



# SHINING 3D



## FreeScan Omni

V1.0.3

# User Manual

# Table of Contents

## Overview

- Welcome**
- Getting Started**

## Hardware

- Introduction**
- Parts List**

## Onboarding

- Setup Wizard**
- Device Connection**
- Activation**
- Upgrade**
- Interface**
- Resource Center**
- Touch Gesture**
- Screen Mirroring**

## Calibration

- Calibration Preparation**
- Calibration**

## Scanning

- Preparation**
- Project Groups and Projects**
- Interface**
- Start Scanning**
- Project Alignment**
- Data Editing**

## Post-Processing



- Post-Processing**
- Mesh Optimization**
- Export**

## Inspection



- Inspection**
- Quick Measurement**
- Inspection Report**
- Manual Alignment**

## Contact

# Overview

## Welcome

### Symbol Conventions

| Symbol                                                                            | Description                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Note:</b> This symbol is used to inform you of the additional information of the product.                                                                                                    |
|  | <b>Caution:</b> This symbol is used to inform you of incorrect operations that may damage the device or result in data loss. Any damages resulting from misuse are not covered by the warranty. |
|  | <b>Warning:</b> This symbol is used to inform you of the potential risks that may result in serious personal injury and other safety incidents.                                                 |

### The Declaration of Intellectual Property and Disclaimer

Thank you for using the products of SHINING 3D TECH CO., LTD. (hereinafter referred to as the "SHINING 3D"). Before you use the products, please carefully read and understand this declaration. Once you use this product, it means that you fully accept this statement and promise to comply with the relevant regulations.

1. The contents of the Product Instruction and User Manual (hereinafter collectively referred to as the "Product Usage Documentation") are critical to your personal safety, legal rights, and liabilities. Before you use the products, please ensure that you have carefully read the Product Usage Documentation, and use the product correctly in accordance with the requirements of the Product Usage Documentation. We also recommend that the products be operated by trained professional technicians.
2. Please inspect and/or maintain the product before use. If the product is damaged, deformed or in any other abnormal condition, stop using it immediately and contact the after-sales service personnel for maintenance. SHINING 3D will not be responsible for any problems caused by your failure to inspect or maintain the product in a timely manner.
3. SHINING 3D does not guarantee the applicability of the outcomes of your use of the products, and you are responsible for verifying the quality and functionality of the outcomes. You should check and verify thoroughly that any outcomes meet your requirements before using them, for which you bear full responsibility. If any damage arising from using the outcomes of any products, you shall bear the corresponding risk, and SHINING 3D shall not bear any responsibility.
4. SHINING 3D owns complete intellectual property rights for the contents of the for which you bear full responsibility. Without the written consent of SHINING 3D, it is not allowed to copy, transmit, publish, adapt, compile or translate any contents of the Product Usage Documentation in any form for any purpose.

5. The Product Usage Documentation is a guidance for installing, operating, and maintaining the product instead of serving as the quality guaranty for the products. SHINING 3D makes all efforts to ensure the applicability of the Product Usage Documentation, but reserves the right of final interpretation. Images and diagrams in the product documentation are presented to provide convenience to user understanding. In the event that any images or diagrams are inconsistent with the physical products, the later shall prevail. In addition to the mandatory provisions of laws and regulations, the contents of the Product Usage Documentation are subject to changes without further notice.
6. SHINING 3D shall not be held responsible for any damages and/or losses caused by human factors, environmental factors, improper storage and use, or any other factors other than due to the quality of the product. SHINING 3D also shall not be held responsible for any indirect anticipated profit loss, loss of reputation and other indirect economic losses. Except as otherwise expressly provided by laws and regulations, the total liability assumed by SHINING 3D (regardless of cause) shall not exceed the purchase price of the products you paid to SHINING 3D.
7. Disputes arising from this Declaration and the Product Usage Documentation thereof shall be governed by the laws of the People's Republic of China, excluding its conflict of law rules. In the event that certain provisions are in conflict with the applicable law, these provisions will be reinterpreted in full accordance with the law, while other valid provisions will remain in force.
8. All disputes between you and SHINING 3D that arise from, shall first be resolved amicably through negotiation. If a dispute cannot be resolved through friendly negotiation, any party may submit the dispute to the Court of Xiaoshan District, Hangzhou City, Zhejiang Province, People's Republic of China for litigation and settlement.
9. In the event of any questions about the contents of this Declaration and application of Product Usage Documentation, please contact us by the contact information provided in the User Manual. Thank you for your cooperation and support! We hope that our products can bring you a great experience of using.

## Getting Started

To find what you need quickly, a general guide to the hardware and the software of this product is presented as follows.

### About Hardware

You can learn about the hardware here, including the introduction and appearance of the scanner.

→ [An introduction to the device](#)

### About Software

You can learn about the software here, including its upgrade and so on.

→ [How to upgrade the firmware or the software?](#)

→ [Basic settings for the software](#)

**After installation and activation, follow the steps below to use the scanner.**

### **1 Calibrate the scanner**

---

Calibration ensures the accuracy of the scanner and improves the scanning quality.

Calibrate the scanner if you first use it; when the calibration is completed, it will be skipped automatically next time you open the software.

→ [Preparations before calibrating](#)

→ [How to calibrate my device?](#)

### **2 Create a project group**

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Create a project group before scanning.

→ [How to create / open a project group?](#)

→ [How to create / open / delete a project in a project group?](#)

### **3 Set scanning parameters**

---

When a project group is created, you can set relevant parameters to get a better scan result.

→ [How to set scanning parameters?](#)

### **4 Scan**

---

After you set scanning parameters, scan the objects.

→ [An introduction to the interface](#)

→ [Preparations before scanning](#)

→ [In the scanning interface, what scan modes can I choose for scanning?](#)

### **5 Edit scanned data**

---

You can edit the scanned data when the scanning is paused or completed to reduce noises and get accurate data.

→ [How to edit scanned data?](#)

→ [An introduction of the cutting plane tool](#)

### **6 Save and export**

---

You can export the scanned data for further processing.

→ [How can I share my data?](#)

### **7 Post-process and inspect scanned data**

---

You can post-process and inspect the scanned data.

→ [How to optimize the scanned data?](#)

- [How to create features?](#)
- [How to align my scanned data?](#)
- [How to inspect my scanned data?](#)

# Hardware

## Introduction

FreeScan Omni is a wireless all-in-one handheld 3D scanner (hereinafter referred to as "the scanner") independently developed by SHINING 3D. It supports both laser and infrared dual light sources to meet various scanning needs. With a built-in AMOLEAD touchscreen and embeded chip, it can complete the entire process from scanning to mesh processing without a computer.

This device will be used in the factory environment to obtain the three-dimensional coordinated information of the components, compliant with the Class A equipment limits.

### Caution

Operation of this equipment in a residential environment could cause radio interference.

This device is restricted to indoor use when operating in the 5150-5250MHz frequency range.

|                                                                                     |    |    |    |    |    |    |        |    |    |
|-------------------------------------------------------------------------------------|----|----|----|----|----|----|--------|----|----|
|  |    |    |    |    |    |    |        |    |    |
| BE                                                                                  | BG | CZ | DK | DE | EE | IE | EL     | ES | FR |
| HR                                                                                  | IT | CY | LV | LT | LU | HU | MT     | NL | AT |
| PL                                                                                  | PT | RO | SI | SK | FI | SE | UK(NI) | TR | NO |
| CH                                                                                  | IS | LI |    |    |    |    |        |    |    |

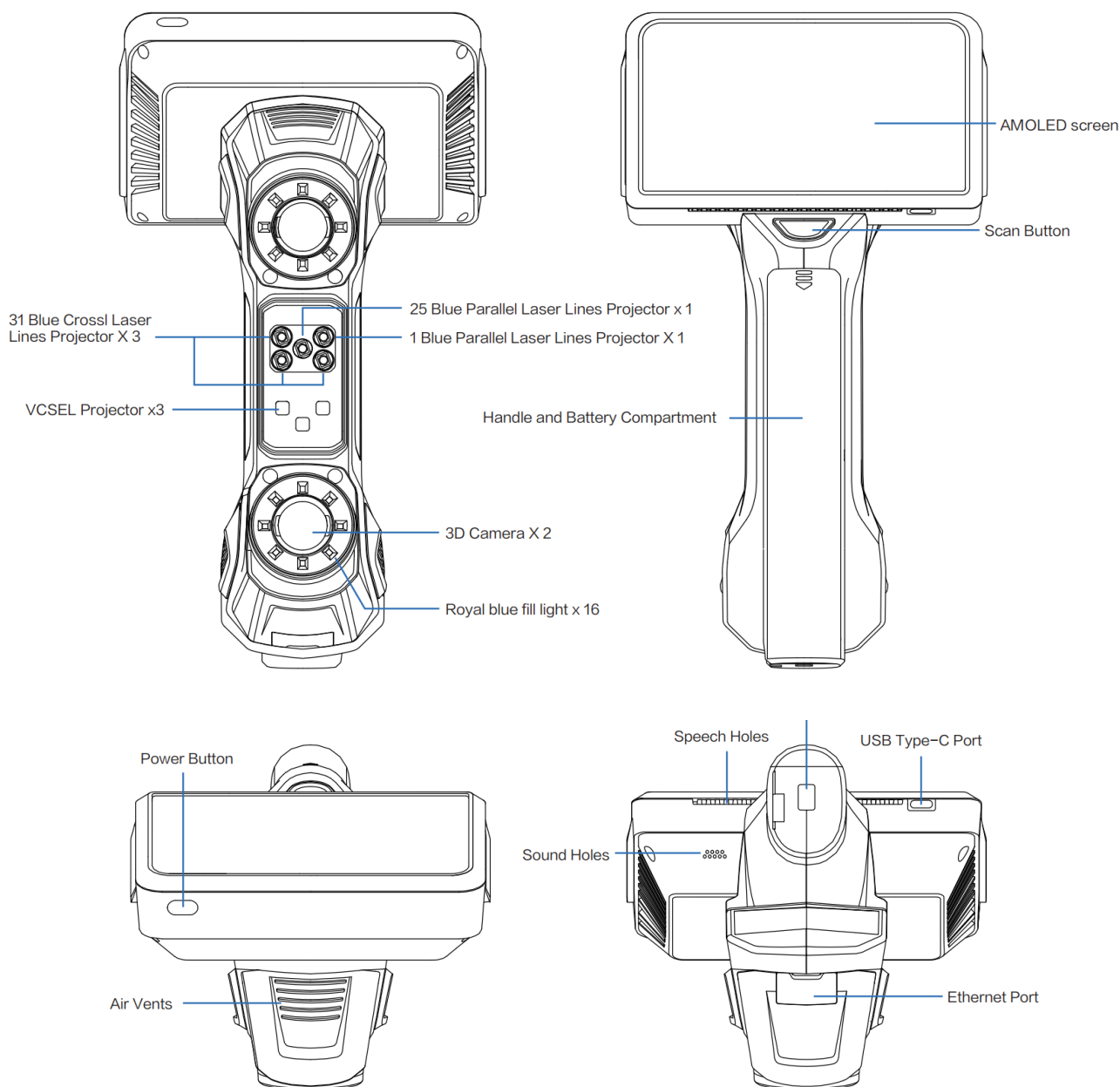
Frequency Range (RF)

Wi-Fi (5G):

Band 1: 5150-5250 MHz (TX/RX), 5.1 GHz Wi-Fi: < 23 dBm (.e.i.r.p)

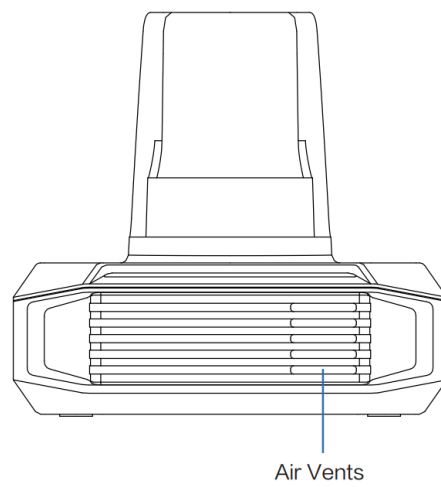
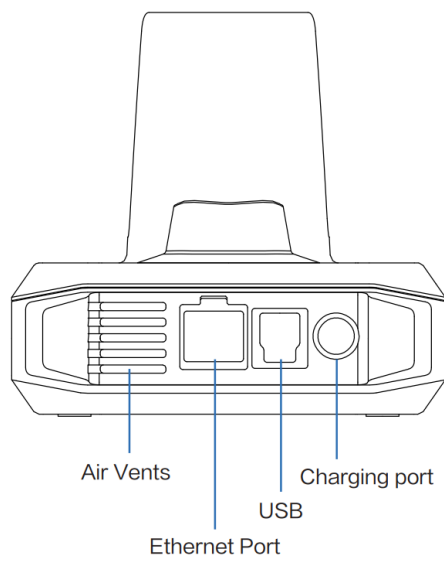
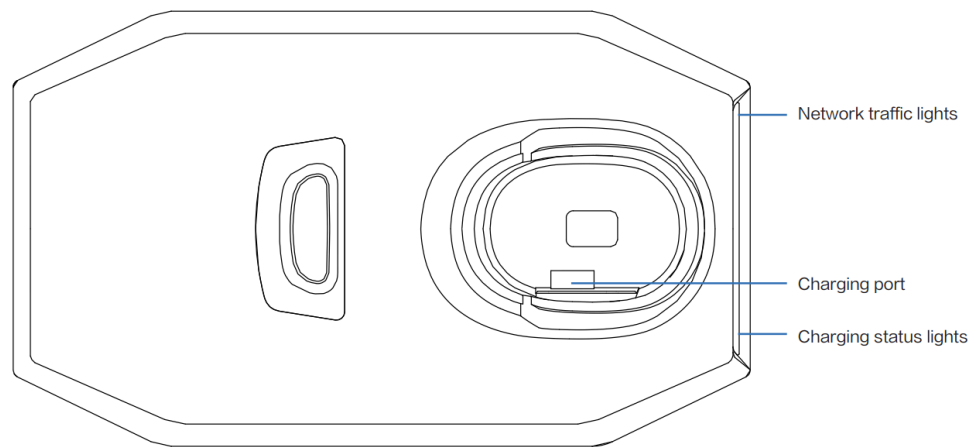
Band 4: 5725-5850 MHz (TX/RX), 5.8 GHz Wi-Fi: < 14 dBm (.e.i.r.p)

## Appearance of the Scanner



| Button       | Description                                                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Button | <ul style="list-style-type: none"> <li>Press once: Enter sleep mode.</li> <li>Long press for 6 seconds: Force shutdown.</li> </ul>                |
| Scan Button  | <ul style="list-style-type: none"> <li>Press once: Pre-scan / Scan / Pause.</li> <li>Long press for 1 second: Optimize global markers.</li> </ul> |

## Appearance of Smart Dock



| Status                                         | Charging Status<br>Light (Left) | Network Signal<br>Light (Right) | Description                                                    |
|------------------------------------------------|---------------------------------|---------------------------------|----------------------------------------------------------------|
| Base powered normally<br>(device not inserted) | Steady cyan light               |                                 | Main unit not inserted                                         |
| Base hardware abnormal                         | Flashing orange<br>light        |                                 | Fan abnormal, NTC abnormal,<br>over temperature                |
| Powered on with device<br>inserted (charging)  | Breathing green<br>light        |                                 |                                                                |
| Charging abnormal                              | Steady orange light             |                                 | Main unit inserted, battery not<br>fully charged, not charging |
| Charging complete                              | Steady green light              |                                 |                                                                |
| WiFi hotspot starting                          |                                 | Breathing cyan light            |                                                                |
| WiFi hotspot started                           |                                 | Steady cyan light               |                                                                |
| WiFi hotspot initialization<br>abnormal        |                                 | Steady orange light             |                                                                |
| Firmware upgrading                             |                                 | Flashing blue light             | Requires connection to PC<br>software                          |
| Device connected                               |                                 | Steady green light              | Requires connection to PC<br>software                          |

## FCC Regulations

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.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

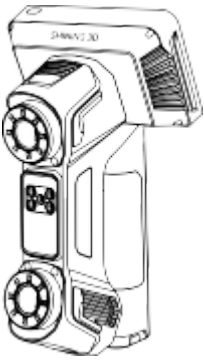
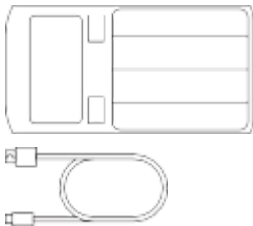
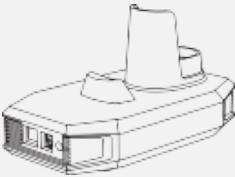
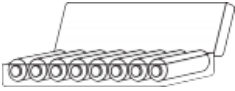
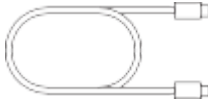
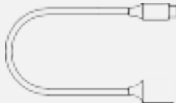
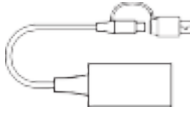
This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Privacy of communications may not be ensured when using this device.

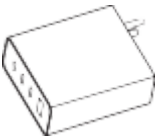
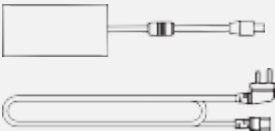
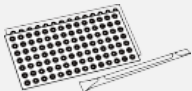
#### RF Exposure Regulations :

3D Scanner: The SAR limit of USA is 1.6 W/kg averaged over one gram of tissue, this device has also been tested against this SAR limit. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with RF exposure requirements ,and should be avoided.

Smart Dock: The tracker complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm during normal operation. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

## Parts List

| Appearance                                                                          | Name                       | Appearance                                                                          | Name                                              |
|-------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------|
|    | FreeScan Omni 3D Scanner   |    | Battery Charging Hub,<br>Charging Hub Power Cable |
|    | AP Charging Dock           |    | Gigabit Ethernet Cable (with<br>screws)           |
|   | 18650 Battery              |   | Type-C Data Cable                                 |
|  | Quick Calibration<br>Board |  | C Male to A Female Adapter                        |
|  | Scale Bar                  |  | USB/Type-C to Ethernet<br>Adapter                 |

| Appearance                                                                        | Name                                | Appearance                                                                         | Name                                                                          |
|-----------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
|  | Multifunctional<br>Charger Head     |   | USB Flash Drive                                                               |
|  | Dock Power Adapter<br>& Power Cable |  | Marker Set, Marker Spatula                                                    |
|  | Dock USB 3.0 Data<br>Cable          |  | Certificate of Conformity,<br>Warranty Card, Accuracy Report,<br>Packing List |

## Onboarding

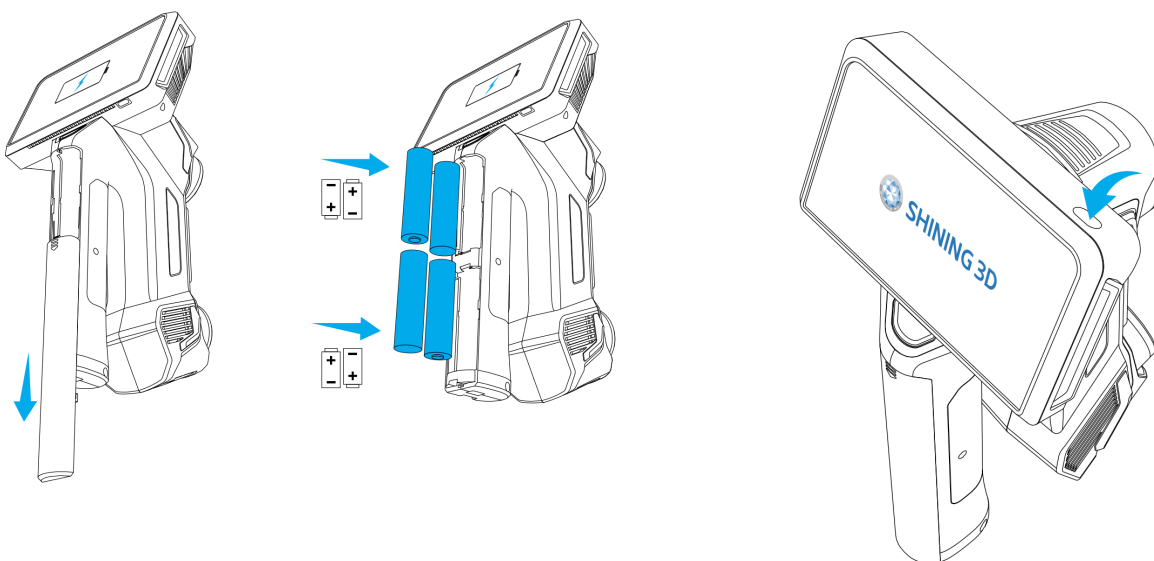
### Setup Wizard

The following is the setup process for the device:

#### 1. Power On and Charging

##### Power On

Insert the included battery into the device, then press and hold the power button for 2 seconds until the screen displays the boot animation, indicating that the device has been powered on successfully.



If the screen remains black or shows a charging prompt, please connect it to the power adapter.

 **Caution**

Performance will be limited if the difference between the two sets of batteries exceeds 50%; if the difference within the same set exceeds 50%, scanning functions may be abnormal. Please replace the batteries as soon as you receive a prompt.

After powering on, you need to select a language, with the default being English. You can change the language later in **Settings > Language**.

## Shut down

Press and hold the power button for 2 seconds to open the power off menu, then tap **Shut down**. To force shut down, press and hold the power button for 6 seconds.

## Charging

There are two ways to charge your device:

- **Charging the Battery Separately:** Place the device's battery into a battery charging dock. Once the battery is fully charged, swap it with the battery currently in your device.
- **Charging with the Smart Dock:** Position your device securely onto the smart dock. Ensure the smart dock is connected to a power supply. A flashing green light on the left side of the dock indicates that your device is actively charging.

 **Note**

Please use the provided power cable and power adapter to avoid damaging the device.

## 2. Read the User License Agreement

Before using this product, please be sure to read and understand the "User License Agreement". This agreement outlines the legal rights and obligations between you and us. By accepting the agreement, you agree to comply with all terms outlined in it.

The "User Experience Program" aims to continuously improve product features and performance by collecting anonymous usage data. Joining this program will not collect your personal information, only statistical data regarding application usage.

 **Caution**

- If you do not agree to the "User License Agreement," please do not check **I have read and agree to the above terms**, and you will not be able to continue using this product.
- If you do not wish to join the "User Experience Program," please do not check **Participate in the User Experience Program**, which will not affect your use of this product.

### 3. Select Time Zone

After connecting to the network, the corresponding time zone will be automatically selected based on the IP address. If not connected to the network, the default time zone will be **GMT-5:00 New York (New York)**.

An incorrect time zone selection will lead to inaccurate time display. To modify the time zone later, please follow these steps:

1. Go to **Settings > General > Time Zone**.
2. Select the correct time zone.

### 4. New User Guide

Upon first use, the system will automatically pop up a new user guide, showcasing common operation instructions, including power on/off, sleep mode, and scanning.

After completing the setup, you will enter the scanner's [homepage](#).

## Device Connection

You can connect the device to FreeScan Omni software in both wireless and wired ways; once connected successfully, you can use the software with the scanner for activation, upgrade, online scanning, data transfer, and other operations.

 **Note**

- When using the device for scanning, you cannot connect to the device.
- If the device is currently casting, entering the device connection interface will automatically stop the casting.

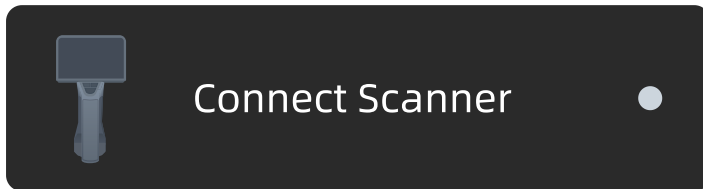
### Wireless Connection

1. Place the scanner on the dock, and the scanner will automatically connect to the dock's hotspot.
2. Use an Ethernet cable or USB upstream cable to connect the dock to the computer, and the computer will automatically connect to the dock's hotspot.

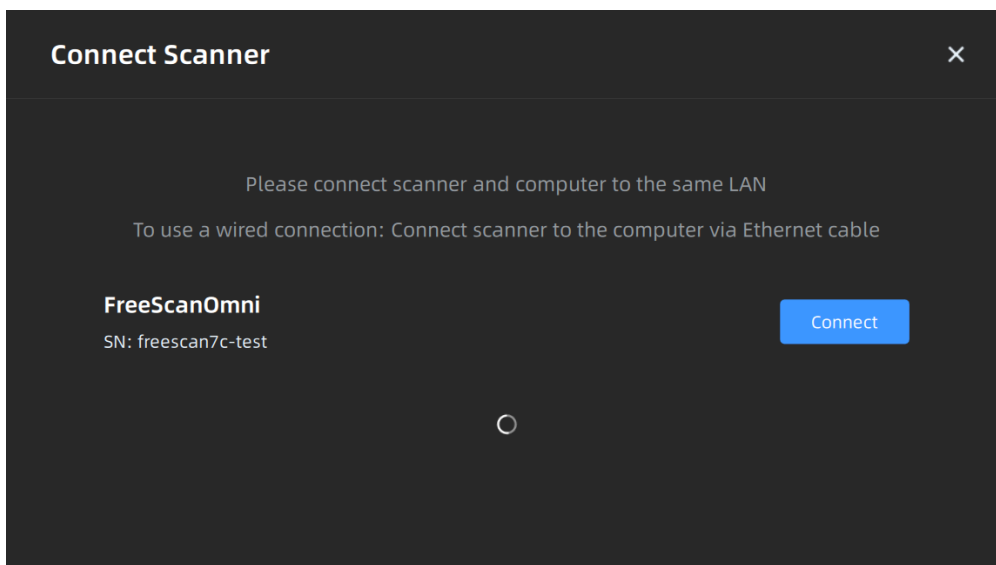
 **Note**

It is recommended to use a USB upstream cable to connect the dock to the computer.

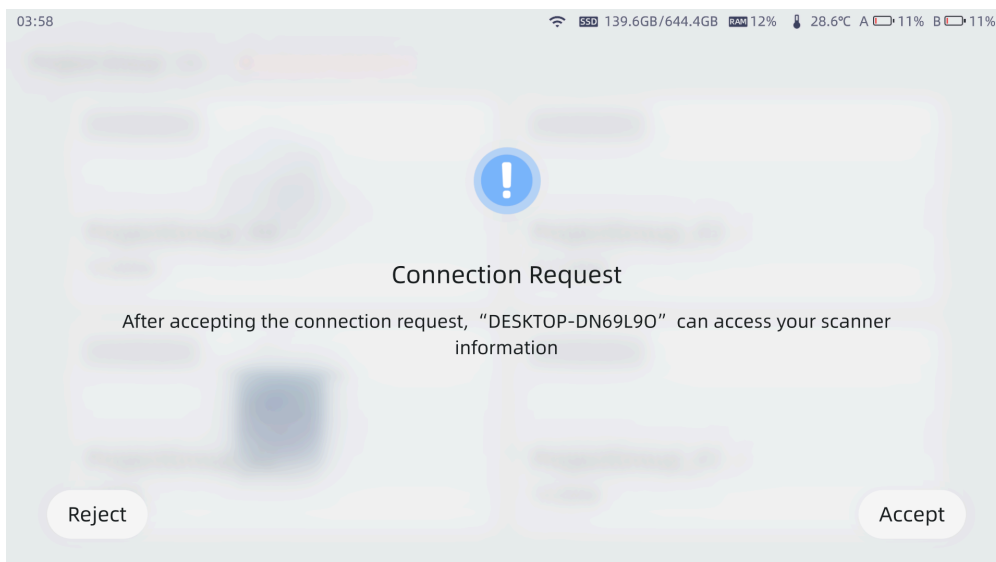
3. On the software homepage, click **Connect Scanner** in the upper left corner to open a dialog box.



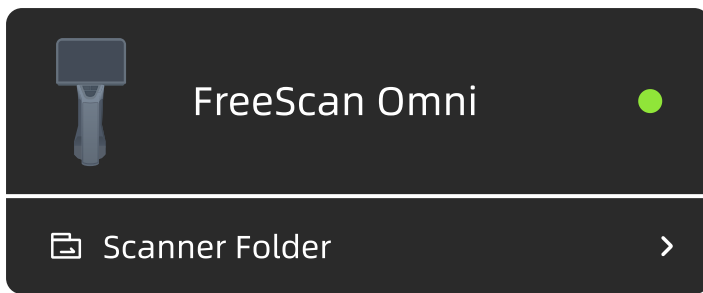
4. In the dialog box, select the scanner you want to connect to, and tap **Join** to initiate the connection request.



5. Click **Accept** on the scanner to accept the connection request.

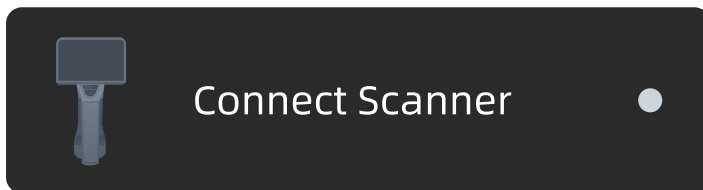


6. Once connected successfully, the scanner name and device folder will be displayed in the upper left corner of the software homepage.

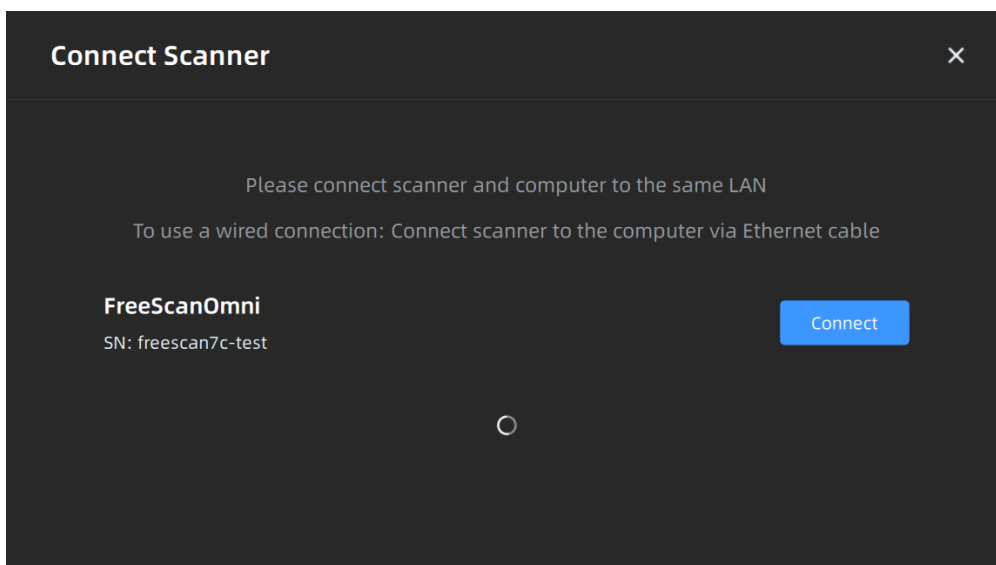


## Wired Connection

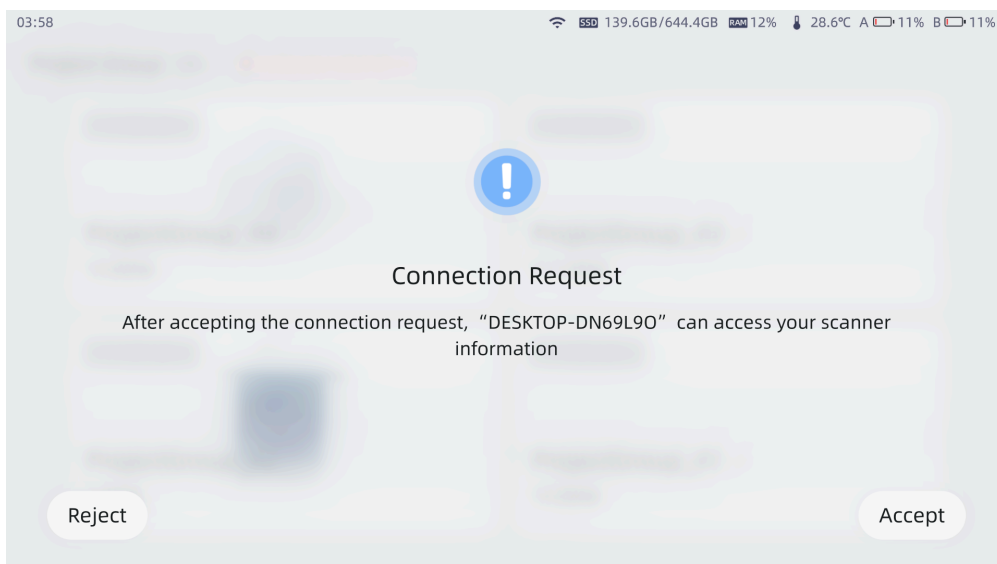
1. Use an Ethernet cable to connect the scanner to the computer.
2. On the software homepage, click **Connect Scanner** in the upper left corner to open a dialog box.



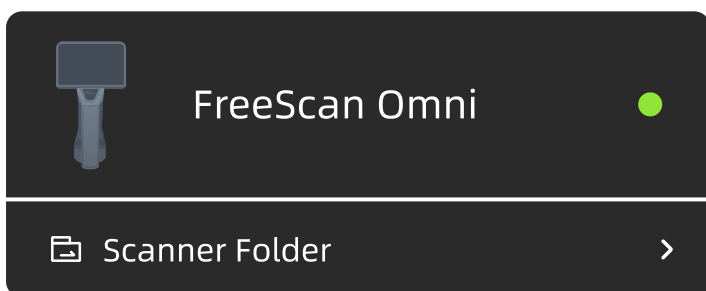
3. In the dialog box, select the scanner you want to connect to, and click **Connect** to initiate the connection request.



4. Click **Accept** on the scanner to accept the connection request.



5. Once connected successfully, the scanner name and device folder will be displayed in the upper left corner of the software homepage.



## Disconnection



### Note

FreeScan Omni only supports connecting to one device at a time. If you need to change the connected device, please disconnect the current one first.

After the device is connected successfully, on the scanner interface, tap **Disconnect**.

## Activation

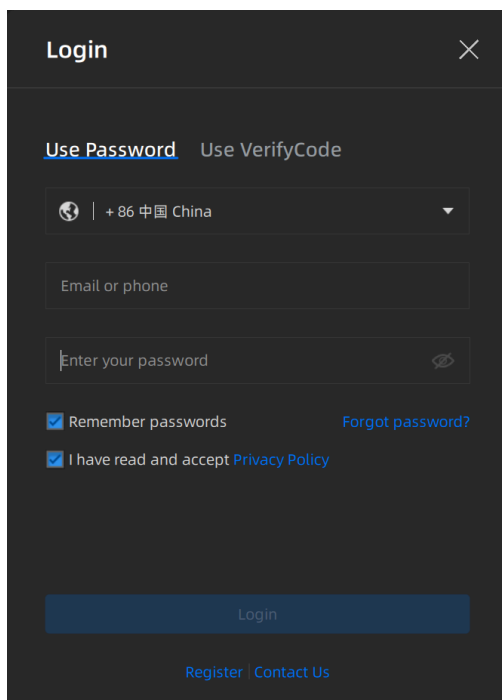
### Online Activation

You can connect the device to FreeScan Omni software and log in to your SHINING 3D account to activate it.

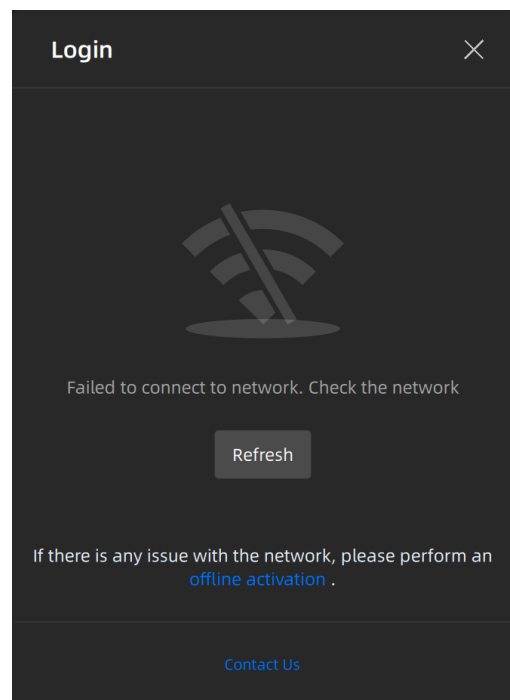
If your computer failed to connect to the network:

- Check the network connection and click **Refresh** to reconnect to the network. It will jump back to the login interface after successfully connecting to the network.

- If your computer can not connect to the network successfully, please choose [offline activation](#).

The screenshot shows the 'Login' window of the Passport application. At the top, there are two tabs: 'Use Password' (selected) and 'Use VerifyCode'. Below the tabs is a dropdown menu for country codes, currently showing '+ 86 中国 China'. Underneath are input fields for 'Email or phone' and 'Enter your password'. There are two checkboxes: 'Remember passwords' and 'I have read and accept Privacy Policy'. A 'Forgot password?' link is next to the second checkbox. At the bottom, there is a 'Login' button and links for 'Register' and 'Contact Us'.

Passport



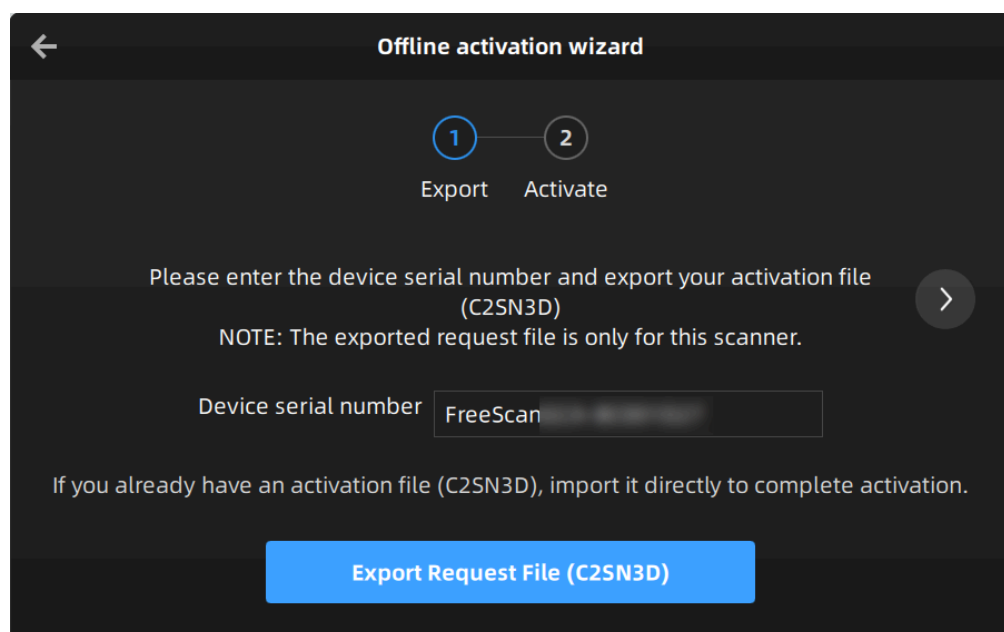
Network Not Available

The activation will be completed automatically after logging in successfully on the networked computer.

## Offline Activation

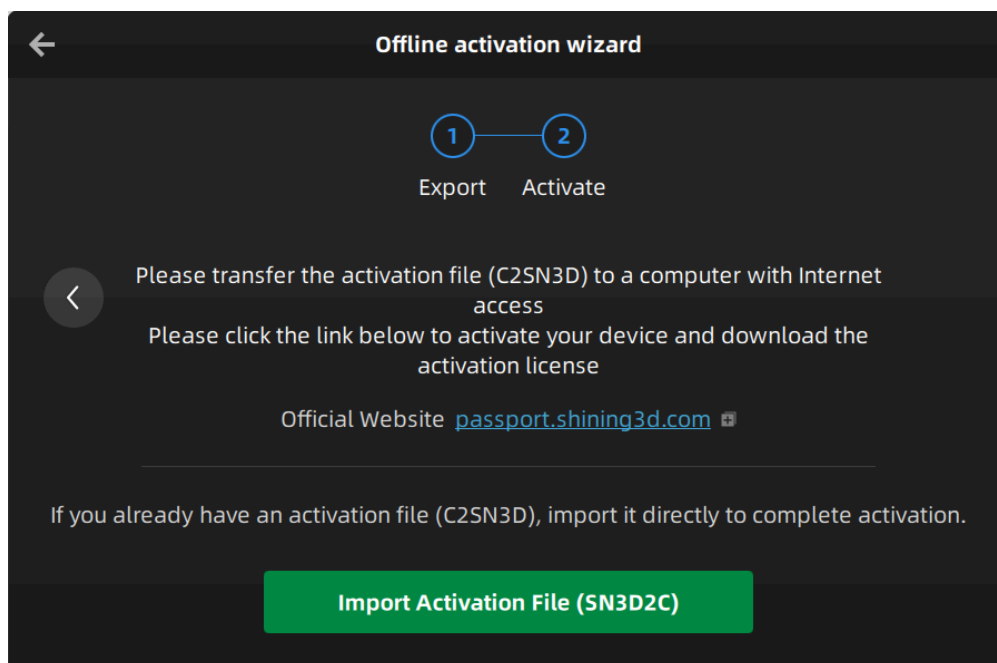
If your computer cannot be networked, activate the scanner offline.

1. Export C2SN3D file to a USB flash drive in the offline activation window.

The screenshot shows the 'Offline activation wizard' window. It has a progress bar at the top with two steps: '1 Export' and '2 Activate'. The main text says 'Please enter the device serial number and export your activation file (C2SN3D)'. Below this is a note: 'NOTE: The exported request file is only for this scanner.' There is a text input field for 'Device serial number' with 'FreeScan' entered. At the bottom, there is a large blue button labeled 'Export Request File (C2SN3D)'.

2. Log in <https://passport.shining3d.com/login> on the networked computer.

3. Click **Offline Activation**.
4. Upload the C2SN3D file.
5. Export the SN3D2C file corresponding to your scanner to your USB flash drive.
6. Import the SN3D2C file to the software.



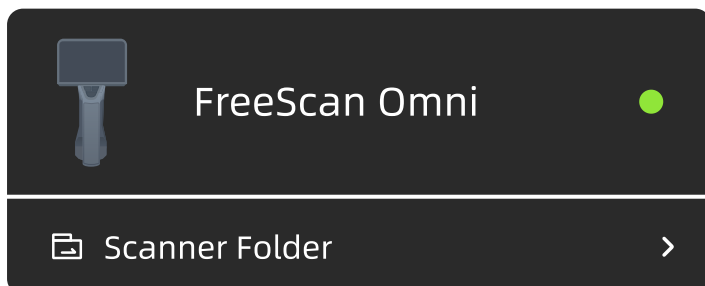
#### Note

Please contact the supplier or [technical support](#) if none of the above methods can activate your device.

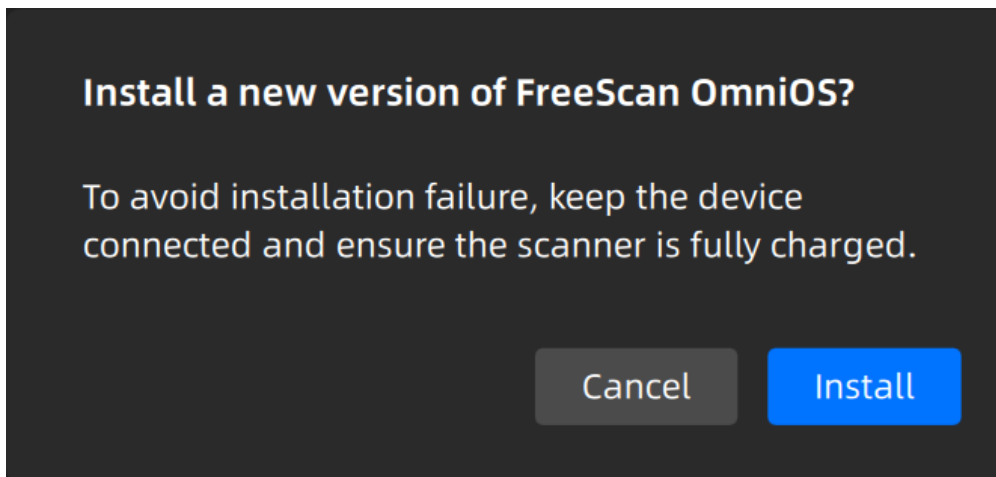
## Upgrade

You can update the scanner software using a wired or wireless connection with FreeScan Omni on your computer.

1. Connect the scanner to FreeScan Omni software installed on the computer. See [Connection](#).
2. Enter the **scanner folder**, then click **Upgrade** to open the file dialog.



3. Select the built-in installation package and click **Open**.
4. Click **Install** to update the scanner software.



5. Once the installation package transfer is complete, click **Confirm** and wait for the scanner to restart.

## Interface

After the device is powered on, it defaults to the home page (except for [first use](#)), where you can view all [project groups](#) and the device status.

### Home Page

#### 1. Calibration

Displays the date of the most recent calibration. Tap



**Calibration: 2025/06/10**

to enter the calibration interface.

#### 2. Status Bar

Displays information about the current device network, temperature, remaining battery, disk space, and system memory usage.

- : USB drive recognized.
- : Network connection status. A weak Wi-Fi signal will affect wireless transmission speed.
- : Hard drive used space and total space. When remaining space is less than 10 GB, the icon will turn red, suggesting to clean up local project group files and clear the cache.
- : Memory usage ratio. When the ratio > 95%, the icon will turn red, indicating that data processing requires a large amount of memory, and it is recommended to create a new project for scanning.
- : Device temperature. Red indicates that the temperature is too high. Pause scanning if the temperature exceeds the limit. Before calibration, warm the device to 27°C.
- : Remaining battery power. When the current power  $\leq 20\%$ , the icon will turn red, suggesting to charge or replace the battery.

### 3. Project Groups

Displays the names, creation times, and occupied space sizes of all project groups.

### 4. Settings

In the settings, you can complete calibration, network settings, and general device settings.



5. Tap to create a new project group.

### 6. Select

When there are project groups, you can tap **Select** to manage the project groups.

## Control Center

Pulling down from the top of the screen will display the control center. Through the control center, you can quickly access device calibration, Wi-Fi, and other settings.

### 1. Settings

Tap to enter system settings.

### 2. Shutdown

Taping will pop up a secondary confirmation menu, allowing for restart, reset and shutdown operations.

### 3. Shortcuts



: Tap to enter the calibration interface. The calibration date will be displayed after successful calibration.



: Tap to enter **Settings > Network Settings** to manage Wi-Fi.



: Tap to enter **Settings > General > Cast** to select the mirroring device.



: Tap to switch between dark and light themes.



: Tap to enter the [Resource Center](#).

### 4. Screen Brightness Adjustment

Drag the slider to adjust the screen brightness.

### 5. Volume Adjustment

Drag the slider to adjust the media volume.

## Settings

Tap on ④ on the home page or the control center's  to enter the **Settings** interface.

## My Omni

## Device Information

- **Device Name**

The model name of the device.

- **Device Serial Number**

The device serial number is the unique identifier for the device, which needs to be provided for after-sales service or technical support.

- **Calibration Board SN**

Used for calibration-related operations.

- **Last Calibration**

Displays the last calibration time of the device.

You can tap the **Calibration** on the right to enter the calibration function interface and complete recalibration.

- **Authorization Information**

Display the device's authorization status and expiration time.

- **Auto Inspect**

Display the authorization status and expiration time of the inspect function.

## Network Settings

Used to manage the device's Wi-Fi connection status and available network list. Through this page, you can view the currently connected network, change the Wi-Fi connection status, and select other available networks.

## Hotspot

Through the hotspot, other devices can join the same network for casting or scanning via the FreeScan Omni software.

## General

- **Temperature Control**

When enabled, the device remains in a warm state during sleep to keep accuracy.



### Caution

Incomplete warming does not affect the use of calibration and scanning functions, but accuracy may be impacted.

- **Scan and Identify Calibration Board Code**

When enabled, you need to scan the calibration board barcode before calibration. This prevents the use of incompatible calibration board.

- **Scanning Distance Indication Method**

Choose the method of distance indication, which can be either **Histogram** or **Laser Line Indicator**.

- **Real-time Resolution Display**

When enabled, the scan data will have higher resolution, but may take longer processing time.

- **Partial Resolution Circle**

The circle refers to the scan area in partial resolution mode. Changing the circle size changes the size of the scan area.

- **Language**

Tap to change the device language.

- **Time Zone**

Tap to change the device time zone.

- **Auto Sleep**

If the device has not processed data or has not been operated for the set duration, it will automatically enter sleep mode. Pressing the power button will wake the device.

- **Cast**

The screen mirroring function supports wirelessly transmitting the content on the scanner's screen to supported devices, such as smart TVs or computer monitors, using Wi-Fi or a hotspot.



#### **Caution**

When using Wi-Fi for wireless connection, the mirroring device and the scanner must be connected to the same Wi-Fi; if using a wireless connection, the hotspot will be automatically enabled, and the mirroring device should connect to this hotspot.

- **DHCP**

When enabled, the device will automatically assign network configuration parameters when connecting to PC software.

- **Auto-Connect Dock Wi-Fi**

Once turned off, the device will not automatically connect to the smart dock's WiFi when docked for charging.

- **Volume**

Tap to turn the device volume on/off or drag the bar to adjust volume.

- **Dark Mode**

Tap to choose between light theme or dark theme.

## Help

You can view the QR code for this user manual and find the technical support center.

## Storage

- **Storage**

Displays the used storage space and remaining storage space of the device.

- **Cache**

The cache consists of local logs, images, and other temporary data generated during device use.

Tap **Clear** to permanently delete cache data.



#### Note

Clearing the cache will not affect normal use.

## Factory Default

Restoring factory default will reset the settings parameters and clear personal information and project data on the device. Please confirm whether you need to clear the data before proceeding.



#### Note

- If you choose **Restore Scan Settings**, the current settings parameters will be reset to their initial state.
- If you choose **Factory Default**, the current logged-in account and settings parameters will be reset to their initial state.
- All project group files can also be selected for synchronization clearing. Please ensure that important data is backed up.

## About

You can view the current software and firmware version of the device, and the *Privacy Policy* and *User Experience Program* here.

## Resource Center

The Resource Center is used to manage resource files related to devices, including global markers (.p3, .asc, .txt, .dgm), scale bar files (.pgf), and inspect templates (.SNITemplate). Here, you can view, select, delete, or import these resource files to meet different operational needs. The inspect template is generated by SHINING3D Inspect software.

Tap the corresponding resource type icon to enter the management interface for that type of file.

## File Management

Upon entering the management interface, a list of files for the selected resource type will be displayed. This list includes each file's name and its creation time.

- **Multi-select/Select All**

Tick the checkbox ☐ to the left of the file name to select multiple files.

Tap the **Select All** button at the bottom of the interface to select all files of the current type at once.

- **Delete Files**

After selecting files, tap  and confirm the deletion.

- **Import Files**

Tap **Import from USB** or **Scan Code** (for scale bar files only) at the bottom of the interface to enter the file import process.

## Import from USB



### Note

If your USB drive does not have a USB-C port, use a USB-C to USB adapter.

Please confirm that the inserted USB flash drive is a high-capacity storage device. After confirmation, the system will categorize the detected status into the following three situations:

#### 1. No USB Flash Drive Detected

The interface will prompt **No USB flash drive detected, please insert a USB flash drive and try again.**

**Action:** Reinsert the USB flash drive.

#### 2. Single USB flash drive Detected

The USB flash drive's file selection window will automatically open, displaying only the supported file formats for import.

**Action:**

- a. Select the files to import.
- b. Tap **Import** to complete the operation.
- c. After successful import, a prompt will appear: **USB flash drive file import successful.**



### Note

- The system can only recognize files in the root directory of the USB flash drive; please do not place files in subdirectories.
- After a successful import, it will redirect to the file list, with the most recently imported files displayed at the top of the list.

#### 3. Multiple USB flash drive Detected

The names and storage information (remaining space/total space) of each USB flash drive will be displayed.

**Action:**

- a. Select the target USB flash drive and tap **Open**.
- b. After opening the file selection window, follow the import process for a single USB flash drive.

## Touch Gesture

### **Caution**

During the scan preview or scanning process, you can only zoom the model.

| Example                                                                             | Action                    | Note                                                    |
|-------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------|
|    | Single-finger drag        | Rotate the model                                        |
|    | Two-finger drag           | Pan the model                                           |
|  | Two-finger spread / pinch | Zoom in / out the model                                 |
|  | Single-finger long press  | Zoom in on the model locally when using lasso selection |

## Screen Mirroring

Before starting the scan, you can mirror the scanner screen to an external monitor or TV.

### **Note**

Screen mirroring is not available during scanning or calibration.

## Operation

1. Swipe down from the top of the scanner screen to open the control center.
2. Tap **Cast**, and select either **Wi-Fi** or **Hotspot**.

 **Note**

- Wi-Fi: You need to scan the QR code with the device to be cast or manually connect the device to the same network as the scanner.
- Hotspot: You need to scan the QR code with the device to be cast or manually connect the device to the scanner's hotspot.

3. Tap **Start Casting**.
4. Use the device you want to display to scan the QR code or enter the URL displayed on the scanner screen in a browser.
5. If the scanner screen appears on the device, it indicates that the casting was successful; you can then operate the scanner directly from that device. To cancel the casting, tap **Exit Casting** on the casting interface.

## Calibration

### Calibration Preparation

You can re-adjust parameters of the device through calibration, which not only ensures the accuracy of the device, but also the scanning quality.

 **Note**

**Calibration** is required under the following conditions:

- The first time for using the device.
- The scanner was severely shaken or vibrated during transportation.
- The scanner is used for the first time or it is not in use for a long period of time (1-2 weeks).
- The accuracy drops during scanning, such as frequent alignment failures or the inability to identify markers.
- Incomplete data is acquired or the quality of scanned data drops during scanning.

 **Caution**

- Do not wipe the calibration board with chemical liquids.
- Do not put heavy objects or sundries on the calibration board.
- After using the calibration board, put it in the flannel bag.
- The calibration board can only be used for the calibration of the device.
- Keep the calibration board away from corrosives, metals and sharp objects to avoid corrosion or damage.
- Make sure that the markers on the calibration board aren't damaged or stained, and that the front side of the calibration board is clean and free of scratches.
- The calibration board is matched to the scanner. Calibrating with an mismatched calibration board will lead to inaccuracy or fail to get good scanned data.
- After powering on the device, please heat it to a proper temperature before the calibration to ensure accuracy and precision.

## Calibration

A total of 6 different directions need to be used for calibration.

### Calibration Entry:

- In the **control center**, tap .
- In the **control center**, tap **Settings > My Omni > Calibration**.
- On the homepage, tap  **Calibration: 2025/06/10**.

### Steps

1. Please take out the calibration board, and place it on a flat surface.
2. Tap **Calibration** and scan the calibration board barcode to verify if the calibration board matches the device.

 **Note**

This process can be disabled in **Settings > General > Scan and Identify Calibration Board Code**.

3. Tap  to begin calibration. During the calibration process, slowly move the scanner according to the instruction until it aligns with the target position.

### **Caution**

- Do not move the calibration board during the calibration process.
- If the scanner shows red, it means it is too far from the target position. Please move the scanner closer to the target until the color changes to green. When it is green, keep the scanner stable.

4. After completing the calibration, please store the calibration board properly.

### **Note**

- If calibration fails, please start over from the first step.
- During calibration, ensure that there are no other markers around the board to avoid affecting calibration accuracy.
- If you still cannot successfully calibrate after multiple attempts, please contact the supplier or [technical support](#).

## Scanning

### Preparation

Make some preparations when scanning different objects.

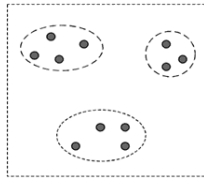
### Markers

Markers shall be placed to models. If the device fails to catch markers, it will not emit laser lines in the **Laser Mode**.

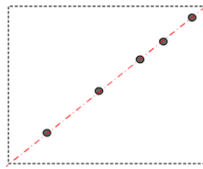
- Place the markers evenly and randomly.
- Four markers are required for the alignment at communal areas.
- Ensure that the device's camera can scan at least 4 markers within the normal scanning range.
- Please place small markers on the edges or at small facets of the model.
- Do not place the markers on the surface with high curvature.
- Do not use damaged or incomplete markers.
- Do not use greasy, dusty, or dirty markers.

### **Note**

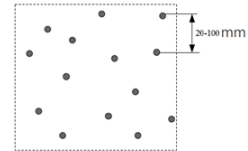
- 3 mm markers are the minimum markers identified in the **Laser Mode**.
- 6 mm markers are the minimum identified in the **IR Mode**.



Artificial grouping of markers (X)



Place markers only on one line (X)



Markers are scattered and irregularly placed (✓)

## For Portrait Scan

Specific requirements:

1. Hairstyle: Please keep it as neat as possible and avoid hairstyles with loose strands or bangs; comb the hair before scanning.
2. Clothing: Avoid wearing dark or reflective clothing (such as black leather shoes); do not wear accessories or glasses that may cause reflections.
3. Posture: Since the scanned object(s) should remain as still as possible during the scanning process, a comfortable and easy-to-maintain posture is suggested before the scan begins.

## For Special Objects

Spray the washable or specified imaging agent on the transparent, shiny or reflective model before scanning.

### Note

#### Types of objects not recommended for scanning:

- Soft material object that cannot be hung.
- Moving or vibrating objects. Frequent changes in the coordinates of such objects will result in poor scanning quality.

## Project Groups and Projects

Each time a new scan is started, the software automatically creates a new project group, which by default contains one project. You can add one or more projects as needed.

A project group is a collection of multiple projects, and it can represent a complete project, such as scanning a statue, a machine, or a scene.

A project is an independent unit within a project group, and each project can independently set scanning parameters, usually corresponding to a specific part or different angles of the scanned object. For example, when scanning a statue, multiple projects can be created to correspond to the front, back, and detailed parts of the statue.

## Create a New Project Group

On the [homepage](#), tap  to automatically create a project group, which will contain one project.

## Create a New Project

Enter the project group and tap  to create a new individual project within the group.

## Rename Project Group

On the right side of the project group name, tap  to rename the project group.

## Delete Project/Project Group

Tap **Select** or long press the card to enter the editing state. You can delete individual or all project/project groups.

## Export Data

On the homepage, tap **Select** or long press the card to enter the project group editing state. Tap  to export the project group or mesh data to a USB flash drive.

### Caution

- Guest mode cannot export data; please log in to the SHINING 3D account to export data.
- Ensure there is enough space on the USB drive before copying, otherwise data cannot be exported.
- If the copying process is unexpectedly interrupted, the files that have been successfully copied will not be cleared.

## Interface

Tap on the  on the homepage, and the software will automatically create a [project group](#) and enter the scanning preview interface.

## Information

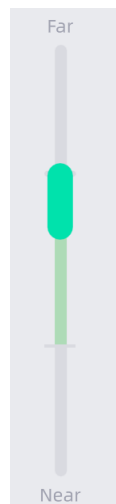
### 1. FPS/Frames/Markers

Real-time display of the current scanning FPS, frame count, and number of markers.

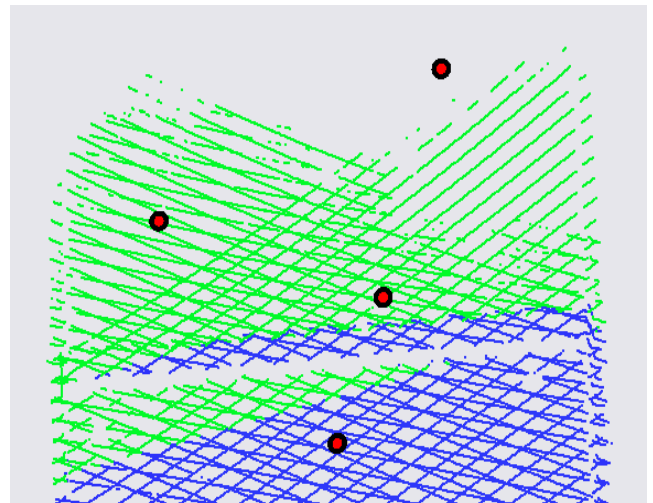
### 2. Status Bar

Displays the current device's network, temperature, battery level, and other status information. For more details, please refer to the [homepage](#).

### 3. Scanning Distance Indication Method (Working Distance Indicator)



Histogram



Laser line indicator

During scanning, if the slider on the histogram or the laser line is green, it indicates that the distance is appropriate.

#### Note

If the scanning distance indication method is set to **Laser line indicator**, the histogram will not be displayed.

### 4. Scan Mode

Displays the scan mode and alignment method of the current file.

### 5. Model Preview Area

The scanned model will be displayed in the preview area.



6.

Start Scanning / Pause Scanning / Scanning Preview.

### 7. Scanning Parameters

Different scenes and scanned objects require specific scanning parameter settings. For more details, please refer to [Scan Settings](#).

## Settings

### Light Source

| Light Source | Scan Mode                                         |
|--------------|---------------------------------------------------|
| Laser        | Markers, Photogrammetry, Mesh, Partial Resolution |
| Infrared     | Markers, Point Cloud                              |



#### Caution

- If there is any scanned data, you must clear them before switching the light source.
- All projects within the project group can only use the same light source, meaning the light source of the second project cannot be modified and must be consistent with the first project.

## Global Markers File

Global markers files improve alignment accuracy and reduce errors by automatically aligning multiple scanning data.

### Import Global Markers File

- No global markers file in the resource center:  
The global markers file shows as **None**. Clicking will prompt you to connect to a PC to import or import files from a USB flash drive. For related operations, please refer to [Import from USB](#).
- Global markers file exists in the resource center:  
Tap to select a file from the global markers file list.



#### Note

- Global markers file supports .p3, .asc, .txt, and .dgm formats.
- The number of markers included in the global markers file must be  $\geq 3$  during laser scanning and  $\geq 4$  during infrared (IR) scanning, with a maximum of 20,000 points.
- Scanning **point clouds** and using **features** for alignment do not support the use of global markers files.

## Scan Mode

### Global Markers

This mode is used to generate global markers files. By scanning the markers on the surface of an object, you can quickly obtain the marker data of the object.

After scanning, you can save the global markers file or switch to point cloud/mesh mode to continue scanning the object.



#### Note

- You can import global markers files to continue scanning and supplement global markers.
- Switching from other scan modes to frame point mode will clear existing scanning data and cannot be recovered.
- During scanning, you can use color indicators to help assess the quality of global markers scanning.
  - If the outer circle of the global markers appears orange, it indicates that the quality of the scanned global markers is low, such as  and .
  - If there are no other colors appearing in the outer circle of the global markers, it indicates that the quality of the scanned global markers is normal, such as  and .

Among them,  and  indicate that the scanned markers are currently within the field of view of the scanner.

## Photogrammetry

This mode is generally suitable for industrial measurements that require high precision. Depending on the size of the scanned object, you can import a suitable scale file to improve the overall accuracy of the frame point data during scanning.



#### Note

The device can save a maximum of 16 scale bar files. To add a new scale file, please go to the [resource center](#) to delete files before importing new scale bar files.

## Mesh

This mode is used to directly scan and generate mesh data, suitable for most scanning scenarios.



#### Note

After switching from global markers mode to this mode, you can enable the **Add Markers** feature while scanning the corresponding object to obtain new markers data.

## Point Cloud Data

This mode displays point cloud data during the scanning process, reducing memory consumption.



#### Note

After switching from global markers mode to this mode, you can enable the **Add Markers** feature while scanning the corresponding object to obtain new markers data.

### Partial Resolution

This mode is used for scanning when there are high detail requirements for local area data or when local data is missing. Scanning with this mode can save scanning time and make the scanning data more accurate and complete.



#### Note

- This scan mode is available only when there is a mesh.
- The laser line automatically switches to 25 lines in this mode.
- If a new area is scanned, the new mesh data will be scanned in the normal point distance.



#### Caution

- You cannot revert to mesh mode after entering this mode.
- This mode is unavailable when the point distance is  $\leq 0.1$  mm.
- **High** option is unavailable when the point distance is between 0.2 mm and 0.4 mm.
- Once an option (standard or high) is selected, it cannot be changed.

### AI Feature Recognition

This mode is suitable for scanning and measuring holes (including circular, slotted, and rectangular) on sheet metal stampings.



#### Note

#### Hole Scanning Guidelines

- **Diameter:** 4–25 mm.
- **Recommended Thickness:** Up to 4 mm for best results.
- **Scanning Method:** Scan vertically into the hole. Make sure there are enough markers around the hole to assist with alignment.
- **Environment Tips:** Ensure strong contrast between the hole and its background to improve scanning accuracy.



## Align Mode



#### Note

Available only during IR scanning.

| Align Mode | Description                                                                                                                                                                                                                                                                                     |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Markers    | Markers alignment uses global markers files to assist in completing the scanning alignment, requiring the import of an existing global markers file or scanning an object with at least 3 markers pasted.                                                                                       |
| Feature    | Feature alignment automatically completes alignment using the geometric features of the scanned object's surface, requiring the scanned object to have rich surface features.                                                                                                                   |
| Hybrid     | Hybrid alignment comprehensively utilizes the object's own features and the pasted markers to complete the scanning alignment, suitable for cases where the geometric feature richness of different parts of the scanned object varies. A minimum of 4 markers must be pasted on flat surfaces. |



## 1.0 Resolution

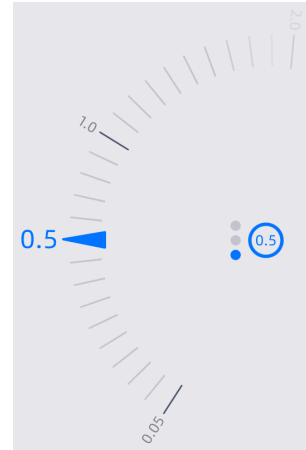
| Light Source | Scan Mode   | Range             |
|--------------|-------------|-------------------|
| Laser        | Mesh        | 0.05 mm ~ 10.0 mm |
| Infrared     | Point Cloud | 0.05 mm ~ 3.0 mm  |

#### Note

Once there are existing projects within the project group, the newly created project cannot change the resolution.

Adjusting resolution:

- Tap , to quickly switch different resolutions.
- Drag the protractor to make fine adjustments.



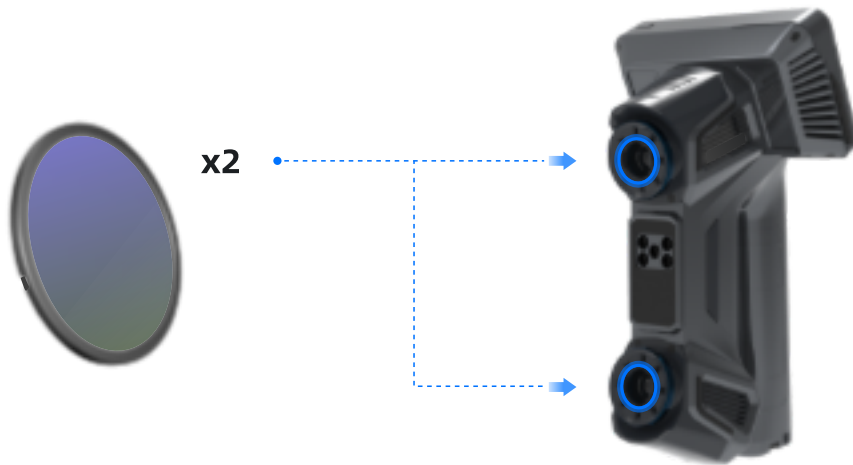
## Brightness

Brightness affects the number of markers recognized by the device. Adjusting the appropriate brightness can enhance scanning quality, optimize detail capture, and avoid detail loss due to insufficient brightness or reflections caused by overexposure; under different materials and ambient light conditions, it can reduce noise and erroneous data, improve accuracy, and ensure consistency in scanning results.

Brightness has three levels: High, Medium, Low, with three preset modes:

1. **Auto:** Automatically adjusts based on ambient brightness
2. **Outdoor:** Suitable for outdoor bright light environments
3. **Reflective:** Suitable for highly reflective objects

For the outdoor mode, it is recommended to magnetically attach the filter before scanning.



| Scan Mode               | Mode Range                |
|-------------------------|---------------------------|
| Markers                 | Auto, Outdoor             |
| Photogrammetry          | Auto, Outdoor             |
| Point Cloud             | Auto, Outdoor, Reflective |
| Mesh&Partial Resolution | Auto, Outdoor, Reflective |

## Working Distance

It refers to the effective area of the scanning data, which can be adjusted based on the size of the object and alignment requirements. A larger value makes it easier to scan data from a distance, but some details may be lost. By controlling the working distance, you can filter out noisy data from far or near.

### Note

- Only IR scanning supports adjusting the working distance, with a range of 160 mm - 1400 mm.
- The maximum recognition distance for markers is 800 mm; beyond this distance, it is recommended to use feature or hybrid alignment.

## Laser Lines

| Line Count | Description                                 |
|------------|---------------------------------------------|
| 93 Lines   | Mainly used for quick scanning of objects.  |
| 25 Lines   | Mainly used for local detail scanning.      |
| 1 Line     | Mainly used for deep hole and gap scanning. |



#### Note

When selecting a single line, deep hole mode can be enabled. When enabled, scanning deep holes will be more effective. However, noisy data will increase.



## Data Quality Indicator

Displays scanning quality in the form of a spectrum, where blue represents high-quality scanned data, and yellow indicates insufficient scanning that requires further scanning. Insufficiently scanned data may disappear or display abnormally after data processing.



## Plane Detection



#### Note

Supported only during IR scanning for feature alignment or hybrid alignment.

Once enabled, it will automatically recognize the plane where the scanned object is located, reducing the probability of mis-scanning planes or feature objects, but it cannot scan planes or objects with few features.

In hybrid alignment, scanning a plane requires pasting 4 markers. In feature alignment, it will prompt you that do not scan directly at the plane.

## Start Scanning

When scanning, please position the scanner directly facing the surface of the object being scanned. Maintain an appropriate working distance as prompted by the software, ensuring that the light evenly covers the object to complete the scan.

### Steps:

1. Tap



to enter the scan mode.

2. Tap  [Settings](#) to select the light source and scan mode for the object to be scanned. The default light source and scan mode are **Laser** and **Global Markers** respectively.

#### Laser

#### Global Markers

- a. Tap  to scan the markers on the object.



#### Note

If there is a global markers file for the object, you can import it into the project. To add more markers, tap



. Alternatively, tap the **Scan Mesh** button to switch to [mesh mode](#).

- b. After the scan is complete, tap the **Generate GMF** button to optimize the global markers.  
c. Once optimization is complete, tap the **Scan Mesh** button to enter [mesh mode](#).

#### Photogrammetry

- a. Tap  to scan the scale bar QR code to import the scale bar file. To import the file from USB flash drive, please refer to [Import from USB](#).  
b. Tap  to scan the scale bar and markers. Once the scale bar is identified, the scale bar model will appear on the screen.  
c. After the scan is complete, tap the **Generate GMF** button to optimize the scale bar and global markers.  
d. Once optimization is complete, tap the **Scan Mesh** button to enter [mesh mode](#).

#### Mesh

- a. During scan preview, adjust the appropriate [scan settings](#).  
b. Tap  to start scanning.

#### Partial Resolution

- a. Select the resolution for local details: standard or high.  
b. Move the scanner closer to the object.  
c. Tap  to start scanning.



#### Note

- You can switch to the partial resolution mode only after there is a mesh.
- Scan area is restricted to the area within the circle that appears in the center of screen.
- You can go to **Settings > General > Partial Resolution Circle** to change the size of circle.

### AI Feature Recognition

- a. Tap  to start scanning.



#### Note

##### Hole Scanning Guidelines

- **Diameter:** 4–25 mm.
- **Recommended Thickness:** Up to 4 mm for best results.
- **Scanning Method:** Scan vertically into the hole. Make sure there are enough markers around the hole to assist with alignment.
- **Environment Tips:** Ensure strong contrast between the hole and its background to improve scanning accuracy.

- b. Recognized features will automatically appear on the scanned data in the 3D scene.



#### Note

- If the recognized features are yellow, it indicates that the current scanned data quality is poor. It is recommended to continue scanning until the features turn green.
- When scanning is paused and features are present, tap  on the right to export the feature file to a USB drive.

### Infrared (IR)

#### Global Markers

- a. Tap  to scan the markers on the object.



#### Note

If there is a global markers file for the object, you can import it into the project. To add more markers, tap



. Alternatively, tap the **Scan Mesh** button to switch to [mesh mode](#).

b. After the scan is complete, tap the **Generate GMF** button to optimize the global markers.

c. Once optimization is complete, tap the **Scan Mesh** button to enter [mesh mode](#).

#### Point Cloud Data

a. During scan preview, adjust the appropriate [scan settings](#).

b. Tap  to start scanning.

3. During the scanning process, observe the model on the screen in real-time while slowly and steadily moving the scanner until the object is fully scanned.



#### Note

- Once scanning begins, you cannot switch scan modes or alignment modes, so please confirm before starting the scan.
- Ensure the scanner is directly facing the object and maintains an appropriate distance while scanning.
- Make sure that **RAM** has sufficient memory during the scan to prevent scanning anomalies.
- When scanning detailed areas or small holes of the object, try to get as close to the object as possible.
- During the scanning process, you can pinch with two fingers to zoom in or out on the model.

## Lost Tracking

When moving the scanner to collect data from the object, the scanner captures multiple frames of data per second and identifies the scanned object through overlapping areas between these frames. If the scanner is moved too quickly during the scan, there may be insufficient overlapping data, leading to a loss of tracking.

## Resume Tracking

If you see the  tracking loss prompt, please realign the scanner with the previously captured area. Once the scanner detects the overlapping area, it will automatically continue scanning without needing to press the scan button.

## Generate Data

When the scan is paused, tap **Optimize/Mesh** to end the scanning process and generate mesh data. You can continue to [edit data](#) or [optimize the mesh](#).

# Project Alignment

This function combines scanned data from multiple project files within the current project group to create a complete 3D model, significantly improving data completeness.

## Steps

### 1. Enter Project Alignment

- a. Ensure that your project group contains **two or more** projects.
- b. When the scanning is paused, tap the  **Alignment**.



#### Note

Make sure the current project has finished scanning, as you cannot continue scanning after alignment.

### 2. Select Projects for Alignment

- a. Select a project to be aligned.



#### Note

Projects that have been completed for alignment will not be displayed in the project list.

- b. Tap **Confirm**.

### 3. Perform Project Alignment

- a. The software will automatically perform alignment by default:
  - Use common markers for auto alignment.
  - If there are fewer than three common markers, the software will automatically switch to **feature points** for alignment.
- b. Check the alignment results.
- c. Perform subsequent operations as needed:
  - **Add Alignment:** If you need to add more projects for alignment, tap  **Add Alignment**.
  - **Manual Alignment:** If the auto alignment results are not satisfactory, tap  **Manual Alignment**.
  - **Add New Project:** If there is missing data, tap the top left **New** + to perform a new scan. After completion, you can align again.

### 4. Merge Scan data

If the alignment result is satisfactory, tap the **Merge** button and the software will optimize the merged data.

## Manual Alignment

If the auto alignment results are not satisfactory, you can align the projects manually.

### 1. Select Alignment Method

- a. After the auto alignment is finished, tap  **Manual Alignment**.
- b. Choose  **Marker Alignment** or  **Point Alignment**.

#### Note

- Markers are used for alignment by default.
- Changing the alignment method will clear the selected markers or points.

### 2. Select Markers/Points

- a. **Double-click** to select at least three markers or points.
- b. Once the quantity is met, tap **Confirm**. The software will perform alignment based on your selection.

## Data Editing

When the scan is paused and there is point cloud or mesh data, you can tap  to enter the data editing interface.



Use touch gestures to rotate/zoom/pan the model.



Use the lasso tool to select a specified area, supporting touch gestures to zoom the model.



**Mesh/Point Cloud/Markers**

Switch between mesh, point cloud, and marker data.



**Expand / Connected Domain**

Select all data connected to the currently selected area.



**Invert Selection**

Select all currently unselected data.

-  **Deselect All**  
Deselect all currently selected data.
-  **Undo**  
Undo the most recent deletion operation and restore the deleted data.
-  **Revert**  
Restore to the state before the last edit.
-  **Delete**  
Delete the selected data. (You can choose whether to retain the markers.)

#### **Caution**

Deleting all the markers is not supported. To ensure the alignment is completed, at least 4 markers must be retained.

## Cutting Plane

When the scan is paused and there is point cloud, mesh, or marker data, you can create a cutting plane. Data below the cutting plane will not be collected and can be used to remove the base data of the object.

1. Select mesh, point cloud, or marker data; if there is only a single data type, no selection is needed.

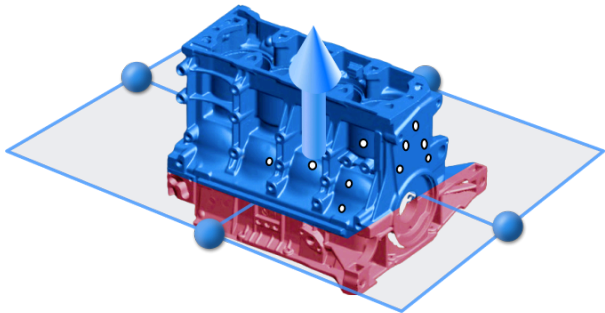
-  : Mesh
-  : Point Cloud
-  : Markers

2. Slide to draw a closed shape. The area within the lasso will be selected.

#### **Note**

- Zooming the model is supported. Tap  to also pan and rotate the model. For gesture instruction, refer to [Touch Gesture](#).
- If selecting  markers, the area must contain at least 3 markers.
  - Unselected marker: 
  - Selected marker: 

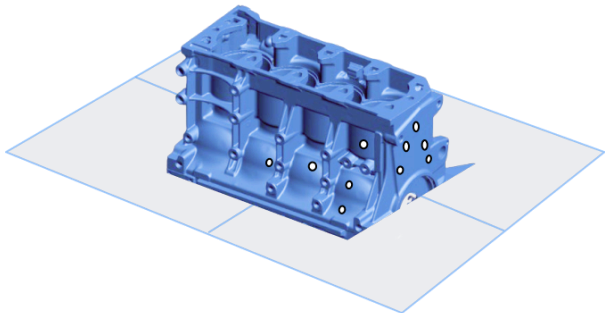
3. Tap **Create**. The normal vector of the created cutting plane will be blue on the front side and red on the opposite side.



4. Edit the cutting plane:

| Operation            | Steps                                                                                                                                                                                                                                   |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Move Cutting Plane   | Tap the arrow above the cutting plane  , and adjust the height of the cutting plane along the arrow direction.                                         |
| Rotate Cutting Plane | Tap the blue circle on the cutting plane  , and rotate the cutting plane around another edge parallel to it.                                         |
| Invert Selection     | Tap  , which will reverse the normal direction and select the data to be retained (data on the normal front side is blue, indicating retained data). |
| Delete Plane         | Tap  , to delete the created cutting plane.                                                                                                          |

5. Tap **Apply**, which will delete the data in the red area below the cutting plane (marker data will be retained) and return to the scan paused interface.



# Post-Processing

## Post-Processing

After the scan is paused, tap **Mesh** to enter the  **Post-Processing** workflow. In this interface, you can perform  **Mesh Optimization** and  **Export** operations.

### Caution

If return to the scan interface and add a new scan or edit the current scan, you need to mesh your 3D scan again. Otherwise, the mesh optimization are unavailable.

If the inspection software license is activated, you can perform the  **Quick Measurement** operation, and tap  **Auto Inspect** to enter the **Inspection** process.

To return to the scanning process, tap  **Return to Scan**.

### Note

If the license is not activated, the **Auto Inspect** button will not be displayed.

## Mesh Optimization

The scanned data requires some mesh optimization settings.

### Watertight

All holes in the scanned data are closed.

### Caution

- Only fully closed models can set mesh quality.
- The closed mode will automatically generate the missing surface data of the model, creating a geometrically closed 3D model.

## Optimization

Optimize the data to reduce noise.

- Medium: Reduce noise on the data surface.

- Standard: Lightly optimize the data while trying to retain the surface features.
- High: Reduce noise while making the data smoother.

#### **Caution**

Setting a higher level may lose some small details.

## Smooth

Denoise the data to make the mesh data smoother and improve data quality.

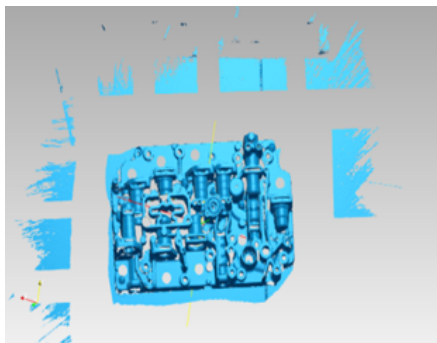
#### **Caution**

This function is unavailable when **Optimization** is set to **None**.

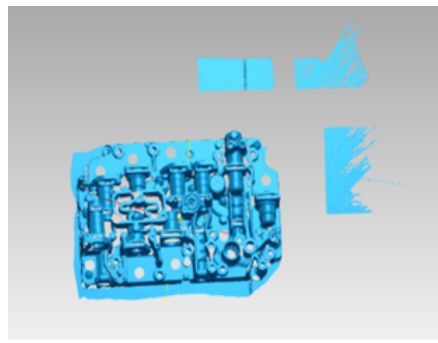
## Advanced Settings

### Remove Small Floating Parts

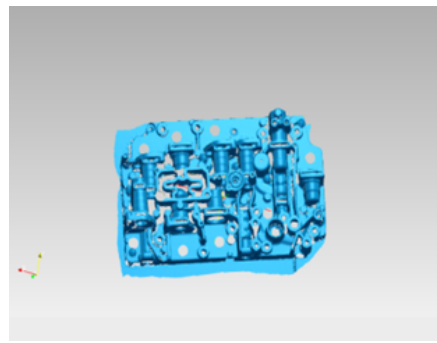
Delete any small floating data that is not connected to the main data.



Original Data



Remove Isolated Faces 50



Remove Isolated Faces 100

### Max Triangles

Set a maximum number of mesh faces as an upper limit for data simplification during mesh generation.

#### **Caution**

- Please avoid entering extremely small values.
- Please enter this value reasonably to avoid excessive simplification that may degrade data quality.

### Fill Small Holes

Automatically fill small holes based on the set hole perimeter.

When performing hole filling, you can first delete the edge data of the hole by setting the neighborhood for deletion, and then proceed to fill the hole to optimize the final filling effect. The larger the value selected for the deletion neighborhood, the more data will be removed from the hole's edge.

### Marker Hole Filling

Fill holes on the object's surface that were not scanned due to being covered by markers.

### Remove Spikes

Remove spike-like data on the surface.

## Recommended Parameters

Automatically use recommended parameters for meshing when enabled.

## Export

You can export the generated mesh data to a USB drive in the following formats: .stl, .obj, .ply, .3mf, and .asc.

1. Insert the USB drive.

#### Note

- If your USB drive does not have a Type-C connector, use a USB Type-C male to USB Type-A female adapter cable. Plug your USB drive into the adapter's Type-A female end, then connect the adapter's Type-C male end to your device's USB Type-C port.
- If the scanner does not recognize the USB drive, please reinsert the USB drive and try again.

2. Tap .

3. Select the file formats you want to export, then tap **Export**.

## Inspection

## Inspection

After completing the scan, you can tap  **Auto Inspect** to enter the inspection interface, where you can generate and export inspection reports.

## Quick Measurement

After performing a 3D scan of a ball bar, you can create spherical features from the scan data and compare them with the values of the ball bar to verify the accuracy of the device.

### Steps:

1. Double-tap the scan data and select a portion of points on the mesh model to fit a sphere and create spherical feature 1.

#### Note

- After creation, the coordinates of the sphere center (X, Y, Z) and the sphere diameter will be displayed.
- Tap  to reset the spherical feature.

2. Double-tap the scan data to create spherical feature 2.
3. After creating two spherical features, the distance between the sphere centers and the differences in the X, Y, Z coordinates of the sphere centers will be calculated automatically.

## Inspection Report

After creating the inspect template (.SNITemplate) from the SHINING3D Inspect software and importing it into the device in the [resource center](#), you can generate an inspection report based on the template. An inspection report can be exported to a USB flash drive in PDF or CSV formats.

### 1. Importing the Inspection Template

You can import the template from a USB flash drive; for detailed operations, please refer to [Import from USB](#).

#### Note

The scanned model must be consistent with the CAD model included in the inspect template.

### 2. Generating the Inspection Report

After selecting the inspect template, tap **Inspect** to display the inspection results and generate the inspection report. The inspection results will be saved in the project file and can be opened at any time without regeneration.

#### Note

If the mesh is regenerated or the inspection data is cleared, the inspection report must be regenerated.

After the inspection is complete, the system will indicate success or failure based on the inspection standards of the template. You can also tap  to hide the CAD model.

The interface will display statistical information, model quality indicator, and color map:

### Statistical Information

1. Alignment Name: e.g., **Best Fit Alignment**.
2. Maximum Deviation: Indicates the most severe error in the model.
3. Minimum Deviation: Indicates the slightest error in the model.
4. Average Deviation: A smaller average deviation indicates that the errors in most areas of the model are small.
5. RMS Value: A smaller RMS value indicates less fluctuation in errors.
6. Standard Deviation: A smaller standard deviation indicates that errors are relatively uniform in most areas.

### Model Quality Indicator

If the inspection passes, the model color map will be entirely green. If the inspection fails, the model color map will display colors other than green.

### Color Map

Move ► to adjust the tolerance range, and the color of the model surface will change accordingly.

Tap  to set the upper tolerance, lower tolerance, maximum value, and minimum value.



### 3. Viewing/Exporting the Inspection Report

Tap  to export the report, select the desired export format (PDF or CSV), and the inspection report will be exported to the USB flash drive or PC.

Tap  to view the report.

#### **Caution**

When the color map is modified, tapping **View Report** will prompt whether to synchronize the modification.

- If you tap **OK**: The system will regenerate the report and synchronize the modified content.
- If you tap **Cancel**: The system will open the original report, and the modified content will not take effect.

This operation only applies to the current report and will not modify the inspect template.

## Manual Alignment

Select points on the CAD model and the mesh model for alignment to achieve more precise alignment, providing a basis for subsequent re-inspection.

#### **Steps:**

1. In the inspection interface, tap  **Manual Alignment** to enter the alignment interface.
2. Double-tap to select 3 - 8 corresponding points on both the CAD model and the mesh model.

#### **Caution**

Do not arrange the points in a straight line.

3. Tap  to confirm the alignment.

#### **Note**

If the alignment result is unsatisfactory, tap  to reset all points and alignment results, and perform the alignment again.

4. After the alignment is complete, tap **Re-inspect** to view the inspection results after alignment.

## Contact

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