Suprema’s biometric technology is used across wide areas of applications including physical access control, public/civil ID projects, fintech, forensic science and mobile authentication. Suprema’s biometrics is one of the most widely used technology and supports over 1 billion people globally providing protection, security, and convenience.

Suprema Fingerprint Module is one of the most widely use technology in the world. Suprema Fingerprint Module serves over 60% of the market in Americas, 80% in APAC and has been chosen by more than 100 European manufacturers including multi-national security companies.

Suprema provides a complete selection of sensors to fulfill different needs in various applications. Suprema Fingerprint Module offers an array of optical & capacitive sensor options providing optical, capacitive, waterproof, PIV and live fingerprint detection features.
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Since our first introduction of SFM decades ago, Suprema strives to maintain our market leadership by introducing innovative technologies ahead of competitors. As commitment to innovation has always been a key to our success, we invest more than 16% of turnover to R&D every year. With the years of expertise in biometrics, Suprema owns over 100 technology patents and continuously introduces technology initiatives to the industry.

During the last decade, Suprema has achieved phenomenal growth of 38% CAGR (2006-2014) with its innovative technologies and products. As one of the largest biometrics powerhouse in the world, Suprema’s market capital exceeds USD300 million. (listed company in KOSDAQ)
Suprema Fingerprint Module is specifically designed to deliver high performance biometrics from various form-factor modules, providing huge design flexibility to manufacturers of devices of all sizes. Powered by renowned Suprema Fingerprint Algorithm and sensor technology, Suprema Fingerprint Module empowers your devices with ability to perform fingerprint recognition with unrivaled precision and efficiency.

- World’s Best-selling Fingerprint Module
- Sensor Options to Meet Various Applications
- Unrivalled Precision and Robustness over Time
- Versatile Interfaces for Easy Integration
Suprema Fingerprint Module is designed to provide developers and manufacturers with refined biometric security solutions to integrate with various applications such as access control systems, time & attendance terminals, locks, kiosks, safes, door locks and mobile devices. Powered by the world’s best multi-award winning Suprema fingerprint algorithm, Suprema Fingerprint Module offers both power and reliability synonymous to Suprema.

**Product Overview**

**World’s Best-selling Fingerprint Module**

Suprema Fingerprint Module is designed to provide developers and manufacturers with refined biometric security solutions to integrate with various applications such as access control systems, time & attendance terminals, locks, kiosks, safes, door locks and mobile devices. Powered by the world’s best multi-award winning Suprema fingerprint algorithm, Suprema Fingerprint Module offers both power and reliability synonymous to Suprema.

**Unrivaled Precision and Robustness over time**

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**Sensor options to meet various applications**

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**Live Finger Detection**

Suprema Fingerprint Module is designed to provide developers and manufacturers with refined biometric security solutions to integrate with various applications such as access control systems, time & attendance terminals, locks, kiosks, safes, door locks and mobile devices. Powered by the world’s best multi-award winning Suprema fingerprint algorithm, Suprema Fingerprint Module offers both power and reliability synonymous to Suprema.

**PIV Certified**

Suprema Fingerprint Module is designed to provide developers and manufacturers with refined biometric security solutions to integrate with various applications such as access control systems, time & attendance terminals, locks, kiosks, safes, door locks and mobile devices. Powered by the world’s best multi-award winning Suprema fingerprint algorithm, Suprema Fingerprint Module offers both power and reliability synonymous to Suprema.

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**SFM6000 Series**

High-end fingerprint module with powerful 1.0GHz CPU

SFM6000 Series is the latest and most powerful addition to Suprema’s SFM family of products. It boasts a powerful 1.0GHz CPU that empowers the world’s fastest authentication and support multiple interfaces including RS232 and USB2.0 that enhances high-speed data transfer.

**SFM5500 Series**

High performance fingerprint module with versatile interfaces

SFM5500 Series is a high-end standalone fingerprint module equipped with versatile external interfaces including RS232, RS422/485, Wiegand and LED control, featuring a powerful 533MHz DSP for fast authentication.

**SFM5000 Series**

High performance fingerprint module with live finger detection

SFM5000 Series features a powerful 533MHz DSP for fast authentication and offers an FBI/FIPS201 certified sensor with built-in LFD technology making it the ideal platform for applications that require live finger detection.

**SFM4000 Series**

Compact fingerprint module with power saving technology

SFM4000 Series hosts Suprema’s fingerprint technology in compact form factor. With its advanced power saving feature, it is ideal for applications limited by size and requiring low power consumption.

**SFM3000 Series**

Entry-level fingerprint module

SFM3000 Series provides a cost-effective fingerprint identification solution for developers seeking the bare essentials for fingerprint authentication and template storage.
SFM6000 Series
Ultra High-end performance powered by 1.0GHz CPU

SFM6000 Series is the latest and most powerful addition to Suprema’s SFM family of products. It boasts a powerful 1.0GHz CPU that empowers the worlds’ fastest authentication, supporting multiple interfaces including RS232 and USB2.0 that allows high-speed data transfer. With enlarged template capacity up to 25,000 templates, SFM6000 Series is the perfect solution for a large-scaled yet fast authentication.

- Powerful 1.0GHz CPU
- Storing Max 25,000 Templates (16MB version)
- USB 2.0 Support
- Fast Power-on Time
- 8 Configurable Digital I/O Ports
- 1:1,000 Identification in 400ms and / 1:1 Verification in 330ms
- Android OS Support
- Suprema, ISO19794-2, ANSI378
- WSQ Image Compression Algorithm certified by FBI
- 256-bit AES Fingerprint Data Encryption

SFM6020-OP | Optical Sensor
- IP65 rated optical fingerprint sensor
- Waterproof and scratch-free sensor surface
- Reliable High quality fingerprint image for wet & dry fingers
- Sensor surface optimized to capture the ideal fingerprint image

SFM6030-OC | Optical Sensor
- IP65 rated optical fingerprint sensor
- Waterproof and scratch-free sensor surface
- Reliable High quality fingerprint image for wet & dry fingers
- Sensor surface optimized to capture the ideal fingerprint image

SFM6050-T | Capacitive Sensor
- Capacitive type sensor
- IP65 rated sensor surface with high durability
- Anti-latent fingerprint technology
- Reliable high quality fingerprint image
**SFM5500 Series**

Engineered to perfection, unrivaled performance

SFM5500 Series is a high-end standalone fingerprint module equipped with versatile external interface including RS232, RS422/485, Wiegand, Digital I/O and LED Control, readily applicable to access control applications. SFM5500 Series offers comprehensive functionalities and interfaces to be used as a complete standalone fingerprint access reader by itself.

- Powerful 533MHz DSP
- 1:1 Verification in 550ms
- Fast Power-on Time
- Configurable Digital I/O and LED Control Ports

- Wiegand Input & Output Ports
- Auxiliary Communication Ports
- 1:1,000 Identification in 700ms
- Suprema, ISO19794-2 and ANSI 378 Template Options

- WSQ Image Compression Algorithm certified by FBI
- 256-bit AES Fingerprint Data Encryption
- 8MB Flash Memory Option
- RS232, RS422/RS485 Host Communication

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**SFM5520-OP**  |  Optical Sensor

- IP65 rated optical fingerprint sensor
- Waterproof and scratch-free sensor surface
- Reliable High quality fingerprint image for wet & dry fingers
- Sensor surface optimized to capture the ideal fingerprint image

**SFM5530-OC**  |  Optical Sensor

- IP65 rated optical fingerprint sensor
- Waterproof and scratch-free sensor surface
- Reliable High quality fingerprint image for wet & dry fingers
- Sensor surface optimized to capture the ideal fingerprint image

**SFM5550-TC**  |  Capacitive Sensor

- TouchChip Capacitive sensor
- PerfectPrint Technology
- Reliable high quality fingerprint image
SFM5000 Series

Optimized for performance, minimizing power consumption

SFM5000 Series is the latest Suprema module equipped with world’s leading fingerprint authentication algorithm, which ranked No. 1 in FVC2004, 2006 and on Going. SFM5000 series features powerful 533MHz DSP which optimized for performance with minimizing power consumption.

- Powerful 533MHz DSP
- 1:1000 Identification in 760ms
- 1:1 Verification in 600ms

- Suprema, ISO19794-2 and ANSI 378 Template Options
- Fast Power-on Time
- 256-bit AES Fingerprint Data Encryption
- 8 Configurable Digital I/O Ports
- 4MB Flash Memory Option

SFM5020-OP | Optical Sensor

- IP65 rated optical fingerprint sensor
- Waterproof and scratch-free sensor surface
- Reliable High quality fingerprint image for wet & dry fingers
- Sensor surface optimized to capture the ideal fingerprint image

SFM5030-OC | Optical Sensor

- IP65 rated optical fingerprint sensor
- Waterproof and scratch-free sensor surface
- Reliable High quality fingerprint image for wet & dry fingers
- Sensor surface optimized to capture the ideal fingerprint image

SFM5060-OH | Optical Sensor with LFD

- 500 dpi resolution
- Hybrid live finger detection technology
- PIV/PIPS 201 certification
- Waterproof front side

Hybrid Live Finger Detection Technology

Suprema’s LFD technology is based on the fact that dynamic and static image characteristics of the fake fingers can be distinguished from those of live fingers. By the advanced analysis algorithm to catch the abnormalities in dynamic changing pattern of fingerprints images, and several static features showing liveness or unnaturalness of fingers, fake fingers are clearly distinguished from those of live fingers. This new LFD technology provides cheap and effective solution to protect the fingerprint system from attack via fake fingerprints.

Suprema LFD Technology

- Dynamic changing pattern analysis
- Liveness feature analysis
- Unnaturalness feature analysis
**SFM4000 Series**  
*Compact size with power saving features*

SFM4000 Series is a compact, power efficient module that is simple to integrate with various system applications. The module offers flexible supply voltage, integrated power management, small footprint, and voltage detector functions. SFM4000 Series is specially designed for lock and safe manufacturers who look for an inexpensive, reliable biometric solution with extra low power-consumption and compact size.

- Integrated Power Control Circuit
- Suprema, ISO19794-2 and ANSI 378 Template Options
- Serial Interface with Simple Protocol
- 4 Configurable Digital I/O Ports
- Single 3.3 VDC Regulated Power Source
- 256-bit AES Fingerprint Data Encryption

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**SFM3000 Series**  
*Core features, world class technology*

SFM3000 Series is a cost effective fingerprint identification module equipped with essential part for fingerprint identification and template storage. SFM3000 Series is suitable for most of the applications where it processes fingerprint recognition and host controller is used to handle other operations. The communication between SFM3000 Series and host controller is done by packet protocol through serial interface.

- High Performance 400MHz DSP
- Fast Power-on Time
- Suprema, ISO19794-2 and ANSI 378 Template Options
- 8 Configurable Digital I/O Ports
- Low Power Consumption
- 256-bit AES Fingerprint Data Encryption
- Serial Interface w / Simple Protocol

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**SFM4020-OP**  | Optical Sensor
- IP65 rated optical fingerprint sensor
- Waterproof and scratch-free sensor surface
- Reliable High quality fingerprint image for wet & dry fingers
- Sensor surface optimized to capture the ideal fingerprint image

**SFM3050-TC**  | Capacitive Sensor
- TouchChip Capacitive sensor
- PerfectPrint Technology
- Reliable high quality fingerprint image

**SFM3050-TC2S**  | StealCoated Capacitive Sensor
- IP67 rated dust and water protection
- TouchChip Capacitive sensor
- Perfect Print Technology
- Reliable high quality fingerprint image
**Evaluation Kit (EVK)**

Evaluation Kit is a demonstration system to enable users to evaluate the core functionality of standalone modules quickly and easily. Moreover, the Evaluation Kit provides software tools and technical documents to help users in developing application systems. The evaluation kits are available for all SFM models.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>SFM6000/5000/3000 EVK</th>
<th>SFM5500 EVK</th>
<th>SFM4000 EVK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product</strong></td>
<td><img src="image1" alt="SFM6000/5000/3000 EVK" /></td>
<td><img src="image2" alt="SFM5500 EVK" /></td>
<td><img src="image3" alt="SFM4000 EVK" /></td>
</tr>
<tr>
<td><strong>Communication Ports</strong></td>
<td>RS232 and USB2.0 (SFM6000 only)</td>
<td>RS232 or RS422/485 for PC interface</td>
<td>RS232 for PC interface</td>
</tr>
<tr>
<td><strong>Sensor Options</strong></td>
<td>Optical, Capacitive</td>
<td>Optical, Capacitive</td>
<td>Optical</td>
</tr>
</tbody>
</table>

### FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-board Operation</td>
<td>1 x Enroll button, 1 x Identify button, 1 x Delete button</td>
</tr>
<tr>
<td>On-board UI</td>
<td>3 x LED's, Multi-tone buzzer</td>
</tr>
<tr>
<td>Cable</td>
<td>RS232/USB2.0 (SFM6000 only) interface</td>
</tr>
<tr>
<td>Power Adaptor</td>
<td>5 VDC</td>
</tr>
<tr>
<td>SDK and Utilities</td>
<td>Unifinger SFM SDK, PC user interface program, Unifinger application UI source code</td>
</tr>
<tr>
<td>Specifications</td>
<td>SFM6000 Series</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td>SFM6000 Series</td>
</tr>
<tr>
<td><strong>Sensor Option</strong></td>
<td>Optical, Capacitive</td>
</tr>
<tr>
<td><strong>CPU Performance</strong></td>
<td>1.0GHz</td>
</tr>
<tr>
<td><strong>Flash Memory</strong></td>
<td>8MB/16MB</td>
</tr>
<tr>
<td><strong>EER</strong></td>
<td>&lt; 0.08%</td>
</tr>
<tr>
<td><strong>Enrollment Time</strong></td>
<td>&lt;330 ms (Optical)</td>
</tr>
<tr>
<td><strong>1:1 Verification Time</strong></td>
<td>&lt;400 ms (Optical)</td>
</tr>
<tr>
<td><strong>1:1000 Identification Time</strong></td>
<td>&lt;600 ms (Optical)</td>
</tr>
<tr>
<td><strong>Template Capacity</strong></td>
<td>5,000 @ 8MB Flash 25,000 @ 16MB Flash</td>
</tr>
<tr>
<td><strong>Log Capacity</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Host Communication</strong></td>
<td>Asynchronous serial: CMOS level (3.3V) up to 921600 bps USB2.0 (up to 2M bps)</td>
</tr>
<tr>
<td><strong>Aux Communication</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Wiegand Interface</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>External I/O</strong></td>
<td>8x Digital I/O</td>
</tr>
<tr>
<td><strong>Encryption (Fingerprint Data)</strong></td>
<td>256-bit AES</td>
</tr>
<tr>
<td><strong>Supply Voltage</strong></td>
<td>3.3/5.0VDC Regulated</td>
</tr>
<tr>
<td><strong>Board Size (L x W x H) (mm)</strong></td>
<td>55x40x8</td>
</tr>
</tbody>
</table>

* Average 1:1000 genuine identification time including feature extraction