BioStation 2a

USER GUIDE

Version 1.02
English
EN 102.00.BS2A

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.

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 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 60 °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.

BioStation 2a uses the capacitive button. If there is much moisture (humidity) like a rainy weather or on the product, wipe with a soft and dry cloth.

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

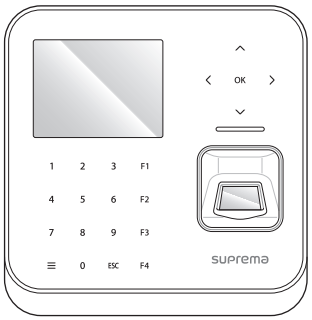
- The product may malfunction.

RTC Battery

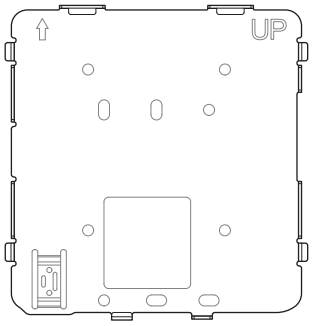
Use of an unapproved or incorrect type of battery may result in a risk of explosion. Discard the battery according to the appropriate regional or international waste regulations.

Introduction

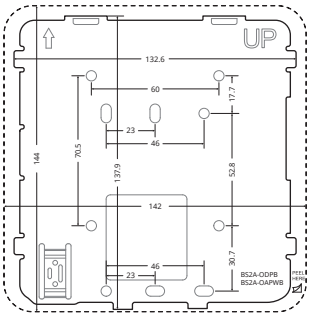
Components



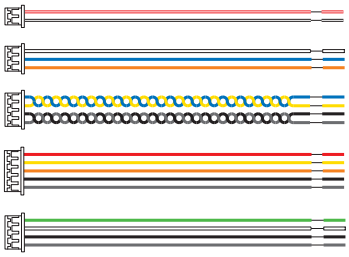
BioStation 2a



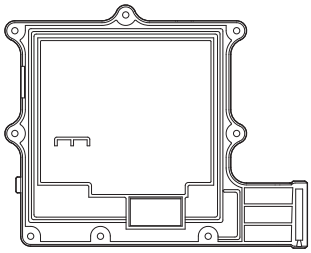
Wall Bracket



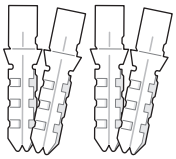
Drilling Template



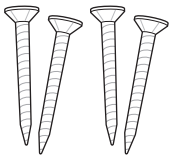
Connection Cables



Cable Cover



PVC Anchor x 4



Fixing Screw x 4

Bracket Fixing Screw (Star Shaped)

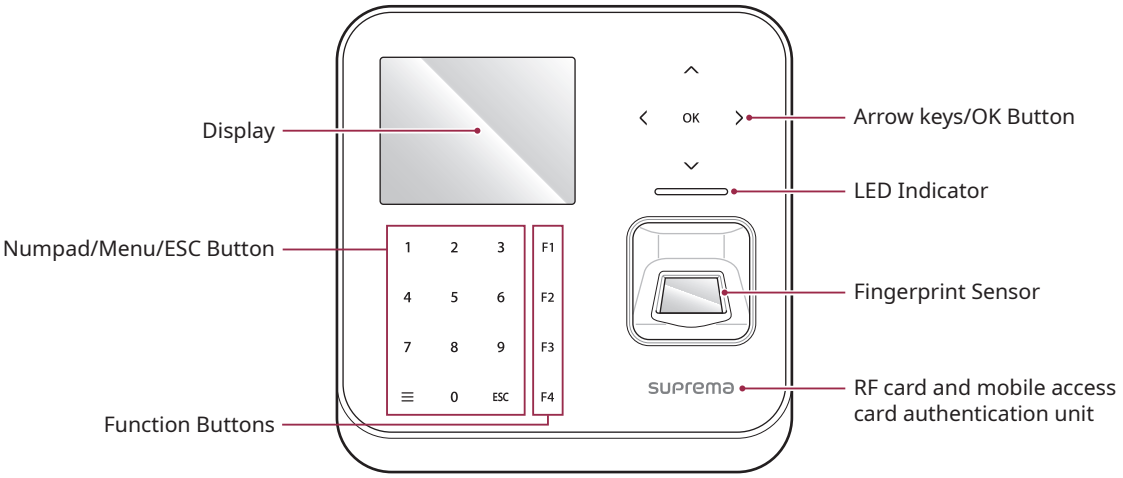
120 Ω Resistor

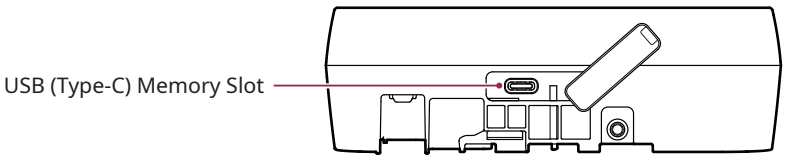
Diode

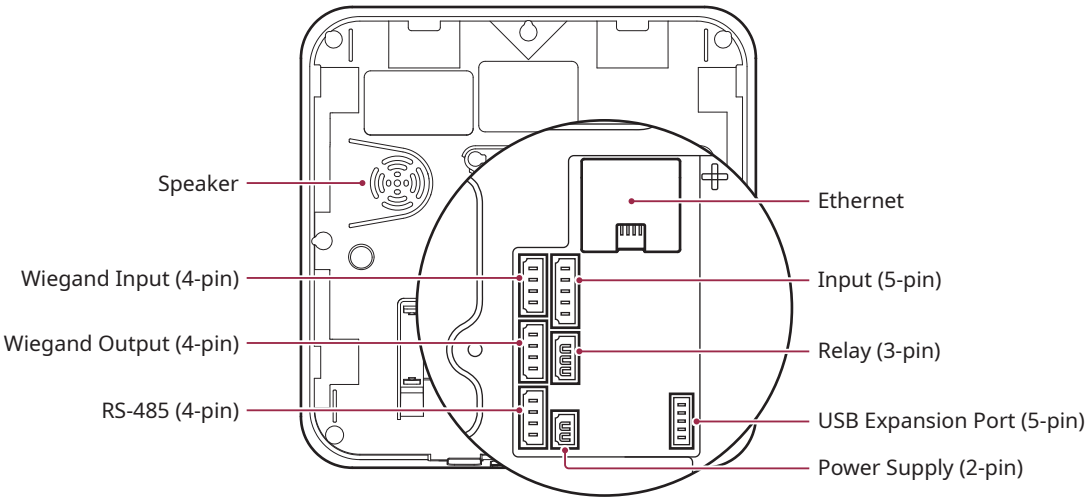
Quick Guide

- 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
Display	Displays various information or settings.
Numpad/Menu/ESC Button	• **1** to **9**: Enters numbers/characters or selects a menu item. • ☰: Opens the menu. • **ESC**: Moves back to the previous screen, or cancels input.
Function Buttons	Serves as T&A function key or selects a sub-menu item.

Name	Description
Arrow keys/OK Button	• ∧ : Change the character type, or set arming/disarming. • ∨ : Change the character type, or select T&A event to authenticate. • < : Delete numbers/characters or authenticate using ID. • > : Insert symbols, configure an item, or select Job code. • **OK**: Select items, save settings, or activate the key menu.
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.
Fingerprint Sensor	Part to scan the fingerprint for entrance.
RF card and mobile access card authentication unit	Part to scan a RFID card or mobile access card for entrance.
USB (Type-C) Memory Slot	Connects the USB memory.
Speaker	Delivers sound.
Wiegand Input (4-pin)	Connect the Wiegand Input cable.
Wiegand Output (4-pin)	Connect the Wiegand Output cable.
RS-485 (4-pin)	Connect the RS-485 cable.
Ethernet	Connects the Ethernet cable.
Input (5-pin)	Connect the Input cable.
Relay (3-pin)	Connects the relay cable.
USB Expansion Port (5-pin)	Connect other accessory products.
Power Supply (2-pin)	Connects the power supply cable.

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

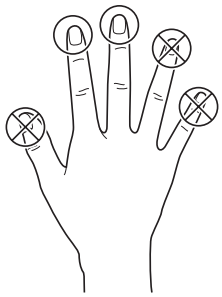
Wiegand Output

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

How to enroll a fingerprint

In order to improve the fingerprint authentication rate, register the fingerprint correctly. BioStation 2a can recognize a fingerprint even if the angle and position of a user's fingerprint input change. If you register the fingerprint with attention to the following matters, the authentication rate can be improved.

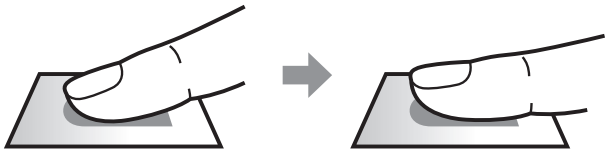
Selecting a finger for fingerprint input



- 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 registered.
- 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 a message saying "Scan 1st finger" is displayed on the screen for enrolling the fingerprint, place the finger with the fingerprint you wish to enroll on the fingerprint sensor and press the finger gently for better authentication.

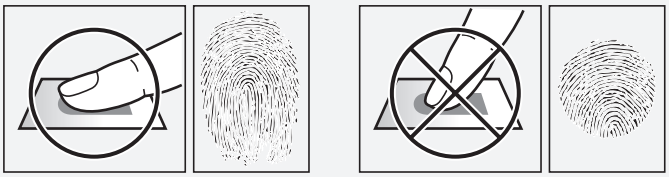


2 When the re-input screen is displayed after a beep sound, scan the fingerprint of the enrolled finger again. (scan the fingerprint of a finger to be enrolled twice)

Cautions for enrolling a fingerprint

When a fingerprint is recognized, it is compared with the initially registered 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.



When the fingerprint recognition fails

BioStation 2a can recognize a fingerprint regardless of a change in season or finger condition. 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.

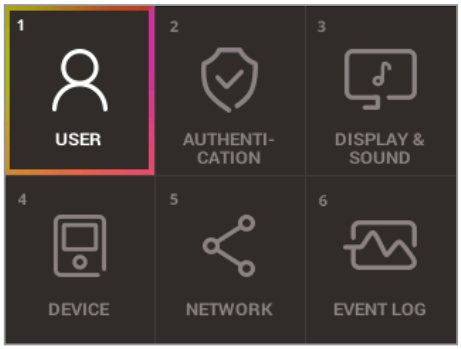
- If the finger is smeared with water or sweat, dry off the finger and then scan the finger.
- If the finger is too dry, blow your breath on the fingertips and then scan the finger.
- If the finger has a cut, register the fingerprint of another finger.
- The initially enrolled fingerprint often may have not been scanned correctly, so enroll the fingerprint again according to ‘Cautions for enrolling a fingerprint’.

Admin Menu

All Menus

1 Press ☰ and authenticate with the Admin level credential.

2 Select the desired menu.

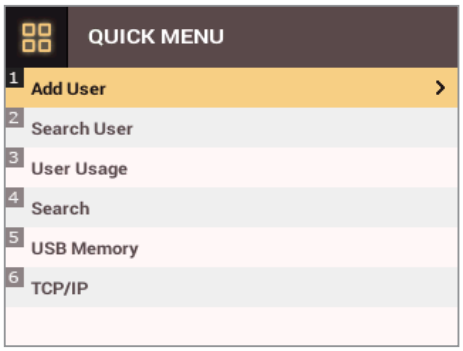


If the administrator has not been designated, the menu screen will be displayed when you press ☰.

Quick Menu

1 Press and hold the ☰ button for more than one second and then release the button. Next, authenticate as an administrator.

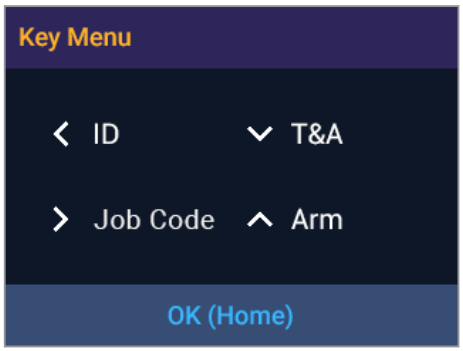
2 Select the desired menu.



If the administrator has not been designated, the quick menu screen will be displayed when you press and hold the ☰ and then release.

Key Menu

Press the **OK** button, **Key Menu** screen appears. You can enter the desired menu by pressing the direction button on the **Key Menu** or home screen.



- < **ID**: The user can authenticate using **ID** according to the set schedule.
- ∨ **T&A**: Select T&A event to authenticate.
- > **Job Code**: Select the user's Job code.
- ∧ **Arm**: The user can set the arming or disarming.

You cannot enter the **Key Menu** while in **Arm** mode. Disable **Arm** mode by pressing the ∧ button on the home screen.

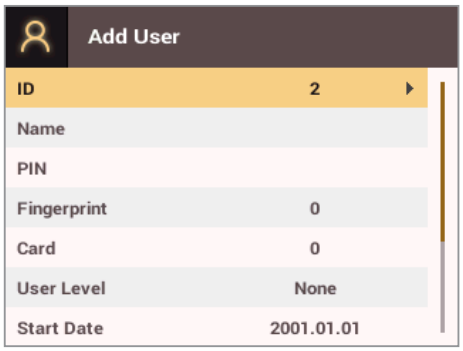
User

Registering user information

The user information including credentials can be registered.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **USER** → **Add User**, then press **OK**.



3 Select an item then press the > button. Press **OK** after configuring the item to register the user information.

- **ID**: Enter a number between 1 and 429467295 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.
- **Name**: Enter the user name with the number buttons. Press the ∧ / ∨ buttons to switch between letters and numbers. Press **F1**/**F2** to show more letters.
- **PIN**: Enter a PIN. Enter the PIN and press **OK**. Enter the PIN again to confirm it, then press the **OK** button. PIN numbers must be 4 to 16 digits to prevent leaking of the PIN.
- **Fingerprint**: Enroll fingerprints for user authentication. After scanning the fingerprint of the registered finger, the same finger should be scanned one more time.
- **Card**: Register cards for user authentication. Scan the cards that you want to assign to users.
- **User Level**: Select the level you wish to assign to a user.

The available menus vary depending on the selected user level.

- **None**: Indicates the level for normal users who cannot use the menu.
- **Administrator**: The user can use all menus.
- **Configuration**: The user can use **AUTHENTICATION**, **DISPLAY & SOUND**, **DEVICE**, **NETWORK**, and **EVENT LOG** menus.
- **User Mgmt**: The user can use **USER** and **EVENT LOG** menus.

- **Start Date**: Set the start date for the user account. Press the number buttons to enter the date. Use the < button to delete the date. Use the > button to enter a separator.
- **Expiration Date**: Set the end date for the user account. Press the number buttons to enter the date. Use the < button to delete the date. Use the > button to enter a separator.

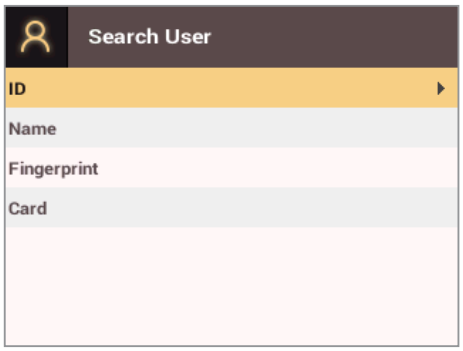
- **Security Level**: Set the security level for 1:1 Authentication.
- **Duress**: Select this option to add the fingerprint as a duress fingerprint. When threatened by someone to open the door, the user can authenticate using this fingerprint to send an alarm signal to BioStar 2.
- **Private Auth Mode**: Change the authentication method according to the user. Select a desired item and press the < / > buttons to change the settings.

Modifying User Information

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

1 Press ☰ and authenticate with the Admin level credential.

2 Select **USER** → **Search User** and press **OK**.



3 Select a search method and press the > button. You can search for users by **ID**, **Name**, **Fingerprint**, or **Card**.

- If you press **OK** without selecting a search method, a list of all users will be displayed.

4 Select the user you want to edit and press **F2**. Edit the information by referring to Registering user information.

- Press **F3** and then the **OK** button to delete a user.

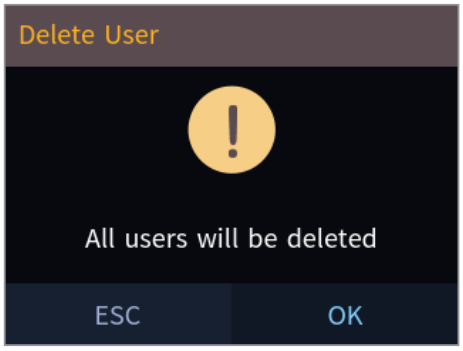
Access Group can be registered in BioStar 2. For detailed contents regarding registering an access group, refer to the BioStar 2 Administrator Manual.

Delete All Users

You can delete all registered users at once.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **USER** → **Delete User**, then press **OK**.



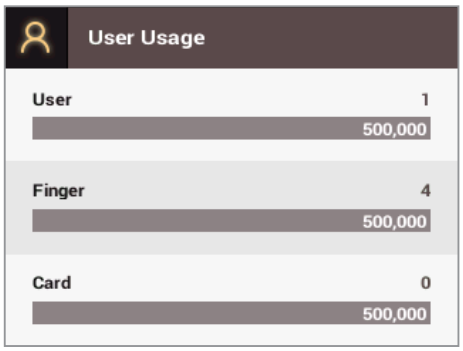
3 When you press **OK**, all registered users will be deleted. To return to the previous screen, press **ESC**.

View User Usage

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

1 Press ☰ and authenticate with the Admin level credential.

2 Select **USER** → **User Usage**, then press **OK**. User usage information appears.



Authentication

Auth Mode

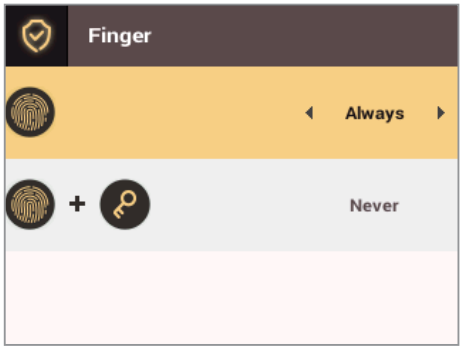
Set the authentication mode. You can make a combination of **Fingerprint**, **PIN**, **Card**, or **ID** and you can also set a schedule for each authentication mode.

Finger

You can set the schedule to be used for each authentication method using a fingerprint.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **Auth Mode** → **Finger**, then press **OK**.



3 Select an item and press the < / > buttons to set a schedule.

- : Mode to use a fingerprint only
- + : Mode to authenticate with a fingerprint and then enter PIN

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

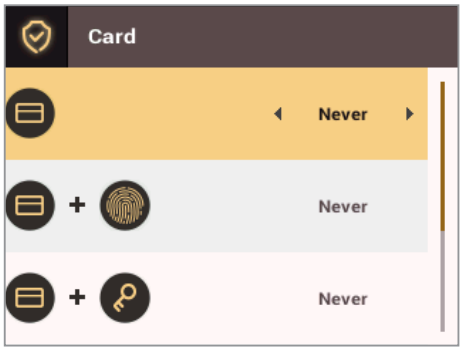
- A schedule can be set in BioStar 2. If there is no set schedule, only **Always** can be selected.
- For detailed contents regarding setting a schedule, refer to BioStar 2 Administrator Guide.

Card

You can set the schedule to be used for each authentication method using a card.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **Auth Mode** → **Card**, then press **OK**.



3 Select an item and press the < / > buttons to set a schedule.

- : Mode to use a card only
- + : Mode to authenticate with a card and then authenticate with a fingerprint
- + : Mode to authenticate with a card and then enter PIN
- + / : Mode to authenticate with a card and then authenticate with a fingerprint or enter PIN
- + + : Mode to authenticate with a card and then use both fingerprint authentication and PIN input.

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

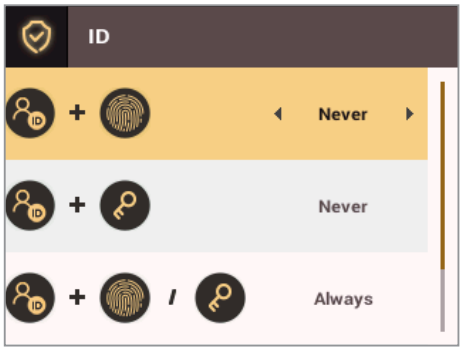
- A schedule can be set in BioStar 2. If there is no set schedule, only **Always** can be selected.
- For detailed contents regarding setting a schedule, refer to BioStar 2 Administrator Guide.

ID

You can set the schedule to be used for each authentication method using ID.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **Auth Mode** → **ID**, then press **OK**.



3 Select an item and press < / > buttons to set a schedule.

- + : Mode to enter ID and then authenticate with a fingerprint
- + : Mode to enter ID and then enter PIN
- + / : Mode to enter ID and then authenticate with a fingerprint or enter PIN
- + + : Mode to enter ID and then use both fingerprint authentication and PIN input

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

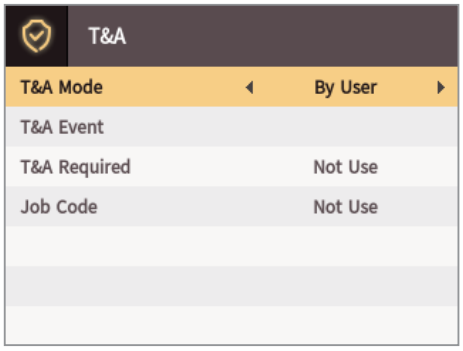
- A schedule can be set in BioStar 2. If there is no set schedule, only **Always** can be selected.
- For detailed contents regarding setting a schedule, refer to BioStar 2 Administrator Guide.

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**, then press **OK**.



3 Select an item and press the < / > buttons to change the settings.

- **T&A Mode**: Set the method to use T&A mode.
- **T&A Event**: View the set T&A event.
- **T&A Required**: Set to require a user to select a T&A event when authenticating.
- **Job Code**: Select whether to use **Job Code**.

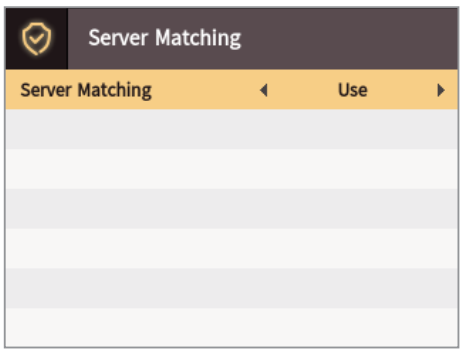
4 To save the settings, press **OK**.

Server Matching

You can set up server matching. 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.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **Server Matching**, then press **OK**.



3 Press the < / > buttons to change the settings.

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

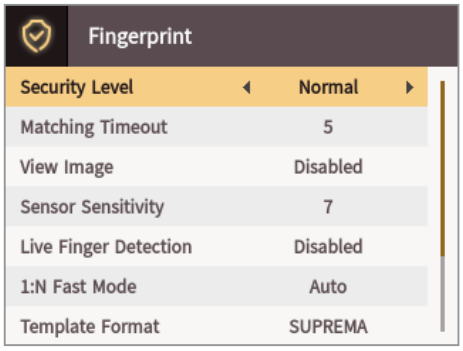
- **Server Matching** is only available for **Fingerprint**, **Card** and **ID** options.
- When you use the **Server Matching** option, you need to activate the option in both Biostar 2 and the device. Refer to the Administrator Guide of BioStar 2 to learn how to set the server matching settings in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

Fingerprint

You can change settings regarding the fingerprint authentication.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **Fingerprint**, then press **OK**.



3 Select an item and press the < / > buttons to change the settings.

- **Security Level**: Set the security level for 1:N authentication.
- **Matching Timeout**: Set the fingerprint matching timeout. If the authentication is not completed during a set time, the authentication will fail.
- **View Image**: Set to view the original image when scanning the fingerprint.
- **Sensor Sensitivity**: Set the sensitivity of the fingerprint authentication sensor. To obtain more precise fingerprint information by increasing the sensor sensitivity, set the sensor sensitivity higher.
- **Live Finger Detection**: Set the level of the fake fingerprint detection. The higher the fake fingerprint detection level, the higher the rejection rate of fingerprint.
- **1:N Fast Mode**: Set the fingerprint authentication speed. If you select **Auto**, the authentication speed will be set according to all fingerprint templates enrolled on the device.
- **Template Format**: Set the fingerprint template format. **SUPREMA** is set as the default, and if you change the template format, all fingerprints saved previously cannot be used. Use caution when changing the Template Format.

> Change the template format after deleting the fingerprint information of all users. If the fingerprint information of a user has been enrolled, the template format cannot be changed.

- **Sensor Mode**: When **Auto On** is set, the fingerprint sensor recognizes a user's fingerprint and turns on. When **Always On** is set, the sensor is always on.
- **Advanced Enrollment**: Inspect the quality of a scanned fingerprint in order to save high quality fingerprint information. When **Use** is set and the quality of the fingerprint is low, it notifies such information to the user and helps the user scan the fingerprint correctly.
- **Duplicate Check**: When registering fingerprints, you can check duplicates.

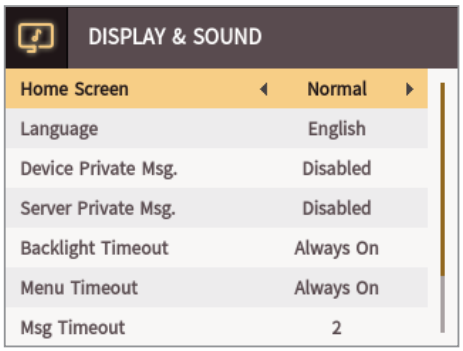
4 To save the settings, press **OK**.

Display & Sound

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

1 Press ☰ and authenticate with the Admin level credential.

2 Select **DISPLAY & SOUND**, then press **OK**.



3 Select an item and press the < / > buttons to change the settings.

- **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/).

- **Backlight Timeout**: Set the time (second) to turn off the lighting of screen.
- **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.
- **Msg Timeout**: Set the time (sec) for a setting complete message or information message to disappear automatically.
- **Voice Instruction**: Set to use the voice instruction instead of alarm sounds.
- **Volume**: Set the volume.

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

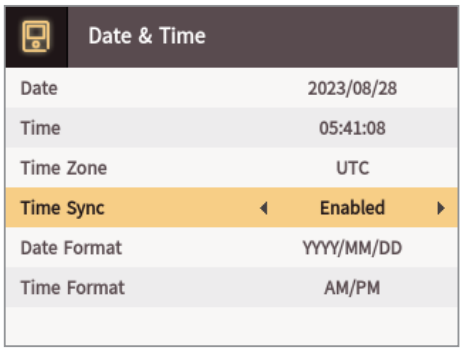
Device

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 **DEVICE** → **Date & Time**, then press **OK**.



3 Select an item and press the < / > buttons to change the settings.

- **Date**: Check the current date. To modify it directly, set **Disabled** for **Time Sync**.
- **Time**: Check the current time. To modify it directly, set **Disabled** for **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**.

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

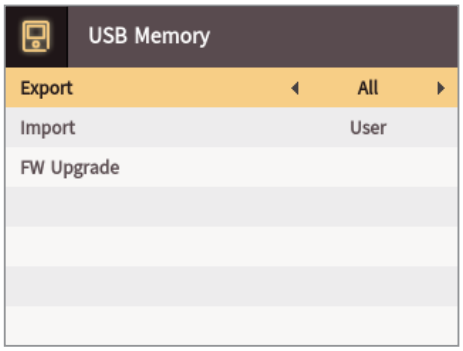
> Press the number buttons to enter the date and time. Use the < button to delete the values entered. Use the > button to enter a separator.

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 **DEVICE** → **USB Memory**, then press **OK**.



3 Select the desired item and execute.

- **Export**: Select information you wish to export to the connected USB memory. Select the desired item and press **OK**.
- **Import**: Import user information from the connected USB memory. Select the desired item and press **OK**.
- **FW Upgrade**: If firmware files are saved in the connected USB memory, press **OK** to upgrade the firmware.

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

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

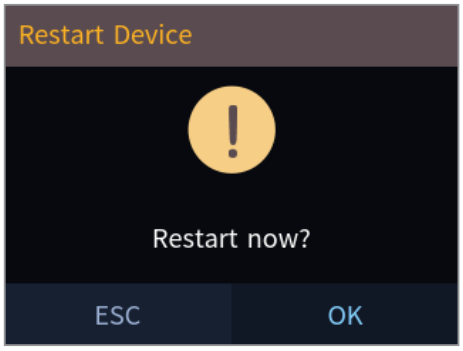
The supported USB flash drives listed above were all tested with USB Type-A. To connect these USB flash drives to BioStation 2a, a separate USB Type-C gender is required.

Restart Device

The user can restart the device.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **DEVICE** → **Restart Device**, then press **OK**.



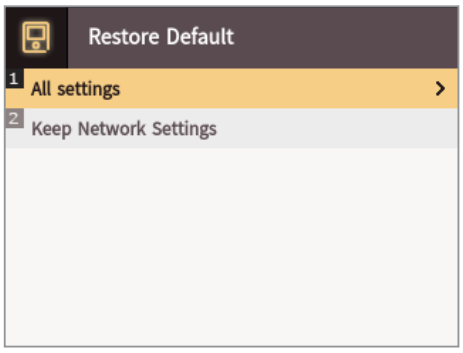
3 To restart the device, press **OK**. To return to the previous screen, press **ESC**.

Restore Default

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

1 Press ☰ and authenticate with the Admin level credential.

2 Select **DEVICE** → **Restore Default**, then press **OK**.



3 Select the desired item and execute.

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

4 If you proceed to restore the defaults, 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.

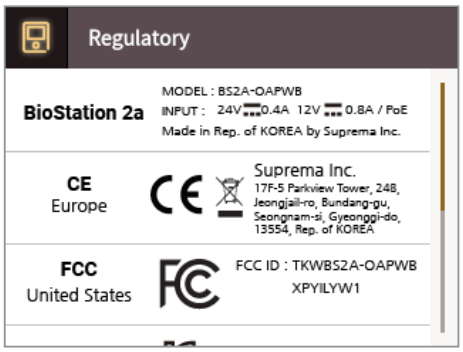
Regulatory

Regulatory Information, certifications, and compliance marks for the BioStation 2a are available on the device.

- **CE / FCC / KC / UKCA / RCM**

1 Press ☰ and authenticate with the Admin level credential.

2 Select **DEVICE** → **Regulatory**, then press **OK**. You can check the regulatory and certifications.

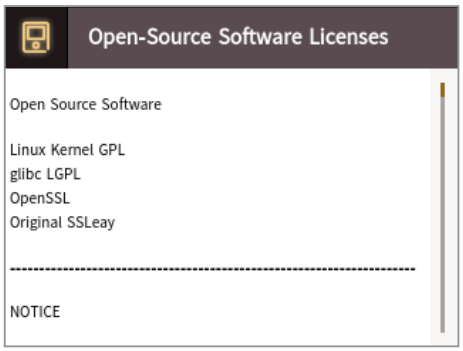


Open-Source Software Licenses

Open source license for BioStation 2a is available on the device.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **DEVICE** → **Open-Source Software Licenses**, then press **OK**. You can check the licenses.



More Settings

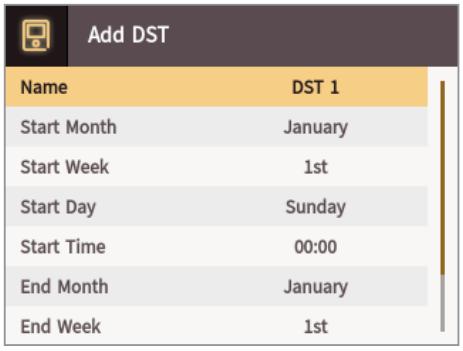
Daylight Saving Time

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 **DEVICE** → **More Settings** → **Daylight Saving Time**, then press **OK**.

3 Select **Add DST**, then press **OK**.



4 Select an item and press the < / > buttons to change the settings.

- **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.

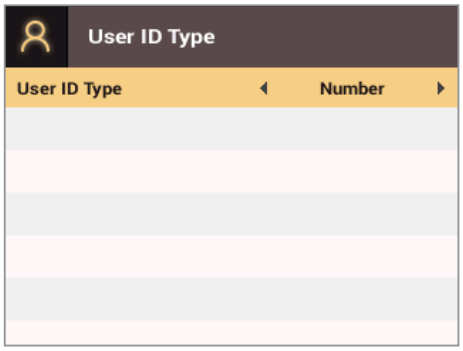
5 To save the settings, press **OK**.

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 **DEVICE** → **More Settings** → **User ID Type**, then press **OK**.



3 Press the < / > buttons to change the settings.

- **Number**: You can register a user ID with numbers only.
- **Alphanumeric**: You can register a user ID with alphanumeric characters and symbols (_, -).

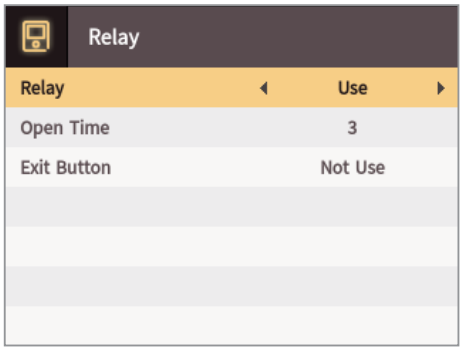
4 To save the settings, press **OK**.

Relay

You can set the **Open Time** and the input port of the **Exit Button** in the device. This option is useful when the device is used as a standalone.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **DEVICE** → **More Settings** → **Relay**, then press **OK**.



3 Press the < / > buttons to change the settings.

- **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.

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

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 **DEVICE** → **More Settings** → **Secure Tamper**, then press **OK**.

3 Set **Secure Tamper** to **Enabled** to delete all registered users, all logs, and security keys when a tamper event occurs.

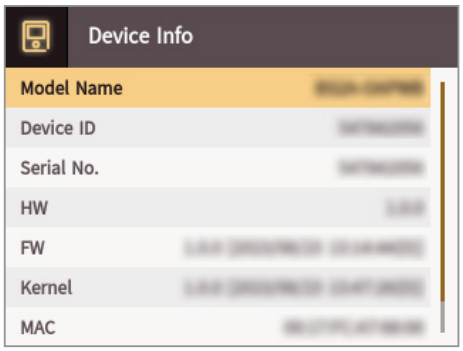
4 To save the settings, press **OK**.

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 **DEVICE** → **More Settings** → **Device Info**, then press **OK**. You can view the information including **Model Name**, **Device ID**, **Serial No.**, **HW**, **FW**, **Kernel**, **MAC**, and **WiFi MAC**.

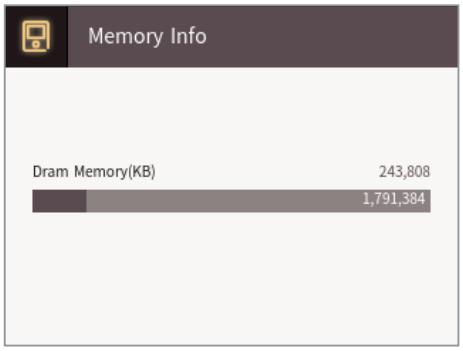


Memory Information

View the status of memory usage.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **DEVICE** → **More Settings** → **Memory Info**, then press **OK**. You can view the memory usage status of the device.



Network

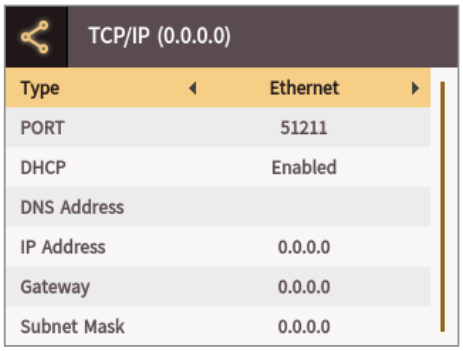
You can change the network settings of the device.

TCP/IP

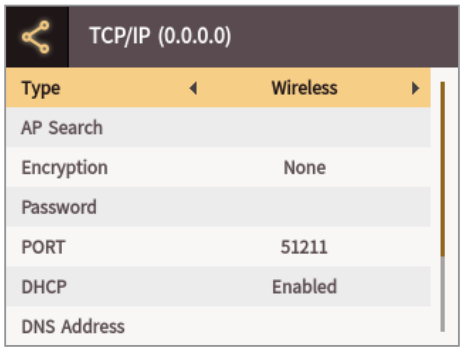
1 Press ☰ and authenticate with the Admin level credential.

2 Select **NETWORK** → **TCP/IP**, then press **OK**.

3 Press the < / > buttons to select a **Type** then select an item. You can select **Ethernet** or **Wireless**.



- **PORT**: Enter the port number of the device.
- **DHCP**: Set whether to use DHCP. If DHCP setting is disabled, the user can modify **IP Address**, **Gateway**, and **Subnet Mask**.
- **DNS Address**: Set the DNS address.
- **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.



- **AP Search**: Select the AP to connect to.
- **Encryption**: Shows the encryption method of the AP.
- **Password**: Enter the AP login password.
- **PORT**: Enter the port number of the device.
- **DHCP**: Set whether to use DHCP. If DHCP setting is disabled, the user can modify **IP Address**, **Gateway**, and **Subnet Mask**.
- **DNS Address**: Set the DNS address.
- **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.

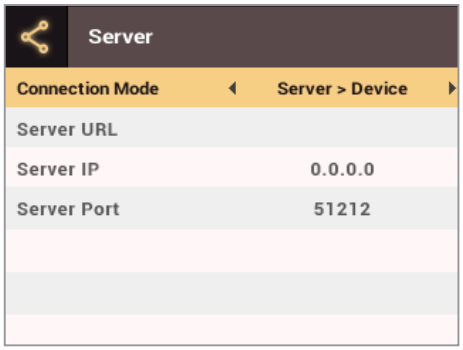
4 To save the settings, press **OK**.

- **Wireless** is only available for BS2A-OAPWB model.
- Press the number buttons to enter the **IP Address**, **Gateway** address, and **Subnet Mask** address. Use the < button to delete the values entered. Use the > button to enter a separator.
- To use **Wireless**, you need a wireless router. For more information on installing and configuring the wireless router, see the manual of the wireless router.

Server

1 Press ☰ and authenticate with the Admin level credential.

2 Select **NETWORK** → **Server**, then press **OK**.



3 Press the < / > buttons to change the settings.

- **Connection Mode**: When you select **Device** > **Server**, you can send a connection signal from the device to a server with the input information directly. When the **Device** > **Server** is enable, the user can enter the **Server URL**, **Server IP**, and **Server Port**.
- **Server URL**: Enter the **Server URL** instead of **Server IP**.
- **Server IP**: Enter the IP address of the PC on which BioStar 2 is installed.
- **Server Port**: Enter the port of the PC on which BioStar 2 is installed.

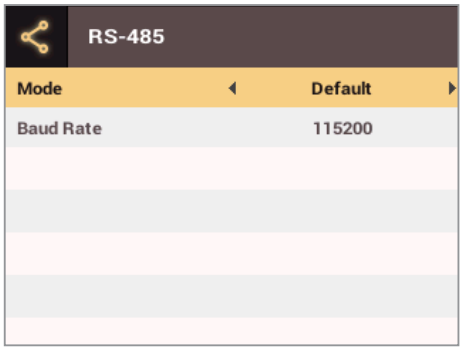
4 To save the settings, press **OK**.

Press the number buttons to enter the values for **Server IP** and **Server Port**. Use the < button to delete the values entered. Use the > button to enter a separator.

RS-485

1 Press ☰ and authenticate with the Admin level credential.

2 Select **NETWORK** → **RS-485**, then press **OK**.



3 Select an item and press the < / > buttons to change the settings.

- **Mode**: Select the RS-485 mode.
- **Baud Rate**: Select the desired baud rate.

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

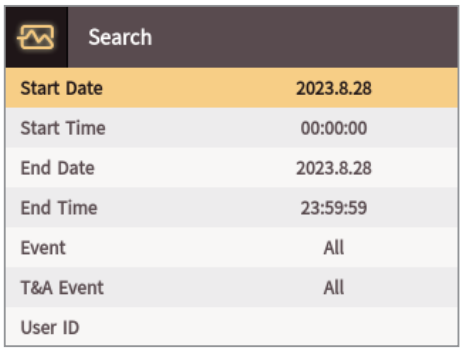
Event Log

Search Log

You can set a condition and search a log.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **EVENT LOG** → **Search**, then press **OK**.



3 Select an item and press the < / > buttons to change the settings. When you press **OK**, a log that matches the set condition will be displayed on the screen.

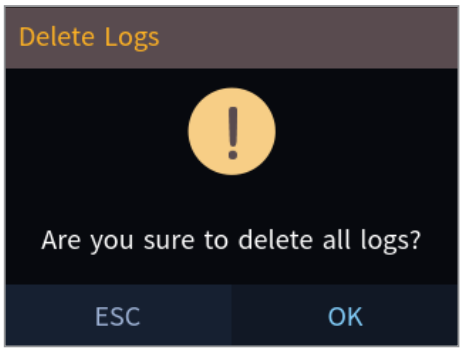
4 To return to the previous screen, press **ESC**.

Delete All Logs

You can delete all saved logs.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **EVENT LOG** → **Delete All**, then press **OK**.



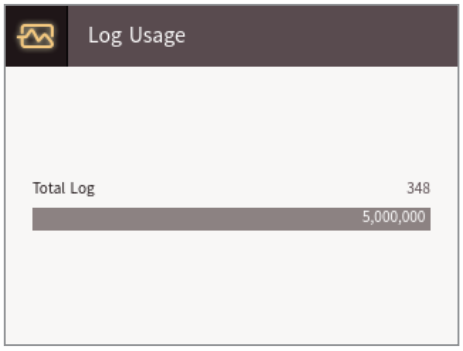
3 To delete all logs, press **OK**. To return to the previous screen, press **ESC**.

View Log Usage

You can check the status of log usage.

1 Press ☰ and authenticate with the Admin level credential.

2 Select **EVENT LOG** → **Log Usage**, then press **OK**. Check the device's 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 adapter or the power cable.
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.
Fingerprint	The fingerprint has been enrolled but fingerprint authentication cannot be done smoothly and errors occur frequently.	• Check How to enroll a fingerprint 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 a large number of 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.
	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.
	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 to keep the fingerprint sensor on, go to **AUTHENTICATION** > **Fingerprint** > **Sensor Mode** and then select **Always On**.
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 2a 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 2a, so only the administrator can access the Admin menu. • If you have lost the Admin PIN, contact the installation company.

Product specifications

Category	Feature	Specification
Credential	Biometric	Fingerprint
	RF Option	• **BS2A-ODPB**: 125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3[1], FeliCa • **BS2A-OAPWB**: 125kHz EM, HID Prox & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3[1], iCLASS SE/SR/Seos, FeliCa
	RF Read Range[2]	EM/MIFARE/DESFire/HID iCLASS: 50 mm, HID Prox/FeliCa: 30 mm
	Mobile	NFC, BLE
General	CPU	1.5 GHz Quad Core
	Memory	16 GB Flash + 2 GB RAM
	Crypto Chip	Supported
	Display	2.8” color TFT LCD
	Display Resolution	320 x 240 pixels
	LED	Multi-color
	Sound	16 bit
	Operating Temperature	-20 °C ~ 60 °C
	Storage Temperature	-40 °C ~ 70 °C
	Operating Humidity	0 % ~ 80 %, non-condensing
	Storage Humidity	0 % ~ 90 %, non-condensing
	Dimension (W x H x D)	142 x 144 x 45 (Bottom) / 37.8 (Top) (mm)
	Weight	• Device: 429 g • Bracket (Including washer and bolt): 142 g
	IP Rating	IP65
	Certificates	CE, UKCA, KC, FCC, RCM, SIG, RoHS, REACH, WEEE
Fingerprint	Image Dimension	272 x 320 pixels
	Image Bit Depth	8 bits, 256 gray scale
	Resolution	500 dpi
	Template	SUPREMA / ISO19794-2 / ANSI-378
	Extractor / Matcher	MINEX certified and compliant
	Live Fingerprint Detection	Supported (SW-based)
Capacity	Max. User	500,000[3]
	Max. Credential (1:N)	Fingerprint: 100,000
	Max. Credential (1:1)	• Fingerprint: 500,000 • Card: 500,000 • PIN: 500,000
	Max. Text Log	5,000,000

Category	Feature	Specification
Interface	Ethernet	Supported (10/100 Mbps, auto MDI/MDI-X)
	Wi-Fi	• **BS2A-ODPB**: Not supported • **BS2A-OAPWB**: 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
	USB	USB 2.0 (Host)
	USB Expansion Port	Supported
	Tamper	Supported
Electrical	Power	• Voltage: 12 Vdc • Current: Max. 0.8 A
		• Voltage: 24 Vdc • Current: Max. 0.4 A
		• PoE: Supported (IEEE 802.3af compliant)
	Switch Input VIH	• Min.: 3 V • Max.: 5 V
	Switch Input VIL	Max.: 1 V
	Switch Pull-up Resistance	4.7 kΩ (The input pots are pulled up with 4.7 kΩ.)
	Wiegand Output VOH	More than 4.8 V
	Wiegand Output VOL	Less than 0.2 V
	Wiegand Output Pull-up Resistance	Internally pulled up with 1 kΩ
	Relay	2 A @ 30 VDC Resistive load 1 A @ 30 VDC Inductive load

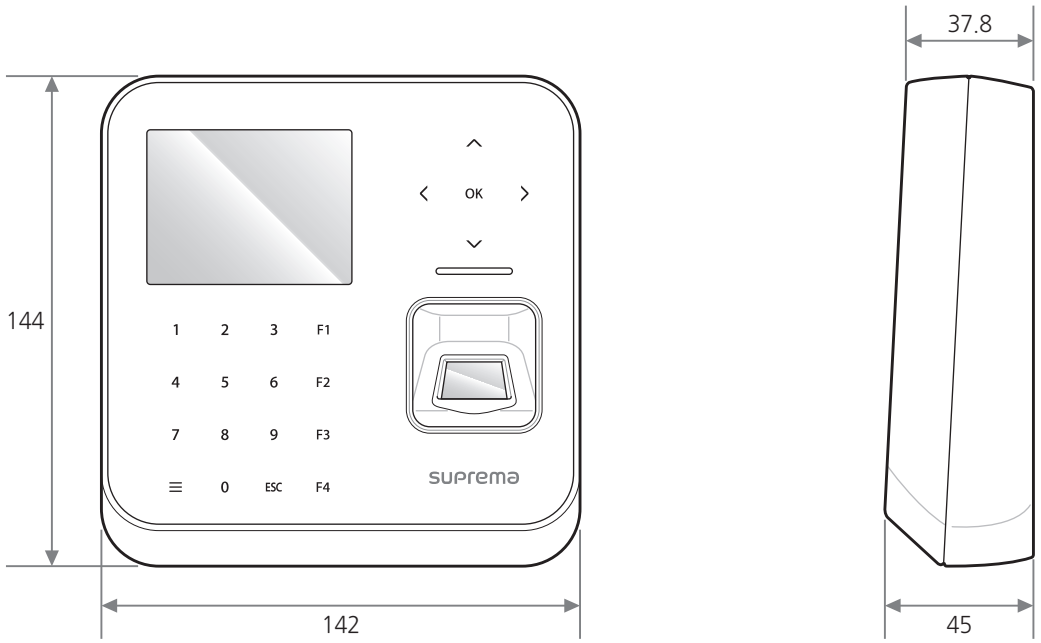
1) DESFire EV2/EV3 cards are supported by having backward compatibility of DESFire EV1 cards. CSN and smart card functions are compatible with BioStation 2a.

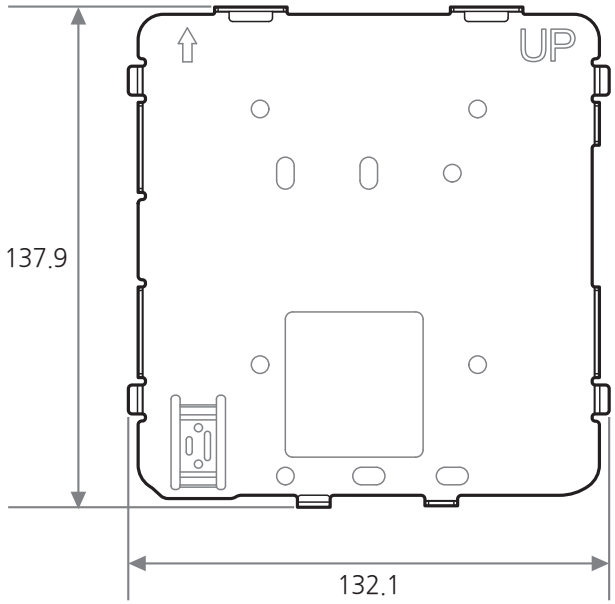
2) RF read range will vary depending on installation environment.

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

Dimensions

(Unit: mm)





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.

- NFC Frequency: 13.56 MHz
- RFID Frequency: 13.56 MHz + 125 kHz

For more information, contact us at the following contact information.

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Version 3, 29 June 2007

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