**SUPREMA ACCESS CONTROL DEVICE - BioStation 2**

**TECHNICAL SPECIFICATIONS**

2023-06-29

# PART 1 - GENERAL

The intent of this document is to specify the minimum criteria for the design, supply, installation, and commissioning of the BioStation 2.

* 1. SUMMARY

1. Section includes a biometric reader and door controller with Ethernet network connectivity.
2. Product - An IP enabled biometric reader and door controller, capable of scanning and registering fingerprints and RFID cards, managing users and controlling access.
   1. REFERENCE
3. Standards
4. IEEE 802.3/802.3u Ethernet Standards
5. FCC - Code of Federal Regulations, Part 15, Class A
6. Conformity for Europe (CE) - R&TTE Directive 1999/5/EC
7. UK Conformity Assessed (UKCA)
8. Korea Certification (KC)
9. Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) - (EC No. 1907/2006)
10. The Waste Electrical and Electronic Equipment (WEEE) - Directive 2012/19/EU
11. ANSI / IEC60529 – Degrees of Protection Provided by Enclosures
12. International Electrotechnical Commission (IEC) – Ingress Protection Rating IP65
    1. SUBMITTALS
    2. QUALIFICATIONS
13. Manufacturer shall be ISO 9001 certified with a minimum of five years’ experience in producing access control equipment.
14. Installers shall be trained by the Manufacturer to install, configure and commission the access control system.
    1. WARRANTY
15. Manufacturer shall provide a limited ( ) month warranty for the product to be free of defect in material and workmanship.

END OF SECTION

# PART 2 - PRODUCTS

1. EQUIPMENT
2. Manufacturer   
   Suprema Inc.   
   17F Parkview Office Tower, 248, Jeongjail-ro, Seongnam-si, Gyeonggi-do, 13554, Republic of Korea  
   Tel: 82-31-783-4502, Fax: 82-31-783-4503, [https://www.supremainc.com](https://www.supremainc.com/)  
   [https://support.supremainc.com](https://support.supremainc.com/)
3. Model(s) name: BioStation 2

Part Number: BS2

1. Alternates: NONE
2. DESCRIPTION
3. The biometric reader and door controller (“reader/controller”) shall be an IP-enabled device capable of scanning fingerprints and RFID cards, managing users and controlling access.
4. FEATURES
5. NIST MINEX certified and compliant
6. 1:20,000 matches in 1 second
7. IP65, Dust & Water Proof
8. Built-in Wi-Fi module (IEEE 802.11 b/g)
9. Wi-Fi, RS-485, Wiegand, TTL, Relay, USB, SD Card, PoE, Tamper
10. Built-in card reader with card options (125kHz EM, HID Prox, 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3, NFC, Felica, iClass SE/SR/Seos)
11. Intuitive Graphical User Interface (GUI) system
12. Function Keys (F1, F2, F3, F4)
13. SPECIFICATIONS

|  |  |  |
| --- | --- | --- |
| **Category** | **Feature** | **Specification** |
| Credential | Biometric | Fingerprint |
| RF Option | **BS2-OMPW**: 13.56Mhz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3**1)**, FeliCa, NFC |
| **BS2-OIPW**: 13.56MHz iCLASS SE/SR/Seos, NFC |
| **BS2-OHPW**: 125kHz HID Prox |
| **BS2-OEPW**: 125kHz EM |
| RF read range**2)** | EM/HID Prox/MIFARE/DESFire: 50 mm, Felica: 30 mm |
| General | CPU | 1.0 GHz |
| Memory | 8 GB Flash + 256 MB RAM |
| Crypto chip | Supported |
| LCD type | 2.8” color TFT LCD |
| LCD resolution | 240 x 320 pixels |
| LED | Multiple colors |
| Sound | 16-bit |
| Operating temperature | -20 °C ~ 50 °C |
| Storage temperature | -40 °C ~ 70 °C |
| Operating humidity | 0 % ~ 80 %, non-condensing |
| Storage humidity | 0 % ~ 90 %, non-condensing |
| Dimension (W x H x D) | 142 x 144 x 45 (Bottom) / 38 (Top) (mm) |
| Weight | * Device: 440 g * Bracket: 130 g (Including washer and bolt) |
| IP rating | IP65 |
| Certificates | CE, UKCA, KC, FCC, BIS, RoHS, REACH, WEEE |
| Fingerprint | Image dimension | 272 x 320 pixels |
| Image bit depth | 8 bits, 256 gray scale |
| Resolution | 500 dpi |
| Template | SUPREMA / ISO 19794-2 / ANSI 378 |
| Extractor / Matcher | MINEX certified and compliant |
| Capacity | Max. User | 500,000**3)** |
| Max. Credential (1:N) | Fingerprint: 20,000 |
| Max. Credential (1:1) | * Fingerprint: 500,000 * Card: 500,000 * PIN: 500,000 |
| Max. Text Log | 3,000,000 |
| Interface | Wi-Fi | Supported |
| Ethernet | Supported (10/100 Mbps, auto MDI/MDI-X) |
| RS-485 | 1 ch Host or Slave (Selectable) |
| Wiegand | 1 ch Input, 1 ch Output |
| TTL input | 2 ch Input, 2 ch Output |
| Relay | 1 Relay |
| USB | USB 2.0 (Host) |
| PoE | Supported (IEEE 802.3af compliant) |
| Intercom | Supported |
| Tamper | Supported |
| Electrical | Power | * Voltage: 12 Vdc * Current: Max. 0.8 A |
| Switch input VIH | * Min.: 3 V * Max.: 5 V |
| Switch input VIL | Max.: 1 V |
| Switch Pull-up resistance | 4.7 kΩ (The input pots are pulled up with 4.7 kΩ.) |
| Wiegand output VOH | More than 4.8 V |
| Wiegand output VOL | Less than 0.2 V |
| Wiegand output Pull-up resistance | Internally pulled up with 1 kΩ |
| Relay | 2 A @ 30 VDC Resistive load  1 A @ 30 VDC Inductive load |
| Platform | BioStar 2 | Supported |
| BioStar 1 | Supported |

1) DESFire EV2/EV3 cards are supported by having backward compatibility of DESFire EV1 cards. CSN and smart card functions are compatible with BioStation 2.

2) RF read range will vary depending on installation environment.

3) The number of users registered without having any credential data.

END OF SECTION

# PART 3 - EXECUTION

1. INSTALLER
2. Contractor personnel shall comply with all applicable state and local licensing requirements.
3. PREPARATION
4. Contractor shall avoid locating the reader/controller in a location subject to direct sunlight, dust or soot.
5. IP addressing shall be coordinated with the Owner’s responsible IT personnel.
6. STORAGE
7. The device shall be stored in an environment where temperature is in the range of -40°C - +70°C.
8. The device shall be stored in an environment where humidity is in the range of 0% - 90%, non-condensing.
9. INSTALLATION
10. The device shall be installed in an environment where temperature is in the range of -20°C - 50°C.
11. The device shall be installed in an environment where humidity is in the range of 0% - 80%, non-condensing.
12. All wires shall be run through conduit to prevent failure caused by rodent damage.
13. Connections between card readers and a door controller shall not exceed 100 meters.
14. All peripheral devices shall be grounded.
15. To avoid RF interference, a minimum separation distance must be maintained.

|  |  |
| --- | --- |
| Wall thickness | Distance |
| 100 mm | 400 mm |
| 120 mm | 350 mm |
| 150 mm | 300 mm |

1. EXAMINATION
2. All network connections to the reader/controller shall be tested for proper levels of performance.

END OF SECTION