

# **UniFinger SFM3000 Series**

## **Firmware Revision Notes**

**Version 1.6**



## Revision Notes

### Firmware Version 1.6

**Build Number 06031900**

2006-03-23

- WSL and RSL commands are added. Security level can be assigned per user basis for 1:1 matching. The minimum security level is lowered to 1/1,000 for 1:1 matching.
- In Normal mode, 1:N matching algorithm gets much faster without any performance degradation. The new algorithm is about two times faster than older versions. Since new Normal mode is faster than old Fast mode 1 for FL, FC and TC2 models, fast mode settings for these three models are adjusted accordingly. New Fast mode 1 is equivalent to old Fast mode 2, new Fast mode 2 to old Fast mode 3, and so on. The Fast modes for OP, OC and TC models haven't been changed.
- Automatic security levels are added. In these modes, the module changes the security level for 1:N matching automatically according to the number of enrolled templates.
- **SFM3000-FL and SFM3020-OP** By tuning the sensor driver, the authentication performance is enhanced especially for dry fingers.
- The following bugs are fixed.
  - It takes long time to process DT command when DELETE\_MULTIPLE\_ID option is given.
  - When CHECK\_FINGER option is given to ET command, the existing templates of the same ID are replaced wrongly.
  - **SFM3010-FC** The heating mode does not work properly with some sensors.

### Firmware Version 1.5

**Build Number 05111100**

2005-11-11

- ETX, RTX, and LTX commands are added.
- ADD\_CHECKSUM option is added to ST command.

- DELETE\_ONLY\_ONE and DELETE\_MULTIPLE\_ID options are added to DT command.
- RS command is added.
- Watchdog system parameter is added.
- The default value of Lighting Condition parameter is changed to Outdoor.
- The default value of Free Scan Delay parameter is changed to 1 second.
- The following bugs are fixed.
  - Encryption mode does not work correctly.
  - EIX command does not return the image quality.
  - ESA command does not return the user ID and image quality.
  - The module hangs if multiple CA commands are received when processing another command.
  - **SFM3050-TC** RI and SI commands return rotated images in Freescan mode.
  - **SFM3050-TC** In rare occasions, CS(Calibrate Sensor) command fails.

**Firmware Version 1.4.1**                      **Build Number 05083000**                      2005-08-30

- **SFM3050-TC** The Sensor driver is updated to enhance sensitivity to dry fingers.

**Firmware Version 1.4**                      **Build Number 05071100**                      2005-07-11

- Broadcast Packet Protocol is changed from 13 bytes to 15 bytes.
- In network mode, the modules only respond to 15 byte network packets.
- Fast Mode system parameter is added. In Fast Mode, 1:N matching time is 2 ~ 7 times faster than normal mode with little degradation of authentication performance.
- Lighting Condition system parameter is added for SFM3020-OP and SFM3040-OC.

- Sensor heating mode is added for SFM3010-FC.
- Free Scan Delay system parameter is added.
- Firmware version starts with 'A'.
- Cancel command is added.
- UG command is added.
- DS command is added.
- User memory commands – ML, MW, and MR – are added.
- Administration level commands – AW, AR, and AC – are added.
- ESA, DSA, and DAA commands are added.
- Extended data transfer protocol is supported.
- EIX, IIX, VIX, SIX, and RIX commands are added.
- ST command returns the quality score of scanned image.
- The following bugs are fixed.
  - When enroll mode is one time(0x30) and CHECK\_FINGER option is given, existing templates of same ID are replaced with new one.

**Firmware Version 1.3**

**Build Number 05042900**

2005-04-29

- Broadcast Packet Protocol is added.
- ID command is added for Broadcast Packet Protocol.
- CHECK\_FINGER and CHECK\_FINGER\_AUTO\_ID options are added for enroll commands. With these options, if a finger is already enrolled, EXIST\_FINGER error will be returned.
- Block index and block size parameters are added to LT command.
- Minimum security level is changed to 1/10,000.

- The following bugs are fixed.
  - When a corrupted template is received in enrollment or verification, the module cannot finish the matching process.
  - **SFM3000-FL** If TIMEOUT is set to infinite, TIMEOUT error returns immediately.

**Firmware Version 1.2.1**

**Build Number 05021400**

2005-02-14

- The following bugs are fixed.
  - ST command does not return the scanned template.
  - When Encryption Mode is on and Template Size is not a multiple of 32, the encrypted templates might be corrupted. It is fixed so that Template Size will be adjusted to a multiple of 32 when Encryption mode is on.
- As a result of fine-tuning the indexing scheme, identification time is improved between heterogeneous templates captured by optical sensors and semiconductor sensors.

**Firmware Version 1.2**

**Build Number 05011800**

2005-01-18

- Time for template extraction and matching is greatly reduced as a result of improving fingerprint authentication algorithm and optimizing it for DSP processor.
- Rotation system parameter is added.
- TemplateSize system parameter is added.
- Enroll command ( ES, EI ) returns image quality score.
- Unused trailing area of templates returned by RT command is filled with 0 instead of garbage.
- SI, ST, KS command can initiate required output port.
- The following bugs are fixed.

- RT command cannot return the latest fingerprint template when Param is NULL.
- First response command has wrong command ID field when FreeScan and AutoResponse is on
- EI, VI, II command uses some portion of images transmitted previously when the size of image is smaller than expected.
- Above limited number of templates ( 10 templates ) can be enrolled to the same user ID when ADD\_NEW option is used and EnrollMode is 2 templates.
- **SFM3010-FC** TIMEOUT error doesn't occur when sensor is not connected.
- **SFM3020-OP** TIMEOUT error doesn't occur when sensor is not connected.

**Firmware Version 1.0**                      **Build Number 04122700**                      2004-12-27

- **SFM3050-TC** The sensor driver for UPEK's TouchChip sensors, including TCS1CD and TSC2CF, is updated to get more reliable image.

**Firmware Version 1.0**                      **Build Number 04121300**                      2004-12-13

- **SFM3040-OC** The sensor driver is updated to fix high power dissipation problem.

**Firmware Version 1.0**                      **Build Number 04120200**                      2004-12-02

- ASCII packet protocol is supported.
- Enroll mode 2 time II and 2 templates II are supported.
- The following bugs are fixed.
  - When enroll mode is 2 templates, ADD\_NEW option of ES command is invalid.

**Firmware Version 1.0**                      **Build Number 04102300**                      2004-10-23

- Default GPIO configuration is modified. All input activation modes are changed from rising edge to active high.
- **SFM3020-OP, SFM3040-OC, SFM3040-OL** Optical sensor drivers are updated to improve finger detection performance. Detection sensitivity and robustness to external lightening condition is adjusted on each sensitivity level.
- **SFM3000-FL** The sensor driver is updated to overcome some rare situations that caused the module hang while capturing fingerprint images, in special cases when the sensor is AF-S2, and the module is started while a finger is pressed.

**Firmware Version 1.0**                      **Build Number 04101500**                      2004-10-15

- 4MB flash memory is supported.

**Firmware Version 1.0**                      **Build Number 04101400**                      2004-10-14

- **SFM3000-TC** UPEK's TouchChip sensor TCS2CF is supported.
- The following bugs are fixed.
  - When GPIO setting is cleared, some communication packets from module such as SCAN\_SUCCESS are lost.

**Firmware Version 1.0**                      **Build Number 04101300**                      2004-10-13

- **SFM3000-FL** Calibrate Sensor (CS) command is supported.
- **SFM3000-TC** Fees Scan mode is supported.

**Firmware Version 1.0**                      **Build Number 04092500**                      2004-09-25

- Created.
- **SFM3000-PR, SFM3000-FL, SFM3000-TC** Firmware Version V1.0A

- **SFM3010-FC** Firmware Version V1.0B
- **SFM3020-OP** Firmware Version V1.0C
- **SFM3040-OC, SFM3040-OL** Firmware Version V1.0E