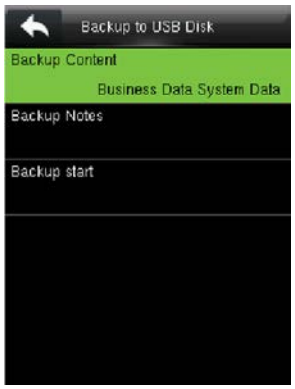
2. Press [/] to switch displayed wallpaper and [Delete Selected Picture] to delete the selected picture, or press [Delete All Pictures] to delete all pictures.

Delete Screen Savers: To delete selected or all screen savers in the device. (For details of uploading screen savers, please refer to 16.3 Image Uploading Rule.)

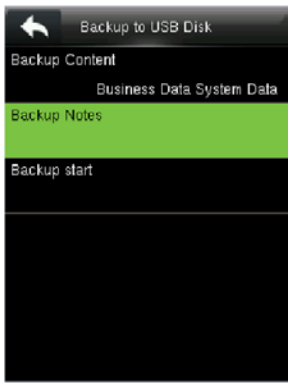
9.2 Data Backup

To backup the data to the device or U disk.

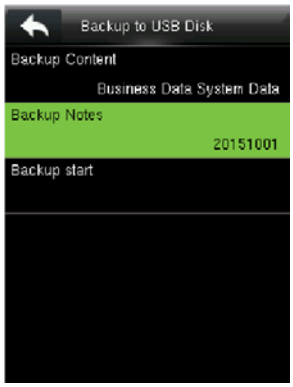




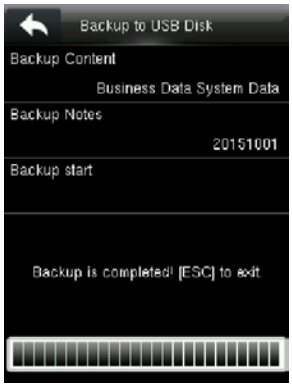
In the initial interface, press > **Data Mgt.** > **Backup Data** > **Backup to USB Disk** to enter the **Backup Data** settings interface.



Press [Backup Notes]



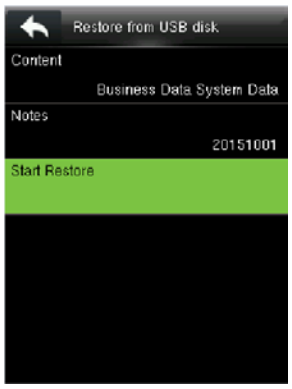
Input backup notes



Backup completely

9.3 Data Restoration

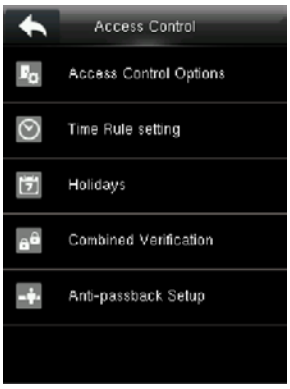
To restore the data in the device or U disk to the device.



In the initial interface, press ⊞ > **Data Mgt.** > **Restore Data > Restore from USB Disk** to enter the **Restore Data** settings interface.

10 Access Control

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

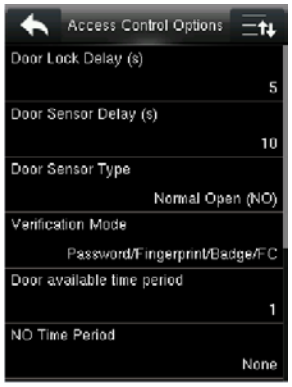


To gain access, the registered user must meet the following conditions:

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

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

10.1 Access Control Settings



In the initial interface, press ⊞ > **Access Control** > **Access Control Options** to enter the **Access Control Options** setting interface.

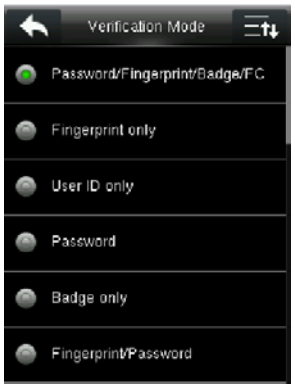
Door Lock Delay (s): The time period for unlocking the door (from door opening to closing automatically) after the electronic lock receives an open signal from the device (value ranges from 1 to 10 seconds).

Door Sensor Delay (s): When the door is opened, the door sensor will be checked after a time period; if the state of the door sensor is inconsistent with that of the door sensor mode, alarm will be triggered.

The time period is the **Door Sensor Delay** (value ranges from 1 to 255 seconds).

Door Sensor Type: It includes **None**, **Normal Open (NO)** and **Normal Close (NC)**. **None** means door sensor is not in use; **Normal Open** means the door is opened when power is ON; **Normal Close** means the door is closed when power is ON.

Verification Mode: Select verification mode to open door, including password / fingerprint / badge / face, fingerprint only, user ID only, password, badge only and so on.



NOTES:

1. "/" means "or". "&" means "and".
2. In a combined verification mode, the corresponding verification information must be registered first. For example: When User A registers **fingerprint** only, and the **[Verification Mode]** is set as **"Password & Badge"**, User A will not pass verification.

Door Available Time Period: Set periods to open the door for users.

NO Time Period: To set time period for Normally Open, so that the door is always unlocked during this period.

Use as master: While configuring the master and slave devices, you may set the state of the master as **Out** or **In**.

Out: A record of verification on the master device is a check-out record.

In: A record of verification on the master device is a check-in record.

Auxiliary Input Configuration: To set the **Aux output/lock Open Time** and **Aux Output Type Setting** for the device with auxiliary connector. **Aux Output Type Setting** includes **None**, **Trigger Door Open**, **Trigger Alarm**, and **Trigger Door Open and Alarm**.

Verify Mode by RS485★: It is the verification mode used by the device when it is the master unit. This option will be displayed only if RS485 reader function is enabled.

You can enable it by following these steps: In the initial interface, press > **Comm.** > **Serial Comm** > **RS232/485** > **RS485** > **Master Unit**.

Speaker Alarm: When the **[Speaker Alarm]** is enabled, the speaker will raise an alarm when the device

is being dismantled.

Reset Access Setting: To reset parameters of door lock delay, door sensor delay, door sensor type, verification mode, door available time period, NO time period, auxiliary input configuration, speaker alarm, anti-passback direction,. However, the content of the Access Data deletion in **[Data Mgt.]** will not be affected.

Speaker Alarm: When the **[Speaker Alarm]** is enabled, the speaker will raise an alarm when the device is being dismantled.

Reset Access Setting: To reset parameters of door lock delay, door sensor delay, door sensor type, verification mode, door available time period, NO time period, auxiliary input configuration, speaker alarm, anti-passback direction,. However, the content of the Access Data deletion in **[Data Mgt.]** will not be affected.

Access Parameters	Factory Default
Door Lock Delay	5 s
Door Sensor Delay	10 s
Door Sensor Type	Normal Open (NO)
Verification Mode	Password/Fingerprint/Badge/Face
Door Available Time Period	1
NO Time Period	None
Aux output/Lock open time	255 s
Aux output type setting	Trigger door open
Speaker Alarm	Off
Door Lock Delay	5 s
Anti-Passback Direction	No anti-passback

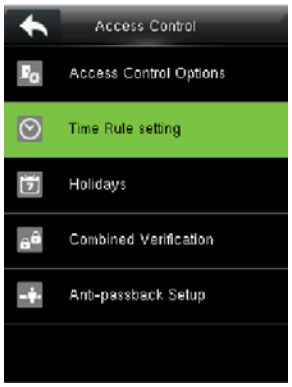
NOTES:

After the device is connected to the software, the "Combined Verification" is not visible, we can **reset access setting** in the device's **access control** system, and then **Data Mgt. >delete the access control data** to be visible.

10.2 Time Rule Settings

Time Rule is the minimum time unit of access control settings; at most 50 **Time Rules** can be set for the system. Each **Time Rule** consists of 7 time schedules (a week) and 3 holiday time schedules, and each time schedule is the valid time within 24 hrs.

You may set a maximum of 3 time periods for every time schedule. The relationship among these time periods is "or". When the verification time falls in any one of these time periods, the verification is valid. The time period format is HH:MM-HH:MM in the 24-hour system with precision to minute.

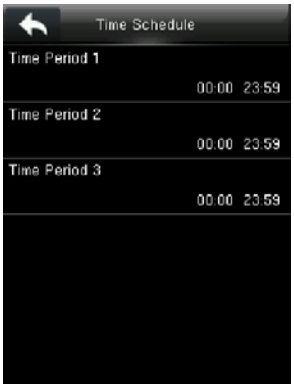


In the initial interface, press > **Access Control** > **Time Rule Setting** to enter the **Time Rule Setting** interface. The default **Time Rule** No. is 1 (whole-day valid), which can be edited.

- **Editing a Time Rule**

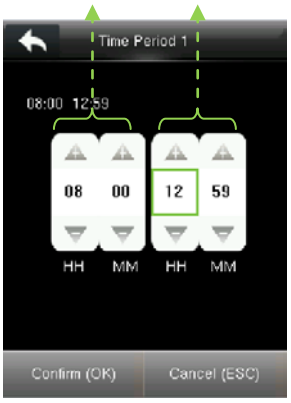
A super administrator may edit time rules as needed. The detailed operation is as follows:

Input time rule number (such as "2"), the time rule (2) will be located automatically, select a time schedule (such as "Monday")



Select "Time Period 1/2/3"

Start Time End Time



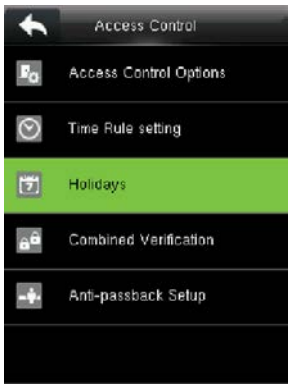
Set "Start Time" and "End Time" as required

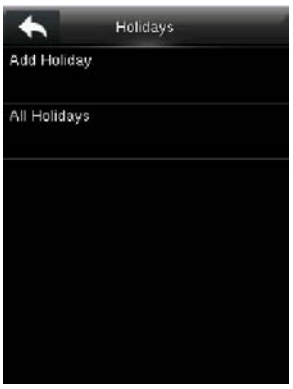
NOTES:

1. When the end time is earlier than the start time (for example, 23:57-23:56), this means closing all day long. When the end time is earlier than the start time (for example 23:59~00:00), this means that this time period is invalid.
2. **Valid Time Period:** 00:00-23:59 (Whole-day valid) or when the end time is later than the start time (for example, 08:00-23:59).
3. By default, time rule 01 indicates full-day opening (00:00-23:59).

10.3 Holiday Settings

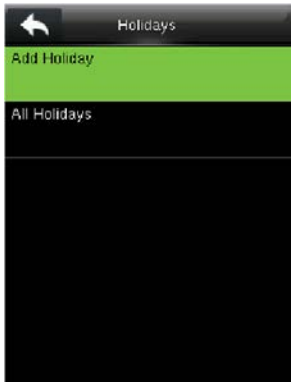
Add access control holidays for the device and set time periods on holidays as needed. The device controls the access control on holidays according to the holiday settings.



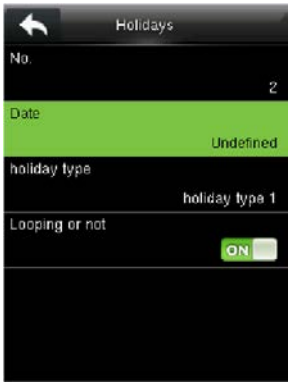


In the initial interface, press > **Access Control** > **Holidays** to enter **Holidays** setting interface.

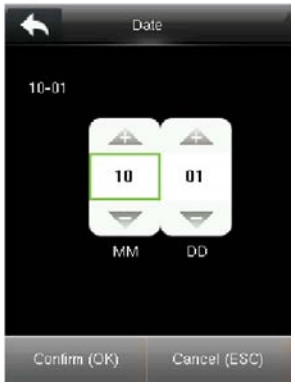
10.3.1 Adding a Holiday



Press [Add Holiday]



Press [Date]



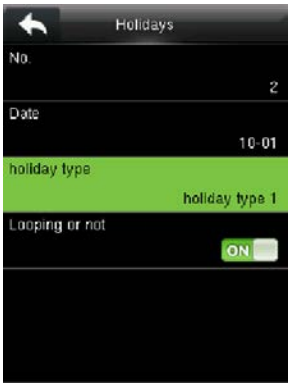
Set date

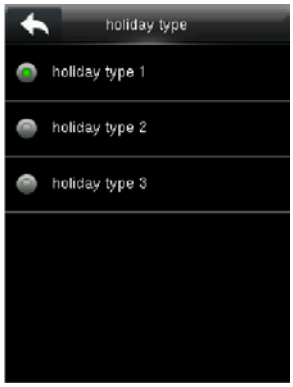
The holiday parameters are set as follows:

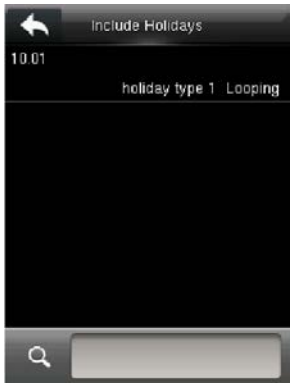
No.: The device automatically assigns a number to a holiday. No. ranges from 1 to 24.

Date: Set the date of a holiday.

Holiday Type: Select access time schedule for holiday. Time period for holiday type 1/2/3 can be edited in time rule. For details about editing methods, please refer to 10.2 Time Rule Settings.







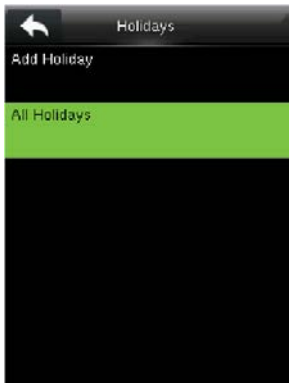
Looping or not: The default value of Looping or not is **[ON]**.

For fixed holidays every year, for example, the New Year's Day is January 1, Looping or not can be set to **[ON]** for them.

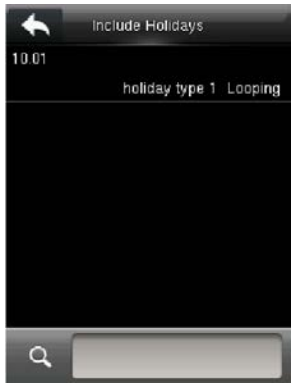
For unfixed holidays every year, for example, the Mother's Day is the second Sunday of May, the specific dates are uncertain and Looping or not can be set to **[OFF]** for them.

For example, when the date of a holiday is set to January 1, 2010 and holiday type is set to holiday type 1, the access control on January 1 is conducted according to the time period settings of holiday type 1 rather than the time period settings of Friday.

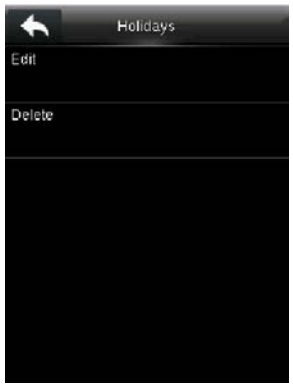
10.3.2 All Holidays



Press [All Holidays]



Select a holiday



Edit or delete the holiday

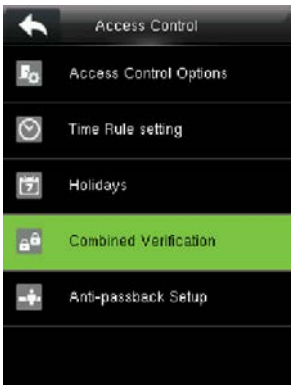
NOTE: The methods of editing or deleting a holiday are the same as those of editing or deleting a user and are not described here. For details, see 4.4 Editing a User and 4.5 Deleting a User.

10.4 Combined Verification Settings

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

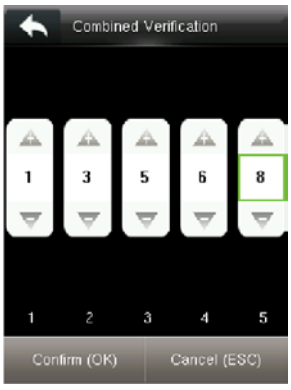
In combined verification, the range of a user number is: $0 \leq N \leq 5$; all the users can belong to a single group, or belong to 5 different groups at most.

NOTE: Access groups are set when adding user (in the initial interface, press > **User Mgt.** > **New User > Access Control Role > Access Group**, to set the access group number to which the added user belongs), the access group number ranges from 1 to 99.

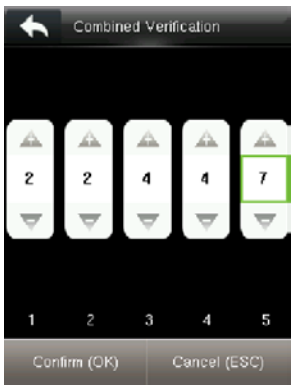


In the initial interface, press > **Access Control** > **Combined Verification** to enter the **Combined Verification** setting interface.

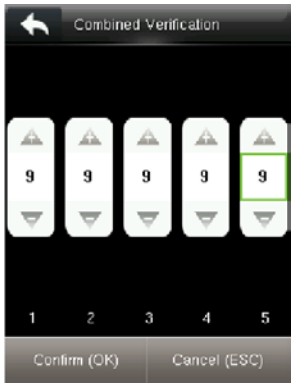
For Example:



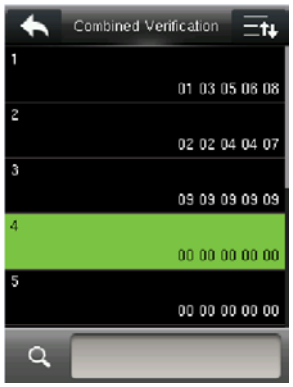
As the above figure, Combined Verification 1 is made up of five members coming from five different groups---access group 1 / 3 / 5 / 6 / 8 respectively.

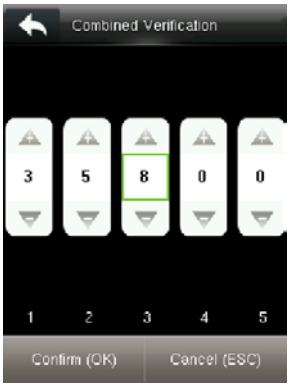


As the above figure, Combined Verification 2 is made up of five members coming from three different groups: two members from Access Group 2, two from Access Group 4, and one from Access Group 7.



As the above figure, Combined Verification 3 is made up of five members, and all of them come from Access Group 9.



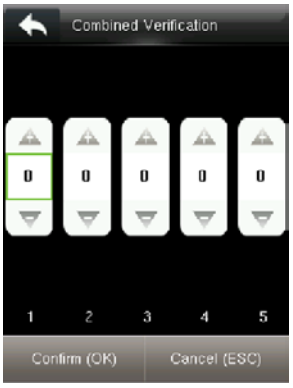


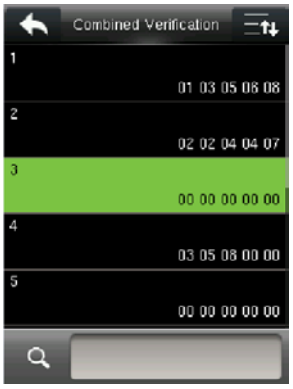
As the above figure, Combined Verification 4 is made up of three members coming from three different groups -- Access Group 3, 5, 8 respectively.

Deleting a Combined Verification

To delete a Combined Verification, set all access group numbers to 0.

For example, to delete Combined Verification 3, please see the figures below:



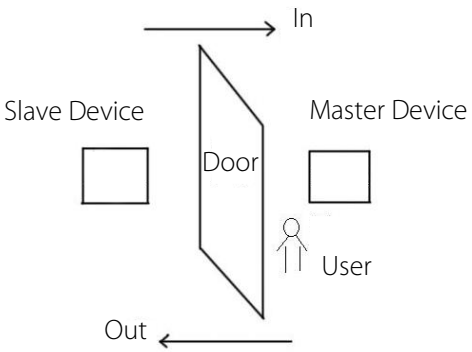


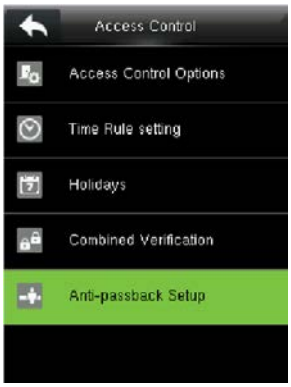
If all access group numbers in Combined Verification 3 are set to 0, it will be deleted.

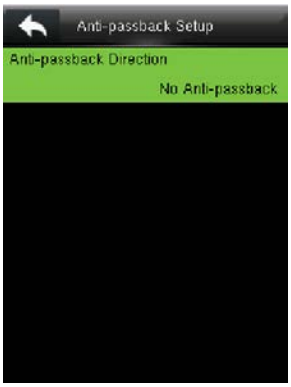
10.5 Anti-passback Settings

To avoid some persons following users to enter the door without verification, resulting in security problem, users can enable anti-passback function. The check-in record must match with check- out record so as to open the door.

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







In the initial interface, press > **Access Control** > **Anti-passback Setup** to enter the **Anti-passback Setup** interface. Select Anti-passback Direction.

No Anti-passback: Anti-Passback function is disabled, which means passing verification of either master device or slave device can unlock the door. Access records are not reserved.

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

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

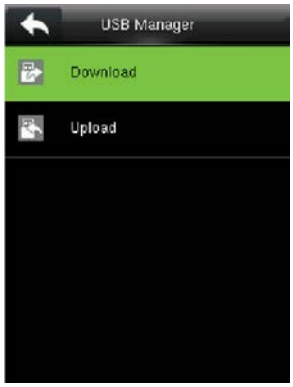
In/Out Anti-passsback: After a user checks in/out, only if the last record is a check-out record can the user check in again, or a check-in record can the user check out again; otherwise, the alarm will be triggered.

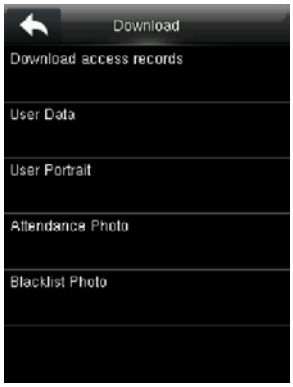
11 USB Manager

User data, user portrait, access records and other data can be exported to relevant software for processing through a USB disk, or import user data to the device by using a USB disk.

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

11.1 USB Download





In the initial interface, press > **USB Manager** > **Download** to enter the USB **Download** interface.

Download Access Records: To download access records in specified time period into USB disk.

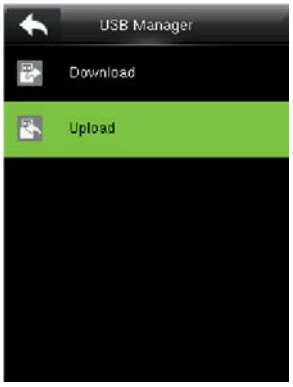
User Data: To download all user information and fingerprints from the device into USB disk.

User Portrait: To download all user photos from the device into a USB disk.

Attendance Photo: To download attendance photos in specified time period from the device into USB disk.

Blacklist Photo: To download blacklisted photos (photos taken after failed verifications) in specified time period from the device into USB disk.

11.2 USB Upload



In the initial interface, press > **USB Manager** > **Upload** to enter the USB **Upload** interface.

User Data: To upload all the user information and fingerprints from USB disk into the device.

User Portrait: To upload user photos from USB disk into the device. Select **[Upload Selected Picture]** or **[Upload All Pictures]** when uploading user portraits, for details of uploading user portraits, please refer to 16.3 Image Uploading Rule).

Screen Saver: To upload screen savers from USB disk into the device. You can choose **[Upload Selected Picture]** or **[Upload All Pictures]**. The images will be displayed on the device's main interface after upload (for the specifications of screen savers, please refer to 16.3 Image Uploading Rule).

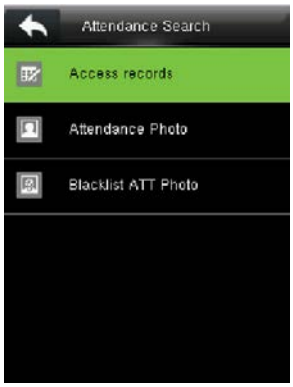
Wallpaper: To upload wallpapers from USB disk into the device. You can choose **[Upload Selected Picture]** or **[Upload All Pictures]**. The images will be displayed on the screen after upload (for the specifications of wallpapers, please refer to 16.3 Image Uploading Rule).

12 Records Search

When users verify successfully, records are saved in the device. This function enables users to check access records, attendance photo and blacklisted photo.

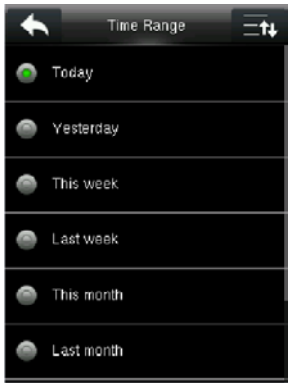
12.1 Searching Access Records

Press ⊞ and select [Attendance Search]



Press [Access Records]

Input user ID (query all data without input)

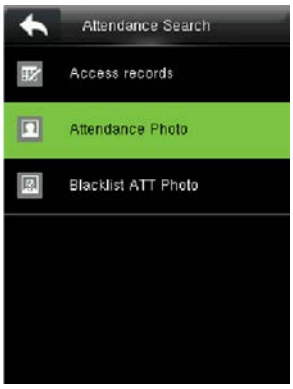


Select time range to be searched

Total access records in the time range will displayed

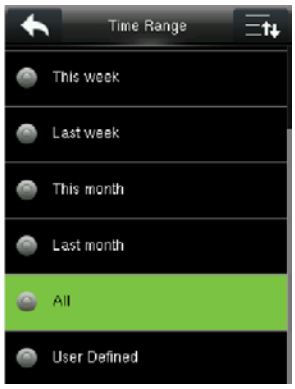
Detailed access records

12.2 Searching Attendance Photo

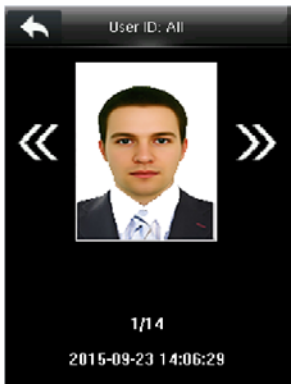


Press [Attendance photo]

Input user ID (query all data without input)

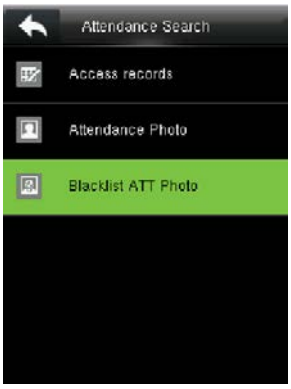


Select time range to be searched

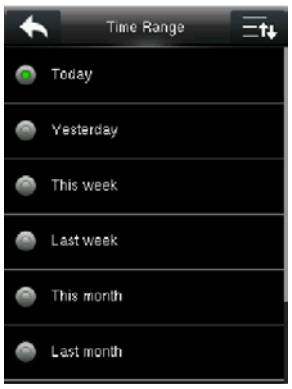


The corresponding attendance photos will then be shown

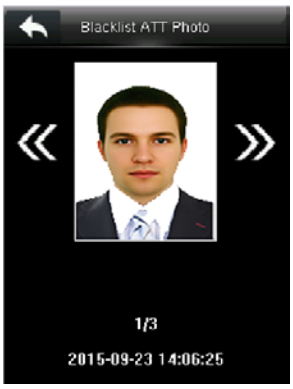
12.3 Searching Blacklist ATT Photo



Press [Blacklist ATT photo]



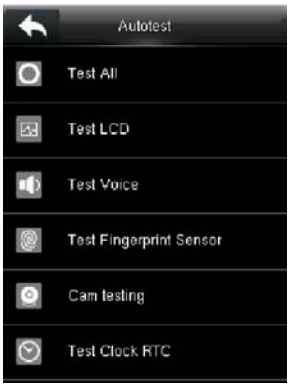
Select time range



The corresponding blacklist ATT photos will be shown

13 Autotest

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



In the initial interface, press > **Autotest** to enter the **Autotest** interface.

Test All: To test LCD, voice, fingerprint sensor, camera and RTC. During the test.

Test LCD: To test the display effect of LCD screen by displaying full color, pure white, and pure black to check whether the screen displays colors properly.

Test Voice: The device automatically tests whether the voice files stored in the device are complete and the voice quality is good.

Test Fingerprint Sensor: To test the fingerprint sensor by pressing fingerprint to check if the collected fingerprint image is clear. When pressing fingerprint on the sensor, the image will be displayed on the screen.

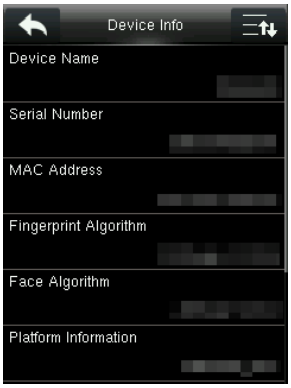
Cam testing: To test if the camera functions properly by checking the photos taken are clear for use.

Test Clock RTC: To test the Real-Time Clock. The device tests whether the clock works properly and accurately by checking the stopwatch. Press the screen to start counting time, and Press the screen again to stop counting, to check if the stopwatch counts time accurately.

14 System Information

Check data capacity, device and firmware information.

In the initial interface, press ⊞ > **System Info** to enter the **System Info** interface.



Device Capacity **Device Info** **Firmware Info**

Device Capacity: To display the number of registered users, administrators, passwords, fingerprints, face, badges★, records, attendance photos, blacklist photos and user photos.

Device Info: To display the device name, serial number, MAC address, fingerprint algorithm, face algorithm, platform information, MCU version, manufacturer and manufacturer date.

Firmware Info: To display the firmware version, bio service, push service and dev service.

☺ **NOTE:** The display of Device Capacity, Device Info and Firmware Info on the system information interface of different products may vary; the actual product shall prevail.

15 Troubleshooting

- Fingerprint sensor is not able to read and verify the fingerprint effectively.
  - ➢ Check whether the finger is wet, or the fingerprint sensor is wet or dusty.
  - ➢ Clean the finger and the fingerprint sensor and try again.
  - ➢ If the finger is too dry, blow air onto it and try again.

- "Invalid time zone" is displayed after verification.
  - ➢ Contact Administrator to check if the user has the privilege to gain access within that time Schedule.

- Verification succeeds but the user cannot open door.
  - ➢ Check whether the lock wiring is correct.

- The Tamper Alarm rings.
  - ➢ Check whether the device and the back plate is fixed together; if not, the tamper switch on the back of the device will be triggered and raises an alarm,  will be shown on the top right corner on the interface. Only when **[Speaker Alarm]** (**Access Control** > **Access Control Options** > **Speaker Alarm**) is **[ON]** will the speaker raise an alarm.

16 Appendices

16.1 Photo ID Function

When the Photo ID function is enabled, and the user passes verification, not only the information of user ID and name will be displayed, but also the photo registered by the user or saved in the USB disk will be shown.

NOTE:

Enabling **[Display User Photo]** (in the initial interface, press **[M/OK]** > **System** > **Access Logs Setting > Display User Photo** > enable the **[Display User Photo]** option) at the same time is needed to display user photo after successful verification.

[Operating Procedure]

1. If the user photo taken by the device is used, the photo will be displayed right after user verification.

2. If the user photo in a USB disk is used, the operating procedure is as below:

   (1) Create a file named as "**photo**" in the USB disk, and save the user photo in the file.

   (2) The photo format must be JPG, and the file must be named as the user ID. For example: the photo corresponding to the user with the ID of 154 should be named as 154.jpg.

   (3) Insert the USB disk into the USB port of the device, and enter **USB Manager** > **Upload** > **User Portrait** to upload users' photos. The photo will then be shown after user verification.

NOTES:

(1) The photo name must be within 9 digits.

(2) The photo size should be less than 15k.

(3) The newly uploaded photo will replace the original photo of the user.

(4) When downloading user photo, enter **USB Manager** > **Download** > **User Portrait**, a file named as "photo" will be created in the USB disk automatically, in which all downloaded user photos will be saved.

16.2 Wiegand Introduction

Wiegand26 Protocol is a standard protocol on access control developed by the Access Control Standard

Subcommittee affiliated to the Security Industry Association (SIA). It is a protocol used for contactless IC card reader port and output.

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

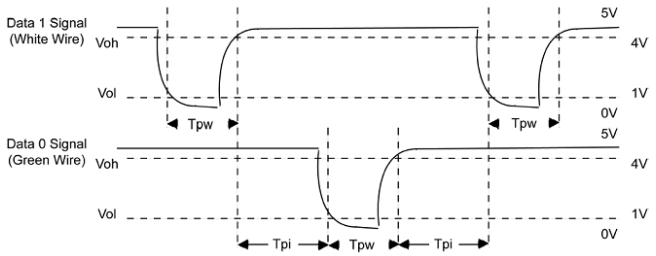
Digital Signal

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

Table1: Pulse Time

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

Figure1: Sequence Diagram



16.2.1 Wiegand 26 Introduction

The system provides the embedded Wiegand 26-bit format.

Composition of the Wiegand 26-bit format: 2-bit parity check bits and 24-bit output content (user ID or card number). The 24-bit binary code can indicate 16 777 216 (0-16 777 215) different values.

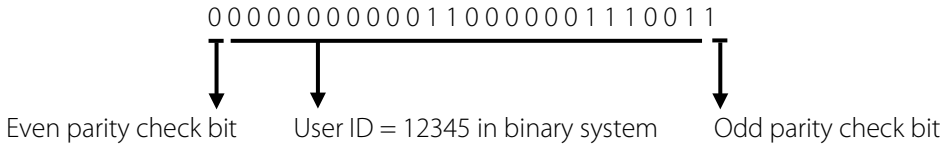
1	2	...	25	26
Even parity check bit	User ID/Card number			Odd parity check bit

The following table describes the fields.

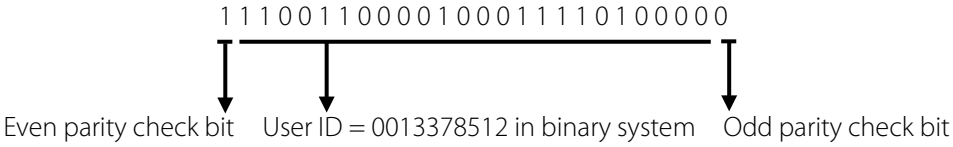
Field	Description
Even parity check bit	The even parity check bit is determined by bits 2-13. If there is an even number of 1's, the even parity check bit is 0. If there is an odd number of 1's, the even parity check bit is 1.
User ID/Card number (bit 2 through bit 25)	User ID/Card number (card code, 0-16777215) and bit 2 indicates the most significant bit (MSB).
Odd parity check bit	The odd parity check bit is determined by bits 14-25. If there is an even number of 1's, the odd parity check bit is 1. If there is an odd number of 1's, the odd parity check bit is 0.

For example: A user with the user ID of 12345 has the card number of 0013378512 and the failure ID is set to 1.

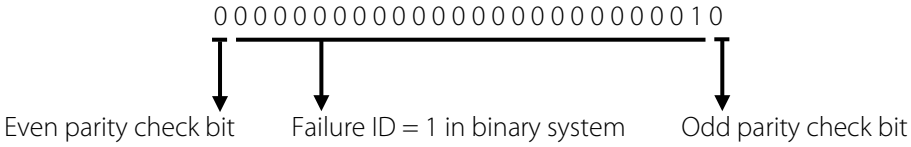
1. When the output content is set to user ID, the Wiegand output of the system is as follows after the user passes the verification.



2. When the output content is set to card number, the Wiegand output of the system is as follows after the user passes the verification.



3. When the verification fails, the Wiegand output of the system is as follows:



NOTE: When output content is beyond the preset range of the Wiegand format, the low-order bits are reserved and high-order bits are discarded. For example, if a user ID is 888 888 888, which is 110 100 111 110 110 101 111 000 111 000 in binary system, the last 24 bits, that is, 111 110 110 101 111 000 111 000 are outputted and the first 6 bits 110 100 are discarded because the Wiegand26 format supports 24 bits of output content.

16.2.2 Wiegand 34 Introduction

The system provides the embedded Wiegand 34-bit format.

Composition of the Wiegand 34-bit format: 2-bit parity check bits and 32-bit output content (user ID or card number). The 32-bit binary code can indicate 4 294 967 296 (0-4 294 967 295) different values.

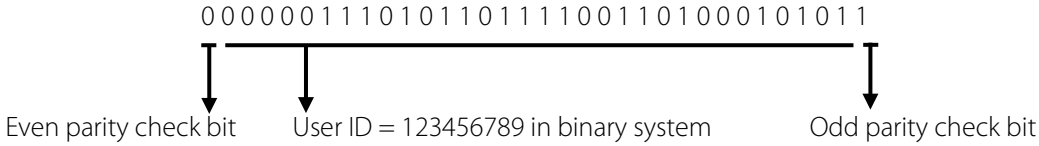
1	2	33	34
Even parity check bit	User ID/Card number		Odd parity check bit

The following table describes the fields.

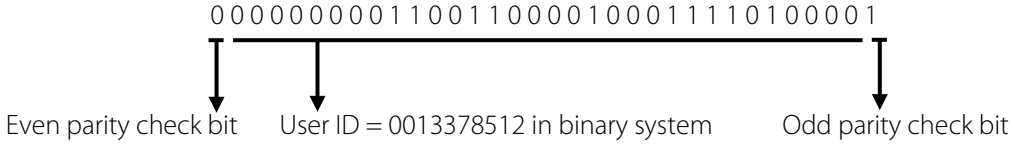
Field	Description
Even parity check bit	The even parity check bit is determined by bits 2-17. If there is an even number of 1's, the even parity check bit is 0. If there is an odd number of 1's, the even parity check bit is 1.
User ID/Card number (bit 2 through bit 25)	User ID/Card number (card code, 0-4 294 967 295) and bit 2 indicates the MSB.
Odd parity check bit	The odd parity check bit is determined by bits 18-33. If there is an even number of 1's, the odd parity check bit is 1. If there is an odd number of 1's, the odd parity check bit is 0.

For example: A user with the user ID of 123456789 has the card number of 0013378512 and the failure ID is set to 1.

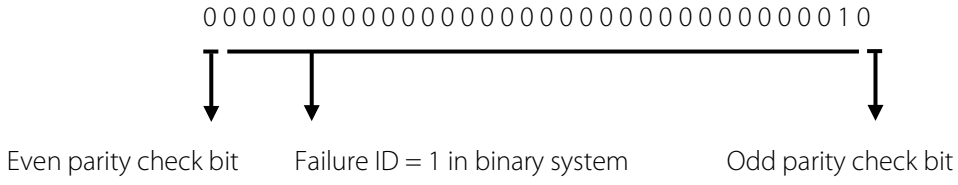
1. When the output content is set to user ID, the Wiegand output of the system is as follows after the user passes the verification.



2. When the output content is set to card number, the Wiegand output of the system is as follows after the user passes the verification.



3. When the verification fails, the Wiegand output of the system is as follows:



16.3 Image Uploading Rule

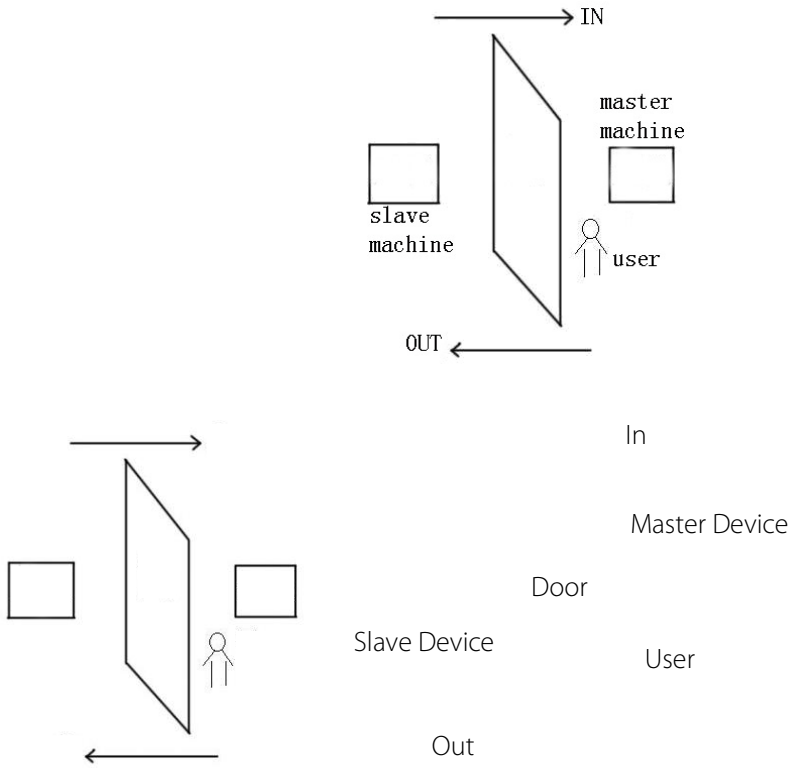
1. **User photo:** It is required to create a file named as "**photo**" under the USB disk file, and put user photos into the file. The capacity is 3000 images, with each of them not exceeding **15k**. The image name is x.jpg (x is the actual user ID, max. 9 digits). The photo format must be JPG.
2. **Advertising image:** It is required to create a file named as "**advertise**" under the USB disk file, and put advertising images into the file. The capacity is 20 images with each of them not exceeding **30k**. Image name and format are not restricted.
3. **Wallpaper:** It is required to create a file named as "**wallpaper**" under the USB disk file, and place wallpapers into the file. The capacity is 20 images with each of them not exceeding **30k**. Image name and format are not restricted.

☺ **NOTE:** When each user photo and attendance photo does not exceed 10k, the device can save a total number of 10000 user and attendance photos (considering the actual capacity of the device, it is strongly suggested to upload 5000 user and attendance photos at most).

16.4 Anti-passback Settings

To avoid some persons following users to enter the door without verification, resulting in security problem, users can enable anti-passback function. The check-in record must match with check-out record so as to open the door.

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



[Working principle]

The master device supports the Wiegand In function and the slave device supports the Wiegand Out function. After the Wigand output port of the slave device is connected to the Wiegand input port of the master device, Wiegand signals outputted by the slave device cannot contain the device ID and the numbers sent from the slave device to the master device must exist on the master device. That is, the user information on the slave device supporting the anti-passback function must map to the user information on the master device supporting the anti-passback function.

[Function description]

The device detects anti-passback based on the last check-in/check-out record of users. The check-in record must match the check-out record. The device supports out anti-passback, in anti-passback, and in/out anti-passback.

When **Out Anti-passback** is set for a user on the master device, the last record of the user must be a check-in record if the user needs to check in/out freely. Otherwise, the user cannot check out and the check-out request of the user is rejected because of anti-passback. For example, if the recent first record of a user is a check-in record, the second record of the user can be either a check-in or check-out record but the third record must be based on the second record, ensuring that the check-in record matches the check-out record. Note: If a user has no record, the user can only check in.

When **In Anti-passback** is set for a user on the master device, the last record of the user must be a check-out record if the user needs to check in/out freely. Otherwise, the user cannot check in and the check-in request of the user is rejected because of anti-passback. Note: If a user has no record, the user can only check out.

When **In/Out Anti-passback** is set for a user on the master device, if the last record of the user is a check-out or check-in record, the next record of the user must be a check-in or check-out record for the user to check in/out freely. That is, the check-in record must match the check-out record.

[Operation description]

1) Model selection

Master device: devices supporting the Wiegand In function, except the F10 reader

Slave device: devices supporting the Wiegand Out function

2) (2) Menu settings

- **Anti-passback Direction**

The options of **Anti-passback Direction** include **In/Out Anti-passback**, **Out Anti-passback**, **In Anti-passback**, and **No Anti-passback**.

Out Anti-passback: After a user checks out, only if the last record is a check-in record can the user check out again.

In Anti-passback: After a user checks in, only if the last record is a check-out record can the user check in again.

3) (3) Modifying the Wiegand output format for the device

When two devices communicate with each other, only Wiegand signals that do not contain the device ID are acceptable. You can choose **Comm.** > **Wiegand Setup** from the main menu or access the software and choose **Basic Setting** > **Device Management** > **Wiegand** and set **Defined Format** to **Wiegand26-bits** or **Wiegand26 without device ID**.

(4) User registration

User IDs must exist on both the master and slave devices and the user IDs must be consistent. Therefore, users need to be registered on both the master and slave devices.

(5) Wiring description

The master and slave devices communicate with each other over Wiegand and the wiring is as follows:

Master device		Slave device
IWD0	<----->	WD0
IWD1	<----->	WD1
GND	<----->	GND

16.5 Statement on Human Rights and Privacy

Dear Customers:

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

We hereby make the following statements:

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

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

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

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

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

16.6 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.