BioStation 3

USER GUIDE

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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.

Instructional Icons

Warning: This symbol indicates situations that could result in death or severe injury.

Caution: This symbol indicates situations that may result in moderate injury or property damage.

Note: This symbol indicates notes or additional information.

Warning

Installation

When using a high-capacity power supply, please pay special attention to avoid miswiring.

- Miswiring may result in serious fire, electric shock, or product damage.

Do not install or repair the product arbitrarily.

- This may result in electric shock, fire, or product damage.
- Damages caused by any modifications or failure to follow installation instructions can void your manufacturer's warranty.

Do not install the product in a place with direct sunlight, moisture, dust, soot, or a gas leak.

- This may result in electric shock or fire.

Install the product in a well-ventilated and cool place away from direct sunlight to prevent overheating when installing it outside.

Do not place the product inside the sealed enclosure when installing it outside.

- It increases the internal temperature of the enclosure and this may result in electric shock, fire, or malfunction.

Do not install the product in a location with heat from an electric heater.

- This may result in fire due to overheating.

Install the product in a dry location.

- Humidity and liquids may result in electric shock or product damage.

Do not install the product in a location where it will be affected by radio frequencies.

- This may result in fire or product damage.

Operation

Keep the product dry.

- Humidity and liquids may result in electric shock, fire, or product damage.

Do not use damaged power supply adapters, plugs, or loose electrical sockets.

- Unsecured connections may cause electric shock or fire.

Do not bend or damage the power cord.

- This may result in electric shock or fire.

Caution

Installation

Please read this manual before installing the product to ensure a safe and correct installation.

When wiring the power cable and other cables, make sure to connect them with the power turned off for all devices involved.

- The product may malfunction.

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

Do not install the product under direct sunlight or UV light.

- This may result in product damage, malfunction, discoloration, or deformation.

Do not install the power supply cable in a location where people pass by.

- This may result in injury or product damage.

Do not install the product near magnetic objects, such as a magnet, TV, monitor (especially CRT), or speaker.

- The product may malfunction.

Keep the minimum distance between products when installing multiple products.

- The product may be affected by radio frequencies emitted by other products and the product may malfunction.

Use the IEC/EN 62368-1 approved power adapter that supports higher power consumption than the product. It is highly recommended to use the power adapter sold by Suprema.

- If the right power supply is not used, the product may malfunction.
- Refer to the Power in the product specifications for maximum current consumption specifications.

Use a separate power supply for the Secure I/O 2, electric lock, and the product.

- If connecting and using the same power supply, the product may malfunction.

Do not connect and use the power supply and Power over Ethernet (PoE+) simultaneously.

- The product may malfunction.

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). It is recommended to use the enclosure if the product is installed outside.

- The product may malfunction if the water-resistant and dust-resistant features are damaged.

When connecting PoE+ power, always use PoE+ or PoE++ standards only.

- Using standard PoE may cause unstable operation and can potentially damage the device permanently.

Caution

Operation

Do not drop the product or cause impacts to the product.

- The product may malfunction.

Do not disconnect the power supply while upgrading the firmware of the product.

- The product may malfunction.

Do not disclose the password to others and change it regularly.

- This may result in illegal intrusion.

Do not press buttons(touch pad) on the product by force or do not press them with a sharp tool.

- The product may malfunction.

Do not store your product in very hot or very cold places. It is recommended to use your product at temperatures from -20 °C to 50 °C.

- The product may malfunction.

When cleaning the product, mind the following.

- Wipe the product with a clean and dry towel.
- If you need to sanitize the product, moisten the cloth or the wipe with a proper amount of rubbing alcohol and gently clean all exposed surfaces. Use rubbing alcohol (containing 70 % Isopropyl alcohol) and a clean, non-abrasive cloth like lens wipe.
- Do not apply liquid directly to the surface of the product.

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

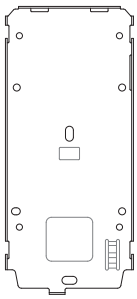
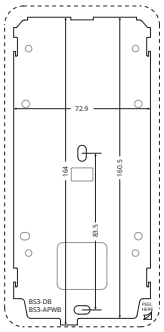
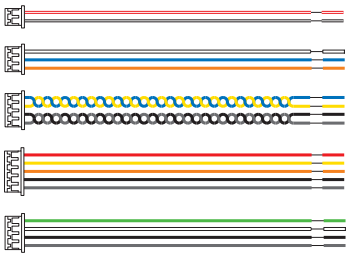
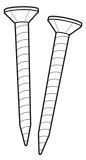
- The product may malfunction.

RTC Battery

Use of an unapproved or incorrect type of battery may result in a risk of explosion. Discard the battery according to the appropriate regional or international waste regulations.

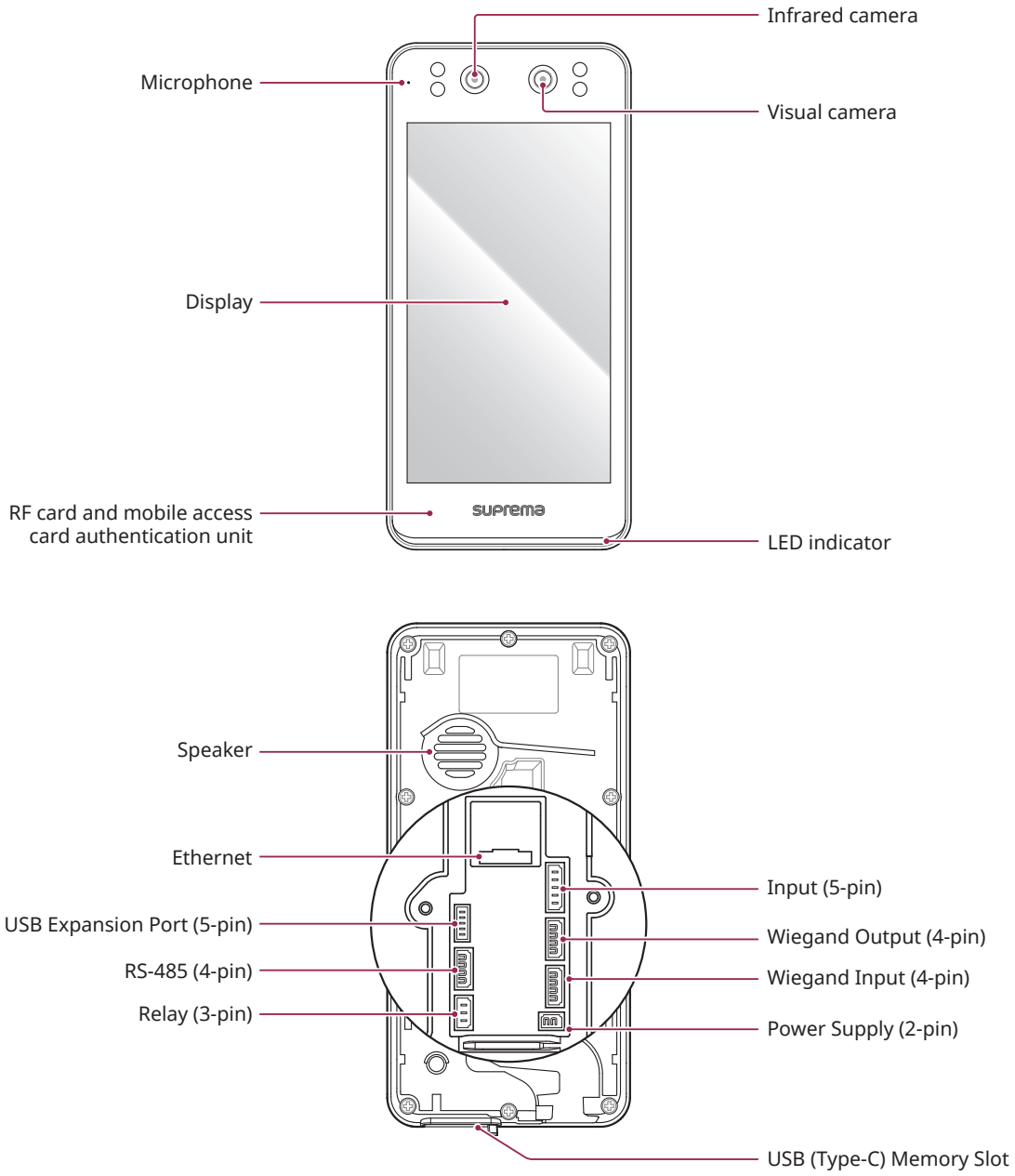
Introduction

Components

		
BioStation 3	Wall Bracket	Drilling Template
		
Connection Cables	Diode	120 Ω Resistor
			
PVC Anchor x2	Fixing Screw x2	Bracket Fixing Screw (Star Shaped)	Quick Guide

- 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.
- For more details regarding the product installation, visit the Suprema Download Center (https://download.supremainc.com) and refer to the installation guide.

Name and Function of Each Part



Name	Description
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.

Name	Description

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:
	  – Fails to receive an IP address when **DHCP** is enabled.
	  – Disconnection with the master device when in **Slave** mode.
	• Red/Purple blinking: Device is locked.
	• Yellow blinking: Waiting for an input.

Speaker	Delivers sound.
Ethernet	Connect the Ethernet cable.
Input (5-pin)	Connect the Input 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.
RS-485 (4-pin)	Connect the RS-485 cable.
Relay (3-pin)	Connect the Relay cable.
Power Supply (2-pin)	Connects the power supply cable.
USB (Type-C) Memory Slot	Connects the USB memory.

Cables and Connectors

Power supply

Pin	Name	Color
1	PWR +VDC	Red (White stripe)
2	PWR GND	Black (White stripe)

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
5	SH GND	Gray

Wiegand Input

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

Wiegand Output

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

Master Admin Settings

The **Master Admin** feature is designed to enhance device security by strengthening overall administrator privileges and preventing unauthorized access and configuration changes.

With this feature, you must **register a Master Admin** on the device, and only registered Master Admins can access the administrator menu and change device settings.

What is a Master Admin?

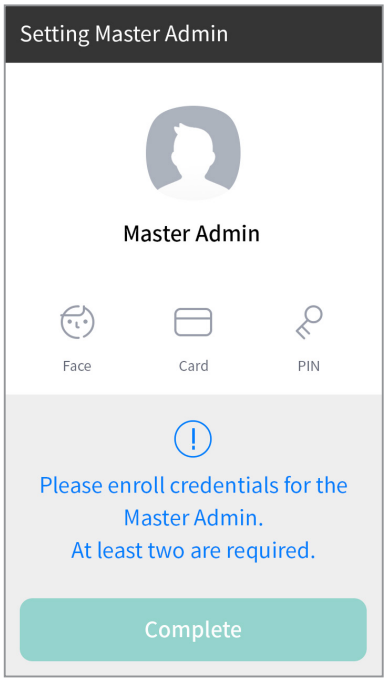
- If you use the device without setting up a Master Admin, anyone can access the administrator menu and change device settings. The Master Admin feature addresses this security vulnerability by enforcing the setup of an overall administrator.
- The Master Admin cannot be deleted directly, and they are deleted only through **Factory Reset**.

Registering Master Admin on a New Device

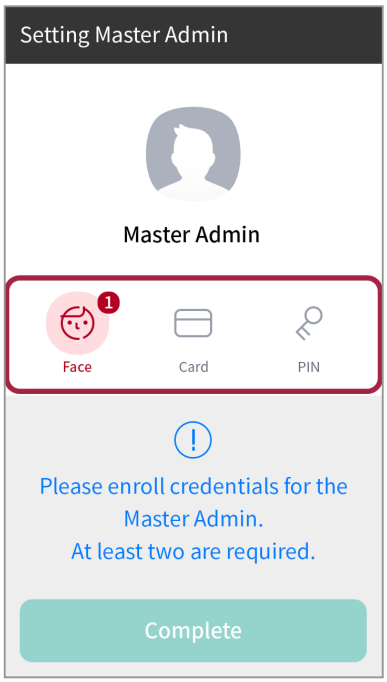
For new devices, registering a Master Admin is mandatory. If you do not register a Master Admin, device usage will be restricted.

- On new devices, the **Master Admin** registration screen appears upon initial boot. You cannot proceed to the next screen unless you register a Master Admin.
- Even if you assign an overall device administrator via BioStar 2, you must register a **Master Admin** to use all device functions.
- The new device cannot be downgraded to a lower version.

1 When you boot a new device for the first time, the **Master Admin** registration screen appears.



2 To register a **Master Admin**, you must enroll at least two types of credentials. Select and enroll your preferred two credential types.



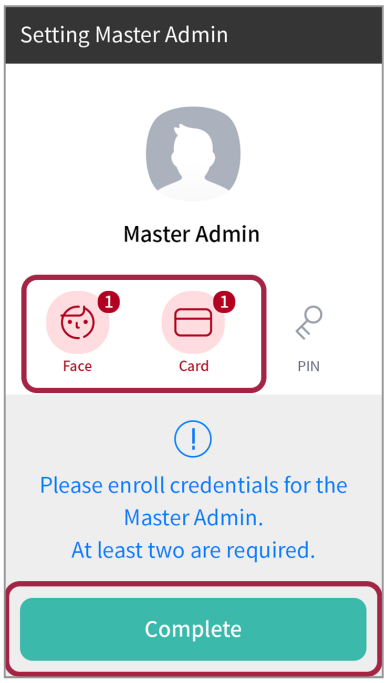
Credentials that can be enrolled for **Master Admin** are as follows:

Credential Type	Max Quantity	Details
Card	Up to 4	Supports CSN and Wiegand type only No duplicate enrollment within the same type
Face	Up to 2	Available only on devices with the same algorithm
Fingerprint	Up to 2	-
PIN	1	Minimum 8 digits

Enrollment Conditions:

- At least two different types of credentials must be enrolled.
- The same conditions apply to both new and upgraded devices.
- All credentials supported by the device can be used for authentication.

3 After enrolling at least two types of credentials, press the **Complete** button to finish **Master Admin** registration.



Additional Information

- **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

- When enrolling a face, maintain a distance of 60 ~ 100 cm between the device and the 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.

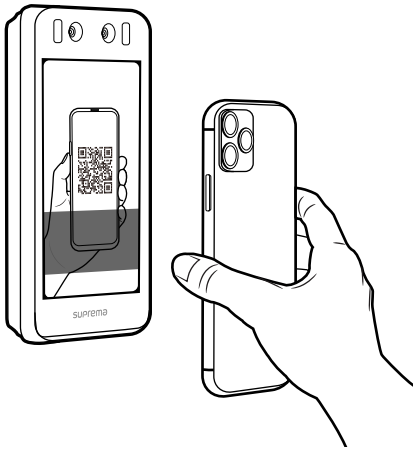
Cautions for authenticating a face

- 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 your face at a distance of 60 ~ 100 cm 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.

Note for QR Code Usage and Device License

How to scan a QR code

You can issue a QR code to a user and use it as an authentication method. Scan the QR code properly by following the instructions on the screen to increase the recognition rate.



- Keep 30 ~ 40 cm of distance between the device's camera and the QR code.
- Position the QR code in the center of the scan screen of the device.
- When authenticating with the QR code downloaded to your smartphone, adjust the brightness of your smartphone so that the device can read the QR code clearly.
- If do not follow the instructions on the screen, it may take a long time to scan the QR code, or it may fail.

Notes for Device License

- Using the QR Code authentication 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.

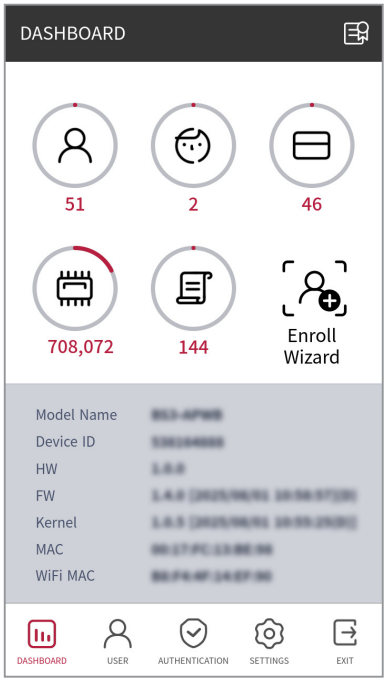
Admin Menu

DASHBOARD

1 Press ⊞ and authenticate with the Admin level credential.

Check current device usage and information on the **DASHBOARD**. Or select the **Enroll Wizard** to immediately register a user.

2 To Enroll a user or set up a device, select the desired menu from the bottom of the dashboard.



- If the administrator has not been designated, the **DASHBOARD** screen will be displayed when you press ⊞.
- The **WiFi MAC** is only available on the BS3-APWB model.

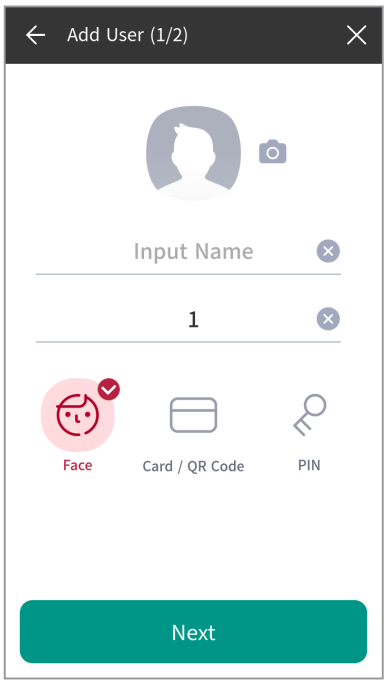
User

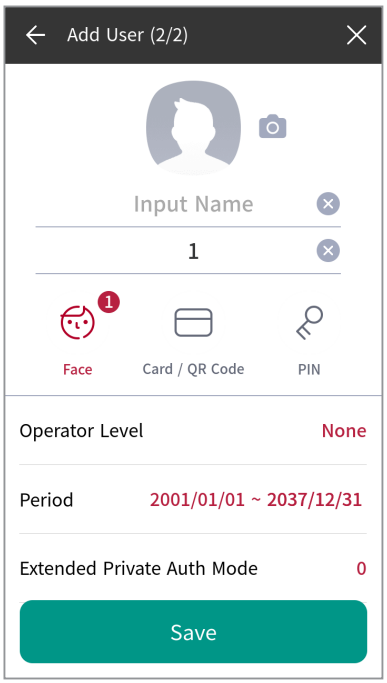
Registering User Information

The user information including credentials can be registered.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **USER** → ⊕, and choose a credential you want to enroll.
There are two steps for the user registration. Some options are available after the credential has been registered.





- 📷 : Register a user photo.
- **Name**: Enter the user name.
- **ID**: Enter a number between 1 and 4294967295 to register as the user ID. If **User ID Type** set to **Alphanumeric**, a combination of alphanumeric characters and symbols (_, -) can be used for the ID. Up to 32 characters can be input.
- **Face**: Enroll a face for user authentication. Press **Face** → **Next** and enroll a face according to the instructions on the screen. To add more faces, press ⊕. Please refer to Enrolling User Faces to learn more about face enrollment.
- **Card / QR Code**: Enroll a card for user authentication. Press **Card / QR Code** → **Next** and scan the card that will be assigned to the user. To enroll an additional card, press **Card / QR Code** → ⊕.
- **PIN**: Enter the PIN you wish to use. Enter the PIN you wish to use, and then enter the same PIN again for confirmation. Enter a number between 8 and 16 digits to prevent leaking.

- **Operator Level**: Select the level you wish to assign to a user.

> Available menus vary according to the set user level.
> - **None**: This is the general user level and menus cannot be accessed.
> - **Administrator**: All menus can be accessed.
> - **Configuration**: **AUTHENTICATION**, **DISPLAY & SOUND**, **DEVICE**, **NETWORK** and **EVENT LOG** menus can be accessed.
> - **User Management**: **USER** and **EVENT LOG** menus can be accessed.

- **Period**: Set an expiry date to use the user account.
- **Extended Private Auth Mode**: Change the authentication method according to the user. You can set extended private auth mode. This mode allows you to combine user authentication methods, including both faces. Otherwise, you can use the device's basic authentication mode.

3 To complete the registration of user information, press **Save**.

Enrolling User Faces

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **USER** → ⊕.

3 Select **Face** → **Next**.

4 Adjust a distance between the face and screen and look straight at the camera of the device.

5 Once your face is captured successfully, press **OK** → **Save**. To retake a photo, press **Re-Shot**.

> - The visual face data of BioStation 3 are not compatible with face templates of FaceStation 2 or FaceLite.
> - You can enroll visual face not only directly from BioStation 3 but from the BioStar 2 by uploading photos or importing CSV files. You can also enroll visual face with your smartphone via a link sent from BioStar 2. To learn more about how to enroll visual face for each method, please refer to the BioStar 2 Administrator Guide.
> - To use a Visual Face feature correctly, take a picture by following instructions below.
> - When enrolling a face, maintain a distance of 60–100 cm between the device and the face.
> - Do not change your face expression.
> - Do not wear a 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.

Modifying User Information

User Management or Administrator can modify the registered user information. A card or face can be added, and PIN and level can be modified.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **USER** → 🔍.

3 Select your search terms. You can search for a user by **All**, **User ID**, **Name**, **Face** and **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**.

> The **Access Group** can be registered in BioStar 2. For detailed contents regarding registering an access group, refer to the BioStar 2 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 Check **Delete All** to delete all registered users and press **OK**.

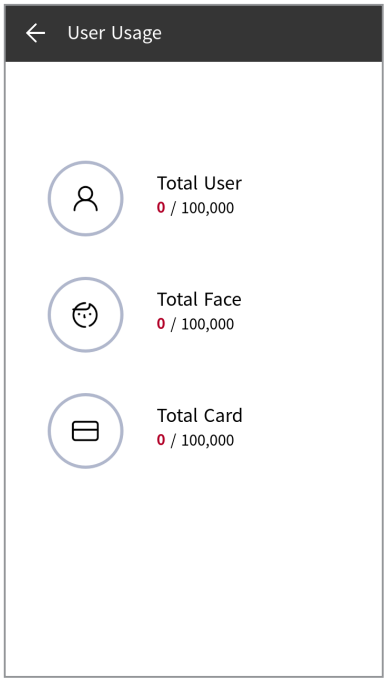
4 When you press **OK**, all registered users will be deleted.

View User Usage

You can see the number of registered users, faces, and cards at a glance.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **USER** → ⓘ. User usage information appears.



Authentication

Auth Mode

Set the authentication mode. You can make a combination of **Face**, **PIN**, **Card / QR Code**, or **ID** and you can also set a schedule for each authentication mode.

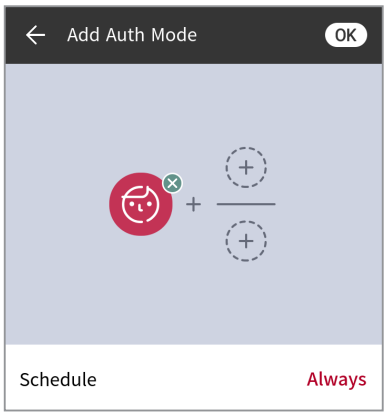
Registering Auth Mode

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **Auth Mode**.

3 Press ⊕.

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.



5 Set the authentication mode as desired and configure the **Schedule**.

Category	Description
Face	• : Mode to use a face only • + : Mode to authenticate with a face and then enter PIN
Card / QR Code	• : Mode to use a card / QR code only • + : Mode to authenticate with a card / QR code and then authenticate with a face • + : Mode to authenticate with a card / QR code and then enter PIN • + / : Mode to authenticate with a card / QR code and then authenticate with a face or enter PIN • + + : Mode to authenticate with a card / QR code and then use both face authentication and PIN input.
ID	• ID + : Mode to enter ID and then authenticate with a face • ID + : Mode to enter ID and then enter PIN • ID + / : Mode to enter ID and then authenticate with a face or enter PIN • ID + + : Mode to enter ID and then use both face authentication and PIN input

- The **Schedule** can be set in BioStar 2. If there is no set schedule, only **Always** can be selected.
- For detailed contents regarding setting a **Schedule**, refer to the BioStar 2 Administrator Guide.
- To use **QR Code** authentication, **QR Authentication** must be activated in **AUTHENTICATION** → **Operation**, 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 Select **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 Select **AUTHENTICATION** → **Auth Mode**.

3 Press and select the authentication mode to delete. You can select multiple options.

4 To delete the selected option, press **OK**.

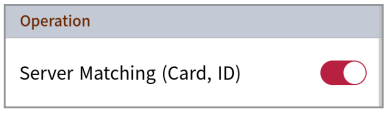
Operation

Server Matching

You can set up server matching.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** and activate **Server Matching (Card, ID)** in **Operation**.



- **Server Matching (Card, ID)**: When this option is activated, it performs user authentication matching in BioStar 2, not in the device. It can be used when the device has too much user information or when the device is installed outside.

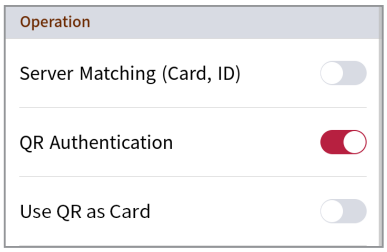
- **Server Matching** is only available for card and ID options.
- When you use the **Server Matching** option, you need to activate the option in both Biostar 2 and the device. Refer to the Administrator Guide of BioStar 2 to learn how to set the server matching settings in BioStar 2.

QR Authentication

You can activate QR code authentication.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** and activate **QR Authentication** in **Operation**.



- **QR Authentication**: Set whether to use QR Code authentication through the device's camera.
- **Use QR as Card**: Allows authentication with a QR code of the same data as the issued CSN card or Wiegand card. It can be set only when **QR Authentication** is activated.

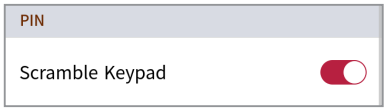
Using the **QR Authentication** requires a separate device license. For more information, refer to License.

PIN

Set whether to use the scramble keypad when entering passwords.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION**, and set whether to use the **Scramble Keypad** in the **PIN**.



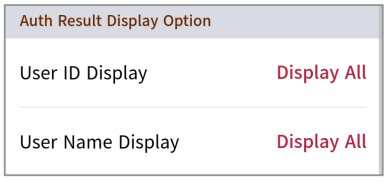
- **Scramble Keypad**: When entering a password, the positions of the number keys are randomly shuffled to prevent password leakage.

Auth Result Display Option

You can set the auth result display option.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** and set the desired item in the **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.

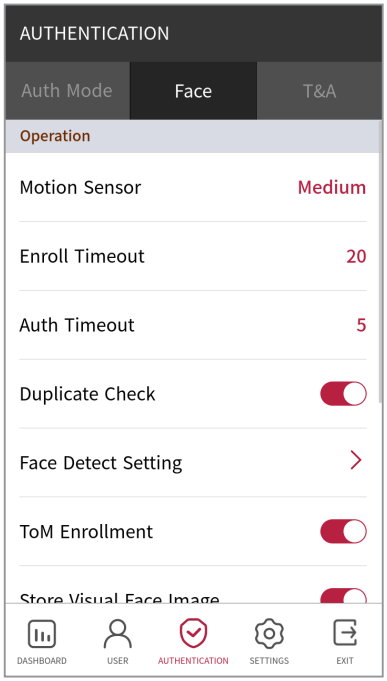
Face

You can change the configuration for facial authentication.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **Face**.

3 Select and set the desired item.



- **Motion Sensor**: Set the sensitivity for detecting motion near the device. If **Motion Sensor** is set to **Off**, tap the screen to authenticate the face.
- **Enroll Timeout**: If a face is not enrolled during the set time, the face enrollment will be canceled.
- **Auth Timeout**: If the authentication is not completed during the set time, the authentication will fail.
- **Duplicate Check**: When enrolling a face, you can check duplicates.
- **Face Detect Setting**: Set the face authentication area by adjusting the size and position of the detected area.

- It is recommended to maintain the default values of options under **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**: Enabling **ToM Enrollment** can be enrolled the **Template on Mobile** issued by BioStar 2. **Template on Mobile** is a Mobile Access card in which the user's biometric templates can be stored so you can still use biometric authentication although your biometric information is not stored in BioStar 2 server, Airfob Portal, or device.

For detailed contents regarding **Template on Mobile**, refer to the BioStar 2 Administrator Guide.

- **Store Visual Face Image**: Set whether to store both the actual image and the template in the visual face or to store only the template without storing the actual image. If disabled, all stored images of visual faces will be deleted, and newly enrolled visual faces will store templates excluding images.

After disabling this setting, please use BioStar 2 v2.9.7 or higher.

- **Security Level**: Set the security level for 1:N authentication.
- **Operation Mode**: Set the operation mode of the device when the face is authenticated.
  - **Fusion Matching**: Use both visual and infrared cameras to increase the face authentication accuracy.
  - **Fast Matching**: The device authenticates users who pass an access point without a pause within the authentication distance.
- **Fake Detection**: The device prevents user authentication using fake faces, such as photos. It is available when **Operation Mode** is set to **Fusion Matching**.

- Face anti-spoofing performance has been improved to pass the iBeta Level 1 ISO 30107-3 Presentation Attack Detection Test.
- We recommend using the **Fake Detection** feature set to **Normal** in environments with strong sunlight.

- **Advanced Settings**: Set the settings of the face authentication, such as mask detection.
  - **Mask Detection**: Set the mask detection mode to detect whether a user is wearing a mask or not.
  - **Detection Mode**: Set the method for verifying whether a mask is being worn. This is activated when the **Mask Detection** is set to **Enabled**.

- **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 to detect wearing a mask. This is activated when the **Mask Detection** is set to **Enabled**.
  - **Check Mode**: Set the check mode depending on the usage.

- **Check After Authentication**: Authenticate and then detect whether the user is wearing a mask.
- **Check Before Authentication**: Detect whether the user is wearing a mask and then authenticates.
- **Check Only**: Detect whether a user is wearing a mask without authentication. When this mode is activated, any user wearing a mask can access it regardless of authentication.

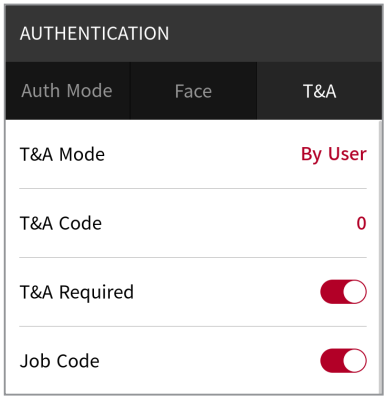
T&A Mode

You can set how to register T&A mode.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **T&A**.

3 Select and set the desired item.



- **T&A Mode**: Set the method to use T&A mode.
- **T&A Code**: You can register T&A events. Select **T&A Code** → ⊕ to register a T&A event and set an icon, **T&A Event Name** and **Schedule**.
- **T&A Required**: Set to require a user to select a T&A event when authenticating. This option can be used 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. This option can be used when **T&A Mode** is set to **Fixed**.
- **Job Code**: Select whether to use **Job Code**.

Settings

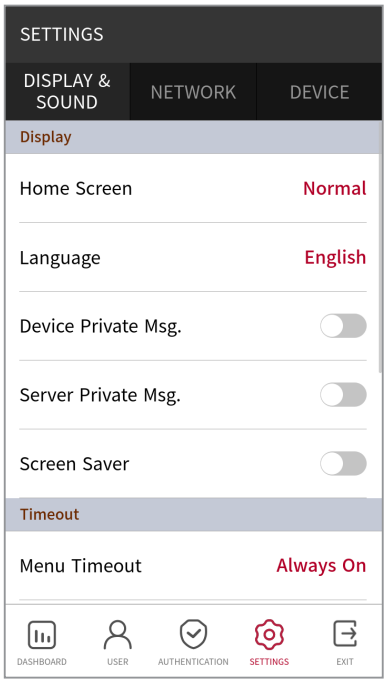
Display & Sound

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

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **SETTINGS** → **DISPLAY & SOUND**.

3 Change the desired item.



- **Home Screen**: Select items to be displayed in the background of the home screen.
- **Language**: 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 2 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. The **Server Private Msg.** can be set using the BioStar 2 API. If not set, does not display a message when authentication is successful even if **Server Private Msg.** is enabled on the device.

For more detailed information about the BioStar 2 Device SDK, visit the BioStar 2 Device SDK web page on the Suprema Knowledge Base (kb.supremainc.com/bs2sdk/).

- **Screen Saver**: Set this option to use the screen saver feature. It reduces unnecessary energy consumption by lowering the brightness of the screen when the device is not in use.
- **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 information message to disappear automatically.
- **Backlight Timeout**: Set the time (second) to turn off the lighting of screen.
- **Voice Instruction**: Set to use the voice instruction instead of alarm sounds.
- **Volume**: Set the volume.
- **Intercom Speaker Volume**: Adjust the speaker's output volume when using intercom.
- **Intercom Microphone Volume**: Adjust the microphone's input volume when using intercom.

Network

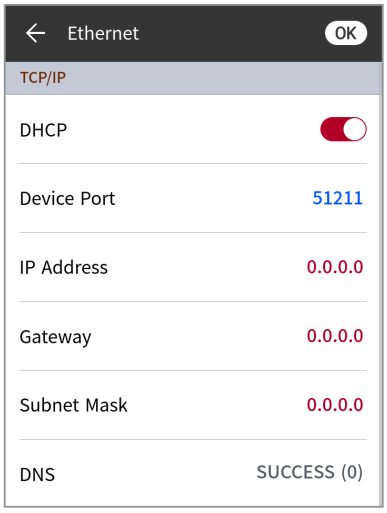
You can change the network settings of the device, such as Ethernet, server, OSDP, etc.

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 port.
- **IP Address**: View the IP address of the device. To modify, disable DHCP setting.
- **Gateway**: View the gateway of the device. To modify, disable DHCP setting.
- **Subnet Mask**: View the subnet mask of the device. To modify, disable DHCP setting.
- **DNS**: Set the DNS server address.

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

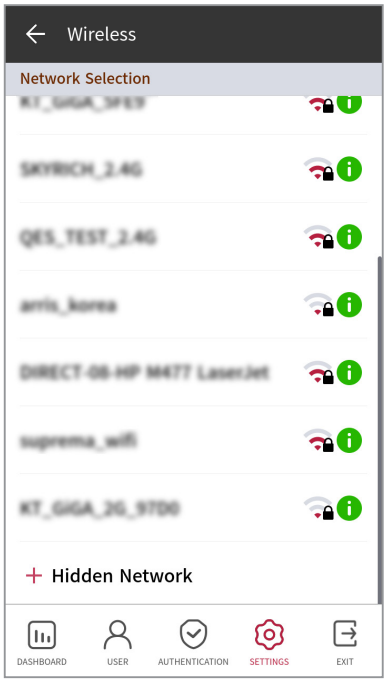
Ethernet cannot be used with **Wireless** at the same time.

Wireless

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **SETTINGS** → **NETWORK** → **Wireless**.

3 The list of networks available to connect will be displayed.



- **Hidden Network**: Add and connect to a wireless network by entering network information manually.
  - **SSID**: Enter the SSID. The SSID may be up to 32 characters long and include alphanumeric (case-sensitive), and special characters.
  - **Password**: Enter the password. The password can include alphanumeric and special characters only.

4 Select the network you wish to connect to and enter the password. When you press **OK**, the connection to the wireless network will be made.

5 Press ⓘ the wireless network you wish to use and then disable DHCP settings to allow users to modify the **IP Address**, **Gateway** and **Subnet Mask**.

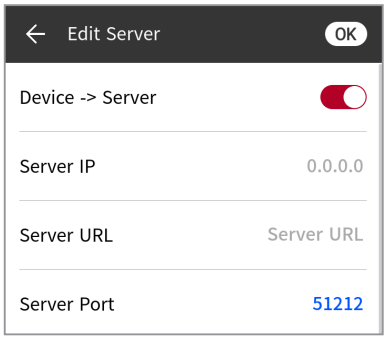
- **Wireless** is only available for BS3-APWB model.
- **Wireless** cannot be used with **Ethernet** at the same time.
- To connect to **Wireless**, a wireless router is required. For content regarding the installation and configuration of wireless router, refer to the user's manual of the wireless router.

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 the **Device** → **Server** is enabled, the user can enter the **Server IP**, **Server URL**, and **Server Port**.
- **Server IP**: Enter the IP address of the PC on which BioStar 2 is installed.
- **Server URL**: Enter the **Server URL** instead of **Server IP**.
- **Server Port**: Enter the port of the PC on which BioStar 2 is installed.

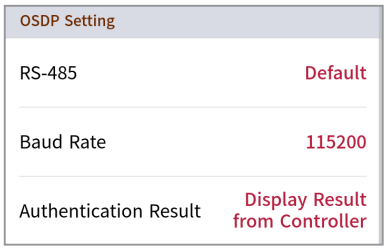
4 To save the settings, press **OK**.

OSDP Setting

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **SETTINGS** → **NETWORK**.

3 Change the desired item in the **OSDP Setting**.



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

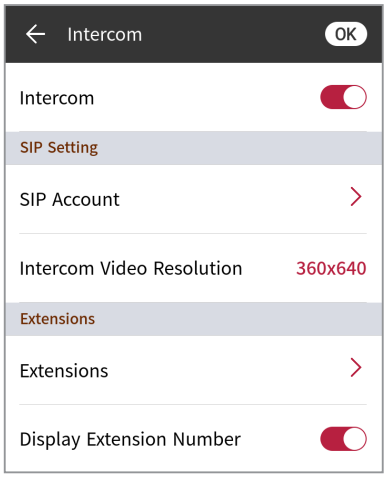
Devices

Intercom

Set the account and extensions of intercom.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **SETTINGS** → **DEVICE** → **Intercom**.



- **Intercom**: Set whether the intercom is enabled or not. To set the **SIP Account** and the **Extensions**, activate this option.
- **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 the extension number.

- 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

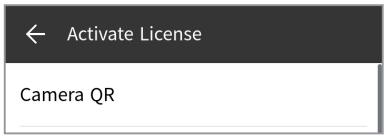
You can activate device licenses or view **Licenses in Slave Devices** and **Activated Licenses in Device**.

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.



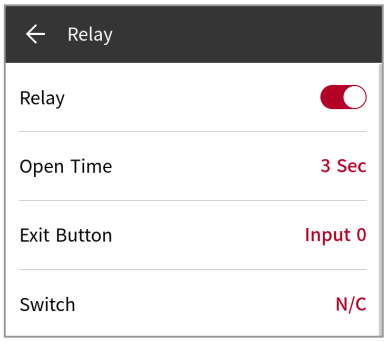
- Contact the place of purchase to issue a device license.
- One feature is available per device license.
- You can include multiple device licenses in one device license file. (Supports up to 100)
- The device license file is an encrypted file and cannot be modified arbitrarily.
- Device licenses are 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 **Open Time** and the input port of the **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 the **Open Time** and the input port of the **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.

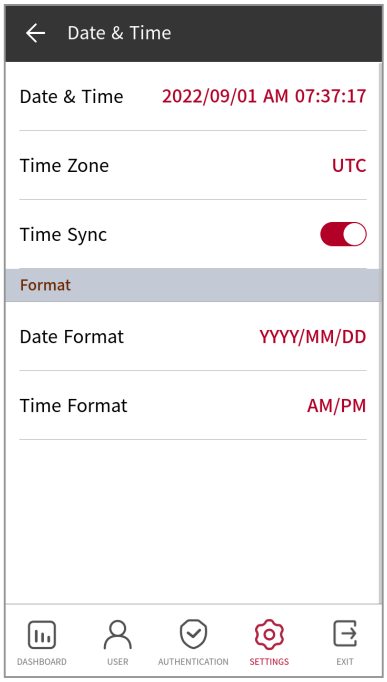
Date & Time

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**: Set the date format. You can select among **YYYY/MM/DD**, **MM/DD/YYYY** and **DD/MM/YYYY**.
- **Time Format**: Set the time format. You can select either **AM/PM** or **24-Hour**.

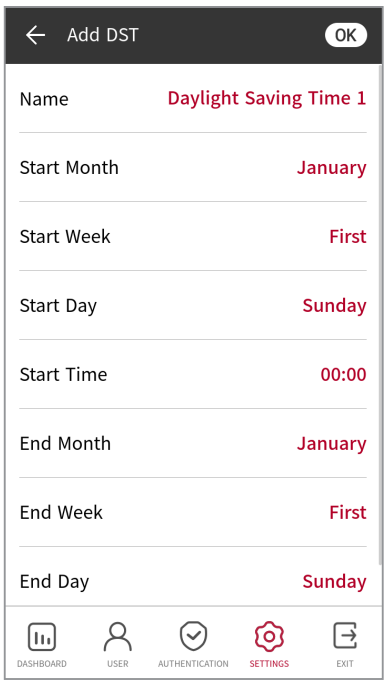
Daylight Saving Time

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 Select the desired item and change the setting.



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

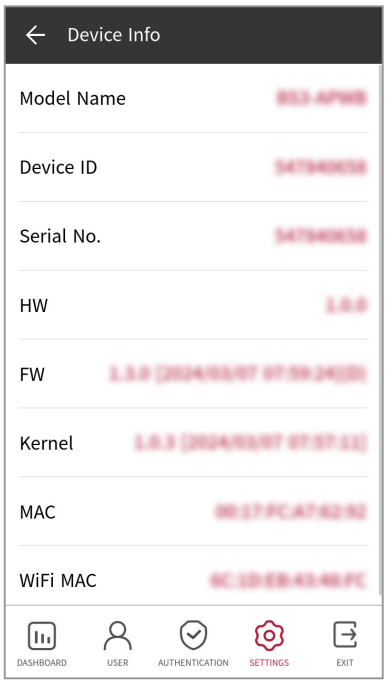
4 To save the settings, press **OK**.

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 view the information including **Model Name**, **Device ID**, **Serial No.**, **HW**, **FW**, **Kernel**, **MAC** and **WiFi MAC**.



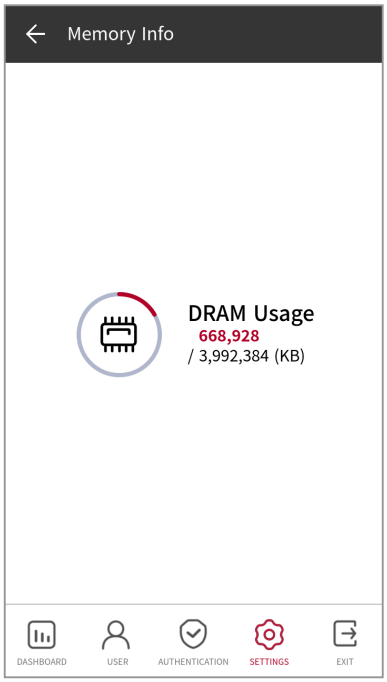
- When long-pressing the **MAC**, **FAS_IR_SP** will be displayed, showing the version of the face anti-spoofing algorithm. If press **FAS_IR_SP** to check the entire hash value in a pop-up message.
- The **WiFi MAC** is only available on the BS3-APWB model.

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.



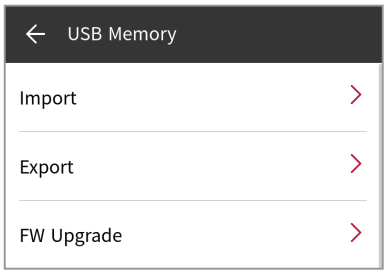
USB Memory

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.

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

- 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.
- The type of supported USB memory is as follows. If you use a different type of USB memory, the function may not operate normally.
  - Samsung Electronics: SUM-BSG 32GB
  - LG Electronics: MU 1 USB 32GB, MU28GBC 32GB
  - SanDisk: Cruzer Blade CZ50 32GB, CZ48 Ultra USB 3.0 64GB, CZ80 USB3.0 64GB, CZ52 64GB, Cruzer Glide Z60 128GB, Cruzer Force CZ71 32GB
  - Sony: USM-SA1 32GB
  - Transcend: JetFlash 760 32GB

  The supported USB flash drives listed above were all tested with USB Type-A. To connect these USB flash drives to BioStation 3, a separate USB Type-C gender is required.

Secure 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.

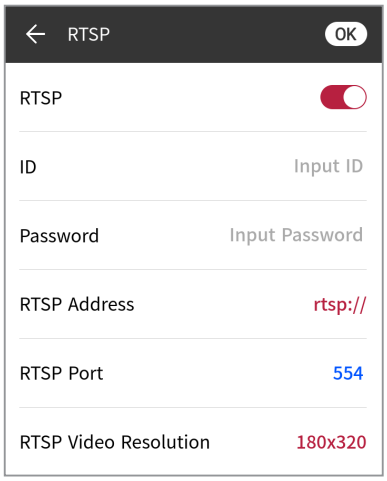
RTSP

A video management system (VMS) of another brand may be connected to monitor videos filmed with the BioStation 3 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. To set the **ID**, **Password**, **RTSP Address**, **RTSP Port**, and **RTSP Video Resolution** activate this option.
- **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.

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

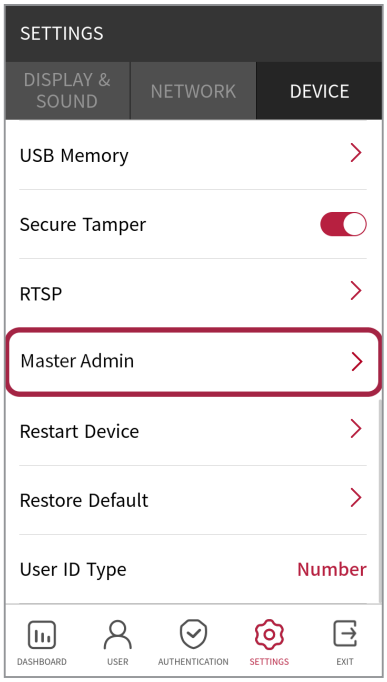
Master Admin

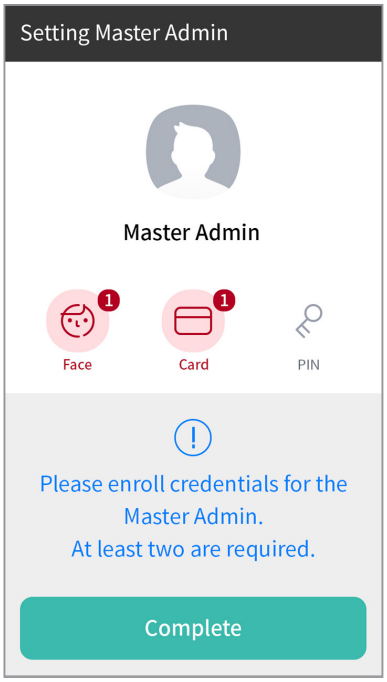
Change the authentication methods for the Master Admin.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **SETTINGS** → **DEVICE** → **Master Admin**.

3 Select the desired authentication methods.





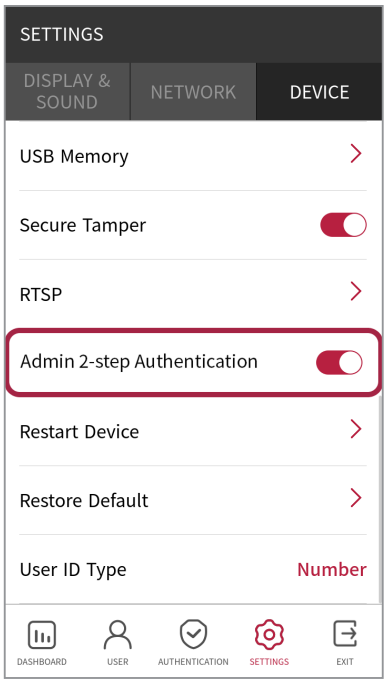
- At least two different types of credentials must be enrolled.
- This feature is available only on new devices with firmware version v1.4.0 or higher.

Admin 2-step Authentication

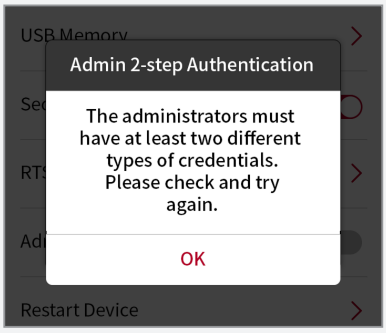
Devices upgraded via firmware do not provide **Master Admin** settings, but you can enhance administrator security by enabling the **Admin 2-step Authentication** option.

1 Press ⊞ and authenticate with the Admin level credential.

2 Select **SETTINGS** → **DEVICE** → **Admin 2-step Authentication**.



- **Admin 2-step Authentication** is available after upgrading the firmware to v1.4.0 or higher. Once upgraded to v1.4.0 or higher, you cannot downgrade to a lower version.
- The default value for **Admin 2-step Authentication** is single-step authentication.
- If not all administrators have at least two types of credentials, activation will fail and an error message will appear. Enroll at least two types of credentials for all administrators, and then try again.



If you activate **Admin 2-step Authentication** and then delete credentials so that all administrators have fewer than two types, you will not be able to access the administrator menu if BioStar 2 connection is also unavailable. Therefore, exercise caution when deleting administrator 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 To restart the device, press **OK**. To return to the previous screen, press **Cancel**.

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**: Reset all settings stored on the device. To reset all device settings, press **OK**. To return to the previous screen, press **Cancel**.
- **Keep Network Settings**: Reset all settings except for the network settings. To reset all settings except for the network settings, press **OK**. To return to the previous screen, press **Cancel**.
- **Factory Default**: Delete all the information saved in the device and the root certificate and restore default settings.
- **Delete the Root Certificate**: Delete the root certificate saved in the device.

3 If you proceed to **Restore Default**, the device will restart.

- 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.
- **Factory Default** menu can be used when the root certificate is saved in the device.
- **Delete the Root Certificate** menu can be used only when the root certificate is saved in the device and 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 register a user ID with numbers only.
- **Alphanumeric**: You can register a user ID with alphanumeric characters and symbols (_, -).

3 Select to the desired item.

Event Logs

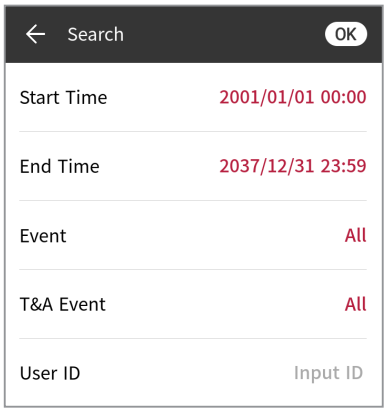
Search Event Logs

Set conditions to search logs.

1 Press ⊞ and authenticate with the Admin level credential.

2 On the **DASHBOARD**, select (📄). All event logs appear.

3 Press 🔍 to search a specific log and change the condition.



4 Set the condition and press **OK** to log that matches the condition will be displayed on the screen.

Delete All Logs

You can delete all saved logs.

1 Press ⊞ and authenticate with the Admin level credential.

2 On the **DASHBOARD**, select (📄). All event logs appear.

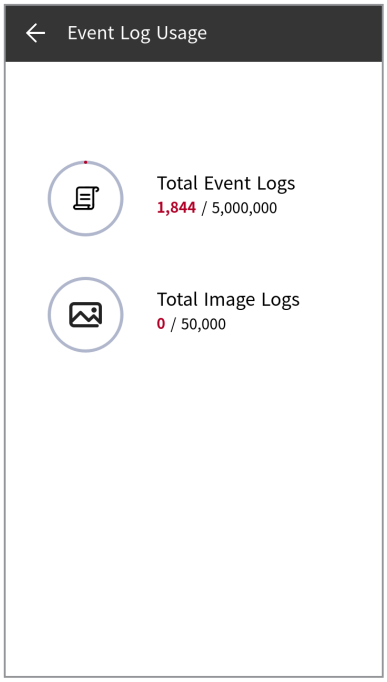
3 To delete all logs, select 🗑 and then press **OK**. To return to the previous screen, press **Cancel**.

View Log Usage

You can check the status of log usage.

1 Press ⊞ and authenticate with the Admin level credential.

2 On the **DASHBOARD**, select → . Check the device's event log and image log usage.



Troubleshooting

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

Category	Problem	Solution
Power	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.
	The terminal reboots abnormally.	• Upgrade the terminal's firmware to the latest version.
PIN	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.
	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.
Face	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 a large number of enrolled faces, change **Matching Timeout** and try again.
	Face authentication has suddenly stopped working.	• Check Cautions for authenticating a face and try again.
	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.
Door lock	The door cannot be locked when I close the door.	• The electric lock may be malfunctioning. Have an inspection through the installation company.
Time	Suddenly the time has become incorrect.	• BioStation 3 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	I lost my Admin PIN, so I cannot access the Admin mode.	• The administrator grants an access permission in BioStation 3, so only the administrator can access the Admin menu. • If you have lost the Admin PIN, contact the installation company.
Master Admin	After upgrading the firmware on existing devices, the Master Admin setting does not appear.	• Devices upgraded with firmware from existing devices do not support master administrator configuration. You can enhance device security by strengthening the permissions of all administrators through the **Admin 2-Step Authentication** option. For more detailed information, refer to Admin 2-step Authentication.

Product Specifications

Category	Feature	Specifications
Credentials	Biometric	Face
	RF Card	• **BS3-DB**: 125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3[1], FeliCa • **BS3-APWB**: 125kHz EM, HID Prox & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3[1], FeliCa, iCLASS SE/SR/Seos
	RF Read Range[2]	EM/HID Prox/MIFARE/DESFire/HID iCLASS: 30 mm, FeliCa: 15 mm
	Mobile	NFC, BLE
	Scramble Keypad (PIN)	Supported
	QR/Barcode[3]	Supported[4]
General	CPU	1.5 GHz Quad Core
	Memory	32 GB Flash + 4 GB RAM
	Crypto Chip	Supported
	Display	5.5" IPS color LCD
	Display Resolution	720 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)	82.5 x 171 x 23.4 (mm)

	Weight	• Device
		  – **BS3-DB**: 370 g
		  – **BS3-APWB**: 380 g
		• Bracket: 90 g (Including washers and bolts)

	IP Rating	IP65
	IK Rating	IK06
	Certifications	CE, UKCA, KC, FCC, IC, RCM, BIS, SIG, RoHS, REACH, WEEE, MIC, TELEC
Face	Authentication Distance[5]	0.3 ~ 1.0 m
	Authentication Height	1.4 ~ 1.9 m
	Matching Speed	Within 0.2 seconds
	Live Face Detection	Supported
Capacity	Max. User	100,000[6]
	Max. Credentials (1:N)	• Face: 50,000
	Max. Credentials (1:1)	• Face: 100,000 • Card: 100,000 • PIN: 100,000
	Max. Text logs	5,000,000
	Max. Image logs	50,000

Category	Feature	Specifications
Interfaces	Ethernet	Supported (10/100/1000 Mbps, auto MDI/MDI-X)
	Wi-Fi	• **BS3-DB**: Not supported • **BS3-APWB**: Supported (802.11 b/ g/ n 2.4 GHz)
	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)]	• **BS3-DB**: Not supported • **BS3-APWB**: Supported (IEEE 802.3at compliant)
	Intercom	Supported
	RTSP	Supported
	USB	USB 2.0 (Host)
	USB Expansion Port	Supported
	Tamper	Supported
Electrical	Power	• Voltage: 12 Vdc • Current: Max. 1 A
		• Voltage: 24 Vdc • Current: Max. 0.7 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
	Wiegnad Output Pull-up Resistance	Internally pulled up with 1 kΩ
	Relay	2 A @ 30 VDC Resistive load 1 A @ 30 VDC Inductive load

1) DESFire EV2/EV3 cards are supported by having backward compatibility of DESFire EV1 cards. CSN and smart card functions are compatible with BioStation 3.

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

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

4) Requires a separate license.

5) The minimum face authentication distance shown is the default setting for the product, and the recommended face authentication distance is 0.6 to 1.0 m.

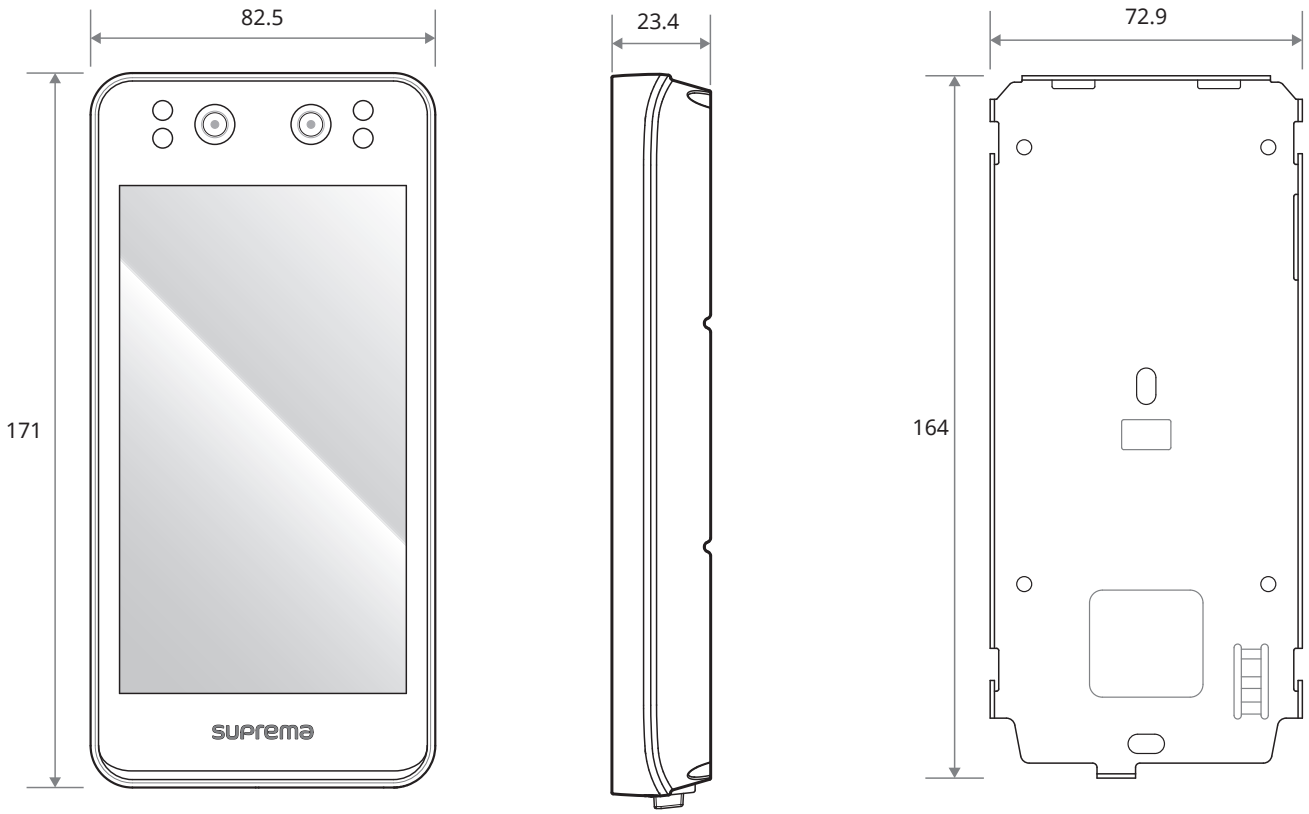
6) The number of users registered without having any credential data.

7) The device requires PoE+ (IEEE 802.3at, 30W) or PoE++ (IEEE 802.3bt, 60~100W). It does not support standard PoE (IEEE 802.3af, 15.4W). Using standard PoE may cause unstable operation and can potentially damage the device permanently. Always verify that your network switch or PoE injector supports PoE+ or PoE++ before connecting the device.

- If BioStation 3 is a master device and a device with a fingerprint sensor is connected as a slave, the slave device can be used for fingerprint authentication.
  - Max. Fingerprint Credentials (1:N): 100,000
  - Max. Fingerprint Credentials (1:1): 100,000

Dimensions

(Unit: mm)



Regulatory Information

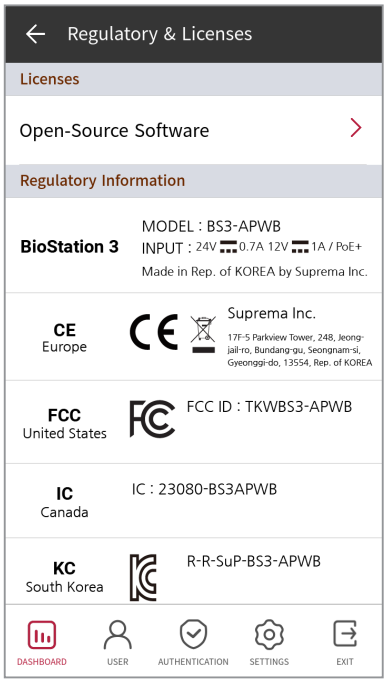
Regulatory & Licenses

Licenses, Regulatory Information, certifications, and compliance marks specific to BioStation 3 are available from the device.

- **CE / FCC / IC / KC / UKCA / RCM / MIC / TELEC**

1 Press ⊞ and authenticate with the Admin level credential.

2 You can view **Regulatory & Licenses** press the ⊟ on the upper right corner of **DASHBOARD**.



If the administrator has not been designated, the **DASHBOARD** screen will be displayed when you press ⊞.

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.

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

EU Declaration of Conformity (CE)

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.

- 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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Version 3, 29 June 2007

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b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

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