Appendix 6.

User manual

Star FINGER007
iPASS IP-FINGER007
IDTECK FINGER007SR

Fingerprint Identification
Access Control System

IDTECK

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1. Safety Instructions

The description below is to keep user's safety and prevent any product damage. Please fully read these instruction and use the product properly.

Danger: This symbol indicates that incorrect handling of the product may result in serious injury or death.

Warning: This symbol indicates that incorrect handling of the product may result in injury or property damage.

Cautions about Power

- Only use the standard voltage (DC +12V/ 350mA).
- If the product emits smoke or smells, stop using the product. Unplug the product from DC power source and contact nearest service center.

Cautions about Installation

- Do not install the product in a place subject to humidity, dust (metallic dust) or splashing water (raindrops).
- Do not install the product in a place not meeting the operating humidity and temperature specified in the specification.
- Do not install the product with tools such as driver in hand when power is being supplied.

Cautions about Usage

- Do not drop liquid like water and give a shock severely.
- Do not place magnetic objects near the product.
- Do not replace the wiring cables installed by experts.
- Do not use the product near direct sunlight and heating apparatus.
- If you want to relocate the installed product, turn power off and then move and reinstall it.
- Do not use the product near flammable spray or objects.
- Do not disassemble, repair or modify the product by yourself. If the product needs service or repair, contact nearest service center.
- If liquid has been spilled on the product, unplug it and contact nearest service center.

Cautions about Cleaning

- Do not clean the product with water. Clean gently with dry cloth or towel.
- Do not use chemicals such as benzene, thinner or acetone for cleaning.

2. General

The Star FINGER007 / iPASS IP-FINGER007 / IDTECK FINGER007SR is a highly advanced single-door biometric access controller with a fingerprint recognition module, a proximity card reader and a keypad. The flexible but reliable biometric access controller is designed to meet various requirements for a robust integrated security solution for access control and time & attendance.

This user-friendly device is capable of storing up to 10,000 to 50,000 cardholders including 1,000 / 2,000 / 4,000 fingerprint users. Depending on the total number of cardholders, up to 10,000 to 50,000 events and alarms can be buffered in the memory so that they can be uploaded to the PC when communication is established.

With a built-in 4" proximity reader, a keypad for Personal Identification Number (PIN) verification and a fingerprint recognition module, the state-of-the-art device allows users to use any combination of proximity card / PIN, password and fingerprint verification, depending on the desired level of security and convenience for individual users or different groups of users.

The Star FINGER007 / iPASS IP-FINGER007 / IDTECK FINGER007SR is capable of controlling one External Reader for Anti-Pass Back application. Four independent input ports can be utilized for a wide variety of applications including Exit Buttons, Door Contacts, PIR Sensors and Fire Detection equipment. Actions to be taken and time settings can be programmed with the front keypad or via the intuitive Windows-based software program.

With a built-in 4" RF reader, keypad for Personal Identification Numbers (PIN), and a sophisticated biometric fingerprint analyzer, the Star FINGER007 / iPASS IP-FINGER007 / IDTECK FINGER007SR offers up to three levels of ID verification. Any combination of proximity, PIN, and biometric may be used and different verification levels can be custom programmed for each user or user group.

The intelligent access controller has the capability to supervise the input and report any disconnection or malfunction of the input to the host or other devices. Events from high priority input devices such as Fire Alarm Sensor, Emergency Key, etc. can be reported to the host prior to all other events. You can use the unit standalone but you can also connect it to the network via RS232 or RS422 communication or on an Ethernet network through an optional TCP/IP module.

The Star FINGER007 / iPASS IP-FINGER007 / IDTECK FINGER007SR has 2 FORM-C Relays and 2 TTL Output Ports allowing for interface with various other devices such as auto dialers. All control setting values such as ID numbers, inputs / outputs, Real-Time Clock, Time Schedules, and Event Transaction Reports can be transferred to and from the PC.

3. Key Features

- FINGER007, IP-FINGER007 : 125KHz Proximity / FINGER007SR : 13.56MHz Contactless Smart Card
- PIN and Fingerprint Recognition
- Dual Function for Access Control and Time & Attendance
- 1:1 Verification and 1: N Identification
- Stores 2 Fingerprint Templates per user
- Auto Touch Sensor for Fingerprint-Only Access
- Supports up to 1,000 / 2,000 / 4,000 Fingerprint Users
- Stores up to 10,000 – 50,000 Users and up to 10,000 – 50,000 Events (Selectable)
- Network Communication via RS232 or RS422 or Ethernet through a Built-in TCP/IP Module (Optional)
- 4 Supervised Input Ports for Cut-Off Check
- 2 FORM-C Relays and 2 TTL Output Ports
- Duress Alarm Function
- Reader Mode Allows Connection to a Control Panel.
- 26/34Bit Wiegand Output for Reader Mode
- 2 Tamper Switches
- Compatible Software: STARWATCH DUAL PRO I, STARWATCH DUAL PRO II, STARWATCH STANDARD

4. Specifications

Model			FINGER007/ IP-FINGER007/FINGER007SR
CPU			32Bit ARM9 and Dual 8Bit Microprocessor
Memory	Fingerprint Module	Program Memory	1MByte flash memory
		Data Memory	1MByte / 2MByte / 4MByte flash memory
	Controller	Program Memory	128KByte flash memory
		Data Memory	1MByte flash memory
Users (Fingerprint Users)			10,000 – 50,000 users (including 1,000 / 2,000 / 4,000 fingerprint users, depending on the model)
Event Buffer			10,000 – 50,000 event buffer (The sum of users and events cannot exceed 60,000.)
Fingerprint Templates Size			800 Bytes for 2 fingerprint templates
Read Range		FINGER007	IDC80 / IDC170 :Up to 4 inches (10cm)
		IP-FINGER007	IPC80 / IPC170 :Up to 4 inches (10cm)
		FINGER007SR	IHC80 :Up to 2 inches (5cm) ISC80 :Up to 4 inches (10cm)

Reading Time (Card)		30ms
Verification / Identification Time		Less than 1sec. / Less than 2sec.
Power / Current		DC 12V / Max.300mA
External Reader Port	FINGER007 / IP-FINGER007	1 port (26bitWiegand, 4 / 8Bit Burst for PIN) for Anti-Pass Back
	FINGER007SR	1 port (34BitWiegand, 4 / 8Bit Burst for PIN) for Anti-Pass Back
Communication		RS232 / RS422 (Max.32ch)
		TCP/IP (An optional built-in module or external converter required)
Baud Rate		9600bps (Recommended) / 4800bps, 19200bps, 38400bps, 57600bps and 115200bps (Selectable)
Input Port		4 ports (Exit Button, Door Sensor, Aux# 1, Aux#2)
Output Port		2 ports (FORM-C Relay Output (COM, NO, NC) / DC12V~18V, Rating Max.2A)
		2 ports (TTL Output / DC5V, Rating Max.20mA)
LCD		Character LCD (2 Lines x 16 Char) / 65.6mm x 13.8mm (2.62" x 0.55") Screen
Keypad		16 Key Numeric Keypad with Back Lighting
LED Indicator		7 Array LED Indicators (Red, Green and Yellow)
Beeper		Piezo Buzzer
Operating Temperature		0° to +50°C (+32° to +122°F)
Operating Humidity		10% to 90% relative humidity non-condensing
Color / Material		Dark Pearl Gray / Polycarbonate
Dimension (W x H x T)		6.36" x 5.28" x 1.9" (161.5mm x 134mm x 48.5mm)
Weight		525 g (1.15lbs)
Certification		FCC, CE, KC, RoHS

* Fingerprint Module Specifications

Resolution	500dpi
Captured Image Size	260 X 300 Pixels
Sensing Area	FIM2260 : 15.0mm X 18.5mm FIM2030 : 13mm X 15.2mm
Scanner	High Quality Optical Sensor
FAR(False Acceptance Ratio)	0.001%
FRR(False Reject Ratio)	0.1%
ESD(Electro Static Discharge)	± 6KV (Contact)
Verification Time	Less than 1 Sec.
Identification Time	Less than 2 Sec.
Color of Scanning LED	FIM2260: White / FIM2030: Red

5. Identifying Supplied Parts

Unpack and check the contents. If any of these parts are missing, contact your distributor.

Main unit

(1 Unit)

Wall mount

(1 PC)

O-ring

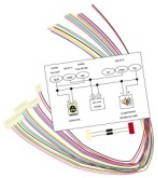
(5 PCS)

User's manual

(1 Copy)

Screws

(4 PCS)



Cable & Diode

Cable(5 ea)

Diode(2 ea)

6. Product Overview

6.1. Functions

Standalone Operation

The Star FINGER007 / iPASS IP-FINGER007 / IDTECK FINGER007SR is capable of having two readers (*i.e.* One built-in reader inside the unit and an External Reader connectable using the External Reader port). The unit receives card data signals from the RF Readers and determines whether or not to unlock the door. When an input signal is sent, for example from and activated sensor or if the Exit Button pressed, the controller generates and logs an appropriate response. All events are kept in its memory and sent to the PC. The access controller is a true standalone device that in the event of a malfunction, will not affect other units, even if used in conjunction with one another.

Operation with PC

All event transactions can be managed via the PC. The data transmitted from the controller can be processed, displayed (In the form of cardholder status, alarm status, etc.) and stored on the PC.

Data Retention

All user information and event/alarm data are retained even in the event of Power Failure unless the memory or the device itself is damaged.

Keypad

The built-in Keypad and LCD let you perform manual programming without connection to the PC.

Dual Finger Mode

Dual Finger Mode is a function that lets a user register two fingers for one ID so that the user can receive authentication with either of the two registered fingers. This is useful when a user's finger is injured.

Anti-Pass Back

Anti-Pass Back is a function that is used to prevent a user entering an area by using their card and passing that card back to another person to use. If the Anti-Pass Back is applied, cardholders cannot gain entry or exit twice in a row, and even if someone tailgates someone into the controlled area without going through the proper authentication procedure, he or she will not be able to gain access when exiting the area. If this is the case, the FINGER007 generates an error message without granting access and then stores an Anti-Pass Back error record in the memory. You can also program the FINGER007 to generate certain output signals in the event of an Anti-Pass Back error.

External Input / Output

The FINGER007 has 4built-in inputs and 4outputs (2Relay Outputs and 2TTL Outputs) which can be used for a wide variety of purposes and applications. For example, the input ports can be used for interface with external devices such as Request-To-Exit Button, Fire Detection Sensor, etc. while the relay output ports can be connected to a Door Lock and/or an Alarm System. When you use Weigand output function, 26/34BIT Weigand will be generated from dual TTL output.

Time Schedule

You can program 10 Time Schedules and apply one Time Schedule to each user. Each Time Schedule has 8 different time zones from Monday to Sunday (7 Time Zones) and one holiday. Each time zone has 5 different time codes so you can program 5 different time codes to each day. Also you can program Time Schedule for individual inputs and outputs. Note that the Time Schedule for input is activated time code for input device so that the input is activated during the time code on this Time Schedule. Each Time Schedule is linked to one of holiday schedule and this linked holiday only validates to holiday time code of the Time Schedule.

Access Time Limitation for Cardholders – You can assign a time schedule code to each Cardholder during the card registration process. Cardholders are granted access only during the time defined in the assigned time schedules. If a Cardholder attempts to gain access out of the set time, access will be denied with a time schedule error.

Operating Time Limit for Output Ports – If you assign a time schedule code to an output code, the Output Port generates constant output signals during the set time. (This feature can be used, for

example, to keep a door open during a certain period of time.)

Operating Time for Authentication Modes – Using this feature, you can have the FINGER007 change. It's Authentication Mode during a set time period. For example, if you set the FINGER007 to the RF + FP (P/W) mode and apply a time schedule code for the Authentication Mode, the FINGER007 will operate in the RF-Only mode (Using RF Card verification alone) during the set time and shift into the RF + FP (P/W) mode (Using both RF Card and fingerprint verification) out of the set time.

Holiday Schedule Setup

Excepting Sunday, you can program 32 holidays to one Holiday Schedule. Each Holiday Schedule is linked to one time schedule which has time code for holidays. So you can program all holidays to Holiday Schedule and the time code for holidays is programmed to holiday time zone of time schedule.

Example: A: Holiday Schedule 01 linked to Time Schedule 01,
Holiday Schedule 02 linked to Time Schedule 02.
B: Holiday Schedule 02 linked to Time Schedule 01,
Holiday Schedule 01 linked to Time Schedule 02.

Door Open Alarm & Forced Door Open Alarm

The FINGER007 can report the open status of the door if the door is not closed within a certain length of time (default: 3 sec) after the door is opened following a normal access procedure. (If this is the case, an alarm signal can be sent to the output port and the alarm event will be saved in the event buffer so that it can be uploaded to the PC when communication is established.) If the door contact sensor detects forced opening of the door, the Forced Door Open Alarm can be generated.

Duress Alarm

In the event of duress, you can enter the 2Digit Duress Password and press <ENT> and open the door using general process. If your access is granted, the door will be opened as usual but duress output will be generated and an alarm event will be sent to the PC.

1: N Authentication (Identification Mode)

You can gain access using the fingerprint authentication alone without using the RF Card or PIN. This feature can be enabled in 9.Identification of "SETUP MODE F4". In the Identification Mode, the security level gets higher automatically, FRR (False Rejection Ratio) as well, but FAR (False Accept Ratio) gets lower, which may result in a lower recognition rate. With an optional Auto Touch Sensor, the FINGER007 can automatically detect the approach of the finger, but if your FINGER007 does not have an Auto Touch Sensor, you will be required to press <ENT> prior to placing your finger on the sensor.

Adaptive Mode

If the Adaptive Mode is enabled, the fingerprint image is automatically adapted for better recognition results. This mode can be enabled in 11.Adaptive of “SETUP MENU F1”. While this feature improves the recognition success rate, the authentication process may take longer.

Weigand Output Function

You can use a Weigand Output Function in the "SETUP MODE F2".

6.2 Product Description

6.2.1 Front View

① LCD Display

It shows setting status.

② 3 LED Indicators

It shows system status.
The red LED turns on with power supply.
The green LED turns on with Relay #1 operation.
The yellow LED turns on with Relay #2 operation.

③ 16 Numeric Keypad

Register/Delete card data and set functions through keypad input.

④ Function Keypad

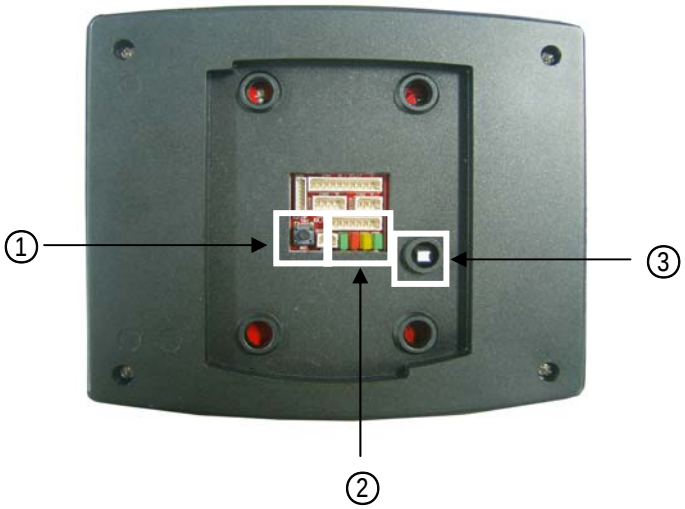
There are four function keys, F1, F2, F3 and F4

⑤ Finger Print Scanner

When users put their finger on the scanner, *white light will turn on.

**In case of FIM2030, red light will turn on.*

6.2.2 Rear View



① Initialization Switch

This switch is used to initialize Star FINGER007. For initialization, press down this switch and then keep it more than 2 seconds. Refer to '8.2 System Initialization' for more details.

② Communication Display LED

#3, #4(yellow, green) LED will twinkle during RS232, RS422 and TCP/IP communication.

If the LAN is connected normally during TCP/IP communication, #1, green LED will turn on. But in the collision status, #2, red LED turns on.

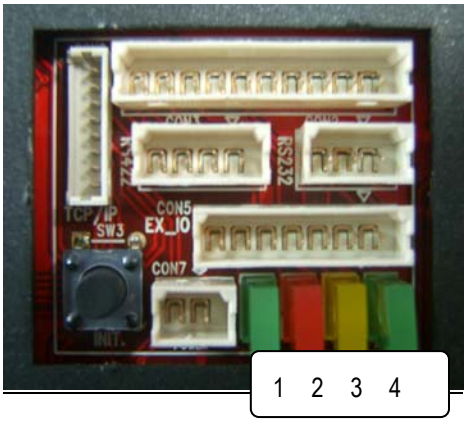
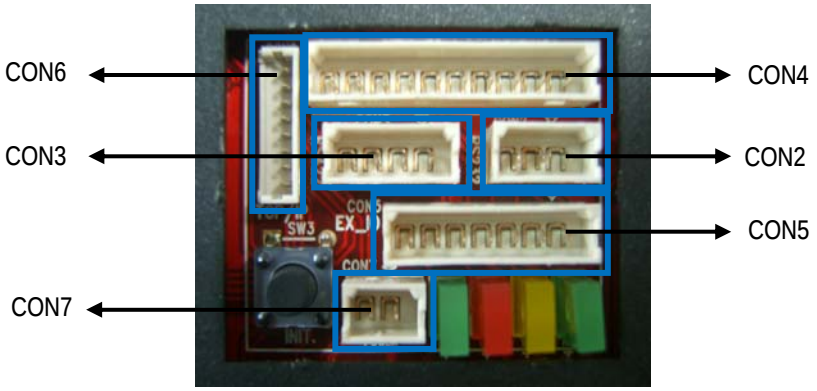


Figure: Magnification of the Communication Display LED in the Rear Panel

③ Tamper Switch

If someone takes off Star FINGER007 installed on the wall by force, the tamper switch is activated then buzzer makes sound to inform of theft.

6.2.3. Color Coded & Wiring Table



I/O PORT NAME	SIGNAL NAME	COLOR CODED
POWER	CON7	
Main Power(+12V)	DC +12V	Red
Power Ground	GND	Black
OUTPUT	CON4	
Door Relay(COM)	COM(1)	Gray with Red Stripe
Door Relay(NC)	NC(1)	Blue with White Stripe
Door Relay(NO)	NO(1)	White with Red Stripe
Alarm Relay(COM)	COM(2)	White
Alarm Relay(NC)	NC(2)	Purple with White Stripe
Alarm Relay(NO)	NO(2)	Purple
INPUT	CON4	
Exit Button	EXIT	Orange
Door Sensor	CONTACT	Yellow with Red Stripe
Aux Input 1	IN1(OK input-Reader Mode)	Green
Aux Input 2	IN2(Error input-Reader Mode)	Green with White Stripe
EXTERNAL READER PORT	CON5	
Wiegand Data0	DATA0	Pink
Wiegand Data1	DATA1	Cyan
OUTPUT	CON5	
TTL Output1	TTL1/D0	Orange with White
TTL Output2	TTL2/D1	Brown with White Stripe
OK Signal Out	OK Out (Not Use)	Green with Red Stripe
Error Signal Out	Error Out (Not Use)	Blue with Red Stripe

Tamper Switch Out	Tamper Switch Out (Not Use)	Yellow with White Stripe
RS232 INTERFACE	CON2	
RS232-TX	TXD	Black with White Stripe
RS232-RX	RXD	Red with White Stripe
Ground	GND	Black
RS422 INTERFACE	CON3	
RS422-TX(-)	TX(-)	Yellow
RS422-TX(+)	TX(+)	Gray
RS422-RX(-)	RX(-)	Blue
RS422-RX(+)	RX(+)	Brown
TCP/IP Communication	CON6	
	TCP/IP Communication	8PIN Connector Module

6.3 Option

- TCP/IP Module:

  Star FINGER007 is able to use TCP/IP Communication. An optional TCP/IP module is needed for TCP/IP communication with the host PC.

7. Installation Tips & Check point

7.1 Check Points before Installation

7.1.1 Installation Layout

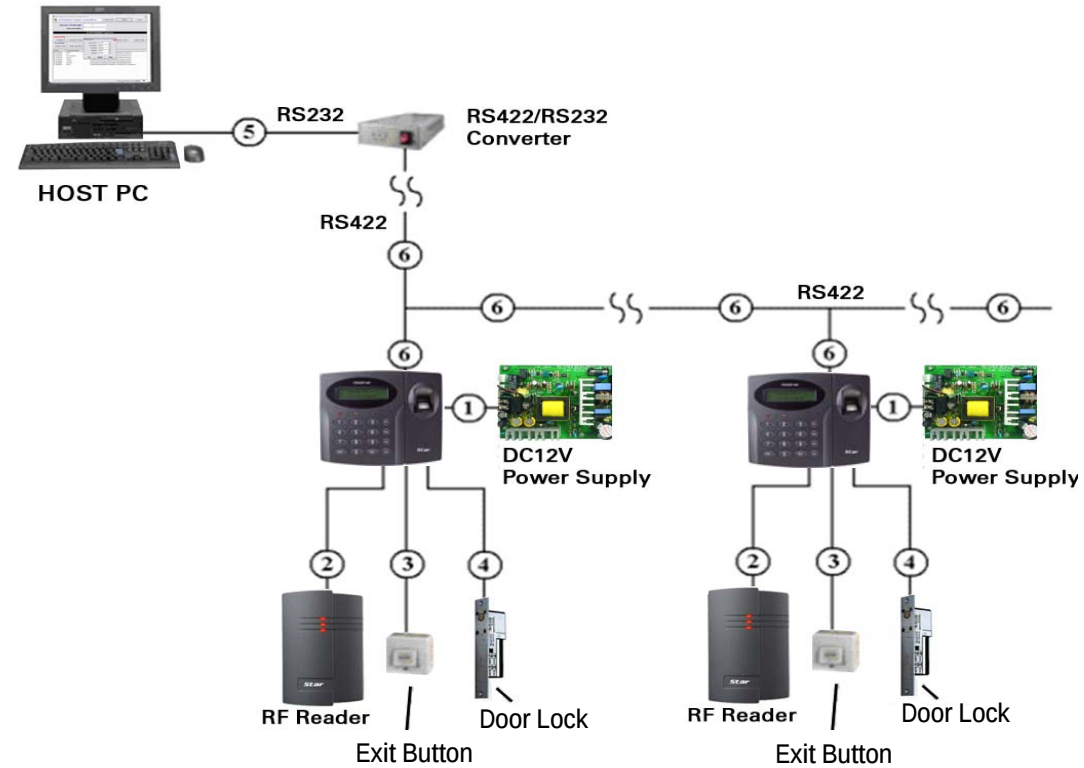


Figure: System Installation Layout

7.1.2 Recommended Cable Type

Reference	Description	Cable Specification
①	Finger007 Power (DC12V) DC Power -> Finger007	Belden #9409, 18 AWG 2 conductor, unshielded
②*	Reader (Power and Data) External Reader -> Finger007	Belden #9512, 22 AWG 4 conductor, shielded
		Belden #9514, 22 AWG 8 conductor, shielded
③	Door Contact Exit Button Sensor Input Input -> Finger007	Belden #9512, 22 AWG 4 conductor, shielded
		Belden #9514, 22 AWG 8 conductor, shielded
④	Door Lock, Alarm Device Lock (Alarm) -> Finger007	Belden #9409, 18AWG 2 conductor, unshielded
⑤	RS232 Cable Converter -> PC	Belden #9829, 24 AWG 2 twisted pair, shielded
⑥	RS485 Cable Finger007 -> Finger007 Finger007 -> Converter	Belden #9829, 24 AWG 2 twisted pair, shielded
	RS422 Cable Finger007 -> Finger007 Finger007 -> Converter	Belden #9830, 24 AWG 3wisted pair, shielded

* *Thicker wires are needed if you connect a reader with high current consumption.*

7.2 Check Point during Installation

7.2.1 Termination Resistor

Termination Resistors are used to match impedance of the network to the impedance of the transmission line being used. When impedance is mismatched, the transmitted signal is not completely absorbed by the receiver and a portion of signal is reflected back into the transmission line.

The decision whether or not to use Termination Resistors should be based on the cable length and data rate used by the communication system.

For example, if you use 9,600 baud rate and 1,200m length of cable, the propagation velocity of cable is 0.66 x speed of light (This value is specified by the cable manufacturer), if we assume the

reflections will damp out in three round trip up and down the cable length, the transmitted signal will stabilize 18.6us after the leading edge of a Bit. Since the data Bit is captured in the middle of the Bit which is approximately 52us after the leading edge of a Bit. The reflection stabilizing time 18.6us is much before the center of the Bit therefore the Termination Resistors are not required.

However, if you install the cable to maximum length, the impedance of cable and network is mismatched and the transmitted signal is overlapped by the reflected signal. In this case, it is recommended to add Termination Resistors to the end of the receiver lines. A 120Ω resistor can be used for Termination Resistor in parallel between the receiver lines "A" and "B" for 2 wires RS485 system or "RX+" and "RX-" for 4 wires RS422 system. A Termination Resistor of less than 90Ω should not be used and no more than 2 terminations should be used in one networking system.

7.2.2 How to Connect Termination Resistors

Figure: Termination Resistors for 2 Wire RS485 Communication System

Figure: Termination Resistors for 4 Wire RS422 Communication System

7.2.3 Grounding System for Communication Cable

We recommend to using proper Grounding System on the communication cable. The best method for Grounding System is to put the shield wire of the communication cable to the 1st class earth grounding; however it is not so easy to bring the earth ground to the communication cable and also the installation cost is raised.

There will be three grounding point where you can find during installation;

1) Earth Ground
2) Chassis Round
3) Power Ground

The most important point for Grounding System is not to connect both ends of shield wires to the Grounding System; in this case there will be a current flow through the shield wire when the voltage level of both ends of shield wire is not equal and this current flow will create noise and interfere to

communications.

For the good grounding, we recommend to connecting only one end of shield wire of communication cable to Grounding System; If you find earth ground nearby, then connect one end of shield wire to earth ground; If you do not have earth ground nearby, then find chassis ground and connect one end of shield wire to chassis ground; If you do not find both earth ground and chassis ground, then connect one end of shield wire to power ground. (GND of FINGER007)

Note: if the chassis ground is not properly connected to the earth and floated from the ground level, then grounding to the chassis ground will give the worst communication; in this case we recommend using power ground instead of chassis ground.

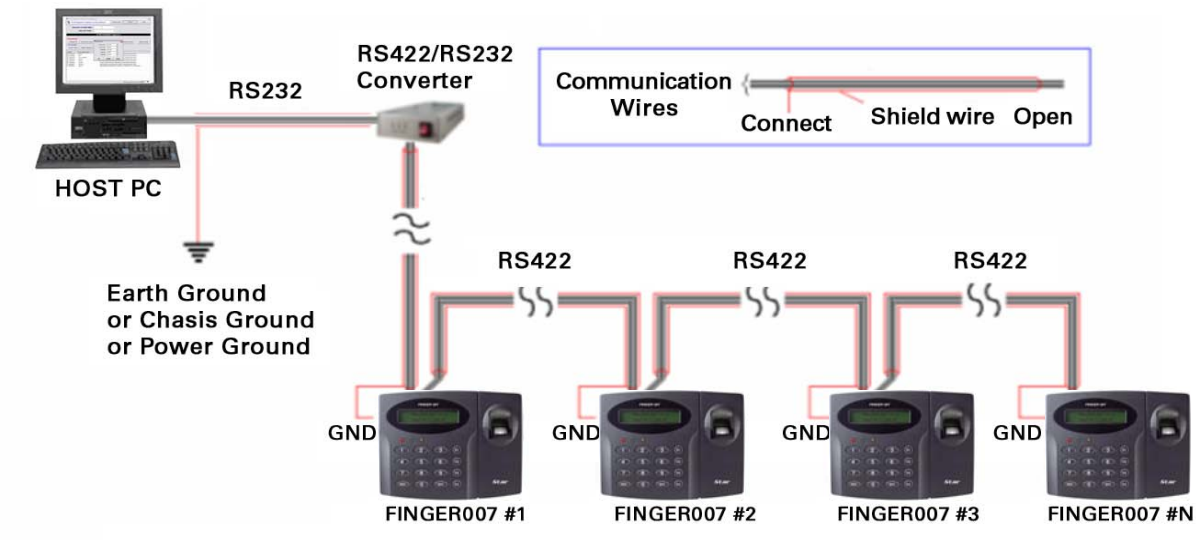


Figure: Grounding System

7.2.4 Reverse Diode Connection

If you connect an inductor (Door Locks or Alarm Device) to the output relays, there will be a high surge voltage created while the inductor is turning on and off. If you do not connect Reverse Diode, the surge voltage will transfer and damage the electronic circuit of the controller. It is strongly recommended to add a Reverse Diode between the inductor coils to absorb this surge voltage.

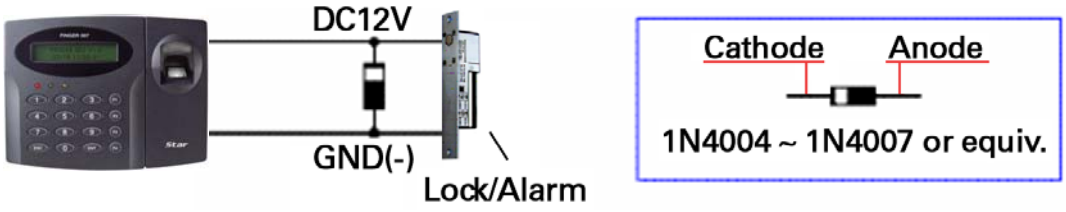


Figure: Reverse Diode Connection

8. Installation of the Product

8.1 Template

Real size template is on 65p in this manual. Tear off the template page and attach it to the wall. And then follow steps below to install the Star FINGER007. (You can install the Star FINGER007 directly, if the gang box is installed on the wall.)

1. Position the Wall Mount template to the location at which you want to install the unit and mark two drilling (two Tap #6-32 holes) positions and then drill it
2. Drill a 1/2" hole on the center of the wall mount.
3. Using two screws, install the wall mount to the hall.
4. Take out the cable through the center hole.
5. After connecting cables, initialize the Star FINGER007. And then test basic function. (Refer to '8.2 SYSTEM INITIALIZATION')
6. Insert O-ring at 5 positions and then insert the bundle of cable to the center hole.
7. Put the Star FINGER007 unit on the wall mount and push it until it is fixed up.

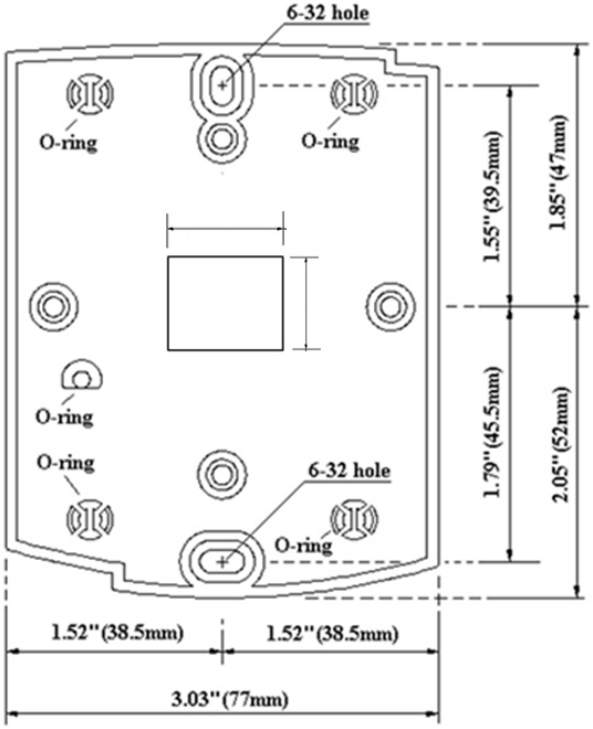


Figure: Template Sample

※ *CAUTION*

Before mounting the Star FINGER007 unit to the Wall Mount bracket, operational test of the unit should be completed, as the locking pins will lock the unit to the Wall Mount. Removing the unit from the Wall Mount bracket after they have been installed together may cause damages to the bracket and render its effectiveness.

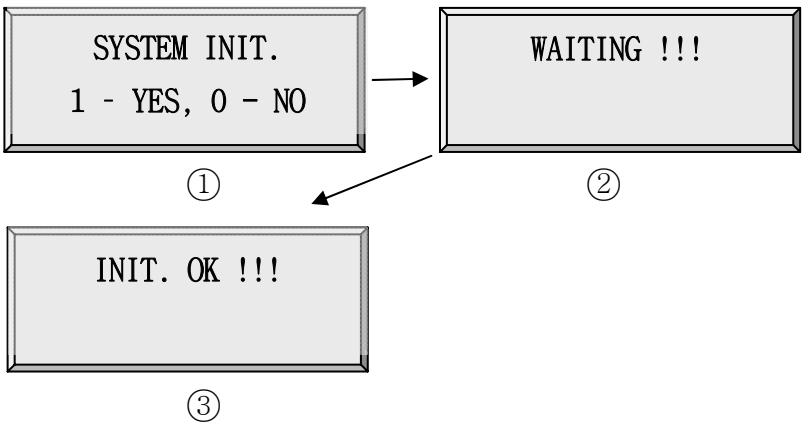
Insert 5 O-rings to the wall mount as indicated, then route the cable of the main unit through the

center hole and push the main unit to wall mount to lock the main unit and make sure that the main unit is locked with wall mount.

8.2 System Initialization

You have to initialize the FINGER007 unit prior to first installation.

Once power is supplied to the FINGER007, press down the initialization switch on the back of the FINGER007 unit and then keep it more than 2 seconds, then you can see displays below on the LCD. If you want initialization, press key <1> otherwise press key <0>.



① Press the key <1> if you wish to initialize the FINGER007.

② Initialization is progressing

③ Rebooted automatically after Initialization

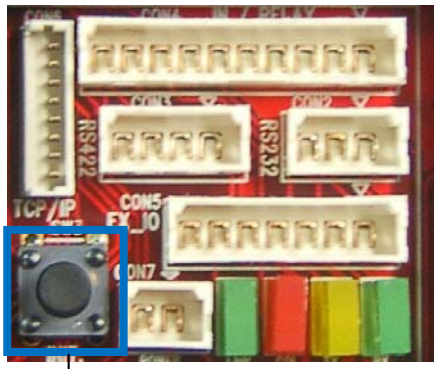


Figure: The Position of Initialization Switch

8.3 Wiring

8.3.1 Power

- Connect (+) wire of DC 12V power to +12V (Red wire)
- Connect GND (-) wire of DC 12V power to GND (Black wire)

8.3.2 Input Connections

Exit Button Connection (Exit)
- Connect one wire from an Exit Button to exit (Orange wire).
- Connect the other wire from the Exit Button to the GND (Black wire).

Door Contact Sensor Connection (Contact)
- Connect one wire from a Door Contact Sensor to contact (Yellow wire with Red stripe).
- Connect the other wire (NC) from the Door Contact Sensor to GND (Black wire).

Auxiliary Input Connection (Applied IN1, IN2)
- Connect one wire from an Auxiliary Input device to one of the IN1 (Green wire), IN2 (Green with White stripe).
- Connect the other wire from the Auxiliary Input device to GND (Black wire).

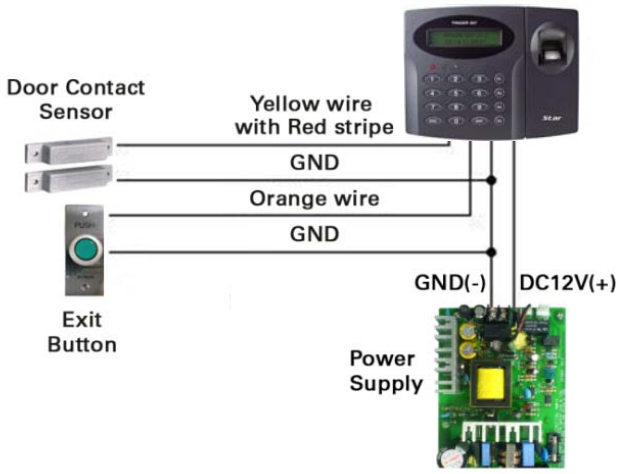


Figure: Input Devices Connection

2.2K Resistance Connection for Cut Off Check

You have to connect a 2.2K Resistor between the input wire (e.g. Orange wire) and the GND to apply the Cut Off Check feature. First, select whether or not to check the Cut Off status of each device from “F2 SETUP MENU” -> “CUT OFF CHECK”. Second, set the desired output that will be generated in the event of a cut off from “F2 SETUP MENU” -> “CUT OFF ALARM”.

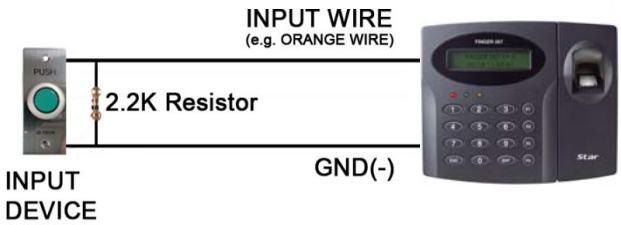


Figure: 2.2K Resistance Connection for Cut Off Check

8.3.3 Output Connections

Door Lock (Power Fail Safe) Connection (Relay 1)
- Connect COM port of Relay 1(Gray with Red stripe) to + 12V (Red wire)
- Connect NC port of Relay 1(Blue with White stripe) to (+) wire of Door Lock Device.
- Connect GND (Black wire) port to (-) wire of Door Lock Devices.

Door Lock (Power Fail Secure) Connection (Relay 1)
- Connect COM port of Relay 1(Gray with Red stripe) to + 12V (Red wire)
- Connect NO port of Relay 1(White with Red stripe) to (+) wire of Door Lock Device
- Connect GND (Black wire) port to (-) wire of Door Lock Devices

Alarm Device Connection (Relay 2)
- Connect COM port of Relay 2 (White) to + 12V (Red wire)
- Connect NO port of Relay 2 (Purple) to (+) wire of Alarm Devices.
- Connect GND (Black wire) port to (-) wire of Alarm Devices

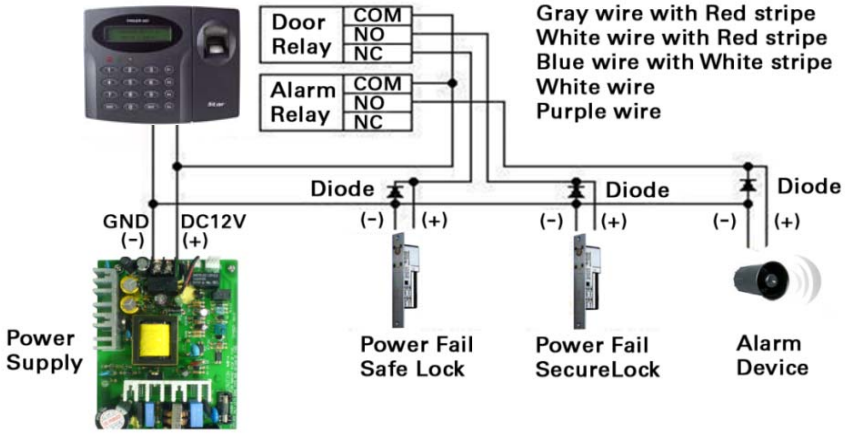


Figure: Door Lock / Alarm Device Connection

CAUTION: Please add one diode as shown above. A fast recovery diode (Current: Min. 1A), 1N4001 - 1N4007 or similar, is recommended.

Wiegand Data Connection (Applicable to Reader Mode)

-Connect DATA0 IN wire of controller to TTL1/D0 (TTL Output1) wire of FINGER007 (Orange with White stripe)

- Connect DATA1 IN wire of controller to TTL2/D1 (TTL Output2) wire of FINGER007 (Brown with White stripe)

CAUTION: If the controller and FINGER007 use separate power sources, you must connect the GND between the controller and FINGER007.

8.3.4 Reader Connections (External Reader)

● Proximity Reader Connection
- Connect (+) wire of FINGER007 to +12V (Red wire)
- Connect (-) wire of FINGER007 to GND (Black wire)
- Connect DATA0 wire of FINGER007 to DATA0 (Pink wire)
- Connect DATA1 wire of FINGER007 to DATA1 (Cyan wire)

CAUTION: If the controller and the external reader use separate power sources, you must connect the GND between the controller and the external reader.

● Compatible Readers(External Reader)

FINGER007 / IP-FINGER007:
Standard 26BIT Wiegand Format Proximity Readers
Standard 26BIT Wiegand + 8BIT Burst Format Proximity and Keypad Reader
RF-TINY, RF10, RF20, RF30, RF70, RF500, RFK101
FGR006, FGR006EX, iP10, iP20, iP30, iPK101
FINGER007 Ver. A.0.0 or over (Wiegand Output Function).

FINGER007SR:
Standard 34BIT Wiegand Format Proximity Reader
Standard 34BIT Wiegand + 8BIT Burst Format Proximity and Keypad Reader
SR10, SR20, SR30, SRK101, FGR006SR, FGR006SRB
FINGER007SR Ver. A.0.0 or Over (Wiegand Output Function).

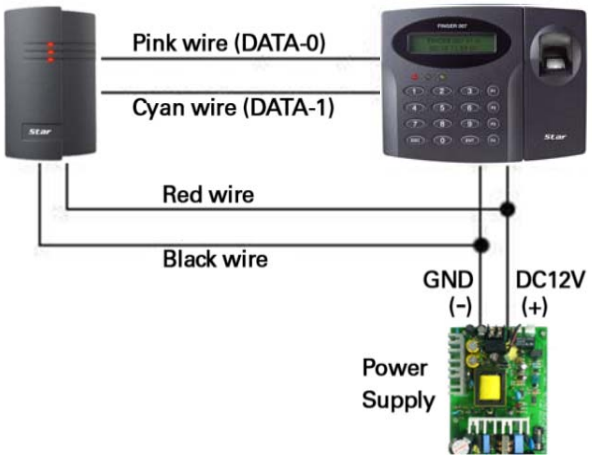


Figure: Reader Connection

9. Communication

9.1 RS232 Communication Port Connection

A 9-PIN connector (Serial Communication Connector, Female) is required to connect the FINGER007 to the PC via RS232 communication.

Please follow the instructions.

- Connect RS232-TX (Black wire with White stripe) port of FINGER007 to the PIN 2 of the 9-PIN connector.
- Connect RS232-RX (Red wire with White stripe) port of FINGER007 to the PIN 3 of the 9-PIN connector.

- Connect RS232-GND of FINGER007 to the PIN 5 of the 9-PIN connector.
- Plug in the 9-PIN connector to COM1 or COM2 port of the PC.
- Install and run FINGER007 Application Software.

CAUTION: The firmware upgrade may not succeed if the distance between the PC and the device is too far. A USB-to-serial converter is recommended if the PC has no COM ports.

9.2 RS-422 Communication Port Connection

9.2.1 RS-422 Connection (Standalone)

An RS422/RS232 converter is required to use RS422 communication between the FINGER007 and the PC.

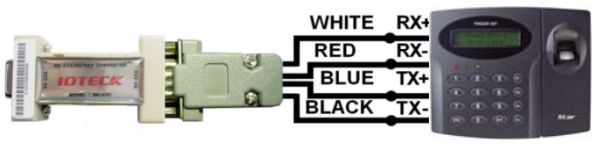
CAUTION: An INC400 converter is recommended for stable communication when the distance between the converter and the device is too far.

Please follow the instructions below;

- Connect RS422-TX (+) (Gray wire) of FINGER007 to RS422-RX (+) port of converter.
- Connect RS422-TX (-) (Yellow wire) of FINGER007 to RS422-RX (-) port of converter.
- Connect RS422-RX (+) (Brown wire) of FINGER007 to RS422-TX (+) port of converter.
- Connect RS422-RX (-) (Blue wire) of FINGER007 to RS422-TX (-) port of converter.
- Plug in the RS232 9PIN connector of the converter to the COM1 or COM2 port of the PC.
- Install and run FINGER007 Application Software.

< A Type >

INC400	Unit(RS422)
WHITE	RX+
RED	RX-
BLUE	TX+
BLACK	TX-



< B Type >

INC400	Unit(RS422)
485+/(T+)	RX+
485-/(T-)	RX-
R+	TX+
R-	TX-

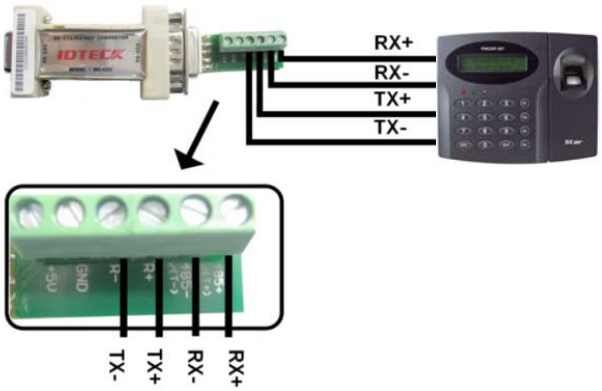


Figure: RS422 Communication between FINGER007 and the PC

9.2.2 RS-422 Connection (Multiple FINGER007 Connections)

RS422/RS232 converter is required to use RS422 communication between multiple FINGER007s and the PC. Please follow the following instructions.

First, you have to connect all RS422 port of all FINGER007s in parallel.

- Connect RS422-TX (+) of one FINGER007 to RS422-TX (+) of another FINGER007.
- Connect RS422-TX (-) of one FINGER007 to RS422-TX (-) of another FINGER007.
- Connect RS422-RX (+) of one FINGER007 to RS422-RX (+) of another FINGER007.
- Connect RS422-RX (-) of one FINGER007 to RS422-RX (-) of another FINGER007.

Second, you have to connect one of RS422 port of FINGER007 to RS422/RS232 converter.

- Connect RS422-TX (+) of the one FINGER007 to RX (+) port of the converter.
- Connect RS422-TX (-) of the one FINGER007 to RX (-) port of the converter.
- Connect RS422-RX (+) of the one FINGER007 to TX (+) port of the converter.
- Connect RS422-RX (-) of the one FINGER007 to TX (-) port of the converter.
- Plug in the RS232 9PIN connector of the converter to the COM1 or COM2 port of the PC.
- Install and run FINGER007 Application Software.

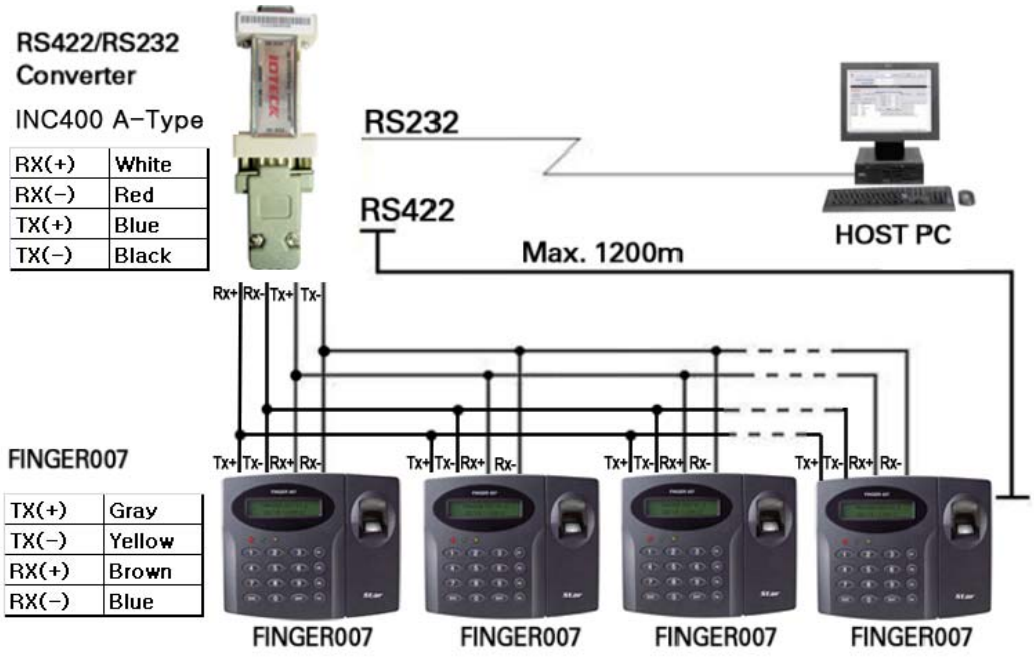


Figure: RS422 Communication between FINGER007s and PC

9.3 TCP/IP Communication Port Connection (Optional)

Optional TCP/IP module is required to use TCP/IP communication between the FINGER007 and the PC. Please follow the following instructions.

1. Connect the LAN cable of the network system to the RJ45 jack of the FINGER007.
2. Set the ID of the FINGER007.
3. Install and run the FINGER007Application Software.

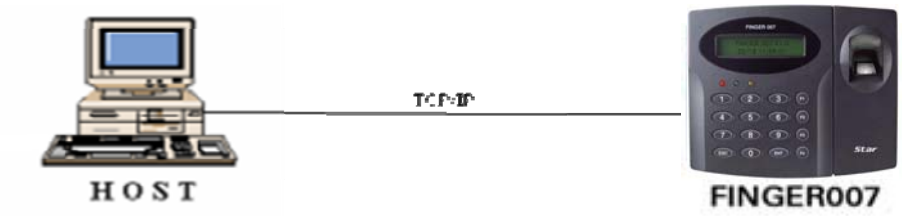


Figure: TCP/IP Connection with FINGER007 and Host PC

9.4 TCP/IP Converter (External Version)

When you use the TCP/IP converter, choose only one converter between RS232 and RS422.

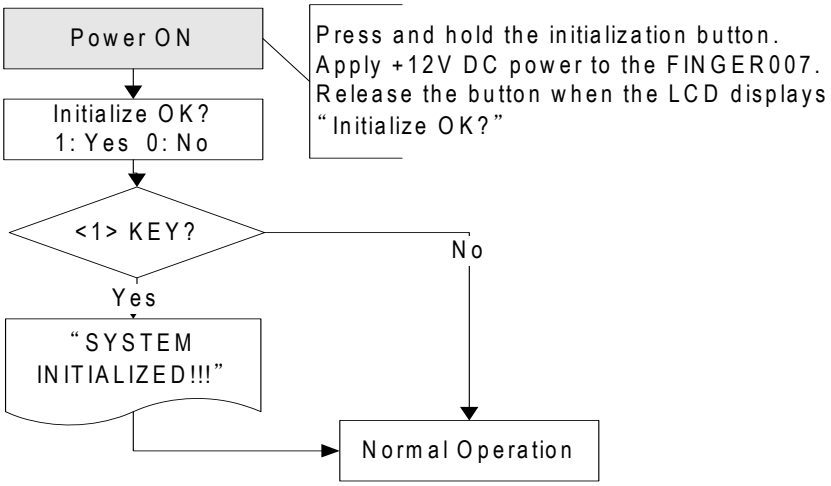
Figure: TCP/IP Converter between FINGER007 and Host PC

INTERFACE	FINGER007	ILAN422	LINE COLOR
RS232	TX (CON2)	RX (RS232 DSUB9)	Black with White Stripe
	RX (CON2)	TX (RS232 DSUB9)	Red with White Stripe
	GND(CON2)	GND	Black
RS422	TX+ (CON3)	RX+ (RS422 CONNECTOR)	Gray
	TX- (CON3)	RX- (RS422 CONNECTOR)	Yellow
	RX+ (CON3)	TX+ (RS422 CONNECTOR)	Brown
	RX- (CON3)	TX- (RS422 CONNECTOR)	Blue

10. Initial Setup

10.1 Initialization of FINGER007

After completing installation and cable connections, apply power (DC12V) to the FINGER007. Press down the initialization switch on the back of the FINGER007 unit and then keep it more than 2 seconds. Then, the LCD will first display “Initialize OK? 1: Yes 0: No”. Press <1> key if you want to initialize the system or <0> to cancel the initialization procedure. After all the initialization process is completed, the system will be operating in the normal mode and the LCD will display “FINGER007 [F1], MM/DD hh : mm : ss”.



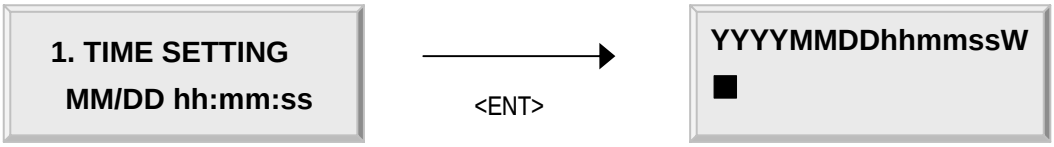
10.2 Entering Setup Mode

To setup or to change the FINGER007 settings, you have to enter the Setup Mode first. To do so, enter the Master ID (default=00000000)* and press the <ENT> key. There are 4 main Setup menus and you automatically get into “SETUP MENU F1” first. You can move to other Setup menus by pressing the <F1> key for “SETUP MENU F1”, <F2> key for “SETUP MENU F2”, <F3> key for “SETUP MENU F3” and <F4> key for “SETUP MENU F4”. There are setting items in the main Setup Menu and you can scroll up or down the menu by pressing the <4> or <6> key. If you press the <ESC> key then the FINGER007 will exit the Setup Mode and return to normal operation in Reader Mode.

**The default Master ID for the FINGER007SR is 0000000000 (Press the <0> key 10 times)*

10.3 Time / Date Setting

After you enter the Setup Mode, you will see the following screen with the current date and time. To adjust the time / date setting, press <ENT>, then enter 15 Digits in a YYYYMMDDhhmmssW format, and then enter <ENT> again to confirm.



NOTE: For the day of the week (W), 1 : Sun, 2 : Mon, 3 : Tue, 4 : Wed, 5 : Thu, 6 : Fri, 7 : Sat.
e.g. To express August 24, 2009, 13:30:15, Monday, enter 200908241330152.

10.4 Setting Maximum Number of Cardholder IDs

You can set the maximum number of cardholder IDs that can be registered on your FINGER007. By default, the FINGER007 is set to store up to 10,000 cardholders and 50,000 events and you can adjust this setting to increase the cardholder capacity at the expense of event memory.
To change the ID memory setting, enter the Setup Mode (See 10.2 Entering setup mode), press <F3>, then press <6> 4 times until you see 5.ID memory on the LCD. (See figure 1.) Once the 5.ID memory item appears on the LCD, press <ENT>, and press <4> or <6> to select "10000/50000", "20000/40000", "30000/30000", "40000/20000" or "50000/10000" (No. of IDs / No. of events), and then press <ENT> again to confirm.

NOTE : Prior to changing the maximum number of cardholders, you must clear the event data from the memory. Because entering the Setup Mode itself generates an event, you must always initialize the event memory prior to changing the maximum ID number setting. For additional information on how to intialize the event memory.(refer to 12.1.9 Event clear). If you attempt to change the setting with some event data still in the memory, the LCD will display "EVENT MEMORY NOT EMPTY" error message. (See figure 2.)

NOTE: If you attempt to reduce the ID memory size to a value lower than the current number of IDs stored in the memory, the LCD will display the "ID TOTAL COUNT WRONG" error message. (See figure 3.) If this is the case, please clear the card data from the memory. For additional information on how to initialize the card memory (See 12.1.8 Card ID clear.)

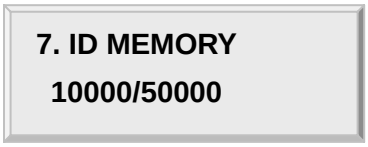


Figure 1.

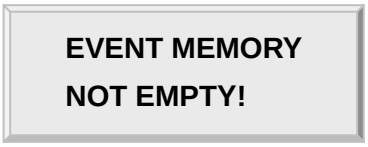


Figure 2.

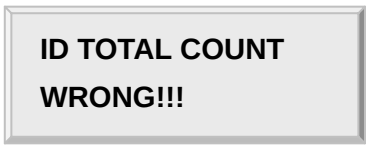


Figure 3.

10.5 Registering Cardholder IDs

To add new cardholder IDs to the FINGER007, enter the Setup Mode (See 10.2 Entering Setup Mode), press <F3>. Once the 1.ID registration item appears on the LCD, press <ENT> to begin the ID registration process.

For detailed information on the ID registration process, please refer to 12.3.1 ID registration.

NOTE: How to place your finger onto the scanner when you register card ID:
When you register or verify your fingerprint, please place your finger onto the scanner correctly as illustrated below.

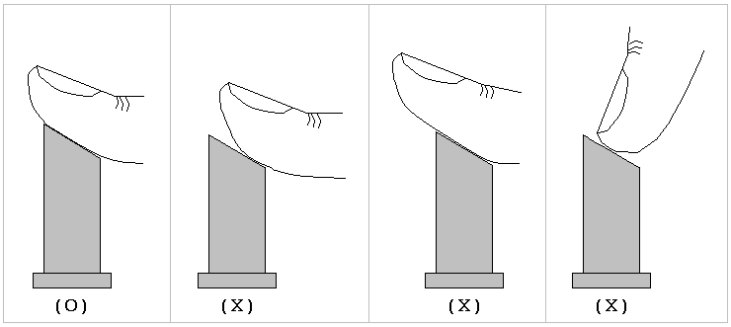


Figure: How to Put Your Finger on the Scanner

11. Operation

11.1 Normal Operation

Power On

When the power is applied to FINGER007, the “RED LED” is turned on.

Fingerprint Identification

1. If registered card is read by the unit, red LED of fingerprint sensor is on.
At this time, you should put your finger and then remove your finger if red LED is off.
2. If fingerprint identification is done, card ID or authorization status appears on the
LCD and fingerprint quality level also appears.
e.g.) [Q3]
3. Quality level appears from 1 to 5.
In case of Q1 or Q2, you can’t use on Identification Mode (1: N) because of bad quality.
In case of Q3, Q4 or Q5, you can use on Identification Mode (1: N) because of good quality.
e.g.) In case of fingerprint identification – Quality Level: 3, Card ID: 12300111

Registered Card Reading

When a registered card (or PIN) is read, the door (Relay1) will open for 3 seconds (Defaults) with the “GREEN LED” on.

Exit Button

To request for exit from the inside, an Exit Button (Or External Reader) can be used. The Door (Relay1) will open for 3 seconds (Defaults) with the on.

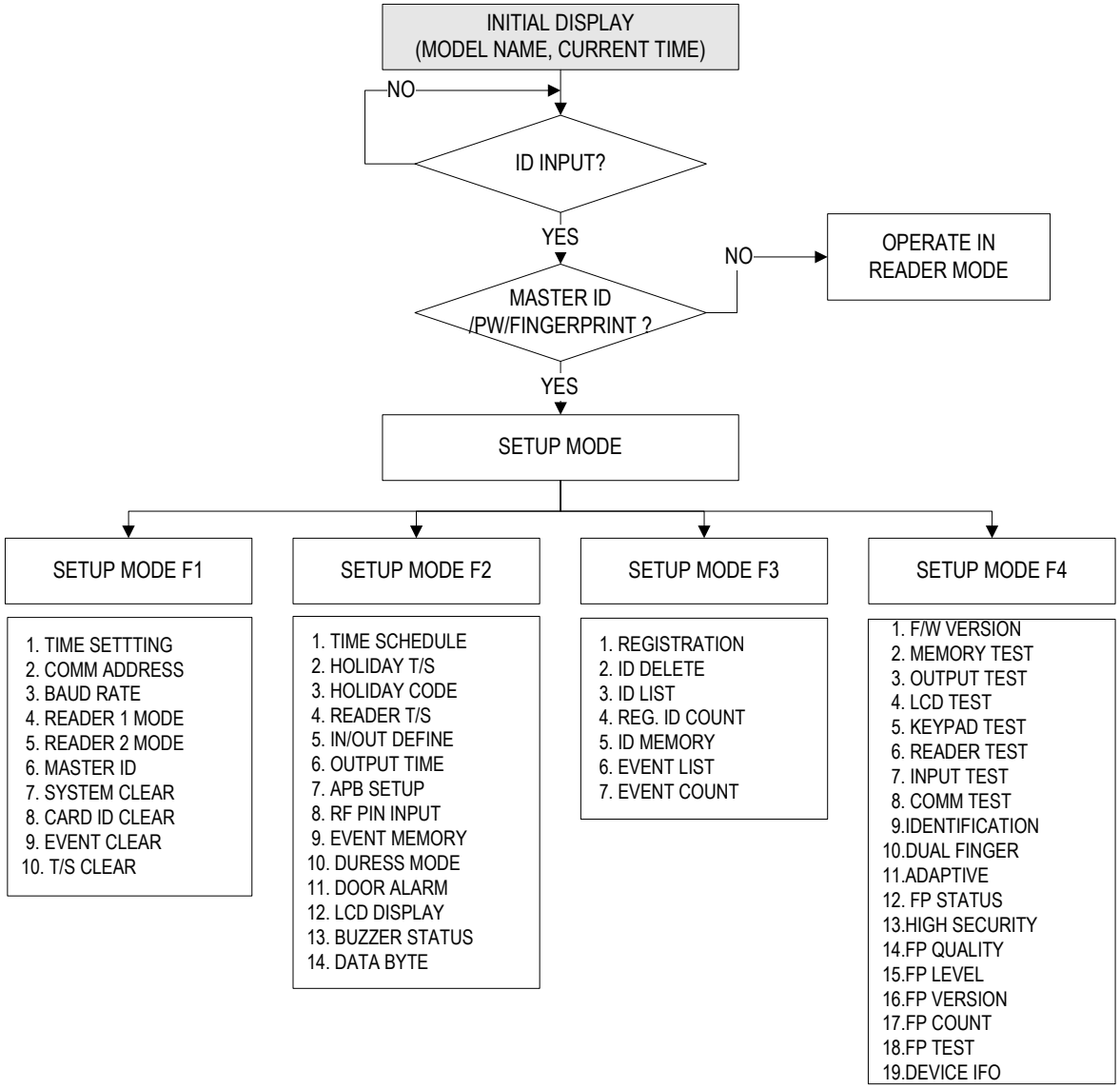
Alarms (Unregistered / Password / Fingerprint / Time Schedule / Door error)

When an unregistered card is read, wrong password is input, wrong fingerprint is input, over the Time Schedule, and access wrong door, the access is denied and the alarm (Relay 2) will be activated for 3 seconds (Defaults) with “RED LED” on.

11.2 Default Setting

When you operate the FINGER007 first time or you initialize the FINGER007, the controller will setup all values defaults (Factory Settings). You can change the settings for desired application. Please refer to the “APPENDIX” section at the back of this manual for the default setting values.

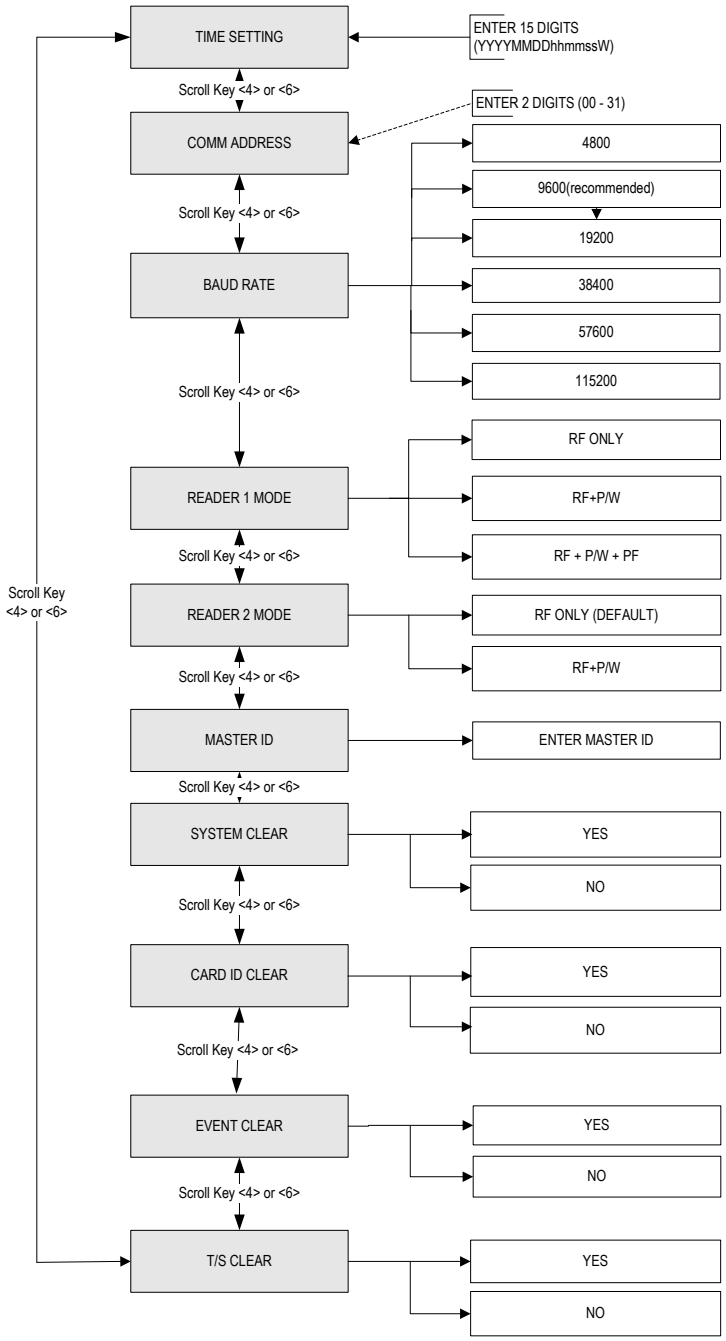
12. Setting Changes



To setup or to change the FINGER007 settings, you have to enter the setup mode first. To do so, enter the Master ID (Default=00000000)* and press the <ENT> key. There are 4 main Setup menus and you automatically get into “SETUP MENU F1” first. You can move to other setup menus by pressing the <F1> key for “SETUP MENU F1”, <F2> key for “SETUP MENU F2”, <F3> key for “SETUP MENU F3” and <F4> key for “SETUP MENU F4”. There are setting items in the main setup menu and you can scroll up or down the menu by pressing the <4> or <6> key. If you press the <ESC> key then the FINGER007 will exit the Setup Mode and return to normal operation in Reader Mode.

*The default Master ID for the FINGER007SR is 0000000000 (Press the <0> key 10 times)

12.1 Setup Menu F1



12.1.1. Time Setting

1. TIME SETTING **MM/DD hh:mm:ss**	The LCD displays the current time. To change the time, press <ENT>, enter 15 Digits in a "YYYYMMDDhmmssW" format, and then enter <ENT> again to confirm.
YYYYMMDDhhmmssW	*NOTE: For the days of the week (W),* *1 : Sun, 2 : Mon, 3 : Tue, 4 : Wed, 5 : Thu, 6 : Fri, 7 : Sat.* *e.g. To input August 24, 2009, 13:30:15, Monday, enter 200908241330152.*

12.1.2. Communication Address

2. COMM ADDRESS
00

2. COMM ADDRESS
12■

A communication address is a unique number assigned to each device for communication. The default address is 00.
For proper communication with the PC, it is important that the value you set here should match the value you set on the application software. It is also important to make sure each device on a loop has a unique address.
To change the communication address of the FINGER007, press <ENT>, enter the desired 2-Digit address in the 00-31 range, and then press <ENT> again to confirm.

12.1.3. Baud Rate

3. BAUD RATE
9600

3. BAUD RATE
->9600

Baud Rate is the measure of speed in serial communication. As for the communication address, the baud rate you set here should match the value you set on the software.
Baud Rates of 4800bps, 9600bps, 19200bps, 38400bps, 57600bps and 115200bps are supported, and 9600bps is recommended.
To change the Baud Rate, press <ENT>, select the desired baud rate by pressing <4> or <6>, and then press <ENT> again to confirm.
NOTE: If a TCP/IP module is being used, the Baud Rate setting must be the same as the TCP/IP module setting.

Troubleshooting Communication Problems

Step 1. Match the communication address between the device and the Application Software.
Step 2. Match the Baud Rate between the device and the Application Software.
Step 3. Ensure that the COM port setting in the Application Software is correct.
Step 4. Ensure that the communication settings in the Application Software are as follows;
1) Parity Bit: None 2) Data Bit: 8 Bits 3) Stop Bit: 1 Bit

12.1.4. Reader1 Mode

4. READER 1 MODE
RF + FP(PW)

4. READER 1 MODE
->RF + PW + FP

You can decide which combination of RF card, fingerprint and password verification you wish to use on Reader1 (the FINGER007 device itself).
To change the Access Mode for Reader 1, press <ENT>, select the "DESIRED MODE" by pressing <4> or <6>, and then press <ENT> again to confirm.

Access Modes for Reader 1
1. RF ONLY: Users can access the door by presenting their card or entering their ID number.
2. RF+F/P (P/W): Users can access the door by presenting their card or entering their ID number and then verifying their identity by a fingerprint. For users who did not register their fingerprints, password verification is used instead of fingerprint verification.
3. RF+P/W+F/P: Users can access the door by presenting their card or entering their ID number and then verifying their identity by both a fingerprint and a password.

12.1.5. Reader 2 Mode

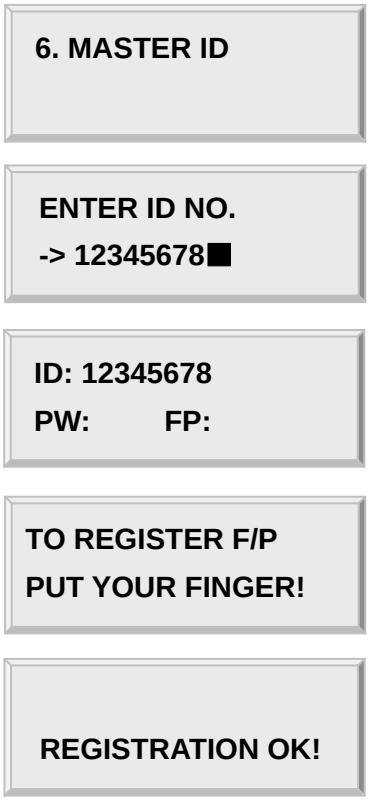
5. READER 2 MODE
RF ONLY

5. READER 2 MODE
->RF + PW

If you have an external reader connected to the FINGER007 (referred to herein as Reader 2), you must adjust this setting according to what access mode is used on Reader 2.
To change the Access Mode for Reader 2, press <ENT>, select the desired mode by pressing <4> or <6>, and then press <ENT> again to confirm.

Access Modes for Reader2
1. RF ONLY: Select this option if Reader 2 is operating without password verification
2. RF+ P/W: Select this option if Reader 2 uses password verification.
NOTE: Proper selection of this setting depends solely on whether Reader 2 uses password verification, but it has nothing to do with whether Reader 2 uses fingerprint verification or not.

12.1.6. Master ID Registration



Master ID is the number/card that you use to enter the Setup Mode. For security reasons, it is advisable that you change the default Master ID immediately and keep the new Master ID / card confidential.

CAUTION: Beware that if you forget the Master ID, you cannot access the Setup Mode.

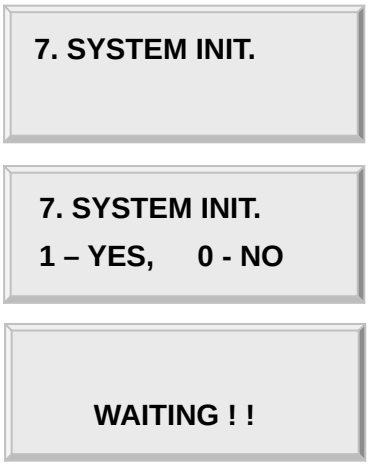
To change the Master ID, press <ENT>, and then either enter the desired 8Digit Master ID or present a card to the reader.

NOTE: For the FINGER007SR, the Master ID is 10Digits long in the range of 0000000000 to 4294967295.

On the next screen, enter the desired 4Digit Master Password in the PW field and, in the FP field, enter <0> if you wish to access Setup Mode without master fingerprint verification or <1> if you wish to use master fingerprint, in which case you will be asked to place your fingerprint on the scanner twice in the next step. When the Master ID/card registration is successfully completed, the LCD displays the "REGISTRATION OK" message.

NOTE: The default Master ID for FINGER007/P and IP-FINGER007 is 00000000 (Eight zeros), but for the FINGER0007SR, it is 0000000000 (Ten zeros)

12.1.7. System Initialization



System initialization allows you to initialize the FINGER007. Initialization clears all the user-defined data stored in the device such as card data, input/output setting, Time Schedules, etc.

CAUTION: Prior to system initialization, make sure to check whether or not the data stored in the device is not needed, since it will be deleted after the initialization.

To initialize the FINGER007, press <ENT>, and then press <1> to confirm. If you wish to cancel and exit without initialization, press <0> instead.

12.1.8. Card ID Clear

8. CARD ID CLEAR	Card ID clear allows you to delete all the card data from the FINGER007. *CAUTION: Before you clear the card memory, make sure you do not need the data stored in the device.* To clear the card data stored in the memory, press <ENT>, and then press <1> to confirm. If you wish to cancel and exit, press <0> instead.
8. CARD ID CLEAR **1 – YES, 0 - NO**	

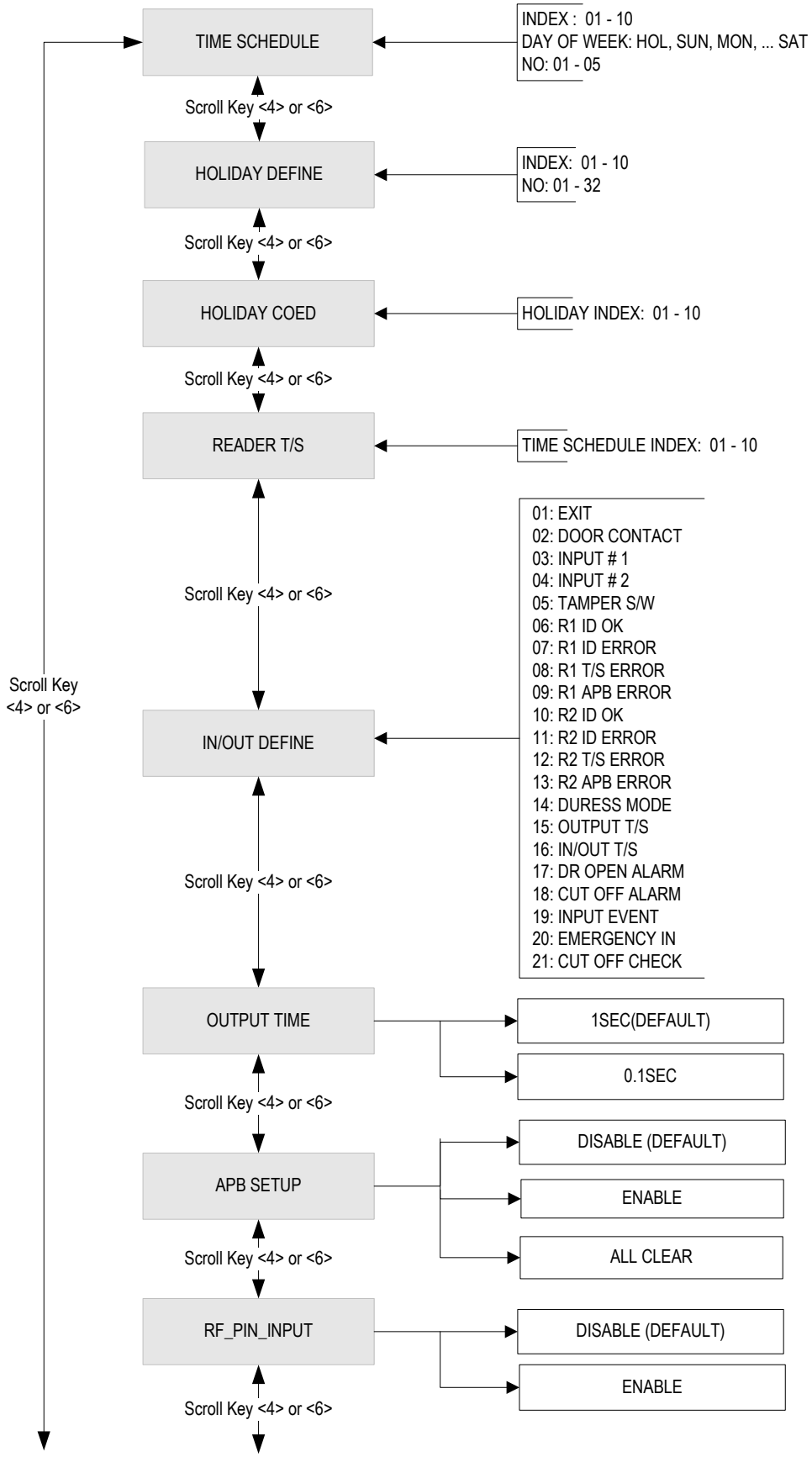
12.1.9. Event Clear

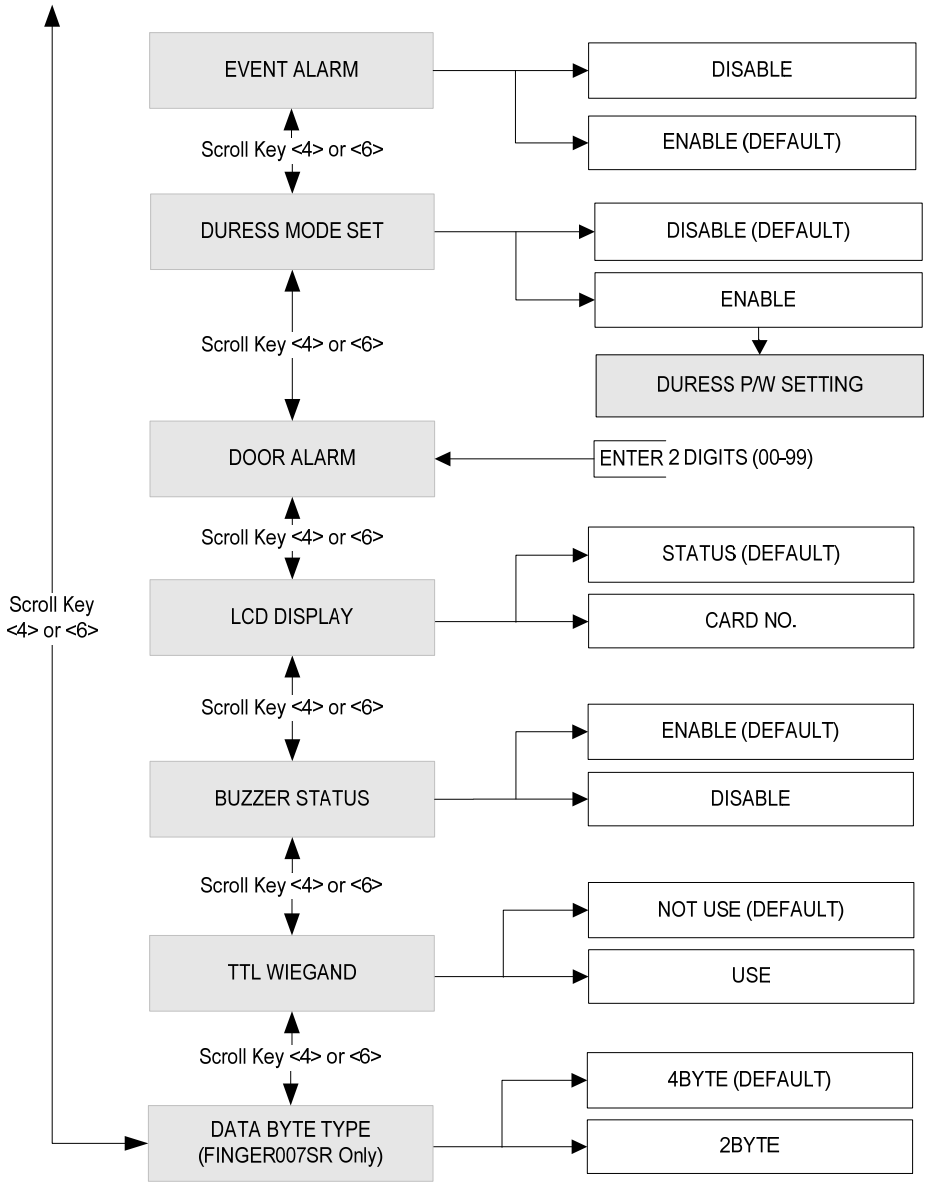
9. EVENT CLEAR	Event clear allows you to delete all the event data from the FINGER007. *CAUTION: Before you clear the event memory, make sure you do not need the data stored in the device.* To clear the event data stored in the memory, press <ENT>, and then press <1> to confirm. If you wish to cancel and exit, press <0> instead.
9. EVENT CLEAR **1 – YES, 0 - NO**	

12.1.10. Time Schedule Clear

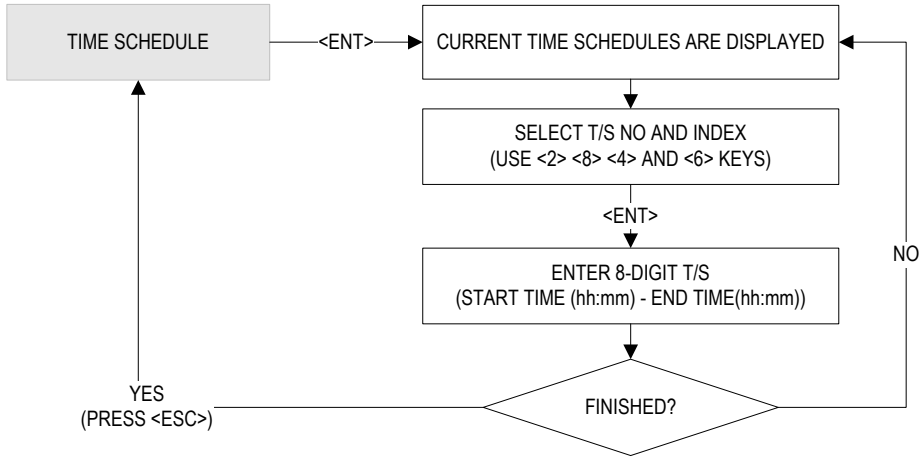
10. T/S CLEAR	T/S Clear allows you to delete all the data related to time scheduling, such as Time Schedules, Holiday and Reader Time Schedules, Holiday Codes, etc. *CAUTION: Before you clear the time schedule Memory, make sure you do not need the data stored in the device.* To clear the time schedule data stored in the memory, press <ENT>, and then press <1> to confirm. If you wish to cancel and exit, press <0> instead.
10. T/S CLEAR **1 – YES, 0 - NO**	

12.2 Setup Menu F2





12.2.1 Time Schedule



1. TIME SCHEDULE

T / S: 01 HOL 1
hh : mm – hh : mm

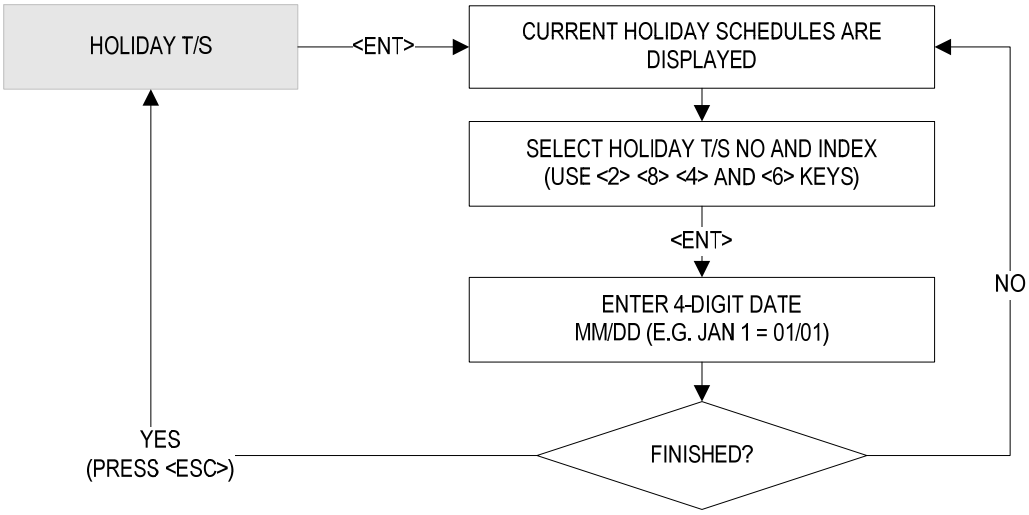
You can define up to 10 time schedule codes. Time schedule code 00 is the default code and can be used to allow round-the-clock access. You can define time schedule codes 01 to 10. Each time schedule code has 8 programmable days (i.e. Sun, Mon, Tue, Wed, Thu, Fri, Sat and holiday) and each day has 5 time intervals.

How to Define Time Schedule Codes

To define a new T/S code or change an existing one, press <ENT>, and the LCD will show T/S information such as T/S code, day, ti7me interval and time period. Press <2> or <8> to scroll up or down the time schedule code (01-10) and the day of the week. (Mon - Sun and holiday). Press <4> or <6> to scroll up or down the time interval. The holiday in this time schedule will be linked to the holiday schedule code. Select a time schedule code, day and Interval, and press <ENT>. Enter the start and end time for the time interval in the 24-hour, hh/mm format, then press <ENT> to save the new T/S settings. Once all information is entered, press <ESC> to return to the menu.

NOTE: You can also define time schedule codes using the Application Software. For more information, please refer to the Software Manual.

12.2.2 Holiday Time Schedule



2. HOLIDAY T/S

HOL TS : 01 #1
MM/DD

You can define up to 10 Holiday T/S codes. Holiday T/S code 00 is the default code without any holidays. (This means that applying Holiday T/S code 00 is the same as applying no holidays at all.) You can define Holiday T/S codes 01 to 10. Each holiday schedule code can have up to 32 holidays defined.

How to Define Holiday T/S Codes

To define a new Holiday T/S code or change an existing one, press <ENT>, and the LCD will show holiday T/S information such as Holiday T/S code, holiday number and date. Press <2> or <8> to scroll up or down the Holiday T/S code (01-10). Press <4> or <6> to scroll up or down the time interval. Select a Holiday T/S code and index, and press <ENT>. Enter the date in the MM / DD format, then press <ENT> to save the new holiday definition. Once all information is entered, press <ESC> to return to the menu.

NOTE: You can also define time schedule codes using the Application Software. For more information, please refer to the Software Manual.

12.2.3 Holiday Code

3. HOLIDAY CODE

T/S INDEX 01
HOLIDAY CODE 00

The Holiday code setting lets you link a holiday schedule to a time schedule. The default holiday schedule code is 00, which means no holidays are applied to the time schedule.
Use <4> or <6> to scroll up or down from the T/S code 01 to 10, and press <ENT>. Then, enter a 2Digit holiday schedule code and press <ENT> to store the changed settings to the memory. To return to the previous menu, press <ESC>.

12.2.4 Reader Time Schedule

4. READER T/S
00

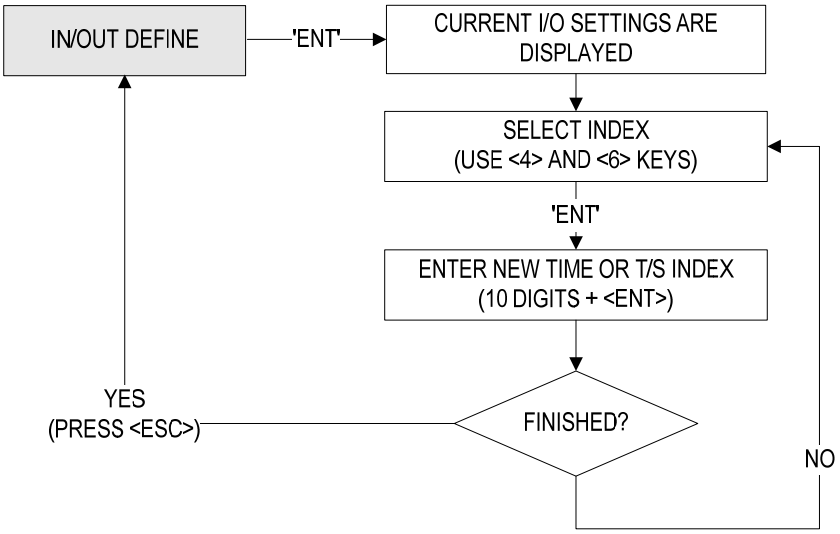
4. READER T/S
01■

You can select one of 3 Access Modes (*i.e.* RF Only Mode, ID+F/P (PW) Mode and RF+PW+F/P Mode) in "READER1 MODE" of "F1 SETUP MENU". However, you may apply RF Only Mode during a certain period of the day. For example, if you wish to allow RF-Only Access from 09:00 to 17:00 while using fingerprint verification for the rest of the time, you can proceed as follows;

1) Set "READER 1 MODE" to RF+F/P Mode.
   (See 11.1.4. Reader 1 Mode)
2) Define T/S code 01 so that it can include a Time Interval between 09:00 and 17:00 for the desired days of the week. *(See 11.2.1 Time Schedule)*
3) Here in Reader T/S, press <ENT>, enter the 2Digit T/S code (In this case, 01), and then press <ENT> again to confirm.
4) To return to the previous menu, press <ESC>.

※Once you input READER T/S, internal and external readers are set to the same value.

12.2.5 Input / Output Definition



5. IN/OUT DEFINE

EXIT
03 00 00 00 00

In/Output Define allows you to adjust In/Output settings (Output activation time, In/Output Time Schedule, Cut-Off Check, etc.).

To change the In/Output Settings, press <ENT> and select an item using <4> or <6> key, and press <ENT> again. After the cursor appears, enter the 10Digit number for the desired setting. Once all information is entered, press <ESC> to exit.

The range of values you can enter in each field is as follows;

- 1-14, 17-18: 00 – 99 (99 is infinite)
- 15-16: 00-10 (Time Schedule Code)
- 19-21:" "USE" or "NOT USE"(Selecting "01" is "USE", Selecting "00" is "NOT USE")

NOTE: The 14.Duress Modem Setting allows you to decide the output signal time for when access is granted following a duress event.

NOTE: When a particular event occurs, the FINGER007 will generate an output signal for Relays #1 and #2, TTL #1 and #2, and Buzzer for the length of time defined for each.

NOTE: For more information, please refer to 13.2 Default Settings for In/Output Relations.

12.2.6 Output Time Setting

6.OUTPUT TIME SET
1 Sec

6.OUTPUT TIME SET
- > 0.1 Sec

Output Time Set allows you to define the unit of time.

- 1 sec: Output Time is calculated in the time unit of 1 second for the In/Output definition.
- 0.1 sec: Output Time is calculated in the time unit of 1/10 second (or 100ms) for the In/Output definition

To change the setting, press <ENT> and press <4> or <6> to select the desired time unit and press <ENT> to confirm.

CAUTION: If your FINGER007 is set to Reader Mode and it is "NOT" used in Standalone Mode, you must always set "OUTPUT TIME" to 1 sec.

Output Time Setting Examples

e.g. If you want to activate the Door Relay (Relay #1, DR) for 3 seconds;
- The Time Unit should be set to 1 SEC.
- The Door Relay (DR) Output Time should be set to "03".

e.g. If you want to activate Door Relay (Relay #1, DR) for 0.5 seconds;
- The Time Unit should be set to 0.1 SEC.
- The Door Relay (DR) Output Time should be set to "05".

12.2.7 Anti-Pass Back

7. APB SETUP
NOT USE

7. APB SETUP
- > USE

The Anti-Pass Back feature is used to prevent an identical user from entering or exiting the door more than twice in a row so that employees cannot pass back their cards to their coworkers. Anti-Pass Back can be applied only when an Exit Reader is installed. "DO NOT" enable it if an "Exit Button" is installed instead of an Exit Reader.

For enable or disable Anti-Pass Back or resetting all APB flags, press <ENT> and press <4> or <6> to select the desired item and press <ENT> to confirm.

Anti-Pass Back Setting Menu Items

- NOT USE: The Anti-Pass Back feature is disabled.
- USE: The Anti-Pass Back feature is enabled.
- ALL CLEAR!: All Anti-Pass Back flags are reset, and access will be allowed one time regardless of the current status of the existing flags.

12.2.8 RF PIN Input

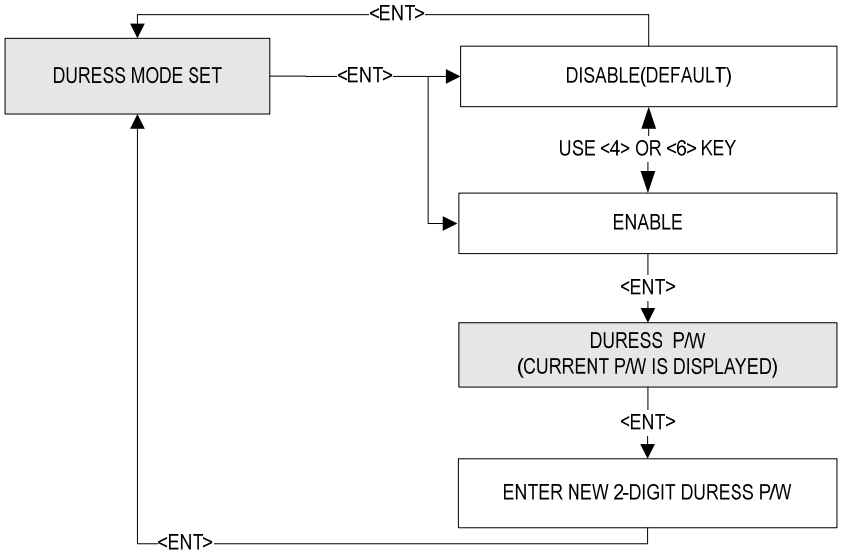
8. RF PIN INPUT **NOT USE** **8. RF PIN INPUT** **- > USE**	RF Pin Input allows you to decide whether to enable or disable PIN (or RF card number) Input via the keypad. By default, PIN Input is disabled. *Caution: If you choose "NOT USE", you cannot gain access via password input when using RF+PW mode. This is same for external readers.*

12.2.9 Event Alarm

9.EVENT ALARM **USE** **9.EVENT ALARM** **- > NOT USE**	Event Alarm allows you to decide whether to enable or disable the event memory full alarm. If you enable Event Alarm, the FINGER007 beeps with an alarm message when the event memory becomes more than 90% full. You can set it regardless of saved events. To enable or disable Event Alarm, press <ENT> and press <4> or <6> to select "USE" or "NOT USE", and then press <ENT> again to confirm.

CAUTION: If the event memory becomes full, the oldest event data is overwritten and lost.

12.2.10 Duress Mode



10. DURESS MODE **NOT USE** **10. DURESS MODE** **- > USE** **DURESS P/W** **12■**	Duress Mode enables a cardholder under duress to activate a silent alarm to notify the security. To enable or disable the Duress Mode and / or set the Duress Password, press <ENT> and press <4> or <6> to select either "NOT USE" or "USE" If you select "USE" the LCD will display the current "DURESS PASSWORD". To change the password, press <ENT> and enter the desired 2-Digit Duress Password, and press <ENT> again to confirm. If you do not wish to change the password, press <ESC>.

NOTE: In case of duress, enter the 2Digit Duress Password and press <ENT> prior to the regular access process. Following a successful access process, access will be granted as usual but, at the same time, a duress alarm will be generated.
NOTE: To learn about how to change the duress alarm output settings, please refer to 11.2.5 In/Output Definition.

12.2.11 Door Open Alarm Time

11. DOOR ALARM **03** **11. DOOR ALARM** **99■**	Door Open Alarm Time refers to the delay between the time at which the Door Relay time finishes and the time at which a Door Open Alarm is activated. To change the Door Open Alarm Time, press <ENT> and enter a 2Digit number as follows; • 00: The alarm will be activated immediately if the door is still left open past the Door Relay Time. • 01-98: Delay (01-98 sec) will be inserted before an alarm is activated. • 99: No alarm. After entering the number, press <ENT> to confirm. *NOTE: For this application, a Door Contact Sensor must be installed on the door.*

12.2.12 LCD Display

12. LCD DISPLAY STATUS **12. LCD DISPLAY - > CARD NO**	LCD DISPLAY allows you to decide whether to display the card number or the status message on the LCD when access is granted or denied. • STATUS: The LCD will display the text message indicating the status, i.e. "ACCESS GRANTED" or "ACCESS DENIED" • CARD NO: Display the number of the card. To change the setting, press <ENT> and press <4> or <6> to select "STATUS" or "CARD NO" and press <ENT> to confirm.

12.2.13 Buzzer Status

13. BUZZER USE **13. BUZZER - > NOT USE**	The buzzer generates a beep when a button on the keypad is pressed, when a card is read, when an error occurs, etc. To enable or disable the buzzer sound, press <ENT> and press <4> or <6> to select "ENABLE" or "DISABLE" and press <ENT> to confirm. *NOTE: The buzzer beeps regardless of this setting, when you exit the Setup Mode, when a memory alarm is activated, or when Buzzer Output is defined in "In/Output Define".*

12.2.14 TTL WEIGAND Output

14. TTL WIEGAND NOT USE **14. TTL WIEGAND → USE**	This function allows whether to use "TTL Output" as "WEIGAND Output" The default value is "NOT USE" You can select setup status by using "<4> or <6>" keys *Caution: If you press "ENTER" after choosing "TTL WEIGAND" to "USE", TTL,1,2 setup values would be initialized to "00".*

12.2.15 Data BYTE (FINGER007SR Only)

14. DATA BYTE
4BYTE

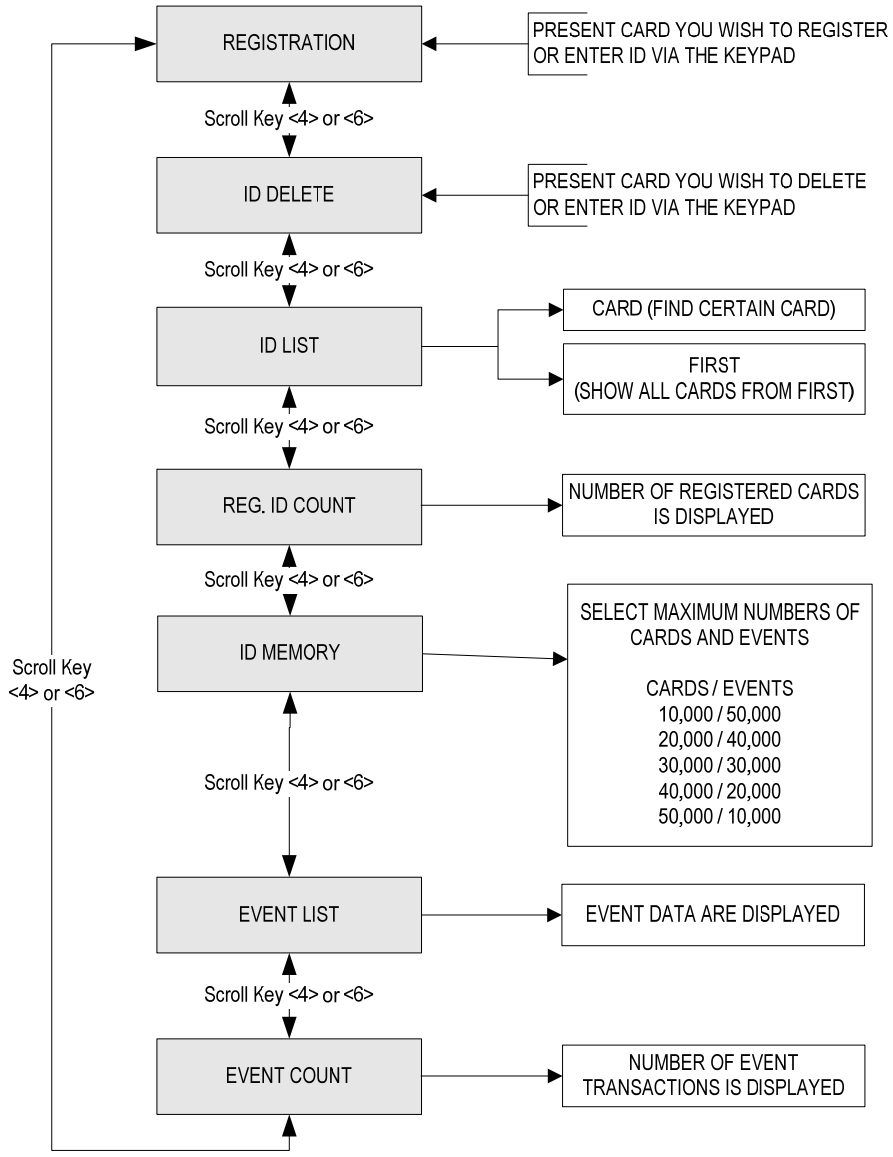
14. DATA BYTE
- > 2BYTE

This feature only applies to the FINGER007SR.
By default, the FINGER007SR can read smart card written in the 4BYTE format, but, for advanced applications, you can use 2BYTE format smart cards. To do so, you must change the Data BYTE setting to "2BYTE". To change the setting, press <ENT> and press <4> or <6> to select "4BYTE" or "2BYTE" and press <ENT> to confirm.

Range of Card Number (FINGER007SR Only)

- 4 Byte (Default): The Card Number can be in the ranges of 0000000000 – 4294967295.
- 2 Byte: The first and last 5 digits can each be in the upper ranges of 00000 ~ 65535.
  lower ranges of 00000-~65535.
  The total is in the ranges of 0000000000~6553565535

12.3 Setup Menu F3



12.3.1 ID Registration

1. REGISTRATION	Registration allows you to add new cardholders to the FINGER007. To add a new cardholder ID, press <ENT>.
ENTER ID NO. **- > _**	Either present a card you wish to register to the FINGER007 or enter the card number (ID) via the keypad and press <ENT>. *NOTE: A Card Number (ID) can be 4 to 8Digits long. For the FINGER007SR, it can be 4 to 10Digits long. For more information about the Card Number Range on the FINGER007SR, see the note under 12.2.14 Data BYTE.*

ID: 12345678 **PW■__TS__RD_FP_**	Once the Card Number is entered, enter the Password (PW), Time Schedule (TS), Reader Number (RD) and Use of Fingerprint (FP) and press <ENT>. For more information, see below.
TO REGISTER F/P **PUT YOUR FINGER!**	If you have entered 1 in the FP field, the fingerprint scanner will be lit up. Then, place the cardholder's fingerprint on the scanner.
LIFT AND **PUT YOUR FINGER!**	Once the light from the fingerprint scanner is turned off, lift the finger up and put it back on a while later.
[Q1:3] [Q2:4] **REGISTRATION OK!**	If the registration is successful, the "REGISTRATION OK!" message will be displayed on the LCD. If you have registered the fingerprint, the quality score for the fingerprint will appear as shown on the left. If the registration is not successful, the "REGISTRATION ERR!" Message will be displayed on the LCD.

Description of Fields

- PW (Password): Enter the 4Digit password. Password verification can be enabled in 11.1.4. Reader1 Mode. This field is compulsory even if you do not use password verification.
- TS (Time Schedule): If you wish to apply a certain time schedule to the cardholder, enter the T/S code. If you wish to allow the cardholder round-the-clock access, enter 0.
- RD (Reader Assignment Code): To use both Readers1 and 2 for the cardholder. Enter 0(or 3). To use just Reader1, enter1. To use just Reader2, enter2.
- FP (Fingerprint): To register the cardholder's fingerprint, enter1. If you do not wish to register the cardholder's fingerprint, enter 0.

12.3.2 ID Deletion

2.ID DELETE	ID Delete allows you to delete existing cards from the FINGER007. To delete an existing card (Or ID), press <ENT>.
ENTER ID NO. **- >**	Either present a card you wish to delete to the FINGER007 or enter the card number (ID) via the keypad and press <ENT>.

ID: 12345678 **DELETE SUCCESS!**	If the card was successfully deleted, the “DELETE SUCCESS!” message will be displayed on the LCD. If the card you presented or the card number you entered is not found, the “UNREGISTERED ID” message will be displayed.

12.3.3 ID List

3. ID LIST	ID List allows you to search for a certain registered card or view the list of all registered cards. To begin, press <ENT>
3. ID LIST **1: CARD 2: FIRST**	To search for a certain registered card, press <1>. To view the entire list of all registered cards, press <2>.
ENTER ID NO. **- >**	If you have entered <1>, enter the Card Number (ID) or present the card you wish to view the information of.
ID: 12345678 **PW1234TS00RD0FP1**	The LCD will show the information of the card you have selected in the previous step or the first card on the list. Press <4> or <6> to view the information of the previous or next card. The “FIRST ID” or “LAST ID” message will appear if you are viewing the first or last ID. If there is no card data, the LCD will display the “MEMORY EMPTY” message. If your FINGER007 is set in Reader Mode, the TS and RD values are not valid and the LCD will display “TS00RD3”.

12.3.4 Registered ID Count

4. REG. ID COUNT **00123**	The number of registered user IDs is displayed. This count automatically increases or decreases as IDs are registered or deleted. The LCD on the left shows that the total of 123 user IDs are registered in the memory.

12.3.5 ID Memory

5. ID MEMORY **10000/50000**	ID Memory allows you to decide how to divide the memory space between IDs and event transactions. The total number of IDs and event transactions combined is a maximum of 60,000. The default setting is 10,000 users and 50,000 event transactions. If you increase the maximum number of IDs, the maximum number of events decreases in the same proportion, and vice versa. To change the memory partition setting, press <ENT>, and press <4> or <6> to select 10000/50000, 20000/40000, 30000/30000, 40000/20000 or 50000/10000 (No. of IDs / No. of Events), and then press <ENT> again to confirm. *NOTE: The event memory must be emptied prior to changing this setting. If you attempt to change the setting with some event data still in the memory, the LCD will display "EVENT MEMORY NOT EMPTY" error message.* *NOTE: If you attempt to reduce the ID memory size to a value lower than the current number of IDs stored in the memory, the LCD will display the "ID TOTAL COUNT WRONG" error message.*
5. ID MEMORY **-> 10000/50000**	
EVENT MEMORY **NOT EMPTY !!!**	
ID MEMORY NOT EMPTY !!!	

12.3.6 Event List

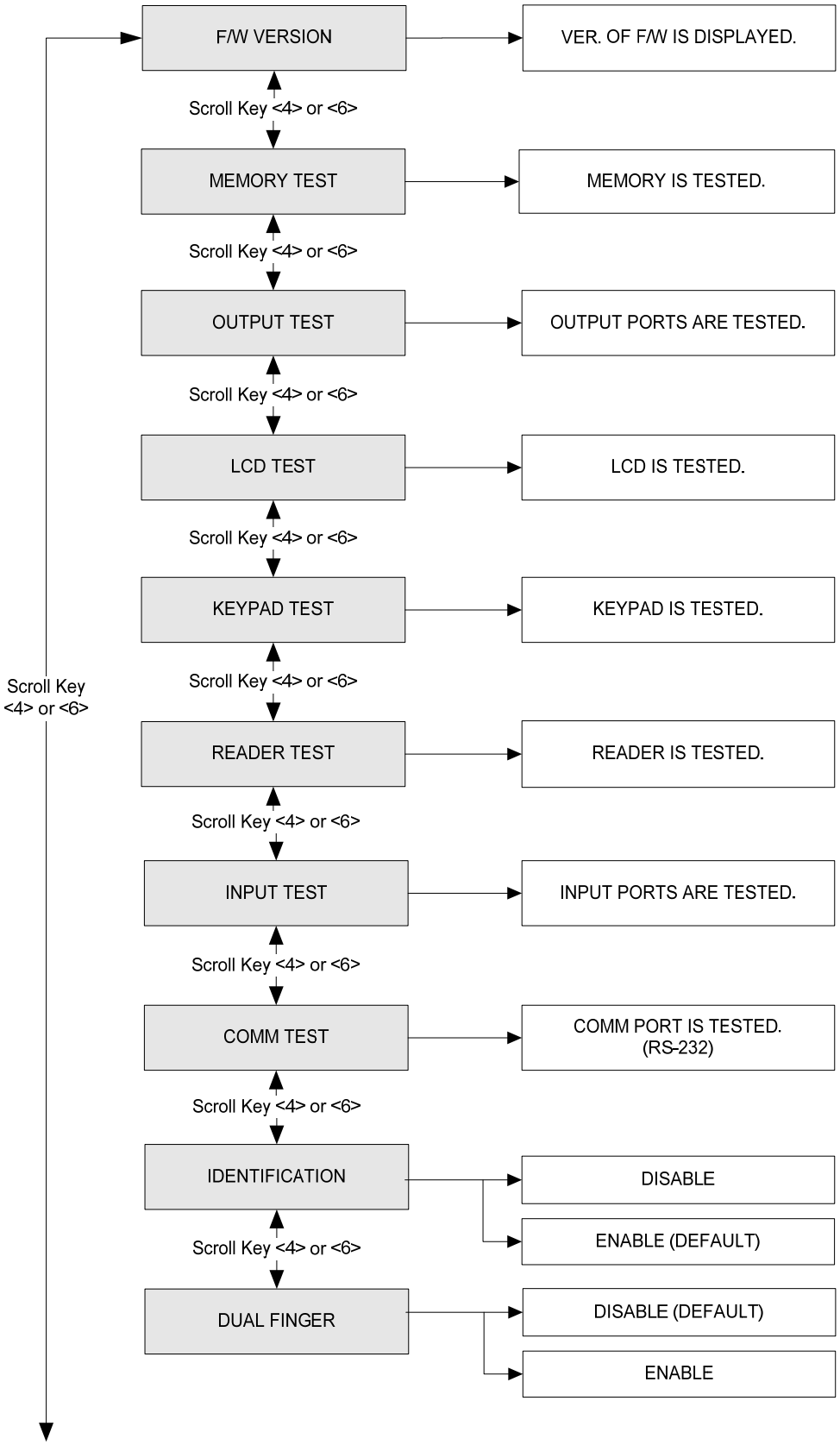
6.EVENT LIST	Event List allows you to check the past access events with the information such as card number, time and date, etc.
ID:00000000 R:1 **08100840242050A**	The LCD displays the information of the access events as follows; Card Number (ID), Reader Number (R: 1 – Reader 1), Event Date (YY/MM/DD), Day of the Week (4: Wed), Time (hh/mm/ss), Access Status (0: Access granted) and Function Key Value (A=F1).
MEMORY EMPTY!!	Press <4> or <6> to view the information of the previous or next event transaction. The "FIRST EVENT" or "LAST EVENT" message will appear if you are viewing the first or last event. If there is no event data, the LCD will display the "MEMORY EMPTY" message.

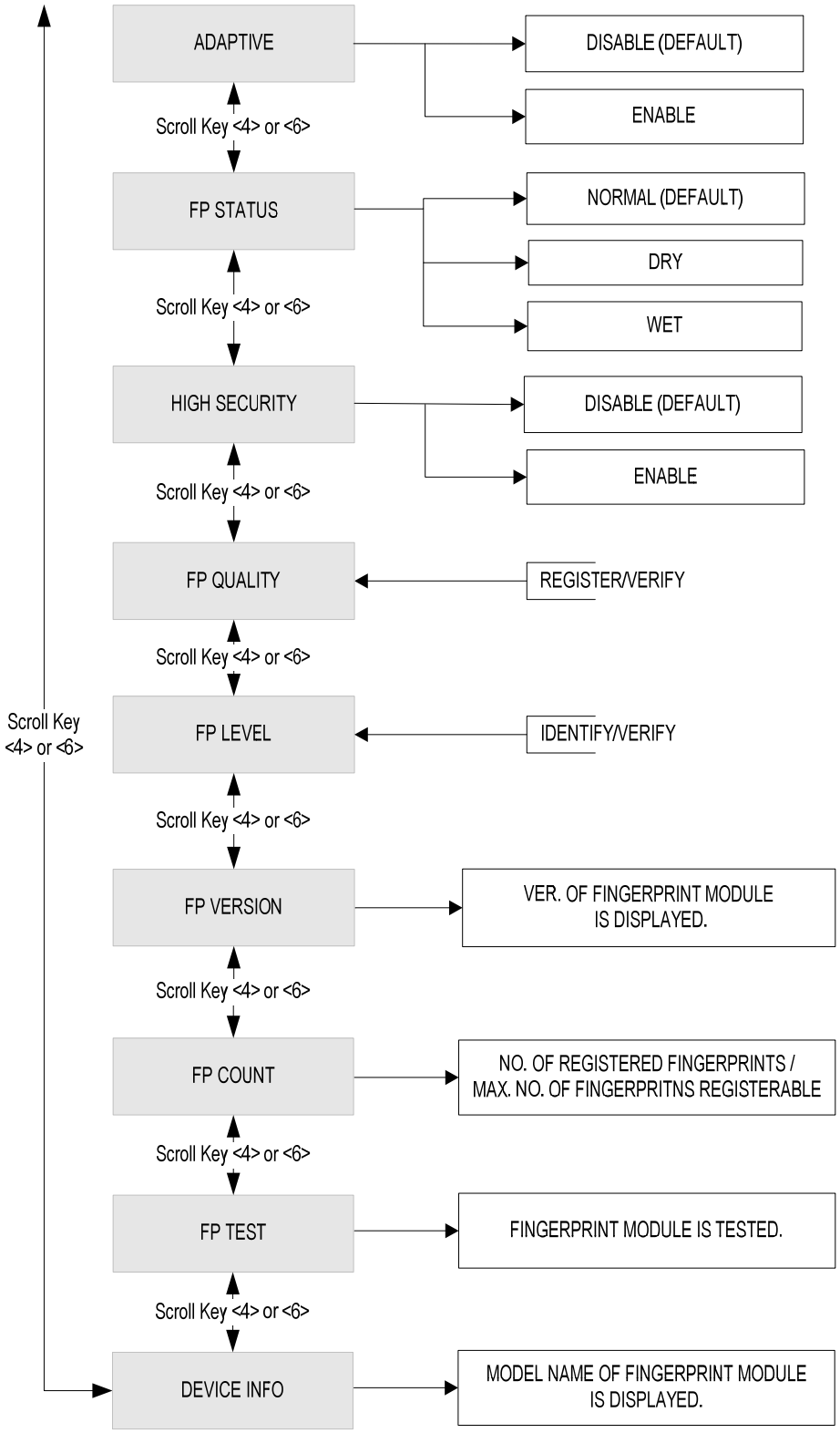
12.3.7 Event Count

7.EVENT COUNT
12345

The number of event transactions is displayed. This count automatically increases or decreases as new events occur or the existing events are uploaded to the PC. The LCD on the left shows that the totals of 12345 event transactions are stored in the memory.

12.4 Setup Menu F4




ADAPTIVE
DISABLE (DEFAULT)
ENABLE
Scroll Key <4> or <6>
FP STATUS
NORMAL (DEFAULT)
DRY
WET
Scroll Key <4> or <6>
HIGH SECURITY
DISABLE (DEFAULT)
ENABLE
Scroll Key <4> or <6>
FP QUALITY
REGISTER/VERIFY
Scroll Key <4> or <6>
Scroll Key
<4> or <6>
FP LEVEL
IDENTIFY/VERIFY
Scroll Key <4> or <6>
FP VERSION
VER. OF FINGERPRINT MODULE
IS DISPLAYED.
Scroll Key <4> or <6>
FP COUNT
NO. OF REGISTERED FINGERPRINTS /
MAX. NO. OF FINGERPRITNS REGISTERABLE
Scroll Key <4> or <6>
FP TEST
FINGERPRINT MODULE IS TESTED.
Scroll Key <4> or <6>
DEVICE INFO
MODEL NAME OF FINGERPRINT MODULE
IS DISPLAYED.

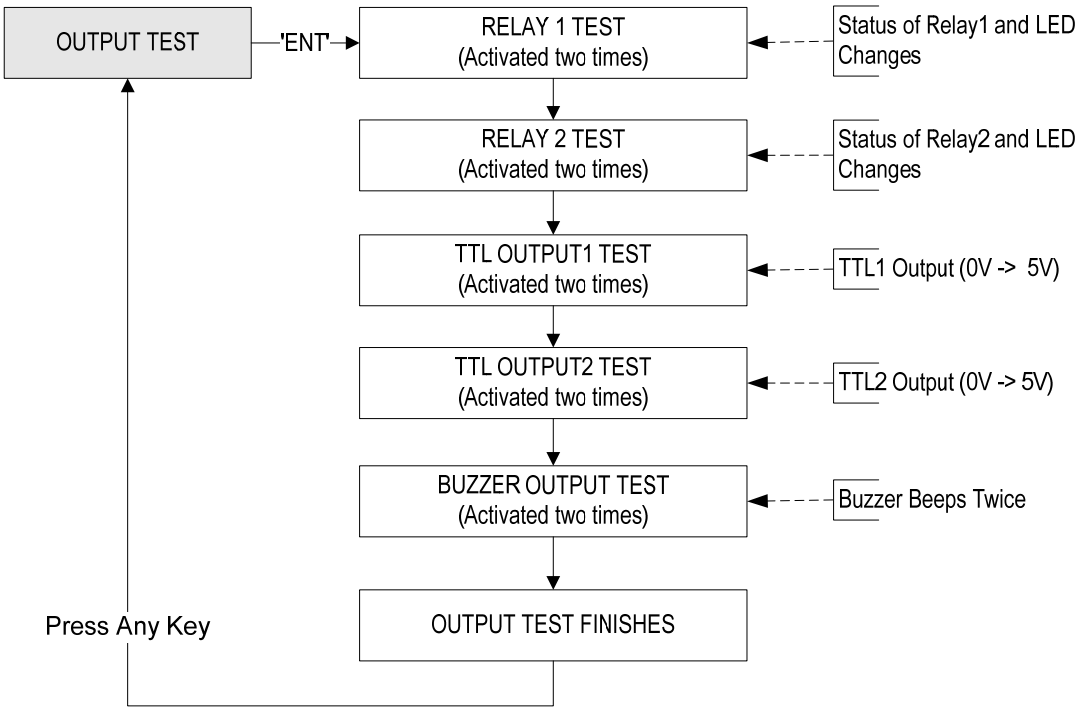
12.4.1 Firmware Version

1. F/W VERSION **V A.1.0**	The version of the firmware installed in the FINGER007 is displayed on the LCD.

12.4.2 Memory Test

2. MEMORY TEST	Memory Test allows you to test the memory of the FINGER007. To begin the test, press <ENT>. If the test is successful, the LCD will display the "TEST PASSED" message. Press any key to finish the test. If the test is unsuccessful, the LCD will display the "TEST FAILED" message. Press any key to finish the test and try again. If the problem persists, please contact your local IDTECK dealer for assistance or service.
TEST FAILED!!! **PRESS ANY KEY…**	

12.4.3 Output Test



3. OUTPUT TEST	Output Test allows you to test the output ports of the FINGER007. To begin the test, press <ENT>. First, output ports1 and 2 will be tested. During the test, relay outputs are activated and you will hear Tick-Tack sounds with the green LED blinking twice. Second, output oorts3 and 4 will be tested. During the test, TTL outputs are activated and the yellow LED blinks twice. You can check the voltage level of the TTL outputs with appropriate test equipment. Lastly, output port 5 will be tested. During the test, you will hear 2 beeps. After all the tests are over, press any key to exit.
OUTPUT 1 **OFF**	
PRESS ANY KEY…	

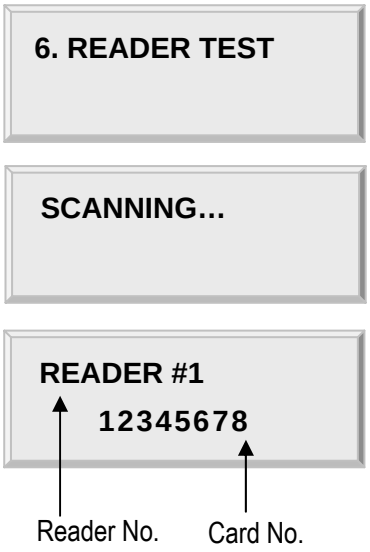
12.4.4 LCD Test

4. LCD TEST	LCD Test allows you to test the LCD of the FINGER007. To begin the test, press <ENT>. Once the test begins, the LCD will display a series of different screens. Ensure that all the screens on the LCD are properly displayed. The test ends with the display of the firmware update date (YYYY/MM/DD). After the test is finished, press any key to exit.
AAAAAAAAAAAAAAA **CCCCCCCCCCCCCCC**	

12.4.5 Keypad Test

5. KEYPAD TEST	Keypad Test allows you to test the keys on the keypad. To begin the test, press <ENT>. Press each key on the keypad, then the number or letter that corresponds to the key pressed will disappear from the screen. After all the keys are pressed, the LCD displays the “TEST PASSED” message. *NOTE: Letter A corresponds to <ESC>, B to <ENT>, C to <F1>, D to <F2>, E to <F3>, and F to <F4>.*
5. KEYPAD TEST **0123456789ABCDEF**	

12.4.6 Reader Test

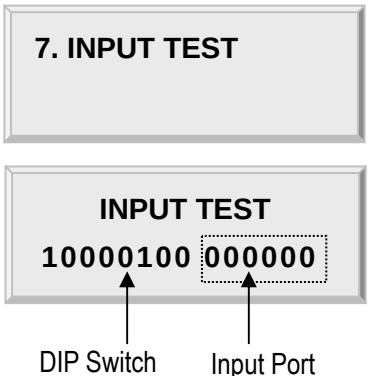


Reader Test allows you to test the reader(s). To begin the test, press <ENT>. While the LCD displays "SCANNING", present a card to the reader you would like to test, and the LCD will display the reader number and the card number. After the test is finished, press <ESC> to exit.

NOTE: Reader#1 refers to the built-in reader of the FINGER007, and Reader #2 refers to an external reader.

NOTE: You can also use Reader Test to check the number of a card.

12.4.7 Input / DIP Switch Test



Input Test allows you to check the status of Input Ports and DIP switches (Communication Address Setting Switches). To begin the test, press <ESC>.

1. DIP Switch: 1=ON, 2=OFF (It shows how the DIP switch on the back of the FINGER007 is set.)
2. Input 1-4: 0=OFF (Disabled)
   1=ON (Enabled)
   2=Input Disconnected
3. Input 5: The status of the tamper switch inside the FINGER007 (0=OFF (Disabled), 1=ON (Enabled))
4. Input 6: The status of the Proximity Sensor (0=OFF (Disabled), 1=ON (Enabled))

If you activate the Cut-Off Check feature for all the input ports in "5.IN/OUT DEFINE" from F2 Setup menu, the result of an input port test will change to 222200 (If termination resistors are not connected) or 000000 (If termination resistors are connected).

12.4.8 Communication Test

8. COMM TEST

TEST PASSED!!!
PRESS ANY KEY…

TEST FAILED!!!
PRESS ANY KEY…

COMM Test allows you to test communication. Prior to the test, connect the RS232-RX wire (Black wire with White stripe) and the RS232-TX wire (Red wire with Black stripe) together. To begin the test, press <ENT>. If the test is successful, the LCD will display the "TEST PASSED" message. Press any key to finish the test. If the test is unsuccessful, the LCD will display the "TEST FAILED" message. Press any key to finish the test and try again after powering the FINGER007 off and back on.

12.4.9 Identification Mode

9. IDENTIFICATION

9. IDENTIFICATION
- > USE

Identification Mode is a feature that allows users to use just fingerprint verification without having to present their cards or enter their ID numbers. If this feature is enabled, a user can just place the fingerprint onto the fingerprint scanner, and then the FINGER007 will perform 1: N authentication for the entire fingerprint templates in the database and grant access if a fingerprint template that matches the user's fingerprint is found.
Default Setting is 'USE'.

12.4.10 Dual Fingerprint Mode

10. DUAL FINGER

10. DUAL FINGER
- > DISABLED

The Dual Fingerprint Mode allows one user to register two different fingerprints per ID. This feature is useful when a user's finger is injured and wishes to use the other registered finger in the verification process.
To enable or disable the Dual Fingerprint Mode, press <ENT> and press <4> or <6> to select "ENABLE" or "DISABLE" and press <ENT> to confirm.

DUAL FINGER	Number of Templates and Fingers	Authentication Success Ratio	Recommended Authentication Mode
NOT USE	2 Storage Templates for a single finger.	High	Identification Mode
USE	1 Storage Template each for 2 different fingers.	Low	Verification Mode

12.4.11 Adaptive Mode

11. ADAPTIVE

11. ADAPTIVE
- > NOT USE

The Adaptive Mode is a feature that improves the quality of fingerprint images in the authentication process, guaranteeing a higher likelihood of successful authentication. However, the authentication process may take longer with this feature on.
To enable or disable the Adaptive Mode, press <ENT> and press <4> or <6> to select "USE" or "NOT USE" and press <ENT> to confirm.

12.4.12 FP Status

12. FP STATUS
NORMAL

12. FP STATUS
- > DRY

FP Status is a special feature designed for special environments where the fingers of most employees might be too dry or wet. If you set the FP Status setting to dry or wet, the FINGER007 will adjust the fingerprint images according to the environment to improve the authentication rate.
To change the setting, press <ENT> and press <4> or <6> to select "NORMAL", "DRY" or "WET" and press <ENT> to confirm.

12.4.13 High Security

13. HIGH SECURITY

13. HIGH SECURITY
- > NOT USE

High Security allows you to enable or disable the latent fingerprint image processing.
Default setting is 'NOT USE'.
CAUTION: Since the image of a latent fingerprint and that of a dry fingerprint are both equally faint, it is hard to tell dry fingerprints from latent images. Therefore, enabling High Security will lower the recognition success rate of dry fingerprints as they might be mistaken to be latent fingerprints.
NOTE: In a place where many users have dry fingerprints, a better recognition success rate can be achieved by adjusting the exposure value higher and/or enabling Adaptive Mode.

12.4.14 FP Quality

14. FP QUALITY
40 / 30

REGISTER / VERIFY
40 / 30

Register Quality and Verify Quality are the threshold values for fingerprint image capture in the fingerprint registration enrollment process (Register Quality) and verification process (Verify Quality). If the quality value for a capture fingerprint image is below the Register Quality threshold, the authentication (registration or verification) is rejected. By adjusting the threshold value, you can control the desired level of fingerprint image quality.

NOTE: If you want to change this function, please consult with IDTECK. Otherwise the recognition success rate is not guaranteed.

12.4.15 FP Level

15. FP LEVEL
8 / 5

IDENTIFY / VERIFY
8 / 5

Verify / Identify Security Level is the threshold value for fingerprint authentication. By adjusting the setting value, you can achieve either a higher recognition success rate or a higher security level.

NOTE: If you want to change this function, please consult with IDTECK. Otherwise the recognition success rate is not guaranteed.

12.4.16 Fingerprint Module Version

16. FP VERSION
V1.71

FP Version allows you to check the version of the fingerprint module on your FINGER007.

12.4.17 Fingerprint Count

17. FP COUNT
0000/1000

FP Count allows you to see how many fingerprints are registered in your FINGER007 and how many can be registered in total. Depending on the specification of the fingerprint module in use, the total fingerprint capacity can be 1000, 2000 or 4000 fingerprints.

12.4.18 Fingerprint Module Test

18. FP TEST **TEST PASSED!!!**	FP Test allows you to test the fingerprint module on your FINGER007. To begin the test, press <ENT>. If the test is successful, the "TEST PASSED" message will be displayed. If the test is unsuccessful, the LCD will display the "TEST FAILED" message. If that is the case, try again. If the problem persists, please contact your local IDTECK dealer for assistance or service.

12.4.19 Fingerprint Device Information Check

19. DEVICE INFO **FIM2260-HD**	Device Info shows you the model name of the fingerprint module on your FINGER007.

13. Appendix

13.1 Default settings of operation modes

No	Operation Mode (Mode Name)	Default Value
1	READER #1 Operation Mode (READER 1 MODE)	ID(RF) + FP(PW)
2	READER #2 Operation Mode (READER 2 MODE)	RF ONLY
3	External & Internal Reader Keypad Input Limit (RF PIN INPUT)	NOT USE
4	Use of Event Memory (EVENT ALARM)	USE
5	Unit of Time for Output Ports (OUTPUT TIME)	UNIT: 1 sec
6	Application Mode to Output Port Time Schedules (OUTPUT T/S)	NOT USE (all codes: 00)
7	Anti-Pass Back Feature (APB SETUP)	NOT USE
8	Duress Mode (DURESS MODE)	NOT USE
9	Door Open Alarm Time (DOOR ALARM)	3 sec (03)
10	Time Schedule (TIME SCHEDULE)	All Time (00:00)
11	Holiday (HOLIDAY T/S)	All Date (00:00)
12	Holiday Code (HOLIDAY CODE)	NOT USE (all holiday codes: 00)
13	Time Schedule Assigned to Internal & External Reader (READER T/S)	NOT USE (code: 00)

13.2 Default Output Settings for Input / Output Relations

INPUT \ OUTPUT	Relay#1	Relay#2	TTL#1	TTL#2	BUZZER
[1] Input #1(EXIT BUTTON)	03	00	00	00	00
[2] Input #2(Door Contact SW)	00	99	00	00	99
[3] Input #3	00	00	00	00	00
[4] Input #4	00	00	00	00	00
[5] Input #5(TAMPER S/W)	00	99	00	00	99
[6] Reader#1 ID OK	03	00	00	00	00
[7] Reader#1 ID Error	00	03	00	00	00
[8] Reader#1 ID T/S Error	00	03	00	00	00
[9] Reader#1 APB Error	00	03	00	00	00
[10] Reader#2 ID OK	03	00	00	00	00
[11] Reader#2 ID Error	00	03	00	00	00
[12] Reader#2 ID T/S Error	00	03	00	00	00
[13] Reader#2 APB Error	00	03	00	00	00
[14] DURESS MODE	03	00	00	00	00
[15] OUTPUT TIME SCHEDULE	00	00	00	00	00
[16] INPUT TIME SCHEDULE	Input #1	Input #2	Input #3	Input #4	Input #5
	00	00	00	00	00
[17] DR OPEN ALARM	Relay#1	Relay#2	TTL#1	TTL#2	BUZZER
	00	03	00	00	00
[18] CUT OFF ALARM	**Relay#1**	**Relay#2**	**TTL#1**	**TTL#2**	**BUZZER**
	00	03	00	00	00
[19] INPUT EVENT	Input #1	Input #2	Input #3	Input #4	Input #5
	01	01	01	01	01
[20] EMERGENCY IN	Input #1	Input #2	Input #3	Input #4	Input #5
	00	00	00	00	00
[21] CUT OFF CHECK	Input #1	Input #2	Input #3	Input #4	Input #5
	00	00	00	00	00

** Index No. [1] - [14], [17]-[18]*
The values indicate the operating time of each output for the input signal.
99 denote "Operating time is not limited".
** Index No. [15]*
The values indicate the Time Schedule Code (index) applied to each output.

** Index No. [16]*
The values indicate the Time Schedule Code (index) applied to each input.
** Index No. [19]-[21]*
The values indicate whether to enable or disable the feature for each output.
(01-USE, 00-NOT USE)

14. FCC Registration Information

FCC Requirements Part 15

CAUTION: Any changes or modifications in construction of this device which are not expressly approved by the responsible for compliance could void the user's authority to operate the equipment.

NOTE: This device complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions;

1. This device may not cause harmful interface, and

2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A Digital Device, pursuant to Part 15 of the FCC rules. These limits are designed to this equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the radio or television off and on, the user is encouraged to try to correct interference by one or more of the following measures.

1. Reorient or relocate the receiving antenna.

2. Increase the separation between the equipment and receiver.

3. Connect the equipment into an outlet on another circuit.

4. Consult the dealer or an experienced radio/TV technician for help.

15. Warranty Policy and Limitation of Liability

IDTECK warrants this product against defects in material and workmanship for the period specified below from the date of purchase under normal customer use. This Warranty doesn't apply: 1) to any product which has been dismantled without authorization of IDTECK or/and has a damaged or detached QC label on its back side; 2) to any losses, defects, or damages caused by improper testing, operation, installation, maintenance, modification, alteration, or adjustment; 3) to any product with a damaged or faded serial number on it; or 4) to any losses, defects, or damages caused by lightning or other electrical discharge, natural disaster, misuse, accident or neglect.

This Limited Warranty is in lieu of all other warranties, obligations, or liabilities on the part of IDTECK, and IDTECK DISCLAIMS ANY AND ALL WARRANTY, WHETHER EXPRESS OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.IDTECK does not, and cannot, know who is present, what property is located, where this product will be used; it would be extremely difficult to determine the actual damages that may result from a failure of the product to perform as anticipated; and the low price of this product is based upon the nature of the product provided and the limited liability that IDTECK assumes. IDTECK IS NOT RESPONSIBLE FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR LOSS, DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR OTHER LOSS, AND IDTECK'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT.

To obtain repair or replacement under the terms of this warranty, visit IDTECK's Website (http://www.idteck.com) and place an online RMA request. After an RMA code is issued, return the product along with the authorization RMA code.

>> Warranty Period

	Product Category	Warranty Period
1	RF CARDS (ACTIVE TYPE)	1 year
	FINGERPRINT MODULE / SENSOR	
2	RF READERS (WITHOUT EPOXY POTTING)	2 years
3	STANDALONE CONTROLLERS	
4	CONTROL PANELS	
5	FINGERPRINT READERS	
6	RF READERS (WITH EPOXY POTTING)	Lifetime
7	RF CARDS (PASSIVE TYPE)	

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference; and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Change or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment under FCC rules.

16. How to Make RMA Request (After Sales Service)

To make the RMA request, the product must be initially registered on IDTECK webpage. After registering the product, send it to IDTECK RMA Center.
Please follow the instructions below:

1. Please register the RMA request via IDTECK webpage.
   : www.idteck.com → "Support & Download" → "Online RMA" → "RMA REQUEST"
   (Please refer to the IDTECK webpage for more details.)
2. RMA Code will be issued after the RMA Center reviews the RMA request form.
3. Enclose the product along with the RMA Code and send it to IDTECK RMA Center.
   (Product without RMA Code is not accepted.)

If you have any questions or problems regarding the RMA services, please contact us using the contact information below. Friendly representatives at IDTECK are always standing by to provide the best after sales services.

IDTECK Headquarter
5F, Ace Techno Tower B/D, 684-1, Deungchon-Dong,
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Website: www.idteck.com
E-Training Center: http://www.idtecktraining.com

IDTECK Production Facility and RMA Center
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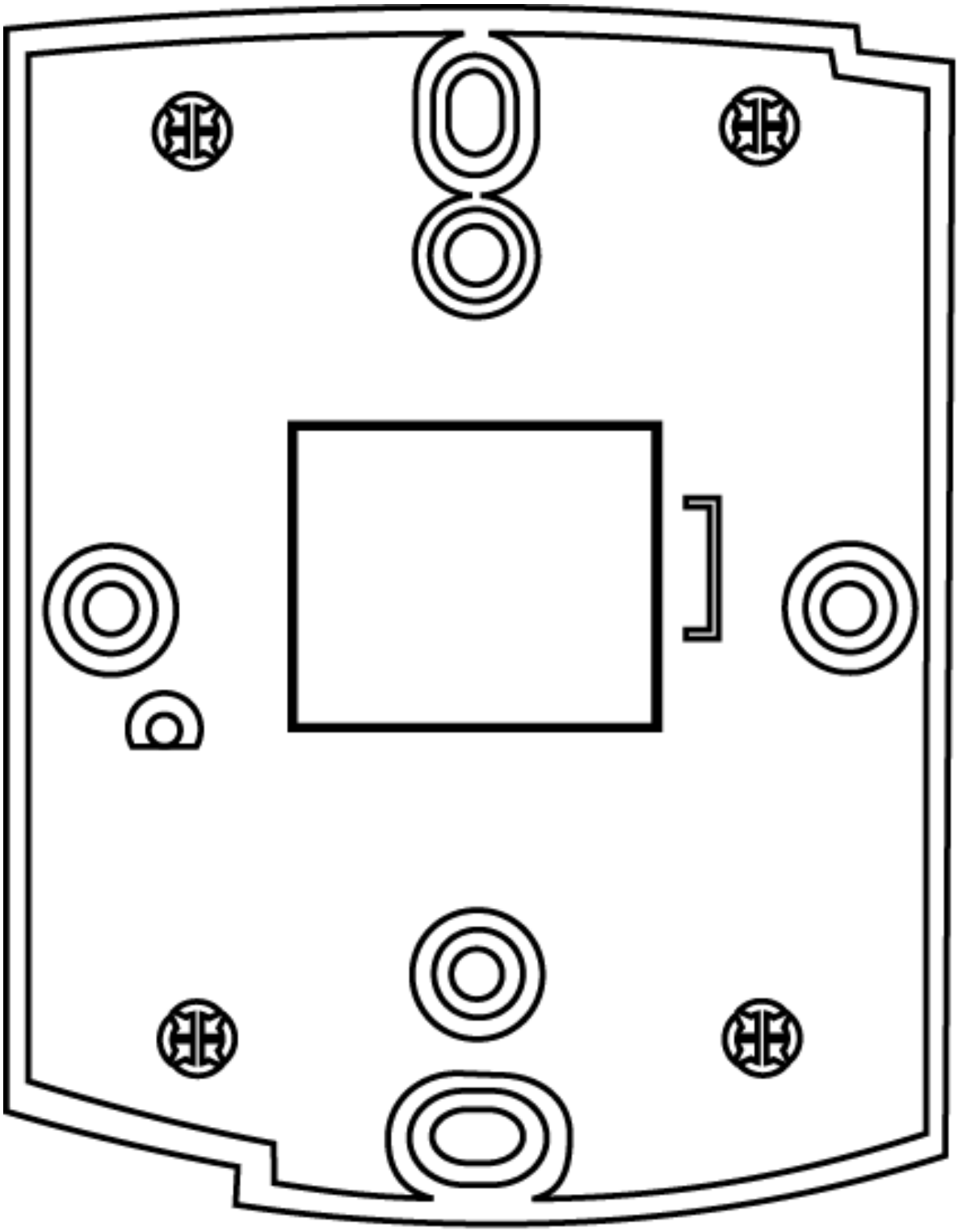
Fax: +82-2-2659-0086
E-mail: webmaster@idteck.com
Website: www.idteck.com
E-Training Center: http://www.idtecktraining.com

17. Template



The specifications contained in this manual are subject to change without notice at any time.

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