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SinoGNSS®

ScanView 2.0.1 User Manual

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CHAPTER 1 INTRODUCTION

1.1 DISCLAIMER

ComNav Technology Ltd. (hereinafter referred to as ComNav) is committed to continuously improving product functions and performance. Product specifications and manual contents are subject to change without prior notice. If any icons or images in this manual differ from the actual product, the physical product shall prevail.

Please read this manual thoroughly before using the product. ComNav will provide assistance for losses caused by improper operation resulting from failure to follow or correctly understand the instructions in this manual, but shall not be liable for such losses. Thank you for your understanding.

1.2 MANUAL OVERVIEW

This manual takes the operations of ScanView software V2.0.1 installed on the P6 handheld controller as an example to guide you to use ScanView for device connection, project creation, differential mode selection, data collection, data import and export, and other operations.

This manual describes in chapters the installation, various functions, setup and operation of the ScanView software.

Bold text indicates points requiring attention, and some functions are accompanied by principle descriptions.

1.3 READING CONVENTIONS

This user manual uses "a)" for first-level numbered items and "1)" for second-level numbered items.

"[]": Indicates clickable buttons.

"Note": Indicates supplementary information.

Red text: Indicates key information. Please perform relevant operations with caution when you see red text.

Red border: Red borders appear in some images as prompts.

1.4 TECHNICAL SUPPORT

From the date of purchase of ComNav products, users can enjoy long-term technical support and upgrade policies provided by ComNav.

Our official website is: *https://www.comnavtech.com* Users may visit the website for the latest updates on ComNav's software and hardware, and download the latest product releases and relevant technical documents.

1.5 YOUR FEEDBACK

If you have any suggestions or comments regarding our software and this manual, please submit feedback via the feedback form on the Settings page within ScanView. Alternatively, you may contact us by email or phone. Your input will greatly help us improve our product quality.

CHAPTER 2 OVERVIEW

2.1 SOFTWARE INSTALLATION

2.1.1 Software Interface

a) Installation Interface

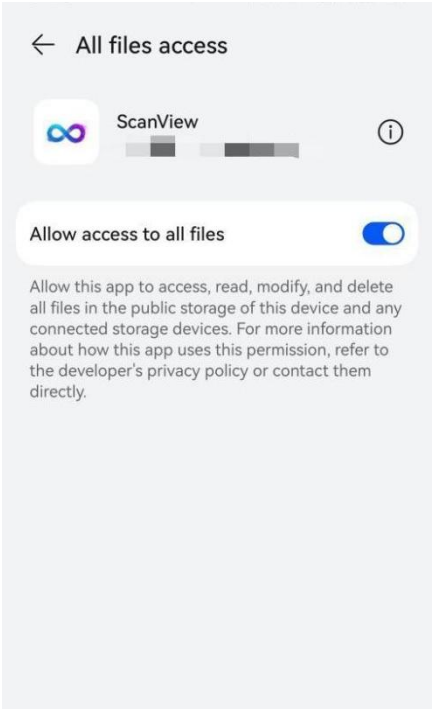


Fig.2-1-1 File Access Permission

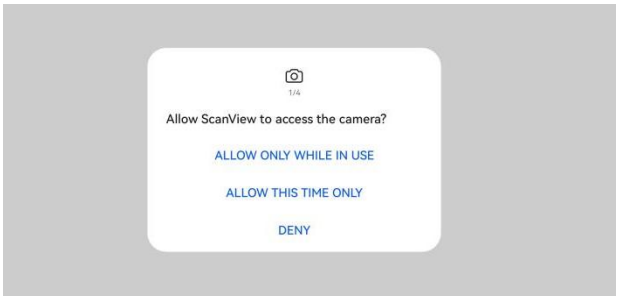


Fig.2-1-2 Permission Granting

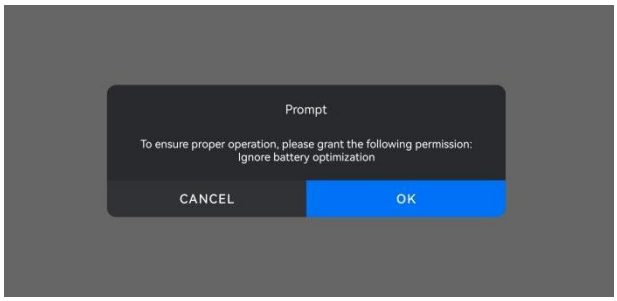


Fig.2-1-3 Permission Restriction Prompt

1) Tap the software installer (ScanView***.apk) and follow the prompts to complete installation. After a few seconds, the application will be installed. Tap [Done] to exit the current screen, or tap [Open] to launch the software.

2) After software installation, when launching the app for the first time, you need to grant access permission to all files (Fig.2-1-1). After opening the app, tap Back. You also need to grant permissions for taking photos, recording videos and accessing location (Fig.2-1-2).

b) Software Interface:

1) After launching the software, the connection screen will appear (as shown in Fig.2-1-4), indicating successful startup of the application.



Fig.2-1-4 Device Connection Screen

2.2 QUICK START

Basic workflow for using the software: Launch software→Connect device→Enter main screen →Check device status→Enter scan interface→Configure SLAM/RTK→Start scanning→Stop scanning→Export data.

The following describes how to quickly perform data acquisition.

Connecting the Device

a) Connecting the Device: Tap [Tap to Connect Device]→Select device WiFi→[Connection].

Tap [Tap to Connect Device] on the connection screen (Fig.2-1-4) to open the device selection page (Fig.2-2-1), Select the WiFi name of the target device, then tap [Connection] to establish the connection (Fig.2-2-2), After successful connection, the main screen will be displayed (Fig.2-2-3).

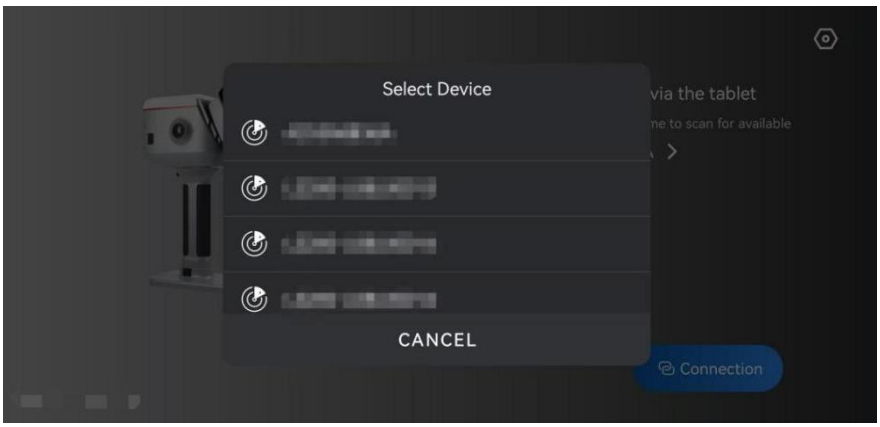


Fig.2-2-1 Device Selection Screen

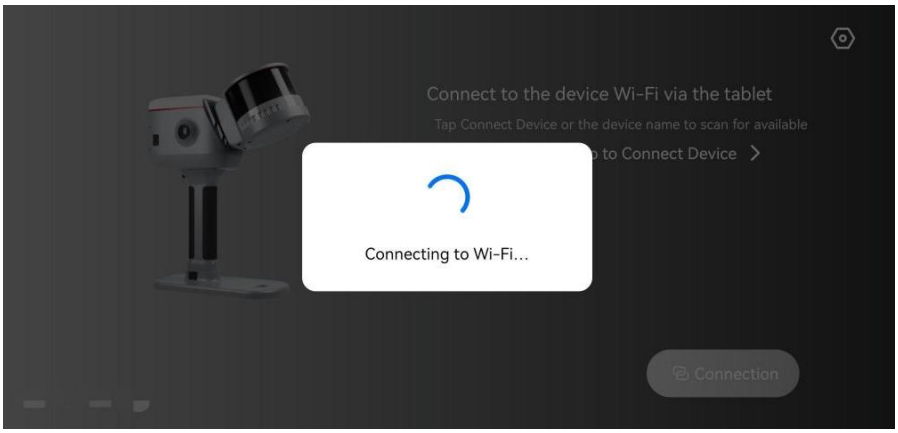


Fig.2-2-2 Device Connecting

Start Operation

b) Check Device Status: After entering the main screen (Fig.2-2-3), tap [Diagnosis] to view the status of each device component (Fig.2-2-4).

You may start the operation and perform data acquisition only when all status indicators are normal.

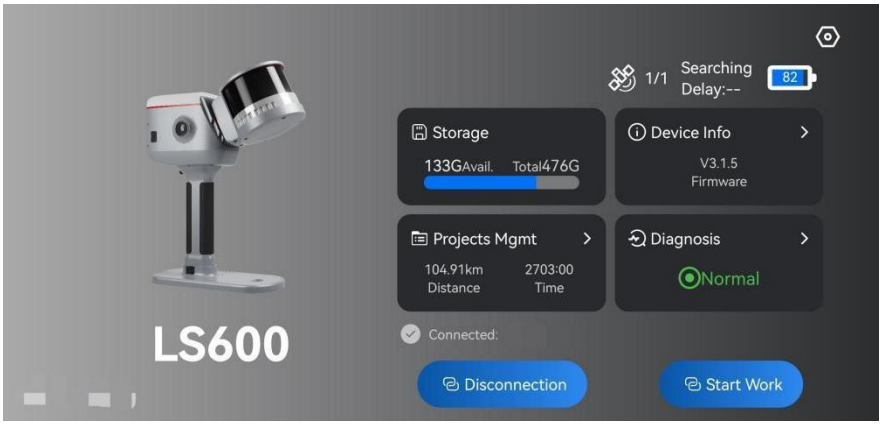


Fig.2-2-3 Main Screen

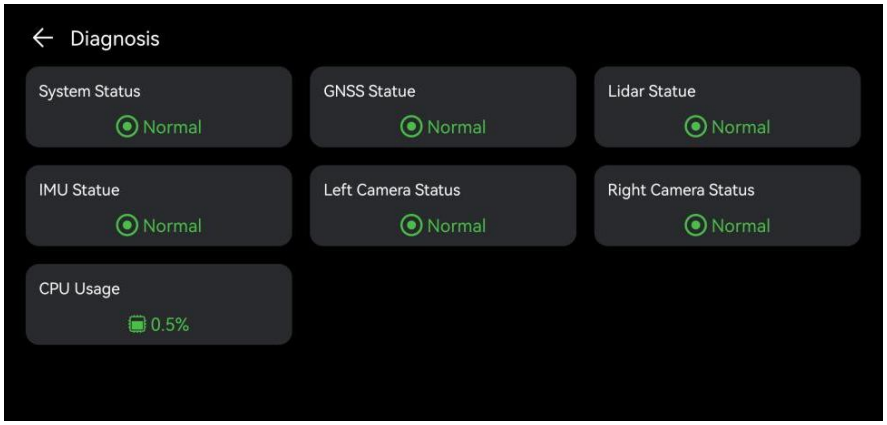


Fig.2-2-4 Device Status Diagnosis

c) Tap [Start Work] to enter the scanning screen. Tap the red [Start] button (Fig.2-2-5), You may modify the project name and scanning mode (Fig.2-2-6), Two scanning modes are available: PPK and RTK.

d) SLAM Settings (Fig.2-2-7): Different display modes correspond to different point cloud quality.

e) When using RTK, differential data must be connected correctly (Fig.2-2-8), For detailed descriptions of each differential source, refer to section ***3.5.2 RTK Settings*** below.

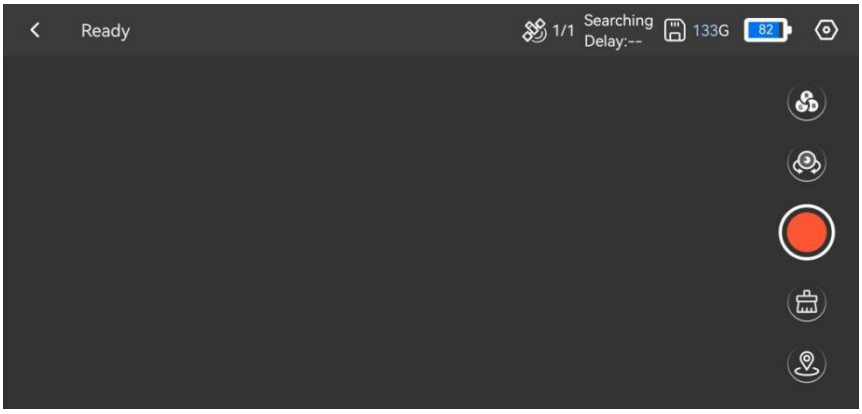


Fig.2-2-5 Scanning Screen

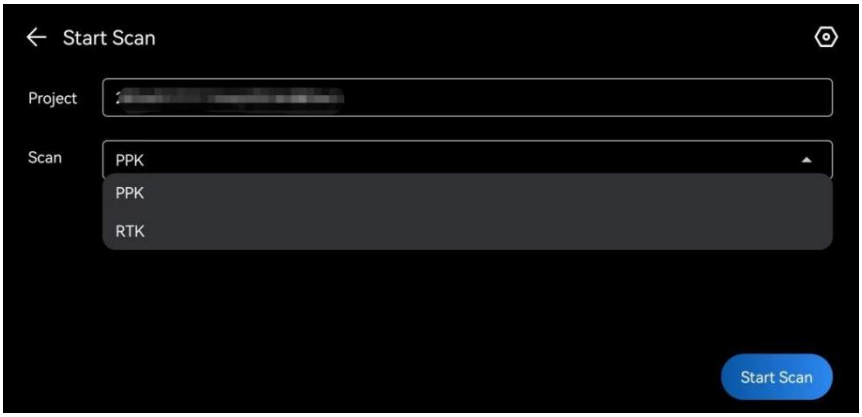


Fig.2-2-6 Project Name and Scanning Mode

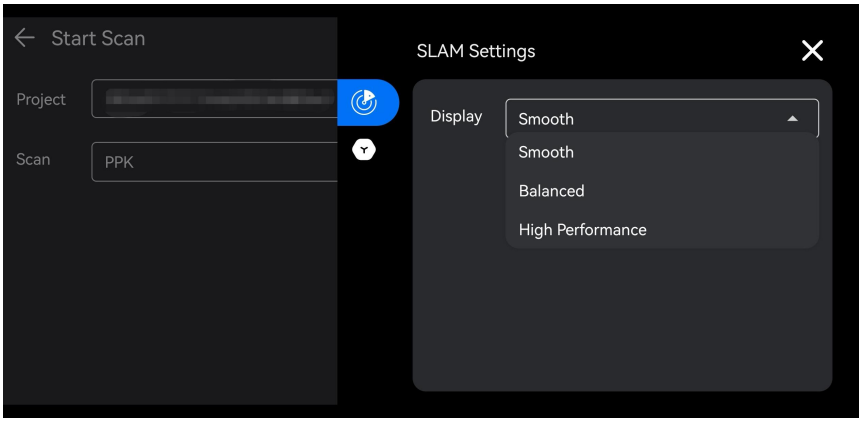


Fig.2-2-7 SLAM Settings

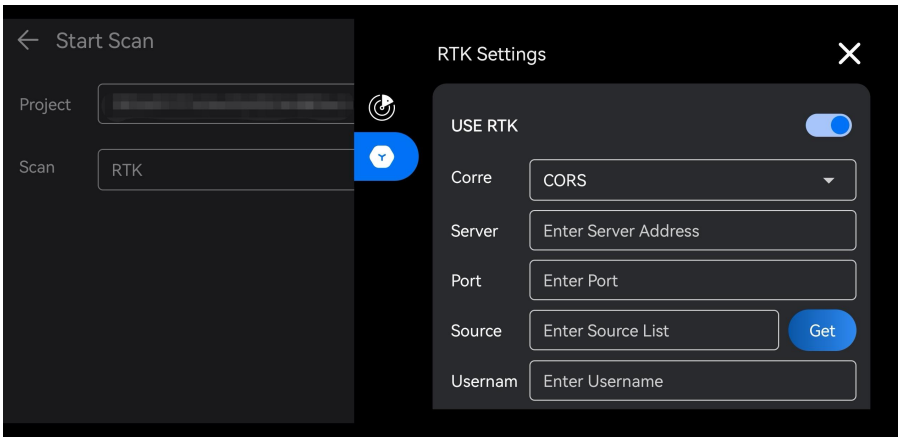


Fig.2-2-8 RTK Settings

f) After completing the settings, tap [Start Scan]. Place the device stationary in an open area for initialization. Once initialization is finished, the software will start data acquisition automatically (Fig.2-2-9). During acquisition, you can perform operations such as color mapping, viewing and clearing of point clouds. See section ***3.4 Scanning Screen*** below for details.

g) During acquisition, control points can be added (Fig.2-2-10). Align the central hole on the base of the handheld device with the control point, then tap [Add] to capture the control point. After capture, the control point will be marked as an orange inverted cone in the point cloud.

h) Tap the red Stop button upon completion of acquisition, and the data will be saved automatically (Fig.2-2-11).



Fig.2-2-9 Data Acquisition in Progress

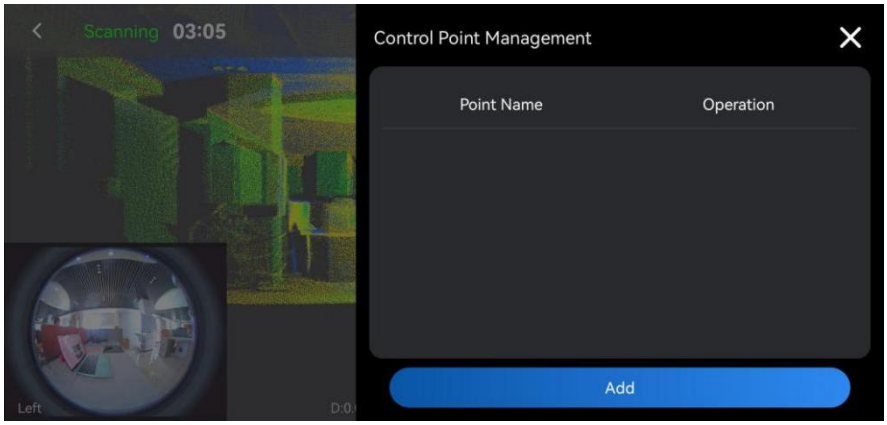


Fig.2-2-10 Control Point Acquisition

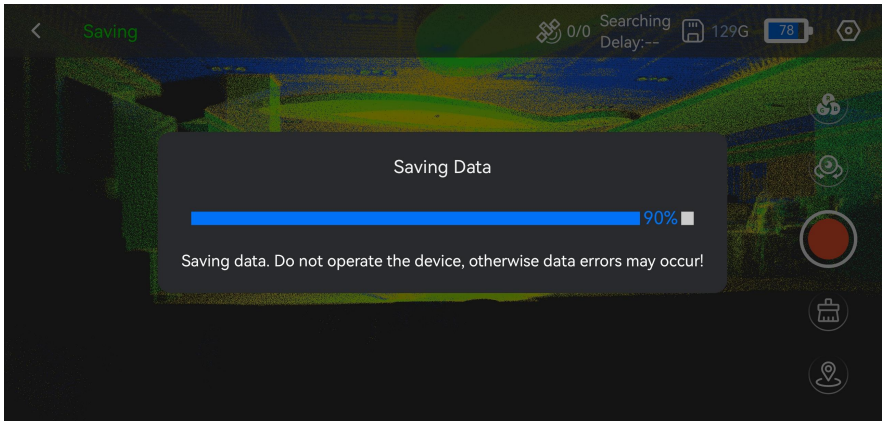


Fig.2-2-11 Data Saving in Progress

Project Export

i) After data saving is completed, tap [Storage] on the main screen and turn on the [Data Export Mode] switch (Fig.2-2-12). You may connect the device, locate the corresponding project under Storage, and export it.

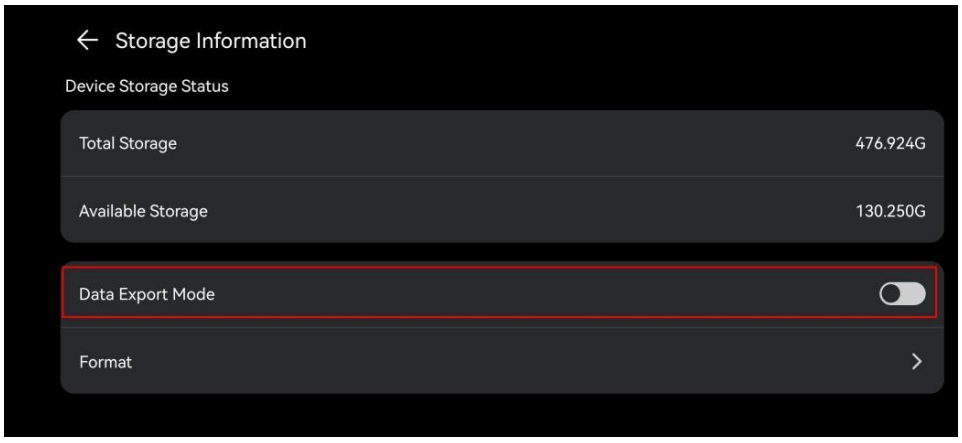


Fig.2-2-12 Data Export Mode

CHAPTER 3 OPERATION INSTRUCTIONS

3.1 SOFTWARE SETTINGS

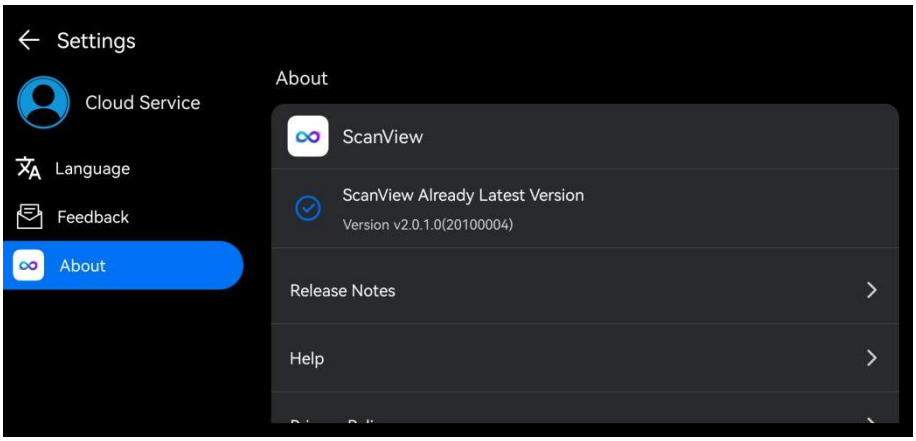


Fig.3-1-1 Software Settings Screen

Users can perform cloud service login, change language, submit feedback, and view software-related information.

3.1.1 Cloud Service

Account Login

a) Tap [Settings]→[Cloud Service]: You can log in to your cloud service account using your mobile phone number or email address (Fig.3-1-2).

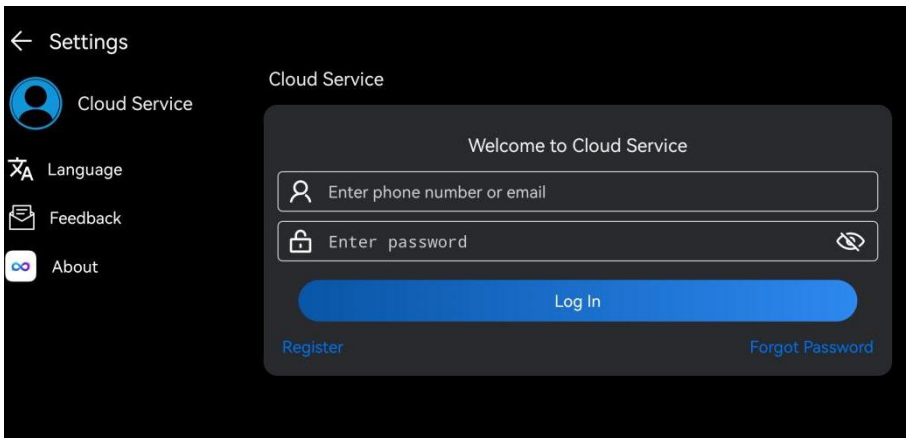


Fig.3-1-2 Cloud Service Login

Account Registration

b) Tap [Settings]→[Cloud Service]→[Register]: If you do not have an account, you may register for a cloud service account using your mobile phone number or email address (Fig.3-1-3).

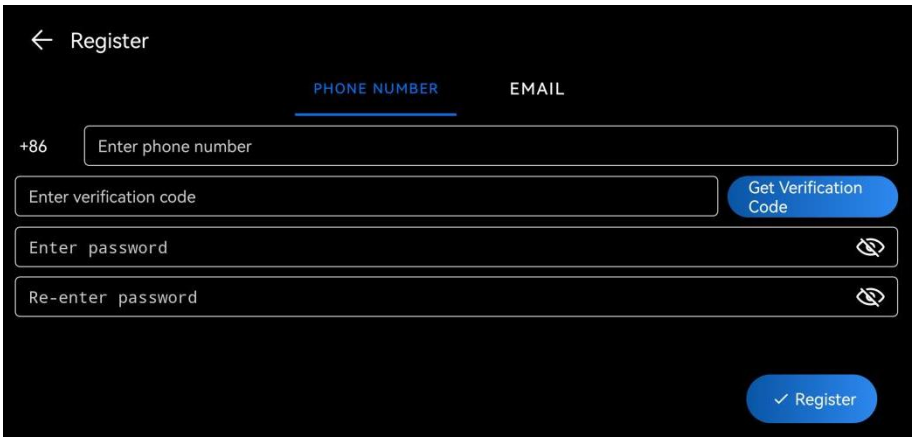


Fig.3-1-3 Account Registration

Forgot Password

c) Tap [Settings]→[Cloud Service]→[Forgot Password]: If you forget your password, you may recover your cloud service account using your mobile phone number or email address (Fig.3-1-4).

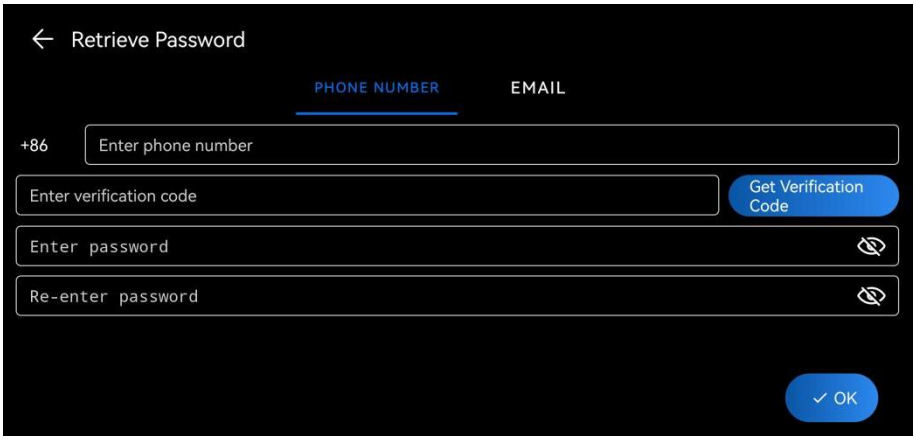


Fig.3-1-4 Password Recovery

3.1.2 Language

a) Tap [Settings]→[Language]→[Back]: Select the language you want to switch to (Fig.3-1-5), a prompt will appear to notify you of the language change when you go back (Fig.3-1-6), confirm and restart the software to apply the language switch.

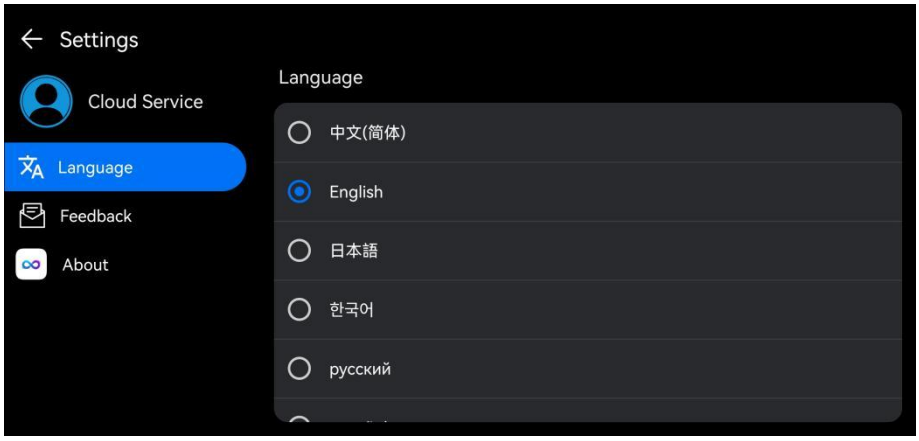


Fig.3-1-5 Language Settings

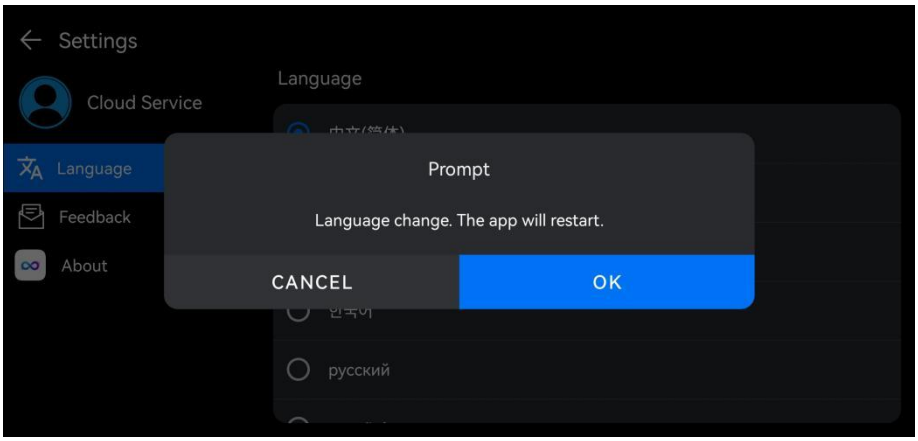


Fig.3-1-6 Language Change Confirmation

3.1.3 Feedback

a) Tap [Settings]→[Feedback]: Enter your feedback description and contact information, then tap [Send] to submit your feedback successfully (Fig.3-1-7).

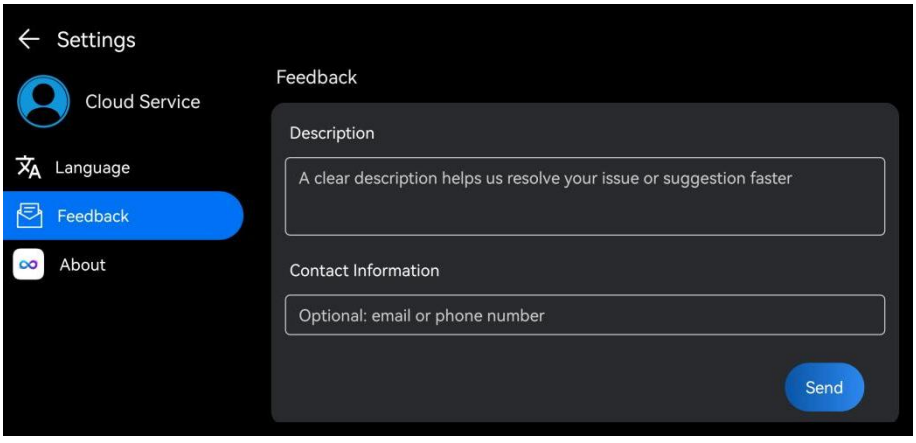


Fig.3-1-7 Feedback

3.1.4 About

a) Tap [Settings]→[About]: You can update the software and view information such as release notes and help documents (Fig.3-1-8).

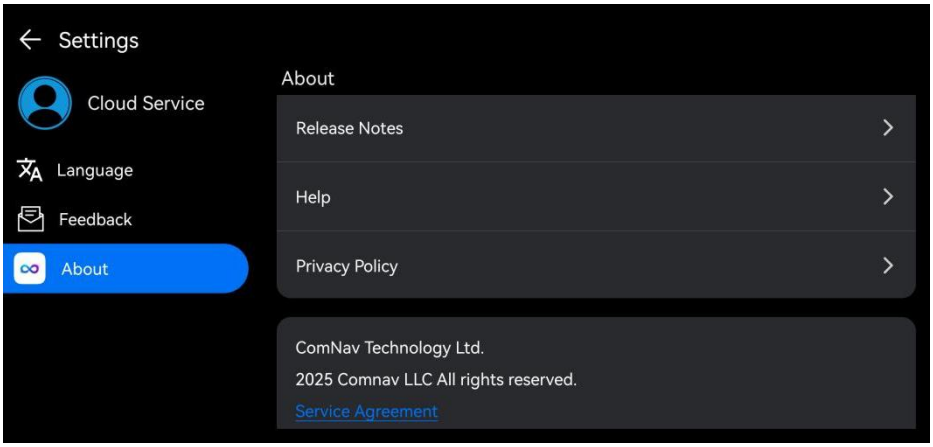


Fig.3-1-8 Software Information

3.2 DEVICE CONNECTION

3.2.1 Device Selection

a) Tap [Tap to Connect Device]: Enter the device selection screen (Fig.3-2-2), select the WiFi name of the device to be connected, and the connection will start automatically.

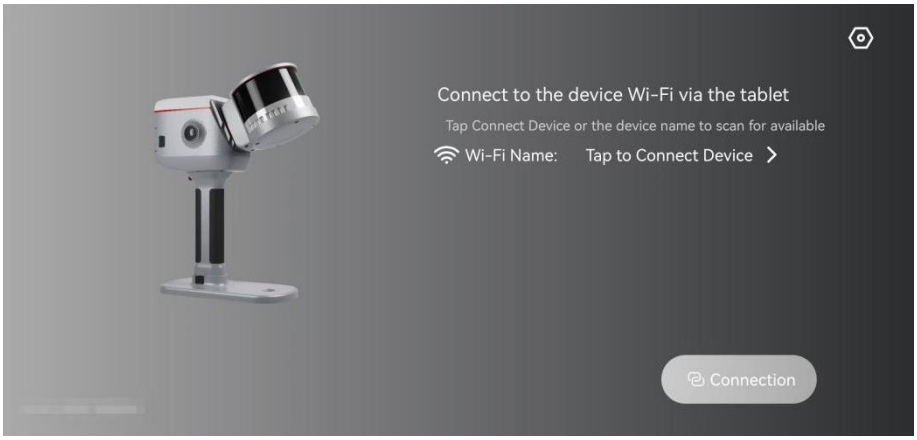


Fig.3-2-1 Connection Screen

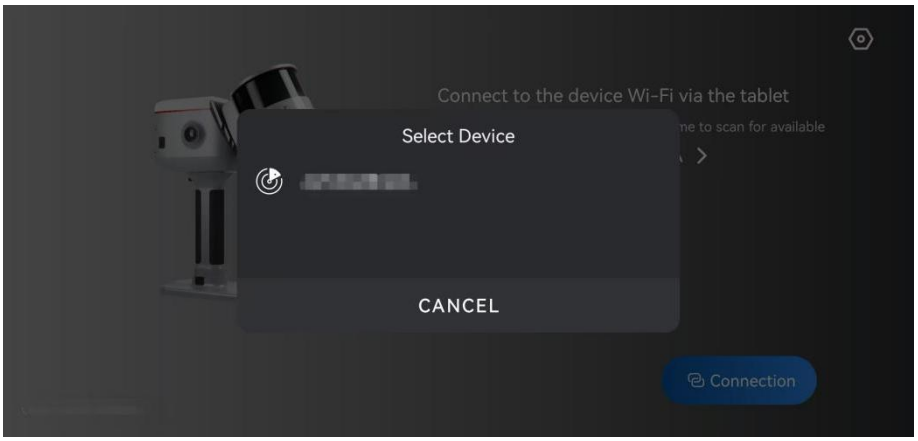


Fig.3-2-2 Device Selection Screen

3.2.2 Connection

a) Tap [Connection]: Start connecting to the device (Fig.3-2-3).

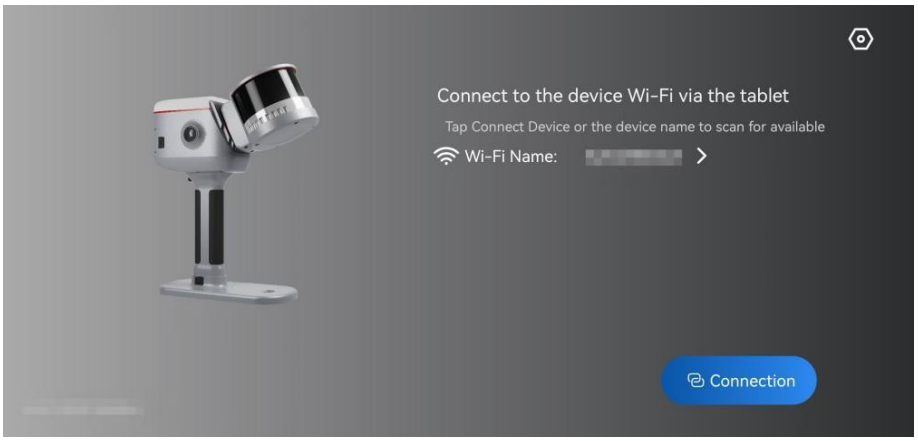


Fig.3-2-3 Device Connection

3.2.3 Device Diagram

a) Device Diagram: It will not be displayed if no device has been connected before.

b) After a device has been connected, the image of the last connected device will be displayed (Fig.3-2-3).

3.2.4 Version Number

a) Version Number: The current software version number is displayed in the lower-left corner.

3.3 MAIN SCREEN

3.3.1 Device Diagram and Name

a) After connecting to the device, the device diagram and device name of the currently connected unit are displayed on the left side of the main screen (Fig.3-3-1).

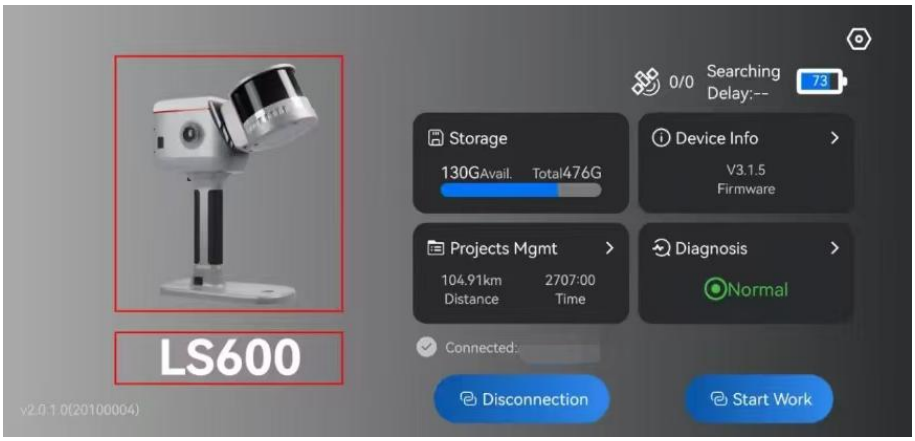


Fig.3-3-1 Device Diagram and Name

3.3.2 Status Bar

a) After connecting to the device, the number of satellites, differential status and battery level of the connected device are displayed on the upper right of the main screen (Fig.3-3-2).

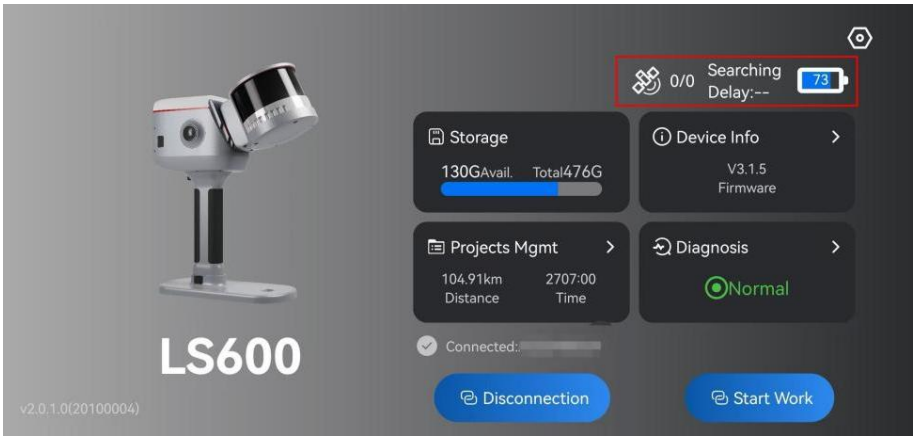


Fig.3-3-2 Main Screen Status Bar

1) Satellite Count: Displays the number of resolved satellites and tracked satellites in the format of resolved satellite count/tracked satellite count.

2) Differential Status: Displays Searching, Single, Diff, float, fixed and Delay.

3) Battery Level: Displays the current device battery. The icon is filled proportionally to the percentage, and the battery percentage value is shown simultaneously.

3.3.3 Device Storage

a) After connecting to the device, the module on the right side of the main screen displays the current storage status of the device, including available storage and total storage (Fig.3-3-3).

b) Tap [Storage]: Access the storage information screen to view detailed storage information of the device (Fig.3-3-4).

c) Data Export Mode: Tap to enable or disable the data export mode of the device.

d) Format: Tap to format the device storage.

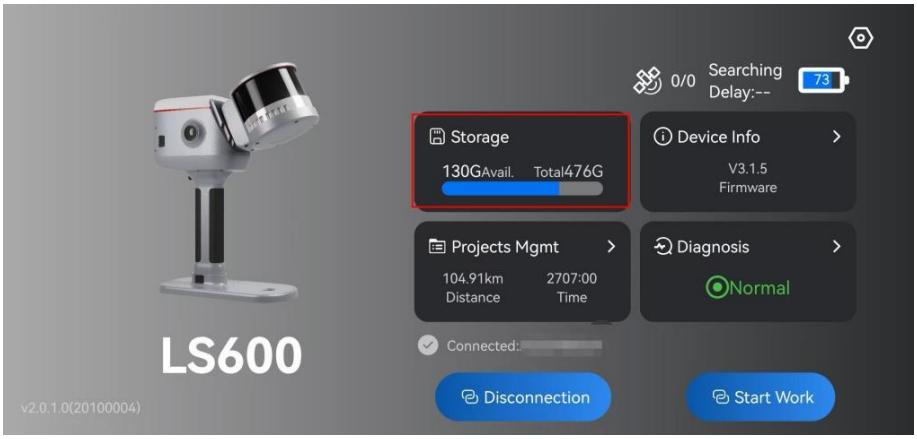


Fig.3-3-3 Device Storage Information

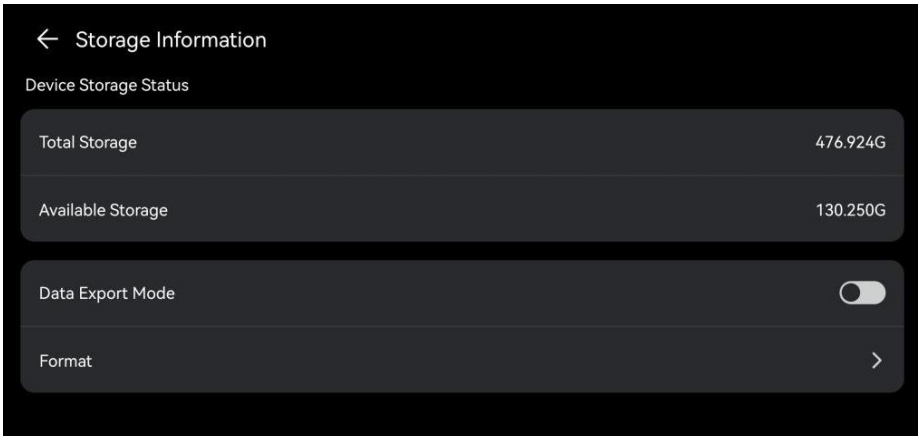


Fig.3-3-4 Detailed Device Storage Information

3.3.4 Device Information

a) After connecting to the device, the module on the right side of the main screen displays the main firmware version name of the connected unit (Fig.3-3-5).

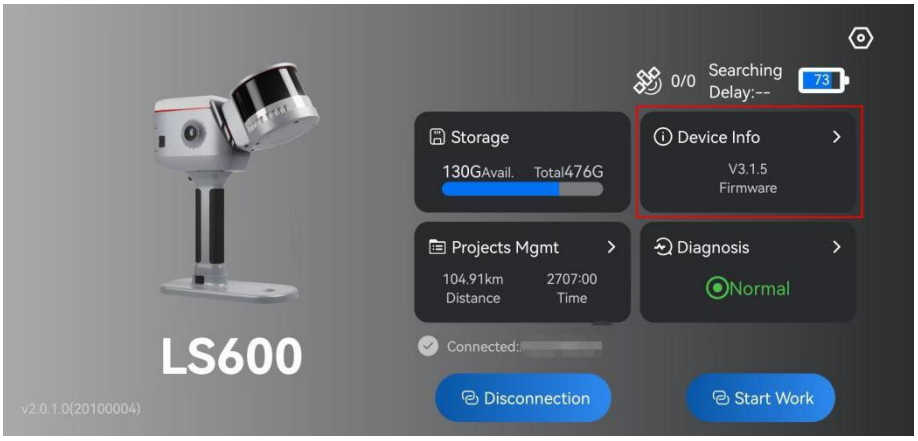


Fig.3-3-5 Device Information

b) Tap [Device Info] or the arrow to enter the Device Information screen (Fig.3-3-6) and view detailed device information.

c) Displays the device serial number (SN), device name, version info, device register info and storage information in sequence.

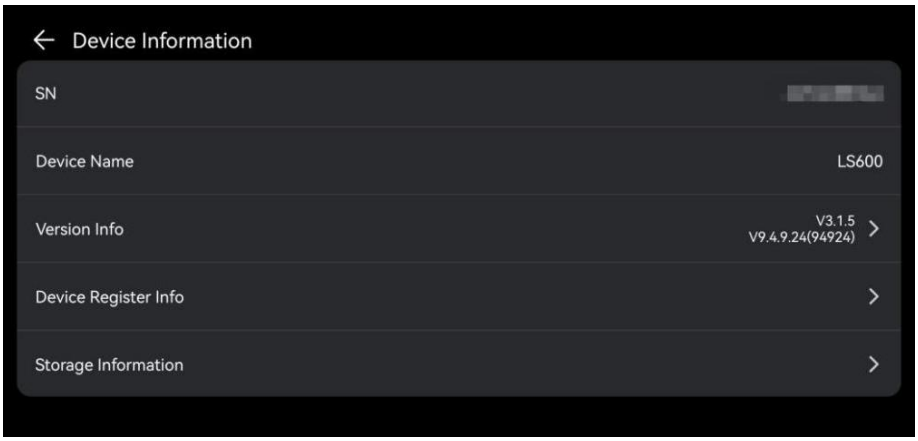


Fig.3-3-6 Detailed Device Information

d) Version Info: Displays detailed version information for each system and the device (Fig.3-3-7).

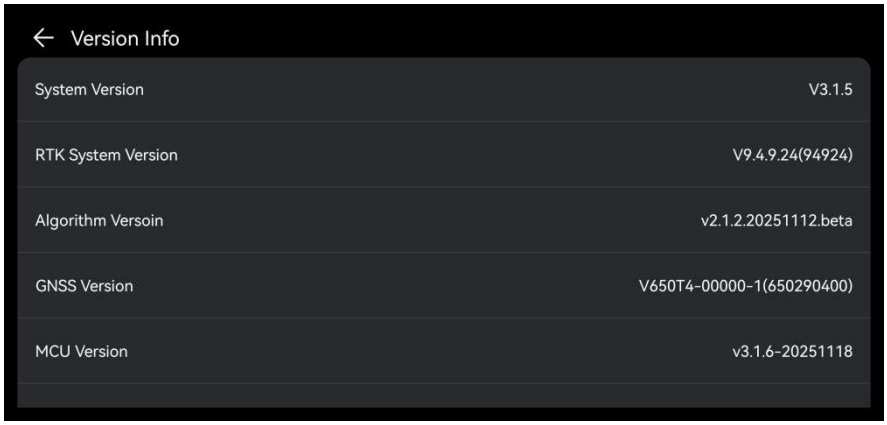


Fig.3-3-7 Version Information

e) Device Register Info: Displays the current registration status of the device and provides entries for free trial and device registration (Fig.3-3-8).

1) Online Registration: After successful registration on the cloud platform, tap [Online Registration] to complete device registration.

2) Offline Registration: Enter the registration code or obtain it via QR code scan, then tap [Register] to complete device function registration.

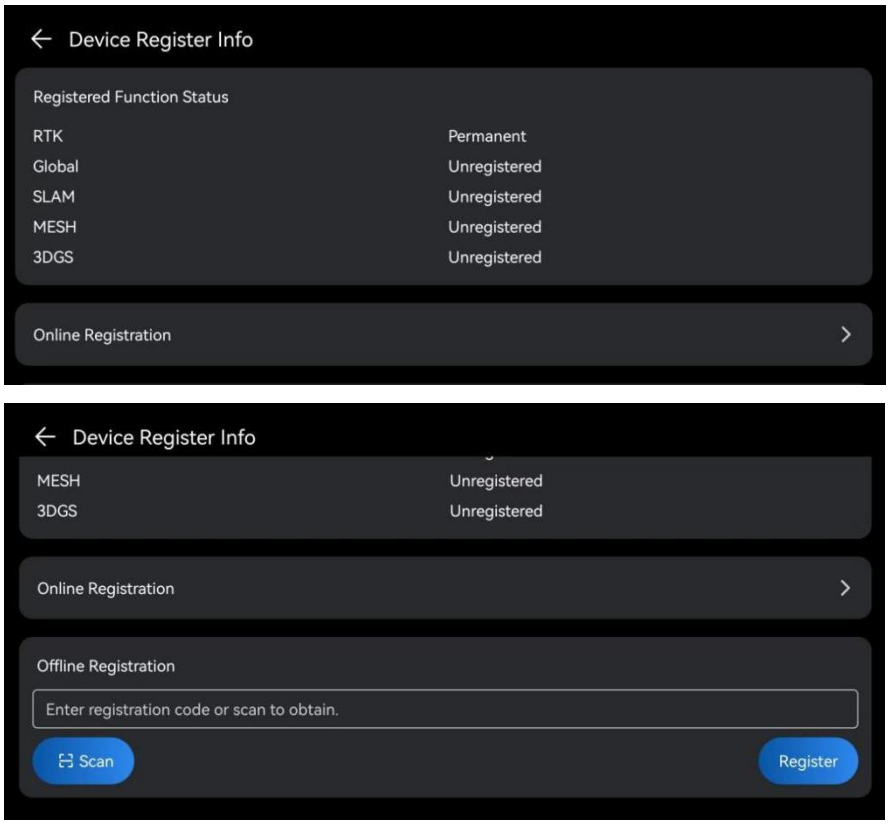


Fig.3-3-8 Registration Information

f) Storage Information: Tap to jump to the storage information screen (Fig.3-3-4).

3.3.5 Project Management

a) After connecting to the device, the module on the right side of the main screen displays the total mileage and total time collected by the device (Fig.3-3-9).

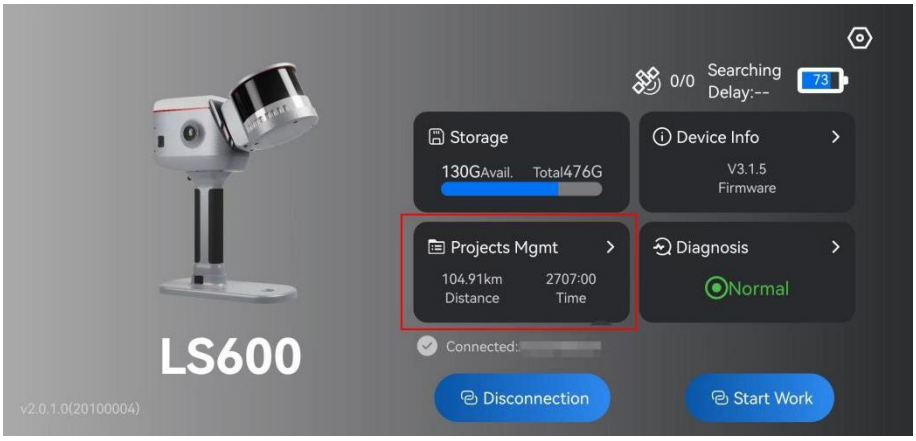


Fig.3-3-9 Project Management

b) Tap [Project Mgmt] or the arrow to open the project management screen (Fig.3-3-10) and view project details stored on the device.

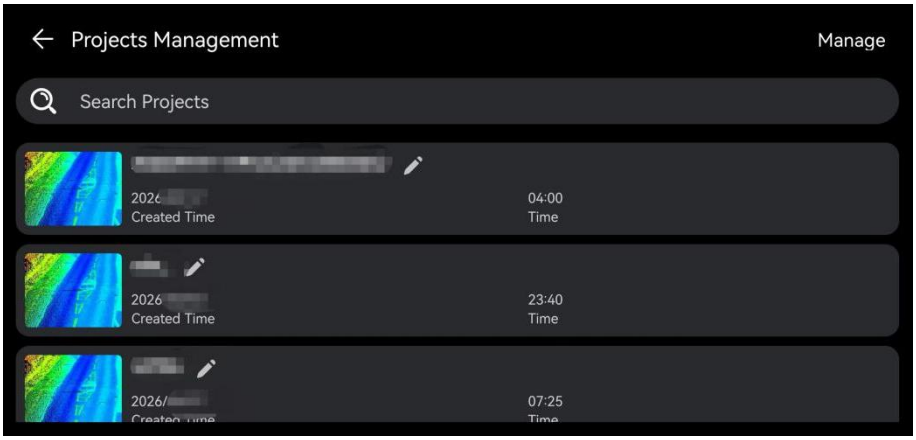


Fig.3-3-10 Project Management Screen

1) Displays the project name, creation time and acquisition duration.

2) Tap the pencil icon at the end of the project name to rename the project.

3) The search box at the top supports fuzzy search by project name.

4) Tap [Manage] to delete projects, single selection and multi-selection are supported.

3.3.6 Device Diagnosis

a) After connecting to the device, the module on the right side of the main screen displays the current device diagnosis status: Preparing, Ready, Normal (Fig.3-3-11).

b) Tap [Diagnosis] or the arrow to enter the device diagnosis screen and view detailed status of each component of the device (Fig.3-3-12).

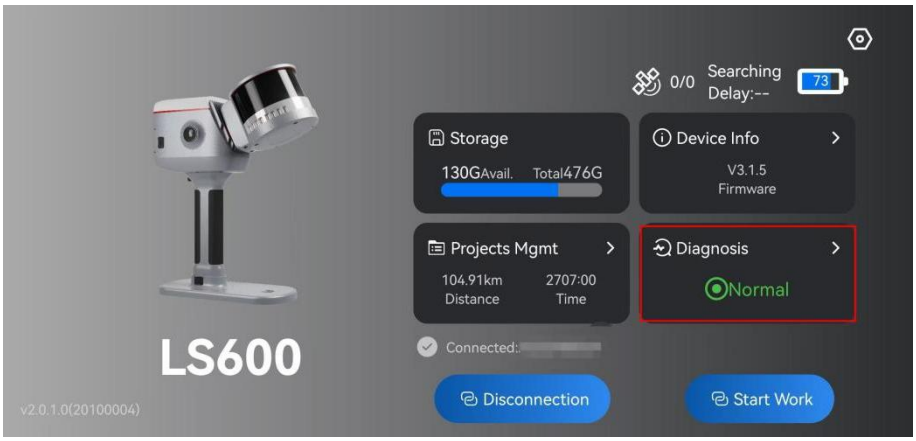


Fig.3-3-11 Device Diagnosis

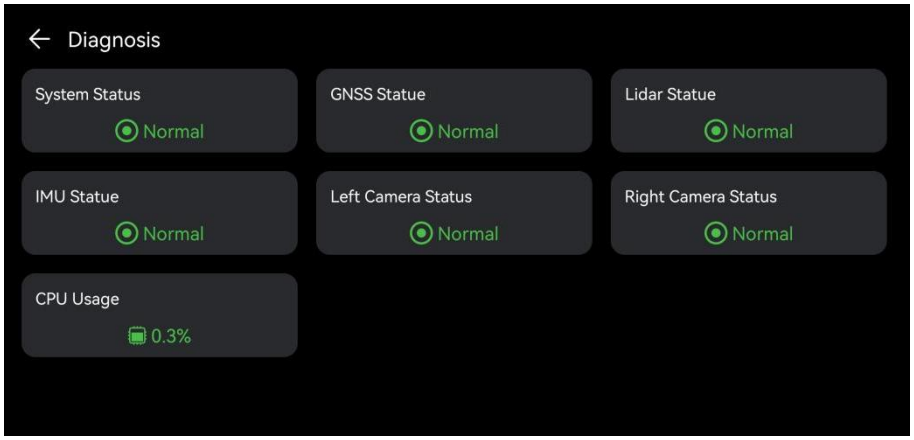


Fig.3-3-12 Device Diagnosis Information

3.3.7 Disconnect

a) Tap [Disconnection] to disconnect the currently connected SLAM device (Fig.3-3-13).

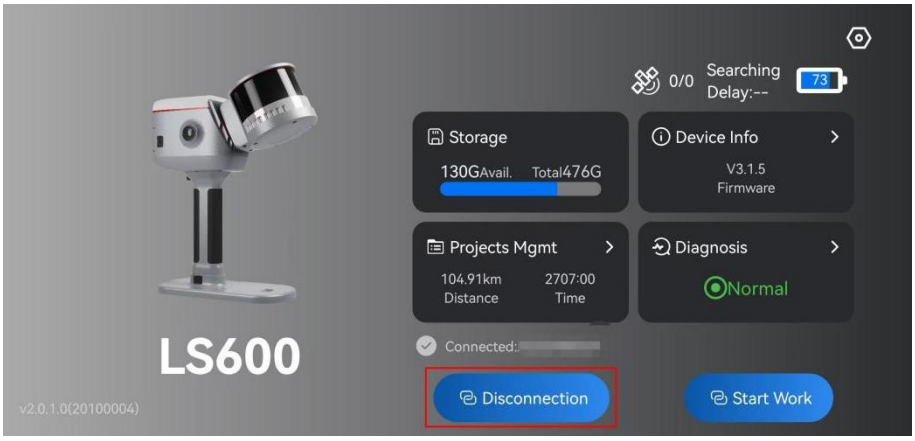


Fig.3-3-13 Disconnect Button

3.3.8 Start Survey

a) Tap [Start Work] to enter the scanning screen and start the work (Fig.3-3-14).

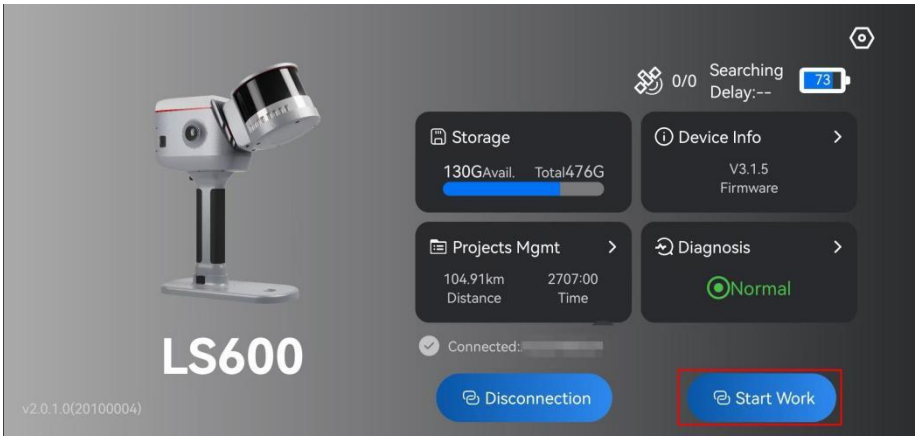


Fig.3-3-14 Start Work Button

3.3.9 Connected Status

a) After connecting to the device, the module on the right side of the main screen shows Connected and the WiFi name of the current device (Fig.3-3-15).

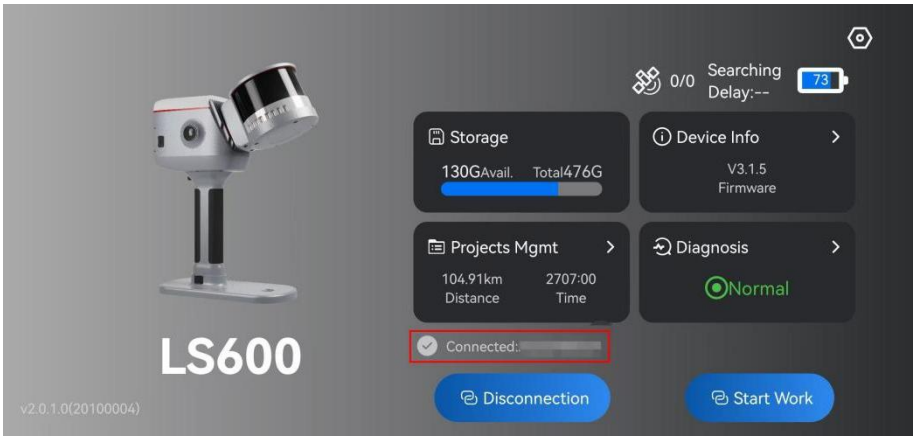


Fig.3-3-15 Connected Status

3.3.10 Software Version

a) The version number of the current software is displayed at the bottom left of the main screen.

3.3.11 Settings

a) The Settings button is displayed at the top right of the main screen; tap it to jump to the software settings (Fig.3-1-1).

3.4 SCANNING SCREEN

3.4.1 Title Bar

a) It displays the current device status, including Preparing, Ready, Initialization Completed, Hardware Starting, Algorithm Starting, Acquiring, Saving, Acquisition Completed, Acquisition Error, and Acquisition Permission Error (Fig.3-4-1).

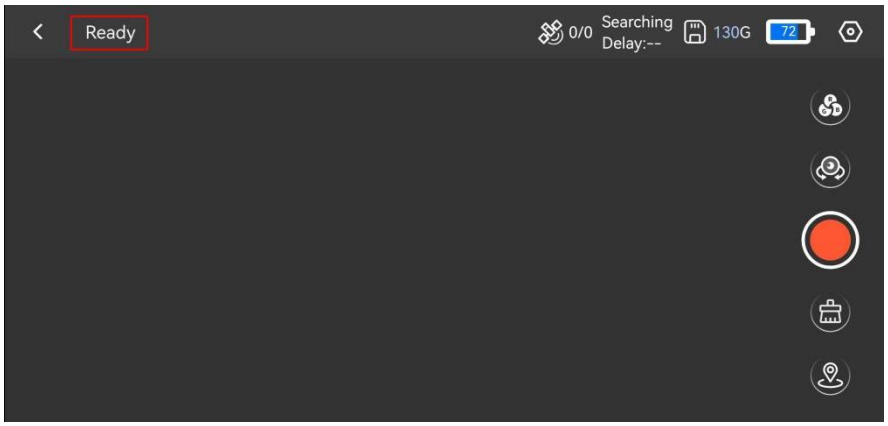


Fig.3-4-1 Title Bar

3.4.2 Status Bar

a) It displays the satellite search status, device storage information, device battery level, and the scan settings button (Fig.3-4-2).

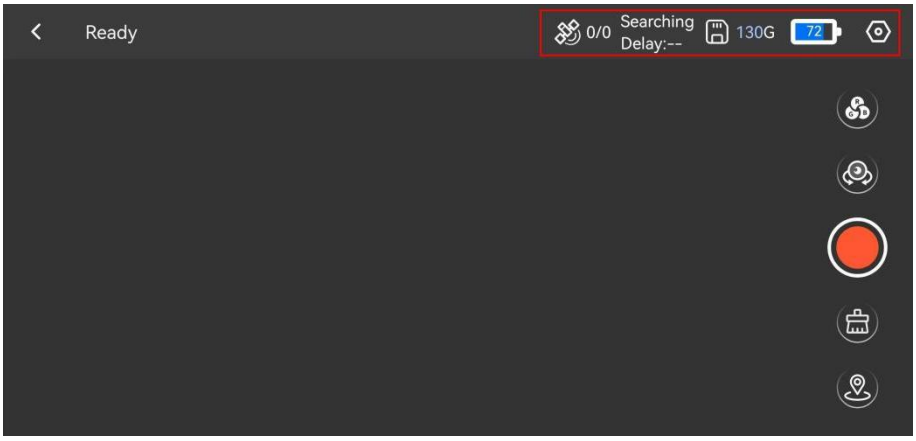


Fig.3-4-2 Status Bar

1) Satellite Search Status: Displays the number of resolved satellites/tracked satellites, current satellite search status and delay.

2) Storage Information: Displays the available storage space of the device.

3) Device Battery Level: Displays the current battery level of the device as well as the battery percentage.

4) Scan Settings: Tap to enter the scan settings screen. See ***3.5 Scan Settings*** for details.

3.4.3 Scan Display

a) After scanning starts, the main screen displays the currently acquired point cloud and trajectory in real time. The fisheye camera view is shown at the bottom left; tap to switch left and right. (Fig.3-4-3).



Fig.3-4-3 Scan Display

3.4.4 Point Cloud Coloring

a) Tap the first button on the right to set the current point cloud coloring mode (Fig.3-4-4).

b) Intensity Coloring: Points are colored according to the signal intensity of the returned laser. Objects with high reflectivity are usually displayed in bright colors, while objects with high absorptivity are displayed in dark colors.

c) Elevation Gradient: Points are rendered with color scales based on their elevation (Z-axis coordinate). Lower areas are typically shown in blue/green, while higher areas are shown in red/yellow, enabling intuitive analysis of terrain undulation and elevation difference.

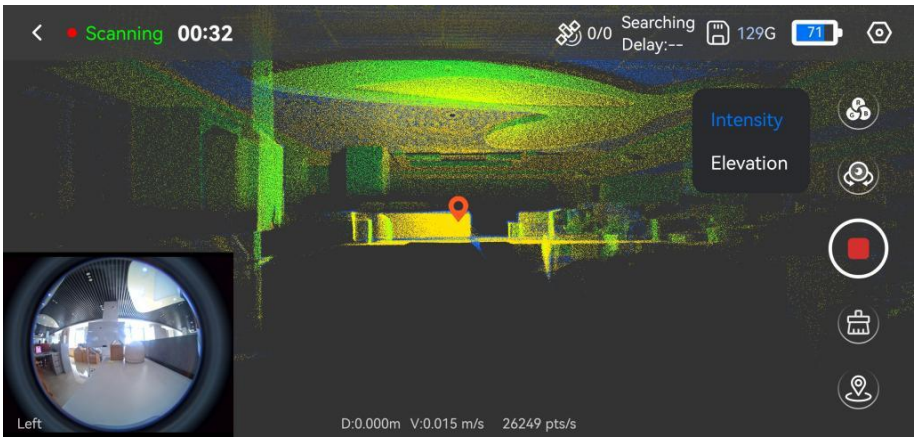


Fig.3-4-4 Point Cloud Coloring

3.4.5 Point Cloud View

a) Tap the second button on the right to set the current point cloud viewing mode (Fig.3-4-5).

b) Free View: Full-degree-of-freedom viewing mode. You can move the viewpoint freely like "flying" in the 3D scene, supporting forward/backward, left/right panning, up/down elevation, and rotation at any angle. It is suitable for in-depth observation of internal scene details or inspection of blind spots.

c) Third-Person: Fixed-point orbiting viewing mode. The view center is fixed on the device; position panning is not available. You may only rotate for observation around the center point (pitch up/down and orbit left/right). It is suitable for real-time monitoring of device status, verification of acquisition coverage, and quick overview of the overall model.

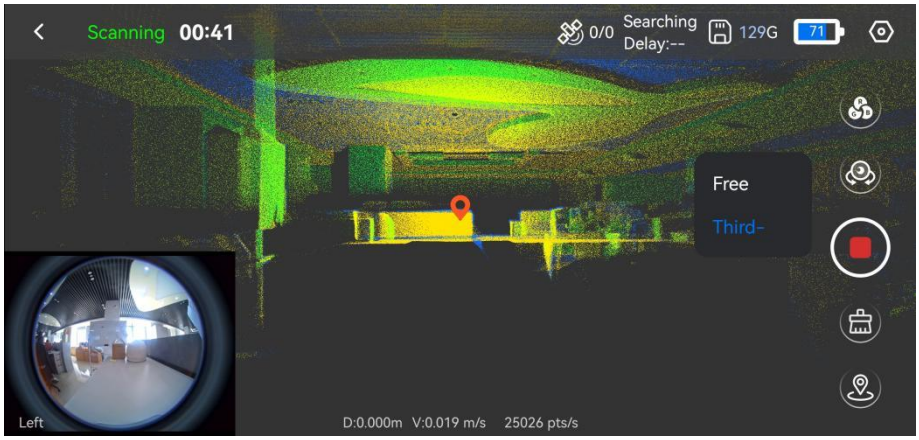


Fig.3-4-5 Point Cloud View

3.4.6 Start/Stop Acquisition

a) The middle button on the right side of the page displays the Start Acquisition/Stop button according to the current scanning status.

b) Tap the Start button to pop up the project editing screen (Fig.3-4-6), where you can edit the project name and select the scan mode.

c) Tap Start Acquisition to initialize the algorithm, IMU, and other components (Fig.3-4-7).

d) After scanning completes, tap the Stop button, and the file will be saved automatically (Fig.3-4-9).

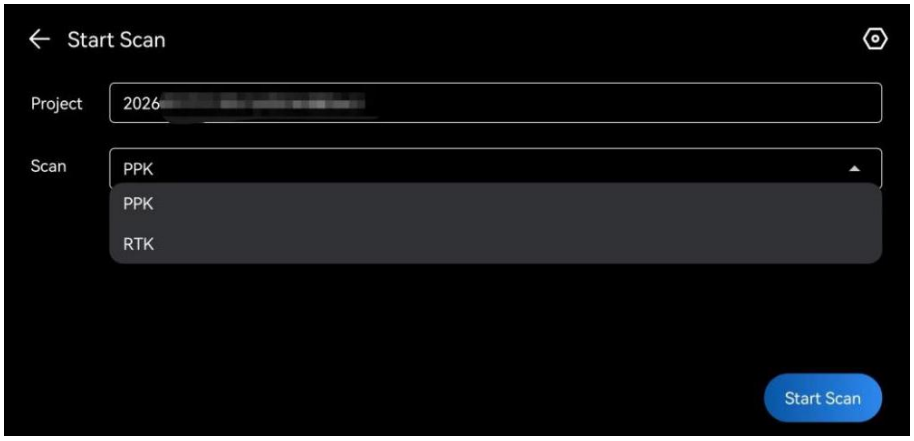


Fig.3-4-6 Project Editing

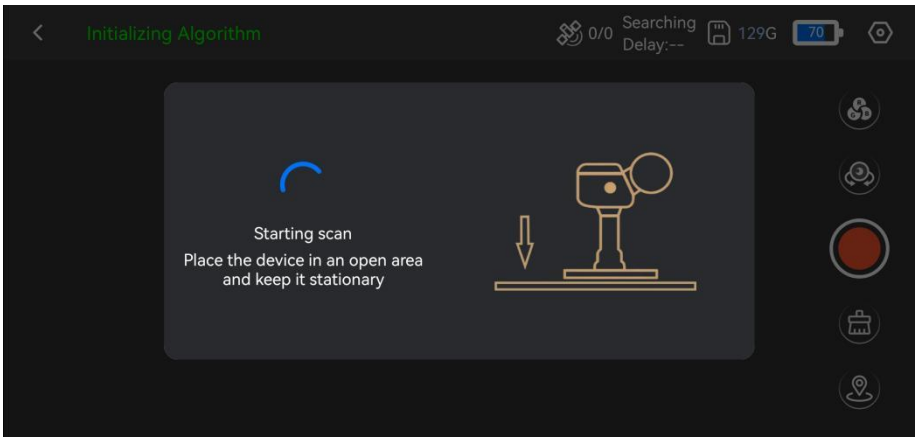


Fig.3-4-7 Initialization

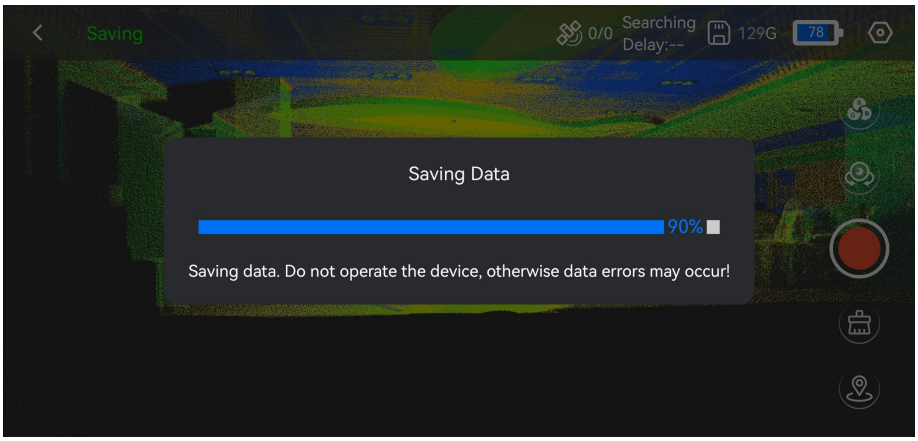


Fig.3-4-8 Data Saving

3.4.7 Point Cloud Clear

a) Tap during scanning to clear the displayed point cloud data on the screen. This operation will not delete the acquired data (Fig.3-4-9).



Fig.3-4-9 Point Cloud Clear

3.4.8 Control Points

a) Tap the last button on the right sidebar of the acquisition page to collect control points if needed during scanning (Fig.3-4-10).

b) Tap [Add] on the Control Point Management screen (Fig.3-4-11) to navigate to the Add Control Point screen (Fig.3-4-12). You may delete existing control points.

c) Add Control Point screen (Fig.3-4-12). You can modify the control point name; the default name is cb_1, and names increment sequentially.

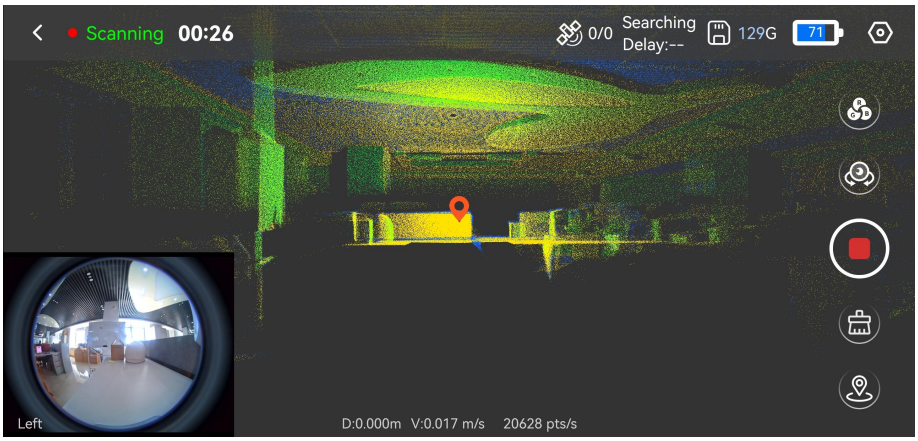


Fig.3-4-10 Control Point Acquisition

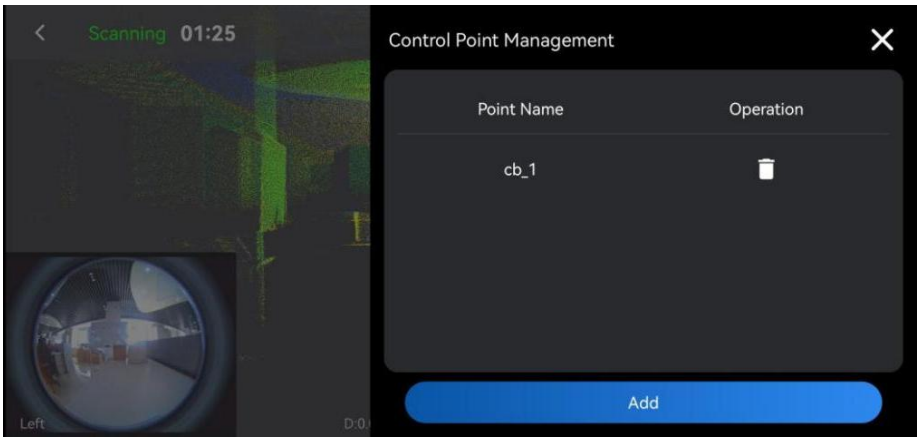


Fig.3-4-11 Control Point Management

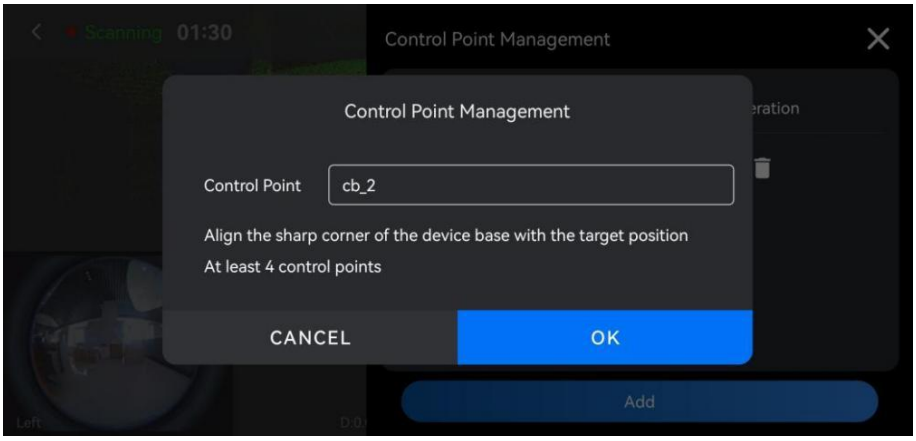


Fig.3-4-12 Add Control Point

3.4.9 Scan Information

a) The bottom of the page displays the scan information for the current session (Fig.3-4-13) including:

1) D: Cumulative distance of the current scan;

2) V: Current moving speed of the device;

3) Point Cloud Frequency: Number of point cloud points acquired in real time per second.



Fig.3-4-13 Scan Information

3.5 SCAN SETTINGS

3.5.1 SLAM Settings

a) Tap the first button on the left side of the Scan Settings screen to switch to SLAM Settings (Fig.3-5-1).

b) Three display modes are available: Smooth, Balanced and High Performance. These modes affect only the display effect on the handset screen and will not impact data acquisition results.

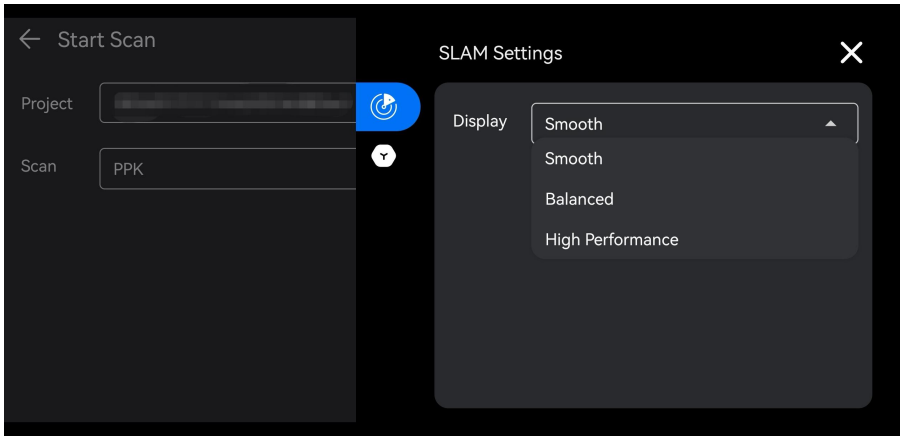


Fig.3-5-1 SLAM Settings

3.5.2 RTK Settings

a) When RTK is selected as the scan mode, Ntrip support connection is required.

b) Ntrip Differential Source Selection: Two options are available, namely CORS and Controller Data Link (supported by P8D handheld controller). The interface will switch to corresponding configurations according to the selected option.

c) Connect/Disconnect: When no differential connection is established, tap to connect to the target differential source, and a pop-up window shows the current connection status. When a differential connection is active, tap to disconnect the current differential source.

d) The RTK Settings button is greyed out during scanning and cannot be configured.

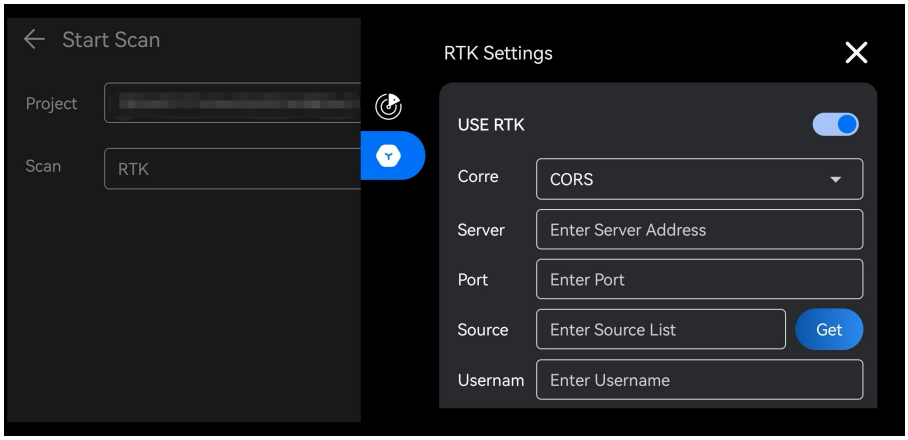


Fig.3-5-2 CORS

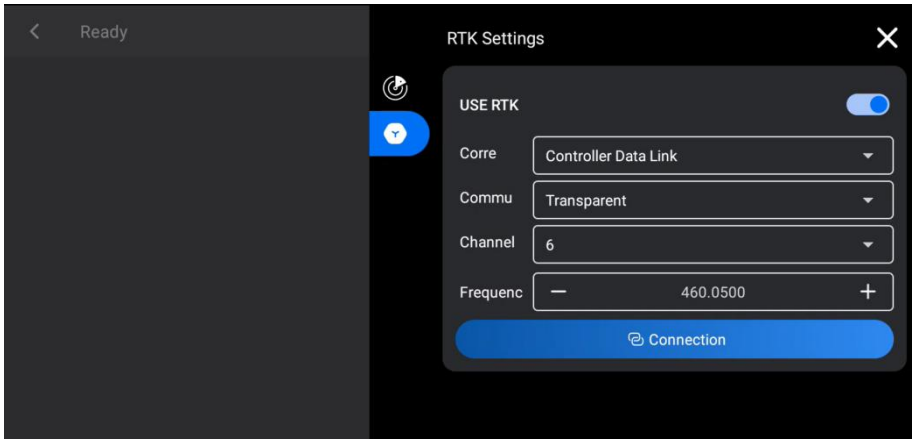


Fig.3-5-3 Controller Data Link

CHAPTER 4 TROUBLESHOOTING

1. Failed to Connect to the Device

If the software fails to connect to the device, this is usually because the mobile phone is not connected to the device's Wi-Fi network or the device is not powered on properly. It is recommended to recheck the network connection and verify the device status.

2. Stuttering Display During Scanning

When the scan covers a large area or runs for a long time, the system needs to process massive amounts of data, which may cause display stuttering. In this case, it is recommended to lower the display mode to improve smoothness.

3. Failure to Obtain Positioning Continuously

If the device fails to obtain positioning for an extended period, heavy signal obstruction may be the cause, such as indoors or near high-rise buildings. It is recommended to move to an open area and retry.

4. Failed to Enable High-Precision Positioning

This issue is usually caused by abnormal network conditions or incorrect parameter configurations. Please check the network connection and confirm that all parameters are entered correctly.

5. Scanning Interruption

If scanning is interrupted unexpectedly, it may be caused by insufficient device power or storage space. It is recommended to check the device status before starting a scan.

CHAPTER 5 DOWNLOAD LINK

https://www.comnavtech.com

CHAPTER 6 APPENDIX

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