UniFinger Evaluation Kit

Datasheet

Ver. 3.0.2

Revision History

Rev No.	Issued date	**Description**
1.0	Nov. 15, 2004	Initial Release
3.0.1	Jul. 21, 2005	In SFM3500 EVK, the pin outs of relay and buzzer are corrected
3.0.2	Dec. 1, 2005	In SFM3500 EVK, the pin out description for relay is corrected Module SDK is replaced with SFM SDK

Contents

Overview

Suprema provides high-performance standalone fingerprint modules ideal for embedded system application where biometric security is needed. UniFinger Evaluation Kit is a demonstration system to enable users to evaluate the core functionality of UniFinger standalone modules quickly and easily. Moreover, the evaluation kit provides quick solution to make use of the standalone module in developing application systems.

The evaluation kit is available for all of the UniFinger modules, including SFM1000, SFM2000, SFM3000, and SFM3500 series. The evaluation kit for SFM1000, SFM2000, and SFM3000 series are compatible, which enables the user to test various models by replacing only the module with sensor. While, the kit for SFM3500 includes different interface board due to diverse extended functionalities of SFM3500 series.

1. Features

- Evaluation kit for UniFinger standalone modules
- User-friendly interface for easy standalone evaluation
- Built-in RS232C interface supporting full functionality evaluation based on communication protocol using PC UI program
- Powerful embedded SDK tools helping quick integration of UniFinger modules into application system
- Simple hardware installation process helping comparison of various models

2. Contents

2.1. Summary

Item	Description
UniFinger module	SFM1000, SFM2000, SFM3000, and SFM3500 series with fingerprint sensors
Interface board	Mother board on which the module is mounted providing diverse interfaces Two types (A, B) differentiated by supporting modules
Serial cable	RS232CC interface cable to connect the interface board with a standard 9 pin serial port
Power adaptor	DC 5V power adaptor to supply regulated power to the interface board
Software CD	CD containing technical documents and application software tools

2.2. UniFinger module

The evaluation kit is available for all of UniFinger standalone modules. Moreover, due to the compatibility of SFM1000, SFM2000, and SFM3000 series, users can evaluate various models by replacing only the UniFinger module. The kit for SFM3500 includes a different interface board due to

diverse extended functionalities of SFM3500 series.

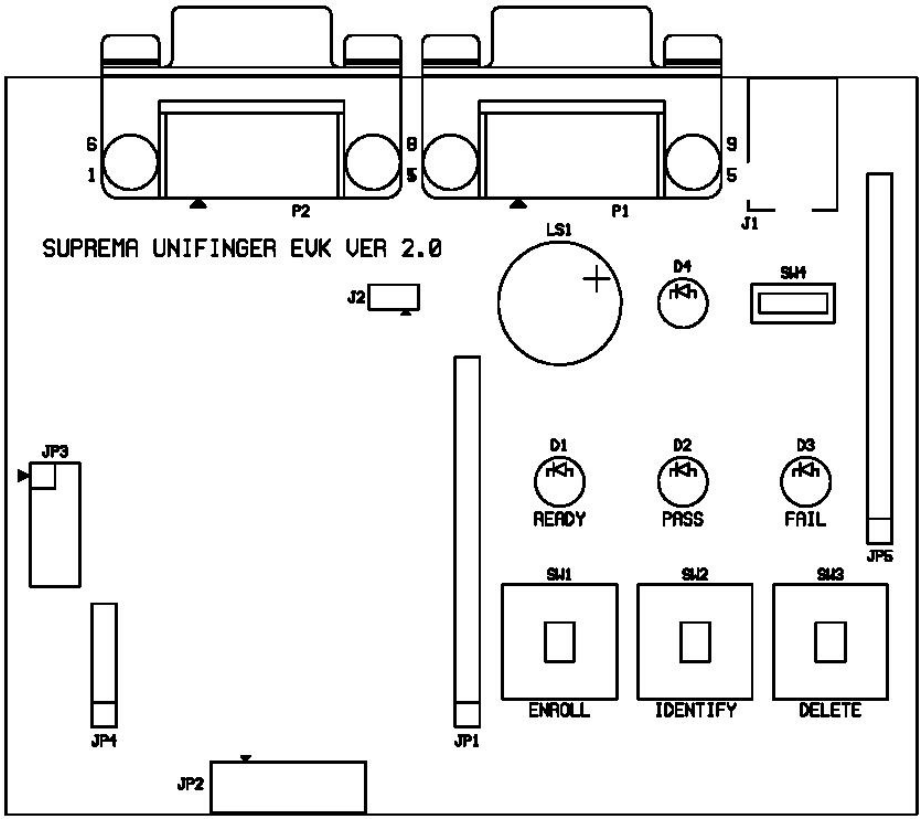
Module series	Available model	Interface board
SFM1000 series	SFM1000-FL, SFM1000-PR, SFM1000-FT , SFM1000-FC	Type A
SFM2000 series	SFM2000-FL, SFM2000-PR, SFM2020-OP, SFM2000-TC, SFM2000-FT, SFM2000-FC,	Type A
SFM3000 series	SFM3000-FL, SFM3000-FS, SFM3000-PR, SFM3000-TC, SFM3010-FC, SFM3020-OP, SFM3040-OL, SFM3040-OC	Type A
SFM3500 series	SFM3500-FL, SFM3500-FS, SFM3500-PR, SFM3510-FC, SFM3520-OP, SFM3550-TC	Type B

2.3. Interface board-Type A

2.3.1. Specifications

Item	Description
Supporting module	SFM1000, SFM2000, SFM3000 series
Size	95mm x 80 mm (WxH)
Power supply	Regulated 5V DC
RS232C port	1
Built-in user interface	3 Buttons, 3 LEDs, 1 Buzzer

2.3.2. Layout



Component	Description
JP1	Module interface pin header socket on which the module is mounted
JP2	Module serial interface connector
JP3	Reserved for internal use
JP4	Pin header socket on which the module is mounted. Reserved for internal use.
JP5	Duplicate of JP1 for user's test
SW1, SW2, SW3	Input buttons for enroll/identify/delete all functions, connected to GPIO0 – GPIO2, respectively.
SW4	Power switch
D1, D2, D3	Status output LEDs signaling ready/success/fail, connected to GPIO0 – GPIO2, respectively

D4	Power status LED
LS1	Buzzer connected to GPIO3
J1	Power adaptor jack
J2	Reserved for internal use
P1	RS232C DB9 female connector for PC interface
P2	Reserved for internal use

2.3.3. Pin assignment

JP1, JP5

Name	Pin number	Description
VSS	4,14	Power Ground
VDD	9	Power pin. 3.3Vdc
GPIO_0 ~ GPIO_7	5,6,7,8, 1,2,3,15	3.3V CMOS, bidirectional port
H_RXD	10	Receive Data
H_TXD	11	Transmit Data
Reserved	12, 13	Reserved for future use

JP2

Name	Pin number	Functions
VDD	1	Power pin. 3.3Vdc
Reserved	2, 3	Reserved for future use
VSS	4,7	Power Ground
H_RXD	5	Receive Data
H_TXD	6	Transmit Data
SHIELD	8	Ground Shield

P1

Name	Pin number	Functions

GND	5	Power ground
TXD	2	RS232C Tx output
RXD	3	RS232C Rx input
NC	1,4,6,7,8,9	No connect

2.3.4. Corresponding connectors of SFM modules

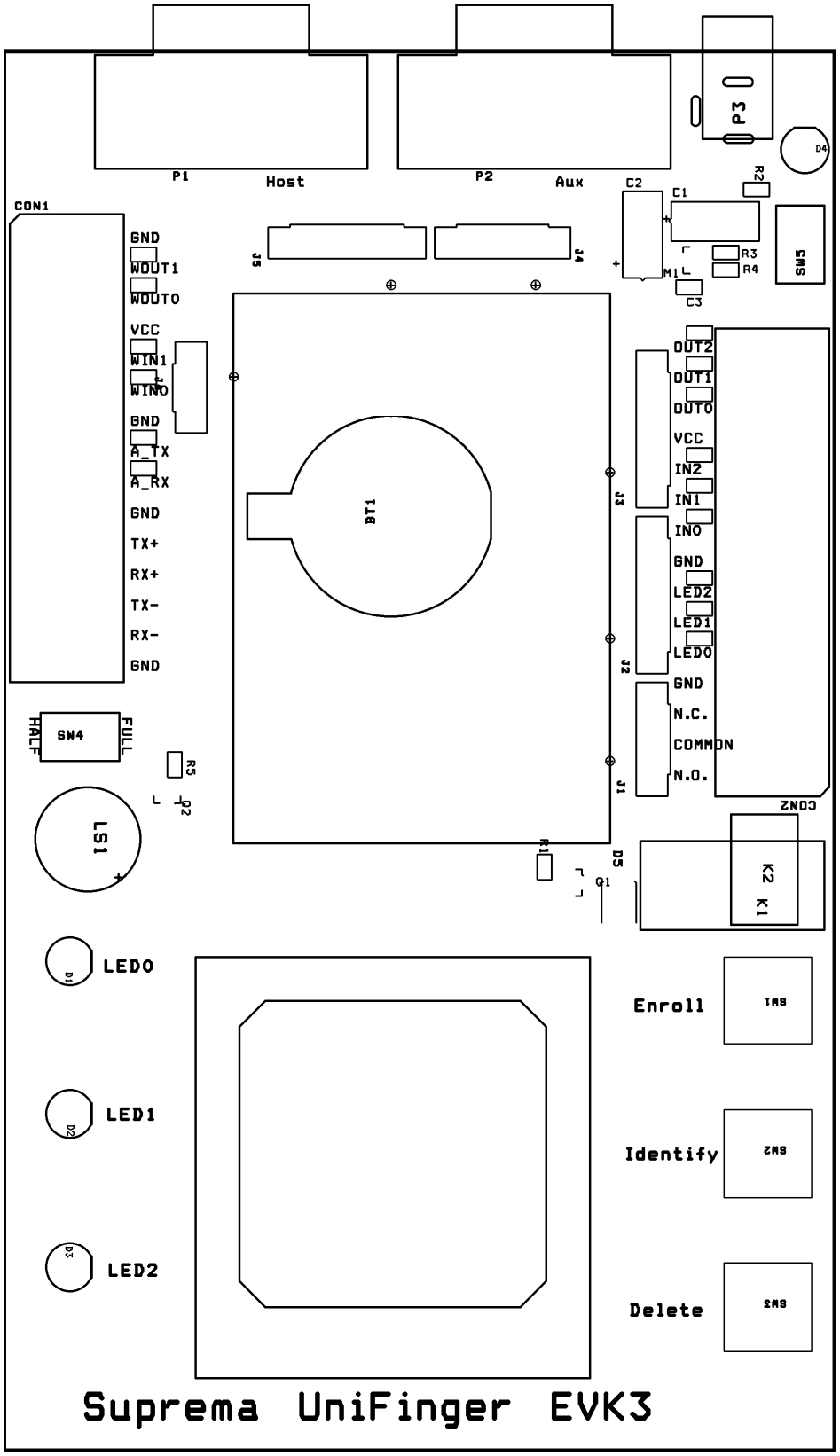
Interface board	JP1	JP4
SFM1000 series	JP4	JP1
SFM2000 series	JP1	JP4
SFM3000 series	J1	J3

2.4. Interface board-Type B

2.4.1. Specifications

Item	**Description**
Supporting module	SFM3500 series
Size	95mm x 165 mm (WxH)
Power supply	Regulated 5V DC
RS232C port	2
Built-in user interface	3 Buttons, 3 LEDs, 1 Buzzer, 1 Relay
User test terminals	2 including versatile interfaces

2.4.2. Layout



Component	Description
J1, J2, J3, J4, J5, J6	Connectors correspondent to SFM3500 interface connectors J1-J6, respectively
P1	RS232C DB9 female connector for host serial port
P2	RS232C DB9 female connector for aux serial port
P3	Power adaptor jack
SW1, SW2, SW3	Input buttons for enroll/identify/delete functions, connected to IN0-IN2 port, respectively.
SW4	RS422/485 duplex mode selection switch
SW5	Power switch
D1, D2, D3	Status output LEDs connected to LED0 – LED2 port, respectively
D4	Power status LED
LS1	Buzzer connected to OUT1 port
K1, K2	Relay controlled by OUT0 port
BT1	A CR2025 type lithium cell for time keeping.
CON1, CON2	Terminals for user's interface test
U5	Fixture holes for sensor boards

2.4.3. Pin assignment

CON1

Pin number	Name	Description
1	GND	Power ground
2	WOUT1	Wiegand out, DATA1
3	WOUT0	Wiegand out, DATA0
4	VCC	5V DC Power
5	WIN1	Wiegand in, DATA1
6	WIN0	Wiegand in, DATA0

7	GND	Power ground
8	A_TX	Aux CMOS serial Transmit data
9	A_RX	Aux CMOS serial Receive data
10	GND	Power ground
11	TX+	Host RS422 TX+ data (full duplex) Host RS485 RTX+ data (half duplex)
12	RX+	Host RS422 RX+ data (full duplex)
13	TX-	Host RS422 TX- data (full duplex) Host RS485 RTX- data (half duplex)
14	RX-	Host RS422 RX- data (full duplex)
15	GND	Power ground

* By switching SW4 to half duplex mode, pin 11-12, 13-14 are connected each other.

CON2

Pin number	Name	Description
1	N.C.	Relay, normally closed with 'COMMON' pin
2	COMMON	Relay, common
3	N.O.	Relay, normally open
4	GND	Power ground
5	LED0	LED0 output
6	LED1	LED1 output
7	LED2	LED2 output
8	GND	Power ground
9	IN0	IN0 input
10	IN1	IN1 input
11	IN2	IN2 input
12	VCC	5V DC power
13	OUT0	OUT0 output
14	OUT1	OUT1 output
15	OUT2	OUT2 output

P1, P2

Name	Pin number	Functions
GND	5	Power ground
TXD	2	RS232C Tx output
RXD	3	RS232C Rx input
NC	1,4,6,7,8,9	No connect

2.5. Software CD

Technical documents and application software are included in the EVK software CD. Detailed contents are as follows:

Item	Description
Manuals	Datasheets of UniFinger modules Datasheet of UniFinger Evaluation Kit Firmware release notes Protocol reference manual Evaluation Kit User guide SFM SDK reference manual Application notes
Brochures	Brochures of UniFinger modules
Utilities	PC UI program Command line tool
SFM SDK	Module interface API for WIN32 environment

3. Related Documents

- ***Protocol Reference Manual***
- ***Evaluation Kit User's Guide***

- ***SFM SDK Reference Manual***
- ***Command Line Tool Reference Manual***

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