BioStation 3 Max

USER GUIDE

Version 1.02

English
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suprema
SECURITY & BIOMETRICS

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Safety Instructions

Please read this safety instructions before you use the product to prevent injury to yourself and others and to prevent property damage.

The term ‘product’ in this manual refers to the product and any items provided with the product.

Compliance Information

Warning

Used to indicate warning information that could lead to serious injury or death if violated while using the product.

Caution

Used to indicate caution information that may result in minor injury or product damage if violated while using the product.

Info

Used to provide notes or additional information while using the product.

Note

Used to provide notes or additional information while using the product.

⚠ Warning

Install

Be especially careful of miswiring when using high-capacity power supplies.

- Serious fires, electric shocks, or product damage may occur due to miswiring.

Do not allow users to install or repair the product arbitrarily.

- Causes fire, electric shock, or injury.
- No free repair service will be provided if the product is damaged due to arbitrary installation or repair by the user.

Do not install the product in places exposed to direct sunlight, moisture, dust, or soot, or where gas may leak.

- May cause fire or electric shock.

When installing the product outdoors, make sure to install it in a shaded and well-ventilated area.

Do not use a completely sealed enclosure when installing the product outdoors.

- The internal temperature of the enclosure may rise due to direct sunlight, causing fire, electric shock, or product damage.

Do not install the product in places where heat is generated, such as near heaters.

- May cause fire or electric shock due to overheating.

Do not install in damp places.

- May cause electric shock or product damage due to moisture.

Do not install in places with electromagnetic interference.

- May cause electric shock or product damage.

Usage

Do not allow liquids such as water, beverages, or chemicals to enter the product.

- May cause fire, electric shock, or product damage.

Do not use damaged power adapters or plugs, or loose outlets.

- If connections are unstable, may cause fire or electric shock.

Do not bend or break the power cord excessively.

- May cause fire or electric shock.

⚠ Caution

Install

Read this manual carefully before installing the product to ensure safe and correct installation.

When wiring power cables and connectors, make sure to turn off the power to all devices you are connecting before wiring and connecting.

- Devices may malfunction.

Before connecting the power to the product, check the manual again to ensure that wiring is correct, then connect the power.

Do not install the product in places directly exposed to sunlight or ultraviolet light.

- May cause product damage, malfunction, discoloration, or deformation.

Do not leave power cables in passageways.

- May cause bodily injury or product damage.

Do not install near strong magnetic objects such as magnets, TVs, CRT monitors, or speakers.

- The device may malfunction.

When installing multiple devices, ensure the minimum spacing distance is observed.

- May affect the RF and BLE performance of other devices, causing them to malfunction.

Use a power adapter that has IEC/EN 62368-1 approval and is rated above the power consumption of the terminal device. It is recommended to use the power adapters sold by Suprema.

- Using an unsuitable power supply may cause devices to malfunction.
- Refer to the Power in the product specifications for maximum current consumption specifications.

Ensure that the product and Secure I/O 2, electric lock (electronic locking device) use separate power supplies.

- Devices may malfunction.

Do not connect the power supply and PoE+ power together.

- Devices may malfunction.

To meet IP65 standards, make sure to use a cable cover after connecting the product and cable. It is recommended to use an enclosure when installed outdoors with full exposure.

- Decreased waterproof and dustproof performance may cause malfunction.

When connecting PoE+ power, make sure to connect it according to PoE+ or PoE++ standards.

- Using standard PoE may cause devices to operate unstably or be permanently damaged.

Usage

Do not drop or subject the product to shock.

- The device may malfunction.

Ensure the power supply is not interrupted during firmware upgrades of the product.

- The device may malfunction.

Manage the password so others do not know it, and change it regularly.

- This may lead to unauthorized access.

Do not press the product's buttons (touchpad) forcefully or use sharp tools to press them.

- The device may malfunction.

Use the product within -20 °C to 50 °C and store it at appropriate temperatures, not too low or too high.

- The device may malfunction.

Be careful when cleaning the product.

- Gently wipe the product surface with a clean, dry cloth.
- If disinfecting the product, dampen a clean cloth with a suitable amount of disinfectant alcohol and gently wipe the product surface. Use disinfectant alcohol that contains 70-75% isopropyl alcohol and a clean, lint-free soft cloth.
- Do not spray disinfectant directly onto the product.

Do not use the product for purposes other than its intended use.

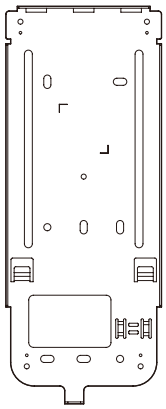
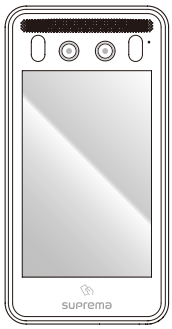
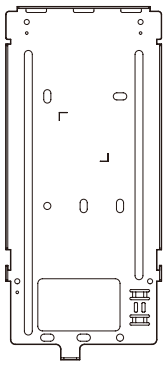
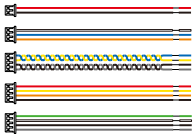
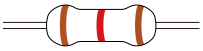
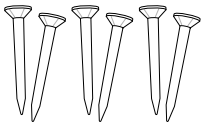
- The device may malfunction.

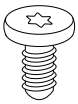
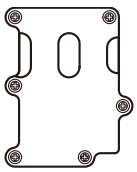
> **RTC Battery**
>
> Replacing with unauthorized or incorrect types of batteries may pose a risk of explosion. Dispose of batteries according to local or international waste regulations.

Getting Started

Provides initial procedures for getting started with the device.

Components

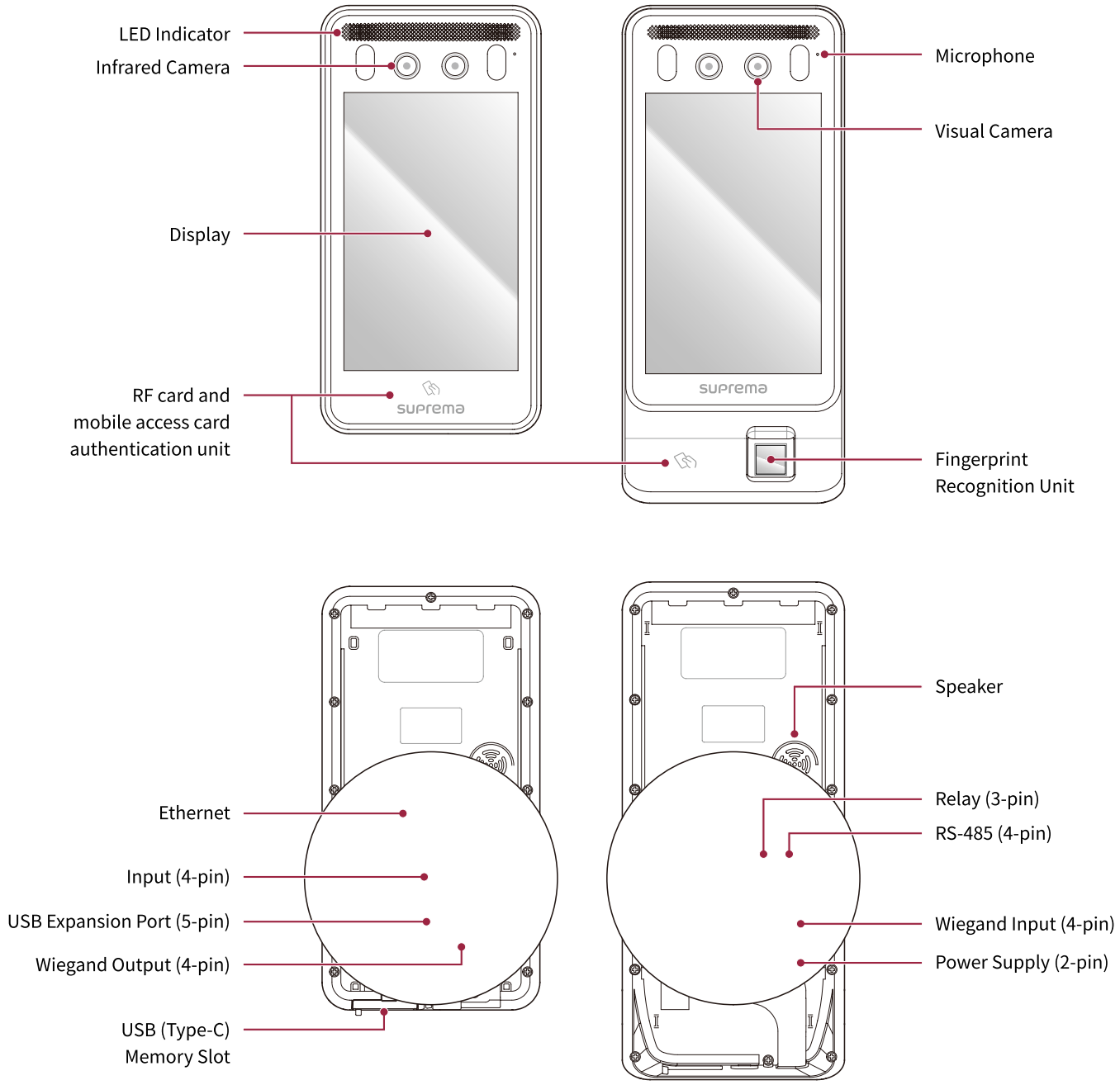
			
BioStation 3 Max (BS3M-ODB, BS3M-OAPB)	Wall Bracket (BS3M-ODB, BS3M-OAPB)	BioStation 3 Max (BS3M-DB, BS3M-APB)	Wall Bracket (BS3M-DB, BS3M-APB)
			
Connection Cables	Diode	120 Ω Resistor	Fixing Screw x6

		
Bracket Fixing Screw (Star Shaped)	Cable Cover	Quick Guide

Info

- Components may vary according to the installation environment.
- When assembling the product with the bracket, you can use the included bracket fixing screw (Star Shaped) instead of the product fixing screw for enhanced security.

Name and function of each part



- **LED Indicator**: Indicates the operational status of the device with the color of the LED.

  - Green: Authentication success.
  - Red: Authentication failure.
  - Blue: Normal operation.
  - Blue/Green blinking:
    - When setting **DHCP** to use, unable to retrieve IP address.
    - When in **Slave** mode, the connection to the master device is disconnected.
  - Red/Purple blinking: Device is locked.
  - Yellow blinking: Waiting for input.
- **Microphone**: Transmits the voice of the user when the interphone is connected.
  - Covering or blocking the microphone may interfere with voice transmission.
- **Infrared Camera**: Capture the infrared face image.
- **Visual Camera**: Capture an actual face image.
- **Display**: Provides a UI for operation.
- **RF card and mobile access card authentication unit**: Part to scan a RFID card or mobile access card for entrance.
- **Fingerprint Recognition Unit**: **BS3M-ODB, BS3M-OAPB** The part that recognizes fingerprints for access.
- **Speaker**: Delivers sound.
- **Ethernet**: Connect the Ethernet cable.
- **Input (4-pin)**: Connect the input cable.
- **Relay (3-pin)**: Connect the Relay cable.
- **RS-485 (4-pin)**: Connect the RS-485 cable.
- **USB Expansion Port (5-pin)**: Connect other accessory products.
- **Wiegand Output (4-pin)**: Connect the Wiegand Output cable.
- **Wiegand Input (4-pin)**: Connect the Wiegand Input cable.
- **Power Supply (2-pin)**: Connects the power supply cable.
- **USB (Type-C) Memory Slot**: Connects the USB memory.

Cables and connectors

Power



Pin	Name	Color
1	PWR +VDC	Red
2	PWR GND	Black

Relay



Pin	Name	Color
1	RLY NO	White
2	RLY COM	Blue
3	RLY NC	Orange

RS-485



Pin	Name	Color
1	485 TRXP	Blue
2	485 TRXN	Yellow
3	485 GND	Black
4	SH GND	Gray

Input



Pin	Name	Color
1	INPUT0	Red
2	INPUT1	Yellow
3	INPUT2	Orange
4	INPUT GND	Black

Wiegand Input and Output



Pin	Name	Color
1	WG D0	Green
2	WG D1	White
3	WG GND	Black
4	SH GND	Gray

Set Up Master Administrator CE-oriented products

The **Master Admin** feature enhances the overall admin privileges of the device to improve device security and prevent unauthorized access and configuration changes. This feature applies only to **CE-oriented products** for the EU region, and **Master Administrator enrollment is required** on **CE products**. Only the enrolled master administrator can access the administrator menu and change device settings.

Info

- This feature is a required policy introduced to enhance security for **CE-oriented products** in the EU region, and it is not supported on **Global (Non-CE) products**.
- The master admin cannot delete directly and will be deleted only during **Factory Default**.

Master administrator support policy CE products vs Global (Non-CE) products

The **Master Admin** feature is activated only on **CE products with a label that has the CE mark**.

Use the sticker on the back label to identify **CE products** and **Global (Non-CE) products**. The feature works differently as follows.

- **CE products**: CE mark present
- **Global (Non-CE) products**: CE mark absent

Category	CE-oriented products	Global (Non-CE) products
Master Admin	Enabled (cannot disable)	Not supported
Admin 2-step Authentication	Required	Not supported
Minimum PIN length	At least 8 digits	At least 4 digits

When connected to BioStar X (or BioStar 2), the Master Admin setting changes based on device support, and the enablement of the Admin 2-step Authentication menu syncs automatically.

Behavior Logic During Firmware Upgrade

When you upgrade the firmware of an existing device, support for **Master Admin** and **Admin 2-step Authentication** can vary based on the combination of the **version before upgrade** and the **target version**.

Contact Suprema Global Technical Support Team for detailed version support availability.

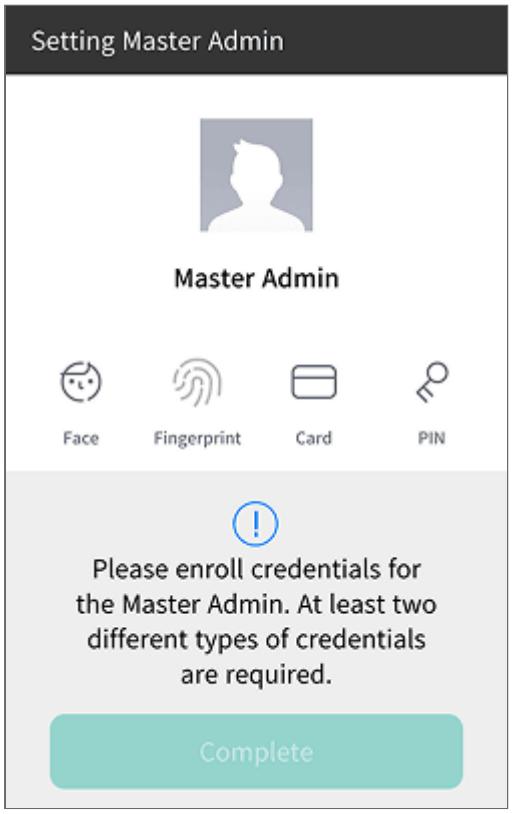
Register the master admin

On a new device for CE products, you must enroll **Master Admin** from the start. If you do not enroll it, device use is restricted.

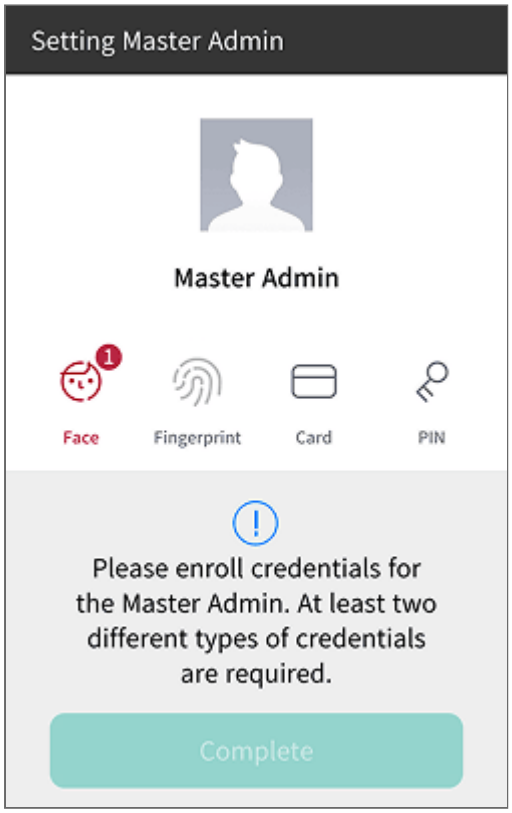
Info

- At first boot, the **Master Admin** enrollment screen appears. If you do not complete enrollment, you cannot move to the next screen.
- Even if you connect to BioStar X (or BioStar 2) and assign a device-wide administrator, you must enroll **Master Admin** directly on the device to use all features.
- New devices cannot perform firmware downgrades.

1. When the new device is booted for the first time, the **Master Admin** registration screen will appear.



2. According to EU security policy, **Master Admin** must enroll credentials of at least two types. Select and enroll two desired credentials.



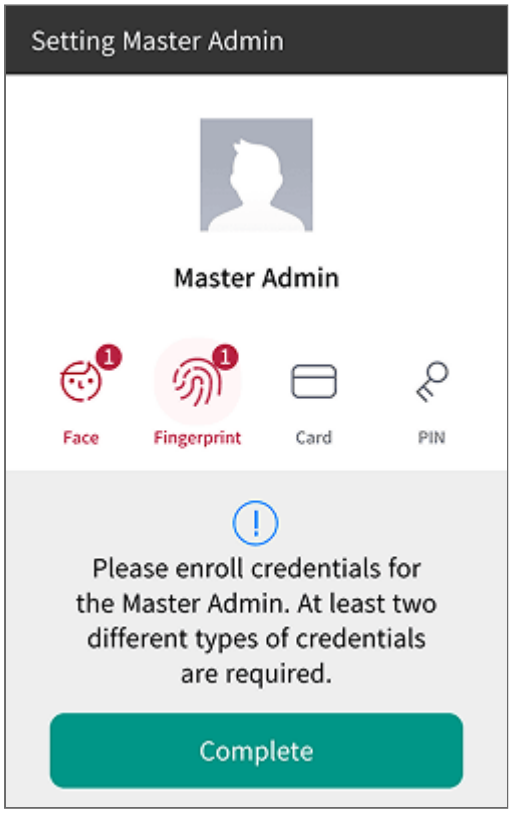
The credentials that can be enrolled for **Master Admin** are as follows.

Credential type	Number of enrollments	Conditions
Card	Up to 4	Supports only CSN and Wiegand types Duplicate enrollment within the same type is not allowed
Face	Up to 2	Enroll only on devices with the same algorithm
Fingerprint	Up to 2	-
PIN	1	At least 8 digits long (CE regulation applies)

Enrollment conditions

- You must enroll at least two types of credentials.
- All credentials supported by the device can be used as authentication means.

3. After enrolling two or more types of credentials, press the **Complete** button to complete the registration of **Master Admin**.



Additional Information

- **When enrolling PIN through BioStar software**

  Global (Non-CE) products that do not support the master administrator can enroll a PIN of at least 4 digits directly on the device. However, when enrolling users through BioStar X (or BioStar 2), the following versions require a PIN with at least 8 digits.

  – BioStar 2 v2.9.11 or later

  – BioStar X v1.0.0 to v1.0.2

  Users enrolled with a 4-digit PIN in the versions above cannot be assigned as device administrators.

- **Manual Device Hash Key Change**

  When manually changing the device hash key, a warning message will indicate that Master Admin PINs will be deleted. Please confirm the message before proceeding.

- **RS-485 Biometric Image Transmission Restriction**

  Biometric credential images are not transmitted over RS-485 communication, so substitute images appear when viewing the registered Master Admin face on slave devices.

Correct face enrollment and authentication method

Cautions for enrolling a faces

- Keep the distance between the device and your face at 60-100 cm when enrolling your face.
- Do not change your face expression.
- Do not wear masks, hats, or eye patches.
- Do not enroll a face wearing a mask. It may increase the False Acceptance Rate (FAR) if both faces with and without a mask are enrolled.
- Do not raise head up or lower head.
- Do not wear thick makeup.
- Do not close your eyes.
- Make sure that both of your shoulders correctly appear on the screen.
- Stand still and enroll your face by staring at the screen.
- Be careful not to display two faces on the screen. Enroll one person at a time.
- If you do not follow the instructions on the screen, the face enrollment may take longer or may fail.

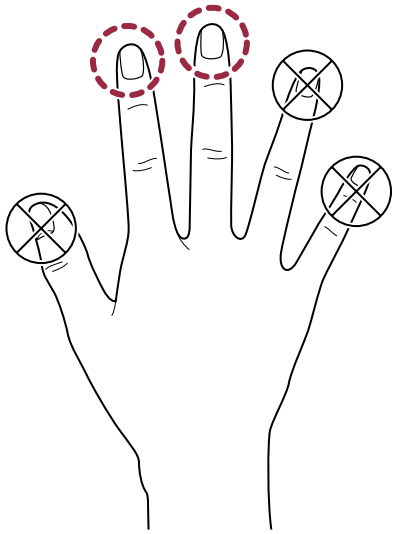
Cautions for authenticating a face

- Ensure that the face appears in the center of the device’s screen. When the guideline is displayed, follow the instructions shown on the screen to authenticate the face.
- If a part of the face is covered with a hat, a mask, an eye patch, or sunglasses authentication may fail. Do not cover the face; allow the device to recognize both the eyebrows and the face.
- Authenticate at a location 90-100 cm away from the device.
- Make sure that both of your shoulders correctly appear on the screen. Authentication may fail if your shoulders are not at the same height. Stand still, and then authenticate your face.

Correct fingerprint input method BS3M-ODB, BS3M-OAPB

In order to improve the fingerprint authentication rate, enroll the fingerprint correctly. This product can authenticate fingerprints even if the user's fingerprint input angle and position change. If you enroll the fingerprint with attention to the following matters, the authentication rate can be improved.

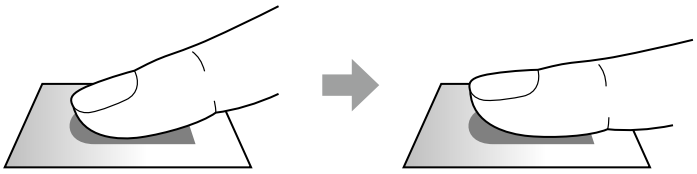
Selecting a finger for fingerprint input



- In preparation for the case that the fingerprint of a specific finger cannot be used, for example if the user is lifting a load with one hand or a finger gets hurt, up to 10 fingerprints for each user can be enrolled.
- In the case of a user whose fingerprint cannot be recognized well, the authentication rate can be improved by enrolling the same finger twice repeatedly.
- If a finger has a cut or the fingerprint is blurry, select another finger for the fingerprint.
- It is recommended to use the index finger or the middle finger when scanning the fingerprint. The authentication rate can be reduced if it is difficult to place another finger at the center of fingerprint sensor accurately.

Fingerprint enroll method

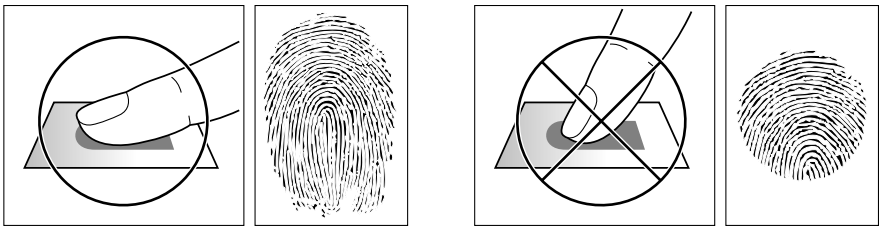
1. When the screen displays "Please input your fingerprint," place the finger you want to enroll on the fingerprint recognition unit and gently press it so that the fingerprint is authenticated well.



2. When the re-input screen is displayed after a beep sound, scan the fingerprint of the enrolled finger again. (scan the fingerprint of a finger to be enrolled twice)

Cautions for fingerprint enrollment

When a fingerprint is recognized, it is compared with the initially enrolled fingerprint, so the initial fingerprint enroll is the most important. Pay attention to the following matters when enrolling the fingerprint.



- Place the finger deep enough to contact with the sensor completely.
- Place the center of the fingerprint in the center of the sensor.
- If a finger has a cut or the fingerprint is blurry, select another finger for the fingerprint.
- Scan the fingerprint correctly without moving according to the instruction on the screen.
- If you make the finger upright so that the contact area with the sensor is decreased or the angle of finger is warped, fingerprint authentication may not be performed.

If fingerprint authentication does not work well

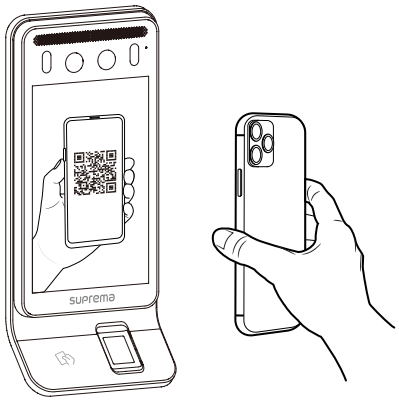
This product can authenticate fingerprints regardless of seasonal changes or changes in the condition of the fingers. However, the authentication rate may vary according to the external environment or fingerprint input method. If the fingerprint authentication cannot be done smoothly, it is recommended to take the following measures.

- If the finger is smeared with water or sweat, dry off the finger and then scan the finger.
- If the finger is too dry, blow your breath on the fingertips and then scan the finger.
- If the finger has a cut, enroll the fingerprint of another finger.
- Since the initially enrolled fingerprint is often not input correctly, please re-enroll the fingerprint according to the Cautions for fingerprint enrollment.

Notes on QR/Barcode and Device License

Correct QR/Barcode Authentication Method

You can issue a QR/barcode to the user for use as a means of authentication. To improve recognition rate, scan the QR/barcode correctly according to the guidance on the screen.



- Keep the distance between the device's camera and the QR/barcode at 8-25 cm.
- Position the QR/barcode so that it is centered in the device's scanning screen.
- If authenticating with a QR/barcode downloaded to a mobile device, adjust the brightness of the mobile device to ensure the screen is clearly visible.
- Failure to follow the instructions on the screen may result in slow recognition or failure of the QR/barcode.

Notes for device license

- Using additional QR/Barcode authentication methods requires a separate device license. Contact the place of purchase to issue a device license.
- The device license file is an encrypted file and cannot be modified arbitrarily.
- Device licenses are issued based on device ID. If the device ID is changed in an unusual way, the warranty service for the license is not provided.

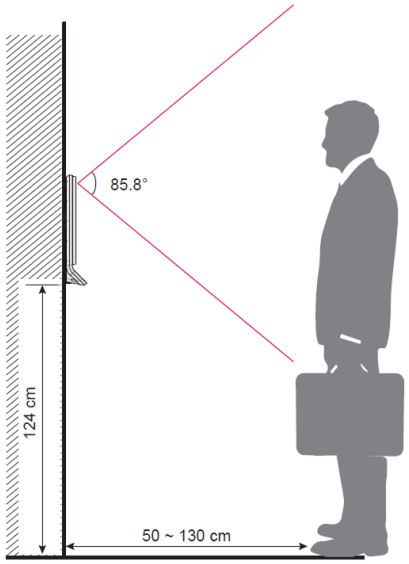
Installation

Provides the complete installation procedures and connection examples required for the device.

Fixing the bracket and the product

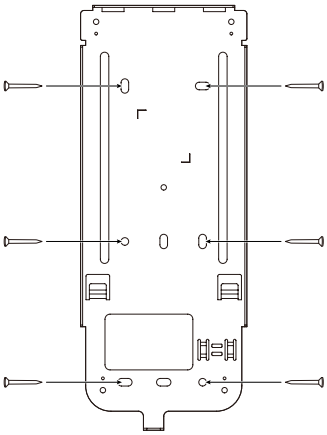
> **Info**
> This document describes the installation procedure based on the BS3M-ODB and BS3M-OAPB models. Install BS3M-DB and BS3M-APB models in the same way.

1. Determine the location to mount the product.



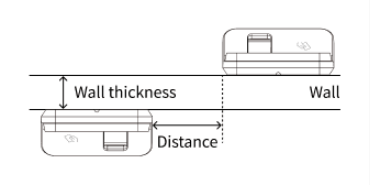
> **Info**
> - The optimal height to install the device is as follows.
> - BS3M-ODB, BS3M-OAPB: 124 cm
> - BS3M-DB, BS3M-APB: 127 cm
> - Install the device where it does not reach the direct sunlight or UV light.
> - Adjust the installation position so that the face is not exposed to direct sunlight when a user tries to authenticate.

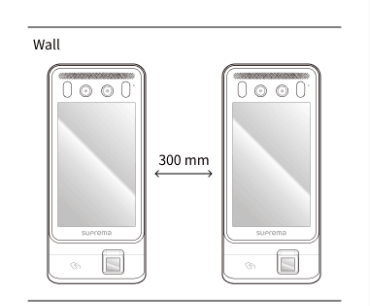
2. Secure the bracket tightly using the fixing screws at the location where the product will be mounted.



Info

- If installing the product on a concrete wall, drill a hole, insert a PVC anchor, and secure it with a fixing screw.
- To avoid RF interference, a minimum separation distance must be maintained.

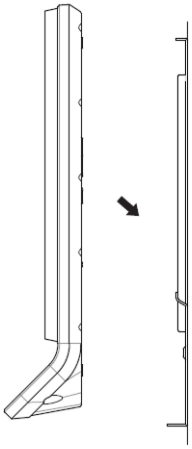




Wall thickness	Distance
100 mm	200 mm
120 mm	180 mm
150 mm	150 mm

- When using a mobile access card, install devices maintaining a minimum distance of 1 m between devices to avoid BLE interference.

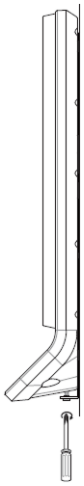
3. After installing the cable cover, tighten the six screws in the cover firmly, and mount the product on the fixed bracket.



Info

Make sure that the cable cover is completely closed after connecting it to the product to maintain the water-resistant and dust-resistant features (IP65 rating).

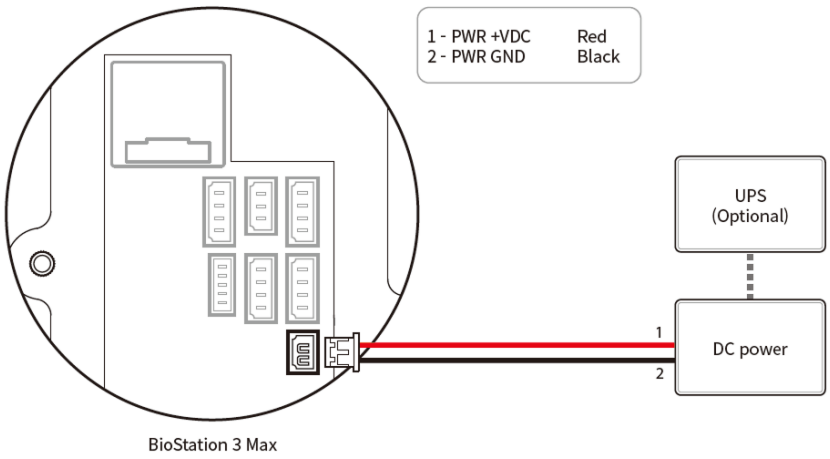
4. Rotate the fixing screws to assemble the product with the bracket.



Info

When assembling the product with the bracket, you can use the included bracket fixing screw (Star Shaped) instead of the product fixing screw for enhanced security.

Power supply connection



Caution

- Use the IEC/EN 62368-1 approved power adapter that supports higher power consumption than the product. If you wish to connect and use another device to the power supply adapter, you should use an adapter with a current capacity which is the same or larger than the total power consumption required for the terminal and another device.
  - Refer to the Power in the product specifications for maximum current consumption specifications.
- Use a separate power supply for Secure I/O 2, the electric lock, and the product respectively. If connecting and using the power supply to these devices together, the devices may malfunction.
- When connecting the power supply, be aware of the distance between the device and the power supply. The device should be connected as close as possible to the power supply so that the length of the connecting cable is kept to a minimum. If cable connections are made improperly it may cause the device to malfunction. It is recommended to use a 16 AWG or 18 AWG cable if the product is far from the power supply. The connection distance may differ depending on the standard of the cable used and the installation environment. This product supports both DC 24 V and DC 12 V power, so check the maximum length according to the cable specification to ensure that the unit is properly powered.

Cable standard	Max. extended length	
	DC 12V	DC 24V
16 AWG	50 m	150 m
18 AWG	30 m	136 m
20 AWG	20 m	90 m

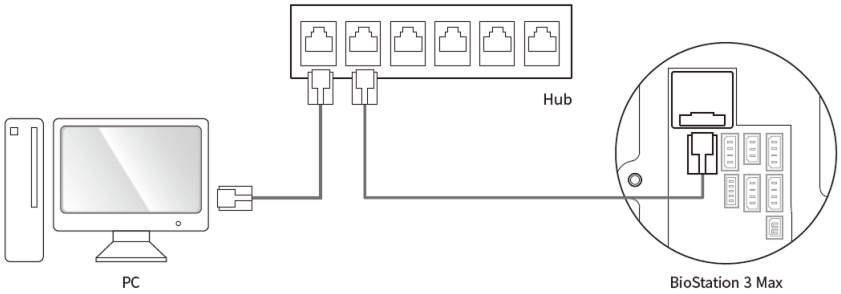
- DO NOT extend the length of power cable when using the power adapter.
- DO NOT use the CAT5 UTP 2-Wire for power supply purpose.

Network Connection

TCP/IP

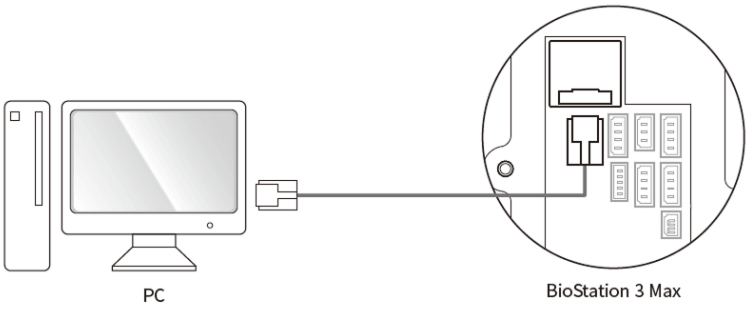
LAN connection (connecting to a hub)

You can connect to the hub using a standard CAT-5e cable.



LAN connection (connecting to a PC directly)

This product supports automatic MDI/MDIX, so it can connect directly to a PC using either a crossover cable or a standard straight CAT-5e cable.



Info

For a gigabit Ethernet switch, check the following information.

- Use a CAT-5e UTP (unshielded twisted pair) cable.
- Use all 4 pairs (8 wires) for the network connection.
- Do not use any pairs or wires in the network cable for other purposes.

Network ports and services

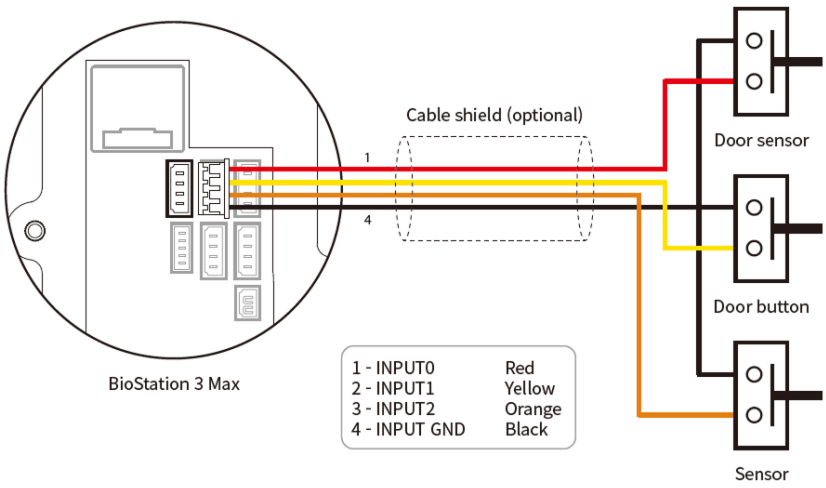
This device uses the following ports for network communication and stable service operation.

Protocol	Service
TCP	Used for communication services between the server and the device, and for the device operation status switching service.
UDP	Used for the device discovery service to search for devices on the network.

Info

These ports provide the product's normal network features. When configuring firewall rules or network security settings, allow these ports.

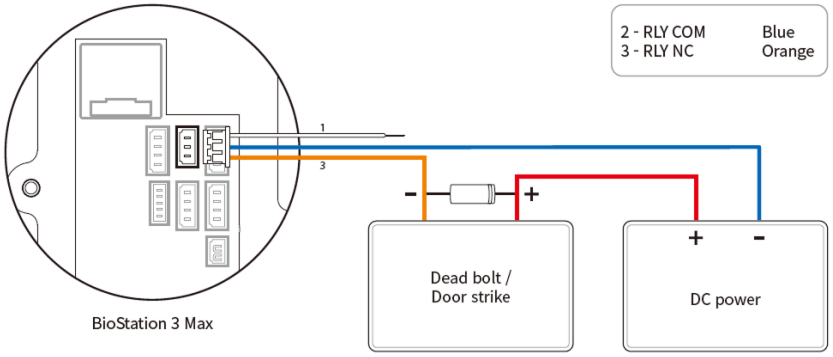
Input connection



Relay Connection

Fail Safe Lock

In order to use the Fail Safe Lock, connect N/C relay as shown in the figure below. There is normally a current flowing through the relay for the Fail Safe Lock. When the relay is activated, blocking the current flow, the door will open. If the power supply to the product is cut off due to a power failure or an external factor, the door will open.



Caution

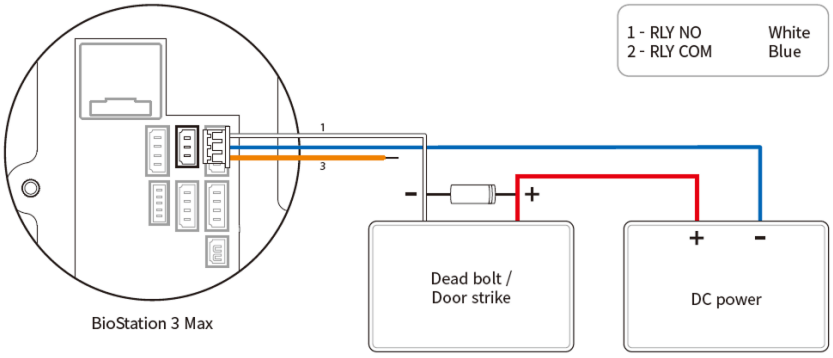
- Install a diode at both sides of the door lock wire as shown in the figure to protect the relay from the reverse current, which occurs when the door lock operates.
- Use a separate power supply for the product and the door lock.
- Suprema's standalone intelligent readers contain internal relays that can directly lock/unlock doors without external controllers for added convenience. For access control applications in need of security, however, it is NOT recommended to use the internal relay of a reader to prevent any tampering attacks which can potentially trigger the door unlock. For such applications, it is highly recommended to use a separate relay unit for a lock control such as Suprema's Secure I/O 2, DM-20 or CoreStation installed at a secure side of a door.

Info

Take caution of the installation direction of the diode. Install the diode close to the door lock.

Fail Secure Lock

In order to use the Fail Secure Lock, connect N/O relay as shown in the figure below. There is normally no current flowing through the relay for the Fail Secure Lock. When the current flow is activated by the relay, the door will open. If the power supply to the product is cut off due to a power failure or an external factor, the door will lock.



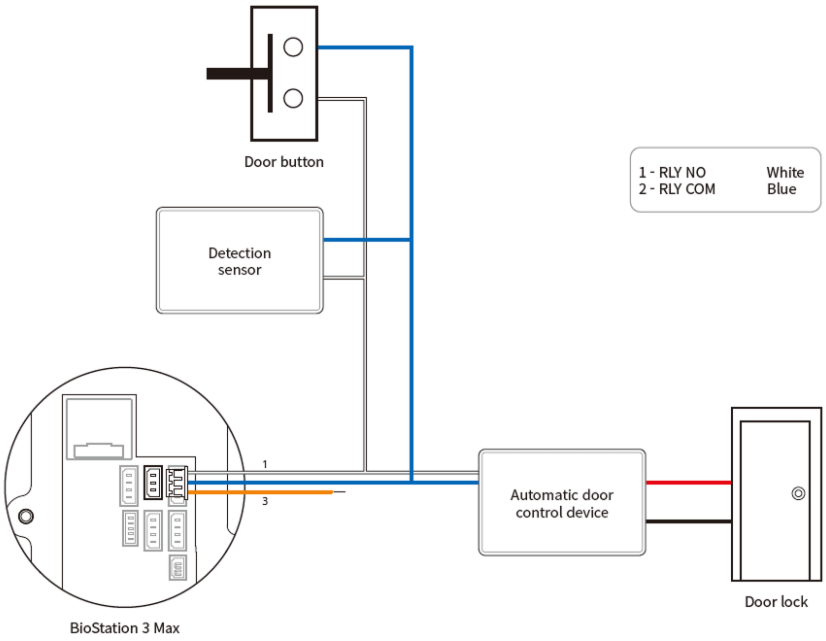
Caution

- Install a diode at both sides of the door lock wire as shown in the figure to protect the relay from the reverse current, which occurs when the door lock operates.
- Use a separate power supply for the product and the door lock.
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Info

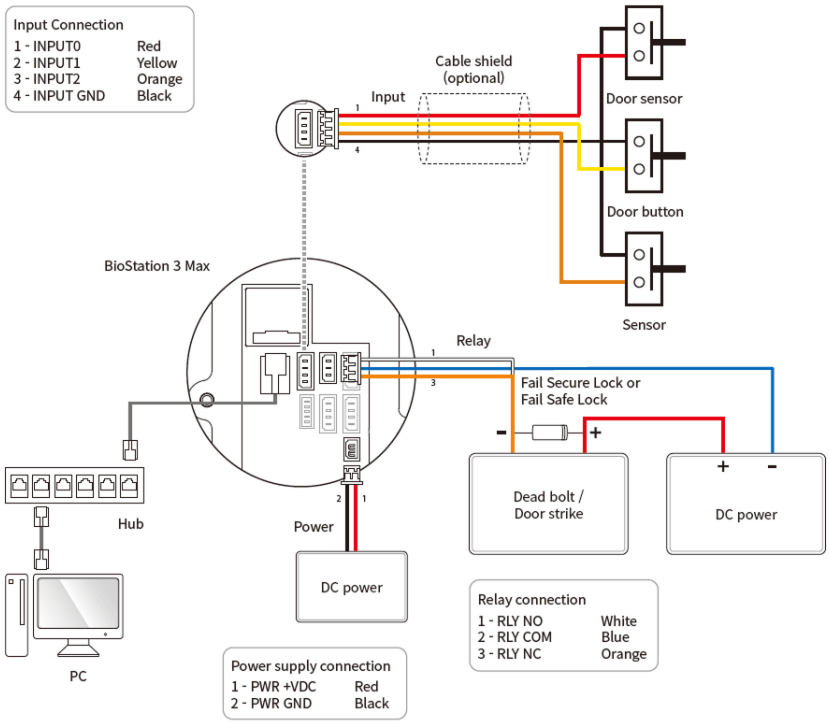
Take caution of the installation direction of the diode. Install the diode close to the door lock.

Automatic door connection



Connecting as a Standalone

The product can be connected to the door lock, door button, and door sensor directly without connecting a separate I/O device.



Caution

Suprema's standalone intelligent readers contain internal relays that can directly lock/unlock doors without external controllers for added convenience. For access control applications in need of security, however, it is NOT recommended to use the internal relay of a reader to prevent any tampering attacks which can potentially trigger the door unlock. For such applications, it is highly recommended to use a separate relay unit for a lock control such as Suprema's Secure I/O 2, DM-20 or CoreStation installed at a secure side of a door.

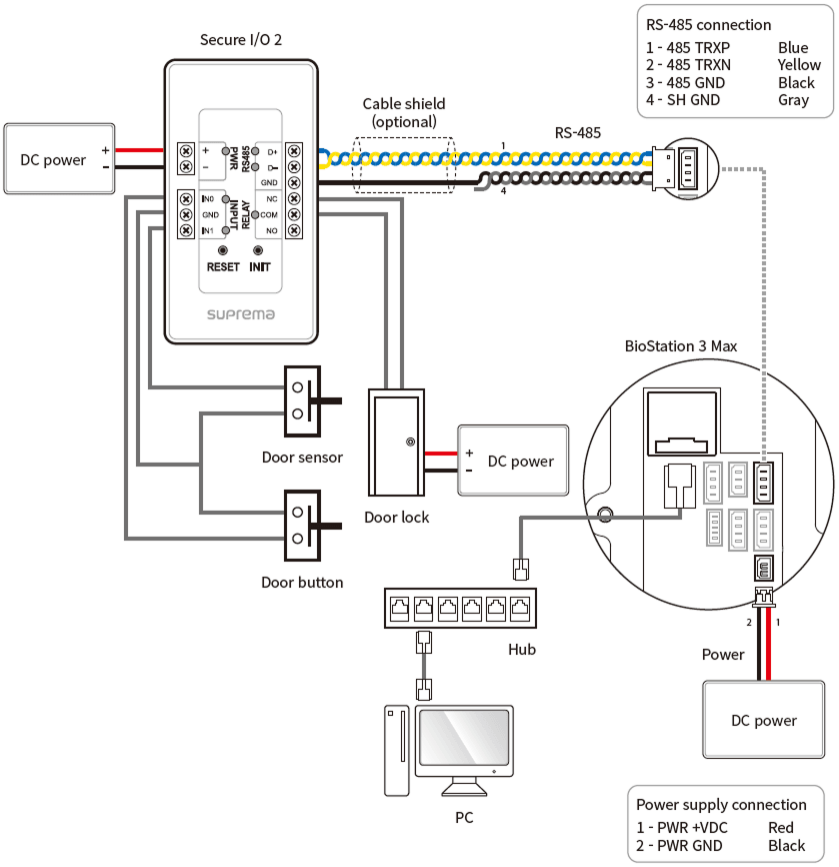
Info

- The device can be used as a multi-door controller with the slave devices with the RS-485 cable. The slave devices are used as dummy readers and authentication is performed in the master device.
- BioStation 3 Max cannot be used as a slave device when FaceStation 2, FaceLite is the master device, and vice versa.
- The maximum number of slave devices available to connect varies according to the authentication method, number of users, and number of devices. Also note that the number of slave devices affects the authentication performance.
- Connect up to 31 slave devices to a master device. The bandwidth of RS-485 allows for up to 7 fingerprint authentication devices to be connected.
- For more information, contact the Suprema Technical Support Team.

Connecting to Secure I/O 2

Secure I/O 2 is an I/O device, can be connected to the product with the RS-485 cable. Security can be maintained even if the connection between the product and Secure I/O 2 has been lost or the power supply to the product has been shut off due to external factors.

- Use an AWG24 twisted pair with a maximum length of 1.2 km for the RS-485 cable.
- It is recommended to use RS-485 cables with a characteristic impedance of 120 Ω.
- If connecting with a RS-485 daisy chain, connect the termination resistor (120 Ω) to both ends of the daisy chain connection. If connected to the middle line, the signal level becomes smaller and the communication performance will deteriorate. Make sure to connect it to both ends of the daisy chain connection.

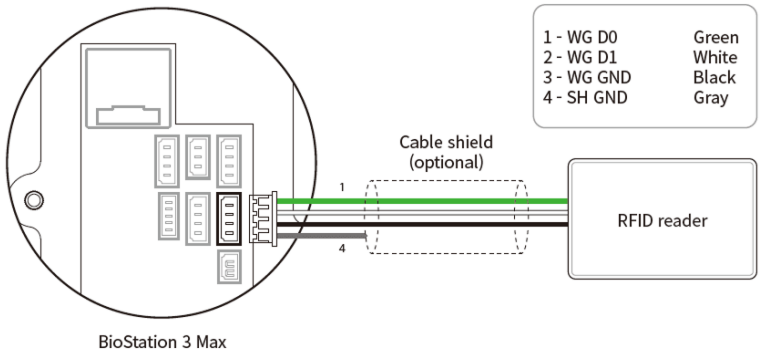


Info

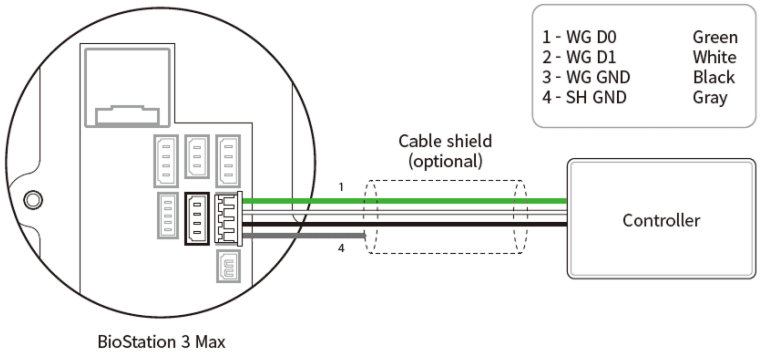
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- For more information, contact the Suprema Technical Support Team.

Wiegand Connection

Used as a Wiegand input device.



Used as a Wiegand output device.



How to Use

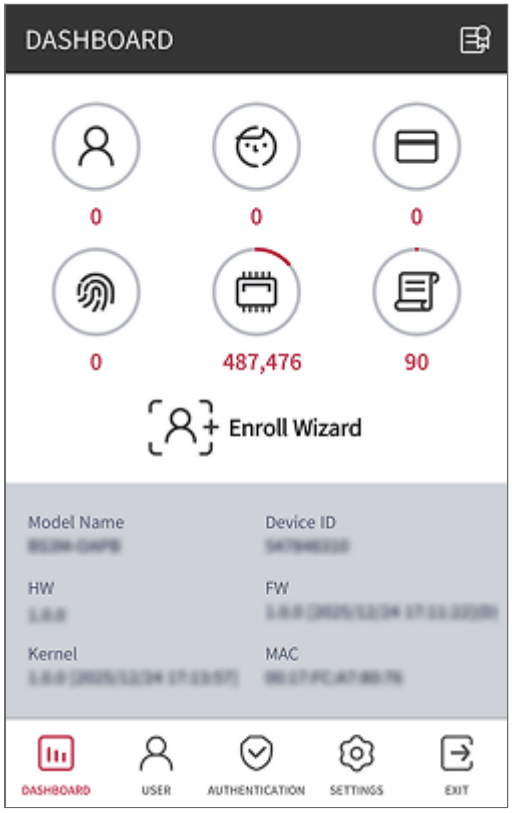
Provides guidance on how to use the main features of the device effectively.

Admin Menu

Provides guidance on the main menus and features accessible with administrator privileges.

DASHBOARD

1. Press and authenticate with the Admin level credential.
   You can check the status and information of the device at **DASHBOARD**. Alternatively, you can press **Enroll Wizard** to directly enroll a user.
2. To register a user or set up a device, select the desired menu from the bottom of the dashboard.

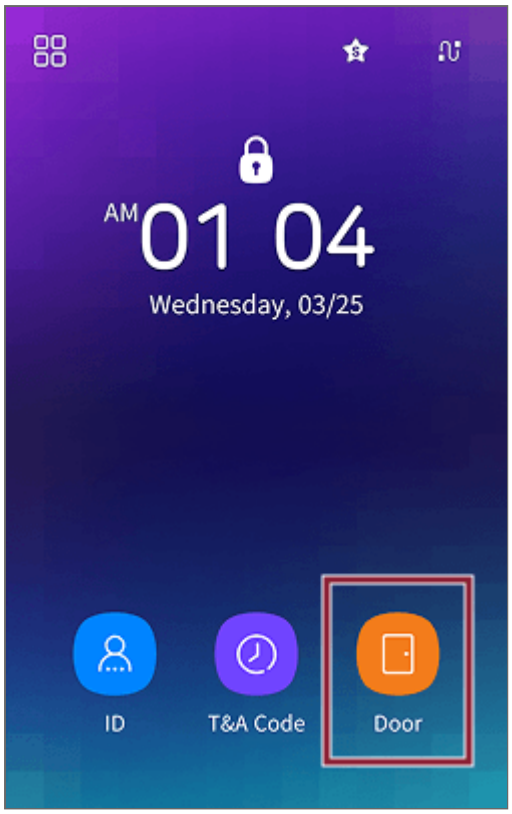


Door Control

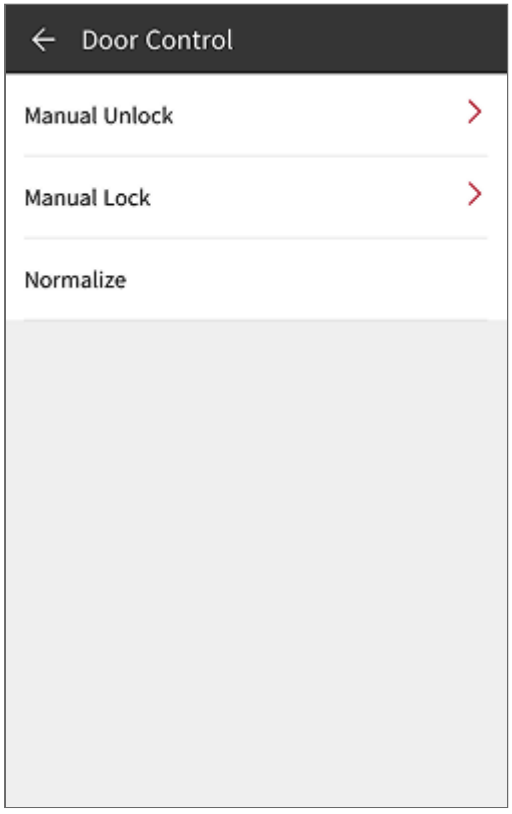
You can manually open, lock, or unlock the connected door.

> **Info**
>
> - You can control the door only when the device is configured as the master device.
> - Use **Administrator** or **Configuration** to control the door.

1. Select **Door** on the main screen.



2. Authenticate using administrator privilege method.
3. Choose the desired door control method.



- **Manual Unlock**: Set the time for immediate door opening or to keep the door open.
- **Manual Lock**: Set the time for immediate locking or to keep the door locked.

- **Normalize**: Cancel manual opening or manual lock hold.

> **Info**
> Set the manual open and manual lock-hold times from 1 to 86,400 seconds.

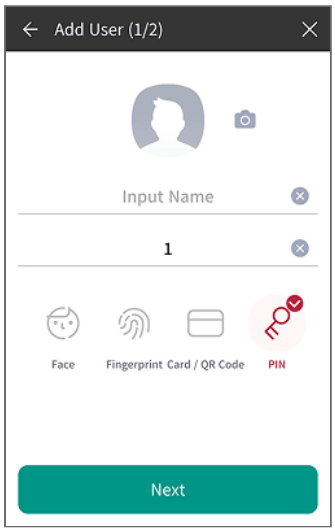
User

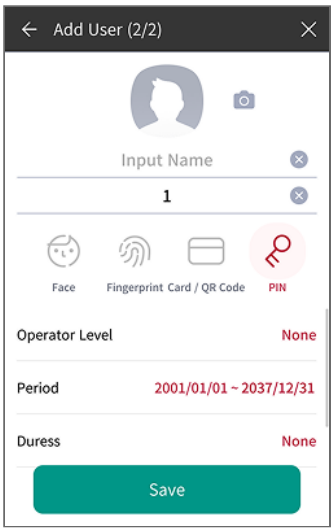
Describes how to register, edit, delete, and manage users.

Registering user information

You can register user information that includes biometric authentication data.

1. Press and authenticate with the Admin level credential.
2. Select **USER** → and set the desired items. User usage information appears.





- : Register a user photo.
- **Name**: Enter a user name. Enter up to 48 characters, including special symbols (~ ! @ # $ % ^ & ( ) - _ = + [ ] { } ; . '). However, names starting with & @ ~ are not allowed.
- **ID**: Enter a number between 1 and 4294967295 to register a user ID. If **User ID Type** is set to **Alphanumeric**, enter up to 32 characters using alphanumerics and certain symbols (_ - .). IDs cannot include spaces. Periods (.) are allowed, but the ID cannot be a single period (.) or two periods (..).
- **Face**: You can enroll a face for user authentication. Press **Face** → **Next** and follow the instructions on the screen to enroll your face. To add more faces, press . Please refer to Enrolling user faces to learn more about face enrollment.
- **Fingerprint**: BS3M-ODB, BS3M-OAPB Enroll a fingerprint for user authentication. Press **Fingerprint** → **Next** and follow the on-screen instructions to enroll a fingerprint. Press to enroll more fingerprints. For more information on fingerprint registration, refer to User fingerprint enrollment.

- **Card / QR Code**: You can enroll a card for user authentication. Press **Card / QR Code** → **Next**, then scan the card to assign it to the user at the RF card authentication unit. To enroll more cards, press **Card / QR Code** → ⊕.

  > **Info**
  > To use **QR Code** authentication, **AUTHENTICATION** must be clicked and **Operation** must have **QR Authentication** activated, and a separate device license is required. For more information, refer to License.

- **PIN**: You can enter the PIN you want to use. Press **PIN** → **Next** and enter the PIN you want to use. For confirmation, enter the PIN once more and then press **OK**. To prevent leaks, input a PIN of 4 to 16 digits.

  > **Info**
  > When using **Master Admin** feature, enter at least an 8-digit number.

- **Operator Level**: You can select permissions to assign to the user.

  > **Info**
  > Available menus vary according to the set user level.
  > – **None**: This is a general user level, and the menu is not available.
  > – **Administrator**: You can use all menus.
  > – **Configuration**: You can use the menus **AUTHENTICATION**, **DISPLAY & SOUND**, **DEVICE**, **NETWORK**, **EVENT LOG**.
  > – **User Management**: You can use the menus **USER**, **EVENT LOG**.

- **Period**: You can set the duration for using the user account.
- **Duress**: BS3M-ODB, BS3M-OAPB Select the fingerprint number to use as a duress fingerprint. If someone coerces you to open a door, authenticate with this fingerprint to send an alarm to BioStar X. At least 2 fingerprints must be enrolled to use this function.
- **Extended Private Auth Mode**: You can set the extended personal authentication mode. This mode allows you to combine user authentication methods, including both faces. Otherwise, you can use the device's basic authentication mode.

3. Press **Save** to complete the registration of user information.

Enrolling user faces

1. Press ⊞ and authenticate with the Admin level credential.
2. Select **USER** → ⊕.
3. Press **Face** → **Next**.
4. Adjust a distance between the face and screen and look straight at the camera of the device.
5. After the shooting is complete, press **OK** → **Save**. To retake your face picture, press **Re-Shot**.

Info

- The visual face data of this product are not compatible with face templates of FaceStation 2 or FaceLite.
- Enroll a user's face not only on the device, but also in bulk on BioStar X by uploading a photo or importing a CSV file. Send a face enrollment link to a user to let them enroll their face on their personal mobile device. For detailed information on each enrollment method, please refer to the BioStar X Administrator Guide.
- To use a Visual Face feature correctly, take a picture by following instructions below.
  - Keep the distance between the device and your face at 60-100 cm when enrolling your face.
  - Do not change your face expression.
  - Do not wear masks, hats, or eye patches.
  - Do not enroll a face wearing a mask. It may increase the False Acceptance Rate (FAR) if both faces with and without a mask are enrolled.
  - Do not raise head up or lower head.
  - Do not wear thick makeup.
  - Do not close your eyes.
  - Make sure that both of your shoulders correctly appear on the screen.
  - Stand still and enroll your face by staring at the screen.
  - Be careful not to display two faces on the screen. Enroll one person at a time.
  - If you do not follow the instructions on the screen, the face enrollment may take longer or may fail.

User fingerprint enrollment BS3M-ODB, BS3M-OAPB

1. Press and authenticate with the Admin level credential.
2. Select **USER** → .
3. Press **Fingerprint** → **Next**.
4. After scanning the fingerprint of the finger to be enrolled, scan the same finger's fingerprint again.

Info

- Fingerprint enrollment is available only for BS3M-ODB and BS3M-OAPB products.
- Place the finger deep enough to contact with the sensor completely.
- Place the center of the fingerprint in the center of the sensor.
- If a finger has a cut or the fingerprint is blurry, select another finger for the fingerprint.
- Enter accurately according to the on-screen instructions when authenticating fingerprints.
- If you make the finger upright so that the contact area with the sensor is decreased or the angle of finger is warped, fingerprint authentication may not be performed.

Modifying User Information

User Management or Administrator can modify the registered user information. Add the user's face, fingerprint, or card, and modify the PIN and level.

1. Press and authenticate with the Admin level credential.
2. Click **USER** → .
3. Select your search terms. You can search for users using **All**, **User ID**, **Name**, **Face**, **Fingerprint**, **Card**.
4. Select the user to modify.
5. Modify the information by referring to Registering user information and press **OK**.
   - To delete a user, select and then press **OK**.

> **Info**
>
> - Fingerprint search is available only on BS3M-ODB and BS3M-OAPB.
> - **Access Group** can be registered in BioStar X. For detailed information on registering an Access Group, please refer to the BioStar X Administrator Guide.

Delete All Users

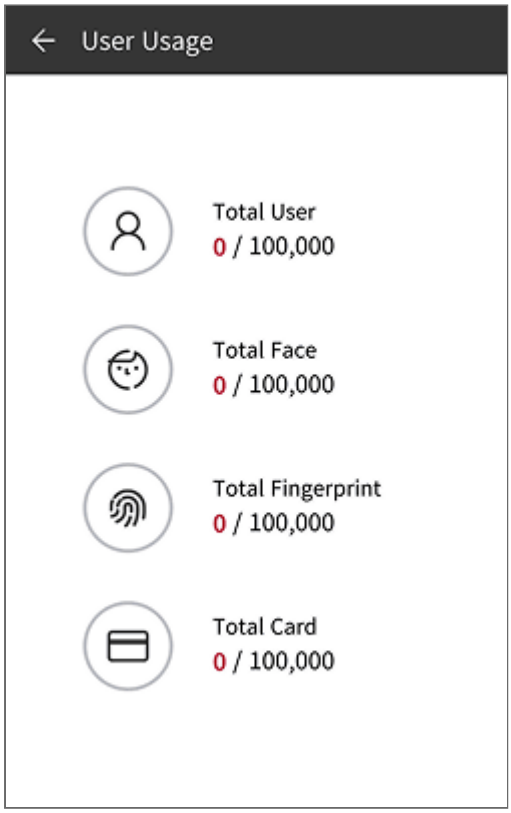
You can delete all registered users at once.

1. Press and authenticate with the Admin level credential.
2. Select **USER** → .
3. Select **Delete All** to check, then press **OK**.
4. To delete all users, press **OK**.

View User Usage

View the number of registered users, faces, cards, and fingerprints at a glance.

1. Press and authenticate with the Admin level credential.
2. Press **USER** → . User usage information appears.



> **Info**
> The number of fingerprints can be viewed only on BS3M-ODB and BS3M-OAPB.

Authentication

Describes the supported authentication methods and authentication procedures.

Authentication mode

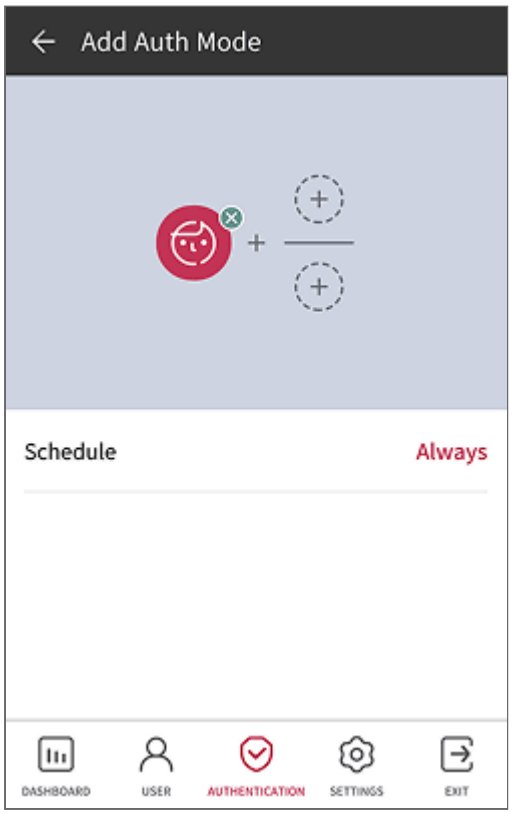
Set the authentication mode. You can combine **Face**, **Fingerprint**, **PIN**, **Card / QR Code**, and **ID** for authentication mode, and you can also set schedules for each authentication mode.

> **Info**
> Fingerprint authentication is available only on BS3M-ODB and BS3M-OAPB.

Registering auth mode

1. Press and authenticate with the Admin level credential.
2. Press **AUTHENTICATION** → **Auth Mode**.
3. Select .

4. Pressing (+) will display the credential that can be added on the screen. Select the credentials to add. Press the (×) while the credential is added, and the added credential will be deleted.



- : Face, : Fingerprint, : Card / QR code, : ID, : PIN
- You can combine selected authentication methods to authenticate all in order or choose to authenticate only some of the selected methods. For example, with the combination + + , authenticate with card / QR code, face, and PIN. With the combination + / , authenticate with card / QR code first, and then enter either face or PIN.

5. After setting the desired authentication mode, set **Schedule**.

> **Info**
>
> - **Schedule** can be configured in BioStar X. If no schedule is set, only **Always** can be selected.
> - For more information about the **Schedule** settings, please refer to the BioStar X Administrator Guide.
> - To use **QR Code** authentication, **AUTHENTICATION** must be clicked and **Operation** must have **QR Authentication** activated, and a separate device license is required. For more information, refer to License.

6. To save the settings, press **OK**.

Modifying auth mode

1. Press and authenticate with the Admin level credential.
2. Press **AUTHENTICATION** → **Auth Mode**.

3. Select the authentication mode to modify.
4. Modify the authentication mode by referring to Registering auth mode and press **OK**.

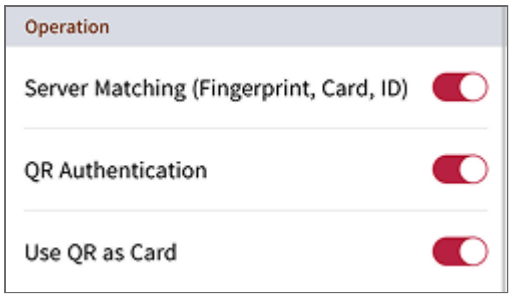
Delete auth mode

1. Press and authenticate with the Admin level credential.
2. Press **AUTHENTICATION** → **Auth Mode**.
3. Press and select the authentication mode to delete. You can select multiple options.
4. To delete the selected item, press **OK**.

Operation

Set authentication options.

1. Press and authenticate with the Admin level credential.
2. Press **AUTHENTICATION**, then enable the desired options in **Operation**.



- **Server Matching (Fingerprint, Card, ID)**: With server matching, BioStar X authenticates users instead of the device. This is useful when the device stores large amounts of user information. It also helps avoid exposing a device that stores credential information outside.

  Info

  – **Server Matching** can only use fingerprint, card, and ID.

  – If you use **Server Matching**, you must enable server matching on both the device and BioStar X. For more information on BioStar X server matching settings, please refer to the BioStar X Administrator Guide.

- **QR Authentication**: Set whether to use QR code authentication through the device's camera.

  Info

  A separate device license is required to use **QR Authentication**. For more information, refer to License.

- **Use QR as Card**: You can set up authentication with a QR code that has the same data as the CSN card or Wiegand card issued to the user. This can only be set when **QR Authentication** is activated.

PIN

Set whether to use the scramble keypad when entering passwords.

1. Press and authenticate with the Admin level credential.
2. After pressing **AUTHENTICATION**, set whether to use **PIN** in **Scramble Keypad**.



- **Scramble Keypad**: The positions of numeric keys can be scrambled randomly when entering a password to prevent password leaks.

Auth result display option

You can set the auth result display option.

1. Press and authenticate with the Admin level credential.
2. After pressing **AUTHENTICATION**, change the desired items in **Auth Result Display Option**.



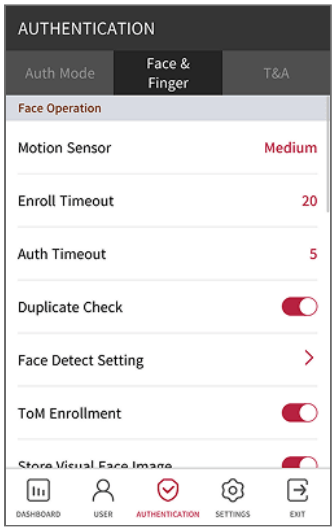
- **User ID Display**: You can select how the user ID is displayed on the authentication result screen of the device.
  - **Display All**: Displays the entire user ID.
  - **Mask All but First Letter**: Displays only the first letter of the user ID.
  - **Hide All**: Do not display the user ID.
- **User Name Display**: You can select how the user name is displayed on the authentication result screen of the device.
  - **Display All**: Displays the entire user name.
  - **Mask All but First Letter**: Displays only the first letter of the user name.
  - **Hide All**: Do not display the user name.

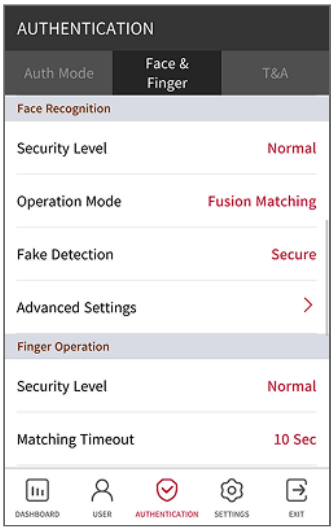
Face & fingerprint

Face

You can change the configuration for facial authentication.

1. Press and authenticate with the Admin level credential.
2. Select **AUTHENTICATION** → **Face & Finger**.
3. Change the desired item in **Face Operation** or **Face Recognition** settings.





- **Motion Sensor**: Set the sensitivity to detect motion around the device. When **Motion Sensor** is set to **Off**, touch the screen to authenticate your face.
- **Enroll Timeout**: If the face is not enrolled within the set time, the face registration will be canceled.
- **Auth Timeout**: If authentication is not completed within the set time, authentication fails.
- **Duplicate Check**: You can check for duplicate faces during face registration.
- **Face Detect Setting**: Set the position and size of the area where the device detects faces during face authentication.

> **Info**
>
> For optimal performance, it is recommended to use default settings for the sub-options of **Face Detect Setting**. The default values of each option are as follows:
>
> – Maximum Head Pose Angle: 15
>
> – Detection Distance: Min 30 cm, Max 100 cm
>
> – Wide Search: Deactivated

- **ToM Enrollment**: By activating **ToM Enrollment**, you can enroll the **Template on Mobile** issued by BioStar X. **Template on Mobile** allows biometric authentication without storing user data on the BioStar X server, Airfob Portal, or device by storing the user's biometric template on a mobile access card.

> **Info**
>
> For more information about **Template on Mobile**, please refer to the BioStar X Administrator Guide.

- **Store Visual Face Image**: You can set to store both the actual images and templates in Visual Face, or to store only the templates without saving the actual images. If disabled, all stored images of visual faces will be deleted, and newly enrolled visual faces will store templates excluding images.

> **Info**
>
> After disabling this setting, connect to BioStar 2 v2.9.7 or later or BioStar X.

- **Security Level**: You can set the security level for 1:N authentication.
- **Operation Mode**: You can set the operating mode of the device for face authentication.
  - **Fusion Matching**: Both visual and infrared matching work to increase the accuracy of face authentication.
  - **Fast Matching**: Users can perform rapid authentication while walking within the device's authentication range.
- **Fake Detection**: You can prevent user authentication with spoofed faces such as photos. Activated when **Operation Mode** is set to **Fusion Matching**.

> **Info**
>
> In strong sunlight, it is recommended to use the **Fake Detection** function as **Normal**.

- **Advanced Settings**: You can change advanced settings for facial authentication, such as mask detection.
  - **Mask Detection**: You can set whether to use mask detection.
  - **Detection Mode**: You can set the method to check if a mask is worn. This is activated when the **Mask Detection** is set to **Enabled**.

> **Info**
>
> - **Require Mask (Hard)**: Users not wearing a mask will be denied authentication and a mask non-compliance event logs.
> - **Require Mask (Soft)**: Users not wearing a mask can be authenticated, but a mask non-compliance event logs.
> - **Require No Mask**: Only users not wearing a mask can be authenticated, and when this mode is used, the mask check mode is fixed to **Check Before Authentication**.

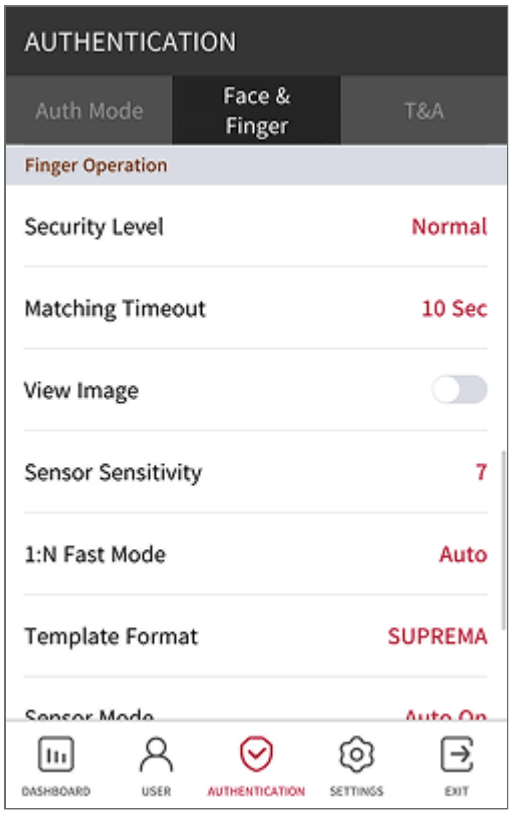
  - **Mask Detection Level**: Set the sensitivity for detecting mask usage. This is activated when the **Mask Detection** is set to **Enabled**.
  - **Check Mode**: Set the confirmation mode according to the purpose of the device.

> **Info**
>
> – **Check After Authentication**: After authentication, check whether the user is wearing a mask.
> – **Check Before Authentication**: Authenticate after checking whether the user is wearing a mask.
> – **Check Only**: The device can only be used to check if a mask is worn. When this mode is activated, any user wearing a mask can access it regardless of authentication.

Fingerprint BS3M-ODB, BS3M-OAPB

You can change the settings for fingerprint authentication.

1. Press and authenticate with the Admin level credential.
2. Select **AUTHENTICATION** → **Face & Finger**.
3. Change the desired item in **Finger Operation**.



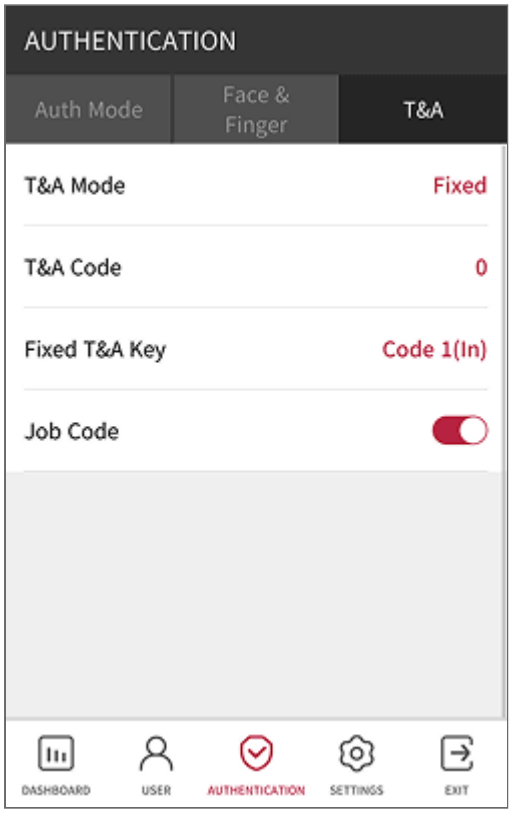
- **Security Level**: You can set the security level for 1:N authentication.
- **Matching Timeout**: Set the wait time for fingerprint matching. If authentication is not completed within the specified time, it will fail.
- **View Image**: The original image of the scanned fingerprint can be viewed.
- **Sensor Sensitivity**: Set the sensitivity of the fingerprint recognition sensor. Set the sensitivity higher to obtain precise fingerprint information.
- **1:N Fast Mode**: Set the speed of fingerprint authentication. When you select **Auto**, authentication speed is set according to the total number of fingerprint templates enrolled in the device.

- **Template Format**: Set the fingerprint template format. **SUPREMA** is set as default. Changing the template format will make all previously saved fingerprints unusable, so take care when changing.
- **Sensor Mode**: Set to **Auto On** to turn on the fingerprint sensor when it detects the user's finger. When set to **Always On**, the sensor remains on even when not scanning fingerprints.
- **Live Finger Detection**: Set the fake fingerprint detection level. Higher levels for fake fingerprint detection may also increase rejection rates for actual people's fingerprints.
- **Advanced Enrollment**: Assess the quality of scanned fingerprints to save high-quality fingerprint information. Enable to notify the user when fingerprint quality is low, helping them scan fingerprints correctly.
- **Duplicate Check**: Check for duplicate fingerprints when enrolling.

T&A (Time and Attendance)

You can set how to register T&A mode.

1. Press and authenticate with the Admin level credential.
2. Select **AUTHENTICATION** → **T&A**.
3. Change the desired item.



- **T&A Mode**: Set how to use attendance mode.
- **T&A Code**: Register T&A events. To register attendance events, select **T&A Code** → and then set the icon to display on the screen, **T&A Event Name**, and **Schedule**.
- **T&A Required**: Set to require a user to select a T&A event when authenticating. Available when **T&A Mode** is set to **By User**.
- **Fixed T&A Key**: Set to use only a T&A event selected by the administrator. Available when **T&A Mode** is set to

Fixed.

- **Job Code**: Set whether to use the job code.

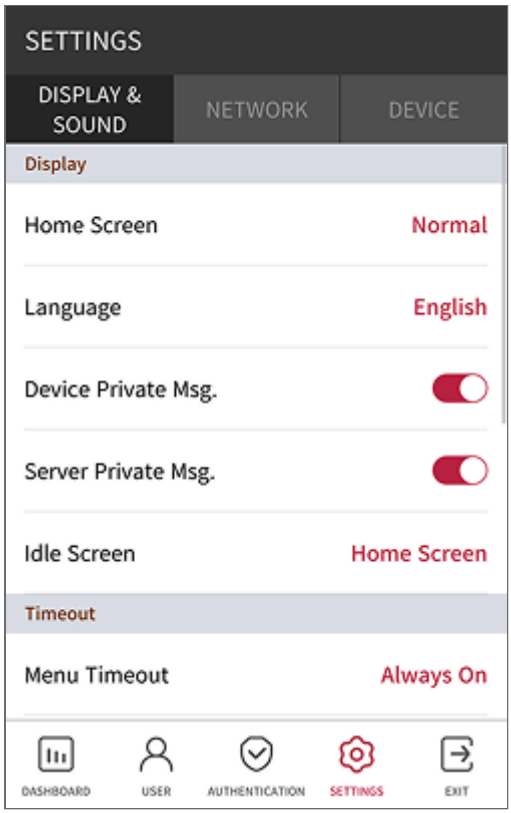
Settings

Provides instructions on how to set system and device configurations.

Display & Sound

You can change the display and sound settings of the device.

1. Press and authenticate with the Admin level credential.
2. Press **SETTINGS** → **DISPLAY & SOUND**.
3. Change the desired item.



- **Home Screen**: You can choose items to display in the background of the home screen.
- **Language**: You can select the language that will be displayed on the screen.
- **Device Private Msg.**: Set whether to use a Private Message, which will be displayed on the screen when the user authenticates. The **Device Private Msg.** can be set using the BioStar Device SDK. If not set, does not display a message when authentication is successful even if **Device Private Msg.** is enabled on the device.
- **Server Private Msg.**: Set whether to use a Private Message, which will be displayed on the screen when the user authenticates. **Server Private Msg.** can be set using the BioStar X API. If not set, does not display a message when authentication is successful even if **Server Private Msg.** is enabled on the device.
- **Idle Screen**: Select the idle screen that appears when the device is not in use.

  - **Home Screen**: Shows the selected home screen without another idle screen.
  - **Screen Saver**: Shows the screensaver. Reduce power consumption by lowering screen brightness when the device is not in use.
  - **Video**: Plays videos added in BioStar X. Set **Video Schedule** to loop the video during the specified time. At other times, select **Home Screen** or **Screen Saver**. For more information about video playback, refer to the BioStar X Administrator Guide.

    > **Info**
    > Add up to 3 videos.

- **Menu Timeout**: Set the time (sec) for the menu screen to disappear automatically. If there is no button input during a set time, the screen will return to the home screen.
- **Message Timeout**: Set the time (sec) for a setting complete message or notification message to disappear automatically.
- **Backlight Timeout**: Set the time (sec) to turn off the lighting of the screen.
- **Voice Instruction**: You can use voice guidance instead of notification tones.
- **Volume**: Set the volume.
- **Video Volume**: Adjust the volume of videos played on the idle screen.
- **Intercom Speaker Volume**: Adjust the speaker volume when using the IP intercom.
- **Intercom Microphone Volume**: Adjust the microphone volume when using the IP intercom.

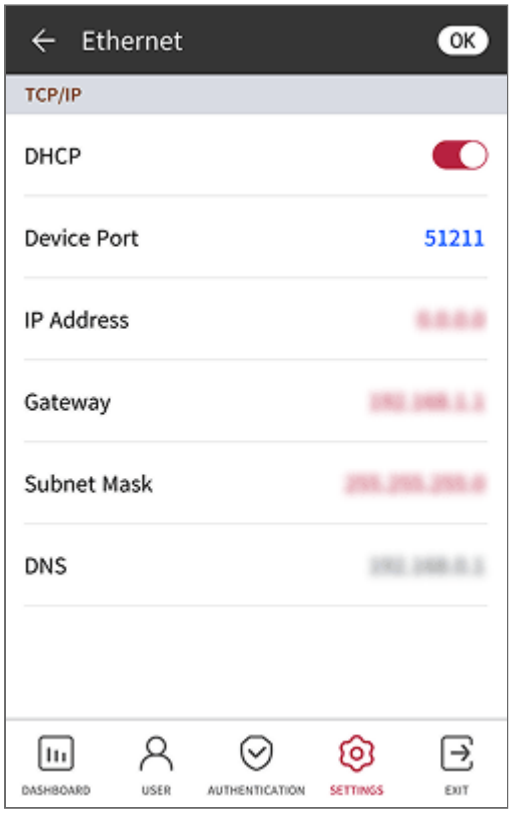
> **Info**
> For more information on the BioStar Device SDK, refer to the BioStar Device SDK page on the Suprema Knowledge Base.

Network

You can change the network settings of the device, such as Ethernet, server, OSDP, etc.

Ethernet

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **NETWORK** → **Ethernet**.
3. Change the desired item.

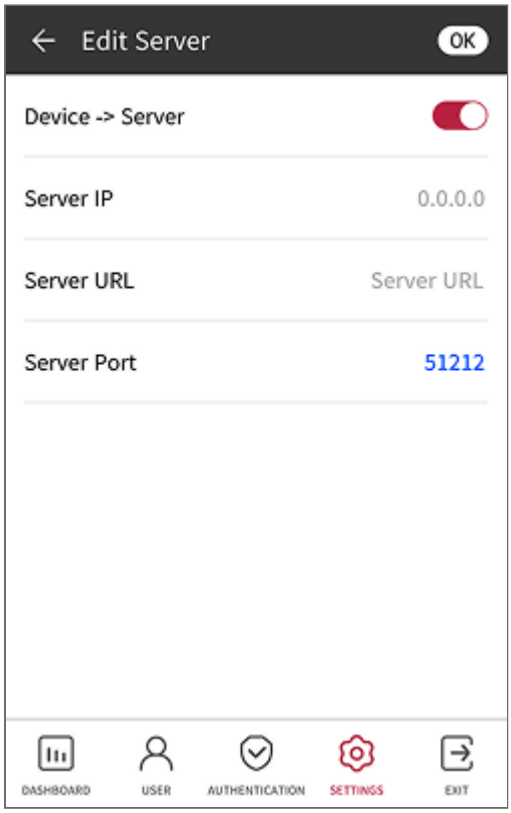


- **DHCP**: Set whether to use DHCP. If DHCP setting is disabled, the user can modify **IP Address**, **Gateway**, and **Subnet Mask**.
- **Device Port**: Set the device's port.
- **IP Address**: You can check the device's IP address. To modify, disable DHCP setting.
- **Gateway**: You can check the device's gateway. To modify, disable DHCP setting.
- **Subnet Mask**: You can check the device's subnet mask. To modify, disable DHCP setting.
- **DNS**: Set the DNS server address.

4. To save the settings, press **OK**.

Server

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **NETWORK** → **Server**.
3. Change the desired item.

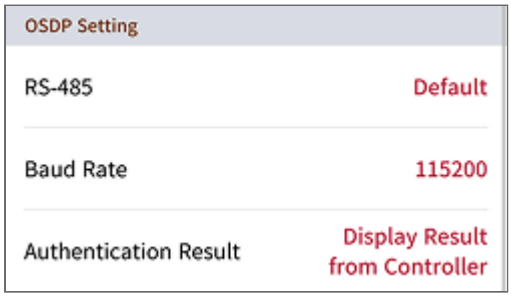


- **Device → Server**: You can send a connection signal from the device to a server with the input information directly. When **Device → Server** is enabled, the user can input **Server IP**, **Server URL**, and **Server Port**.
- **Server IP**: Enter the IP address of the PC on which BioStar X is installed.
- **Server URL**: You can enter **Server URL** instead of **Server IP**.
- **Server Port**: Enter the port of the PC on which BioStar X is installed.

4. To save the settings, press **OK**.

OSDP settings

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **NETWORK**.
3. Set the desired item in **OSDP Setting**.



- **RS-485**: Select the RS-485 mode.
- **Baud Rate**: Select the desired baud rate.
- **Authentication Result**: When using **Intelligent Slave**, select to display the authentication results of 3rd party controllers or devices on the screen. This option can be used when **RS-485** mode is set to **Default** or **Slave**.

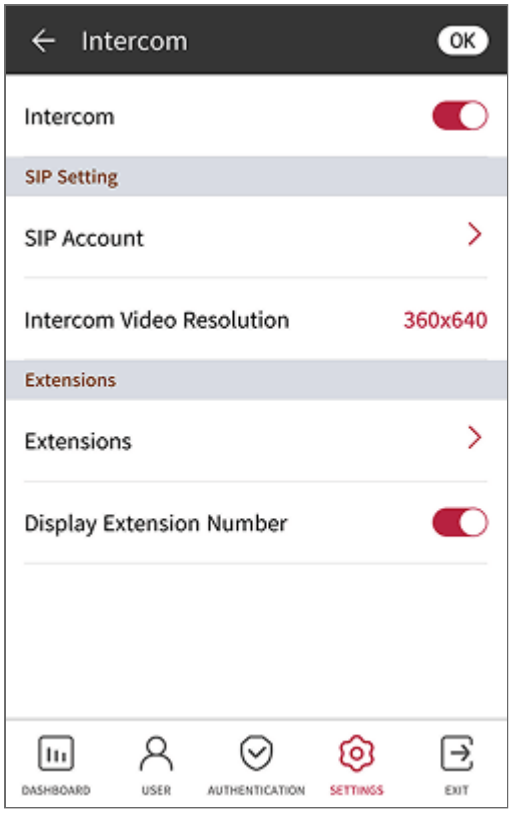
Device

IP Intercom

Set the account and extensions of intercom.

> **Info**
> To use Acoustic Echo Cancellation (AEC), set your SIP client's audio codec (for example, MicroSIP or Linphone) to G.722. If the codec is set to G.721, calls are possible, but echo cancellation will not be applied.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Intercom**.



- **Intercom**: Set whether the intercom is enabled or not. Enabling intercom settings allows you to configure **SIP Account** and **Extensions**.
- **SIP Account**: Enter each item so that the device can be registered on the SIP server.
- **Intercom Video Resolution**: Select the resolution of the intercom video output from the device.
- **Extensions**: Add, delete, or edit extension numbers.
- **Display Extension Number**: Set whether to display extension numbers.

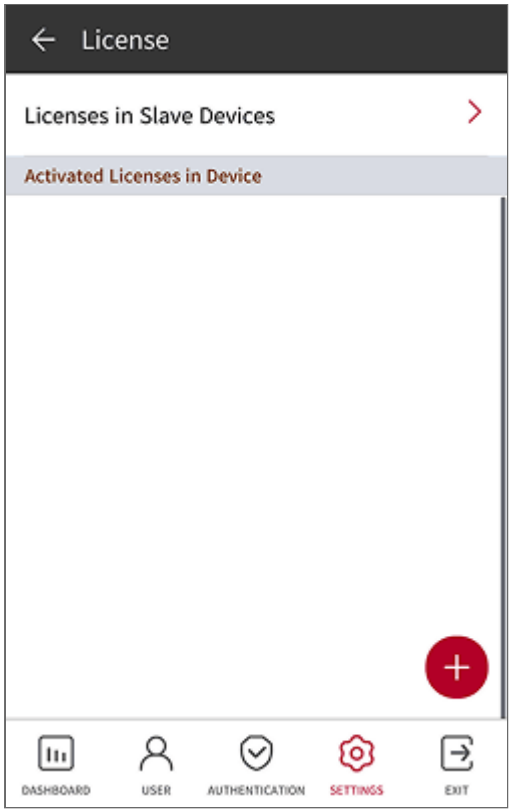
> **Info**
>
> - If **Display Name** is not set, it will not be possible to distinguish receivers.
> - Extension numbers can only enter alphanumeric (case sensitive), and special characters `+` `-` `@` `.`.

3. To save the settings, press **OK**.

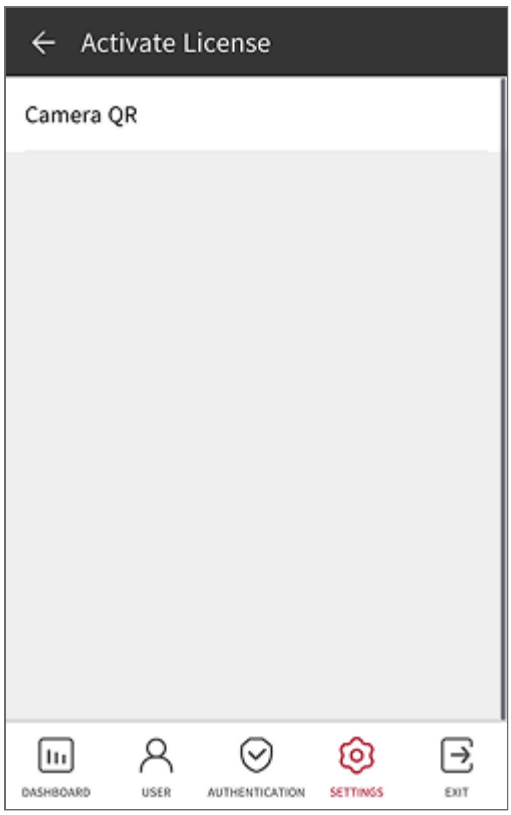
License

You can activate the device license or check **Licenses in Slave Devices** and **Activated Licenses in Device**.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **License**.
3. To activate the device license, connect the USB with the license to the device and select .



4. Licenses that can be activated appear on the screen. Activate the desired license.



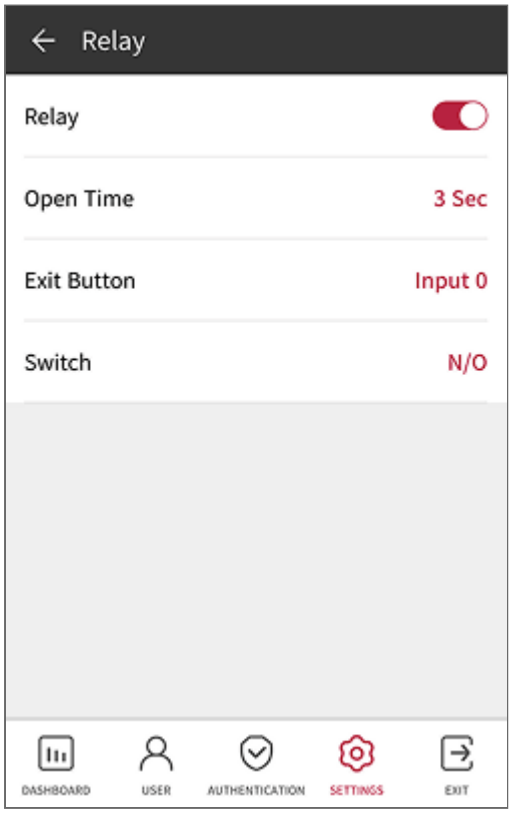
Info

- Contact the place of purchase to issue a device license.
- One feature is available per device license.
- You can include multiple device licenses in one device license file. (Supports up to 100)
- The device license file is an encrypted file and cannot be modified arbitrarily.
- Device licenses are issued based on device ID. If the device ID is changed in an unusual way, the warranty service for the license is not provided.

Relay

You can set the input ports of **Open Time** and **Exit Button** in the device.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Relay**.

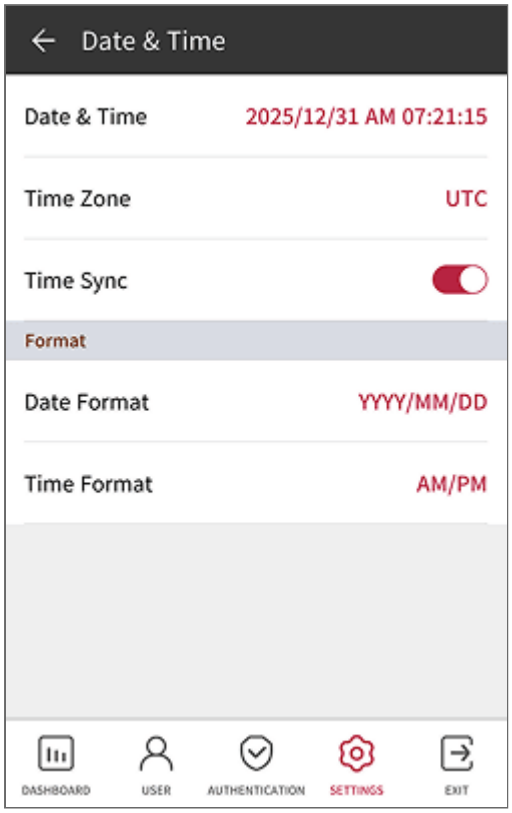


- **Relay**: You can set whether relay is enabled or not. To set **Open Time** and **Exit Button**, activate this option.
- **Open Time**: Set the duration for the door to remain open when standard user authentication has been carried out.
- **Exit Button**: Select the input port where the exit button is connected.
- **Switch**: Select the type of switch (**N/O** or **N/C**) for the Exit Button's input port.

Date & Time

You can set date and time. Set the date and time accurately in order to collect accurate log data.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Date & Time**.
3. Change the desired item.

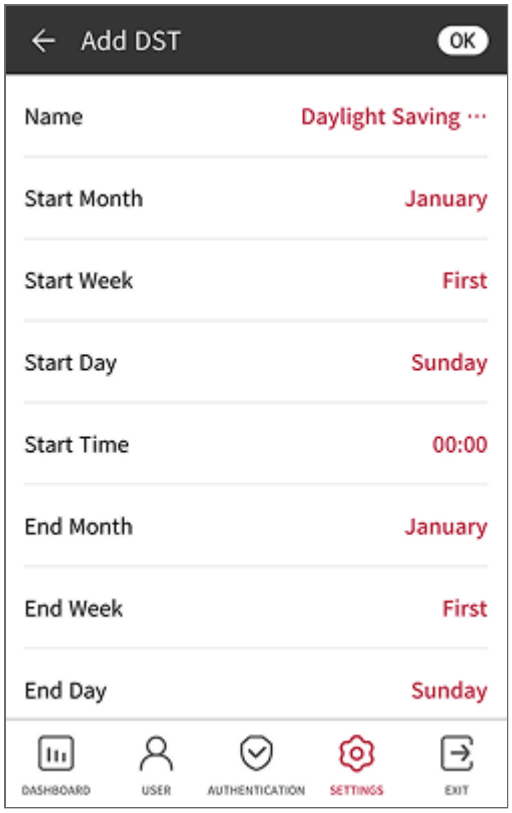


- **Date & Time**: Check the current date and time. To modify it manually, disable **Time Sync**.
- **Time Zone**: Set the time reference of the current location.
- **Time Sync**: Synchronize the server and the time. If you wish to synchronize the server and the time, enable **Time Sync**.
- **Date Format**: You can set the date format. You can select **YYYY/MM/DD**, **MM/DD/YYYY**, and **DD/MM/YYYY**.
- **Time Format**: You can set the time format. You can select **AM/PM** and **24-Hour**.

Daylight saving time

You can use the device by applying daylight saving time. Set the start and end time correctly.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Daylight Saving Time** and then press to add additional daylight-saving time.
3. Change the desired item.



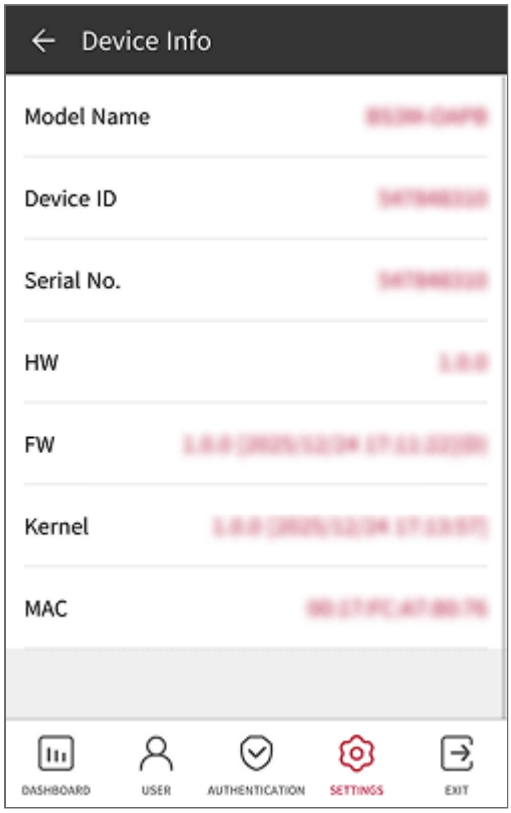
- **Name**: Set the name of daylight-saving time.
- **Start Month** / **Start Week** / **Start Day** / **Start Time**: Set details of when daylight-saving time begins.
- **End Month** / **End Week** / **End Day** / **End Time**: Set details of when daylight-saving time ends.

4. To save the settings, press **OK**.

Device Information

You can view the model name, device ID, serial number, device and firmware version, kernel, and MAC address.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Device Info**. You can check the information of **Model Name**, **Device ID**, **Serial No.**, **HW**, **FW**, **Kernel**, **MAC**.



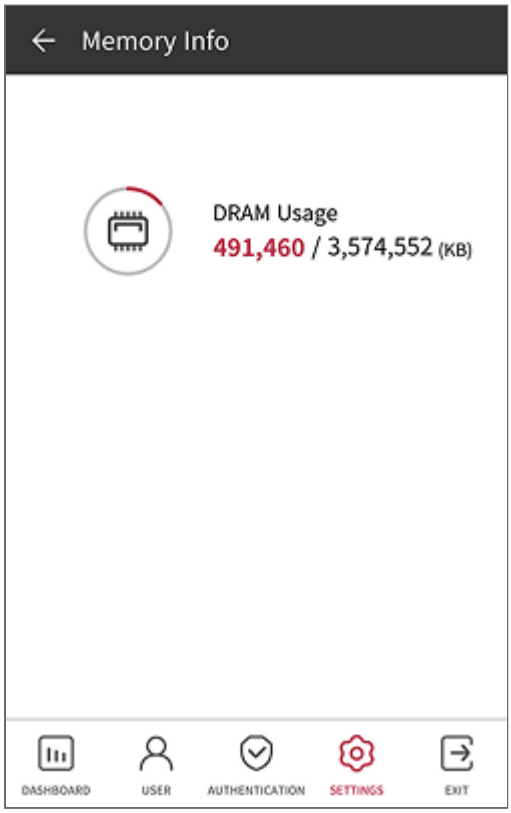
Info

Long-press **MAC** to display **FAS_IR_SP** information showing the version of the face anti-spoofing algorithm. If you press **FAS_IR_SP**, you can check the entire hash value in a pop-up message.

Memory information

View the status of memory usage.

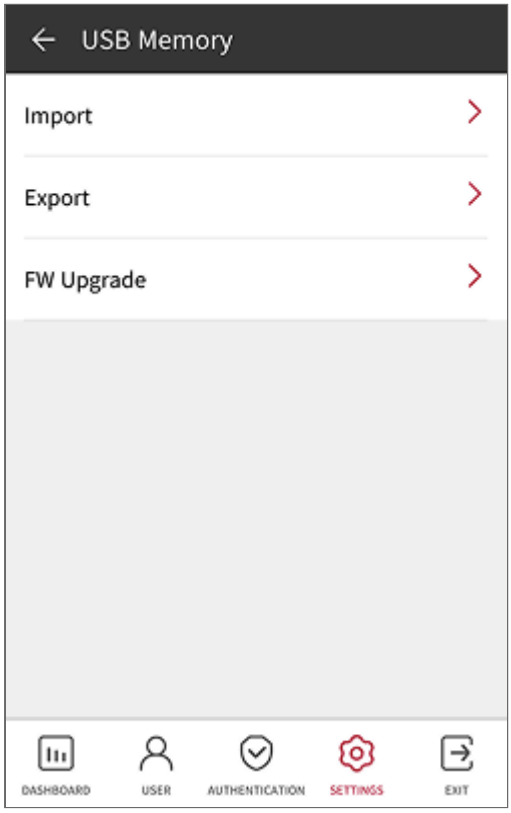
1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Memory Info**. You can view the memory usage status of the device.



USB memory

Connect USB Memory and import user information to the device or export log and user information from the device. You can also upgrade the firmware.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **USB Memory**.
3. Select the desired item and change the setting.



- **Import**: Import user information from the connected USB memory.
- **Export**: Select information you wish to export to the connected USB memory.
- **FW Upgrade**: Upgrade the firmware if the firmware files are saved in the connected USB memory.

Caution

Do not disconnect the power supply while upgrading the firmware of the device. The device may malfunction.

Info

- It is recommended to use a USB flash drive formatted in exFAT. USB flash drives in FAT32 format may malfunction when more than 50,000 face credentials are stored.
- Check the amount of free space on your USB flash drive. To save 100,000 face credentials, a minimum of 15 GB of free space is required.

Secure Tamper

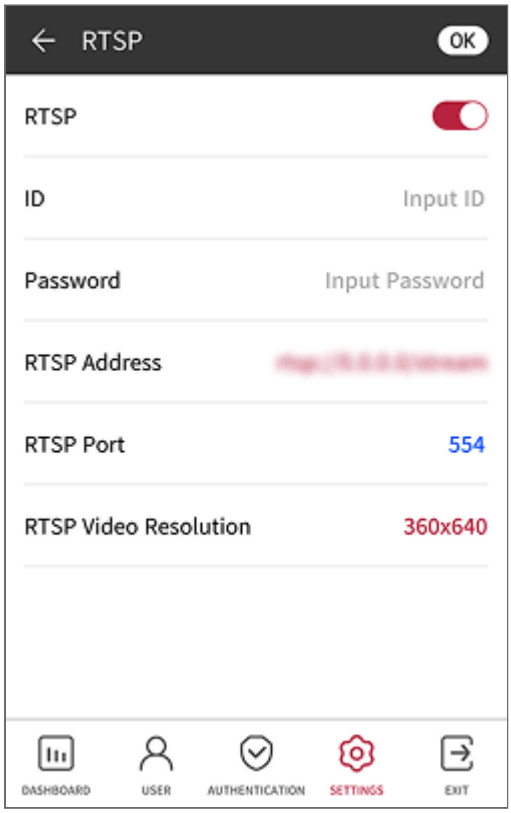
You can set whether to use security tamper. When the tamper is turned on, you can set to delete the entire user, the entire log, and the security key.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE**.
3. Activate **Secure Tamper** to delete data of all registered users, all logs, and secure keys when a temper event occurs.

RTSP

Connect a third-party video management system (VMS) to monitor videos filmed with the product's visual camera.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **RTSP**.
3. Select the desired item and change the setting.



- **RTSP**: You can set whether RTSP is enabled or not. When RTSP setting is enabled, the user can configure **ID**, **Password**, **RTSP Address**, **RTSP Port**, and **RTSP Video Resolution**.
- **ID**: Enter the ID. The ID may have up to 32 characters, in a combination of alphanumeric (case-sensitive) characters and certain symbols `-` `_`.
- **Password**: Enter the password. The password may have 8-32 characters in a combination of alphabetic (capital and lowercase letters) and numeric characters.
- **RTSP Address**: Enter the RTSP address.
- **RTSP Port**: Enter the RTSP port number.

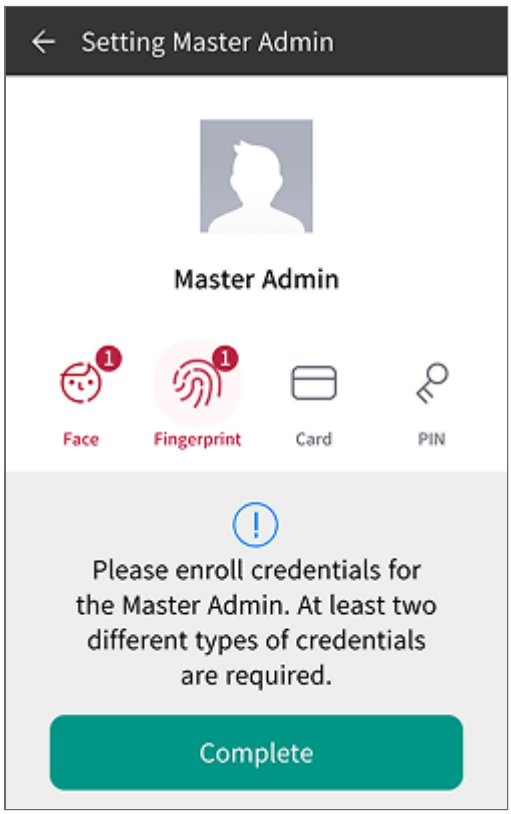
- **RTSP Video Resolution**: Select the resolution of the RTSP video output from the device.

> **Info**
> When the device is configured as a slave device, the RTSP function may not be available.

Master administrator CE-oriented products

You can change the authentication method of the Master Admin.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Master Admin**.
3. Press **Complete** to set the desired authentication method and save.



> **Info**
> You must enroll at least two types of credentials.

Restart device

The user can restart the device.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Restart Device**.
3. Press **OK** to restart the device. Press **Cancel** to return to the previous screen.

Restore default

Device settings, network settings, and operator levels will be reset.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **Restore Default**.
   - **All settings**: Initializes all settings stored on the device. Press **OK** to initialize all device settings. Press **Cancel** to return to the previous screen.
   - **Keep Network Settings**: Initializes all settings except for network settings. Press **OK** to initialize all settings except for network settings. Press **Cancel** to return to the previous screen.
   - **Factory Default**: Deletes all information saved in the device and the root certificate, restoring settings to default.
   - **Delete the Root Certificate**: Deletes the root certificate saved in the device.
3. If you proceed with **Restore Default**, the device will restart.

> **Info**
>
> - When you reset, the operator level will be reset as well. After resetting, make sure to set the operator level again.
> - Language setting will not change after resetting.
> - The **Factory Default** menu can be used when the root certificate is saved in the device.
> - The **Delete the Root Certificate** menu can be used only when the root certificate is saved in the device and an administrator has been designated.

User ID type

Select the type of user ID to register to the device.

1. Press and authenticate with the Admin level credential.
2. Select **SETTINGS** → **DEVICE** → **User ID Type**.
   - **Number**: You can enter a user ID with numbers only.
   - **Alphanumeric**: Enter a user ID using alphanumeric characters and certain symbols (`_` , `-` , and `.`).
3. Select to the desired item.

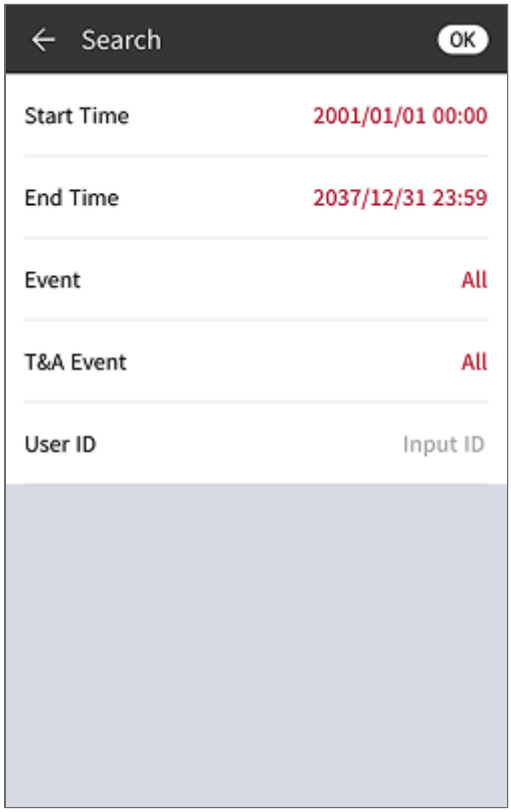
Event Logs

Describes how to view event logs generated by the device.

Search event logs

Set conditions to search logs.

1. Press and authenticate with the Admin level credential.
2. Select in **DASHBOARD**. All event logs appear.
3. Press to search a specific log and change the condition.



4. Set the search criteria and click **OK** to display logs that match the criteria.

Delete all logs

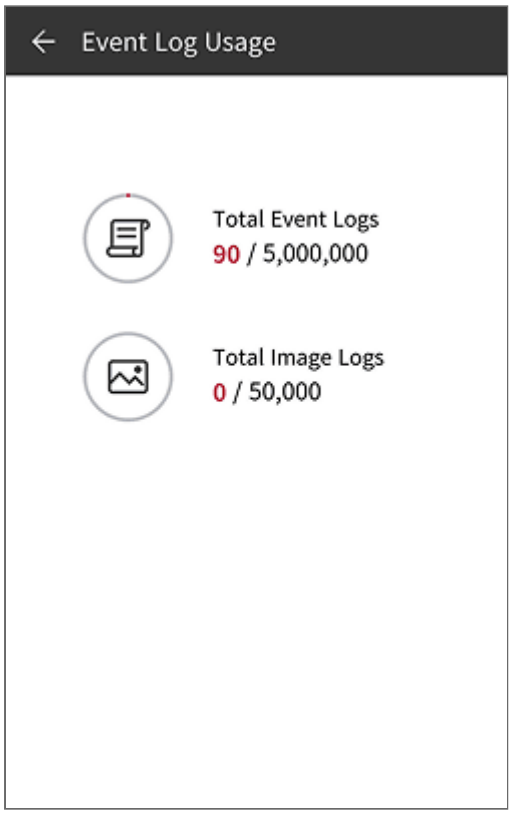
You can delete all saved logs.

1. Press and authenticate with the Admin level credential.
2. Select in **DASHBOARD**. All event logs appear.
3. To delete all logs, select and click **OK**. Press **Cancel** to return to the previous screen.

View log usage

You can check the status of log usage.

1. Press and authenticate with the Admin level credential.
2. Press → in **DASHBOARD**. Check the device's event log and image log usage.



Troubleshooting

This document provides information to solve unexpected issues that you may encounter when using the device.

Check items before reporting a malfunction

This document provides information to solve unexpected issues that you may encounter when using the device.

Power

Q. The power is being supplied but the device does not operate.

- If the terminal and the bracket are far away from each other, the device may not operate due to the temper switch.
- Check the adaptor or the power cable.

PIN

Q. I lost my PIN.

- For a normal user PIN, request it from the administrator and enter it again.
- If you have lost the Admin PIN, contact the installation company.

Q. I entered my PIN and pressed the OK button, but I still cannot open the door.

- Check if you have entered the registered PIN correctly.
- Check if you have changed the PIN recently.
- If you cannot remember the PIN, request it from the administrator and enter it again.

QR/Barcode

Q. It fails to scan a QR/Barcode.

- Refer to Correct QR/Barcode Authentication Method and try again.
- Adjust the brightness of your smartphone so that the device can read the QR/Barcode clearly and try again.
- If the problem persists, contact the administrator who issued the QR/Barcode.

Face

Q. The face has been registered but face authentication cannot be done smoothly, and errors occur frequently.

- Check Cautions for enrolling a faces and enroll the face again.
- If there are many enrolled faces, change **Matching Timeout** and try again.

Q. Face authentication has suddenly stopped working.

- Check Cautions for authenticating a face and try again.

Q. **Mask Detection** is set to **Enabled**, but face authentication cannot be done smoothly when wearing a mask.

- Authenticate your face twice with the mask pull down on the tip of your nose. Then, authenticate your face again wearing a mask that covers your nose completely. If the problem persists, contact the installation company.

Fingerprint

Q. The fingerprint has been enrolled but fingerprint authentication cannot be done smoothly and errors occur frequently.

- Check Correct fingerprint input method and enroll the fingerprint again.
- If your fingerprint has a cut, the device may recognize your fingerprint as someone else's fingerprint.
- If there are many enrolled fingerprints, change **Matching Timeout** and try again.
- The authentication rate may vary for each fingerprint due to different characteristics. Enroll the fingerprint of another finger.

Q. Suddenly fingerprint authentication cannot be done.

- Check if the finger or the fingerprint sensor is smeared with sweat, water or dust, and wipe the finger or the fingerprint sensor clean.
- Wipe your finger and the fingerprint sensor with a dry towel and then try again.
- If the fingerprint of your finger is too dry, blow on the fingerprint and then try again.

Q. The fingerprint sensor does not turn on.

- When **Sensor Mode** is set to **Auto On**, the sensor will only turn on when you place finger on the fingerprint sensor. If you want the fingerprint sensor to always be on, set **Sensor Mode** to **Always On**.

Door lock

Q. The door cannot be locked when I close the door.

- The electric lock may be malfunctioning. Have an inspection through the installation company.

Time

Q. Suddenly the time has become incorrect.

- The device is equipped with a built-in battery but if power is not supplied for a long time, the built-in battery may die, causing the time to become incorrect. You can correct the time by referring to Date & Time.

Admin access

Q. I lost my Admin PIN, so I cannot access the Admin mode.

- The administrator grants an access permission in the device, so only the administrator can access the Admin menu.
- If you have lost the Admin PIN, contact the installation company.

Product Specifications

Provides key specifications of the product, including size, features, and performance.

Credentials

Biometric	**Face** • Authentication Distance[1]:0.3 ~ 1.3 m • Authentication Height:1.4 ~ 1.9 m • Matching Speed:Within 0.2 seconds • Live Face Detection:Supported **Fingerprint** BS3M-ODB, BS3M-OAPB • Image Dimension:300 x 400 pixels • Resolution:500 dpi • Template:SUPREMA / ISO19794-2 / ANSI-378 • Extractor / Matcher:MINEX certified and compliant • Sensor Certificates:FBI PIV and FBI Mobile ID FAP20 • Live Fingerprint Detection:Supported (SW-based)	
RF Card	BS3M-DB, BS3M-ODB	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3, FeliCa
	BS3M-APB, BS3M-OAPB	125kHz EM, HID Prox & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3, FeliCa, iCLASS SE/SR/Seos
RF Read Range[2]	EM/MIFARE/DESFire/HID iCLASS: 50 mm, HID Prox/FeliCa: 30 mm	
Mobile	NFC, BLE	
Scramble Keypad (PIN)	Supported	
QR/Barcode[3]	Supported[4]	
QR/Barcode Read Range[5]	8 ~ 25 cm	

General

Model Name	**BS3M-DB, BS3M-APB, BS3M-ODB, BS3M-OAPB**	
CPU	**1.4 GHz Quad Core**	
Memory	**32 GB Flash + 4 GB RAM**	
Crypto Chip	**Supported**	
Display	**7" IPS color LCD**	
Display Resolution	**800 x 1280 pixels**	
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**	
Camera	• **IR: 2M pixels** • **Visual: 2M pixels**	
Dimensions (W x H x D)	**Device**	• **BS3M-DB, BS3M-APB: 119.8 x 233 x 23.5 (mm)** • **BS3M-ODB, BS3M-OAPB: 119.8 x 268.3 x 23.5 (Top) / 49.6 (Bottom) (mm)**
	Bracket	• **BS3M-DB, BS3M-APB: 98.4 x 223.3 (mm)** • **BS3M-ODB, BS3M-OAPB: 98.4 x 251.4 (mm)**
Weight	**Device**	• **BS3M-DB, BS3M-APB: 565 g** • **BS3M-ODB, BS3M-OAPB: 640 g**
	Bracket	• **BS3M-DB, BS3M-APB: 187 g (including washers and bolts)** • **BS3M-ODB, BS3M-OAPB: 206 g (including washers and bolts)**

IP Rating	**IP65**
IK Rating	**IK06**
Certifications	**CE** CE models only**, UKCA, KC, FCC, IC, RCM, RoHS, REACH, WEEE, SIG, MIC, TELEC, ETL Listed to UL 294**

Capacity

Max. User	**100,000**[6)]	
Max. Credentials (1:N)	**BS3M-DB, BS3M-APB**	• **Face: 50,000** • **Card: 100,000**
	BS3M-ODB, BS3M-OAPB	• **Face: 50,000** • **Fingerprint: 100,000** • **Card: 100,000**
Max. Credentials (1:1)	**BS3M-DB, BS3M-APB**	• **Face: 100,000** • **Card: 100,000** • **PIN: 100,000**
	BS3M-ODB, BS3M-OAPB	• **Face: 100,000** • **Fingerprint: 100,000** • **Card: 100,000** • **PIN: 100,000**
Max. Text logs	**5,000,000**	
Max. Image logs	**50,000**	

Interface

Ethernet	**Supported (10/100/1000 Mbps, auto MDI/MDI-X)**
Network Protocol	**TCP, UDP**
RS-485	**1 ch Master / Slave (Selectable)**

RS-485 Communication Protocol	**OSDP V2 compliant**	
Wiegand	**1 ch Input, 1 ch Output**	
Input	**3 ch Inputs**	
Relay	**1 relay**	
PoE+[7)]	**BS3M-DB, BS3M-ODB**	**Not supported**
	BS3M-APB, BS3M-OAPB	**Supported (IEEE 802.3at compliant)**
Intercom	**Supported**	
RTSP	**Supported**	
USB	**USB 2.0 (Type C)**	
USB Expansion Port	**Supported**	
Tamper	**Supported**	

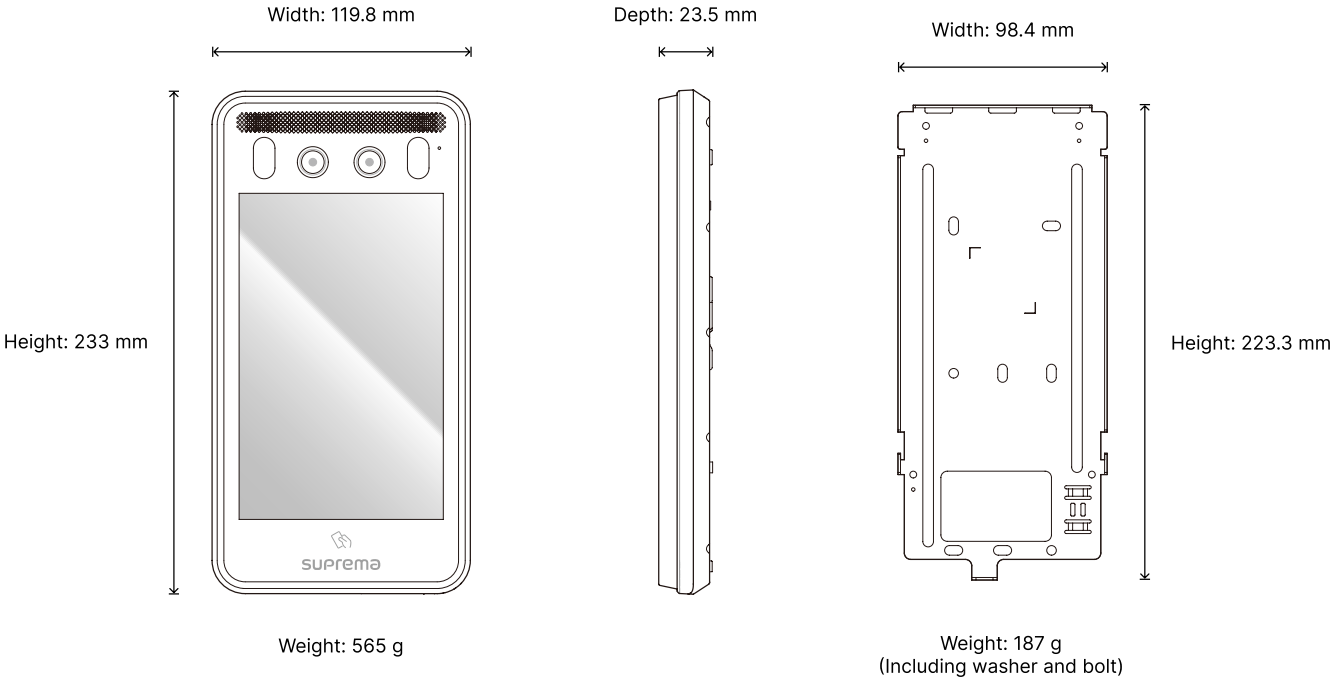
Electrical

Power	**12 Vdc**	**Current: Max. 2.1 A**
	24 Vdc	**Current: Max. 1 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 ports 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**

Dimensions and Weight

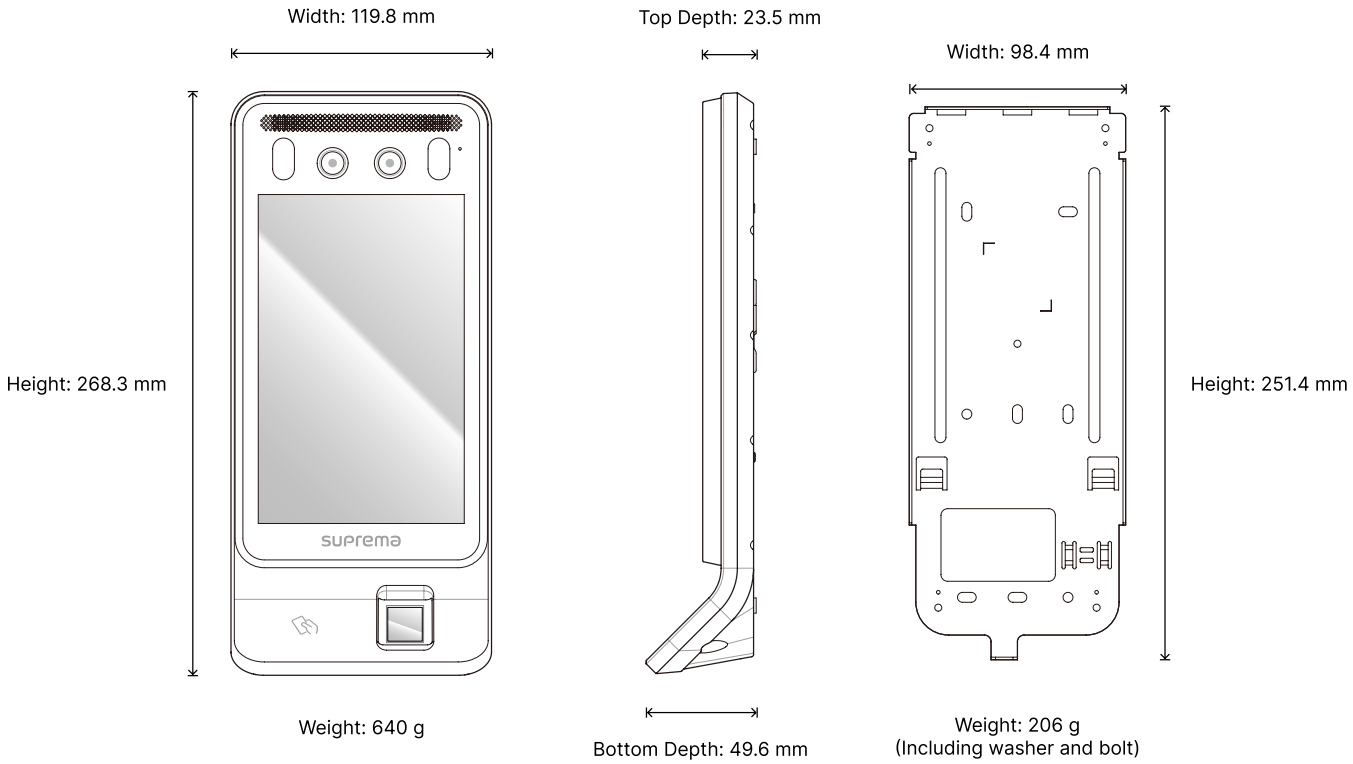
BS3M-DB, BS3M-APB



Weight: 565 g

Weight: 187 g
(Including washer and bolt)

BS3M-ODB, BS3M-OAPB



1) The minimum facial authentication distance indicated is the default setting for the product, and the recommended facial authentication distance is 0.5-1.3 m.

2) The RF detection range may vary depending on the installation environment.

3) Supports QR/Barcodes composed of up to 32 ASCII code strings.

4) Camera QR license is required to use more diverse QR/barcode authentication. For detailed information on device licenses, please refer to the BioStar X Administrator Guide.

5) The indicated QR/Barcode recognition distance is a recommended distance, and the actual recognizable distance may vary depending on the QR/Barcode size and installation environment.

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

7) Requires PoE+ (IEEE 802.3at, 30 W) or PoE++ (IEEE 802.3bt, 60–100 W) power. Standard PoE (IEEE 802.3af, 15.4 W) is not supported. Using standard PoE may cause devices to operate unstably or be permanently damaged. Before connecting the device, make sure your network switch or PoE injector supports PoE+ or PoE++.

Info

Product specifications are subject to change without notice for performance improvement.

Regulatory Information

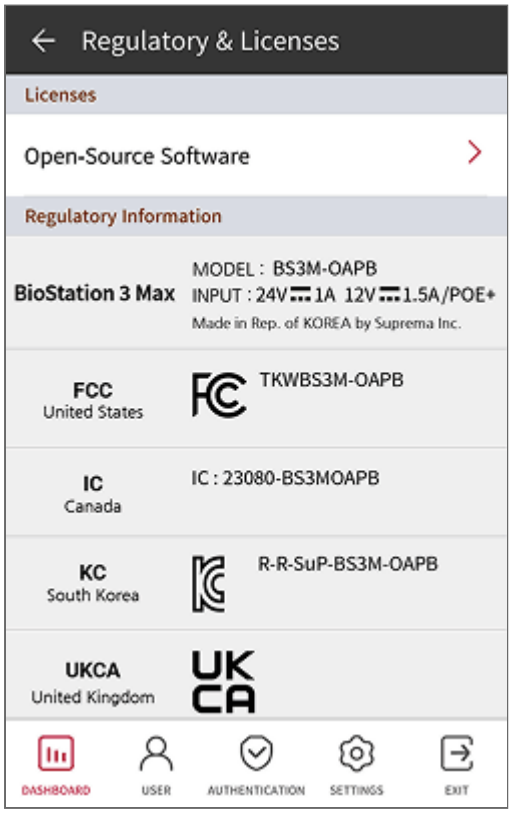
Provides information on regulations and certifications complied with by the product.

Regulatory & Licenses

You can check the license, regulatory certification, and compliance marks on the product.

- CE CE models only / FCC / IC / KC / UKCA / RCM

1. Press and authenticate with the Admin level credential.
2. Touch **DASHBOARD** in the upper right corner and touch to check **Regulatory & Licenses**.



FCC Compliance Information

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Info

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. Do not install or operate this device and its antenna in conjunction with any other antenna or RF transmission device.

IC information

This device complies with Industry Canada's licence-exempt RSSs.

Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage ;
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

EU Declaration of Conformity (CE) CE models only

This product is CE marked according to the provisions of the Radio Equipment Directive (RED) 2014/53/EU.

Hereby, Suprema Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of Radio Equipment Directive (RED) 2014/53/EU and is marked with the CE mark. This device is a Class 1 radio device according to the instructions.

- Bluetooth transmit power: -0.1 dBm
- Bluetooth frequency: 2402~2480 MHz
- NFC frequency: 13.56 MHz
- RFID frequency: 13.56 MHz + 125 kHz

For more information, please contact us via the contact details below.

Suprema Inc.

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Tel: +82-31-783-4502 / Fax: +82-31-783-4503

Appendices

Includes legal notices contained in the product.

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- The NotoSans font included in this product is licensed under the SIL Open Font License. For more information about the SIL Open Font License, please see the SIL Open Font License.
- The modified source based on the Linux kernel included in this product, the glibc library, and the WebRTC library can be downloaded by contacting the Suprema Technical Support Team.

Suprema Inc.

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visit the webpage below by scanning the QR code.
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