

BioStation 2

USER GUIDE

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English
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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.

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 waterresistant 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 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 including fingerprint sensor. 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 2 uses capacitive buttons and screen. If the environment is moist from wet weather or the product surface is smeared with a lot of water, wipe off the product with a dry towel before using it.

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

- The product may malfunction.

RTC Battery

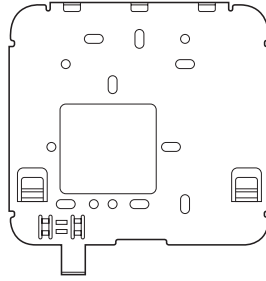
Use of an unapproved or incorrect type of battery may result in a risk of explosion. Discard the battery according to the appropriate regional or international waste regulations.

Introduction

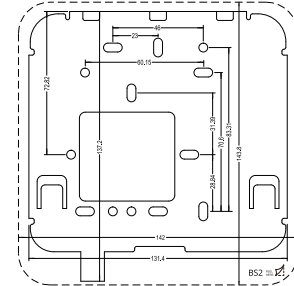
Components



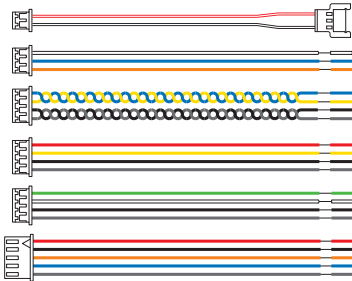
BioStation 2



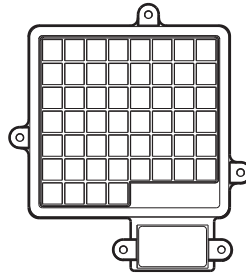
Wall Bracket



Drilling Template



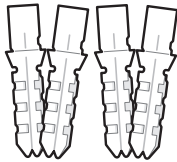
Connection Cables



Cable Cover



Diode



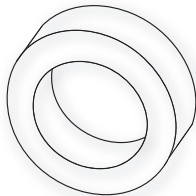
PVC Anchor x4



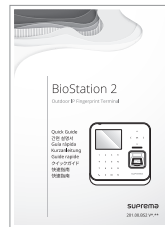
Fixing Screw x4



Bracket Fixing Screw
(Star Shaped)



Ferrite Core



Quick Guide

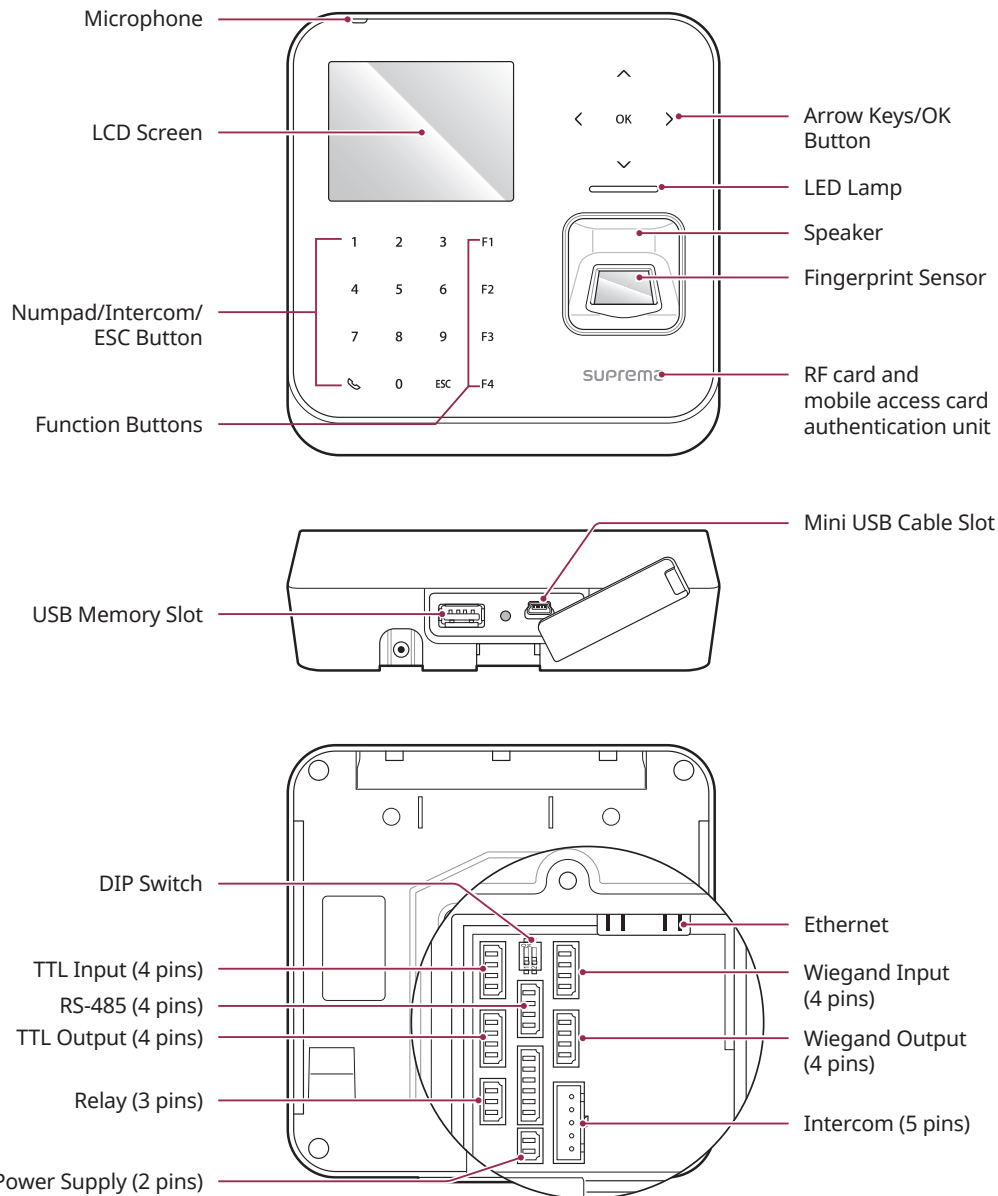


Open Source Software Guide



- 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, visit the Suprema website (<https://www.supremainc.com>) and refer to the user guide.

Name and function of each part



Name	Description
Microphone	Transmits the user's voice to the intercom.
LCD Screen	Displays various information or settings.
Numpad/Intercom/ESC Button	<ul style="list-style-type: none"> • 1 to 9: Enters numbers/characters or selects a menu item. • : Connects to the intercom. • ESC: Opens the menu, moves back to the previous screen, or cancels input
Function Buttons	Serves as T&A function key or selects a sub-menu item.
Arrow Keys/OK Button	<ul style="list-style-type: none"> • ^: Changes the character type. • v: Changes the character type or selects a T&A event. • <: Deletes numbers/characters. • >: Inserts symbols or configures an item. • OK: Selects an item or saves the settings.
Speaker	Delivers sound.
LED Lamp	Indicates the operational status of the product with the color of the LED lamp.

Name	Description
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 Memory Slot	Connects USB memory.
Mini USB Cable Slot	Will be supported in the future.
TTL Input (4 pins)	Connects the TTL input/output cable.
RS-485 (4 pins)	Connects the RS-485 cable.
TTL Output (4 pins)	Connects the TTL input/output cable.
Relay (3 pins)	Connects the relay cable.
Power Supply (2 pins)	Connects the power supply cable.
DIP Switch	Turns on the termination resistor for the RS-485 interface. <ul style="list-style-type: none"> • To use the termination resistor, set DIP switch 1 to ON.
Ethernet	Connects the Ethernet cable.
Wiegand Input (4 pins)	Connects the Wiegand input cable.
Wiegand Output (4 pins)	Connects the Wiegand output cable.
Intercom (5-pin)	Connects the intercom cable.

Cables and connectors

Power



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

TTL input/output



PIN	Name	Color
1	TTL IN0 / OUT0	Red
2	TTL IN1 / OUT1	Yellow
3	TTL GND	Black
4	SH GND	Gray

Wiegand input/output



PIN	Name	Color
1	WG IN0 / OUT0	Green
2	WG IN1 / OUT1	White
3	WG GND	Black
4	SH GND	Gray

Intercom



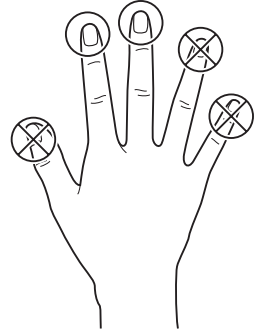
PIN	Name	Color
1	INPH +VDC	Red
2	INPH GND	Black
3	INPH AUD	Orange
4	INPH DTA	Blue
5	SH GND	Gray

How to enroll a fingerprint

In order to improve the fingerprint authentication rate, register the fingerprint correctly. BioStation 2 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.

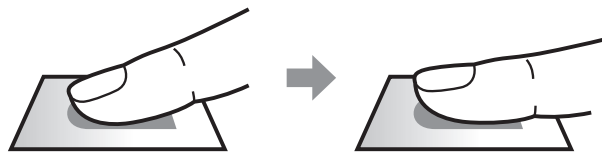
Selecting a finger for fingerprint input

- 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 Finger" is displayed on the LCD 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

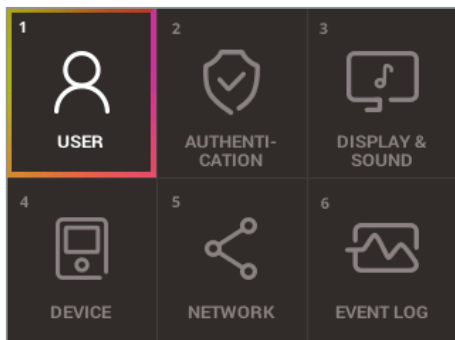
BioStation 2 can recognize a fingerprint regardless of a change in season or finger condition. However, the authentication rate may vary according to the external environment or fingerprint input method. If the fingerprint authentication cannot be done smoothly, it is recommended to take the following 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

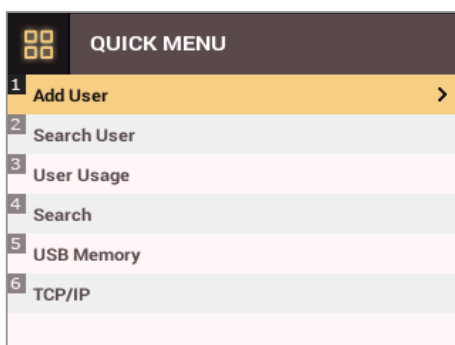
- 1 Press the **ESC** and authenticate with the Admin level credential.
- 2 Select the desired menu.



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

Quick Menu

- 1 Press and hold the **ESC** 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 **ESC** and then release.

Registering user information

The user information including credentials can be registered.

- 1 Press the **ESC** and authenticate with the Admin level credential.
- 2 Select **USER** → **Add User**, then press **OK**.

Add User	
ID	2
Name	
PIN	
Fingerprint	0
Card	0
User Level	None
Start Date	2001.01.01

- 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:** Enters the user name with the number buttons. Press the **^** / **∨** buttons to switch between letters and numbers. Press **F1/F2** to show more letters.
 - **PIN:** Enters 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:** Enrolls fingerprints for user authentication. After scanning the fingerprint of the registered finger, the same finger should be scanned one more time. Press the **ESC** button if you do not want to enroll a fingerprint.
 - **Card:** Registers cards for user authentication. Scan the cards that you want to assign to users. Press the **ESC** button if you do not want to register another card.
 - **User Level:** Select the level you wish to assign to a user.



The available menus vary depending on the selected user level.

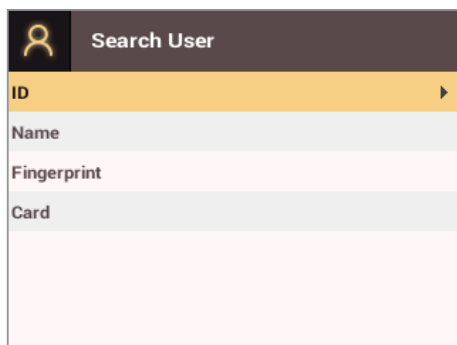
- **None:** Indicates the level for normal users who cannot use the menu.
- **Administrator:** The user can use all menus.
- **Configuration:** The user can use **AUTHENTICATION**, **DISPLAY & SOUND**, **DEVICE**, **NETWORK**, and **EVENT LOG** menus.
- **User Mgmt:** The user can use **USER** and **EVENT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

- **Start Date:** Sets 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:** Sets 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:** Sets 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 the **ESC** 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

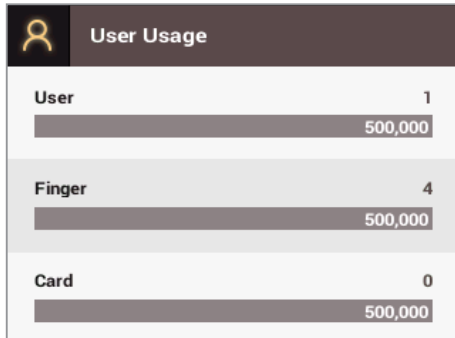
You can delete all registered users at once.

- 1 Press **ESC** 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.

View User Usage

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

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **USER** → **User Usage**, then press **OK**.



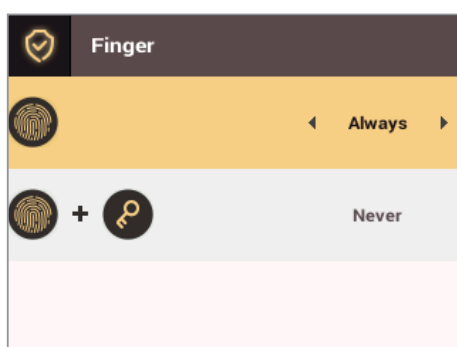
User Usage	
User	1
<div style="text-align: right;">500,000</div>	
Finger	4
<div style="text-align: right;">500,000</div>	
Card	0
<div style="text-align: right;">500,000</div>	




Authentication

Finger

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

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **AUTHENTICATION** → **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 settings, press **OK**.

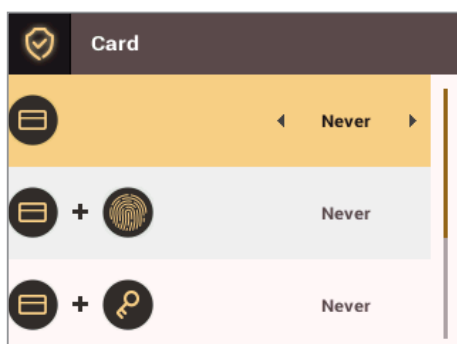







- A schedule can be set in BioStar 2. If there is no set schedule, only **Always** can be selected.
- For detailed contents regarding setting a schedule, refer to BioStar 2 Administrator Guide.







Card

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

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **AUTHENTICATION** → **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 settings, press **OK**.



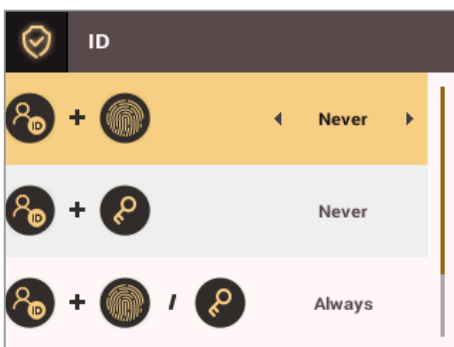
- A schedule can be set in BioStar 2. If there is no set schedule, only **Always** can be selected.
- For detailed contents regarding setting a schedule, refer to BioStar 2 Administrator Guide.

ID











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

1 Press **ESC** and authenticate with the Admin level credential.

2 Select **AUTHENTICATION** → **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 settings, press **OK**.

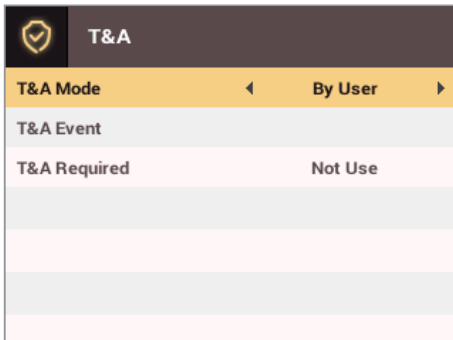


- A schedule can be set in BioStar 2. If there is no set schedule, only **Always** can be selected.
- For detailed contents regarding setting a schedule, refer to BioStar 2 Administrator Guide.

T&A Mode

You can set how to register T&A Mode.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **AUTHENTICATION** → **T&A Mode**, then press **OK**.

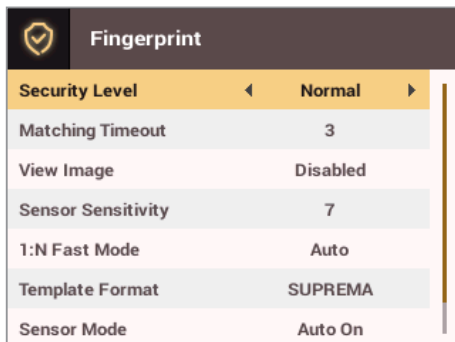


- 3 Select an item and press **</>** buttons to set a schedule.
 - **T&A Mode:** Set the method to use T&A mode.
 - **T&A Event:** View the set T&A event.
 - **T&A Required:** Set to require a user to select a T&A event when authenticating. If **Use** is set, you can set to require a user to select a T&A event when authenticating.
- 4 To save settings, press **OK**.

Fingerprint

You can change settings regarding the fingerprint authentication.

- 1 Press **ESC** 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.
 - **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.



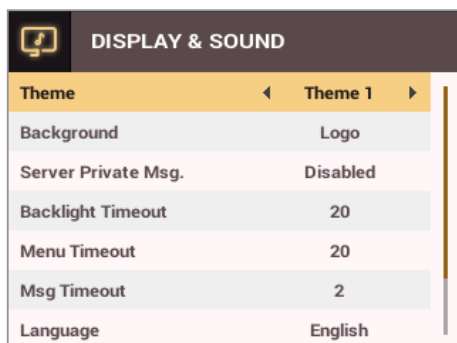
Change the template format after deleting the fingerprint information of all users. If the fingerprint information of a user has been enrolled, the template format cannot be changed.

- **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 settings, press **OK**.

Display & Sound

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

- 1 Press **ESC** 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.
 - **Theme:** Changes the style of the home screen.
 - **Background:** Select items to be displayed in the background of the home screen.
 - **Server Private Msg.:** Set whether to use a Private Message, which will be displayed on the screen when the user authenticates. You can set the **Server Private Msg.** by using the BioStar 2 API. If you have not set it on the server, the device does not display a message when authentication is successful even if **Server Private Msg.** is enabled on the device.
 - **Backlight Timeout:** Set the time (second) to turn off the lighting of LCD 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.
 - **Language:** Set the language you wish to use.
 - **Voice Instruction:** Set to use the voice instruction instead of alarm sounds.
 - **Volume:** Set the volume.
- 4 To save 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 **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Date & Time**, then press **OK**.

Date & Time	
Date	2015/03/03
Time	15:29:59
Time Zone	UTC +9:00
Time Sync	Disabled
Date Format	YYYY/MM/DD
Time Format	24-Hour

- 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 **24-Hour** or **AM/PM**.



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.

Daylight Saving Time

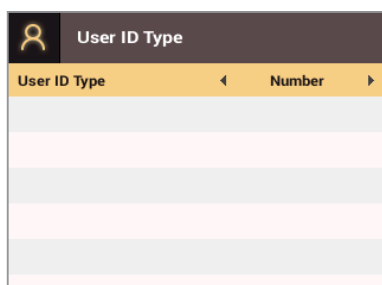
You can use the device by applying daylight saving time. Set the start and end time correctly.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Daylight Saving Time**, then press **OK**.
- 3 Select an item and press the **</>** buttons to change the settings.
- 4 To save settings, press **OK**.

User ID Type

You can set the type of user ID to be registered on the device to a combination of alphabetic characters, numbers, and symbols (., -).

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **User ID Type**, then press **OK**.

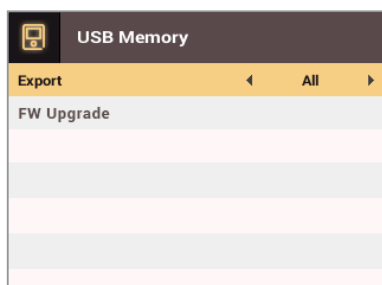


- 3 Press the </> buttons to change the settings.
- 4 To save settings, press **OK**.

USB Memory

Connect USB Memory and import user information to the device or export log and user information from the device. Upgrade the firmware.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **USB Memory**, then press **OK**.



- 3 Select the desired item and change the setting.
 - **Export:** Select information which you want to export to 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-LSB 8GB, SUM-PSB 8GB, SUM-PSB 16GB, SUM-BSG 32GB
- LG Electronics: XTICK J3 WINDY 8GB, SMART USB MU1 White 8GB, MU 1 USB 32GB, MU28GBC 32GB, XTICK MOBY J1 16GB

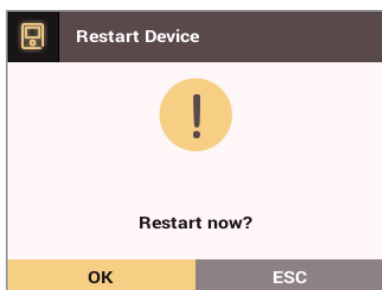


- SanDisk: Cruzer 16GB, Cruzer Blade CZ50 4GB, Cruzer Blade CZ50 32GB, CZ48 Ultra USB 3.0 64GB, CZ80 USB3.0 64GB, CZ52 64GB, Cruzer Glide Z60 128GB, Cruzer Force CZ71 32GB
- Sony: Micro Vault Click 8GB, MicroVault CLICK 16GB, USM-SA1 32GB
- Transcend: JetFlash 760 8GB, JetFlash 760 32GB, JetFlash 500 8GB
- Memorette: MINI500 8GB
- A-DATA: S102 PRO 8GB

Restart Device

You can restart the device.

- 1 Press **ESC** 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 **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Restore Default**, then press **OK**.
 - **Reset All Settings:** You can reset all settings stored on the device. Press **OK** to reset all device settings. To cancel, press **ESC**.
 - **Reset without Network Settings:** You can reset all settings except network settings. Press **OK** to reset all settings except network settings. To cancel, 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.
- 3 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.

Relay

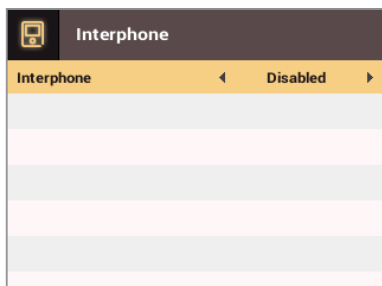
You can set the open time and the input port of the exit button in the device. This option is useful when the device is used as a standalone.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Relay**, then press **OK**.
 - **Relay:** You can set whether relay is enabled or not. To set the open time and the input port of the exit button, set to **Enabled**.
 - **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.
- 3 To save settings, press **OK**.

Intercom

You can select whether or not to use the intercom.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Interphone**, then press **OK**.



- 3 When the intercom is connected, press the **</>** buttons to select **Enabled**.
- 4 To save 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 **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Secure Tamper**, then change the settings by pressing **</>**.
- 3 To save settings, press **OK**.

Device Info

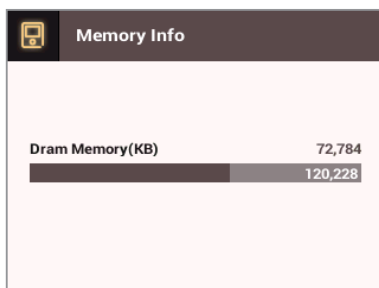
You can view the model name, device ID, serial number, firmware version of device ID, and MAC address.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Device Info**, then press **OK**.
 - You can view the information including **Model Name**, **Device ID**, **HW**, **FW**, **Kernel**, **MAC**, and **WiFi MAC**.
- 3 Check the device information and press **OK**.

Memory Info

View the status of memory usage.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Memory Info**, then press **OK**.



- 3 Check the memory information and press **OK**.

Network

TCP/IP Settings

You can change the network settings of the device.

- 1 Press **ESC** 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**.

TCP/IP	
Type	Ethernet
PORT	51211
DHCP	Enabled
IP Address	192.168.16.141
Gateway	192.168.16.1
Subnet Mask	255.255.255.0

TCP/IP	
Type	Wireless
AP Search	MKNexus5
Encryption	None
Password	
PORT	51211
DHCP	Enabled
IP Address	192.168.16.141

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

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



- 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 Settings

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **NETWORK** → **Server**, then press **OK**.

Server	
Connection Mode	Server > Device
Server URL	
Server IP	0.0.0.0
Server Port	51212

- 3 Select an item and 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 you select **Server > Device**, **Server IP** and **Server Port** cannot be entered.
 - **Server URL:** You can enter the BioStar 2 server's URL instead of **Server IP**.
 - **Server IP:** Enter the IP of the PC where BioStar 2 is installed.
 - **Server Port:** Enter the port of the PC on which BioStar 2 is installed.
- 4 To save 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 Settings

RS-485

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **NETWORK** → **RS-485**, then press **OK**.

RS-485	
Mode	Default
Baud Rate	115200

- 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 settings, press **OK**.

Event Log

Search Log

You can set a condition and search a log.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **EVENT LOG** → **Search**, then press **OK**.

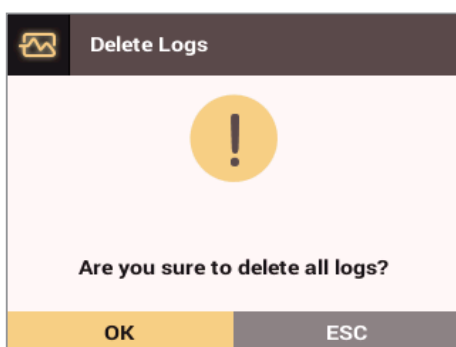
Search	
Start Date	2015.3.3
Start Time	00:00:00
End Date	2015.3.3
End Time	23:59:59
Event	All
T&A Event	All
User ID	

- 3 Select an item and press the **</>** buttons to change the condition. 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 **ESC** and authenticate with the Admin level credential.
- 2 Select **EVENT LOG** → **Delete All**, then press **OK**.

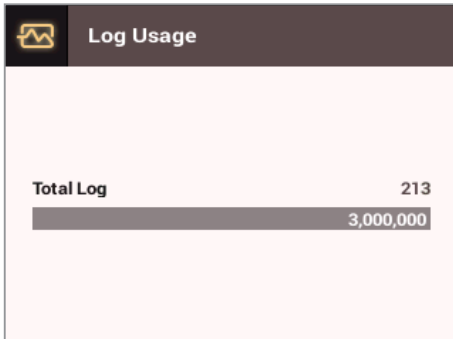


- 3 To delete all logs, press **OK**. To return to the previous screen, press **Cancel**.

View Log Usage

You can check the status of log usage.

- 1 Press **ESC** and authenticate with the Admin level credential.
- 2 Select **EVENT LOG** → **Log Usage**, then press **OK**.



- 3 Press **OK** after checking the 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • The electric lock may be malfunctioning. Have an inspection through the installation company.
Time	Suddenly the time has become incorrect.	<ul style="list-style-type: none"> • BioStation 2 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.	<ul style="list-style-type: none"> • The administrator grants an access permission in BioStation 2, so only the administrator can access the Admin menu. • If you have lost the Admin PIN, contact the installation company.

Product specifications

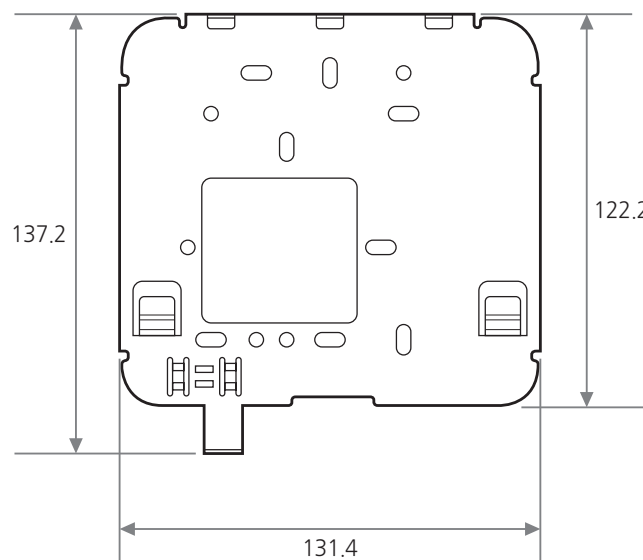
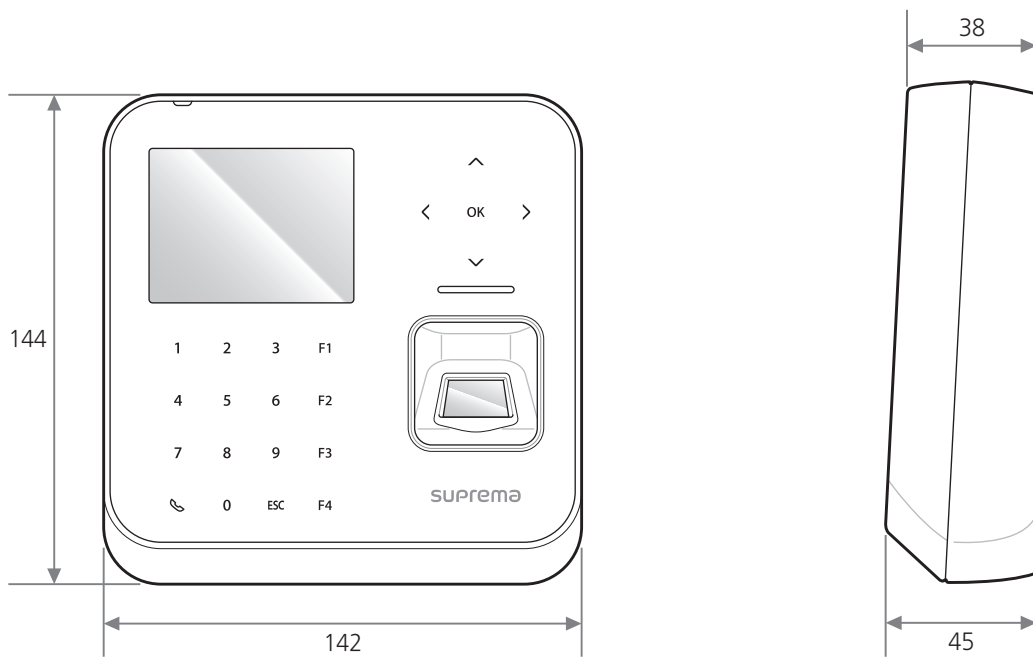
Category	Feature	Specification
Credential	Biometric	Fingerprint
	RF Option	<ul style="list-style-type: none"> • BS2-OMPW: 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/ EV2/EV3¹⁾, FeliCa • BS2-OIPW: 13.56MHz iCLASS SE/SR/Seos • BS2-OHPW: 125kHz HID Prox • BS2-OEPW: 125kHz EM
	RF Read Range ²⁾	EM/MIFARE/DESFire/HID iCLASS: 50 mm, HID Prox/FeliCa: 30 mm
	Mobile	NFC (BS2-OMPW, BS2-OIPW)
General	CPU	1.0 GHz
	Memory	8 GB Flash + 256 MB RAM
	Crypto Chip	Supported
	LCD Type	2.8" color TFT LCD
	LCD Resolution	320 x 240
	LED	Multi-color
	Sound	16-bit
	Operating Temperature	-20 °C ~ 50 °C
	Storage Temperature	-40 °C ~ 70 °C
	Operating Humidity	0 % ~ 80 %, non-condensing
	Storage Humidity	0 % ~ 90 %, non-condensing
	Dimension (W x H x D)	142 x 144 x 45 (Bottom) / 38 (Top) (mm)
	Weight	<ul style="list-style-type: none"> • Device: 440 g • Bracket (Including washer and bolt): 130 g
	IP Rating	IP65
Certificates	CE, UKCA, KC, FCC, BIS, RoHS, REACH, WEEE	
Fingerprint	Image Dimension	272 x 320 pixels
	Image Bit Depth	8bit, 256 grayscale
	Resolution	500 dpi
	Template	SUPREMA / ISO19794-2 / ANSI-378
	Extractor / Matcher	MINEX certified and compliant
Capacity	Max. User	500,000 ³⁾
	Max. Credential (1:N)	Fingerprint: 20,000
	Max. Credential (1:1)	<ul style="list-style-type: none"> • Fingerprint: 500,000 • Card: 500,000 • PIN: 500,000
	Max. Text Log	3,000,000

Category	Feature	Specification
Interface	Wi-Fi	Supported
	Ethernet	Supported (10/100 Mbps, auto MDI/MDI-X)
	RS-485	1 ch Master / Slave (Selectable)
	RS-485 Communication Protocol	OSDP V2 compliant
	Wiegand	1 ch Input, 1 ch Output
	TTL Input	2 ch Inputs
	TTL Output	2 ch Outputs
	Relay	1 Relay
	USB	USB 2.0 (Host)
	PoE	Supported (IEEE 802.3af compliant)
	Intercom	Supported
	Tamper	Supported
	Electrical	Power
Switch Input VIH		<ul style="list-style-type: none"> Min.: 3 V Max.: 5 V
Switch Input VIL		Max.: 1 V
Switch Pull-up Resistance		4.7 k Ω (The input pots are pulled up with 4.7 k Ω .)
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 k Ω
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 2.
- 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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The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

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