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I. Operating Environment

1）Avoid installing the device at a location under direct sunlight or near. This will affect the performance of the fingerprint sensor.

2）The operating temperature of the device lies between 0℃–60℃. Avoid operating in outdoor environments, if this cannot be prevented, please implement necessary measures to maintain within the operating temperature.

II. Installation Precautions

1）Prior to installation, please turn off the main power supply. Installing with the main power turned on may shock the circuit and damage the device.

2）This is an electrostatic-sensitive device; please also connect the neutral wire of the device before other cables.

3）Do not expose any unused cable terminals, this may lead to a short circuit. Additionally, do not use different colored cables to connect the device to prevent complications.

4）Please connect other cables before the power supply. If the device does not function properly, please disconnect the power supply before any inspection.

5）If there is a huge distance between the power outlet and the device, do not use other replacement power cable such as an Ethernet cable. A long cable may result in an immense power loss.

6）Damaged to power circuit, motherboard and fingerprint sensor due to improper installation is not being covered by the warranty.

7）The recommended installation height is 1.4-1.5 meters.

III. Key Summary

The button on the device are as followed:

ESC/⊙	◀	▶	OK

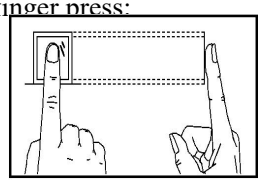
Button Functionality：

ESC/⊙	Escape or Cancel（or Power On/Off）
OK	Enter Menu or Confirmation
◀	Cursor Up
▶	Cursor Down

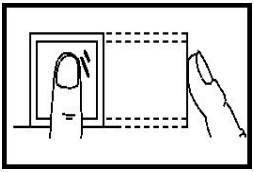
IV. Fingerprint Summary

The correct method for fingerprint registration and verification: press your finger flatly onto the sensor screen, place your finger as close to the center of the screen as possible.

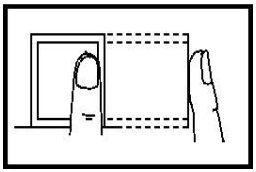
An illustration of a correct finger press:



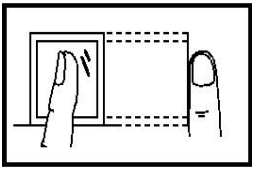
Correct



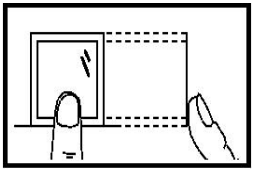
Not Flat



Not Centered



Tilted



Not Centered

V. Main Menu

While the device is idling，select  （or "OK" Button）to enter the main menu. To interact with the interface, you may use the arrow keys or the touchscreen.

Main menu includes: Register, Delete, U-down, Set COMM, LockCtrl, Advanced, View User Rec, ViewInfo. Each main menu option includes 2 to 3 sublevel menus, to categorize the specific options.

1) Register：Register fingerprints and other verification information.
2) Delete：Deletes registration and verification information.
3) U-down: Download logbook records and user information, or upload user information using USB drive.
4) Set COMM：Configure settings for RS485/Ethernet connection.
5) LockCtrl: Adjust timezones, access control protocols and alarm settings.
6) Advanced: Configure device number, logbook settings, time and date settings, alarm settings and touchscreen recalibration.
7) View User Rec：Review the In&Out records of a specific user ID.
8) ViewInfo: Review user memory capacity, logbook info and system info.

VI. User Registration

While the device is idling，select  (or "OK" Button）to enter main menu（If a Admin is registered, Admin authorization is required to enter the main menu），as following：

In "Register", you will see 3 options: "User", "Admin", and "Sup. User".

After choosing "User", you may choose to register a new user or edit a registered user.

New Reg.：Enroll a new user.

Backup：Add or edit new verification method.

VII. Enroll Fingerprint

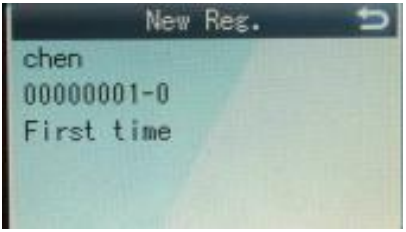
1) New User

Choose "New Reg." -> "Finger"

First, enter the user ID (if no user ID was entered, the lowest unregistered user ID will be chosen), press "OK". Then you may enter the name (optional). Username can be added using the software later on. If no username was entered, no name will be displayed at login.

After entering the name, choose  on the screen (or "OK" Button）to confirm.

In the fingerprint registration interface, follow the displayed instructions and register 3 times using the same finger. If the fingerprint registration is successful, enrollment will be successful.



If enrollment is successful, the system will ask if you wish to continue.

If you choose "YES", you will continue to enroll a new user.
If you choose "NO", you will return to the menu with options to enroll other verification method.

2) Backup

The format of "Backup" is similar to "New Reg.". After selecting "Backup", you will have the option to choose which verification method to enroll, then you will be prompt to enter the user ID you wish to register.

VIII. Enroll Password

In the "New Reg." menu, select "Password".

Using the keypad on the screen, enter the user ID and choose  on the screen（or "OK" Button）.

The password is limited to less than 8 digits, enter the password twice. If the two passwords match, enrollment will be successful.

IX. Enroll Card

Enter the "User" Menu.

In the "New Reg." menu, select "ID Card".

Using the keypad on the screen, enter the user ID and choose  on the screen（or "OK" Button）.

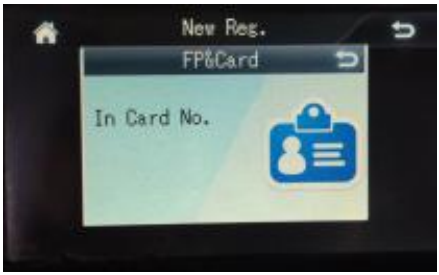
Swipe the card at the fingerprint sensor area, and card enrollment will be complete.

X. Fingerprint & Card

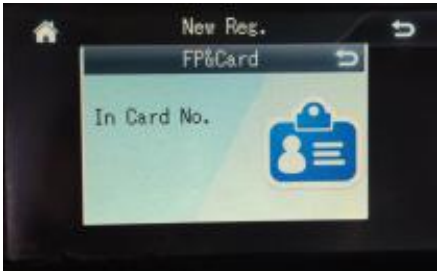
Enter the "New Reg." Menu.

In the "New Reg." menu, select "FP&Card".

Using the keypad on the screen, enter the user ID and choose  on the screen（or "OK" Button）.



Swipe the card at the fingerprint sensor area. This will bring you to the fingerprint enrollment interface. If the fingerprint registration is successful, enrollment will be successful.



Caution: After Fingerprint & Card enrollment, verification can be done with only fingerprint, or with swiping card and followed up with fingerprint verification.

XI. Fingerprint & Password

Enter the "New Reg." Menu.

In the "New Reg." menu, select "FP&Pass".

Using the keypad on the screen, enter the user ID and choose  on the screen（or "OK" Button）. Enter the desired password twice. This will bring you to the fingerprint enrollment interface. If the fingerprint registration is successful and the two passwords match, enrollment will be successful.

Caution: After Fingerprint & Password enrollment, fingerprint verification will prompt with a followed up password verification. Only by clearing both verifications can the user be authorized.

XII. Enroll Admin

Enroll Admin allows the enrolled user to have Admin privilege. Enrollment process is similar to normal user enrollment; please refer to the "Enroll User" section.

Disparity：Admin will be listed as the Admin class under user enrollment.

Admin can be treated as normal user on this device, this will give permission to each user to configure the device settings. Setting configuration will be recorded in the device logbook.

XIII. Enroll Super User

Enroll Super User allows the enrolled user to have some privilege of Admin class. Enrollment process is similar to normal user enrollment; please refer to the "New Reg." section.

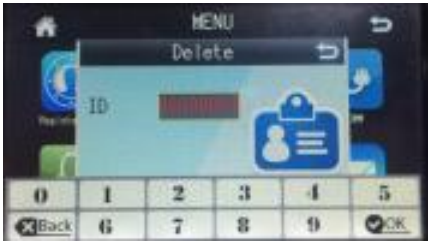
Disparity： Super users have the rights to enroll new users and download data (Using USB drive to download In&Out record, and changing IP settings), but cannot access other function menus.

Only registered Admins can enroll super users. Super users can be treated as normal user on this device; this will give permission to each user to configure some of the device's settings. Setting configuration will be recorded in the device logbook.

XIV. Delete User

While the device is idling，select （or "OK" Button）to enter the main menu.

In the main menu, choose "Delete" and press on the screen（or "OK" Button）to enter the "Delete" menu.



Enter the desired user ID and press "OK".

Choose "YES" to confirm the deletion or "NO" to return.

Press "Esc" to return to the menu.

XV. USB Drive Download

In the "U-down" menu, you will see the following options: Enr. Data, U-Upload, GLog&Del and All GLog. Allows user to manage enrollment data and In&Out records.

1） USB Drive Download

Select "U-down" in the main menu.

① Enr. Data

A) Plug in the USB drive into the USB port;

B) Press  on the screen（or "OK" Button)to enter main menu and choose "U-down";

C) Select "Enr. Data" will download all enrollment information (fingerprint data, name, etc.) into the connected USB drive. The output data will be in the format of a ".DAT" file, for example: AFP_001.DAT;

D) Connect the USB drive to a computer with the provided software to access the downloaded user information.

Note：It is recommended to download the user information every time a new user has been enrolled.

② GLog&Del

A) Plug in the USB drive into the USB port;

B) Press  on the screen（or "OK" Button)to enter main menu and select "U-down";

C) Select "GLog&Del" will download the records in the device to the USB drive. The output data will be in the format of a ".TXT" file, for example: GLG_001.TXT;

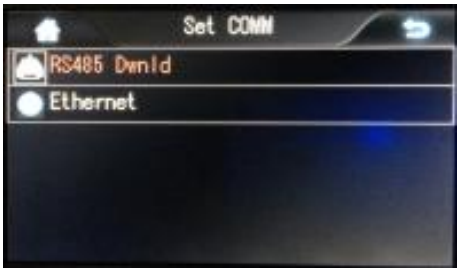
D) Connect the USB drive to a computer with the provided software to access the downloaded records.

Using USB drive to upload enrollment information

You may transfer the enrollment information from one device to another using a USB drive, as well as transferring the enrollment information from the software database to a device. The file containing the enrollment information must have the corresponding device number with the device for it to be recognized. For example: The file name of the enrollment information being "AFP_001.DAT", means that this file belongs to the device with the device number of "001".

XVI. Communication Settings

Press  on the screen（or "OK" Button) to enter main menu and choose "Set COMM".



- RS485 Download

This menu allows you to change the Baud Rate between the device and the computer through RS485 connection. The bandwidth can be adjusted using the arrow keys.

- Ethernet Download

This menu allows you to change the parameters using the Ethernet connection.

1) RS485 Connection

Using a RS485 adaptor allows communications over 800 meters. It is recommended that while using the RS485 connection, set the Baud Rate between the device and the computer to be 9600BPS for the best stability.

2) Ethernet Connection (if applicable)

The default IP address was set to be 192.168.1.224. This is a valid address for most local network. Please adjust the IP address, subnet mask and port accordingly for your network.

Caution: When connecting between the device and the computer, it is required to use an Ethernet10/100Base-T Crossover Cable. If the connection require to pass over a Hub/Switch, please use an Ethernet 10/100Base-T Straight Thru Cable.

XVII. Access Control

1 Time Zone Configuration

1.1 Day Period

This allows you to adjust up to 8 different time zones on a single day for authorizing access.

Example 1: Allow access during 6 AM to 8 AM and 5 PM to 7 PM.
Example 2: Allow access throughout the whole day.

`TIME ZONE EXAMPLE 1:

1	06:00	08:00
2	17:00	19:00
3	00:00	00:00
4	00:00	00:00
5	00:00	00:00

TIME ZONE EXAMPLE 2:

1	00:00	23:59
2	00:00	00:00
3	00:00	00:00
4	00:00	00:00
5	00:00	00:00

1.2 Week Period

This allows you to adjust the accessible time zones throughout the week with the Day Period configurations done in the above.

For example: From Monday to Friday, allow access during 6 AM to 8 AM and 5 PM to 7 PM. On Saturday and Sunday, allow access throughout the whole day.

Sunday	2
Monday	1
Tuesday	1
Wednesday	1
Thursday	1
Friday	1
Saturday	2

Note: Week Period 0 on the device is defaulted to allow access throughout the week. Other Week Periods are defaulted to deny access.

2 User Access Control

Enter the user ID that you wish to configure and press "OK".
Grouping: Users can be arranged into 10 different groups.
Week Period: Set the corresponding week schedule.
Effective Period: Set the starting and ending date for the user to be authorized access.

Note: Each user has his/her own group and week schedule, if these

parameters were not configured, they will be defaulted to "0". This allows free access for the registered user. When a user performs verification, the device decides whether the user is allowed during that time period, if he/she was allowed, access will be granted.

For example: a user with user ID "00000001", in group 1, and in schedule 1.

If the user perform a verification, the device decides whether the corresponding group has authorized access ("in Unlock Group"), if the group has the right, then the device will determine according on the authorized time period.

3 Unlock Group Settings

Combination 1	0
Combination 2	0
Combination 3	0
Combination 4	0
Combination 5	0

Using this setting can set the group combination of users required to gain access. For example: if a combination was to "12" (1, 2), this means in order to gain access, you will need a user from group 1 and a user from group 2 to verify continuously.

Case 1: One Group, Solo Access.

Combination 1 1
Combination 2 0
…
Combination 5 0

With the above settings, anyone from group 1 will be allowed to access.

Case 2: One Group, Multiple Access

Combination 1 111
Combination 2 0
…
Combination 5 0

With the above settings, in order to gain access, it will require 3 different users from group 1 to verify continuously.

Case 3: Two Groups, Multiple Access

Combination 1 12
Combination 2 0
…
Combination 5 0

With the above settings, in order to gain access, it will require a user from group 1 and a user from group 2 to verify continuously (order of verification does not matter). Also, any solo access by group 1 or group 2 users will not be authorized.

Caution: On default, combinations in "Unlock Group "are set to "0"and new users are enrolled to group 0.

4 Unlock Time

This controls the duration that the door lock is released. The value ranges from 1-255 seconds. Default value is 5 seconds.

5 Lurk Proc

Anti-passback is switched on only when the value is set to "1" or "2".

Settings	Description
NO	Switch off anti-passback
Host Inside	Entries from External Reader will be recorded as "IN" Entries from the Reader on this terminal will be recorded as "OUT"
Host Outside	External Reader will be recorded as "OUT" Entries from the Reader on this terminal will be recorded as "IN"

With this function being switched on, the device to authorize access based on the In&Out Record. This will also disable any repeated access on the same terminal until a record is made on the other terminal. Therefore an "IN" record can only be followed by an "Out" record; otherwise the access will be illegal.

10 Multiple Verifications (Users)

This setting will require a number of simultaneous verification by different users in order to gain access. If this value was set to 2, it will require 2 different users to verify to gain access.

11 Verify-Fail Count

This activates the alarm after a number of consecutive unsuccessful verifications. If the value was set to 5, the alarm will be sounded on the 5th trial.

12 Wiegand Format

Allows to configure the Wiegand port output format. The default value is 26 bit. This can be set between 26 or 34 bit.

XVIII. Advanced Settings

The Advanced Settings include 4 options: Device, Logs, Set Time, Bell, and Touch Adj..

In the main menu, select "Advanced" then "Device".
Device settings menu allows you to configure the following device parameters:

Settings Content	Description	Range	Default Value
Machine ID	Identification number for the device	1-255	1
Admin Qnty	Limits number of admin on the device	1-10	5
Language	Display language in the system menu	Multiple	English
Volume	Set the volume of the speaker	1-10	6
Dormancy	Screen saver ON/OFF	Yes/No	No
Verify	Allowed verification method	Multiple	F/P/C
Upload UI	Changing the User Interface with USB drive	(Empty)	No
Shutdown	Allow/Disallow the use of the power button to turn off the device	Yes/No	No
Default Setting	Reset all system settings to its default value	(Empty)	(Empty)
Manager Cancel	Clear all settings on Admin privilege	(Empty)	(Empty)

Verification Method: This sets the allowed combination of verification methods for authorized access.

Fingerprint/Card/Password	Grant access for valid verification using either fingerprint, card or password
Card + Fingerprint	Swipe card first and then with fingerprint
Fingerprint + Password	Fingerprint first and then enter password
Card + Fingerprint + Password	Swipe card first, fingerprint, and then enter password

XIX. Log Settings

1 Management Log Warning (ARec Wrn)

Every time a setting is changed or user information is changed, an entry record is made into the Management Log. The Management Log can store up to 1000 entries.

Management Log Warning will be notified when the remaining memory for management records reaches a threshold.

For example: If the value is set to be 100, when the management log reaches 900 entries, a warning will be shown to remind you that the used memory is above the threshold settings.

2 In&Out Log Warning (URec Wrn)

Similar to Management Log Warning, a warning will be notified when the remaining memory for In&Out records reaches a threshold. This value can be set between 1-1500 entries.

For example: If the value is set to be 1500, when the In&Out log reaches 98500 entries, a warning will be shown to remind you that the used memory is above the threshold settings.

3 Re-verification Time

This setting identify whether the user has login within the predefined duration. The recommended setting is 5 minutes. If a duplicated login was performed during this time period, the device will not register this entry into the logbook.

XX. Time Settings

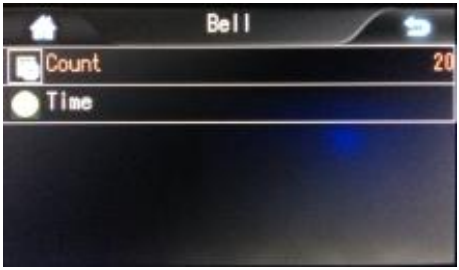
In the main menu, select "Advanced" then "Set Time".

The default time was set to the Beijing time zone (UTC+08:00). This maybe changed during device testing.

Before using this device, please set the time and date accordingly. Note: The time format can be changed under the menu, options being YY-MM-DD/MM-DD-YY/DD-MM-YY.

XXI. Preset Alarm

In the main menu, select "Advanced" then "Bell".



Count：The number of times the alarm will be sounded；

Time：The time that the alarm will be sounded. This can be set up to 8 occasions.

XXII. Touchscreen Recalibration

In the main menu, select "Advanced" then "Touch Adj.".

Press on the  cursor on the screen to carry out the recalibration.

XXIII. View In&Out Log

On the idle screen, select  to enter the "View User Rec" Menu. Perform any verification method and your In&Out logbook records will be shown.

In the figure above shows the record for user ID *00000001* in May 2013. With one entry on 1st May, two entries on 2nd May and one entry on 3rd May. "1/1" on the right upper corner shows that it is currently displaying page 1 out of a total of 1 page. "01" shows the date of the month. You can navigate through the pages using the arrow keys.

XXIV. User Info

In the "ViewInfo" menu includes Storage Detail, Record Detail, and System Detail. Select "User Info", this will show the number of entries stored for user count and each verification count.

XXV. Logbook Info

In the "ViewInfo" menu, select "Record Detail". This will show the number of logbook entries and an option to clear all logbook entries.

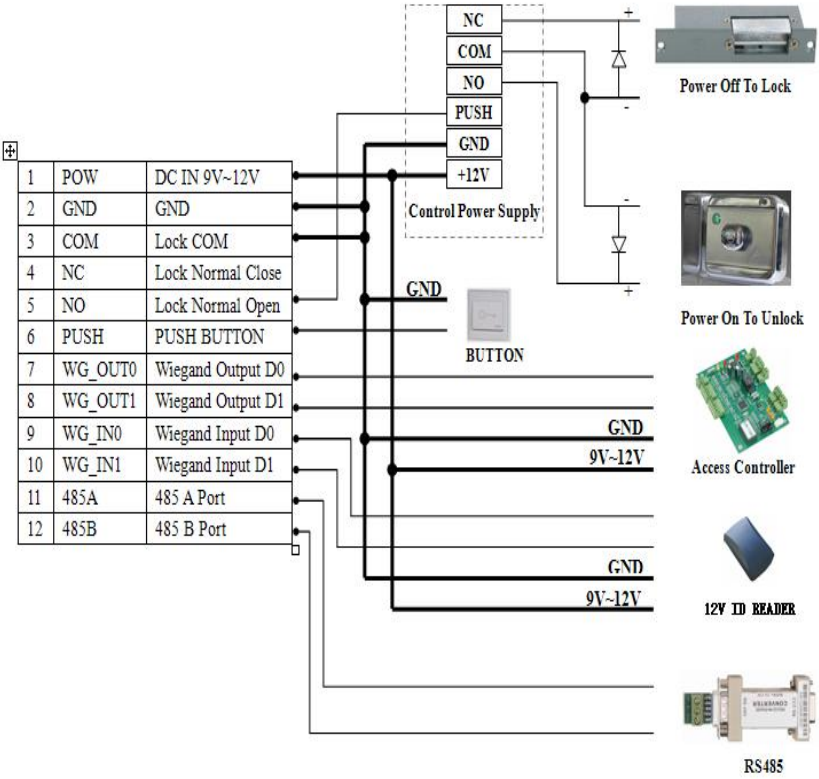
Navigate the menu using the arrow keys.

XXVI. System Info

Displays the follow information:

XXVII. Wiring Diagram

Wiring Diagram



1	POW	DC IN 9V~12V
2	GND	GND
3	COM	Lock COM
4	NC	Lock Normal Close
5	NO	Lock Normal Open
6	PUSH	PUSH BUTTON
7	WG_OUT0	Wiegand Output D0
8	WG_OUT1	Wiegand Output D1
9	WG_IN0	Wiegand Input D0
10	WG_IN1	Wiegand Input D1
11	485A	485 A Port
12	485B	485 B Port