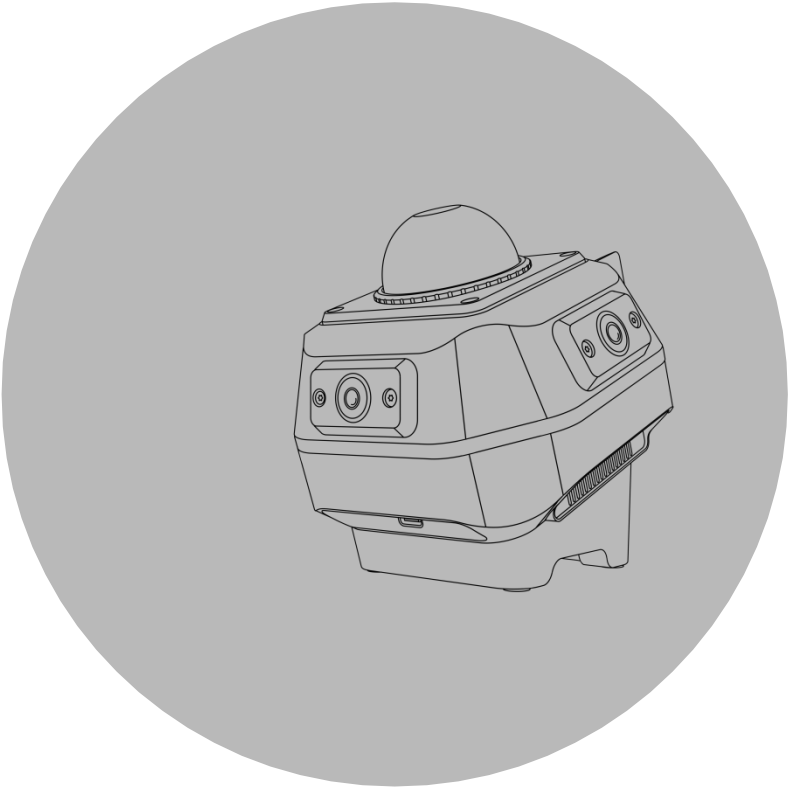
MindPalace

Pocket 2 & Pocket 2pro

USER MANUAL

V1.0.1



Manifold Tech Limited

EN

2026.4

CONTENTS

1. Introduction 1
2. Basic Functions of Equipment 1
    2.1 Physical Structure of Pocket 2 & Pocket 2Pro 1
    2.2 Battery Installation and Charging 2
    2.3 Indicator Lights and Buttons 3
    2.4 Data Copy 4
    2.5 APP and Firmware Upgrade 5
    2.6 RTK Installation and Configuration 6
3. Data Acquisition Process 9
    3.1 MindCloudGo Introduction 9
    3.2 Device Connection 9
    3.3 Scanning Operation 10
    3.4 Precautions for Use 15
4. Detailed App Functions 16
    4.1 APP Interface Diagram 16
    4.2 Control Point Function 16
    4.3 One-click cloud access function 17
    4.4 Section and CAD conversion function 18
5. Using Q&A 20
6. Update content of APP version 1.0.1 22

1. Introduction

Pocket2 is a professional-grade, high-precision 3D data acquisition and intelligent processing device that seamlessly integrates point cloud scanning, panoramic imaging, and detailed photo recording in one compact unit. Powered by the high-performance MindSLAM™ algorithm, the device enables real-time 3D data acquisition and processing, significantly improving on-site operational efficiency. Pocket2 is widely applicable in digital twin construction, facility operation and maintenance, and robotic simulation training, while also serving firefighting, public security, transportation, and forestr y sectors for emergency response and investigation. Through deep integration with the MindCloud platform, Pocket2 supports seamless generation of 3D models from 2D imagery, enabling a fully connected digital twin workflow — from data acquisition to computation and modeling.

The Pocket2 Pro version builds upon the standard model with an additional dual top-mounted 12-megapixel panoramic camera module, delivering higher-resolution scene capture and superior 3DGS rendering performance. It meets the demanding standards of professional users who require enhanced visual fidelity, richer spatial details, and optimized data quality for advanced 3D applications.

2. Basic Functions of Equipment

2.1 Physical Structure of Pocket 2 & Pocket 2Pro

1. LiDAR
2. SLAM Camera
3. External Camera Shutter Button
4. Expansion Hot Shoe Port
5. Data Transfer Port
6. Power Button/Indicator Light
7. Charging Port
8. External Close-Up Camera
9. Dual 12MP Panoramic Cameras

*The external close-up camera is an optional accessory.

*The dual 12MP cameras are standard for Pocket 2 Pro, Pocket 2 does not include this component.

2.2 Battery Installation and Charging

Press the latch buttons indicated by the red box simultaneously to attach and secure the handle battery to the device via the latch connection.

As shown below, press and hold the power button to start the device (a short press checks the battery level). Wait for the power indicator lights to illuminate sequentially. It is recommended to use a C-C charger with a power ranging from 35W to 67W.

2.3 Indicator Lights and Buttons

Battery indicator light status	Meaning
LED 1 is blinking blue.	The battery is charging, with a charge level ranging from 0-25%
LED 1 is solid blue. LED 2 is blinking blue.	The battery is charging, with a charge level ranging from 25-50%
LEDs 1 and 2 are solid blue. LED 3 is blinking blue.	The battery is charging, with a charge level ranging from 50-75%
LEDs 1, 2, and 3 are solid blue. LED 4 is blinking blue.	The battery is charging, with a charge level ranging from 75-95%
LEDs 1, 2, 3 and 4 are solid blue.	The battery is charging and the battery level is over 95%; The battery is discharging, with a charge level ranging from 100% to 75%
LEDs 1, 2 and 3 are solid blue.	The battery is discharging, with a charge level ranging from 75-50%
LEDs 1 and 2 are solid blue.	The battery is discharging, with a charge level ranging from 50-25%
LED 1 is solid blue.	The battery is discharging, with a charge level ranging from 25-7%
LED 1 is blinking red.	The battery is discharging, with a charge level ranging from 7-5%
LEDs 1, 2, 3 and 4 are blinking blue.	Battery Overtemperature Warning
Button mode	**Function**
Press and hold for 3 seconds	Switch the device between on and off states
Press once briefly	Check battery level

2.4 Data Copy

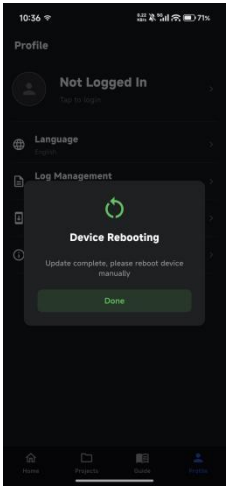
After pressing and holding the device power button to turn it on, use the supplied Type-C data cable to connect the device's DATA port to the computer. Once the device storage is recognized, you can proceed with data copying.

2.5 APP and Firmware Upgrade

After the user opens the APP, it will automatically check whether the current APP version and firmware version are up to date. If they are not the latest versions, a red dot reminder will appear in the upper right corner of the homepage. Users can tap the red dot update reminder to update the APP version or upgrade the firmware online.

Users can also manually check the APP version. Enter the My page and tap Check for Updates to view the version status manually.

The device needs to be restarted after the online firmware update is completed.



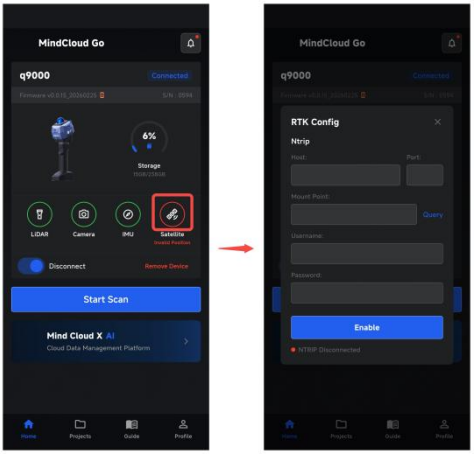
2.6 RTK Installation and Configuration

Insert the RTK connector into the device's reserved Port C. The RTK

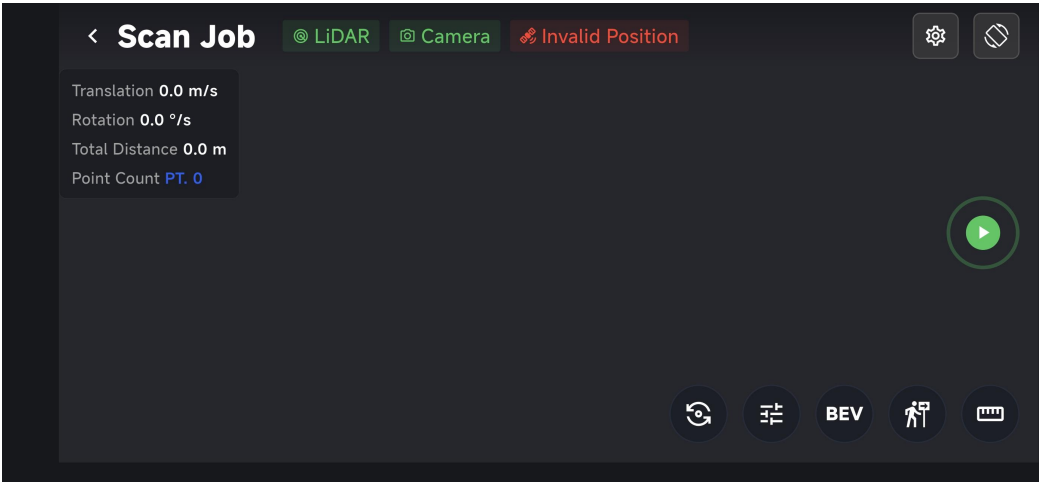
extension bracket will simultaneously slide into the hot shoe slot. Once you confirm that both connectors are fully seated, tighten the securing knob to complete the RTK installation on the Pocket 2.

The RTK for the Pocket 2 Pro is mounted and secured to the device using an RTK bracket, as shown in the figure below.

After connecting the device, tap the satellite icon on the homepage. Fill the corresponding configuration information obtained from the CORS service provider into the RTK settings, then click Enable. Once the prompt "Ntrip connected" appears in the bottom left corner, the RTK configuration is completed.



After starting scanning, pay attention to changes in the RTK bar information. When green RTK fixed solution information is displayed, it indicates good RTK signal quality.

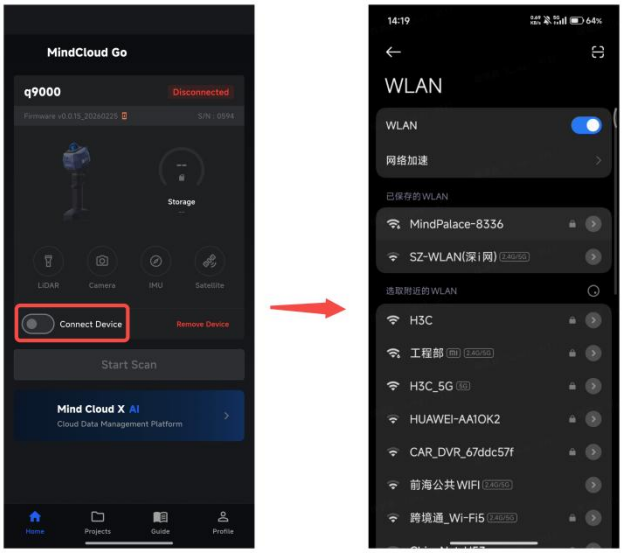


3. Data Acquisition Process

3.1 MindCloudGo Introduction

MindCloudGo is a mobile application supporting Mindpalace Pocket2, compatible with Android and iOS systems. HarmonyOS is not recommended. By connecting to the device via WiFi, it allows real-time point cloud viewing and supports quick switching between true color, intensity, and elevation modes. Users can monitor scanning and mapping results as well as walking trajectories in real time, adjust scanning angles and positions flexibly to prevent missed areas, and efficiently complete 3D scanning tasks. In addition, MindCloudGo supports local and device project management and viewing, as well as uploading and exporting point cloud data, enabling intelligent spatial digital management in the cloud.

3.2 Device Connection

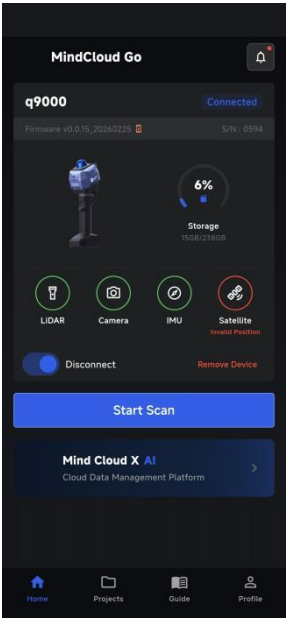


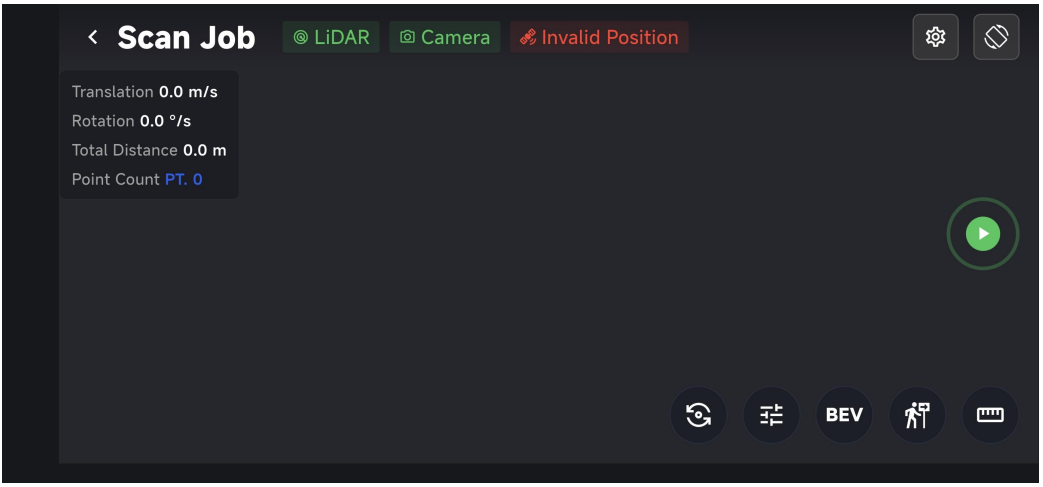
Tap Add New Device, and the APP will automatically redirect to the Wi-Fi connection page. Connect your phone to the device Wi-Fi (Wi-Fi name format: MindPalace-xxxx, Wi-Fi password: 1234567890), then return to the APP homepage to collect data.If Wi-Fi connection fails or the APP shows disconnected status, please check and try the following solutions:

- Disable mobile data on your phone's SIM card;
- When connecting to a wireless network, select connection options that can make the connection more durable, such as "Keep WiFi connected"
- Disable network proxy or traffic-intercepting software like VPN(if enabled);
- Turn off advanced WLAN settings such as "Smart Wi-Fi Selection" or " Auto-Switch Data Network" (if enabled).

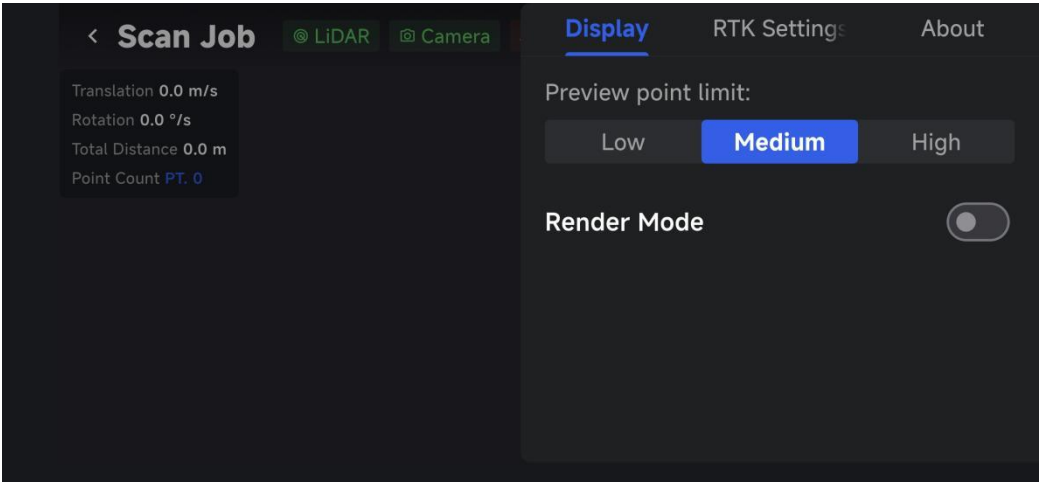
3.3 Scanning Operation

After connecting the device, click "Start Scan" on the homepage to enter the scanning page.

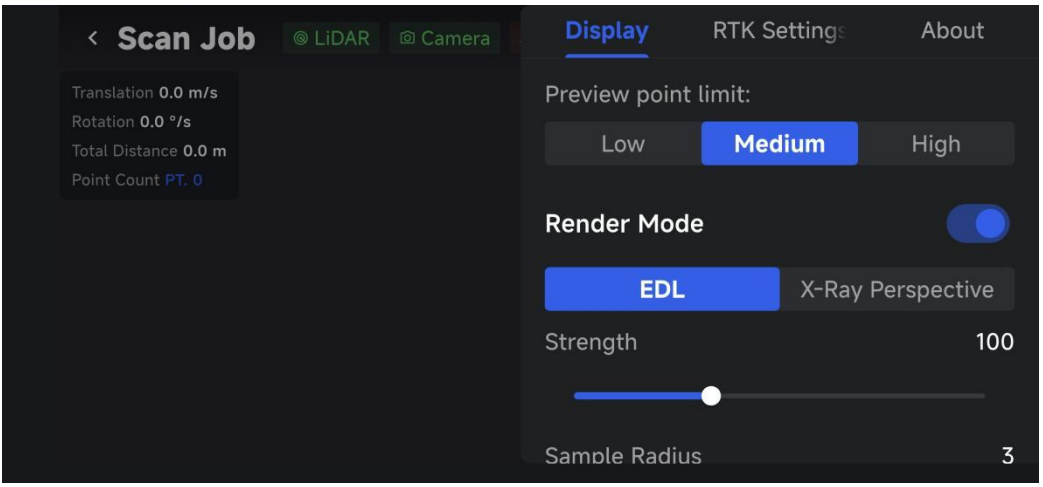


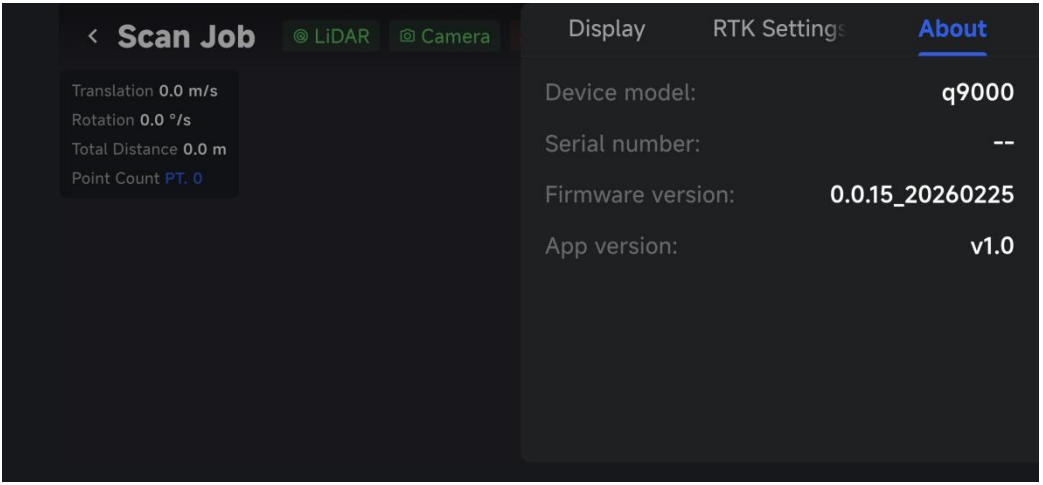


Click the switch view icon in the top right corner of the scanning view to switch between landscape and portrait scanning views. Click the settings icon to enter the display page, where you can adjust the upper limit of the number of preview points in the app (this adjustment is limited to the number of point clouds displayed in the app and does not affect the actual point cloud files). If the phone performance is low, please adjust the upper limit of preview point clouds to a lower value.



Users can activate the rendering mode as needed, freely switching between EDL and X-Ray rendering methods, and setting relevant parameters to achieve different visual effects. The EDL rendering method can highlight the edges of point cloud points, improve lighting effects, and make the overall point cloud more three-dimensional. It can also enlarge the point particles, making the edges of the point cloud appear clearer. The X-Ray rendering method allows users to see through the internal structure of objects like a "see-through eye" when viewing the point cloud.

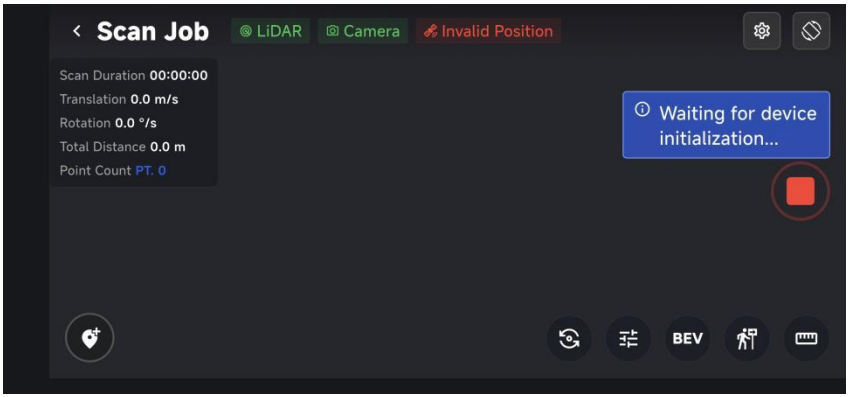


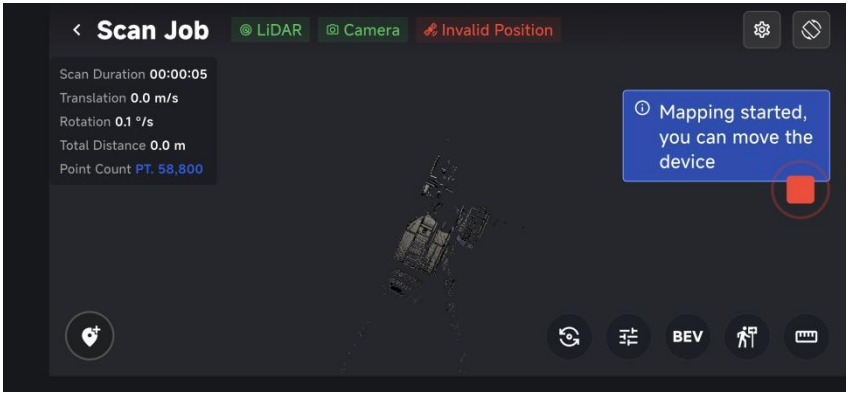


On the About page, users can view device model, serial number, firmware version, and APP version information, which can be used to assist in troubleshooting related issues.

Place the device in a relatively horizontal position and click the APP start icon to initialize the device (do not hold the device during initialization). The APP will prompt "Waiting for device initialization". Do not move the device until the APP prompts "Map building starts, you can move the device". Then, you can hold the device to perform scanning tasks.

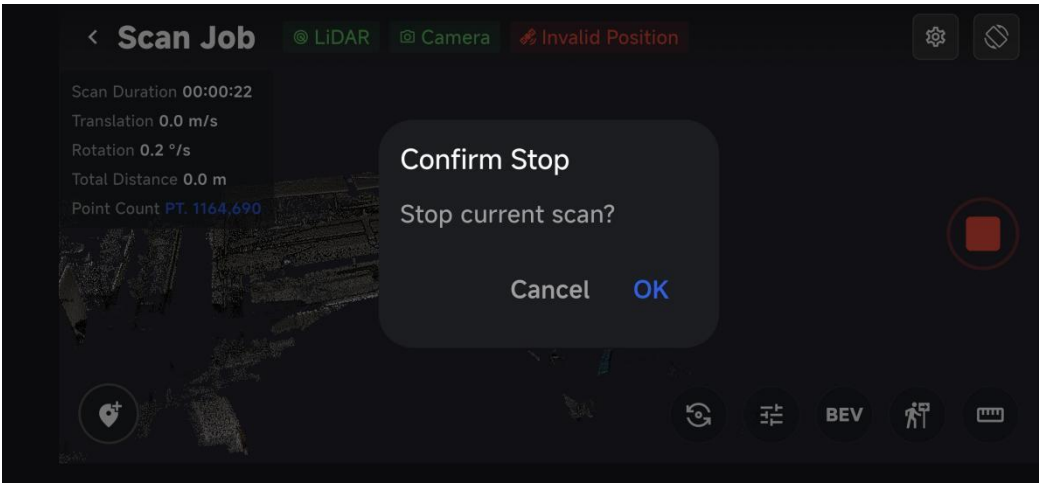
When initializing the scene, please try to choose a scene with a wide field of view and sufficient lighting conditions. It is recommended to avoid scenes with moving objects, glass, and water surfaces.





When scanning, please hold the device vertically to the ground and keep it directly in front of your body. You can check the completeness of the point cloud through the APP preview interface, and rescan any missing parts in a timely manner. The scanning movement can be imagined as advancing with a glass of water that is almost overflowing. When scanning, please do not shake the device violently, and do not rotate it in place.

After scanning is complete, click the stop icon to confirm the end of scanning (even if the app exits or is cleared during scanning, or even if the phone is turned off, it will not affect the device's scanning. However, to finally confirm the end of scanning, **the app must be connected to the device's WiFi before completing the action of clicking the stop scanning icon)**.



When the APP prompts "Project is being saved, please wait...", it is strictly prohibited to perform actions such as powering off or clearing the APP. The scanning task is considered complete only after the APP prompts "Project saved as xxx".

3.4 Precautions for Use

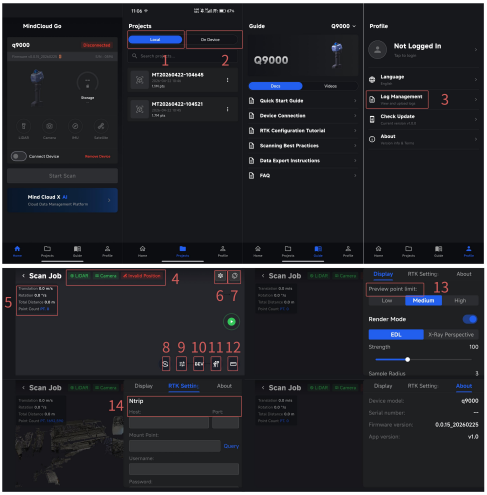
- After connecting your phone to the device's WiFi, you may be prompted that the network is unavailable. Please do not switch to another WiFi network;
- When using equipment to collect data, please avoid violent shaking or rotation of the equipment. It is recommended that the walking speed be

below 1m/s and the turning speed be below 40° /s;

- Do not touch or cover the heat dissipation area of the device when using it for extended periods;
- If the scanning environment switches between excessively cold and hot conditions, please ensure to promptly wipe away any water mist on the surfaces of the radar and camera.

4. Detailed App Functions

4.1 APP Interface Diagram



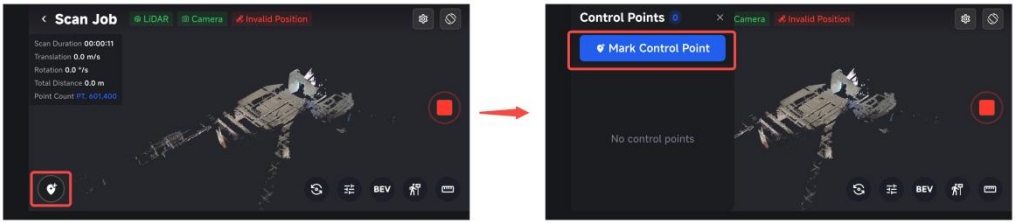
1.The items scanned by the mobile app and stored in the phone's space
2.The device scans items stored in the device's hard drive
3.Logs generated during the operation of the APP, used to locate problematic data
4.Equipment status indication information
- Lidar and camera: green indicates normal, gray indicates abnormal
- RTK：Fixed solution, floating solution, differential solution, invalid position

5.Equipment status indication information
- Translation: Current device movement speed
- Rotation: current rotation speed of the device
- Total Distance: The accumulated moving distance of the current device
- Point Count: The cumulative number of point clouds collected by the current device

6.Setting icon
7.Screen orientation toggle icon
8.Point cloud display mode supports four modes: RGB, monochrome, intensity, and axis
9.Point size adjustment: supporting adjustment from 1.0 to 10.0 point sizes
10.Switching between person perspectives: supporting switching between BEV (bird's-eye view) and FPV (first-person view)
11.Mobile follow-up switching: When enabled, the current scan will always remain in the center of the screen, and the APP point cloud will follow the device's movement and changes
12.Measurement mode selection: supporting profile measurement, distance measurement, area measurement, and triangulation measurement
13.Preview point limit: Switching the preview point quantity does not affect the final point cloud result, but only affects the quantity of point cloud displayed on the mobile app

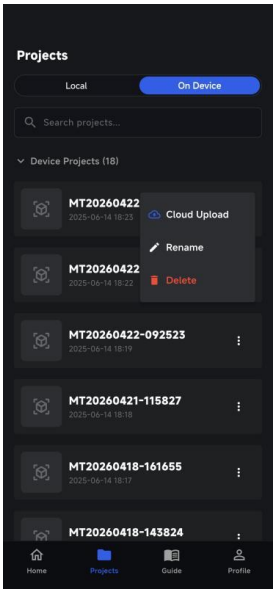
4.2 Control Point Function

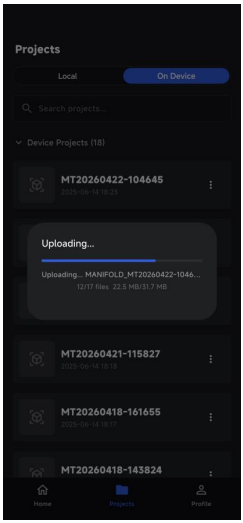
During the scanning and data collection process, coordinates can be collected from known control points on the ground for subsequent point cloud coordinate system transformation. When collecting control points, align the observation hole at the bottom of the device with the center of the control point and keep it stationary for more than 3 seconds.



4.3 One-click cloud access function

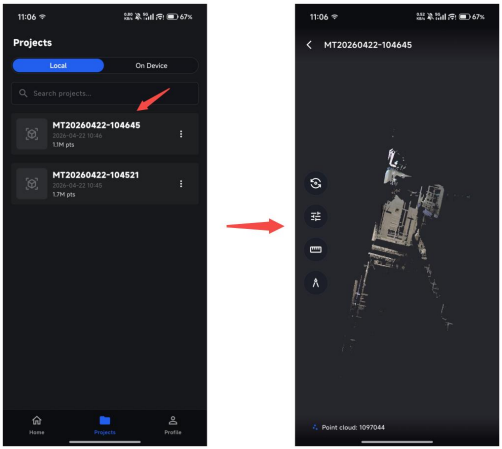
After logging in to the account, the APP supports uploading the project folders of on-device projects to the cloud of the same account. After connecting to the device's WiFi, select the file you want to process from the on-device projects, click the "More" icon - "Upload to Cloud", and you can first download the file to the local storage through device WiFi communication, and then enable network WiFi or data traffic to upload the data to the cloud platform.





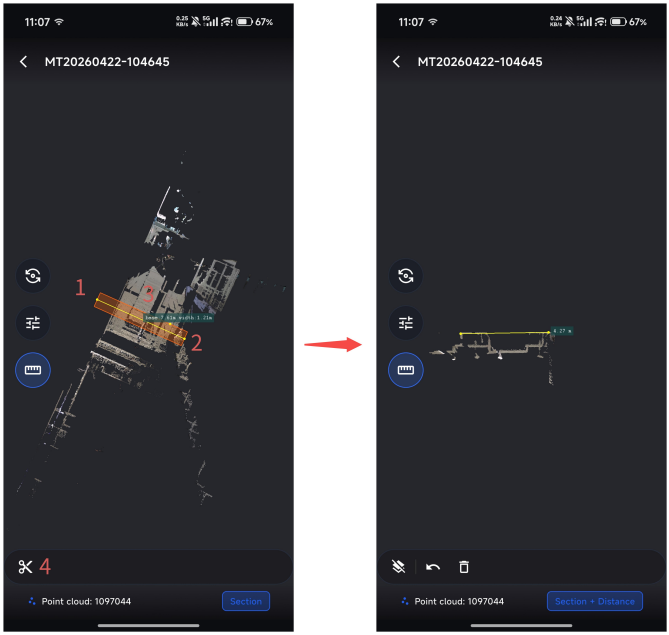
4.4 Section and CAD conversion function

The APP allows users to view point clouds in local projects and perform operations such as sectioning and converting to CAD on the point clouds of these projects. The toolbar on the left side of the point cloud viewing view includes options for switching point cloud rendering modes, adjusting point size, measuring, and slicing point clouds.

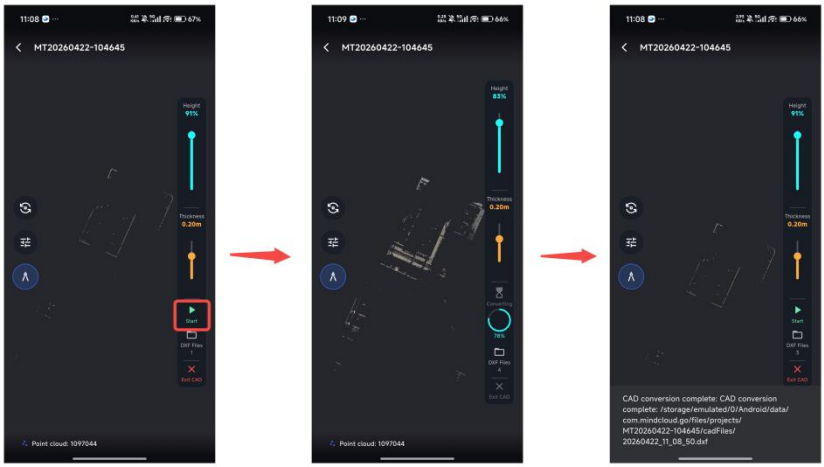


Clicking the measurement icon activates the measurement function, and here we will focus on the use of the profile measurement function. This function is suitable for both indoor and outdoor scenarios.

After selecting the Measurement-Profile function, first click on two points in the view to confirm the orientation and length of the profile line (steps 1 and 2). Then, click on a point along the perpendicular direction of the profile line to set the thickness of the profile (step 3). After confirmation, click on the profile icon to complete the profile (step 4). For the profile view, measurements can be taken to confirm the distance between different objects.



The point cloud slicing function is primarily applicable to indoor scenes. By clicking the point cloud slicing icon, you can slice the point cloud, adjust the slicing height and thickness, and select the appropriate slicing to export in .dxf format.



5. Using Q&A

Q. How far can the device be from the phone?

A. The device relies on WiFi communication with the mobile phone. Considering potential environmental interference and fluctuations in the volume of transmitted data, it is recommended to use a phone holder to secure the mobile phone to the device and prevent it from detaching.

Q. Can't find the device WiFi?

A. Please restart the device and try searching again using a different phone. Check if there are multiple WiFi signal sources in your current environment, and try again in a different location.

Q. The app cannot establish a connection with the device after the phone connects to the device's WiFi?

A. Please check if there are other phones establishing a connection with this device.

Q. The app cannot connect to the device?

A. Please check if the phone has granted location permission to the app, and restart the app after granting the location permission.

Q. Is there a prompt indicating a connection interruption during the scanning process?

A. Please turn off your mobile network and ensure that WiFi remains connected at all times. If the app interface fails to reconnect automatically, please test with a different phone and provide the phone model to customer service. (For iPhone users, please keep the app always in the foreground and keep the screen on.)

Q. When connecting a device to a computer via a data cable, the computer fails to recognize the device's hard drive?

A. First, ensure that the device is powered on. Next, use the original data cable provided by the manufacturer or a high-speed data transmission cable that supports USB3.0 protocol to connect the device. Finally, confirm that both ends of the interface are securely plugged in.

Q. What kind of charger is needed to charge the device?

A. It is recommended that the charger power be between 35W and 67W. A steady flashing blue light on the battery indicator indicates normal charging, while four blue lights constantly on indicate that the battery is fully charged.

6. Update content of APP version 1.0.1

1. UI architecture refactoring;
2. Supports full-scale point cloud display and multiple point cloud rendering modes;
3. Support converting point cloud slices to DXF format;
4. Support multiple types of point cloud measurement functions;
5. Access to MindCloud X AI ecosystem;
6. Fix a series of bugs.