Suprema
Product Overview
2022
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Proven Leader in Access Control, Time & Attendance and Biometric Solutions
Founded in 2000, Suprema Inc. has become a leading global provider of security and biometrics. By combining world-renowned biometric algorithms with superior engineering, Suprema has introduced a number of technology innovations to the security industry over the last two decades. Suprema’s extensive portfolio includes biometric access control systems, time & attendance solutions, fingerprint live scanners, mobile authentication solutions and embedded fingerprint modules. The company has established itself as a global premium brand in the physical security industry and has worldwide sales network in over 140 countries. Suprema has no. 1 market share in biometric access control in Europe, Middle East and Africa region and has been named the world’s top 50 security manufacturers for ten consecutive years.
2000

1 Billion +

23 Countries

1.5 Million +

100+

A+

EMEA Market Share

No.1

Global Sales Network in

140 Countries

Excellent Financial Stability

(A&S Magazine, 2011-2020, 10 years in a row)

Security Manufacturer

Top 50

National Identification Projects in

Systems in Operation

Industry Patents and Intellectual Properties

Number of people using Suprema technologies

In Biometric Access Control (IHS Markit)

(Korea Investors Service)
BioStar 2 is a web-based, open, and integrated security platform that provides comprehensive functionality for access control, time & attendance, visitor management, and video logs. It supports web API to integrate BioStar 2 with 3rd party software. In addition, users can control the BioStar 2 platform remotely with the mobile app for BioStar 2 and manage Suprema Mobile Access, a mobile credential system that uses smartphones as access keys.
With the purchase of BioStar 2 AC license, you can use advanced access control features like elevator control, advanced anti-passback zone control, fire alarm zone, scheduled lock/unlock zone, intrusion alarm zone, server matching, and video log features.

BioStar 2 AC

BioStar 2 TA

Build a more flexible time & attendance system with BioStar 2 TA module. It lets you set an unlimited number of schedules and specify the number of users for each schedule. BioStar 2 time & attendance module is ideal for an enterprise level system or create a variety of time & attendance rules.

Various Shift Settings
Flexible Work Management
Easy Shift Type Setting
Timesheet Calendar View
BioStar 2, certified for data protection

Suprema BioStar 2 platform and access control devices are certified by ISO for data protection measures and are GDPR and CCPA compliant, meeting all of 26 data protection management standards, 114 data protection control and 18 personal information management requirements. All personal information stored in Suprema products, including biometric data, are encrypted using AES algorithm and the encryption keys are safely managed in cryptochips (SecureElement), with access routes securely blocked.
Leading provider of biometric solutions since 2000, Suprema has continuously innovated fingerprint and facial recognition technology as well as deep learning artificial intelligence that is core to biometric solutions.
Artificial Intelligence

Artificial intelligence is core to biometric recognition technology. Leading provider of biometrics solutions for twenty years, Suprema has naturally advanced its computer vision with machine learning technology as well. Facing and solving real-world problems over the two decades, Suprema has accumulated technological know-how that late comers into the field have not acquired. Because Suprema designs, develops and manufactures the entire product—from algorithm and software to hardware as well—the company possesses technological capability that can optimize and expand upon AI for platforms ranging from the cloud to embedded systems.

Facial Recognition

Suprema took its facial recognition technology to the next level. BioStation 3 adopted NPU, or Neural Processing Unit, to maximize the performance of its AI engine. Combined with Suprema’s domain knowledge and experience as a two-decade access control leader, BioStation 3’s NPU-optimized AI algorithm offers the highest standards in facial recognition accuracy and speed.

Fingerprint Recognition

Suprema’s fingerprint recognition technology is the world’s fastest, most accurate and stable with the false acceptance rate of only rate of 1 in 10 million, matching up to 150,000 people per second. Suprema employs a unique sensor imaging technology that reduces image distortion and uniformly corrects the contrast to enhance authentication performance. Suprema technology identifies fake fingerprints forged with various materials like paper, film, rubber, clay, silicone, and adhesives by comparing irregular fingerprint patterns as well as fingerprint images obtained via infrared and white light. Suprema fingerprint recognition received international certifications (NIST MINEX, FBI, IQS, STQC, FVC) and is suitable for governmental and official authentication purposes.
Along with biometrics, using smartphones as credentials is a growing trend in the access control industry. Suprema lets users replace RF cards and fobs with Mobile Access cards and QR codes issued and managed either on Suprema system or 3rd party solutions.
Suprema Mobile Access

Suprema Mobile Access significantly improves user convenience by letting people use smartphones as access cards. Mobile access cards can be issued on either BioStar 2 or Suprema Airfob Portal and users can receive them via email. Suprema Mobile Access can easily be integrated with 3rd party systems.

- Fast and easy contactless solution
- Support both NFC & BLE (Bluetooth 4.2 or above)
- Remote management via web portal
- Background mode (BLE, Standby mode)
- Compatible with Android (9.0 or above) & iOS (10 or above)

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**CoreStation**

- TCP/IP
- RS-485
- OSDP/Wiegand
- API
- SDK

**Suprema Airfob Pass App**

**3rd Party AC System**

- SDK
- OSDP/Wiegand

**Suprema Airfob Portal**

**BioStar 2**

**Suprema NFC/BLE Device**

**Suprema NFC/BLE Reader**

**3rd Party Controller**

**Authentication**
Suprema Airfob Patch

Suprema Airfob Patch can be attached to existing RF card readers to translate Mobile Access Card’s Bluetooth or NFC signals to RF card signal, making them compatible with credentials stored in mobile devices. Airfob Patch works without battery, harvesting energy from RF signals transmitted from the card reader.

QR Code

Suprema offers the option of using QR codes as credential. Suprema’s versatile intelligent terminal X-Station 2 can read QR codes composed of up to 32 ASCII codes. QR codes can be issued on BioStar 2 or 3rd party systems.
Suprema offers card readers that support dual-frequency RFID technology, compatible with a wide range of card types including MIFARE, DESFire, FeliCa and EM. Suprema card readers can also read mobile credentials using both NFC and BLE communication. Recently released Suprema X-Station 2 is equipped with color LCD touchscreen and QR code recognition and can be used to manage time and attendance as well as visitor passage and access control at unmanned facilities.

**X-Station 2** | Versatile Intelligent Terminal
- Compatible with most RFID cards,
  Mobile Access cards, QR codes
- Enhanced security with Secure Boot and
  OSDP (Open Supervised Device Protocol)
- Built-in Camera for image logs

**XPass 2** | Outdoor Compact RFID Device
- Compatible with most RFID cards and dual-frequency
- Mobile Access cards
- IP67 and IK08 Vandal-proof structure

**XPass D2** | Outdoor Compact RFID Reader
- Compatible with most RFID cards and dual-frequency
- Mobile Access cards
- IP67 and IK08 Vandal-proof structure
- SIA OSDP verified

* Suprema Mobile Access is supported on XPass D2 - V02A H/W versions only.
Suprema controller provides the advantages of a biometric-enabled security over a centralized access control system.

**CoreStation** | Intelligent Biometric Controller

Designed to accommodate enterprise-level systems, Suprema CoreStation stores up to 500,000 users with an incredible fingerprint matching speed of up to 400,000 match per second. Its multi-port interface also supports nonbiometric access control system such as RFID card readers, door locks, alarms sensors and RTE. With its high-performance, biometric readiness and Ethernet communication, CoreStation lets users access the full features of the BioStar 2 platform. Suprema CoreStation can be used in conjunction with door modules and output extension modules to control up to 132 access points. Suprema modules provides secure connection with encrypted communication.

**Input Module (IM-120)**
- 12 supervised inputs
- Offline operation
- Auxiliary & tamper input

**Output Module (OM-120)**
- Up to 12 output relays
- Elevator control with BioStar 2
- Anti-passback, fire alarm feature

**Secure Module (SIO2)**
- Secure door control
- Encrypted communication
- Compact form factor

**Door Module (DM-20)**
- Up to 4 doors
- Encrypted communication
- Two Wiegand interfaces
BioStation 3 sets a new standard in access control, providing a new door access experience that enables improved security across all doors, for organizations of all sizes. This terminal is smaller than previous model, yet it has the largest variety of features.

With highly advanced facial recognition, access credentials and usability features, BioStation 3 makes it easier than ever to safely, securely and conveniently protect an organization’s physical security and users’ personal data.

Multiple Contactless Access Methods

BioStation 3 provides multiple credential options — all contactless and perfectly compatible with a post-pandemic world.

- Facial Recognition
- QR and Barcode
- Mobile Access
- Face Template on Mobile
- RFID Card

1 Available by the end of 2022
2 Suprema’s exclusive authentication method ‘Face Template on Mobile’ lets users enroll into an access control system and store their face profile directly on their own mobile devices. This gives the users complete control over their own ID and their privacy. Users’ biometric data is not stored in company databases.

Enhanced Facial Recognition and Security

BioStation 3’s NPU-optimized AI algorithm offers the highest standards in facial recognition accuracy and speed.

- Accurately and rapidly recognize moving faces in high-traffic areas
- Use dynamic face templates to increase matching performance with faces wearing masks, glasses, hats, beards, different hairstyles, etc.
- Detect fake faces, images, and photos
System Topology

Depending on customer needs, Suprema access control devices can be set up in a distributed or centralized system.
In distributed systems, IP terminals and readers perform the roles of a controller and reader simultaneously, letting you undertake functions such as user management, access control management, and biometric recognition on a single terminal. Suprema's IP terminals and readers improve system reliability with easy system configuration and distributed management. It also provides the benefits of simple wiring, low installation and maintenance costs.
Centralized System

With Suprema’s CoreStation and readers, you can build a centralized system, which is a system based on access control units (ACU). Suprema’s centralized system provides enhanced security and excellent system scalability. The centralized system also enables you to upgrade your existing systems at lower installation cost. Integrated with BioStar 2, this system safely stores all information about each user including the user’s name, ID, PIN, access rights and fingerprint data on a single device.
CoreStation 4 Door Access Control Kit | Complete Access Control Solution

CoreStation 4 Door Access Control Kit contains all components necessary to secure 4 doors. It includes BioStar 2 Access Control Software, CoreStation door controller, 4x access readers of your choice (RFID or Biometrics), and 50 free credits for Suprema Mobile Access. Easily set up a centralized access control system, choosing the credentials of your choice with options: Card, PIN, biometrics, and mobile access cards.
Development Tools
Suprema G-SDK

Suprema G-SDK is a highly-scalable development kit that enables device management for multi-site, multi-tenant customers. It is mobile and cloud-friendly, allowing you to easily add and manage devices via Device Gateways when a new site is added. Based on gRPC, Suprema G-SDK supports many programming languages including Java, C#, Python, Node.js, Go, and C++.

BioStar 2 Device SDK

BioStar 2 Device SDK is a development tool that enables you to control the core features of Suprema’s terminal through 3rd party software.

Suprema Versatile Platform (SVP) Android SDK

The Suprema Versatile Platform (SVP) Android SDK allows you to create customized apps to run on Suprema’s time & attendance and workforce management terminals, NOVUS and OMNIS. The SDK is made up of APIs that let you develop Android applications for utilizing NOVUS and OMNIS’ full functionality.

BioStar 2 API

BioStar 2 API is a Web API that enables integration between BioStar 2 and 3rd party softwares. BioStar 2 API are standardized and allows communication using REST and JSON, making integration and app development easy.
<table>
<thead>
<tr>
<th>Product</th>
<th>FaceStation F2</th>
<th>BioStation 3</th>
<th>FaceStation 2</th>
<th>Facelite</th>
<th>BioStation A2</th>
<th>BioStation 2</th>
</tr>
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<tbody>
<tr>
<td>Product Name</td>
<td>FSF2-DB/AB, Face / FSF2-DBD, Face, Fingerprint</td>
<td>Face</td>
<td>Face</td>
<td>Face</td>
<td>Fingerprint</td>
<td>Fingerprint</td>
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<td>Biometrics</td>
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<tr>
<td>BioStation 3</td>
<td>Face</td>
<td>Face</td>
<td>Face</td>
<td>Face</td>
<td>Fingerprint</td>
<td>Fingerprint</td>
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<td>NFC, BLE</td>
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<td>Max. User(1)</td>
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<td>100,000</td>
<td>30,000</td>
<td>30,000</td>
<td>500,000</td>
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<td>Operating Temperature</td>
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<td>-20°C ~ 50°C (-4°F ~ 122°F)</td>
<td>-20°C ~ 50°C (-4°F ~ 122°F)</td>
<td>-20°C ~ 50°C (-4°F ~ 122°F)</td>
<td>-20°C ~ 50°C (-4°F ~ 122°F)</td>
<td>-20°C ~ 50°C (-4°F ~ 122°F)</td>
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<td>Audio</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Memory</td>
<td>16 GB Flash + 2 GB RAM</td>
<td>32 GB Flash + 4 GB RAM</td>
<td>6 GB Flash + 1 GB RAM</td>
<td>8 GB Flash + 1 GB RAM</td>
<td>8 GB Flash + 1 GB RAM</td>
<td>8 GB Flash + 256 MB RAM</td>
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<tr>
<td>Crypto Chip</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
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<tr>
<td>Dimensions (W x H x D mm)</td>
<td>119 x 233 x 15.5</td>
<td>85 x 172 x 25.4</td>
<td>141 x 164 x 25</td>
<td>152 x 152 x 115</td>
<td>142 x 144 x 45</td>
<td>155 x 35 x 40</td>
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<tr>
<td>Certifications</td>
<td>CE, FCC, UL, RoHS, REACH</td>
<td>CE, FCC, UL, RoHS, REACH</td>
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<td>CE, FCC, UL, RoHS, REACH</td>
<td>CE, FCC, UL, RoHS, REACH</td>
<td>CE, FCC, UL, RoHS, REACH</td>
</tr>
</tbody>
</table>

(1) The number of users registered without any credential data.
(2) DESFire EV2 cards are supported by having backward compatibility of DESFire EV1 cards. CLN and smart card functions are compatible with Suprema devices.
(3) DESFire EV1/EV2 cards are supported by having backward compatibility of DESFire EV1 cards. CLN and smart card functions are compatible with BioStation 3.

### Interfaces
- **Wi-Fi**: Not Supported
- **TCP/IP**: Supported
- **RS-485**: 1ch Host or Slave (Selectable), 1ch Host or Slave (Selectable)
- **Wiegand**: 1ch Input or Output (Selectable), 1ch Input or Output (Selectable)
- **I/O**: 2ch Inputs, 3 Inputs, 2ch Inputs, 2ch Inputs
- **Relay**: 1 Relay, 1 Relay, 1ch in and 1ch Out, 2 Inputs
- **USB**: USB 2.0 (Host), USB 2.0 (Host), USB 2.0 (Host), USB 2.0 (Host)
- **CPU**: 3.8 GHz Dual Core + 1.4 GHz Quad Core, 1.5 GHz Quad Core, 1.2 GHz Quad Core, 1 GHz Quad Core
- **Memory**: 16 GB Flash + 2 GB RAM, 32 GB Flash + 4 GB RAM, 8 GB Flash + 1 GB RAM, 8 GB Flash + 1 GB RAM
- **Crypto Chip**: Supported
- **Audio**: Supported
- **Power**: Voltage-DC 12V ~ DC 24V / Current- Max. 2.5 A, DC 12V 2.5A, DC 24V 1.2A, DC 24V
- **PoE**: Supported
- **Dimensions (W x H x D mm)**: 119 x 233 x 15.5, 85 x 172 x 25.4, 141 x 164 x 25, 152 x 152 x 115, 142 x 144 x 45, 155 x 35 x 40
- **Certifications**: CE, FCC, UL, RoHS, REACH, WEEE
<table>
<thead>
<tr>
<th>Model</th>
<th>Fingerprint</th>
<th>Memory</th>
<th>Card</th>
<th>PIN</th>
<th>DC Power</th>
<th>Temperature Range</th>
<th>Communication</th>
<th>Interfaces</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BioLite N2</td>
<td>Fingerprint</td>
<td>2 Inputs</td>
<td>-</td>
<td>-</td>
<td>DC 12V</td>
<td>-20°C ~ 50°C (-4°F ~ 122°F)</td>
<td>-</td>
<td>-</td>
<td>58 x 190 x 44</td>
</tr>
<tr>
<td>BioEntry W2</td>
<td>Fingerprint</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-20°C ~ 50°C (-4°F ~ 122°F)</td>
<td>-</td>
<td>-</td>
<td>50 x 172 x 43.5</td>
</tr>
<tr>
<td>BioEntry P2</td>
<td>Fingerprint</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-20°C ~ 50°C (-4°F ~ 122°F)</td>
<td>-</td>
<td>-</td>
<td>XS2-ODPB, XS2-OAPB, XS2-QAPB, XS2-ODPB, XS2-OAPB, XS2-QAPB</td>
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<tr>
<td>X-Station 2</td>
<td>-</td>
<td>2 GB Flash + 256 MB RAM</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>125 kHz EM &amp; 13.56 MHz MIFARE, FeliCa</td>
<td>-</td>
<td>-</td>
<td>82 x 208.5 x 25.9</td>
</tr>
<tr>
<td>XPASS 2</td>
<td>-</td>
<td>8 GB Flash + 64 MB RAM</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>125 kHz EM &amp; 13.56 MHz MIFARE, FeliCa</td>
<td>-</td>
<td>-</td>
<td>80 x 120 x 11.4</td>
</tr>
<tr>
<td>XPASS S2</td>
<td>-</td>
<td>16 GB Flash + 1 GB RAM</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>125 kHz EM &amp; 13.56 MHz MIFARE, FeliCa</td>
<td>-</td>
<td>-</td>
<td>533 MHz MIFARE, FeliCa</td>
</tr>
</tbody>
</table>

Notes:
- Some models (BEW2-OAP, BEW2-OHP) do not support BLE.
- BEP2-OA: MIFARE Plus, DESFire EV2/EV5, FeliCa, NFC, BLE, MIFARE Plus, DESFire EV2/EV5, FeliCa, NFC, CLASS SE/SE/Sess
- BEP2-DD: MIFARE EM & 13.56 MHz MIFARE, MIFARE Plus, DESFire EV2/EV5, FeliCa

CE, FCC, MC, RoHS, Reach, WEEE
### Product

<table>
<thead>
<tr>
<th>Product Name</th>
<th>CoreStation (CS40)</th>
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#### Capacity

<table>
<thead>
<tr>
<th></th>
<th>CoreStation (CS40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. User</td>
<td>500,000</td>
</tr>
<tr>
<td>Max. Credential (1:1N)</td>
<td>100,000 Fingerprint: 100,000</td>
</tr>
<tr>
<td>Max. Credential (1:1)</td>
<td>500,000 Fingerprint: 500,000 Card: 500,000 PIN: 500,000</td>
</tr>
<tr>
<td>Max. Text Logs</td>
<td>5,000,000</td>
</tr>
</tbody>
</table>

#### Interfaces

<table>
<thead>
<tr>
<th></th>
<th>CoreStation (CS40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCP/IP Supported</td>
<td></td>
</tr>
<tr>
<td>RS-485</td>
<td>5ch</td>
</tr>
<tr>
<td>RS-485 Communication Protocol</td>
<td>OSDP V2 Compliant</td>
</tr>
<tr>
<td>Wiegand</td>
<td>4ch</td>
</tr>
<tr>
<td>Relay</td>
<td>4 Relay</td>
</tr>
<tr>
<td>TTL Input</td>
<td>8ch (Supervised Input Selectable)</td>
</tr>
<tr>
<td>TTL Output</td>
<td>8ch</td>
</tr>
<tr>
<td>AUX Input</td>
<td>2ch (AC Power Fail, Tamper)</td>
</tr>
</tbody>
</table>

#### Hardware

<table>
<thead>
<tr>
<th></th>
<th>CoreStation (CS40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>1.4 GHz Octa Core</td>
</tr>
<tr>
<td>Memory</td>
<td>8 GB Flash + 1 GB RAM</td>
</tr>
<tr>
<td>LED</td>
<td>Multi-color</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0°C ~ 50°C (32°F ~ 122°F)</td>
</tr>
<tr>
<td>Tamper</td>
<td>Optional (ENC-R-10)</td>
</tr>
<tr>
<td>Power</td>
<td>DC 12V</td>
</tr>
<tr>
<td>Dimensions (W x H x D mm)</td>
<td>150 x 214 x 21</td>
</tr>
<tr>
<td>Certifications</td>
<td>CE, FCC, KC, RoHS, REACH, WEEE, UL294</td>
</tr>
</tbody>
</table>

### CoreStation (CS40) - Specifications

- **Max. User**: 500,000
- **Max. Credential (1:1N)**: 100,000 Fingerprint: 100,000
- **Max. Credential (1:1)**: 500,000 Fingerprint: 500,000 Card: 500,000 PIN: 500,000
- **Max. Text Logs**: 5,000,000

#### Interfaces

- **TCP/IP Supported**
- **RS-485**: 5ch
- **RS-485 Communication Protocol**: OSDP V2 Compliant
- **Wiegand**: 4ch
- **Relay**: 4 Relay
- **TTL Input**: 8ch (Supervised Input Selectable)
- **TTL Output**: 8ch
- **AUX Input**: 2ch (AC Power Fail, Tamper)

#### Hardware

- **CPU**: 1.4 GHz Octa Core
- **Memory**: 8 GB Flash + 1 GB RAM
- **LED**: Multi-color
- **Operating Temperature**: 0°C ~ 50°C (32°F ~ 122°F)
- **Tamper**: Optional (ENC-R-10)
- **Power**: DC 12V
- **Dimensions (W x H x D mm)**: 150 x 214 x 21
- **Certifications**: CE, FCC, KC, RoHS, REACH, WEEE, UL294