

## **LiDAR Scanner**

# Hardware User Manual

■ August 2025 | Rev. 1.0

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**Revisions:**

Version	Date	Description
1.0	2025.08	First release

**Read Before Use:**

**Operate in strict accordance with this guide and associated manuals.**

Improper use may cause device damage and poor performance.

If you have any questions during use, contact the customer service.

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# Preface

Thank you for purchasing this LiDAR Scanner ("P2"). Before use, ensure that you have read this guide carefully and followed the instructions herein to better understand and operate the product.

# Technical Support

Starting from the date of purchase, users are provided with the technical support and upgrade services from FJDynamics.

Contact FJDynamics by any of the following methods:

Tel: 1833-330-6660 (United States)

Tel: 496-931-090-130 (Europe)

FJDynamics official website: <https://www.fjdynamics.com>

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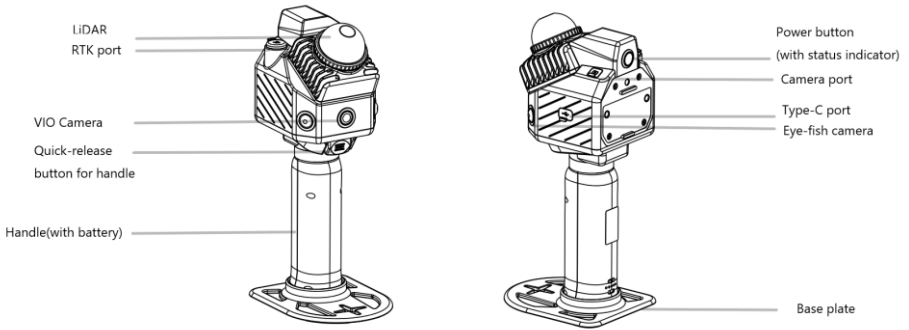
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# 1. Safety Instructions

1. This device satisfies the requirements of the following standards regarding the laser safety: IEC 60825-1:2014; 21 CFR 1040.10 and 1040.11, except for deviations (IEC 60825-1 Ed.3) pursuant to Laser Notice No.56, dated May 8, 2019.
2. Although the device complies with Class 1 safety standards, do not use a microscope, a magnifying glass in any form, or other magnifying devices to look directly at the lasers.
3. To ensure maximum self-protection, do not look directly at the running LiDAR.
4. Do not block or interrupt the LiDAR when it is rotating.
5. Do not plug and unplug the connecting cables repeatedly.
6. Use the device at normal ambient temperatures and avoid exposing it to extreme temperatures. Otherwise, the battery life will be shortened or unpredictable risks may occur.
7. The device contains sensitive electrical and mechanical components. Do not forcibly bend or pull the connecting cables, and do not insert unrelated objects into the connectors.
8. Do not immerse the batteries in water. Store the batteries in a cool and dry place when they are not in use.
9. Do not use or place the batteries near heat sources, such as fire and heaters.
10. Use only the original charger during charging. Third-party chargers are strictly prohibited.
11. Do not reverse the battery's positive and negative terminals.
12. Never insert the battery directly into a power outlet.
13. Prohibit metal objects from touching both battery terminals.
14. Recharge the battery every 3 months if unused to prevent deep discharge.
15. Do not disassemble the battery casing, weld it, or puncture it with sharp objects.
16. Charging temperature: 0–45°C; Discharge temperature: -20–50°C (50°C applicable only when integrated with devices).
17. Avoid unplugging or reconnecting the battery's Type-C port while the device is in use.

## 2. Overview



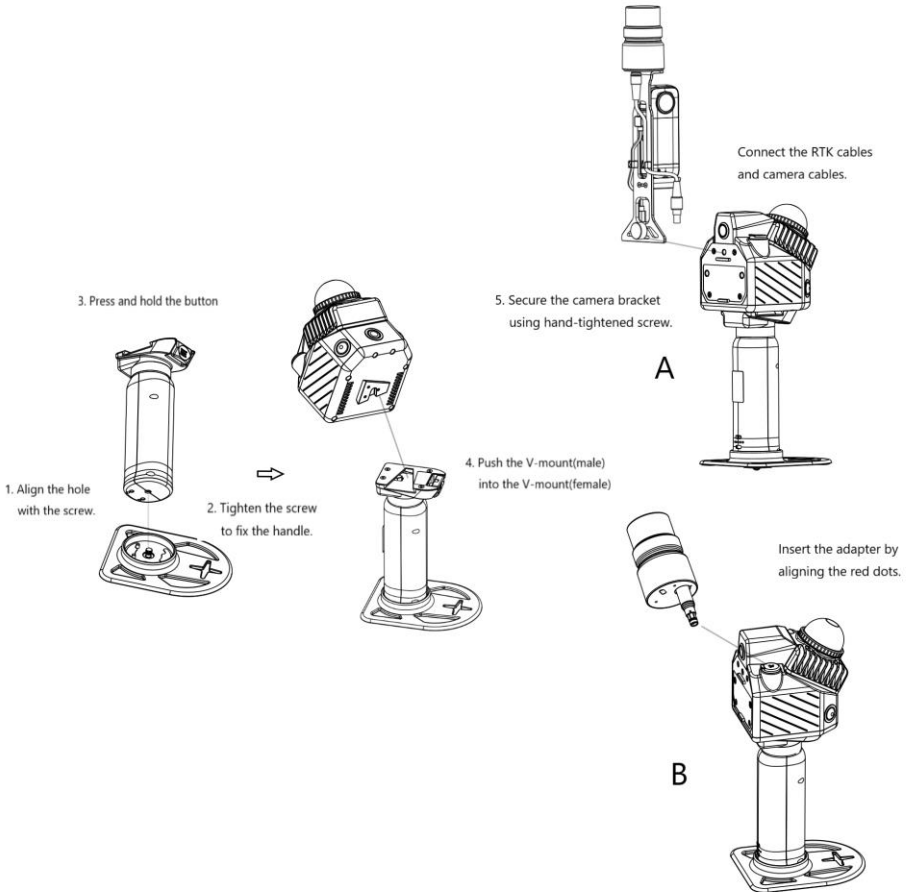
Specifications			
<b>Weight</b>	1 kg (excluding the camera module and base plate)	<b>Dimensions (excluding the camera module)</b>	87×90×270 mm
<b>Accuracy</b>	12 mm	<b>Laser wavelength</b>	905 nm
<b>Scanning range</b>	40 m (10% reflectivity) or 70 m (80% reflectivity)	<b>Laser class</b>	Class 1 Eye safe
<b>LiDAR FOV</b>	360°×59°	<b>LiDAR</b>	1
<b>Point cloud processing</b>	Real-time	<b>Points per second</b>	200,000
<b>Point cloud display</b>	Real-time preview on a mobile terminal	<b>Power supply</b>	Battery
<b>Supply voltage and current</b>	10.8 V, 3 A	<b>Charging port</b>	Type-C
<b>Data transfer</b>	USB-2.0	<b>Power consumption</b>	14 W
<b>Battery life</b>	1 h 50 min (excluding the camera module) 1h 30 min (including the camera module )	<b>Wi-Fi</b>	2.4 GHz
<b>Operating temperature</b>	-20°C to 50°C	<b>Storage</b>	512 GB
<b>Fisheye Camera FOV</b>	285°×150°	<b>Fisheye Camera pixels</b>	12M × 2
<b>VIO Camera FOV</b>	74°×47°	<b>VIO Camera pixels</b>	1080P
<b>Point cloud colorization</b>	Real-time+ Postprocessing	<b>RTK Fusion</b>	Real-time
<b>IP Rating</b>	IP54		

## 3. First Use

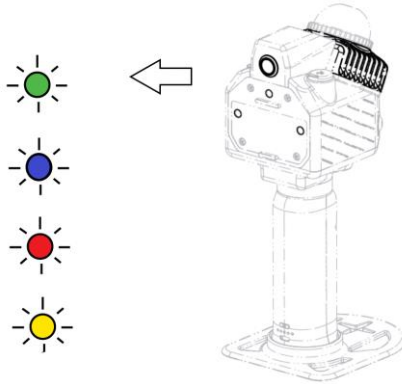
### 3.1. Assembly and Connection








#### P2 LiDAR Scanner System Configurations:

- Option A: Panoramic external camera + RTK module integration.
- Option B: RTK module package.



### 3.2. Instructions for Indicator Lights




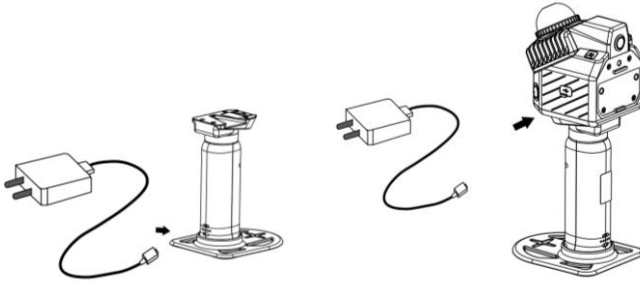
<i>Illustration</i>	<i>LED Description</i>	<i>Main Functions</i>
	Green light slow blink	Device starting up
	Green light double flash	Device shutting down
	Green light steady on	Wi-Fi STA standby mode (Bluetooth+Hotspot)
	Blue light steady on	Wi-Fi AP standby mode (WiFi)
	Red light slow blink	Data collection in progress
	Yellow light rapid flash	Device malfunction alert
	Blue light blinking	Scanning initialization, saving process, or switching mode between STA and AP

### 3.3. Button Functions

<i>Operation</i>	<i>Button Action</i>	<i>Duration(s)</i>	<i>LED State Transition</i>
<b>Power On</b>	SINGLE LONG PRESS	$0.2 < t < 1$	Green light slow blink → Green light steady on
<b>STA→AP</b>	SINGLE SHORT PRESS+	$0.2 < t < 0.5$	Green light steady on →
	SINGLE LONG PRESS	$t > 1$	Blue light blinking → Blue light steady on
<b>AP→STA</b>	SINGLE SHORT PRESS+	$0.2 < t < 0.5$	Blue light steady on →
	SINGLE LONG PRESS	$t > 1$	Green light steady on
<b>Start Scanning</b>	SINGLE LONG PRESS	$t = 1$	Green/Blue light steady on →
			Blue light blinking →
			Red light slow blink
<b>Stop Scanning</b>	SINGLE LONG PRESS	$t = 1$	Red light slow blink →
			Blue light blinking →
			Green/Blue light steady on
<b>Normal Shutdown</b>	SINGLE LONG PRESS	$3 < t < 5$	Green/Blue light steady on →
			Green light double flash → Off
<b>Force Shutdown</b>	SINGLE LONG PRESS	$t > 8$	Any state → Off

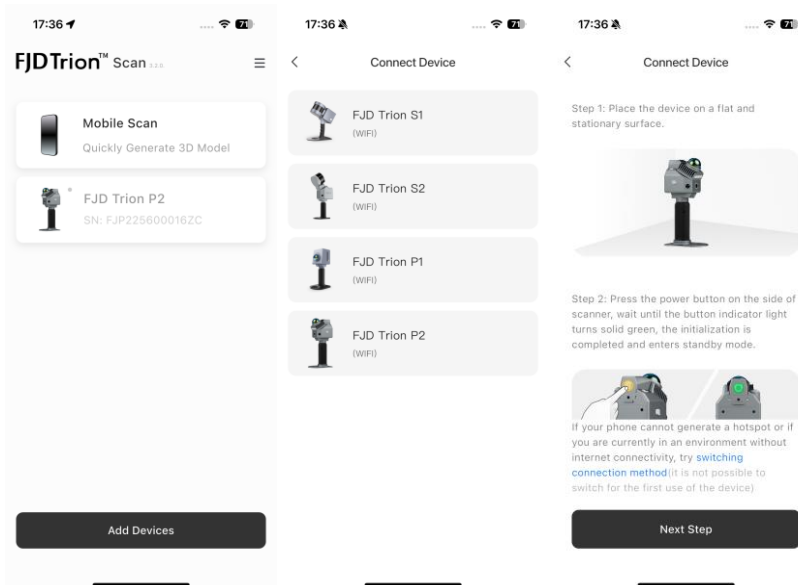
### 3.4. Charging the Battery

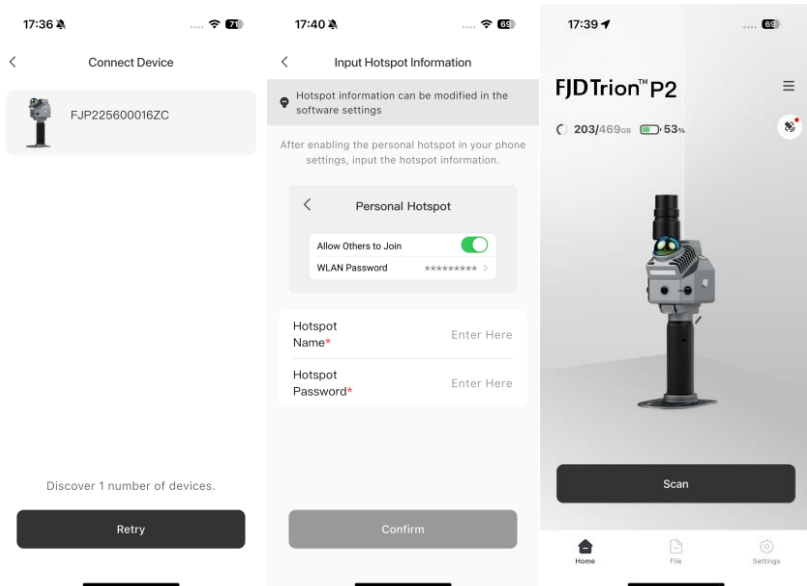
- **Charging the Battery Independently:** Plug one end of the charger provided into the Type-C port of the handle and the other end to a power outlet to charge the battery. It takes about 1.5 h to fully charge the battery. Press the button beside the Type-C port to check the battery level.
- **Charging the Battery While in Operational Mode:** Charging via Original Charger and Type-C Port 



### 3.5. Equipment Startup and Connection

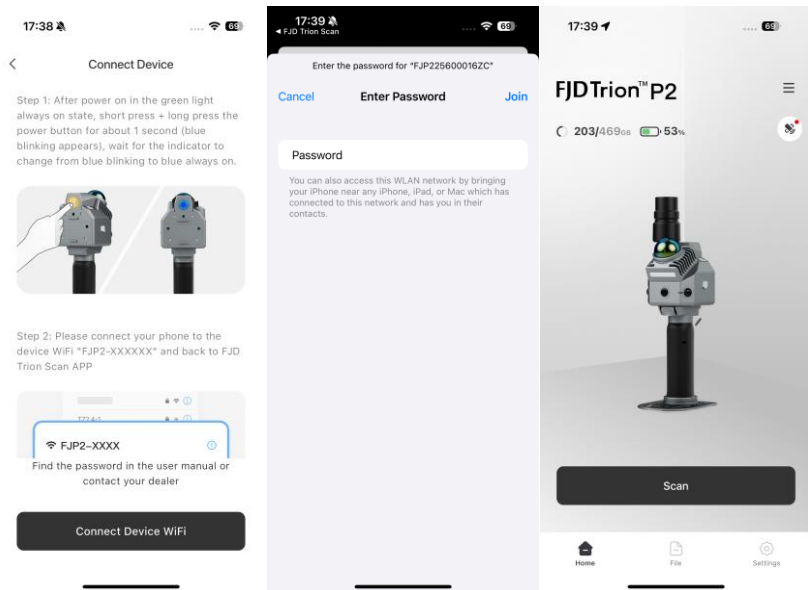
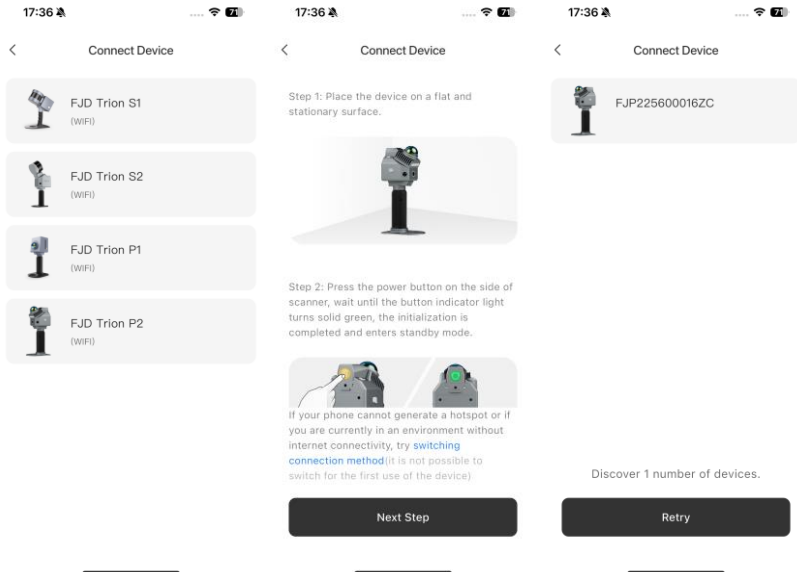
- Startup: Place the device flat and quickly click the switch button (0.2 to 1 second). The green light on the device indicator will stay solid for about 15 seconds. Connecting the APP to the Device
  1. STA mode connection: Open the APP and **select Add Device** → FJD Trion P2 → Next → Select the corresponding device SN connection → Enter the hotspot name and password created by the mobile phone and click **confirm** → The APP will automatically jump to the operation interface.





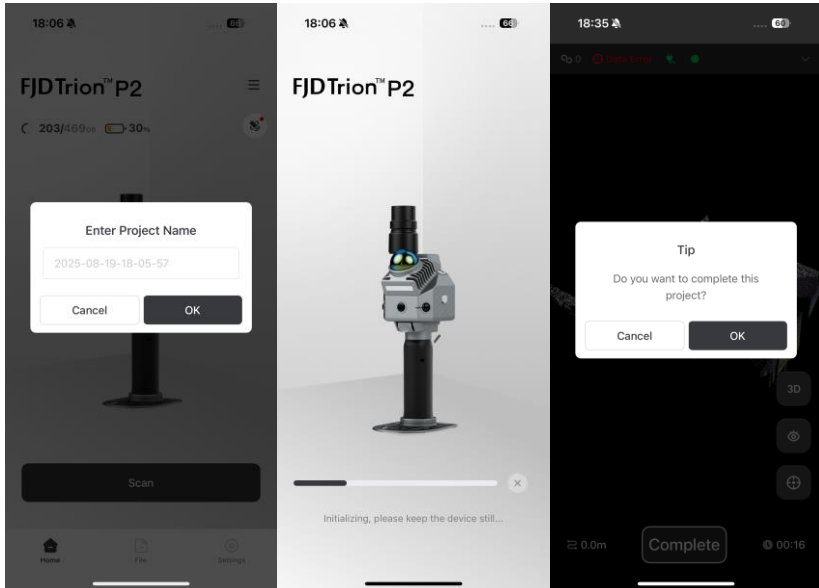
2. AP mode connection: Short press & long press to switch Wi-Fi mode → Disable the SIM card network on your mobile phone. → Add device → FJD Trion P2→ Next → Select the corresponding device SN connection → Connect the device Wi-Fi→ Jump to the mobile phone Wi-Fi connection interface → Enter the password **fdtrionp2**→ Return to the APP and it will automatically jump to the operation interface.

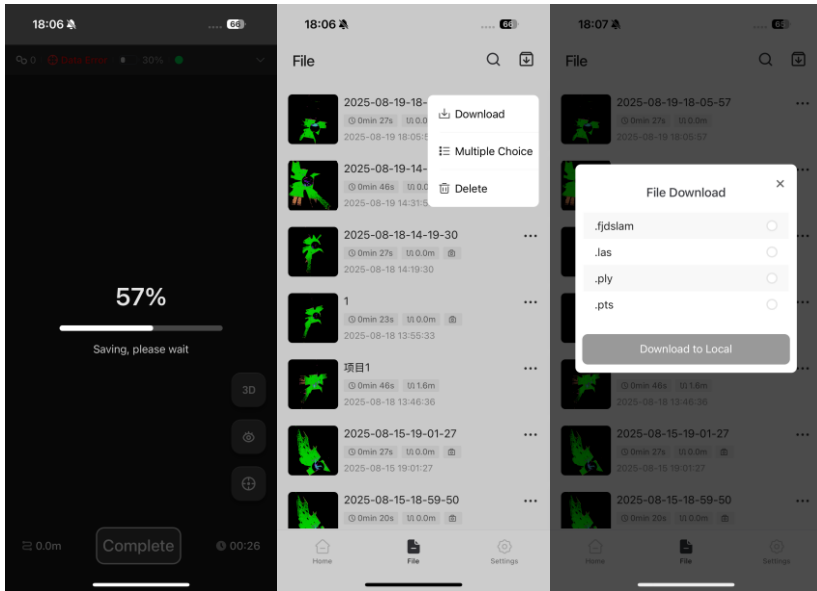
AP mode web version: Enter 10.33.68.254 in the browser address bar.



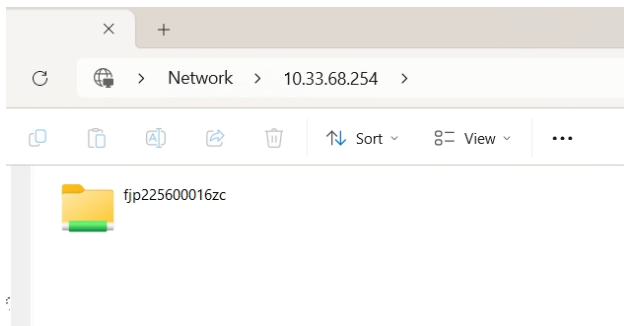
### 3.6. Data Collection and Download

- Scan and download: Click "Start Scanning" → Enter the project name → Click "Confirm" → After scanning is completed, click "Finish" → Select and download the data list according to the required format.



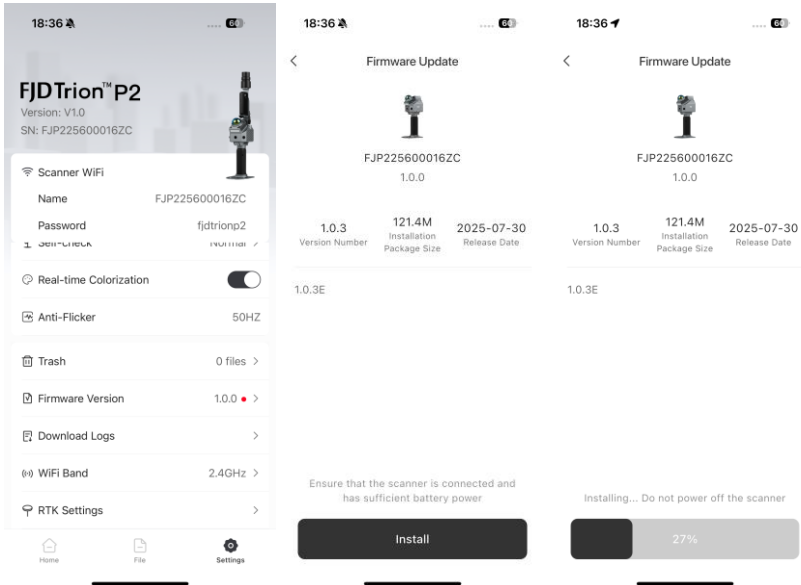


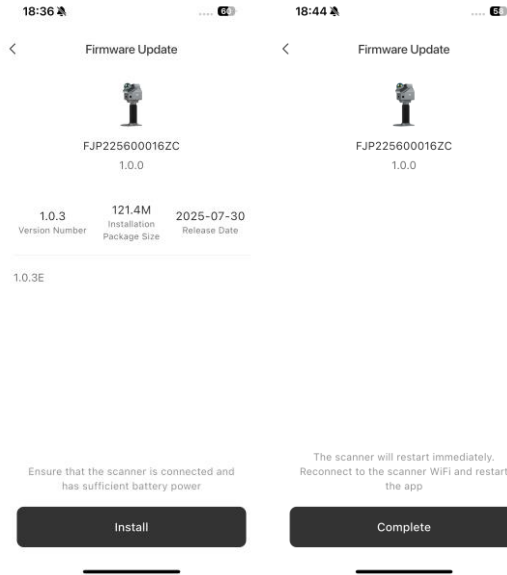
- LAN Download Method: PC connection to Scanner P2' s hotspot, or connect the Scanner P2 to your PC using a Type-C cable. Open File Explorer, type \\10.33.68.254 in the address bar, and press Enter.



### 3.7. Firmware Upgrade

In [Settings], tap [Firmware Version]. If a new version is detected, a notification will appear. Tap [Update Now] to begin downloading the installation package. After the download is complete, basic information (version number, size, and date) will be displayed. Then tap [Install]. Do not turn off the device during the update. After the update is complete, the device will automatically restart and the indicator light will change from flashing green to solid green. You can then reconnect.





### **3.8. Device Shutdown**

Press and hold the power button on the back of the device for 3–5 seconds. The power button indicator will change from "green light on constantly" to "green light on both sides". The device will shut down after 5 seconds.

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