

# FaceStation F2

## USER GUIDE

Version 1.06

English

EN 102.00.FSF2-ODB V1.06A

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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

**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 adaptors, 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

**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 only a power supply adaptor of either D.C 24 V and 800 mA or higher or D.C 12 V and 1,500 mA or higher.**

- If the right power supply is not used, the product may malfunction.

**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.

**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.

### 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.

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


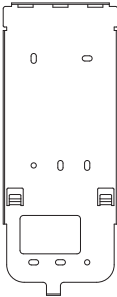
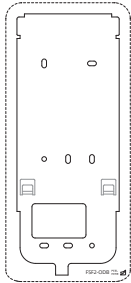
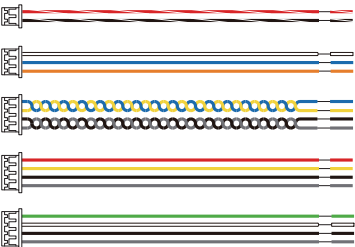


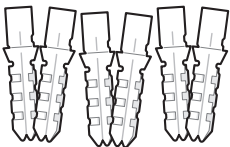
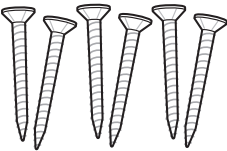

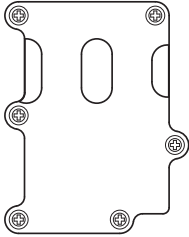


- The product may malfunction.

### **RTC battery**

Discard the battery according to the appropriate regional or international waste regulations. Discard the battery according to the appropriate regional or international waste regulations.

# Introduction

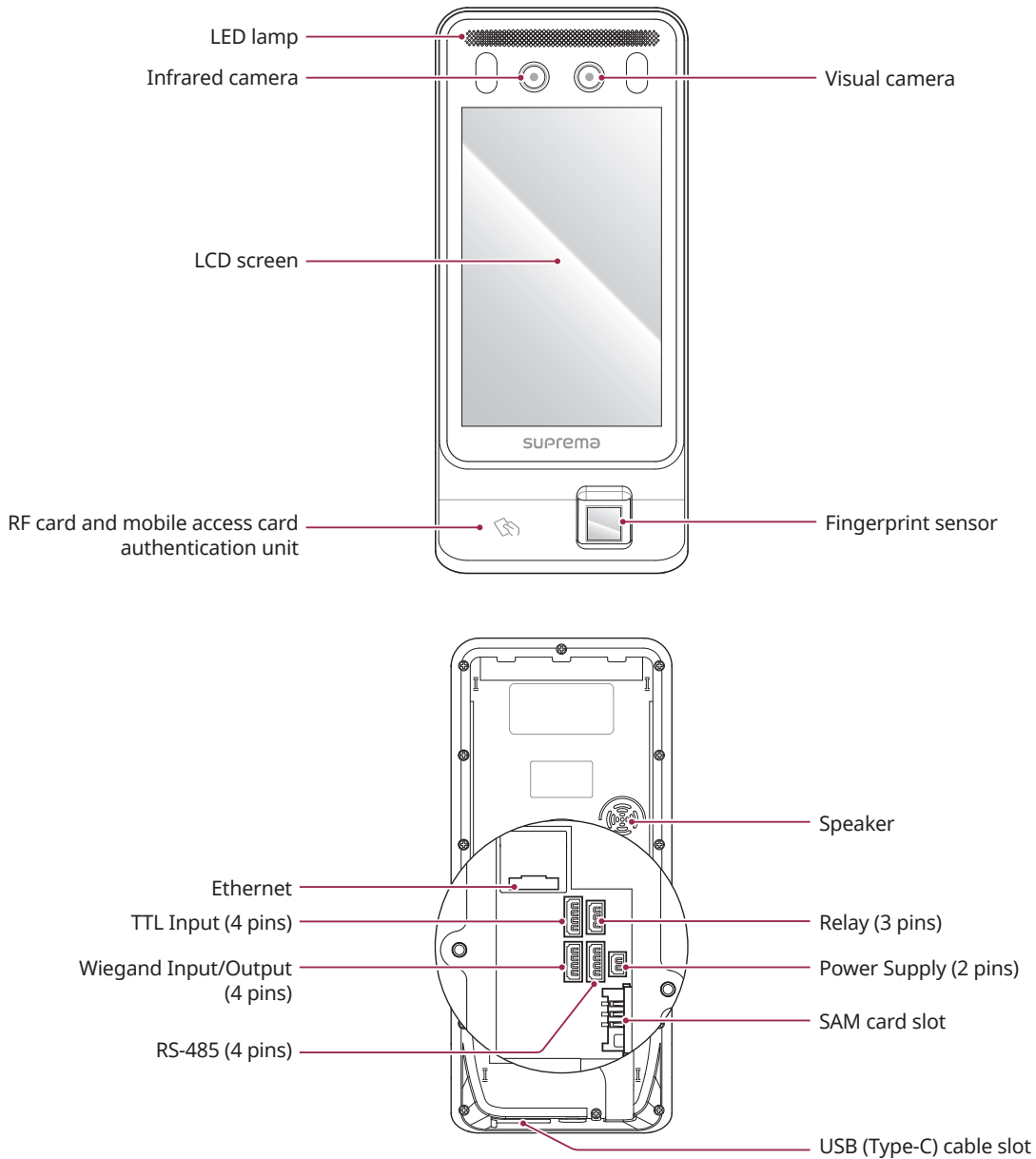
## Components

		
<p>FaceStation F2</p>	<p>Wall Bracket</p>	<p>Drilling Template</p>
		
<p>Cables</p>	<p>Diode</p>	<p>120 Ω resistor</p>
		
<p>PVC Anchor x6</p>	<p>Fixing Screw x6</p>	<p>Bracket Fixing Screw (Star Shaped)</p>
		
<p>Cable Cover</p>	<p>Quick Guide</p>	<p>Open Source Software Guide</p>



- 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 website (<https://www.supremainc.com>) and refer to the installation guide.

## Name and function of each part



Name	Description
<b>LED lamp</b>	Turned on when the user is detected in the dark.
<b>Infrared camera</b>	Capture the infrared face image.
<b>Visual camera</b>	Capture an actual face image.
<b>LCD screen</b>	Provides UI for operation.
<b>RF card and mobile access card authentication unit</b>	Part to scan a RFID card or mobile access card for entrance.
<b>Fingerprint Sensor</b>	Reads fingerprints.
<b>Speaker</b>	Delivers sound.

Ethernet	Connect the Ethernet cable.
TTL input (4 pins)	Connect the TTL input cable.
Relay (3 pins)	Connect the relay cable.
Wiegand input/output (4 pins)	Connect the Wiegand input/output cable.
Power supply (2 pins)	Connect the power supply cable.
RS-485 (4 pins)	Connect the RS-485 cable.
SAM card slot	Insert the SAM card.
USB (Type-C) cable slot	Connects the USB cable.

## Cables and connectors

### Power supply



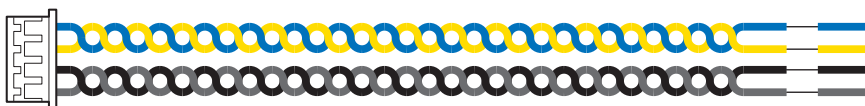
Pin	Name	Color
1	PWR +VDC	Red (white stripe)
2	PWR GND	Black (white stripe)

### 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



## TTL input



Pin	Name	Color
1	TTL IN0	Red
2	TTL IN1	Yellow
3	TTL GND	Black
4	SH GND	Gray

## Wiegand input and output



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

## Correct face enrollment and authentication method

### Cautions for enrolling a face

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

### Cautions for authenticating a face

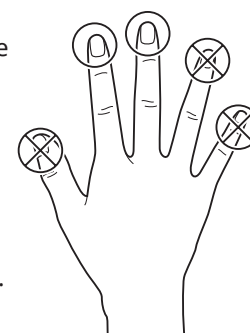
- Ensure that the face appears in the center of the device's screen. When the guideline is displayed, follow the instructions shown on the screen to authenticate the face.
- If a part of the face is covered with a hat, a mask, an eye patch, or sunglasses authentication may fail. Do not cover the face;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

## How to enroll a fingerprint

In order to improve the fingerprint authentication rate, enroll the fingerprint correctly. FaceStation F2 can recognize a fingerprint even if the angle and position of a user's fingerprint input change. If you enroll the fingerprint with attention to the following matters, the authentication rate can be improved.

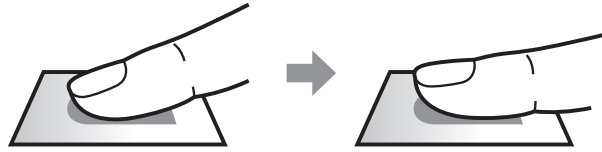
### Selecting a finger for fingerprint input

- In preparation for the case that the fingerprint of a specific finger cannot be used, for example if the user is lifting a load with one hand or a finger gets hurt, up to 10 fingerprints for each user can be 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 "Place your finger on the sensor." is displayed on the LCD screen for enrolling the fingerprint, place the finger with the fingerprint you wish to enroll on the fingerprint authentication unit 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

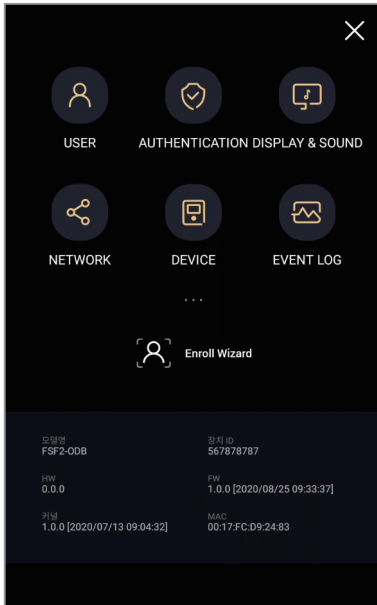
FaceStation F2 can recognize a fingerprint regardless of a change in season or finger condition. However, the authentication rate may vary according to the external environment or fingerprint input method. If the fingerprint authentication cannot be done smoothly, it is recommended to take the following 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 .

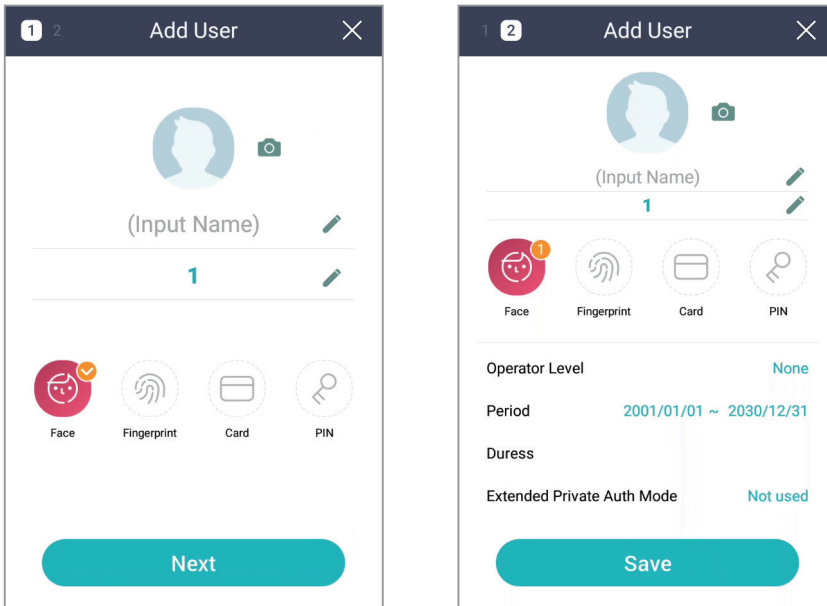
## Registering user information





The user information including credentials can be registered.

1 Press  and authenticate with the Admin level credential.

2 Select **USER** → , and choose a credential you want to register.

There are two steps for the user registration. Some options are available after the credential has been registered.



-  : Register a user photo.
- **Name:** Enter the username.
- **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.
- **Face:** Register a face for user authentication. Press **Face** → **Next** and register a face according to the instructions on the screen. To add more faces, press . Refer to [Registering a face](#) to learn more about the face registration.
- **Fingerprint:** Register a fingerprint for user authentication. Press **Fingerprint** → **Next** and register a fingerprint according to the instructions on the screen. To add more fingerprint, press . Refer to [Registering a fingerprint](#) to learn more about the fingerprint registration.
- **Card:** Register a card for user authentication. Press **Card** → **Next** and scan the card that will be assigned to the user. To register an additional card, press .
- **PIN:** Enter the PIN you wish to use. Enter the PIN you wish to use, and then enter the same PIN again for confirmation. Enter a number between 4 and 16 digits to prevent leaking.

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




Available menus vary according to the set user level.

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

- **Period:** Set an expiry date to use the user account.
- **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.
- **Extended Private Auth Mode:** Change the authentication method according to the user. You can set whether to use the extended private auth mode. this mode allows you to combine user authentication methods, including both faces and fingerprints. Otherwise, you can use the device's basic authentication mode. You can modify it in BioStar 2.

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

## Registering a face

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

**2** Select **USER** → .

**3** Select  **Face** → **Next**.




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

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



- The visual face data of FaceStation F2 are not compatible with face templates of FaceStation 2 or FaceLite.
- You can register Visual Face not only directly from FaceStation F2 but from the BioStar 2 by uploading photos or importing CSV files. You can also register Visual Face with your smartphone via a link sent from BioStar 2. To learn more about how to register Visual Face for each method, please refer to the BioStar 2 help manual.
- To use a Visual Face feature correctly, take a picture by following instructions below.
  - When registering a face, maintain a distance of 60 cm to 100 cm between the device and the face.
  - Do not change your face expression.
  - Do not wear masks, hats, or eye patches.
  - Do not raise head up or lower head.
  - Do not wear thick makeup.
  - Do not close your eyes.
  - Make sure that both of your shoulders correctly appear on the screen.
  - Stand still and register your face by staring at the screen.
  - Be careful not to display two faces on the screen. Register one person at a time.
  - If you do not follow the instructions on the screen, the face registration may take longer or may fail.

## Registering a fingerprint




- 1 Press  and authenticate with the Admin level credential.
- 2 Select **USER** → .
- 3 Select  **Fingerprint** → **Next**.



- 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.

## Modifying User Information

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



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



**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

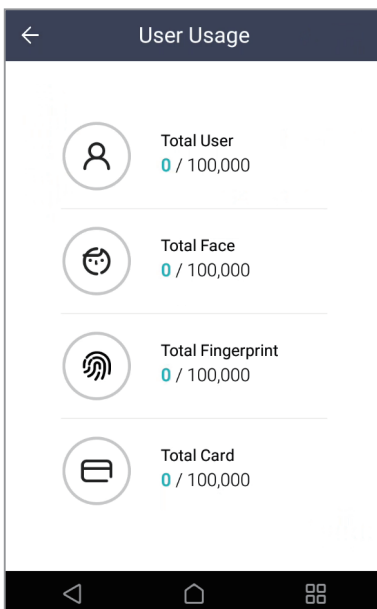
You can delete all registered users at once.

- 1 Press  and authenticate with the Admin level credential.
- 2 Select **USER** → .
- 3 Check **Delete All** to delete all registered users and press **OK**.
- 4 When you press **OK**, all registered users will be deleted.

## View User Usage

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

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








# Authentication







## Auth Mode

Set the authentication mode. You can make a combination of face, fingerprint, PIN, card, or ID and you can also set a schedule for each authentication mode.

### Registering auth mode

- 1 Press  and authenticate with the Admin level credential.
- 2 Select **AUTHENTICATION** → **Auth Mode** and press .
- 3 Press  and select one of options you want to use. To add additional options, repeat this step.
- 4 Press **Schedule** and set a schedule.




- You can combine selected authentication mode to authenticate all in order or only some of the selected authentication mode to authenticate. For example, if you combines the authentication mode with  +  + , a user should authenticate a face, fingerprint, and PIN, and if you combine the authentication mode with  +  / , a user authenticates a face first and fingerprint or PIN.
- 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's manual.

- 5 Press **OK** to save the settings.



## Modifying Auth Mode

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**.
- 3 Select the authentication mode to modify.
- 4 Modify the authentication mode by referring to [Registering auth mode](#) and press **OK**.


## Delete Auth Mode

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**.
- 3 Press  and select the authentication mode to delete. You can select multiple options.
- 4 Press **OK**. To delete the selected option, press **OK**. Or, press **Cancel** to cancel the deletion.

## Server Matching


You can set the 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.

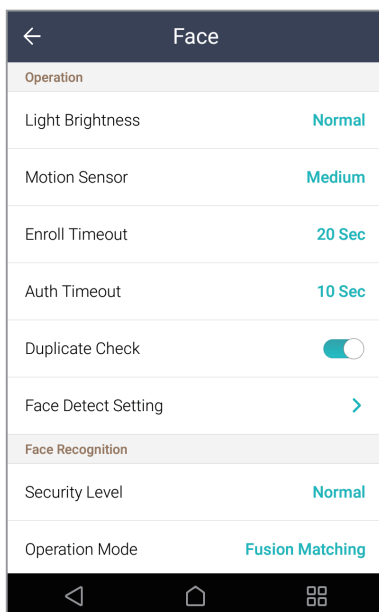
- 1 Press  and authenticate with the Admin level credential.
- 2 Select **AUTHENTICATION** and activate **Server Matching (Fingerprint, Card, ID)**.



- It 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 manual of BioStar 2 to learn how to set the server matching settings in BioStar 2.

## Face

- 1 Press  and authenticate with the Admin level credential.
- 2 Select **AUTHENTICATION** → **Face**.
- 3 Select and set the desired item.



- **Light Brightness:** Adjust the brightness level of the light manually. Select **Normal** or **High** to change the level or select **Not Use** to turn off the light.
- **Motion Sensor:** Set the sensitivity for detecting motion near the device. If Motion Sensor is set to **OFF**, tap the screen to authenticate the face.
- **Enroll Timeout:** If a face is not registered during the set time, the face registration will be canceled.
- **Auth Timeout:** If the authentication is not completed during the set time, the authentication will fail.
- **Duplicate Check:** When registering a face, you can check duplicates.
- **Face Detect Setting:** set the face recognition area by adjusting the size and position of the detected area.



- It is recommended to maintain the default values of options under Face Detect Setting. The default values of each option are as follows:
  - Maximum Head Rotation Angle: 15
  - Minimum Face Width: 66
  - Maximum Face Width: 250
  - Search Range X coordinate: 144
  - Search Range Width: 432

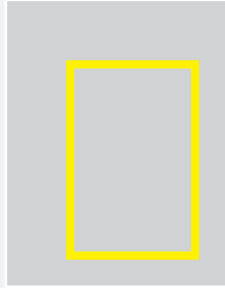
- **Security Level:** Set the security level for 1:N authentication.
- **Operation Mode:** Set the operation mode of the device when the face is authenticated.
  - **Fusion Matching:** Use both visual and infrared cameras to increase the face authentication accuracy.
  - **Fast Matching:** The device authenticates users who pass an access point without a pause within the authentication distance.
- **Face Detection:** The device prevents user authentication using fake faces, such as photos. It is available when **Operation Mode** is set to **Fusion Matching**.
- **Advanced Settings:** Set the settings of the face recognition, such as mask detection, thermal camera.
  - **Check Mode:** Set the check mode depending on the usage.
  - **Authentication Fail Sound:** Set the alarm to trigger when a user is not wearing a mask, or the measured temperature is higher than preset threshold.
  - **Mask Detection:** Set the mask detection mode to detect whether a user is wearing a mask or not. If you select **Enabled (Hard)**, it refuses authentication of users who are not wearing a mask and saves event logs. If you select **Enabled (Soft)**, users who are not wearing a mask can authenticate but event logs still be saved.
  - **Thermal Camera:** Set the thermal camera options. If you select **Enabled (Hard)**, it refuses authentication of users with elevated temperature than the preset threshold and saves event logs. If you select **Enabled (Soft)**, users with elevated temperature than the preset threshold can authenticate but event logs still be saved.



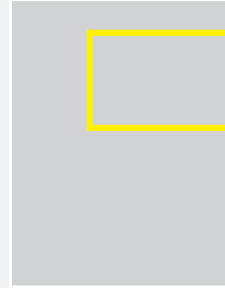
- Set the **Check Mode** depending on the usage when **Mask Detection** or **Thermal Camera** is activated.
  - **Check After Authentication:** Measure the temperature after a successful authentication.
  - **Check Before Authentication:** Authenticate only when the user is within the range of the preset temperature threshold. When this mode is activated, it does not attempt to authenticate user's identity if their temperature has been detected to be above the threshold.
  - **Check Only:** Detect temperature without authentication. This mode allows users within the range of the preset threshold to access without checking their identity or access rights.
- When **Thermal Camera** is enabled, you can set advanced settings.
  - **Celsius/Fahrenheit:** Change the unit of temperature.
  - **Low Threshold Temperature:** Set the minimum threshold temperature to limit the access. Users with detected temperature below the threshold will be denied access. It can be set between 1°C to 45°C and cannot be higher than the value of the maximum threshold temperature.
  - **High Threshold Temperature:** Set the maximum threshold temperature to limit the access. Users with detected temperature over the threshold will be denied access. It can be set between 1°C to 45°C and cannot be lower than the value of the minimum threshold temperature.
  - **Save Temperature Data:** Save temperature data. When this mode is activated, it saves both authentication and temperature logs. When this mode is deactivated, it only saves authentication logs.
  - **Show Thermal Infrared Image:** Display infrared imaging on the screen of the devices.
  - **Dynamic ROI:** If there are ambient light sources near the device, the thermal camera may incorrectly measure the subject's temperature. You can set the thermal camera to automatically measure the skin temperature by detecting the ROI (Region of Interest) and to avoid detecting the temperature of ambient light devices.
  - **Camera Configuration:** Configure the thermal camera settings for accurate measurement.
- When **Thermal Camera** is enabled, you can configure the thermal camera settings for accurate measurement depending on environment.
  - **Distance(cm):** Set up the distance between the user and device.
  - **Emissivity:** Set up the emissivity to precisely measure the temperature of the user.



- **ROI X(%), ROI Y(%), ROI Width(%), ROI Height(%)**: You can set the ROI manually when you disable **Dynamic ROI**. Set the temperature measurement area by adjusting the size and position of ROI (Region of Interest). To move the ROI horizontally (left or right), change the ROI X(%) value. The ROI moves to the right as entering a larger value. To move the ROI vertically (up or down), change the ROI Y(%) value. The ROI goes up as entering a larger value. To change the size of the ROI, change the ROI Width(%) or ROI Height(%) value. The ROI becomes bigger as entering a larger value. The following is an example for changing the ROI values for each option with 40 (X), 15 (Y), 70 (Width), 40 (Height).



When using the default values



When changing the default values with 40 (X), 15 (Y), 70 (Width), 40 (Height)

- **Skin Temperature Compensation**: You can set the thermal camera to adjust its temperature value automatically measuring the ambient conditions.
- **Skin Temperature Correction**: You can set the thermal camera to compensate for variations in caused by the ambient environment that consistently affect temperature measurement. For example, if the environment is causing temperature to be measured at 0.1°C higher, set the temperature correction to -0.1.
- **FW**: It shows the current firmware version of the thermal camera when it is connected properly.

- It is recommended to maintain the default values of the camera configuration settings for the best performance. The default values of each option are as follows:
  - **Distance(cm)**: 100
  - **Emissivity**: 0.98
  - **ROI X(%)**: 30
  - **ROI Y(%)**: 25
  - **ROI Width(%)**: 50
  - **ROI Height(%)**: 55

The yellow guide box will appear to guide the ROI area when using it with default values. You can measure temperature by placing the face inside of the ROI area. The yellow guide box will disappear when changing the default values or using Dynamic ROI.



When using the default values



When changing the default values or using Dynamic ROI

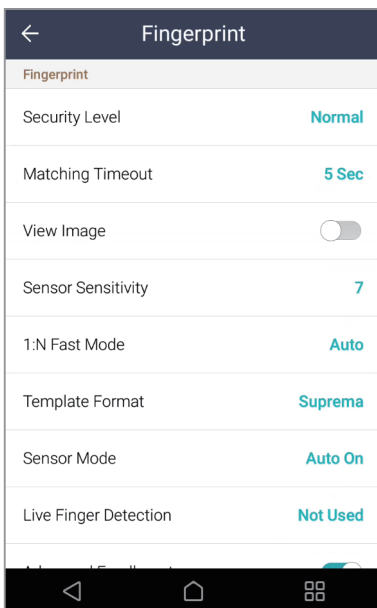


- It is not possible to use both face authentication with a mask on and thermal camera features on a slave device.
- The supported thermal camera is TCM10-FSF2.

## Fingerprint

You can change settings regarding the fingerprint authentication.


- 1 Press and authenticate with the Admin level credential.
- 2 Press **AUTHENTICATION** → **Fingerprint**.
- 3 Select and set the desired item.

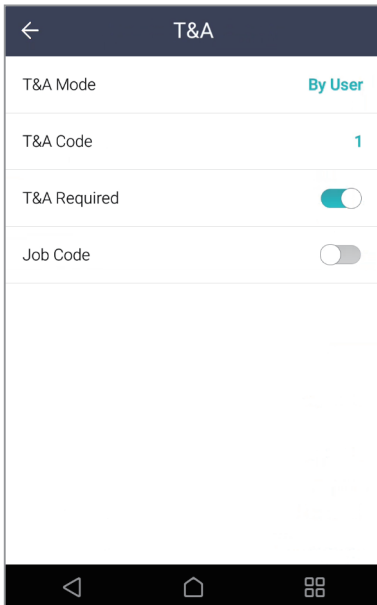



- **Security Level:** Set the security level for 1:N authentication.
- **Matching Timeout:** Set the fingerprint matching timeout. If the authentication is not completed during a set time, the authentication will fail.
- **View Image:** Set to view the original image when scanning the fingerprint.
- **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.
- **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.
- **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.
- **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.

## T&A Mode

You can set how to register T&A Mode.


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

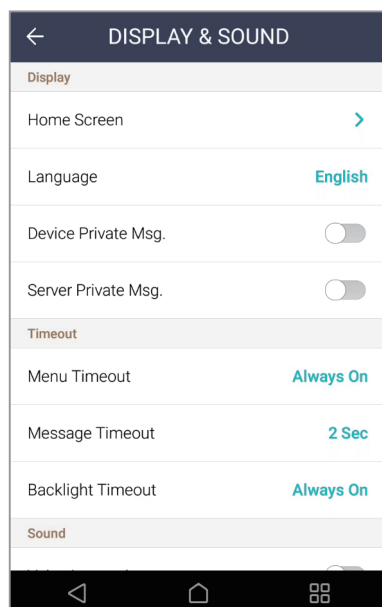


- **T&A Mode:** Set the method to use T&A mode.
- **T&A Code:** You can register T&A events. Select **T&A Code** →  to register a T&A event and set an icon, name of T&A event, and schedule.
- **T&A Required:** Set to require a user to select a T&A event when authenticating.
- **Fixed T&A Key:** Set to use only a T&A event selected by the administrator. This option can be used when **Fixed** is set for **T&A Mode**.
- **Job Code:** Select whether to use **Job Code**.

# 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**.
- 3 Change the desired item.



- **Home Screen:** Select items to be displayed in the background of the home screen.
- **Language:** Set the language you wish to use.
- **Device Private Msg.:** Set whether to use a Private Message, which will be displayed on the screen when the user authenticates. You can set **Device Private Msg.** by using the BioStar 2 Device SDK.
- **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.
- **Screen Saver:** Set this option to use the screen saver feature. It reduces unnecessary energy consumption by lowering the brightness of the LCD screen when the device is not in use.
- **Menu Timeout:** Set the time (sec) for the menu screen to disappear automatically. If there is no button input during a set time, the screen will return to the home screen.
- **Message Timeout:** Set the time (sec) for a setting complete message or information message to disappear automatically.
- **Backlight Timeout:** Set the time (second) to turn off the lighting of LCD screen.
- **Voice Instruction:** Set to use the voice instruction instead of alarm sounds.
- **Volume:** Set the volume.




Refer to the BioStar 2 Device SDK webpage on the Suprema Knowledge Base website ([kb.supremainc.com/bs2sdk/](http://kb.supremainc.com/bs2sdk/)) for more information on the BioStar 2 Device SDK.

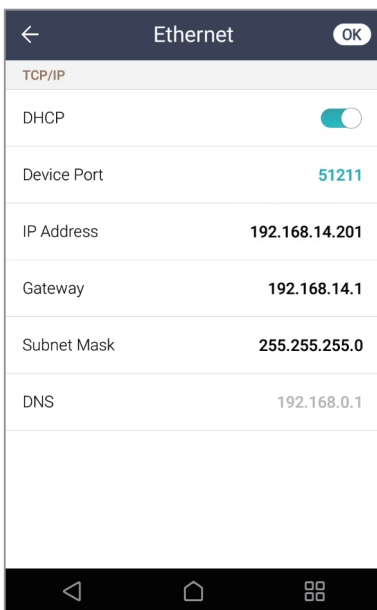
# Network

## Network Settings

You can change the network settings of the device.

### Ethernet


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

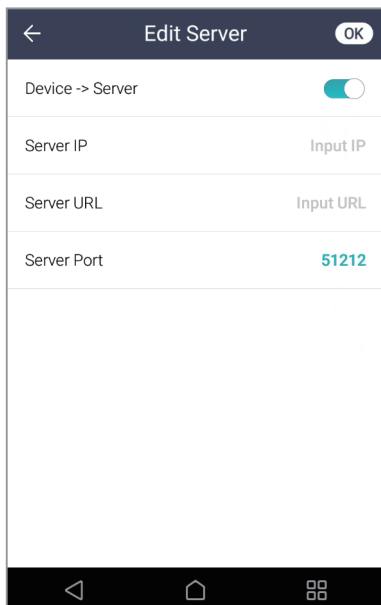


- **DHCP:** Set whether to use DHCP. If DHCP setting is disabled, the user can modify **Port**, **IP Address**, **Gateway**, **Subnet Mask**, and **DNS**.
  - **Device Port:** Set the device port.
  - **IP Address:** View the IP address of the device. To modify, disable DHCP setting.
  - **Gateway:** View the gateway of the device. To modify, disable DHCP setting.
  - **Subnet Mask:** View the subnet mask of the device. To modify, disable DHCP setting.
  - **DNS:** Set the DNS server address.
- 4 To save settings, press **OK**.



## Server


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



- **Device → Server:** You can send a connection signal from the device to a server with the input information directly. When you select **Server -> Device**, **Server IP**, **Server URL** and **Server Port** cannot be entered.
- **Server IP:** Enter the IP address of the PC on which BioStar 2 is installed. Input is accepted only when **Device -> Server** is set for **Connection Mode**.
- **Server URL:** Enter server URL instead of **Server IP**. Input is accepted only when **Device -> Server** is set for **Connection Mode**.
- **Server Port:** Enter the port of the PC on which BioStar 2 is installed. Input is accepted only when **Device -> Server** is set for **Connection Mode**.

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

## Serial Setting

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

Serial Setting	
RS-485	Default
Baud Rate	115200


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

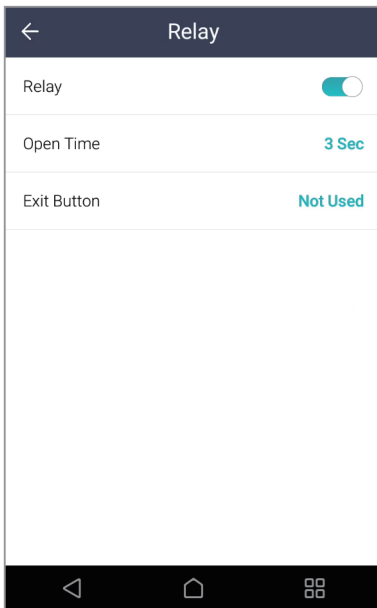
- 4 To save settings, press **OK**.

# Device

## Relay

You can set the open time and the input port of the exit button in the device.


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

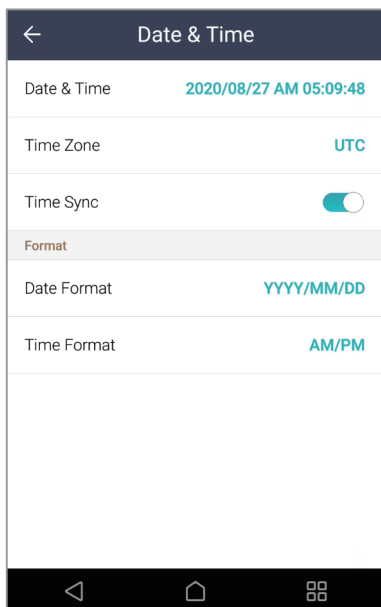


- **Relay:** You can set whether relay is enabled or not. To set the open time and the input port of the exit button, activate this option.
- **Open Time:** Set the duration for the door to remain open when standard user authentication has been carried out.
- **Exit Button:** Select the input port where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

## Date & Time

You can set the open time and the input port of the exit button in the device.



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

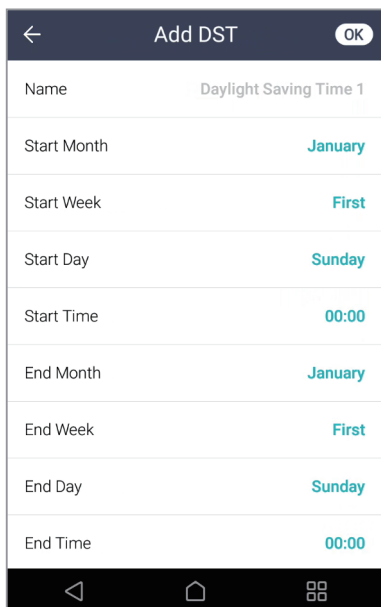


- **Date & Time:** Check the current date and time. To modify it manually, disable **Time Sync**.
- **Time Zone:** Set the time reference of the current location.
- **Time Sync:** Synchronize the server and the time. If you wish to synchronize the server and the time, enable **Time Sync**.
- **Date Format:**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

## 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** → **Daylight Saving Time** and press  to add additional daylight-saving time.
- 3 Select the desired item and change the setting.




Add DST	
Name	Daylight Saving Time 1
Start Month	January
Start Week	First
Start Day	Sunday
Start Time	00:00
End Month	January
End Week	First
End Day	Sunday
End Time	00:00

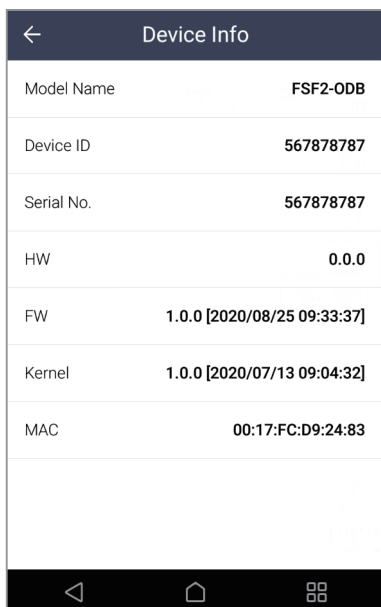
- **Name:** Set the name of daylight-saving time.
- **Start Month / Start Week / Start Day / Start Time:** Set details of when the daylight-saving time option begins.
- **End Month / End Week / End Day / End Time:** Set details of when the daylight-saving time ends.

- 4 To save 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  and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Device Info**. You can view the information including **Model Name**, **Device ID**, **Serial No.**, **HW**, **FW**, **Kernel**, and **MAC**.

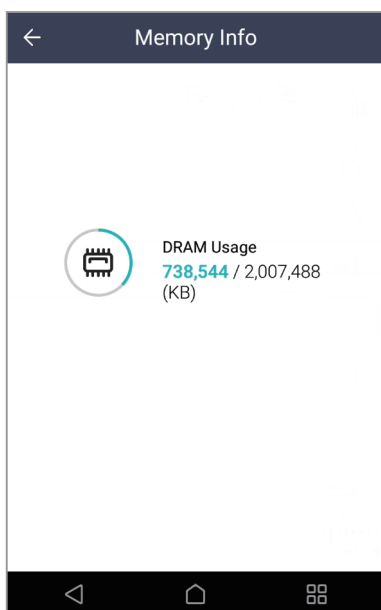


Device Info	
Model Name	FSF2-ODB
Device ID	567878787
Serial No.	567878787
HW	0.0.0
FW	1.0.0 [2020/08/25 09:33:37]
Kernel	1.0.0 [2020/07/13 09:04:32]
MAC	00:17:FC:D9:24:83

## Memory Info


View the status of memory usage.

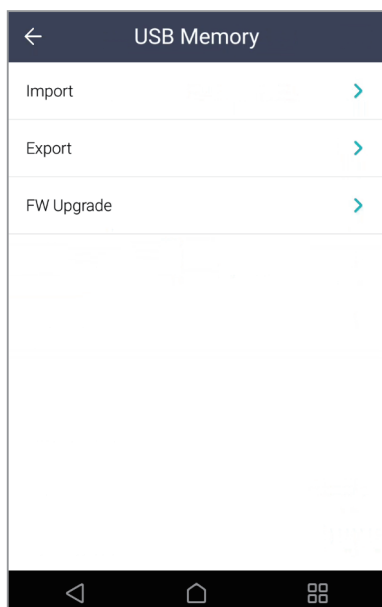
- 1 Press  and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Memory Info**. You can view the memory usage status of the device.



## USB Memory

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

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



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




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



- When upgrading firmware from version 1.0.5 or earlier to version 1.1.0 or later, it starts of migration of face templates registered. It may take up to 10 hours depending on the amount of data.
- It is recommended to use a USB flash drive formatted in NTFS or exFAT. USB flash drives in FAT32 format may malfunction when more than 50,000 face credentials are stored.
- Check the amount of free space on your USB flash drive. To save 100,000 face credentials, a minimum of 15 GB of free space is required.
- The type of supported USB memory is as follows. If you use a different type of USB memory, the function may not operate normally.
  - Samsung: SUM-BSG 32 GB
  - LG Electronics: MU 1 USB 32 GB, MU28GBC 32 GB
  - SanDisk: Cruzer Blade CZ50 32 GB, CZ48 Ultra USB 3.0 64 GB, CZ80 USB3.0 64 GB, CZ52 64 GB, Cruzer Glide Z60 128 GB, Cruzer Force CZ71 32 GB
  - Sony: USM-SA1 32 GB
  - Transcend: JetFlash 760 32 GB
 The supported USB flash drives listed above were all tested with USB Type-A. To connect these USB flash drives to FaceStation F2, a separate USB Type-C gender is required.


## Secure Tamper

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

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


## Restart Device

The user can restart the device.

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

## Restore Default

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


- 1 Press  and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **Restore Default**.
  - **All settings:** You can reset all settings stored on the device. Press **OK** to reset all device settings.
  - **Keep Network Settings:** You can reset all settings except network settings. Press **OK** to reset all settings except network settings.
  - **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.

## 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  and authenticate with the Admin level credential.
- 2 Select **DEVICE** → **User ID Type**.
- 3 Change to the desired item and press **OK**.

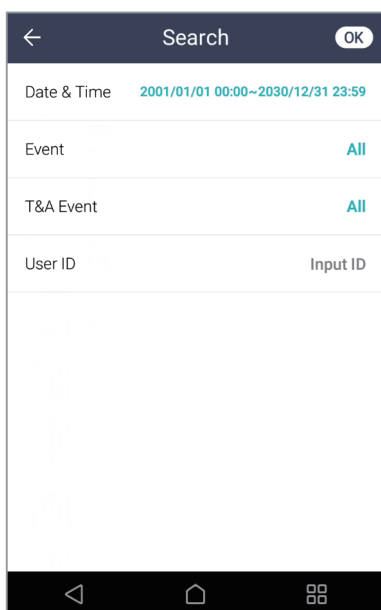


# Event Log

## Search Log

You can set a condition and search a log.



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



- 4 Press **OK**. A log that matches the condition will be displayed on the screen.



## Delete All Logs

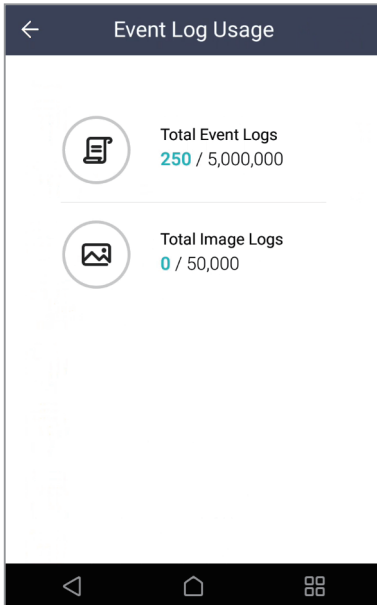
You can delete all saved logs.

- 1 Press  and authenticate with the Admin level credential.
- 2 Select **EVENT LOG**.
- 3 To delete all logs, select  and then press **OK**. To return to the previous screen, press **Cancel**.

## View Log Usage

You can check the status of log usage.

- 1 Press  and authenticate with the Admin level credential.
- 2 Select **EVENT LOG** → . You can check the capacity of event and image logs on the device.



# 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"> <li>If the terminal and the bracket are far away from each other, the device may not operate due to the temper switch.</li> <li>Check the adaptor or the power cable.</li> </ul>
	The terminal reboots abnormally.	<ul style="list-style-type: none"> <li>Upgrade the terminal's firmware to the latest version.</li> </ul>
PIN	I lost my PIN.	<ul style="list-style-type: none"> <li>For a normal user PIN, request it from the administrator and enter it again.</li> <li>If you have lost the Admin PIN, contact the installation company.</li> </ul>
	I entered my PIN and pressed the <b>OK</b> button, but I still cannot open the door.	<ul style="list-style-type: none"> <li>Check if you have entered the registered PIN correctly.</li> <li>Check if you have changed the PIN recently.</li> <li>If you cannot remember the PIN, request it from the administrator and enter it again.</li> </ul>
Face	The face has been registered but face authentication cannot be done smoothly, and errors occur frequently.	<ul style="list-style-type: none"> <li>Check 'Cautions for registering a face' and register the face again.</li> <li>If there are a large number of registered faces, change Matching Timeout and try again.</li> </ul>
	Face authentication has suddenly stopped working.	<ul style="list-style-type: none"> <li>Check 'Cautions for authenticating a face' and try again.</li> </ul>
	Mask Detection is enabled, but face authentication cannot be done smoothly when wearing a mask.	<ul style="list-style-type: none"> <li>Authenticate your face twice with the mask pull down on the tip of your nose. Then, authenticate your face again wearing a mask that covers your nose completely. If the problem persists, contact the installation company.</li> </ul>
	The thermal camera fails to measure temperature.	<ul style="list-style-type: none"> <li>Check if the thermal camera is properly connected to the terminal.</li> <li>Measure the temperature again without covering your forehead. If the problem persists, contact the installation company.</li> </ul>
	The thermal camera measures lower temperature than actual temperature.	<ul style="list-style-type: none"> <li>If a user measures the temperature after being exposed to cold temperatures for a long time, the temperature may be measured lower than the actual temperature. Wait for 1 to 2 minutes indoors and try again. If the problem persists, contact the installation company.</li> </ul>
Door Lock	The door cannot be locked when I close the door.	<ul style="list-style-type: none"> <li>The electric lock may be malfunctioning. Have an inspection through the installation company.</li> </ul>
Time	Suddenly the time has become incorrect.	<ul style="list-style-type: none"> <li>FaceStation F2 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 <a href="#">Date &amp; Time</a>.</li> </ul>
Admin Access	I lost my Admin PIN, so I cannot access the Admin mode.	<ul style="list-style-type: none"> <li>The administrator grants an access permission in FaceStation F2, so only the administrator can access the Admin menu.</li> <li>If you have lost the Admin PIN, contact the installation company.</li> </ul>

# Product specifications

Category	Feature	Specification
Credential	Biometric	Face, Fingerprint
	RF Option	125 kHz EM & 13.56 MHz MIFARE, MIFARE Plus, DESFire EV1/EV2*, FeliCa
	RF read range**	EM/MIFARE/DESFire: 50 mm / Felica: 30 mm
	Mobile	NFC, BLE
General	CPU	1.8 GHz Dual Core + 1.4 GHz Quad Core
	Memory	16 GB Flash + 2 GB RAM
	Crypto chip	Supported
	LCD type	7" IPS color LCD
	LCD resolution	800 x 1280 pixels
	Sound	16 bit
	Operating temperature	-20°C–50°C
	Storage temperature	-40°C–70°C
	Operating humidity	0 %–80 %, non-condensing
	Storage humidity	0 %–90 %, non-condensing
	Camera	2MP 2EA
	Dimension (W x H x D)	119.8 x 268.4 x 49.7 (mm)
	Weight	<ul style="list-style-type: none"> <li>Device: 670 g</li> <li>Bracket (Including washer and bolt): 205 g</li> </ul>
	IP rating	IP65
	Certificates	CE, FCC, KC, RoHS, REACH, WEEE
Face	Recognition Distance	0.5–1.3 m
	Recognition Height	1.4–1.9 m
	Matching speed	Less than 0.5 sec
	Live Face Detection	Supported
Fingerprint	Image dimension	300 x 400 pixels
	Resolution	500 dpi
	Template	SUPREMA / ISO19794-2, ANSI-378
	Extractor / Matcher	MINEX certified and compliant
	Sensor Certificates	FBI PIV and FBI Mobile ID FAP20
	Live Fingerprint Detection	Supported (Deep learning-based)
Capacity	Max. User	100,000***
	Max. Credential (1:N)	<ul style="list-style-type: none"> <li>Fingerprint: 100,000</li> <li>Face: 50,000</li> </ul>
	Max. Credential (1:1)	<ul style="list-style-type: none"> <li>Fingerprint: 100,000</li> <li>Face: 100,000</li> <li>Card: 100,000</li> <li>PIN: 100,000</li> </ul>
	Max. Text Log	5,000,000
	Max. Image Log	50,000
	Interface	Ethernet
RS-485		1 ch Host or Slave (Selectable)
Wiegand		1ch Input or 1ch Output (Selectable)
TTL input		2 ch Inputs
Relay		1 Relay
USB		USB 2.0 (Host)
Tamper		Supported

Electrical	Power	<ul style="list-style-type: none"> <li>Power: DC 12 V–DC 24 V (Max. 2.5 A)</li> <li>Adapter recommended specifications: DC 24 V or DC 12 V (<math>\pm 10\%</math>) with a minimum of 2,500 mA****</li> </ul>
	Switch input VIH	Min.: 3 V / Max.: 5 V
	Switch input VIL	Max.: 1 V
	Switch Pull-up resistance	4.7 k $\Omega$ (The input pots are pulled up with 4.7 k $\Omega$ .)
	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 $\Omega$
	Relay	2 A @ 30 VDC Resistive load 1 A @ 30 VDC Inductive load

\* DESFire EV2 cards are supported by having backward compatibility of DESFire EV1 cards. CSN and smart card functions are compatible with FaceStation F2.

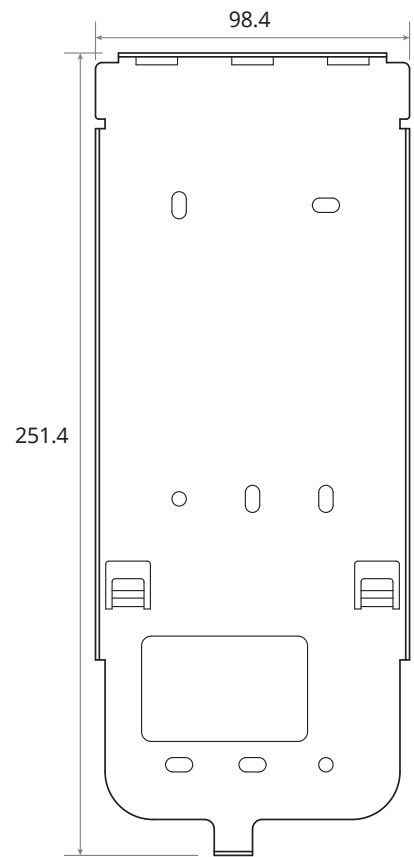
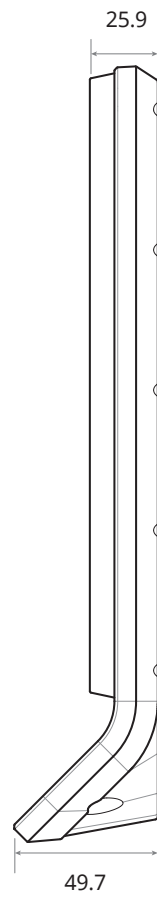
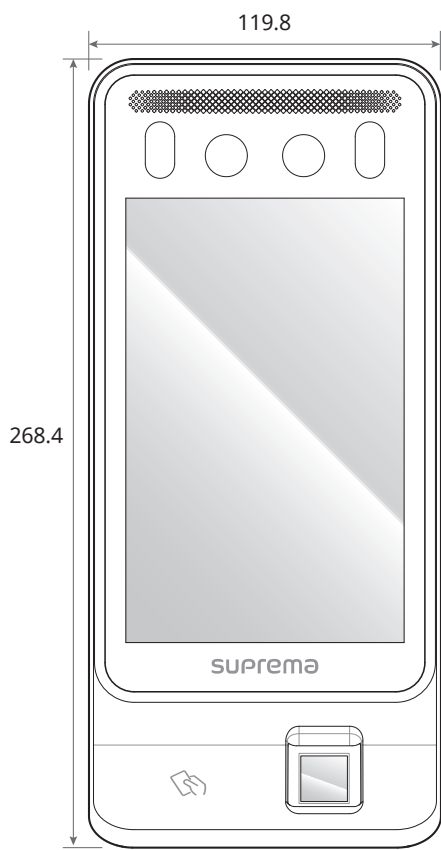
\*\* RF read range will vary depending on installation environment.

\*\*\* The number of users registered without having any credential data

\*\*\*\* Adapter is sold separately. Refer to the recommended specifications.

# 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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules..

- This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.
- A minimum separation distance of 20 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

## EU Declaration of Conformity (CE)

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

- Bluetooth Transmit Power: -0.1 dBm
- Bluetooth Frequency: 2402~2480 MHz
- NFC Frequency: 13.56 MHz
- RFID Frequency: 13.56 MHz + 125 kHz

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

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Version 3, 29 June 2007

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