Larger Sensor, Mechanical Shutter,
Precision in Point Clouds.

SHARE SLAM S20

--Operation manual

IDEAL FOR 3D MAPPING

Content

01

Product Introduction

Device Introduction

Parameter

Device Weight

1079g

Protection Class

IP5X

Working Temperature

-20℃~ + 50℃

Storage Temperature

-20℃~+60℃

Working Time

150min

Charging Time

120min

Data Transmission

TF Card/Type-C

Sensor Size

13.13*8.76mm(1 inch)

Pixel Size

2.4μm

Image Size

3504*4672

Effective Pixels

16 MP

Shutter Type

Mechanical/Electronic Shutter

Aperture

F2.8

Focal Length

3.5mm

Lens FOV

Horizontal: 140°

Vertical: 200°

RTK Accuracy

Horizontal: 0.8cm + 1ppm

Vertical: 1.5cm + 1ppm

Point Cloud Thickness

≤ 1cm

Relative Accuracy

≤ 1cm

Absolute Accuracy

≤ 5cm

Storage Capacity

256G

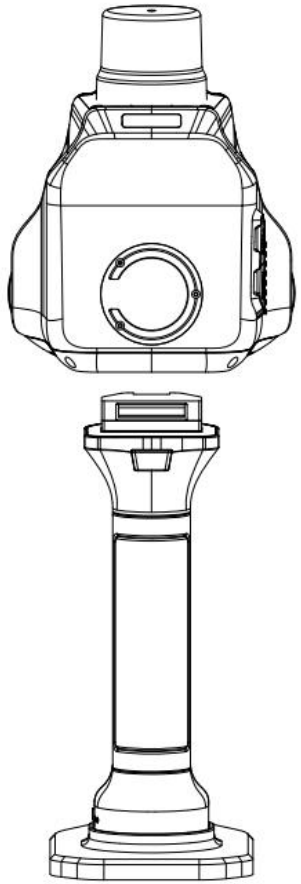
LiDAR Installation

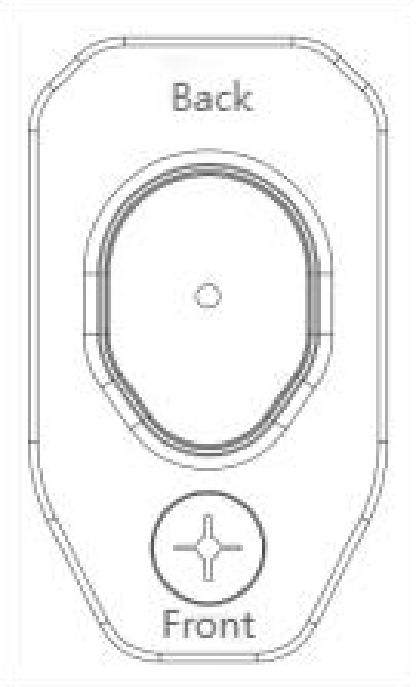
Tilted 25° to the ground

02

Data Collection

Installation and Removal





Installation Steps:

- Connect the positioning plate to the bottom of the battery handle, insert the screws and tighten them.
- Align the power interface at the top of the handle with the power interface at the bottom of the scanner.
- Gently press the scanner down and insert it directly
- A click sound indicates successful installation.

Removal Steps:

- While holding the battery handle button, pull the scanner upward.

Power on/off and Charging

Power on/off:

- Press the power button briefly and then hold it to turn the device on or off.

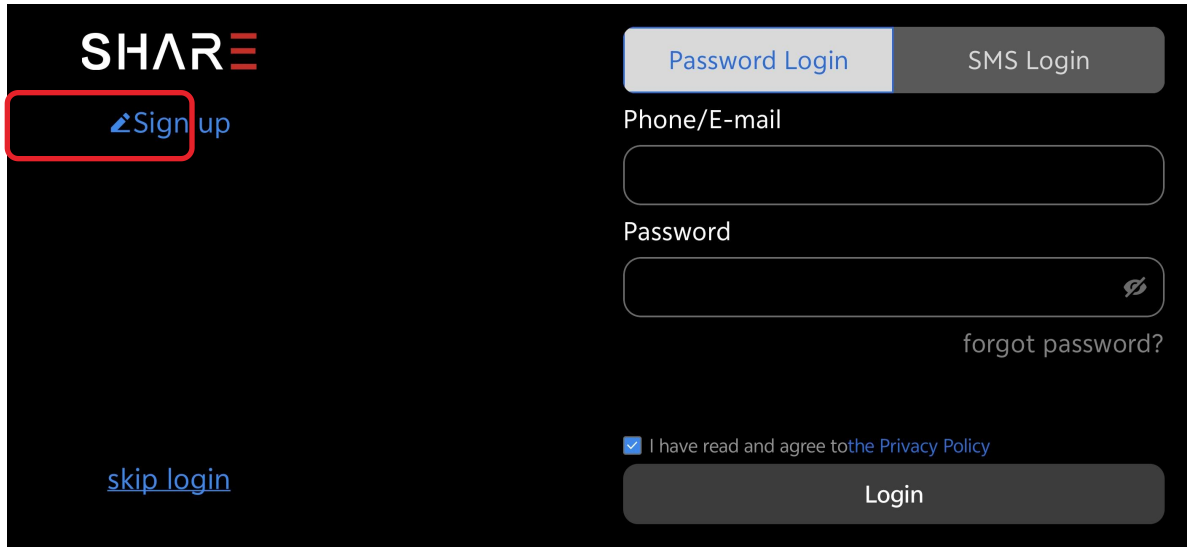
Charging:

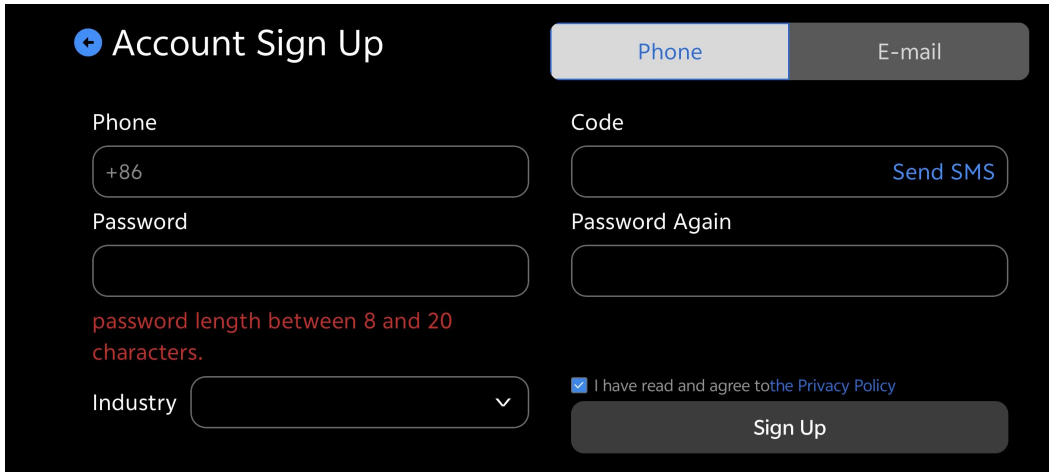
- Connect the charging cable to the Type-C port at the bottom of the battery handle. The power indicator lights will turn green one by one when it is in normal charging status.

Charging Precautions:

- Please use the original cable and plug provided in the transport box to charge your device.
- When charging, please remove the main body of the device and charge only the battery handle.
- Before charging, please ensure that the battery handle is in the off state.

First Use -- Sign Up





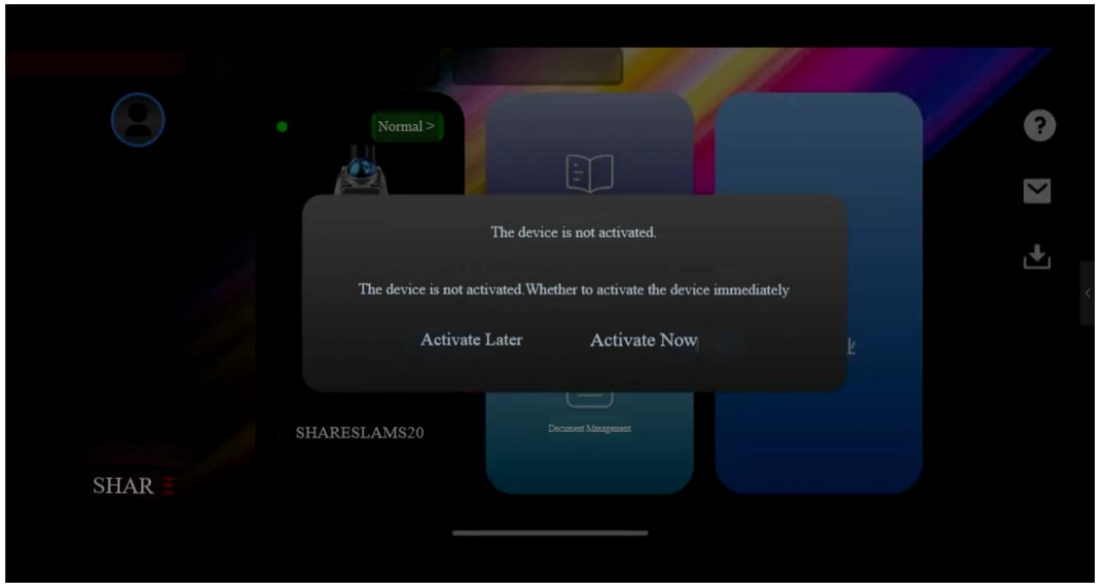
Sign Up:

- Click the “Sign Up” in the upper left corner.
- You can register an account through two methods: by phone number or by email.
- According to the instructions, enter the information and click on Sign up to complete the account registration.

Notes:

- The device must be activated by registering an account and logging in for the first time.
- Without logging in, activation cannot occur, and therefore, the system cannot be used.
- After activation, no login is required for subsequent use. You can click the 'Skip Login' option in the lower left corner to directly collect data for assignments.

First Use -- Activation



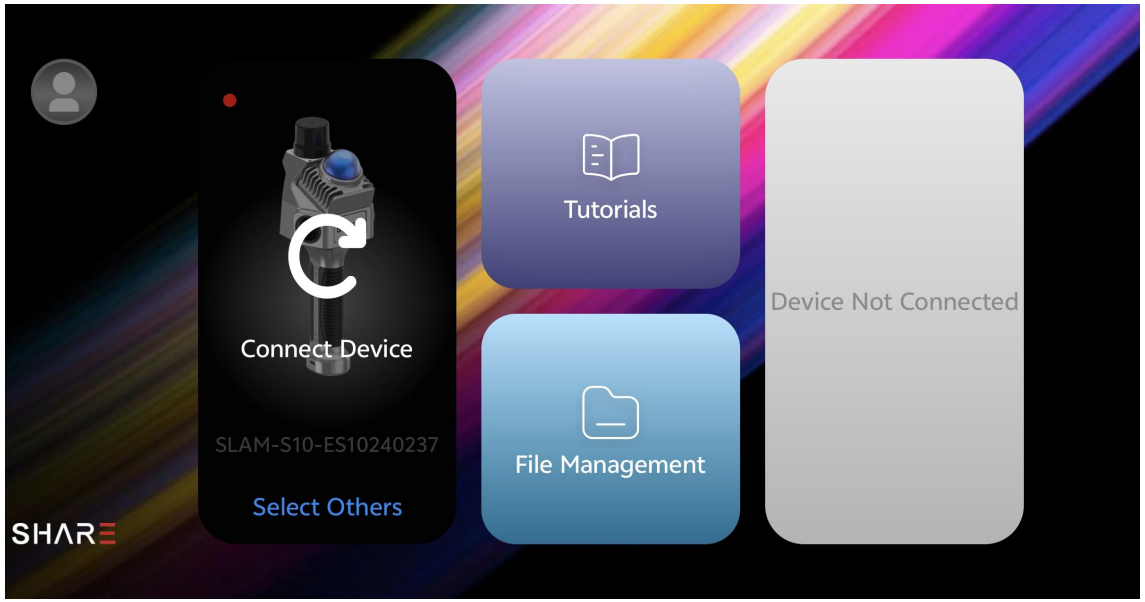
Activation:

- When the device is not activated, a pop-up window will appear when you click Start.
- Click "Activate Now" and enter the corresponding information.
- After tapping Activate, wait for the screen to show that the activation is successful.

Notes:

- If it is not activated, the device and APP can be connected normally.

Device Connection



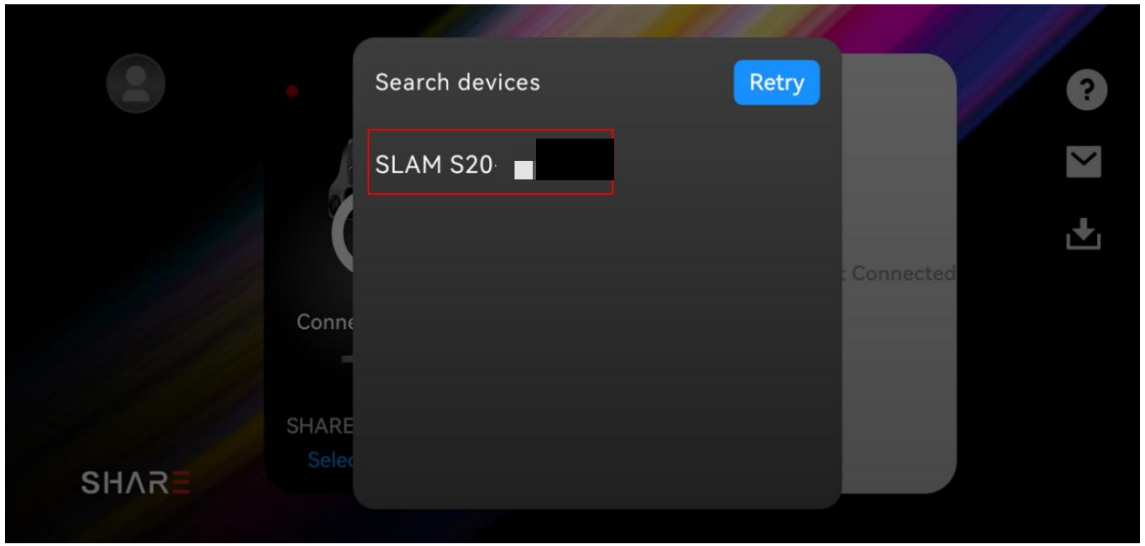
Device Connection:

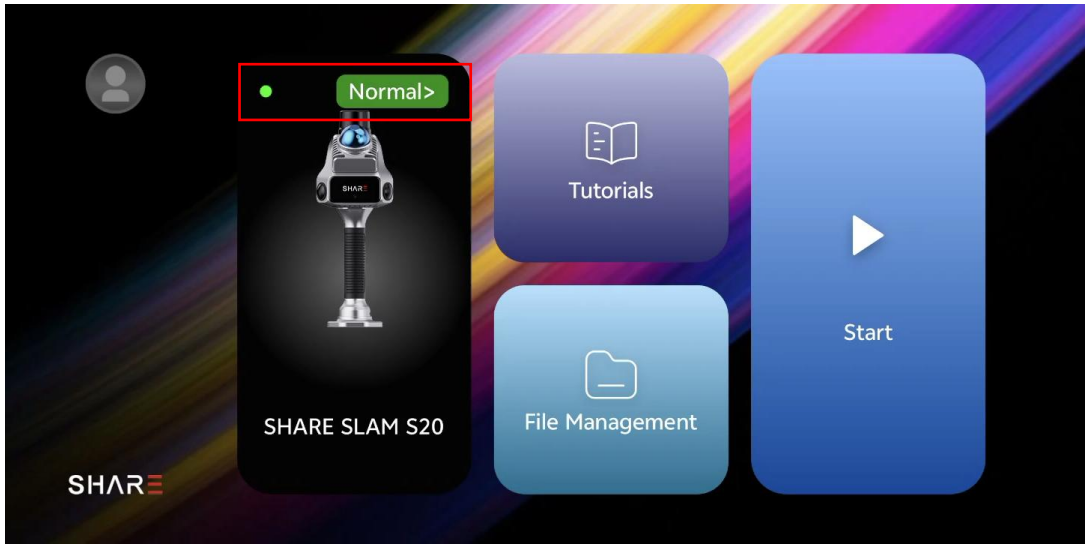
- Turn on the mobile phone's Wi-Fi and Bluetooth.
- Click on 'Select Others' to choose the SHARE SLAM S20 device.

Notes:

- The software supports SHARE SLAM S10 and SHARE SLAM S20.
- To connect a device for the first time, you need to select the SN number of the device.
- After the device has been connected for the first time, subsequent connections will automatically recognize the SN.

Device Connection





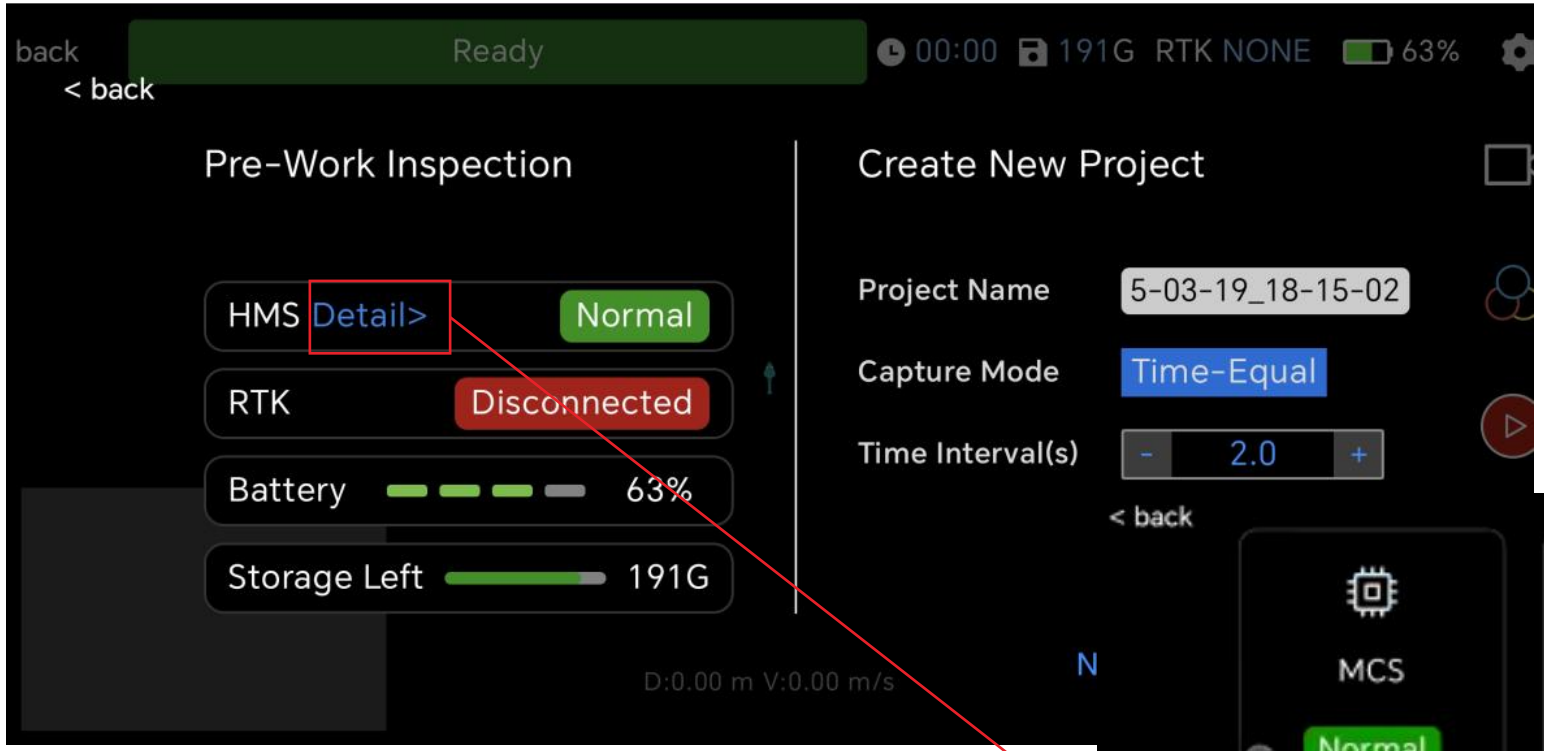
Device Connection:

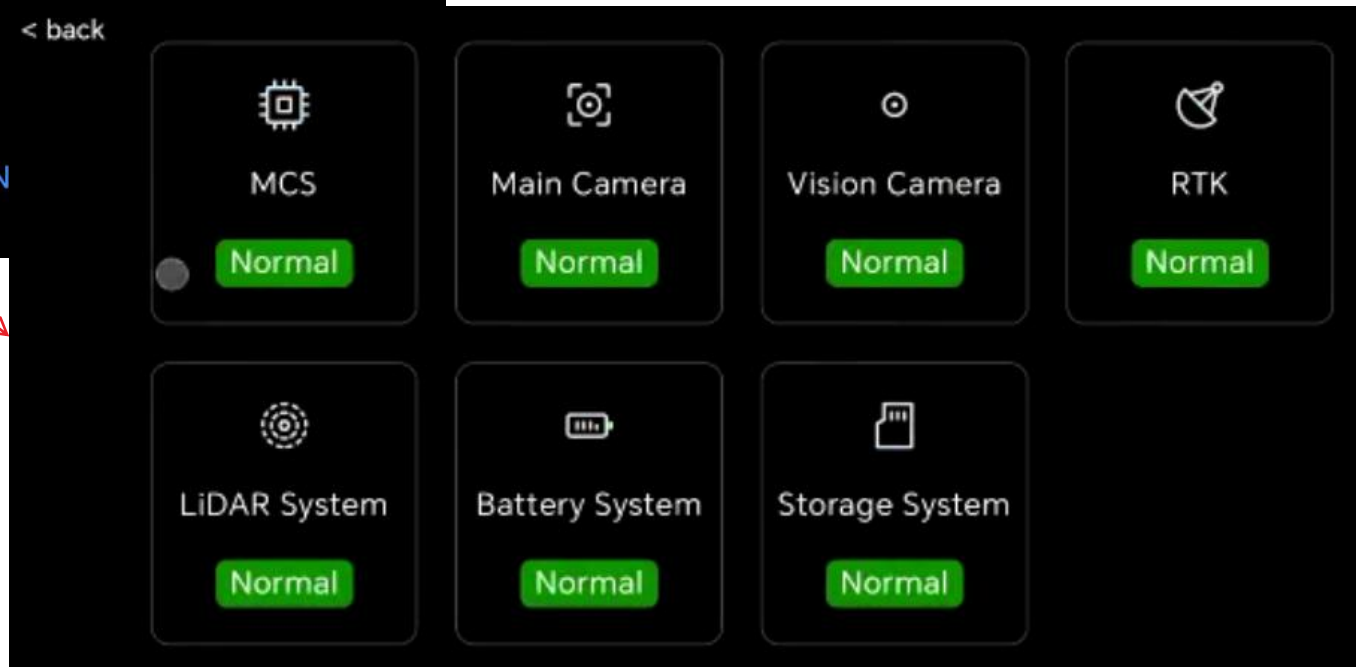
- Select the SN number of the device
- The main interface displays that the device model and connection status is normal, indicating a successful connection.
- Click "Start" to enter the operation interface.

Notes:

- The software supports SHARE SLAM S10 and SHARE SLAM S20.
- To connect a device for the first time, you need to select the SN number of the device.
- After the device has been connected for the first time, subsequent connections will automatically recognize the SN.

Operation Flow -- Device Status Confirmation

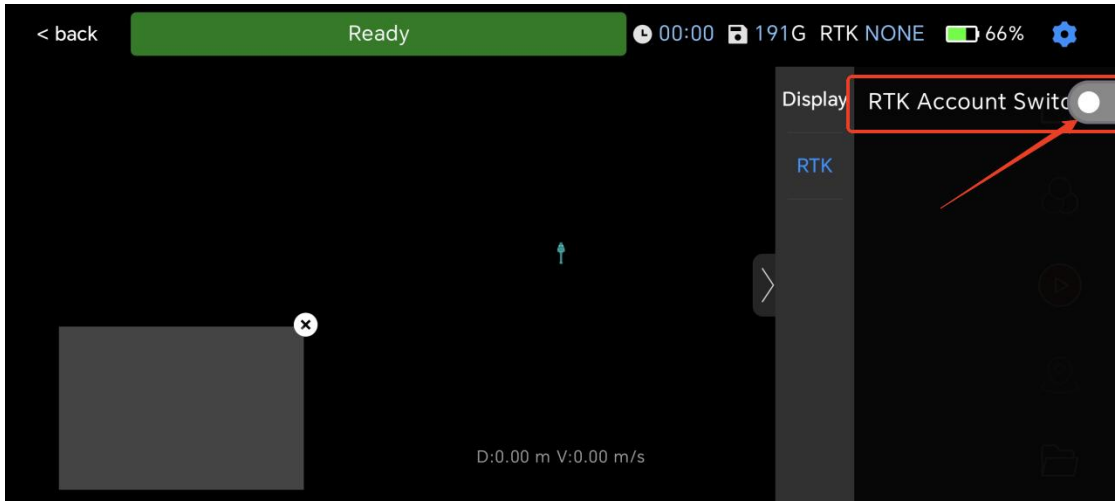


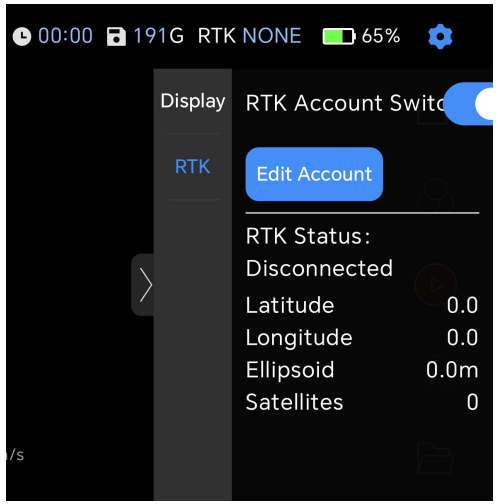


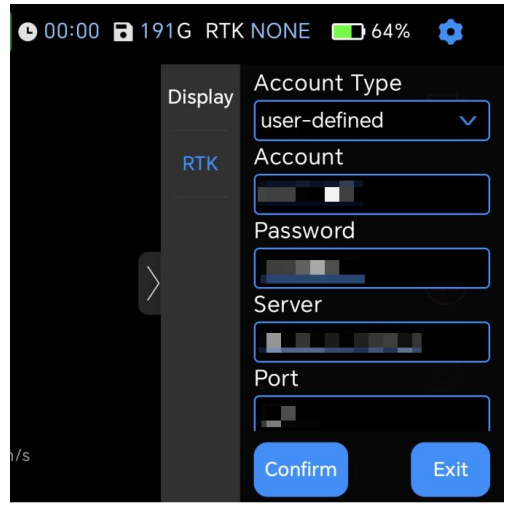
Pre-Work Inspection:

- Click on 'Details' to view the device status.
- Confirm whether the memory card is properly inserted.
- Confirm that the firmware for all components is up to date.

Operation Flow -- RTK Configuration







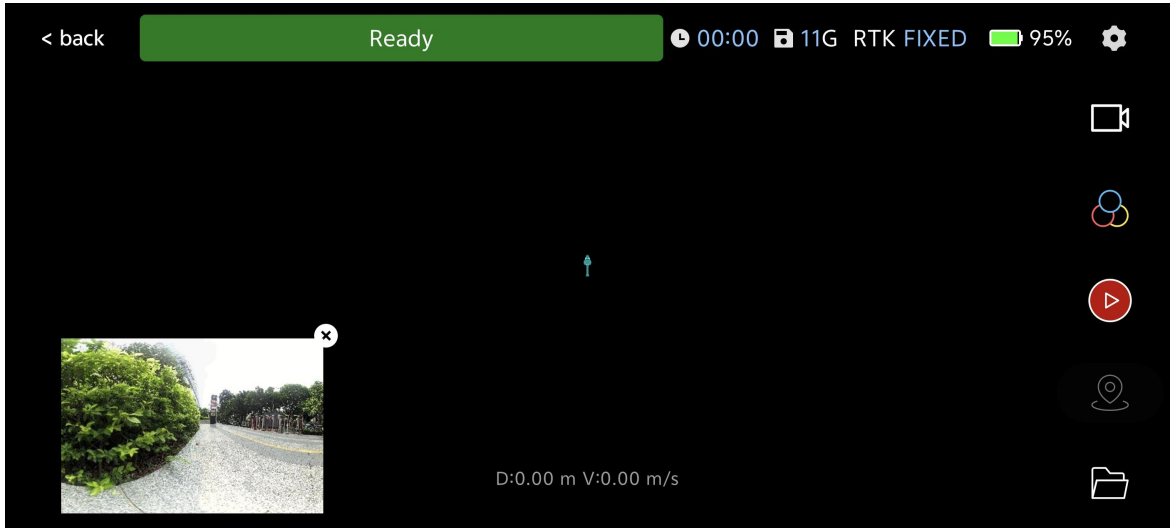
RTK Configuration:

- Click the "Settings" in the upper right corner to enter the "RTK" interface.
- Turn on the 'RTK account switch' button and click 'Edit account'.
- Select the account type, and after entering the account and password, the rest of the information will be automatically filled in.
- Select the corresponding coordinate system according to your needs and then click 'Confirm'.

Notes:

- The RTK account can be set up before the task, and after configuration, wait for the fixed solution before starting the task.
- After entering the RTK account, the device will default to retain the information of the last entered account.
- After the device restarts, you need to re-enter the RTK interface for configuration.

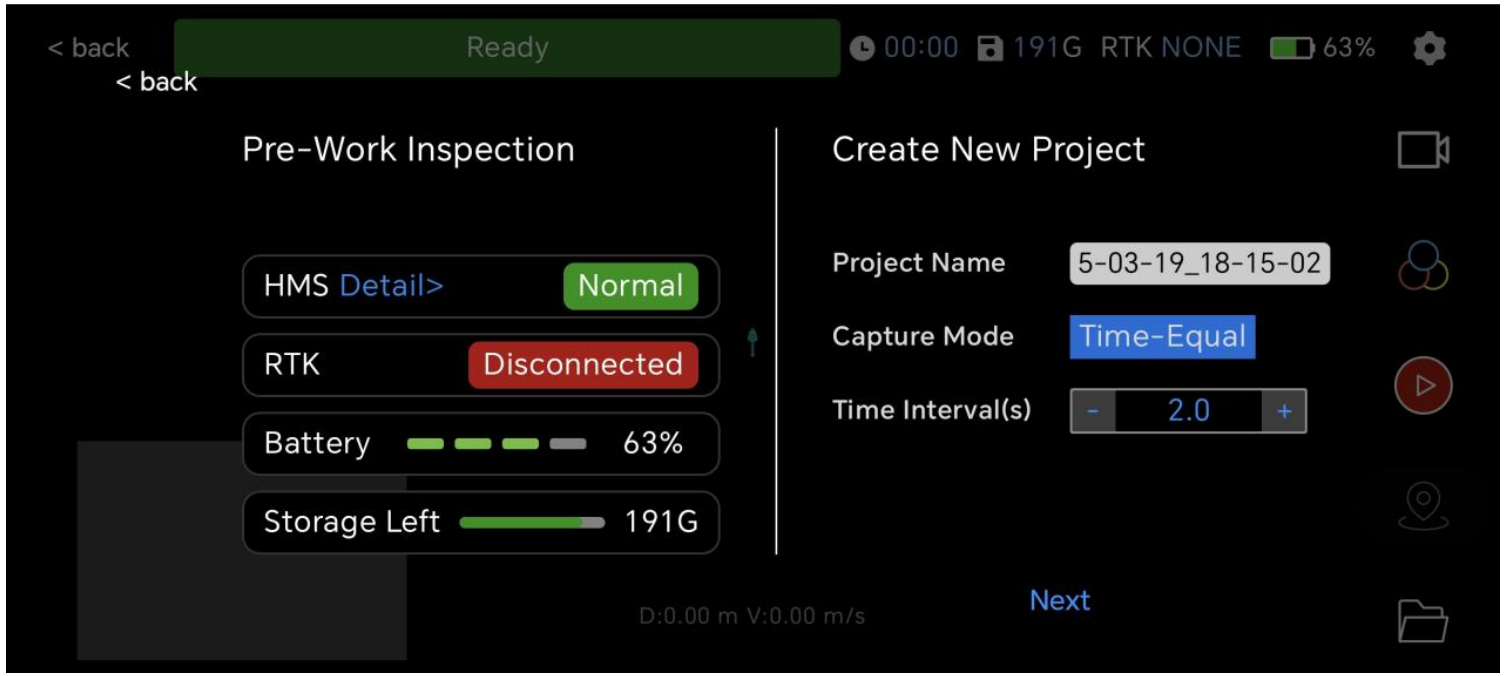
Operation Flow -- RTK Configuration



RTK Configuration:

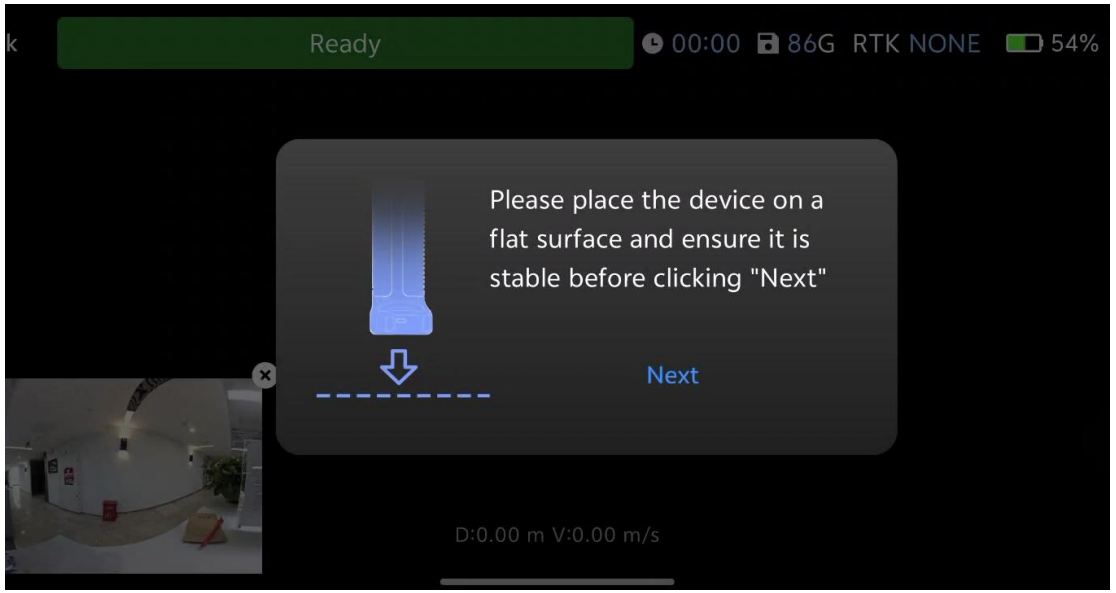
- After the prompt 'Setting successful', wait for the RTK status to change to 'Fixed solution'.
- You can click 'RTK Fixed Solution' to check the RTK status.

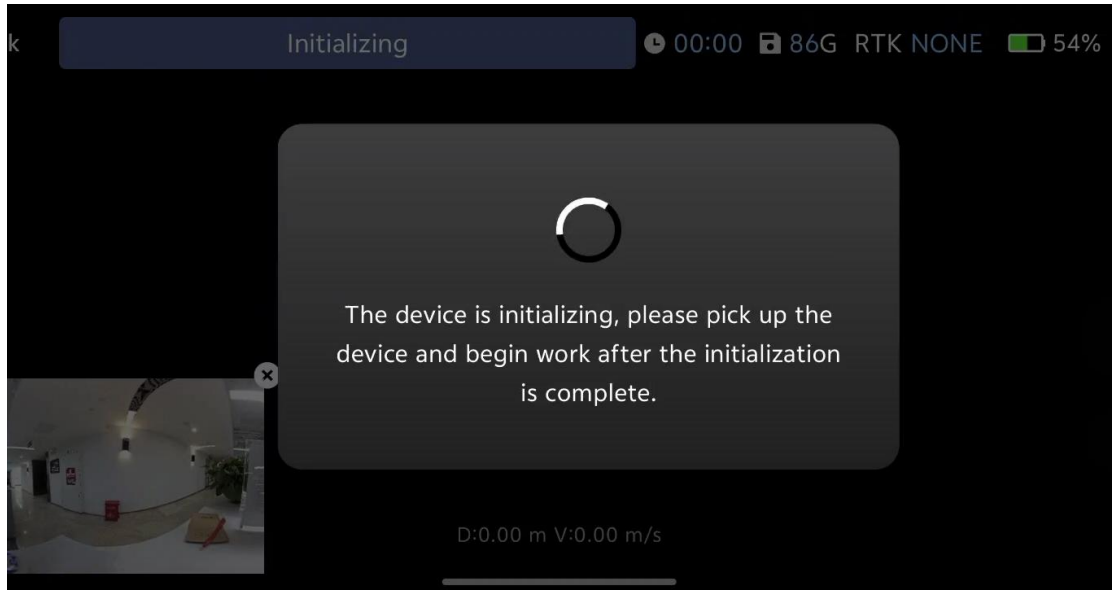
Operation Flow -- New Project



- The project name is defaulted to the date and time of creation and can be modified by the user.
- The default shooting interval is 2 seconds; it is recommended to use the default parameters for the operation.
- Click 'Next' to start the initialization steps.

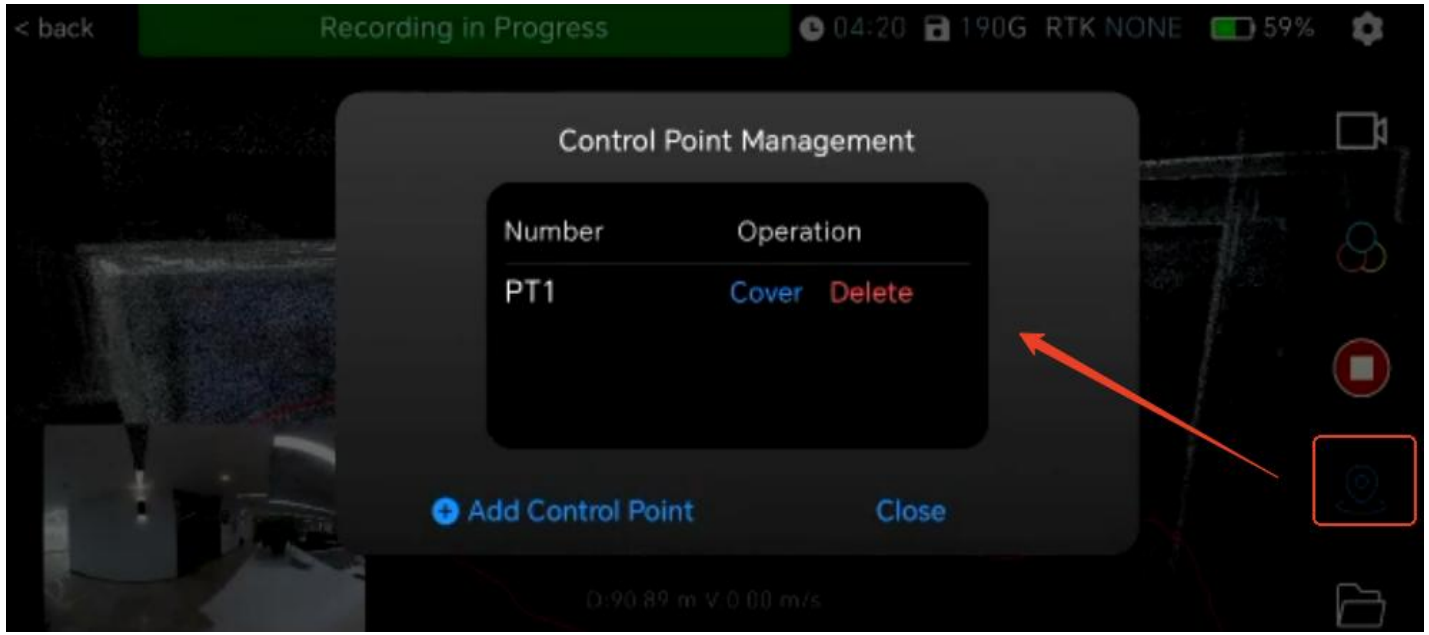
Operation Flow -- Initialization

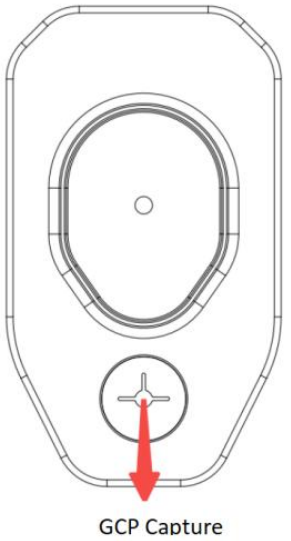




- Before the initialization process begins, place the device on a horizontal surface.
- Do not move the device during initialization.
- Wait until the initialization is complete and the prompt disappears, and the real-time point cloud appears, and then pick up the device and start.

Operation Flow -- GCPs Collection

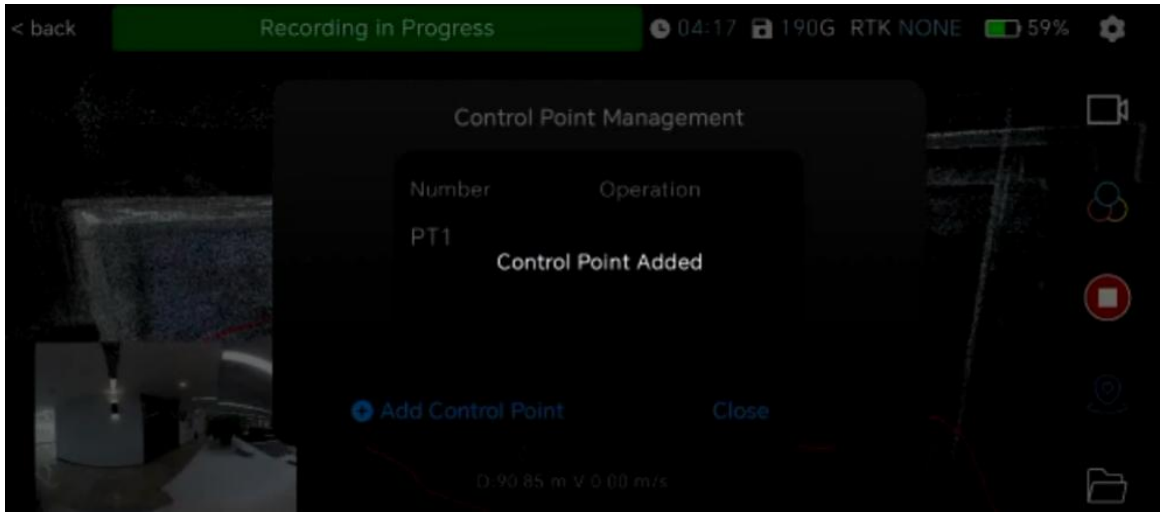




GCPs Collection:

- Click the control point icon on the right.
- On the "Control Point Management" page, click "Add Control Point".
- After entering the corresponding control point number, align the crosswire of the device with the control point to be collected, and click "OK".
- According to the prompts, stand still for 10 seconds and wait for collection.

Operation Flow -- GCPs Collection



GCPs Collection:

- Wait for the screen to display "Control Point Added Successfully" and then collect the next control point.

Notes:

- Control point acquisition must be done after the start of the project.
- Control point numbers can be set out of order.
- Do not move the device during the acquisition process, and remain still until the prompt disappears.

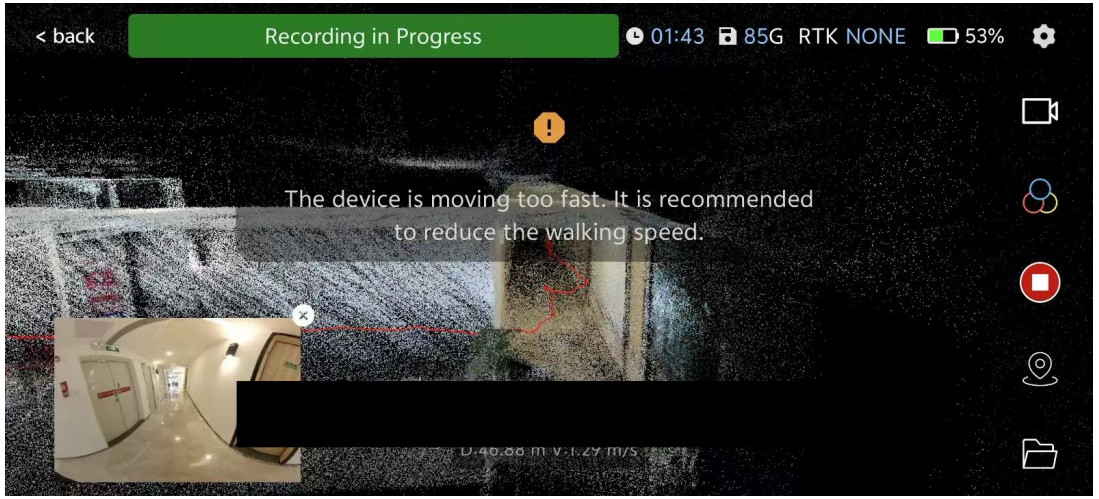
Overwrite:

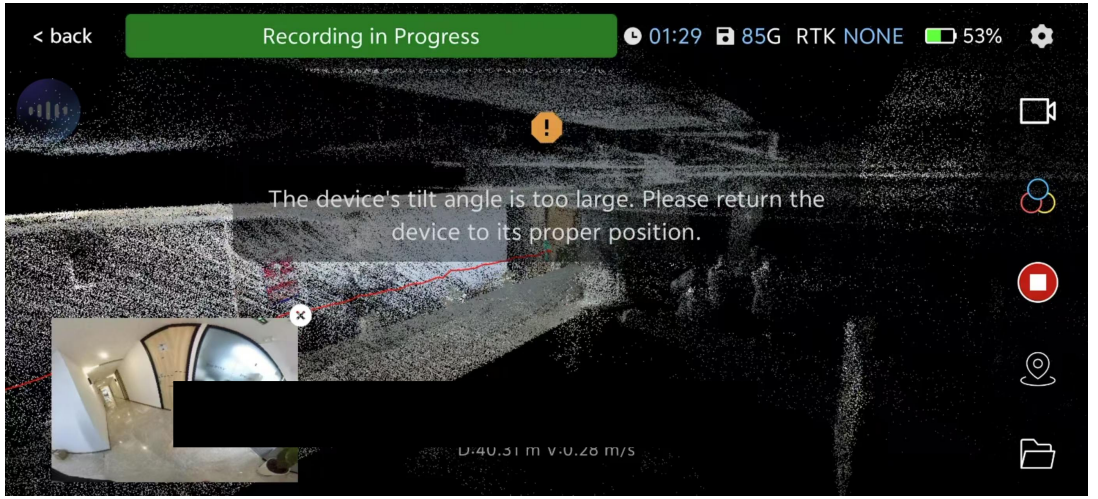
- Aim the crosshair at the control point and click "Overwrite" to re-collect the point and overwrite the last acquisition data.

Delete:

- Click "Delete" to delete the collected data of the control point.

Operation Flow -- Tips for Operation

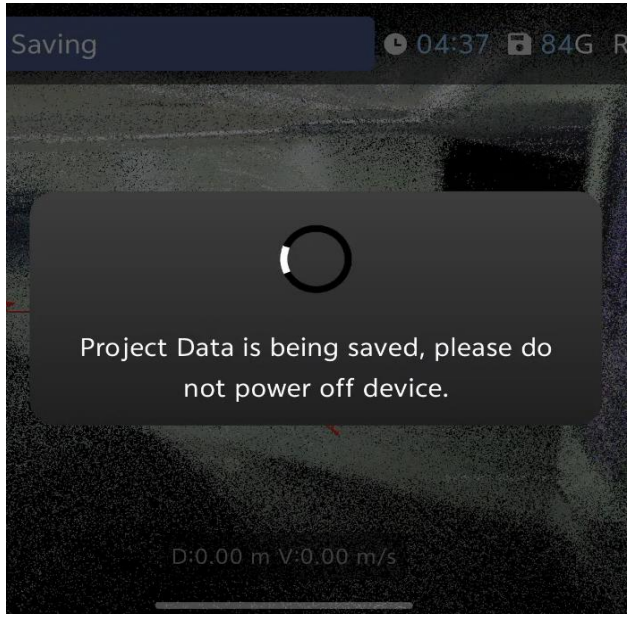


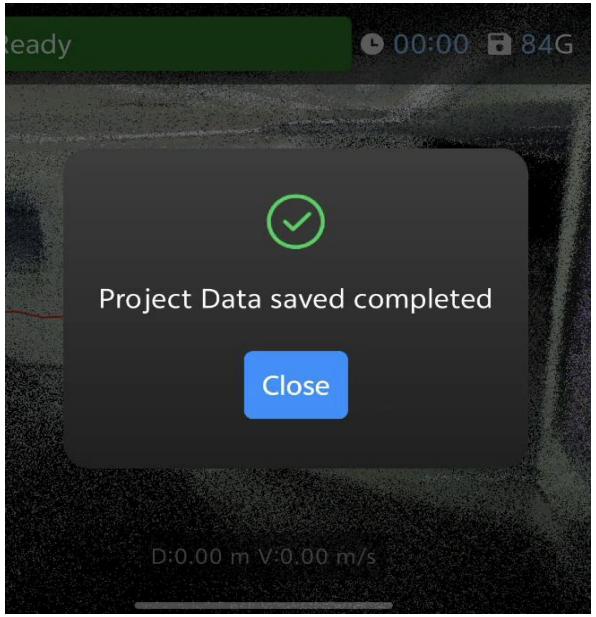


During the operation:

- If the prompt as shown in the figure appears, please follow the prompts to avoid abnormal data collection and processing.

Operation Flow -- Data Saving





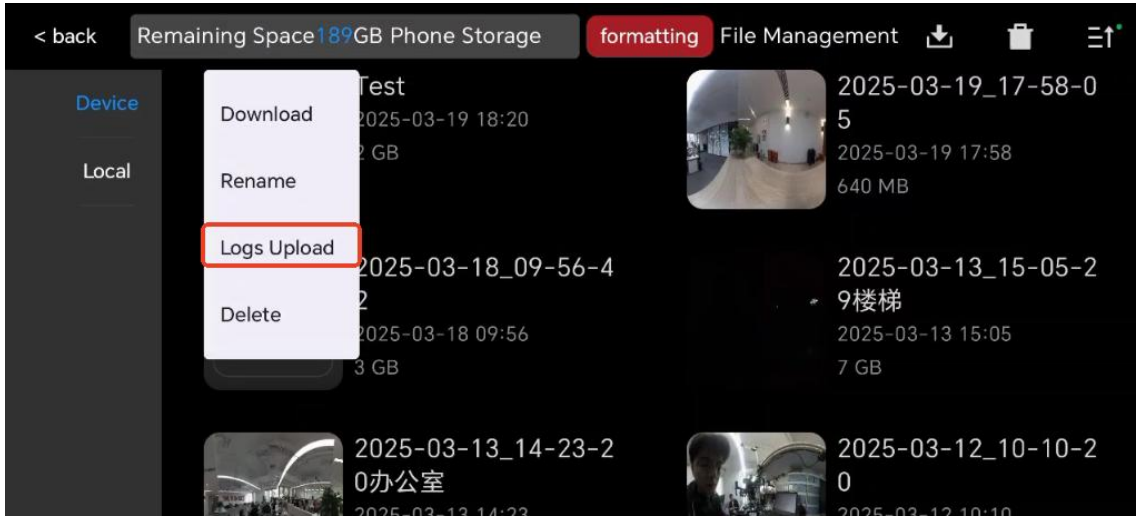
Data Saving:

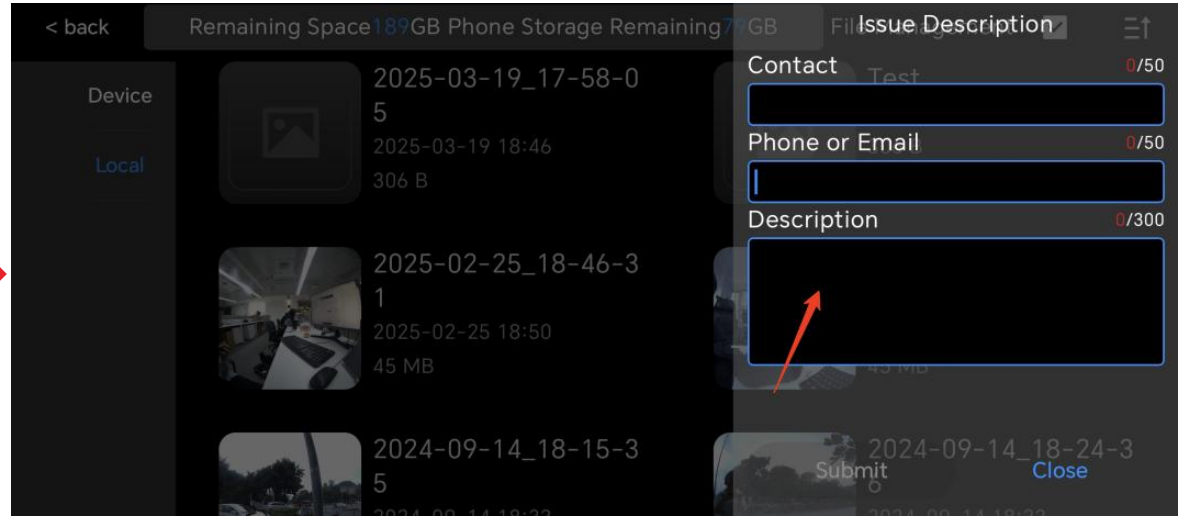
- Click the job button on the right to save the data, and wait for the data to be saved according to the pop-up prompts.
- After the display "Data save completed" is displayed, you can close the app and the device.

Notes:

- Do not turn off the device during the data saving process, if the device is turned off during the saving process, the data storage may be incomplete and cannot be solved.
- Pay attention to the battery power during the operation process, reserve the power of data storage, and avoid the automatic shutdown of the device when the power is insufficient during the saving process.

Upload LOG

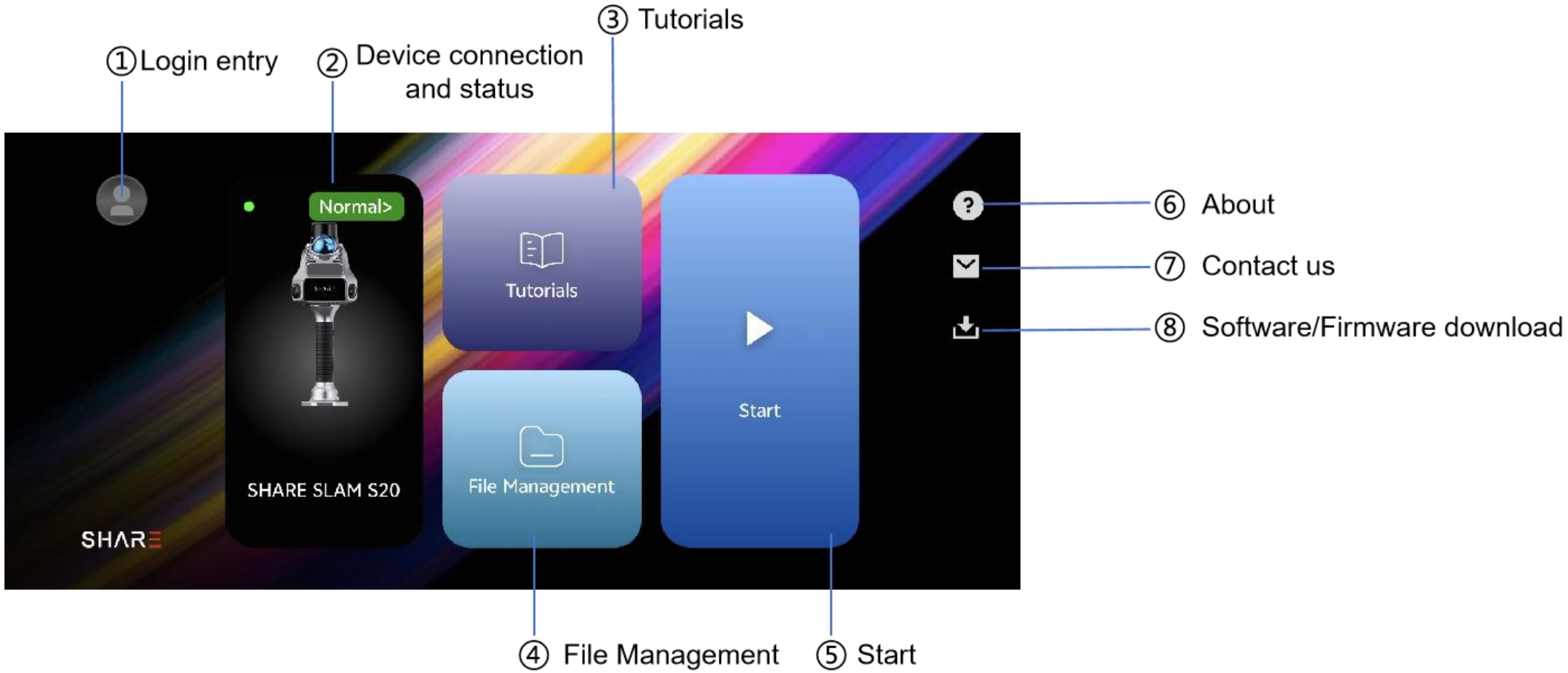




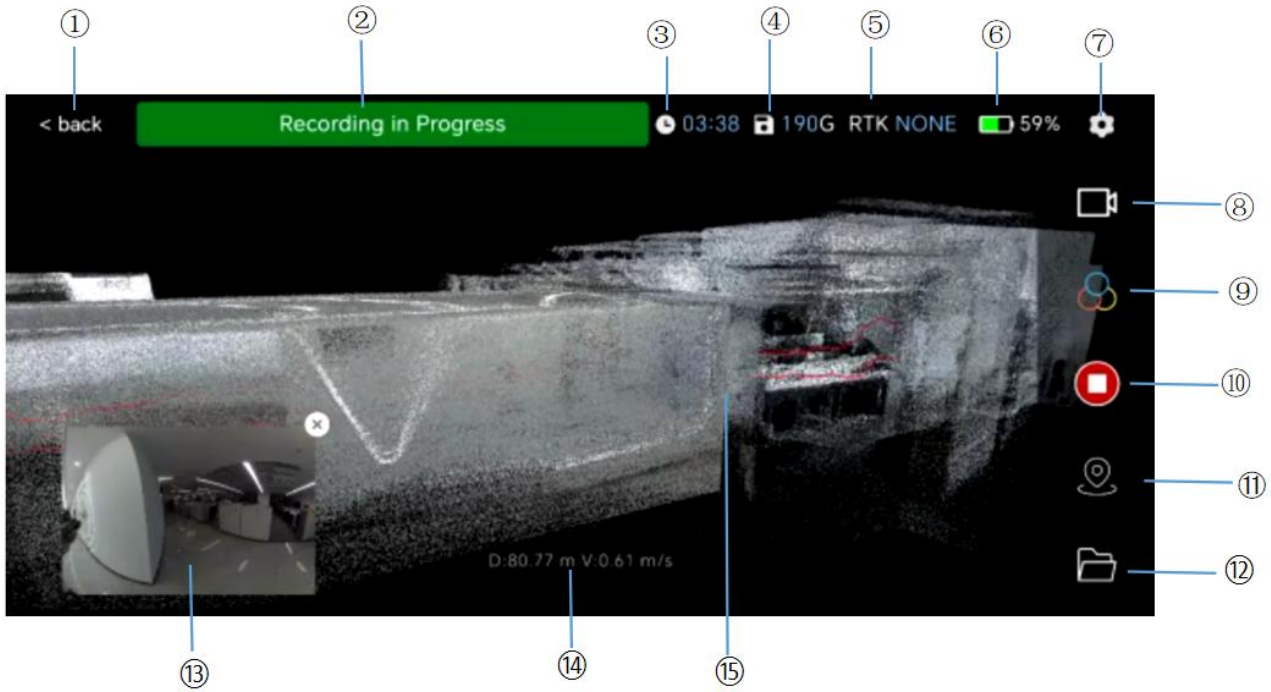
Upload LOG:

- After logging into your account, you can upload logs.
- Enter 'File Management', long press the issue project that needs to be uploaded, click 'Log Upload', fill in the relevant information, and upload.
- For data collection issues, you may upload logs and contact SHARE Technical Support.

Interface


①Login entry
② Device connection and status
③ Tutorials
Normal>
Tutorials
Start
File Management
SHARE SLAM S20
SHARE
⑥ About
⑦ Contact us
⑧ Software/Firmware download
④ File Management
⑤ Start

Interface



①Back : Click to return to the main interface of the software;

②Status Description: prompts the current status of the project;

③Working Time: Prompts the working time of the current project;

④Remaining Storage Space: SD card remaining space;

⑤RTK Status: Prompts the status of the RTK;Click to view details;

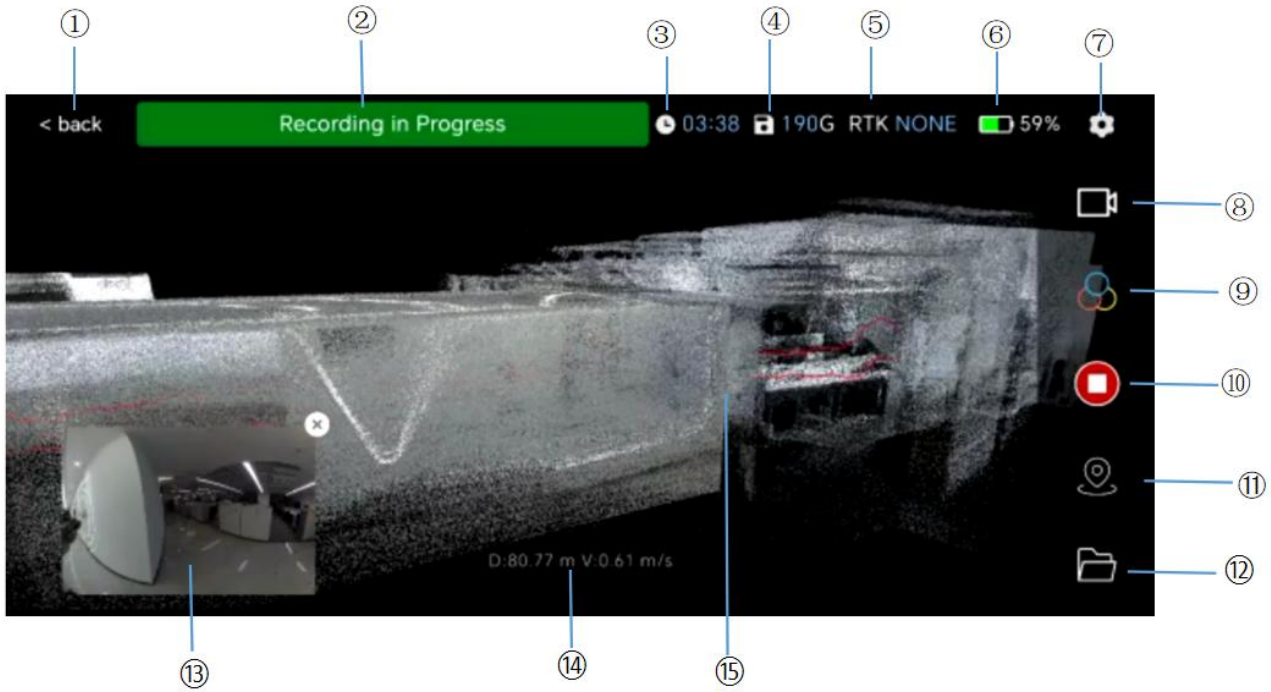
⑥Power: Device power description;

⑦Setting: Project parameter setting button, click to set relevant parameters;

⑧Roaming mode: Switch roaming modes, including free roaming and third-person;

⑨Point Cloud Mode: Switch the display mode of point cloud in the three-dimensional scene.Supports three modes: color point cloud, intensity coloring and elevation gradient;

Interface



⑩**ON/OFF:** Control the start and end of project;

⑪**Control Point Management:** Operations such as adding, deleting and overwriting control points of the project can be performed;

⑫**File Management:** Jump to the file management page, where you can manage, delete, view and do other operations on local (save in mobile) or device project data;

⑬**Image:** View image information taken by the device;

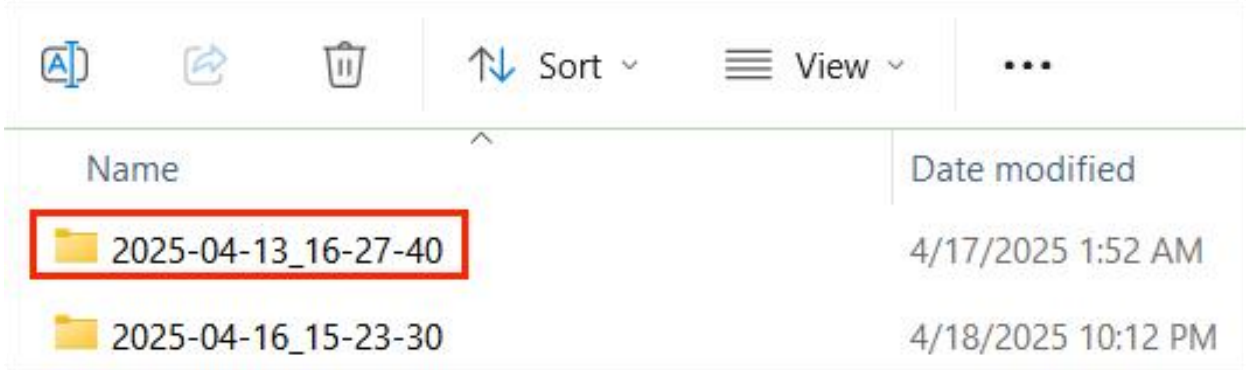
⑭**Cumulative distance/travel speed:** Displays the accumulated length of data collected in the current project and the current travel speed;

⑮**Three-dimensional Scene:** Display point cloud and trajectory lines, and can be manually operated to view details.

03

Data Processing

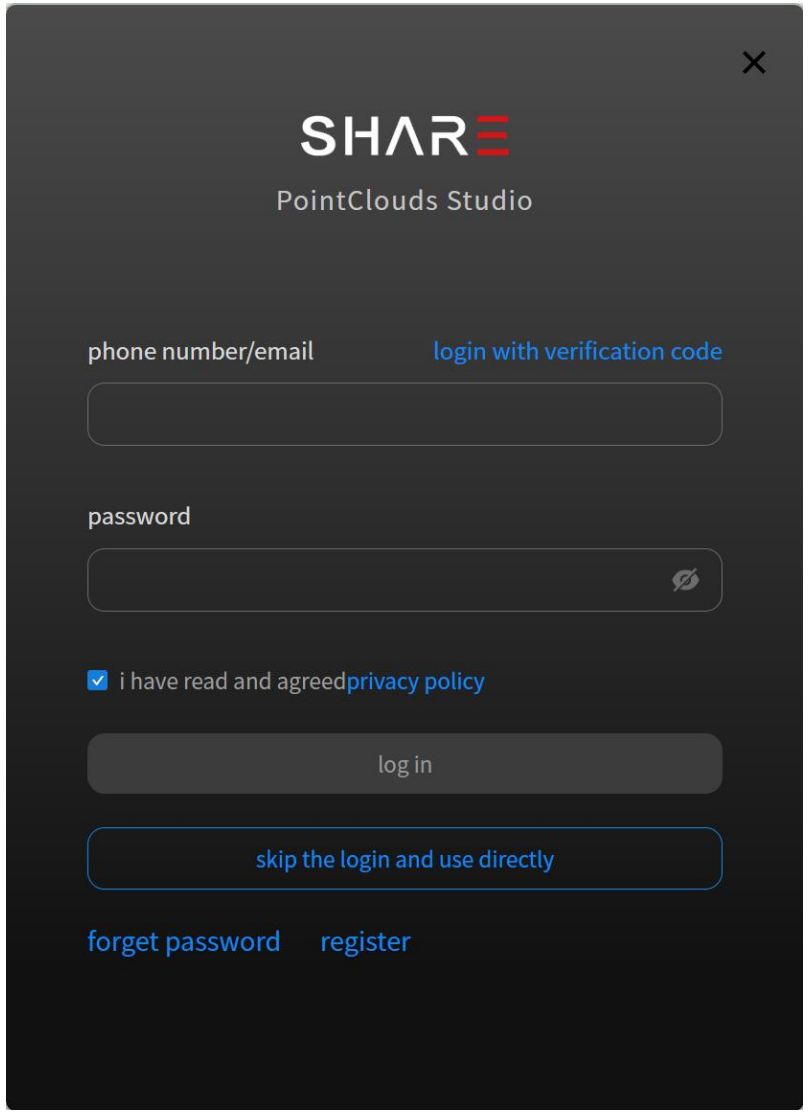
Data Copy



Procedure:

- Take out the TF card on the right side of the main body of the device and insert it into the card reader, and insert the card reader into the computer.
- When you turn on the computer, you can read the drive letter named "SLAM-S20".
- After opening it, find the data you want to process, and copy and paste the entire folder to your computer.

Open the Software



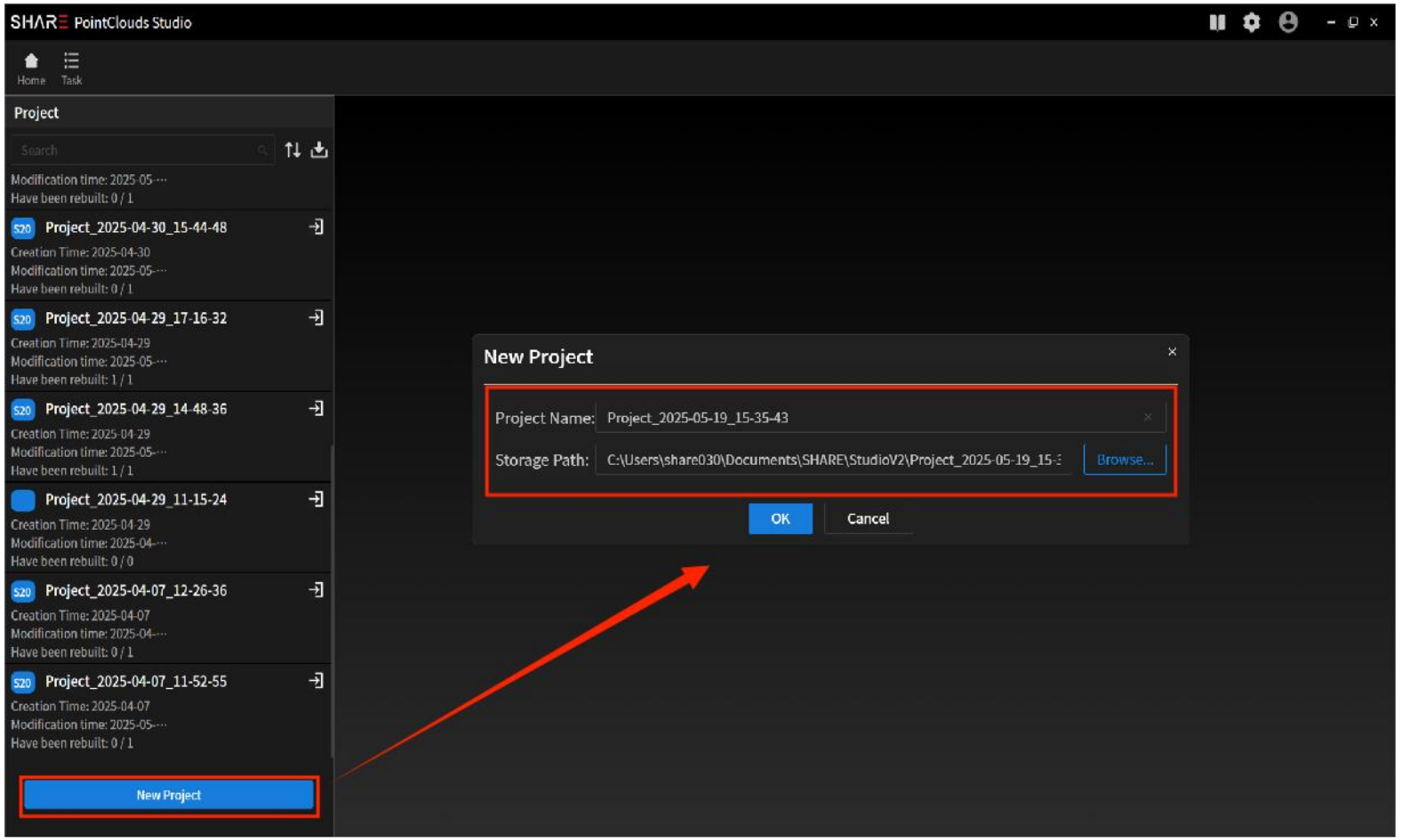
SHARE PointClouds Studio:

- Scan the QR code on the transport box or visit the SHAREUAV official website to download the software installation package.
- After installing the software, open it, register, and log in.

Notes:

- You can directly use the Point Cloud Manager to process data without logging in.
- Data processing does not require a dongle.
- S10 data can be processed (dongle needed).
- If you need to upload logs, you must log in first.
- Users who have used the SHARE Data Manager can log in with their SHARE Data Manager account, without the need for re-registration.

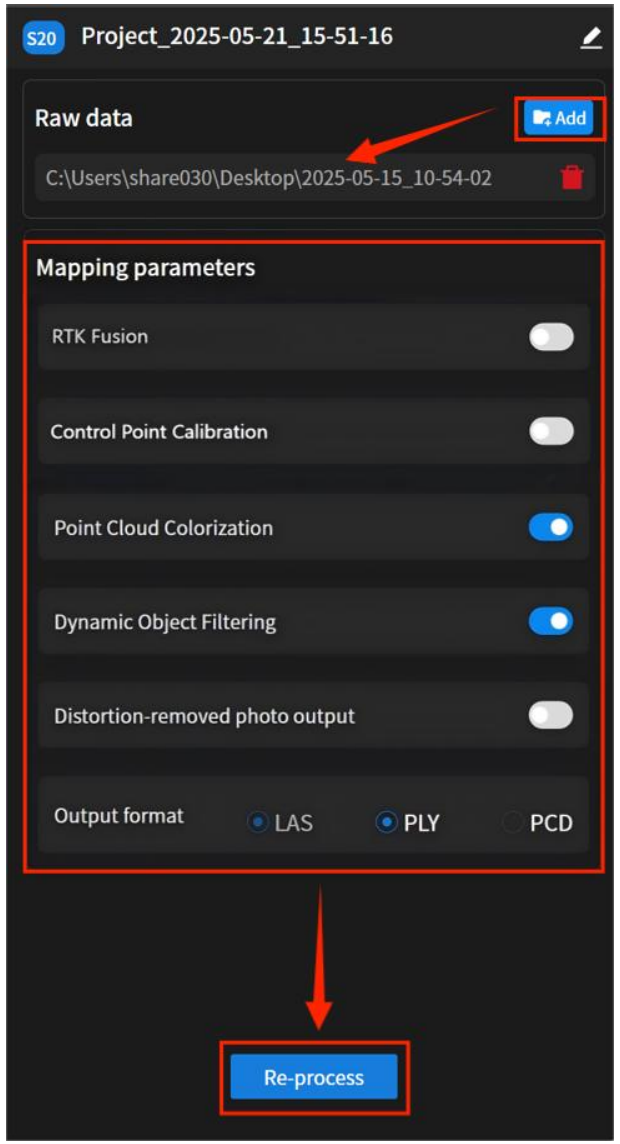
Point Clouds Calculation Process



Procedure:

- Click New Project to customize the project name and storage path on the New Project page.
- The project name and storage path will be automatically filled in according to the default format and default path, and click "OK" after confirming that they are correct.

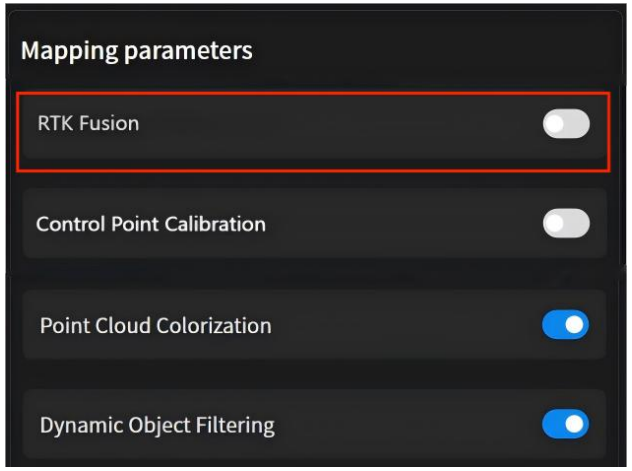
Point Clouds Calculation Process

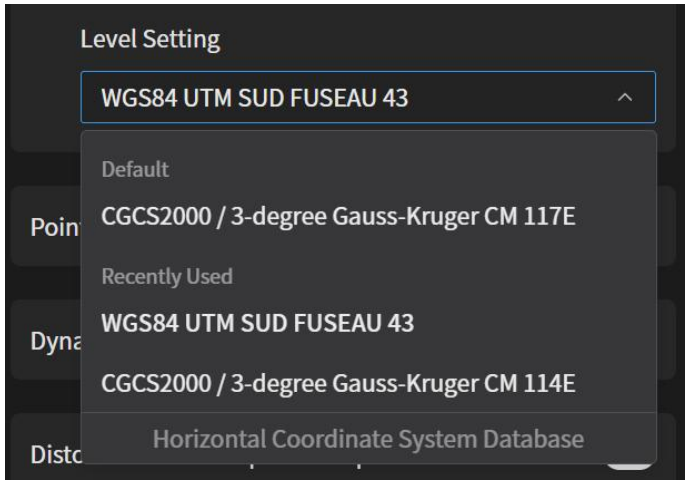


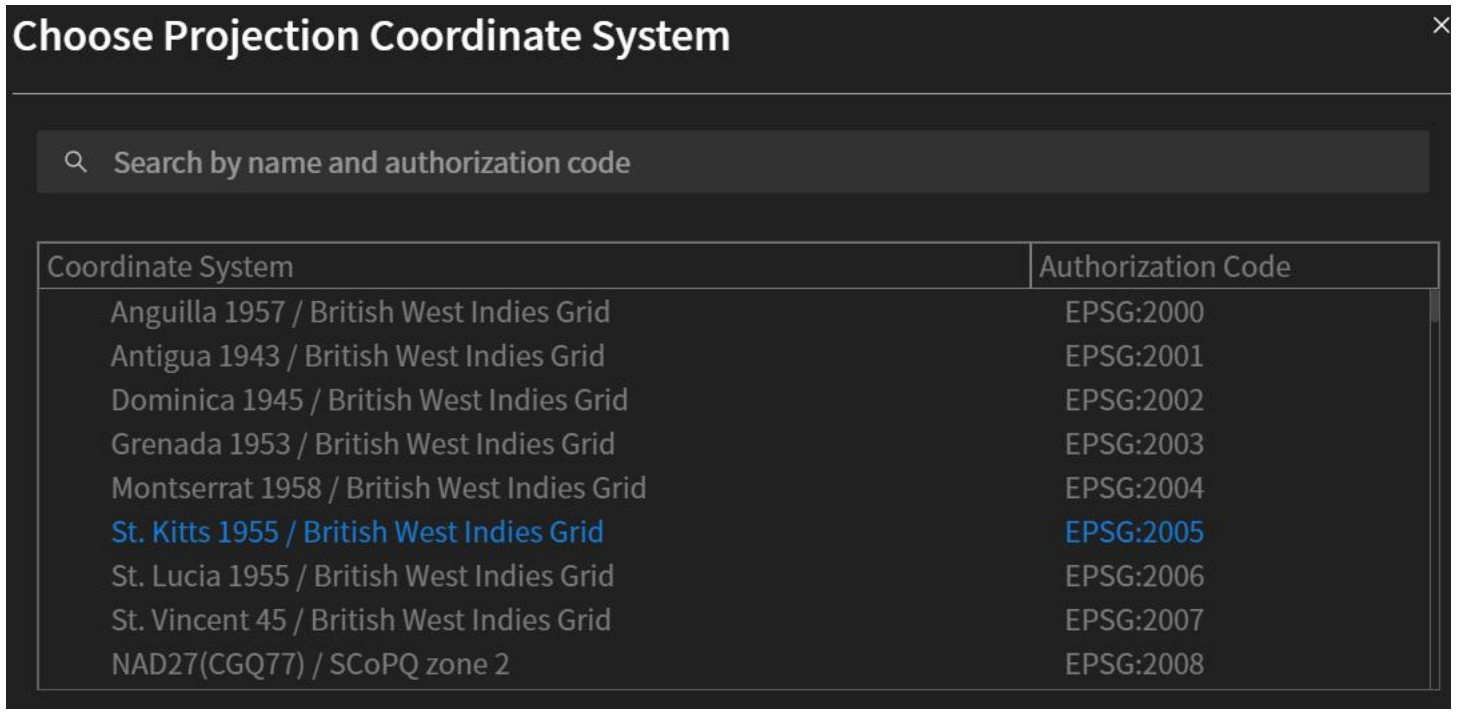
Procedure:

- Click "Add" and select the original folder has been copied to your computer.
- Select the corresponding mapping parameters according to your needs and click "Process", and the software will start to process the data automatically.

Mapping Parameters



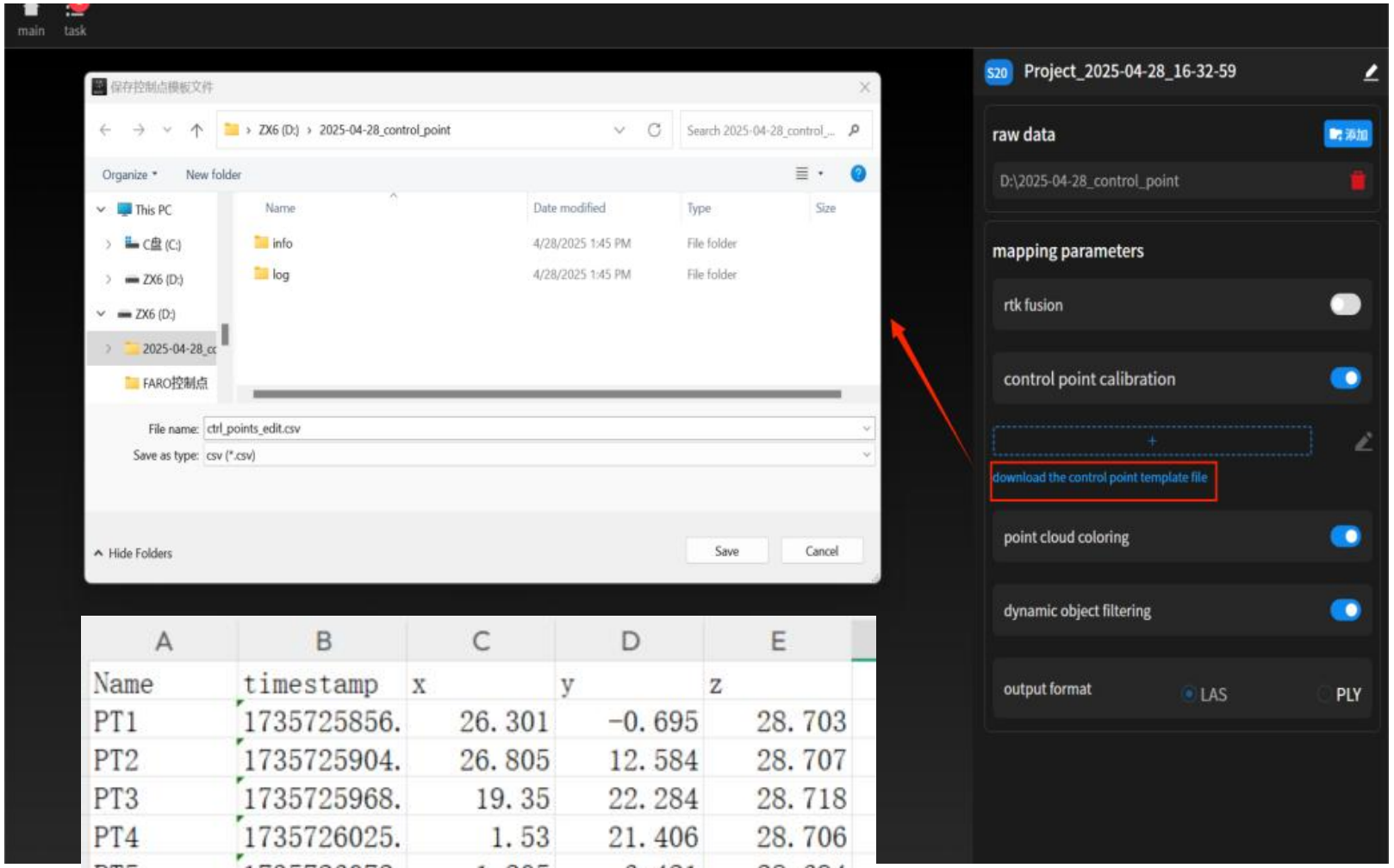




RTK Fusion:

- If the RTK function is enabled during the operation, the RTK Fusion switch can be enabled for data processing;
- Select the corresponding "Projected Coordinate System" set during data acquisition, and then click "Confirm";
- The point cloud output is point cloud data with accurate coordinate information.

Mapping Parameters

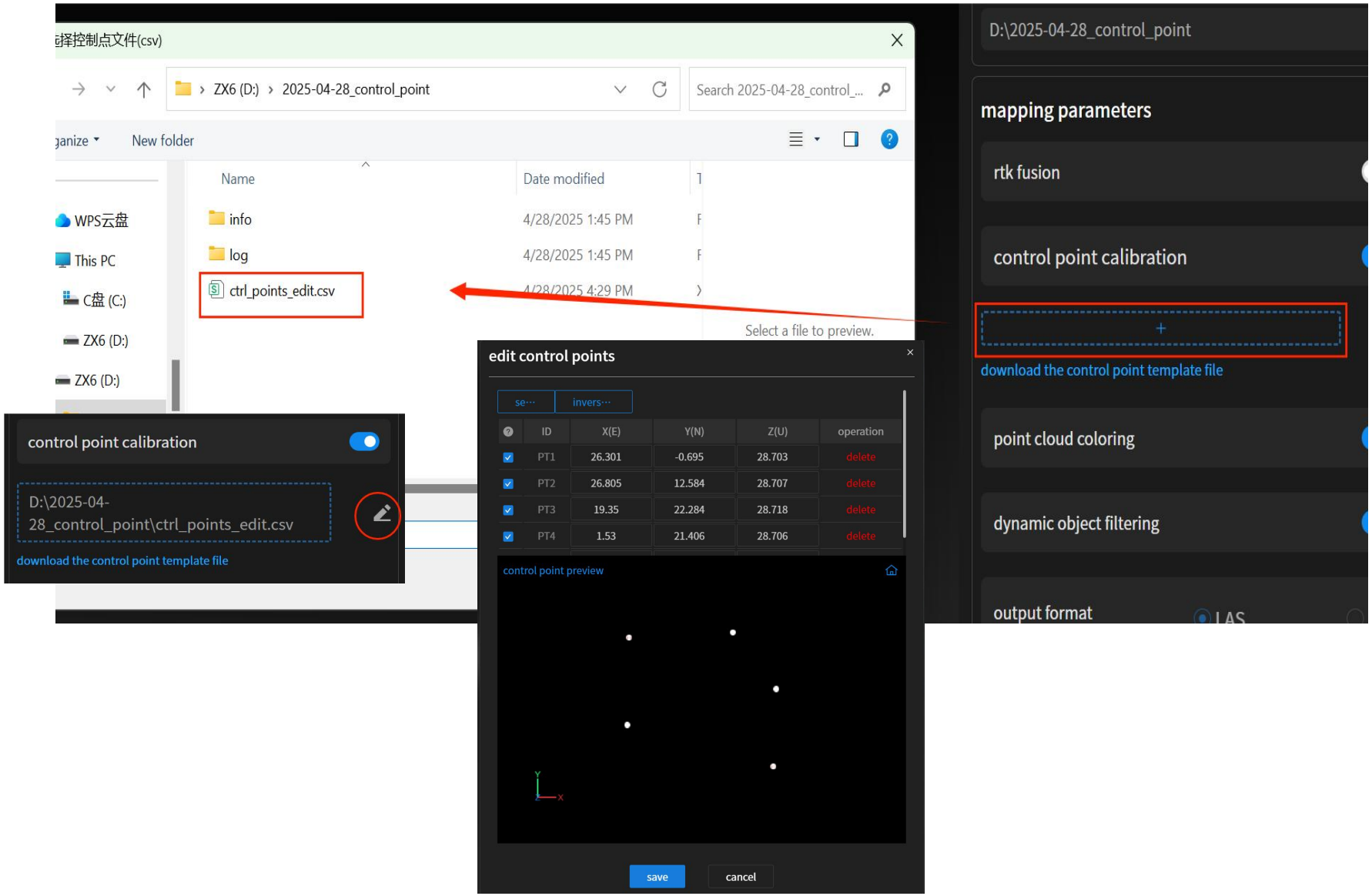


	A	B	C	D	E
	Name	timestamp	x	y	z
	PT1	1735725856.	26. 301	-0. 695	28. 703
	PT2	1735725904.	26. 805	12. 584	28. 707
	PT3	1735725968.	19. 35	22. 284	28. 718
	PT4	1735726025.	1. 53	21. 406	28. 706
	PT5	1735726072.	1. 205	6. 421	28. 694

Control Point Calibration (Method 1):

- A dataset of control points has been collected, and the control point calibration can be opened.
- The number of collected control points must be greater than 4 to perform the control point calibration function.
- Click "Download Control Point Template File" to choose a location to save it, and you can batch edit the input control point coordinates according to the format requirements.
- After editing, click "+" to import the edited table and then start processing.

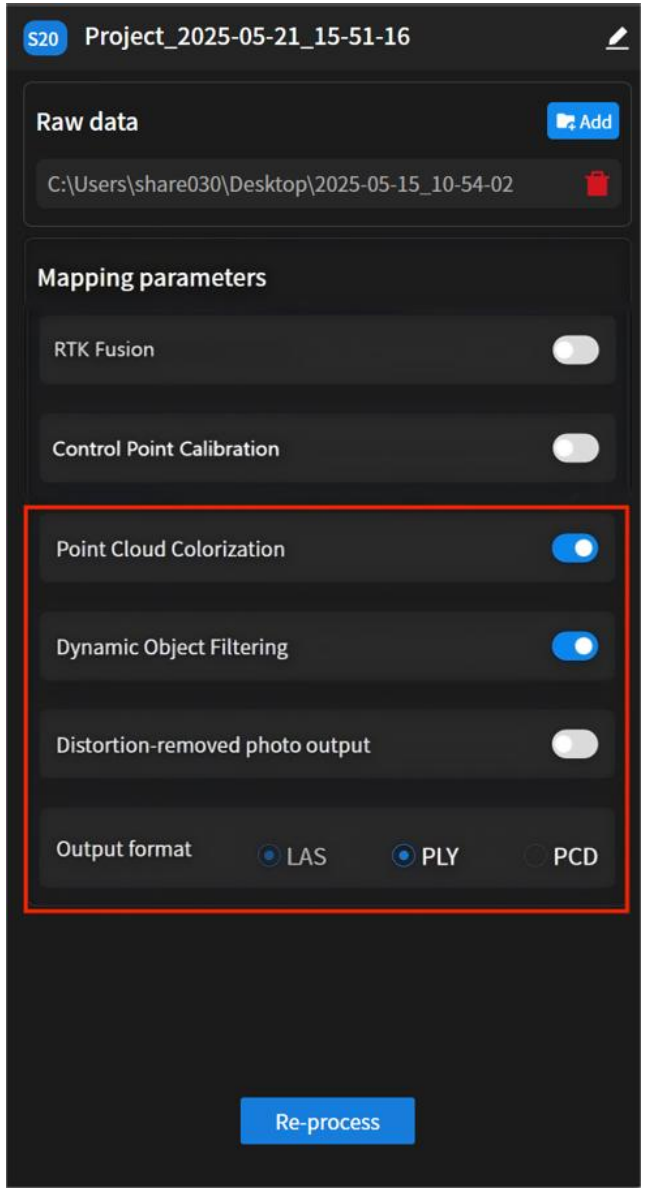
Mapping Parameters



Control Point Calibration (Method 2):

- Click "+" to import the "control_points.csv" file.
- Click Edit symbol on the right, enter the coordinates of the corresponding control point.
- Click “Save” to start processing the data.

Mapping Parameters



Point Cloud Colorization:

- If you need to assign a color point cloud, please check the button to turn it on
- Unchecked, only uncolored point clouds are calculated

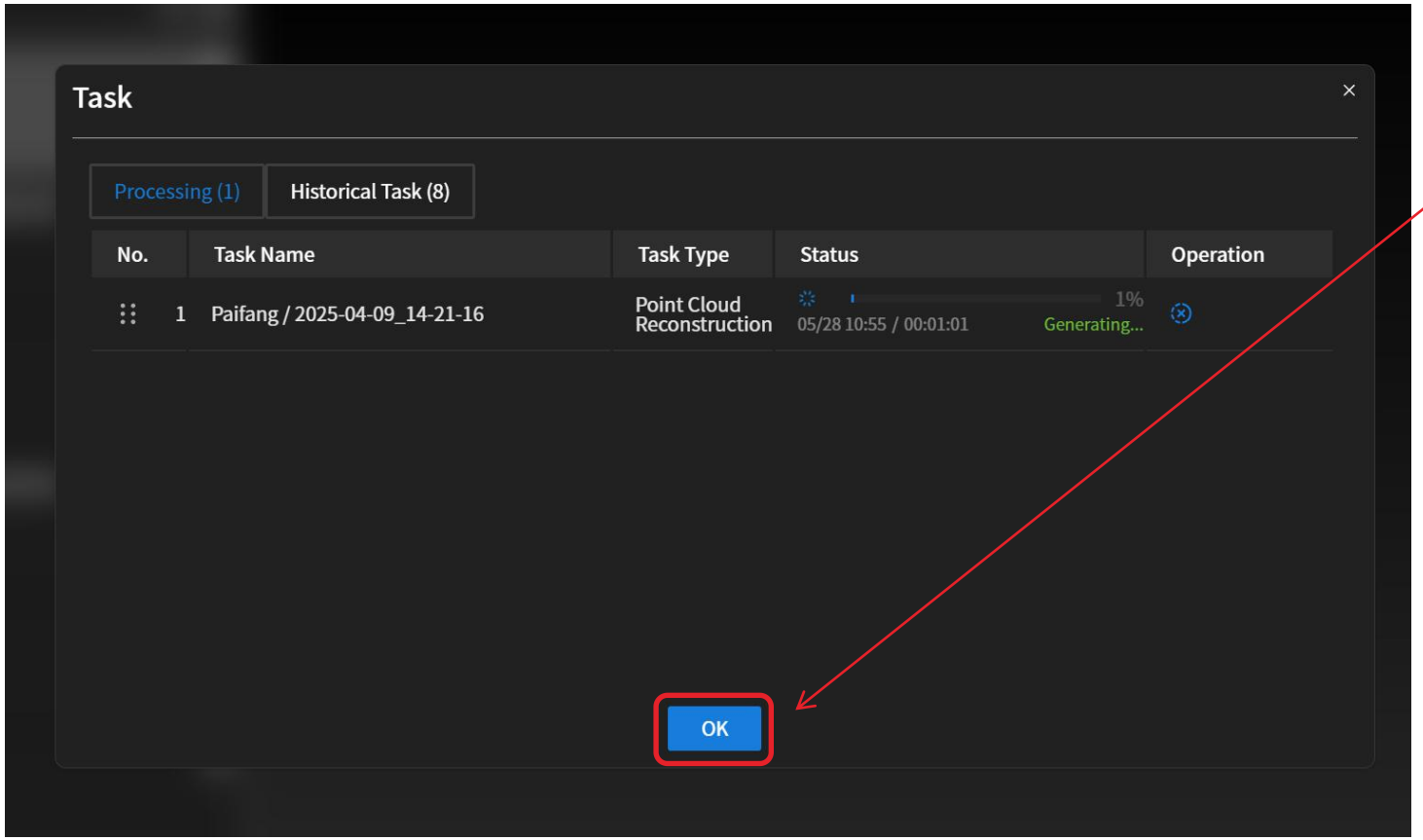
Dynamic Object Filtering:

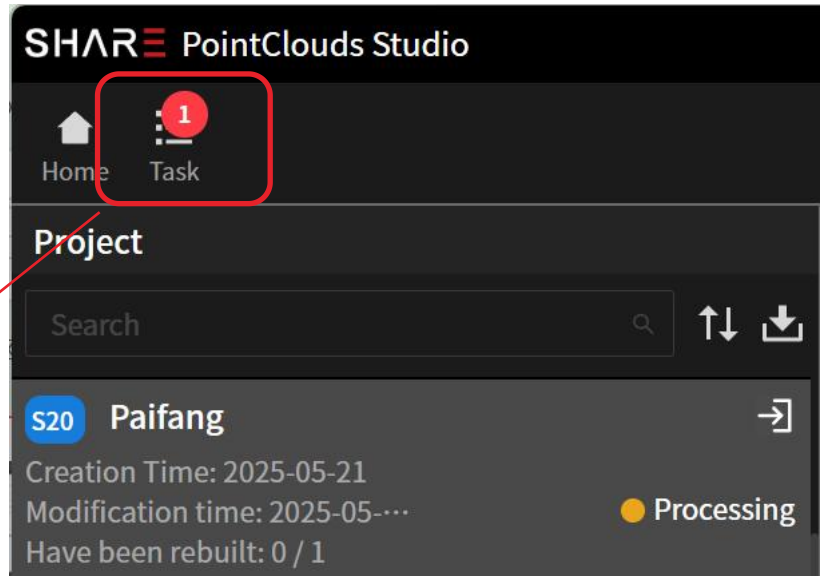
- Turn it on to filter out moving objects during the scanning process

Output Format:

- The default output is a point cloud in .las format, and you can select the output of .ply or .pcd format point clouds according to your needs

Data Processing

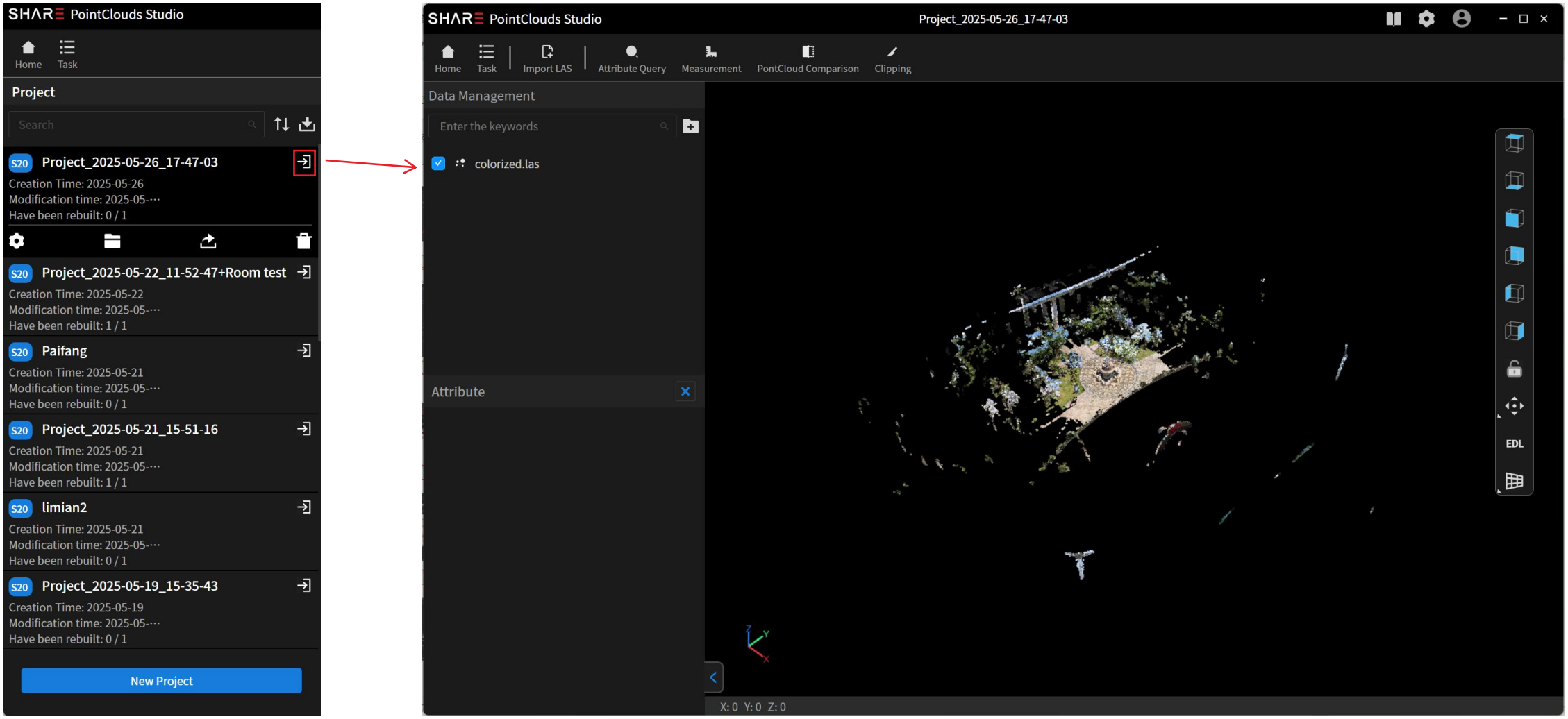




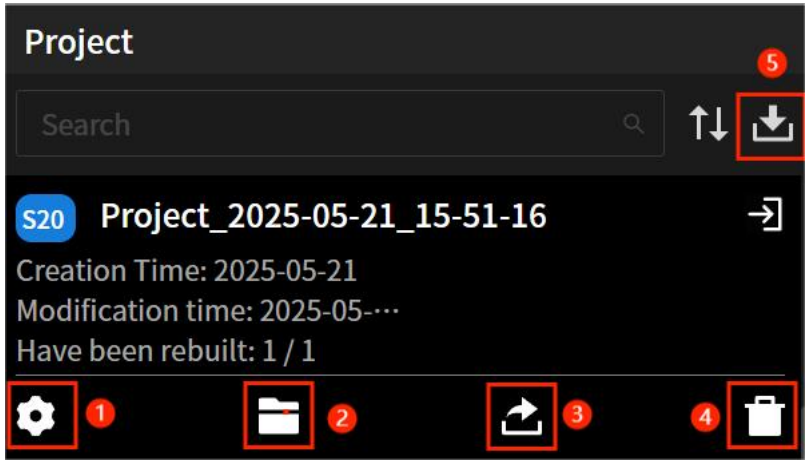
- Automatic pop-up task management after the processing starts
- Click OK to close the task management page
- Disabling the task management page does not affect data processing

Results viewing

View: Click the Open Project button to view the point cloud data



Function Introduction



Project interface features:

① **Project Configuration:** Click to enter the "Project Configuration" interface, where you can modify the processed original data file package and drawing parameters to recalculate.

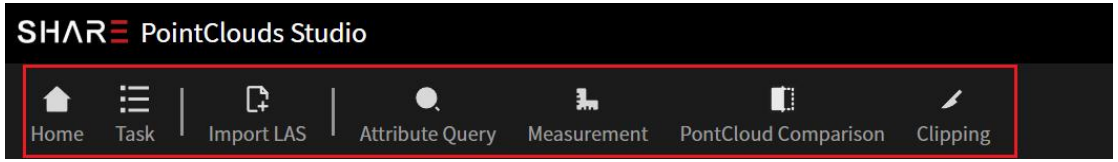
② **Show in Folder:** After clicking, the result folder will automatically pop up, and you can view the content of the result file.

③ **Export Project:** After clicking, the result folder and the original folder will be compressed into a compressed package for packaging output.

④ **Delete Project:** Click to delete the project in Point Cloud Manager and delete the results folder.

⑤ **Import Project:** You can import the entire package exported from the export project into the SHARE PointClouds Studio for recognition.

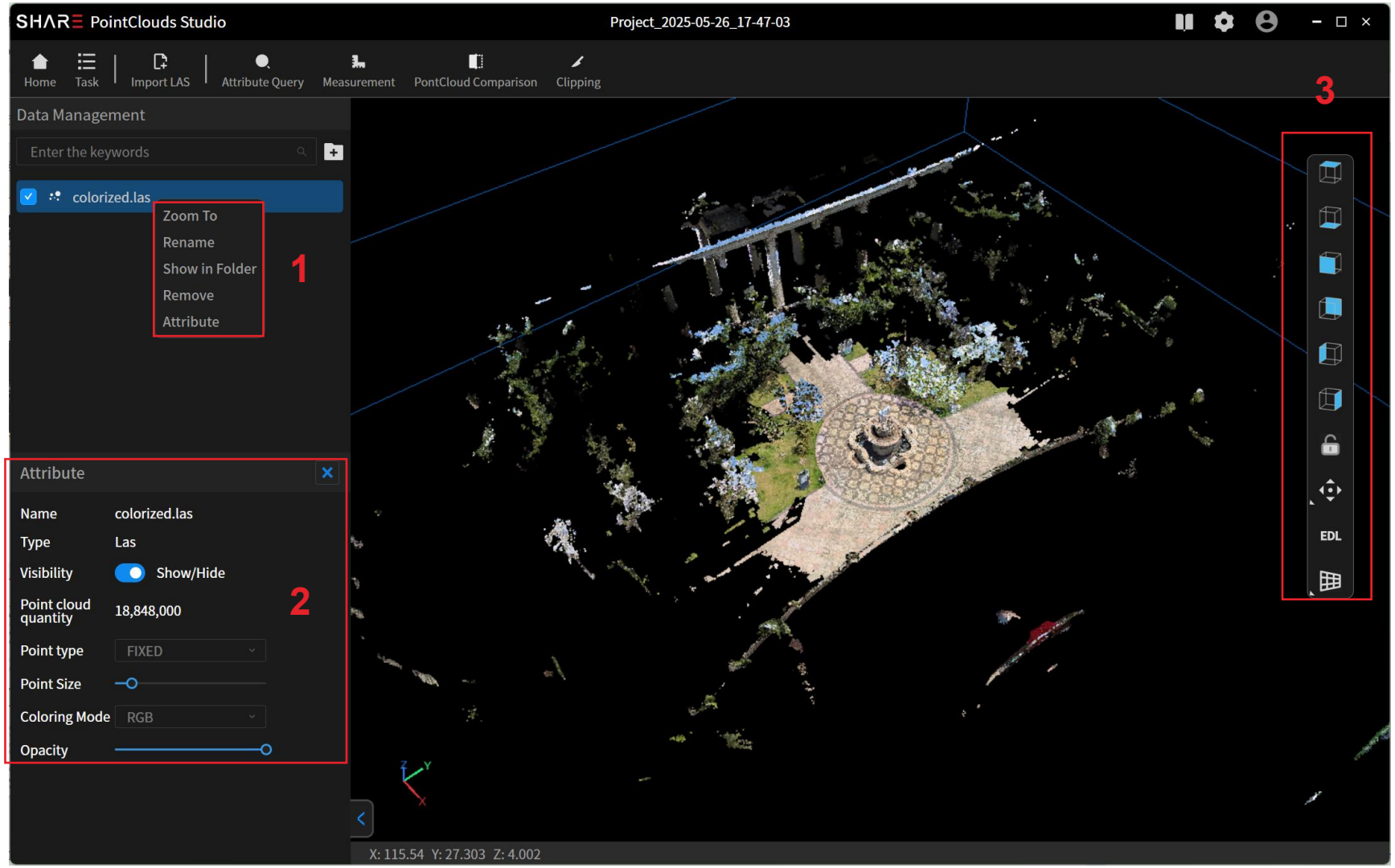
Function Introduction



Tool Bar:

- **Home:** Click to return to the main interface of project management.
- **Task:** After clicking, a task management pop-up window will appear, which can display the current task status of the running map
- **Import LAS:** Point clouds in LAS format can be imported.
- **Attribute Query:** After clicking, you can select any point on the point cloud to query the corresponding point information.
- **Measurement:** After clicking, you can select the coordinate, distance, area, height, and angle measurement functions to observe the point cloud.
- **PointCloud Comparison:** Click to import two sets of point cloud data linkage comparison.
- **Clipping:** Click to trim the selected point cloud and view it, and the result cannot be exported after cropping.

Function Introduction



Tool Bar:

- **1.1 Zoom To:** Displays the point cloud in the center.
- **1.2 Rename:** Renames the point cloud file.
- **1.3 Show in Folder:** The folder where the LAS point cloud is located pop-up window.
- **1.4 Remove:** Removes the point cloud from the point cloud manager.
- **2. Attribute:** You can modify the way you view the point cloud, such as point size, rendering mode, transparency, etc.
- **3. Point cloud display:** You can click different buttons on the right side to view point clouds from different perspectives.

04

Precautions

Precautions

- Acquisition posture: When scanning, keep the device directly in front of the body, and try not to hold the device sideways or obliquely.
- Preparation before scanning: Familiarize yourself with the scanning site, turn on the doors and lights in advance when scanning enters, and remove obstacles and obstructions.
- Walk loopback when RTK is turned off: It is recommended to form a loopback at about 50-100m, and the loopback needs to have a path in the same direction.
- When working in a small space, it is easy to see the lack of corner ground, so you need to pay attention to check the preview point cloud in the App when scanning.
- If a short-term non-fixed solution occurs when an RTK job is enabled, the data can be processed normally. If there is no solution for a long time or a single point solution, the data processing results will be affected or the data cannot be processed normally.
- Before data processing, it is recommended to copy the data to the computer for local processing to improve the processing speed.
- Please check whether your computer's memory is sufficient before data processing.

FAQ

Q1: If the project is large and the memory card is not enough to store, can it be replaced with a larger capacity?

A1: The standard configuration includes a 256GB memory card, which supports expansion; it is recommended to use a SanDisk Gold card.

Q2: How long is the single operation time of the S20 battery handle? How long does it take to charge? How long does it last?

A2: It takes 120 minutes to fully charge, and 150 minutes can be operated at a time when fully charged. The service life is about 300 battery cycles.

Q3: Does the S20 need a dongle for data processing?

A3: No, you can process the data by downloading the SHARE PointClouds Studio from the official website.

Q4: What format can S20 output point cloud data?

A4: The default output is .las format, .ply and .pcd formats can also be exported

Q5: Can I export mesh models from S20 data?

A5: Photos and point clouds captured by S20 can be modeled by third-party modeling software.

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Officials Website

LinkedIn

YouTube

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Service Hotline:+86-755-23216686 **Email： technical.support@shareuavtec.com**