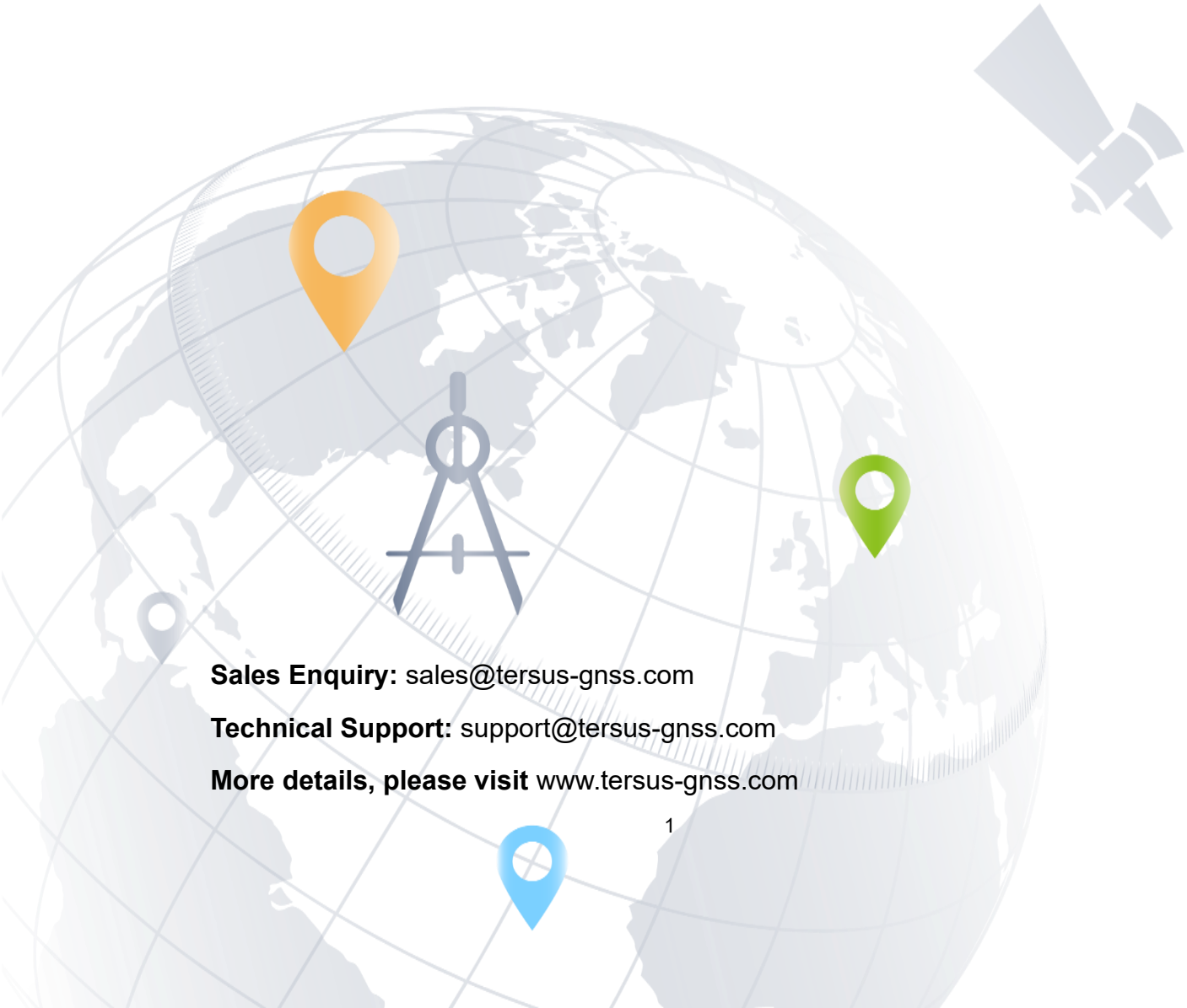
Tersus MVP S1
User Manual

2026.1



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More details, please visit www.tersus-gnss.com

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product in violation of national laws or regulations.

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1. Product Overview

1.1 Device Introduction

Tersus MVP S1 is a handheld 3D data scanner developed by Tersus GNSS. It integrates a high-precision LiDAR sensor, a wide-angle mapping camera, and a built-in RTK positioning module, achieving deep fusion of laser and imagery data. Combined with our proprietary point cloud algorithms, it enables efficient and high-accuracy 3D spatial data acquisition. A single operator can rapidly capture accurate colorized point cloud data, and surveying tasks can be completed simply by performing handheld scanning. Architects, construction professionals, and survey experts can all use Tersus MVP S1 to quickly obtain real-world 3D information.

1.2 Key Features

- Supports real-time computation and post-processing, with real-time colorized point clouds and industry-leading colorization quality.
- Point cloud thickness is within 1 cm, and relative accuracy reaches 1 cm.
- Dual fisheye wide-angle cameras with a total resolution of 24 megapixels.
- Built-in RTK module requiring no external antenna; the device operates with a single button.
- Quick-release battery design with Type-C charging support.
- Comes with Tersus MVP S1 Capture, providing real-time operation status feedback and real-time colorized point cloud preview.
- Comes with Tersus MVP S1 Mapper, supporting one-click generation of colorized point clouds and export of multiple standard point cloud formats.

1.3 Package Contents

Item	Scanner	Handle	Positioning Plate	Magnetic Clip	Power Adapter	Mounting Adapter
Quantity	1	1	1	1	1	1
Item	Data Cable	USB Dongle	Card Reader	User Manual	Certificate	Cleaning Cloth
Quantity	1	1	1	1	1	1

1.4 Handheld LiDAR Scanner Specifications

Tersus MVP S1 Handheld LiDAR Specifications V1.0		
General	Product Name	Tersus MVP S1
	Dimensions	104 × 140 × 305.7 mm (with positioning plate)
	Weight	Battery: 363 g; Main unit: 619 g
	Protection Rating	IP5X
	Power Supply	Handle battery
	Battery Capacity	41.97 Wh (2849.41 mAh)
	Operating Temperature	−20°C to 55°C
	Storage Temperature	−20°C to 60°C
	Charging Method	Type-C; PD 30W fast charging
	IMU	Supported
	Storage Capacity	256 GB (expandable)
Camera	Effective Pixels	48 MP per lens, 96 MP total
	Field of View	Vertical 200°, Horizontal 200°
	Number of Cameras	2
	Output Format	JPG / H.264
	Camera Mounting Angle	135° between cameras
LiDAR	Laser Class	Class 1 / 905 nm
	Point Rate	200,000 pts/s
	Scanning Method	Mobile scanning
	Point Cloud Frequency	10 Hz (typical)
	Measurement Range	0.1– 40 m @ 10% reflectivity; 0.1–70 m @ 80% reflectivity
	Field of View	Horizontal 360°; Vertical −7° to 52°
	LiDAR Mounting Angle	Tilted downward 20°
RTK	RTK Configuration	Built-in (standard)
	RTK Accuracy	Horizontal 0.8 cm + 1 ppm; Vertical 1.5 cm + 1 ppm
	Supported GNSS	7 satellite systems, 21 frequencies

Data	Point Cloud Thickness	Within 1 cm
	Accuracy	Absolute accuracy < 5 cm; Relative accuracy < 1 cm
	Point Cloud Formats	.las, .pcd, .ply and other common formats
	Mobile App	Supports iOS, Android, and HarmonyOS
	Desktop Software	Supports one-click colorized point cloud generation
	Built-in Viewer	Supports point cloud and image spatial association viewing

2. Device Installation Guide

2.1 Device Components

The Tersus MVP S1 consists of two main parts: the scanner and the dedicated handle (which contains the battery). The handle provides power and supports the main unit, while the scanner houses the LiDAR, cameras, RTK module, storage module, and other components.

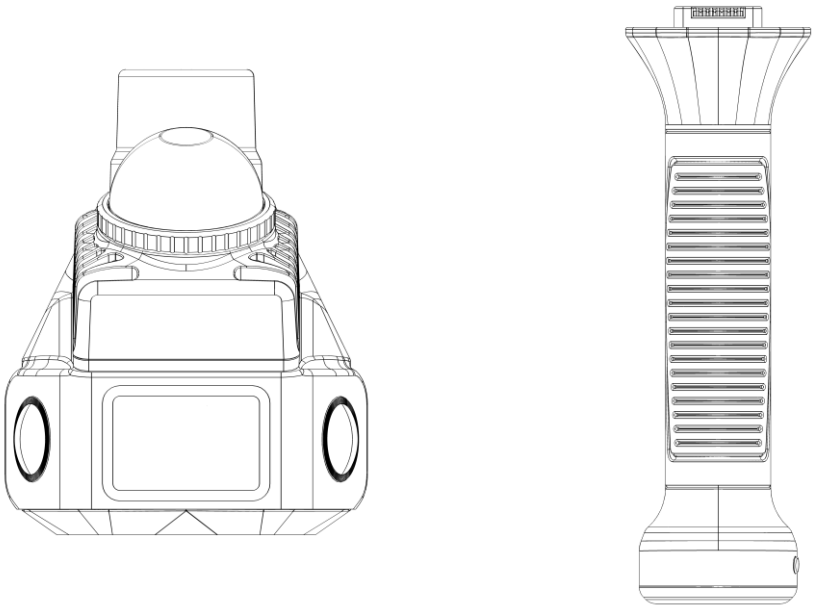


Figure: Scanner and Handle (Front View)

2.2 Installation

2.2.1 Mounting the Positioning Plate

First, attach the handle to the positioning plate. Attach the handle to the base plate and tighten the screw clockwise. Gently shake the assembly to ensure the handle and positioning plate are securely installed.

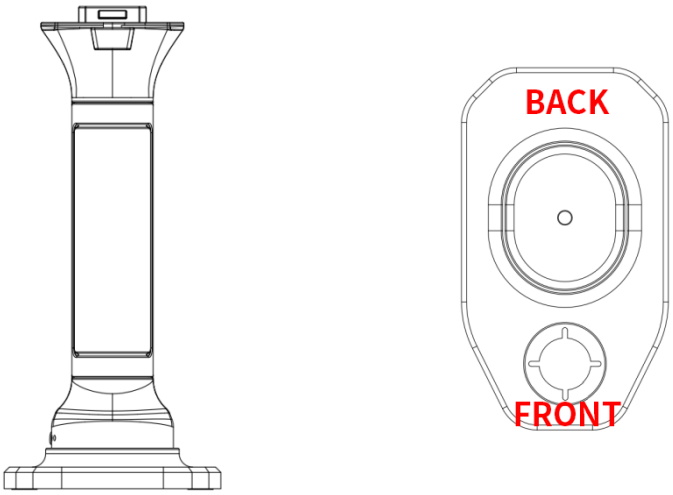


Figure: Handle (Rear View) and Positioning Plate

2.2.2 Full Device Assembly

Align the power interface on the top of the handle with the power interface on the bottom of the scanner. Ensure the white circular mark on the scanner faces toward you. Gently press the scanner downward until it clicks into place, indicating successful installation.

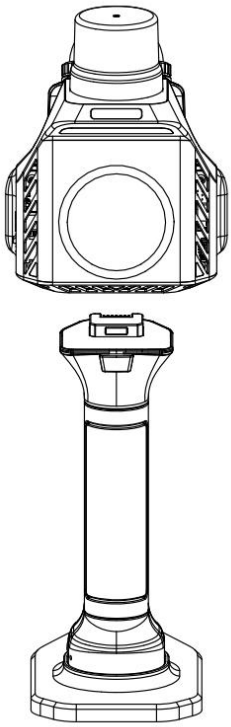


Figure: Full Device Assembly (Rear View)

2.3 Disassembly

Hold the handle with your left hand and the scanner with your right hand. Press the button located above the handle while pulling the scanner upward. Be careful not to use excessive force to avoid damaging the device. Finally, rotate the positioning plate screw counterclockwise until the handle can be detached.

2.4 Charging

To charge the device, the scanner must be detached from the handle, while the handle and positioning plate do not need to be removed. Insert the included charging adapter into the Type-C port at the bottom of the handle. The battery is charging when the power indicator lights turn on sequentially. During scanning, a portable power bank may be used to charge the device; however, this may affect the battery’s lifespan.

3. Scanning Operation

To start scanning, the Tersus MVP S1 must be controlled using the companion Tersus MVP S1 Capture app. Through the app, users can initiate and stop scans, manage data, and perform other operations. The indicator light located beneath the RTK antenna on the scanner displays different colors to indicate the device's operating status during scanning.

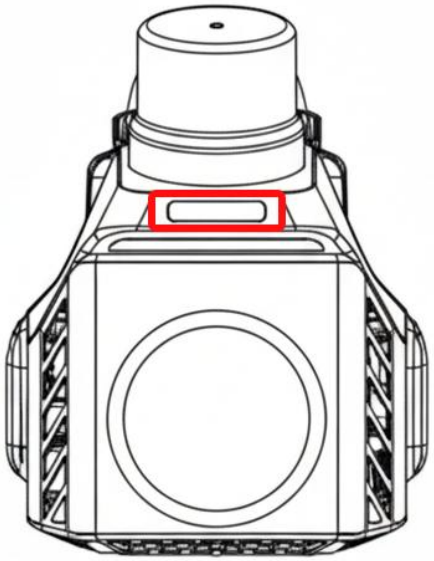


Figure: Indicator Light Location

Indicator Color	Operating Status
Yellow	Powering on, initializing, or saving data
Green	Normal scanning operation
Blue	Ready, task initialization in progress
Red	No TF card inserted or device malfunction

3.1 Powering On

When the device is powered off, briefly press the battery button to check the number of indicator lights lit, which indicates the remaining battery level. The battery button, located at the bottom of the handle, also serves as the power indicator. Press and hold the battery button to turn on the device. When the battery indicator lights up, the handle powers the scanner. A steady battery indicator means the Tersus MVP S1 is powered on. The number of lights indicates the remaining battery level as follows:

Number of Lights	Battery Level
Red Light	15%
1 Light	5%–25%
2 Lights	25%–50%
3 Lights	50%–75%
4 Lights	75%–100%

3.2 Device Startup

After powering on, the Tersus MVP S1 performs a self-check to ensure all modules are functioning properly in preparation for scanning. When the indicator lights remain steady, the self-check is complete, and the device is ready for operation.

3.3 Connecting to the App

You can scan the provided QR code to download and install the app.

On the main app interface, if the icon on the left side is gray, it indicates that the phone is not yet connected to the device. Tap the icon to go to the phone's Wi-Fi settings. Select the Wi-Fi network named after the device SN number. The default Wi-Fi password is **123456789**. This Wi-Fi is broadcast by the Tersus MVP S1 to establish a connection with the phone. When the left icon in the app changes from gray to color, it indicates that the device is successfully connected.

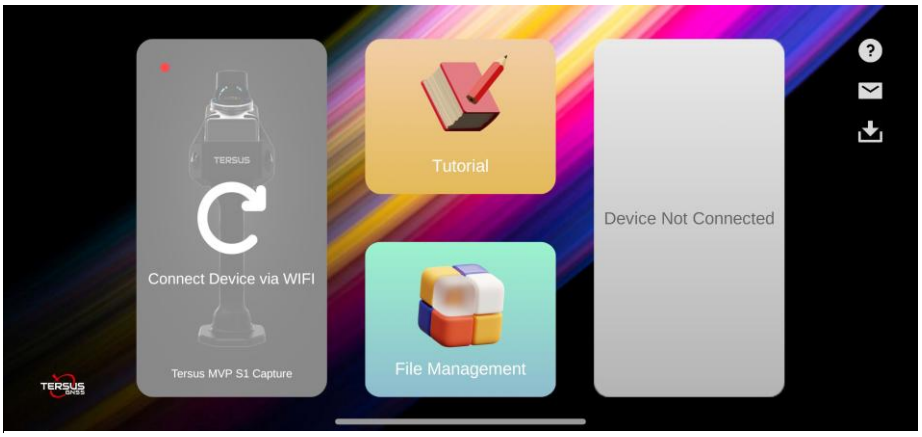


Figure: App Main Interface

3.4 Starting a Scan

Once the device is connected, tap Start Job to enter the scanning interface. Users can adjust relevant parameters before beginning the scan according to their needs.

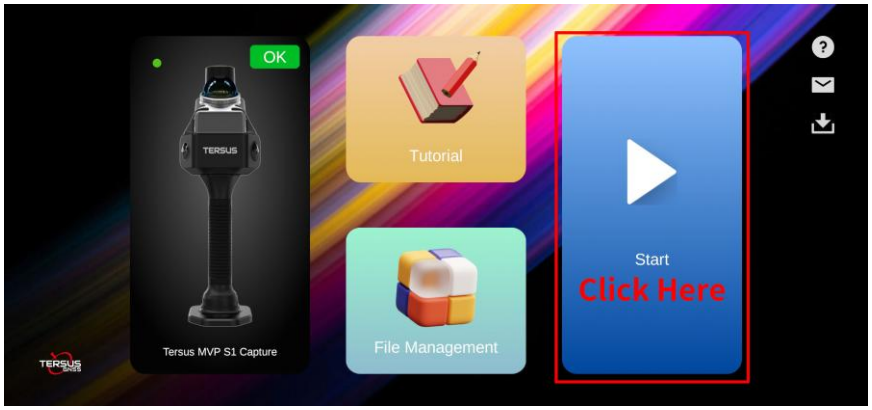


Figure: Tap Button to Enter Job Interface

3.5 Parameter Settings

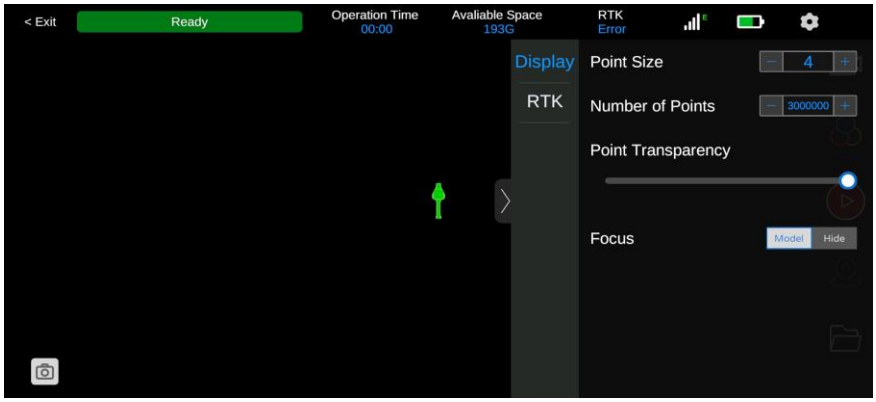


Figure: Parameter Settings Interface

Tap the Settings button on the right side of the app to configure point cloud display, RTK, and other options.

Display Settings	Point Cloud Size	Adjustable from 1 to 10
	Point Cloud Quantity	Selectable from 0 to 4 million points
	Transparency	Adjustable from 0 to 100

	Focus	Allows the user to show or hide the model following the viewport
RTK	RTK On/Off Button	Controls the RTK function. Users can input RTK account credentials, supporting NTRIP protocols.

3.5.1 RTK Settings

Enable RTK to connect to a network CORS account, supporting NTRIP or QXWZ protocols. Using RTK outdoors significantly improves data acquisition accuracy. It is recommended to enable this function.

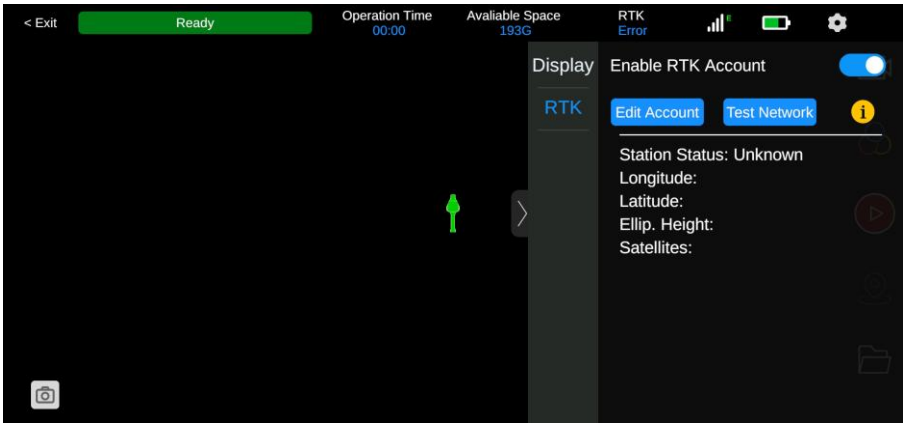


Figure: RTK Settings Interface

3.6 Creating a New Project

When the device status shows Ready, tap the Start button on the right side to begin a new job.

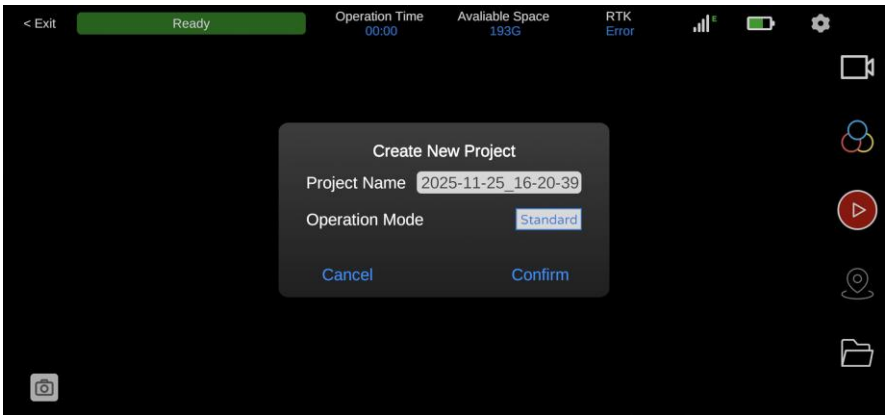


Figure: New Project Interface

A New Project dialog will appear. Enter the project name, select the job mode (Standard or 3DGS), and set the photo interval. Tap Confirm to start. The top of the screen will display device status, working time, storage capacity, RTK status, signal strength, and battery level.

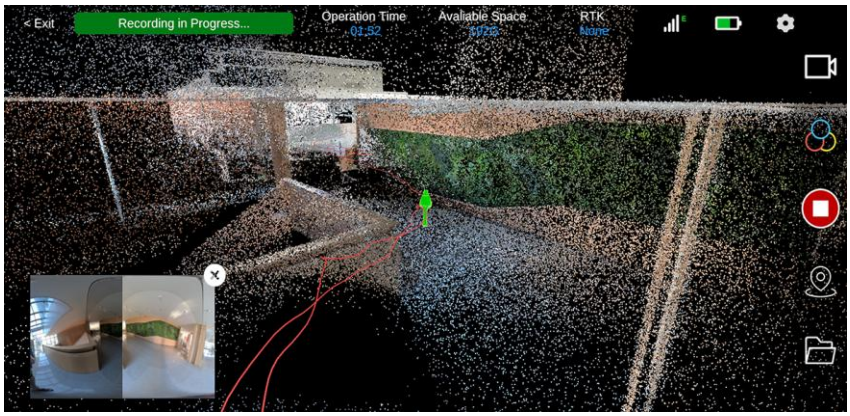


Figure: Data Acquisition Interface

3.7 Control Point Collection

During a job, tap the second button at the bottom right of the interface to add or remove control points. Control points are used during post-processing to calibrate and improve the overall accuracy of collected data.

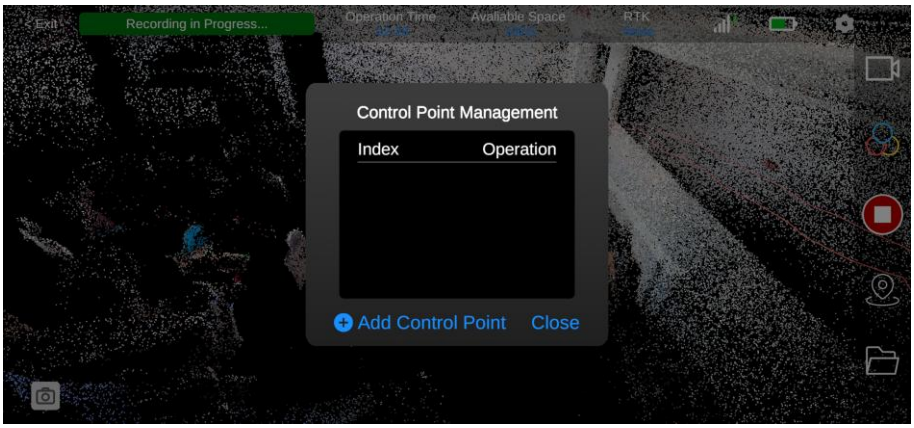


Figure: Control Point Interface

When collecting a control point, align the center of the positioning plate's control point area with the location to be added, then tap Add Control Point. Keep the device stable for approximately 10 seconds to complete the collection.

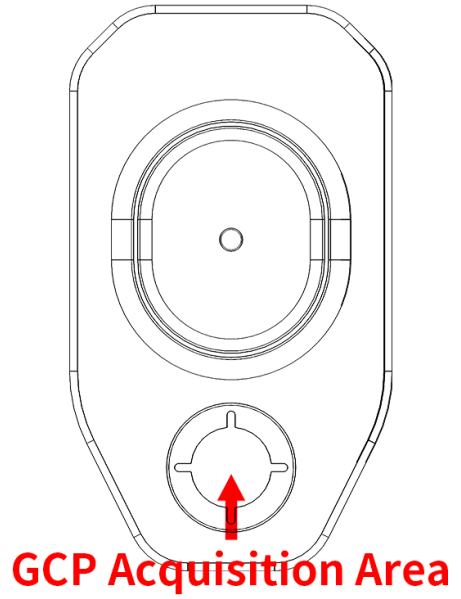


Figure: Align Positioning Plate with Control Point

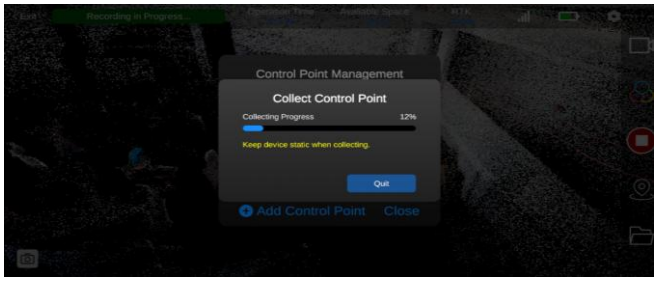


Figure: Do not move the device until the progress is complete.

Users can edit, overwrite, or delete control points after they are set, according to operational needs.

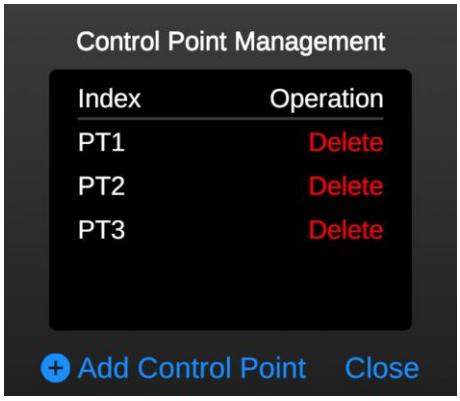
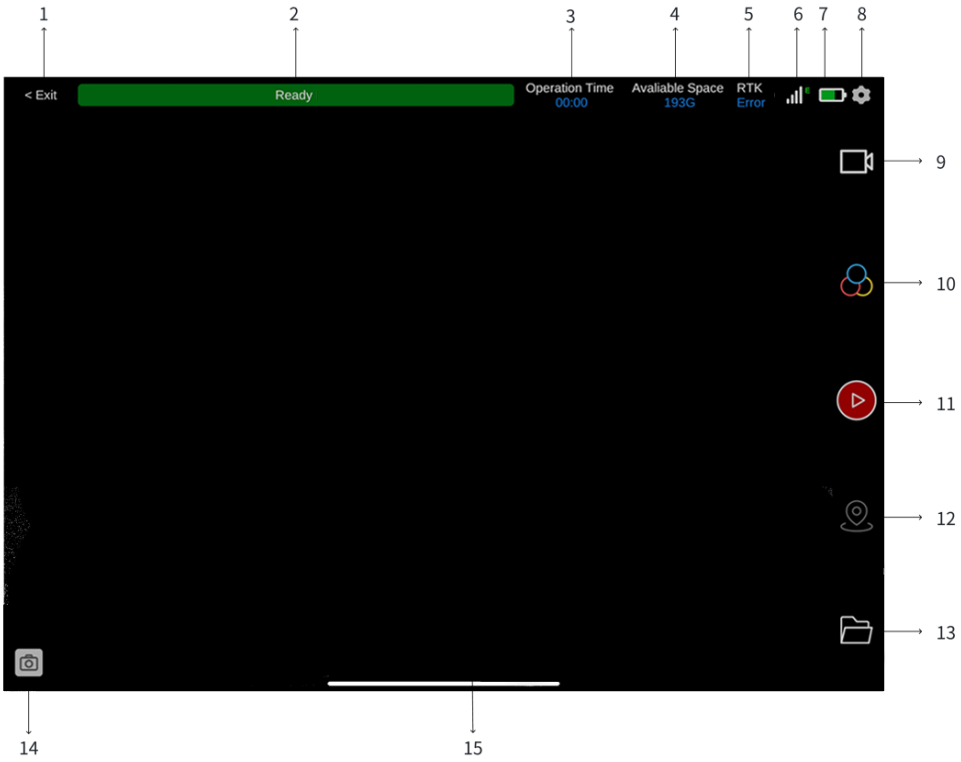


Figure: Control Point Editing Interface

3.8 Data Acquisition

When the device status shows Ready, scanning can begin. The software displays the reconstructed 3D point cloud and collection trajectory in real time, and users can manually inspect the 3D colorized point cloud.



The functions of the job interface are as follows:

1. Return to Main Interface: Tap to return to the app's main interface.
2. Status Indicator: Displays the current job status.
3. Job Time: Shows the elapsed time for the current project.
4. Storage: Displays the remaining memory space.
5. RTK Status: Shows the status of the RTK module.
6. Signal: Displays the device's current signal information.
7. Battery Level: Indicates the device battery status.
8. Settings: Opens the job parameter settings.
9. Roaming Mode: Switches between free roaming and third-person view modes.
10. Point Cloud Mode: Switches the 3D scene display between colorized point cloud, intensity-colored, and elevation-gradient modes.
11. Start/Stop: Controls the start and end of a job.
12. Control Point Management: Allows adding, deleting, or overwriting control points. Adding control points improves the overall accuracy of the collected data during post-processing.
13. File Management: Opens the file management page to manage, delete, view, or download device or local project data.
14. Photo Points: Displays photos captured by the device in real time. By default, one photo is taken every 0.5 seconds.
15. 3D Scene: Displays the point cloud in real time. Users can zoom, pan, or rotate to inspect details of the 3D scene.

3.9 Scanning Notes

1. Before starting a scan, inspect the lenses for smudges or fingerprints to avoid affecting data quality.
2. When creating a new project, place the device on a level surface and keep it stationary during initialization to prevent model displacement.
3. During scanning, it is recommended to move the device at a speed of approximately 1 m/s. Avoid large arm movements to prevent incomplete or distorted data.
4. Although the device filters moving objects, avoid keeping people in front of the scanner for prolonged periods, as this may reduce the quality of collected data.
5. During the scanning process, use the app to monitor the live view to check for missed areas or important objects and perform supplementary scanning if needed.
6. When moving from an area with reference objects to a very open space (for example, entering a balcony from a high-floor interior), the LiDAR may not have sufficient reference points, which may result in differences in the collected data.

3.10 Saving Data

To end a scan, tap the red button on the right side of the screen. After approximately 10 seconds, a Save Successful message will appear. If you wish to continue scanning, wait at least one minute after the confirmation message before starting a new scan.

3.11 Powering Off the Device

Ensure that all data has been collected and saved, and that the device is in a stopped state. Press and hold the power button on the handle for

approximately 10 seconds. When the indicator lights turn off and no operational sounds are heard, the Tersus MVP S1 is fully powered off.

4. App Data Management

Tersus MVP S1 Capture provides comprehensive data management functions. Users can upload, download, rename, or delete files via the File Management page. If data is downloaded from the device to a mobile phone, it can be viewed directly on the phone for quick inspection.

4.1 Device Storage

Although users can view the scanning process on their phone in real time, all completed scan data is stored on the Tersus MVP S1's TF card after each scan. You can find your recently scanned data under Data Management → Device Storage. By default, files are named according to the recording start time, and the preview thumbnail is the first photo captured at the start of recording.

It is recommended to rename each file after scanning for easier identification later. The top-right buttons, from left to right, are Download, Delete, and More. The More menu allows you to select all files or sort them by name or size. Please note that deleted files cannot be recovered.

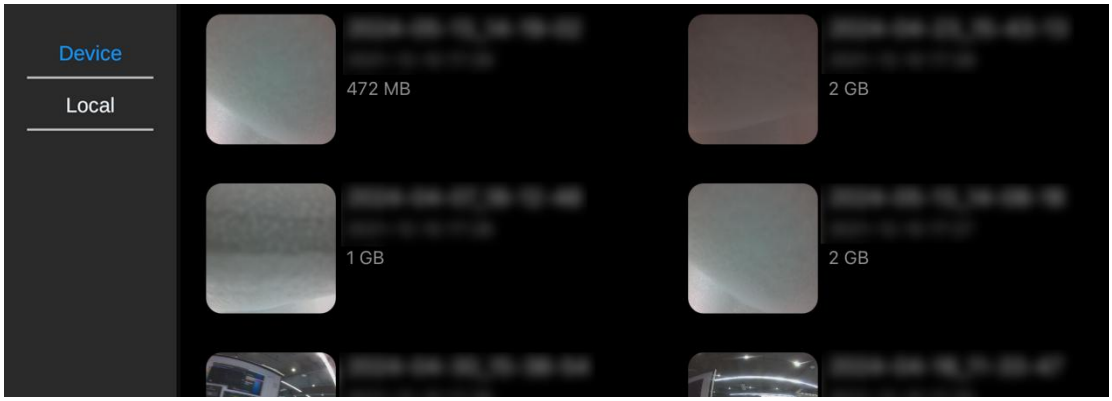


Figure: Viewing Device Storage Data

4.2 Local Storage

To download scanned data to your mobile device, select the desired file(s) on the Device Storage page and tap Download. After downloading, the file will appear under the Local page.

In the Local interface, you can navigate the virtual environment to inspect scanned areas. Due to the limited processing power of mobile devices, the point cloud displayed in review mode is a downsampled version, intended only to verify scanned areas. For full-quality viewing, post-processing on a computer is recommended.

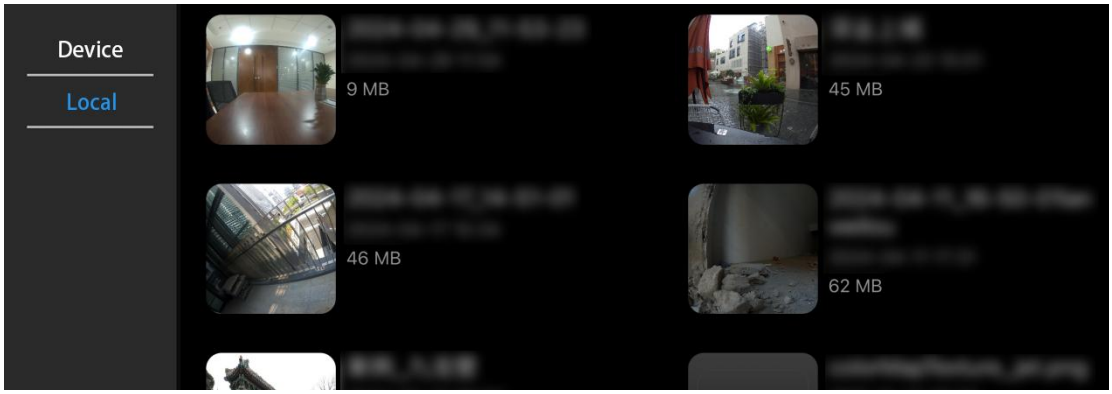


Figure: Viewing Local Storage Data on Mobile

4.3 Reviewing Data

Switch to local file management and select the corresponding project. In the Review interface, you can rotate, zoom, and pan the point cloud for detailed inspection.

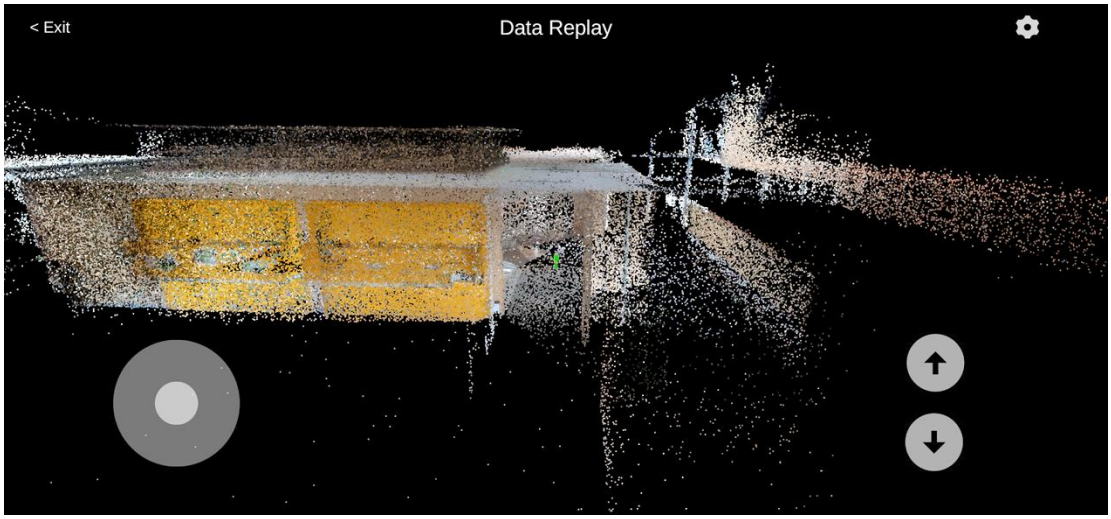


Figure: Data Review Interface

5. Tersus MVP S1 Mapper Processing Software

Tersus MVP S1 Mapper is a PC processing software for Tersus GNSS handheld 3D LiDAR scanners. It provides raw data parsing, 3D point cloud visualization, and measurement analysis. When paired with Tersus GNSS handheld LiDAR products, it supports the complete workflow from data acquisition to analysis, enabling full application of 3D point clouds.

5.1 Hardware and Software Requirements

To ensure smooth operation, the recommended configuration is as follows:

Device	Requirement
CPU	Intel® Core™ i7-10700H @ 2.90 GHz (or AMD equivalent)
GPU	GeForce RTX2060 4GB
RAM	32 GB
Storage	64 GB available hard disk space
Operating System	Windows 10 / Windows 11

5.2 Software Installation, Update, and Uninstallation

5.2.1 Software Download and Installation

Contact technical support to obtain the latest Tersus MVP S1 Mapper download link. After downloading, double-click the installer and follow the prompts. Click **Next** to proceed through the installation steps. Default settings are recommended.

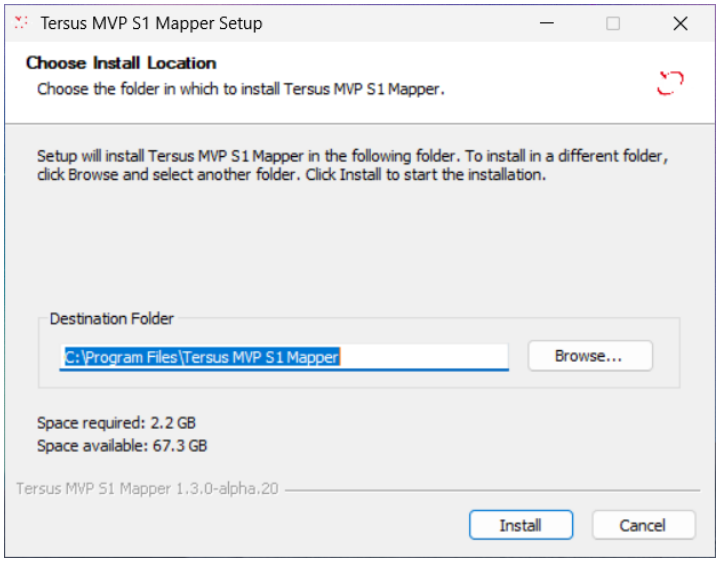


Figure: Software Installer

5.2.2 Software Update

When a new version is available, a popup will prompt you to update. Click **Update Now** to proceed.

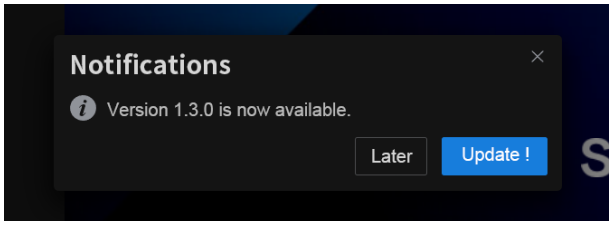


Figure: Client Update Interface

5.2.3 Software Uninstallation

Locate the installer directory on Windows and double-click **Uninstall Tersus MVP S1 Mapper.exe** to begin uninstallation.

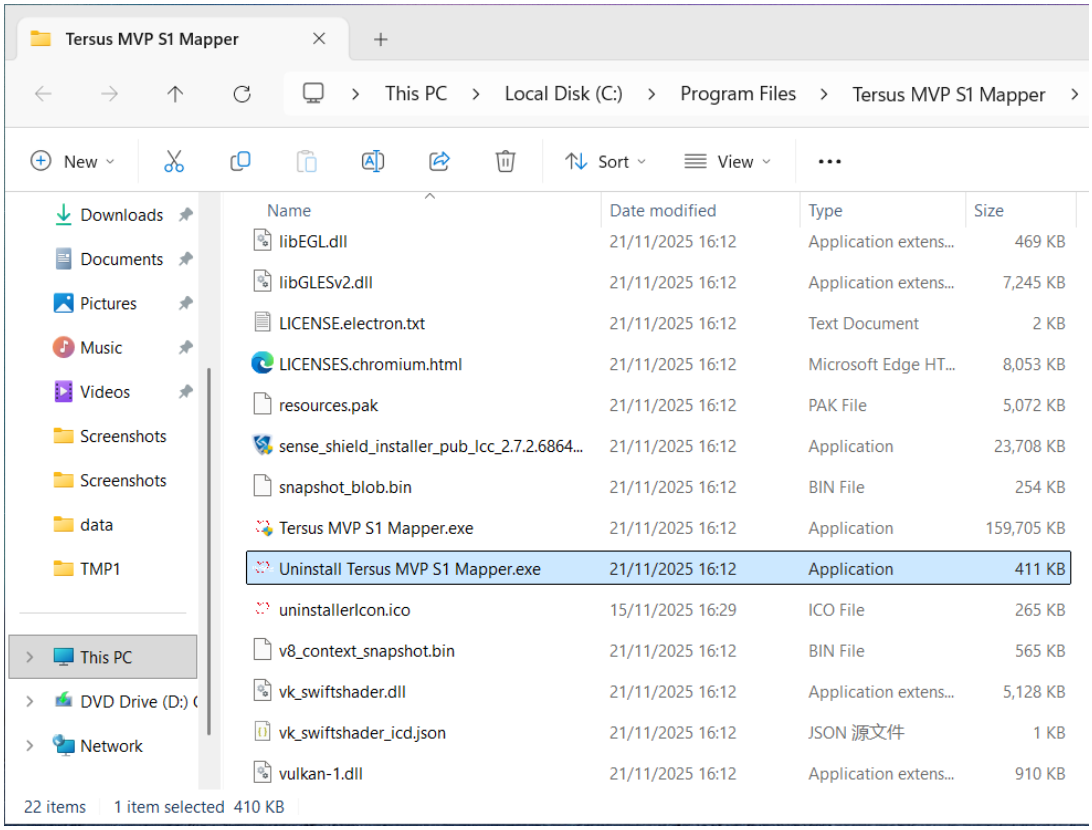


Figure: Software Uninstaller

Click Uninstall in the interface to start the process. Wait until the progress bar completes, then click Finish to complete the uninstallation.

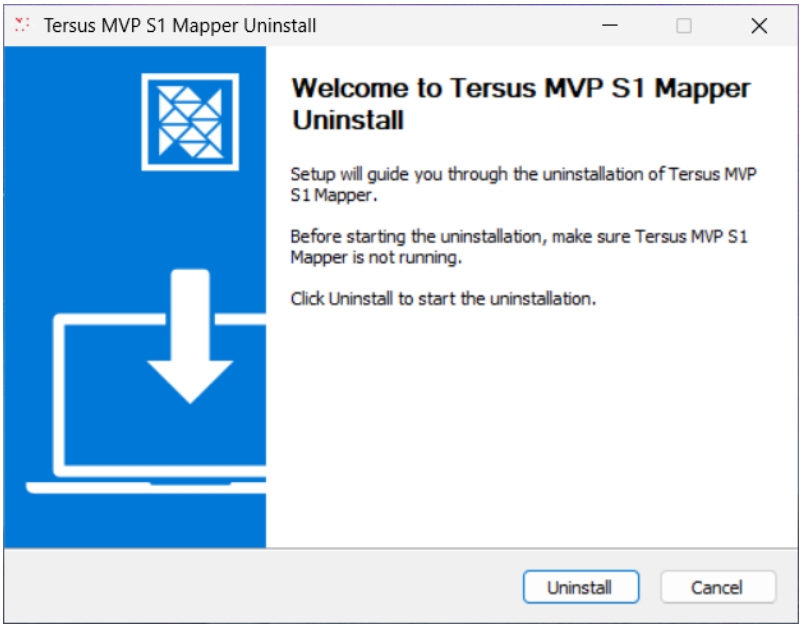


Figure: Uninstall Interface

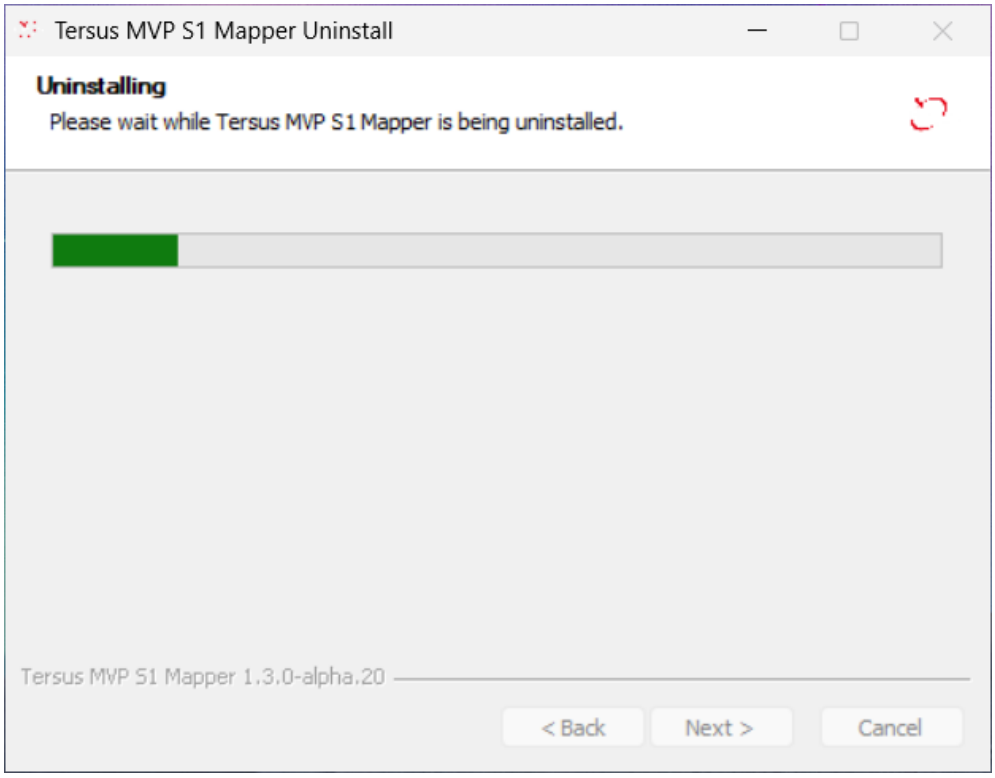


Figure: Uninstall Progress

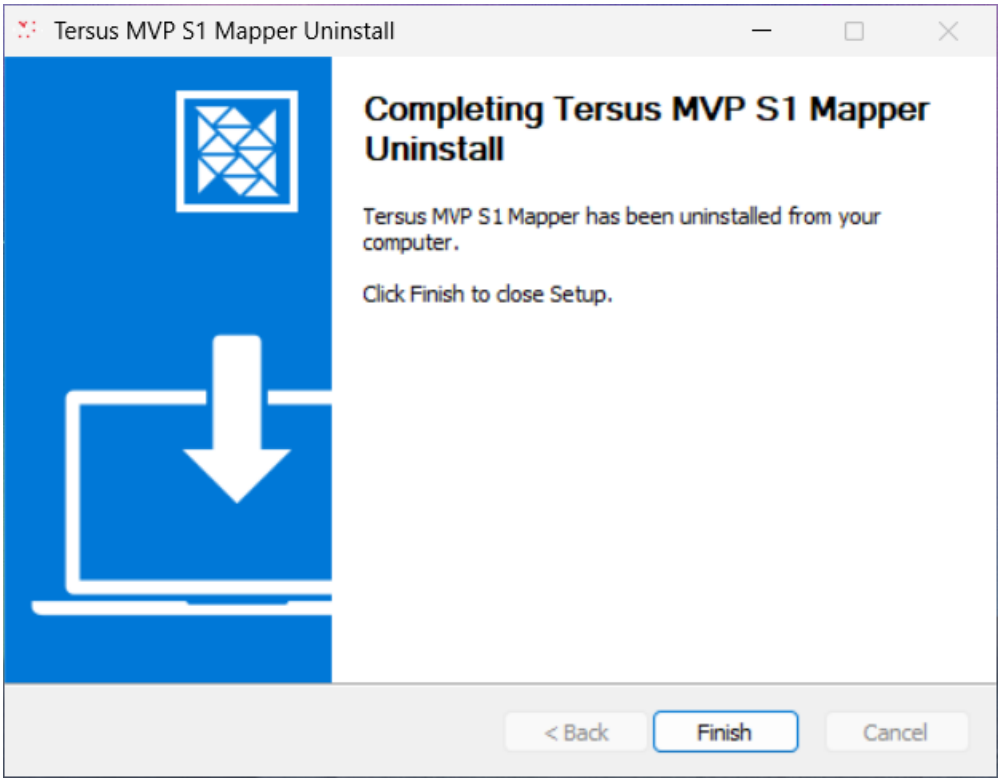


Figure: Uninstall Completion

5.3 Software Licensing

Tersus MVP S1 Mapper uses a hardware key (“dongle”) for licensing. Before use, obtain the dongle and install the driver.

5.3.1 Dongle Acquisition

Each device comes with a standard dongle. For additional dongles, contact the sales team.

5.3.2 Driver Installation

After software installation, the dongle driver installation window will appear, or you can run sense_shield_installer_pub_2.6.0.64252.exe from the software directory.

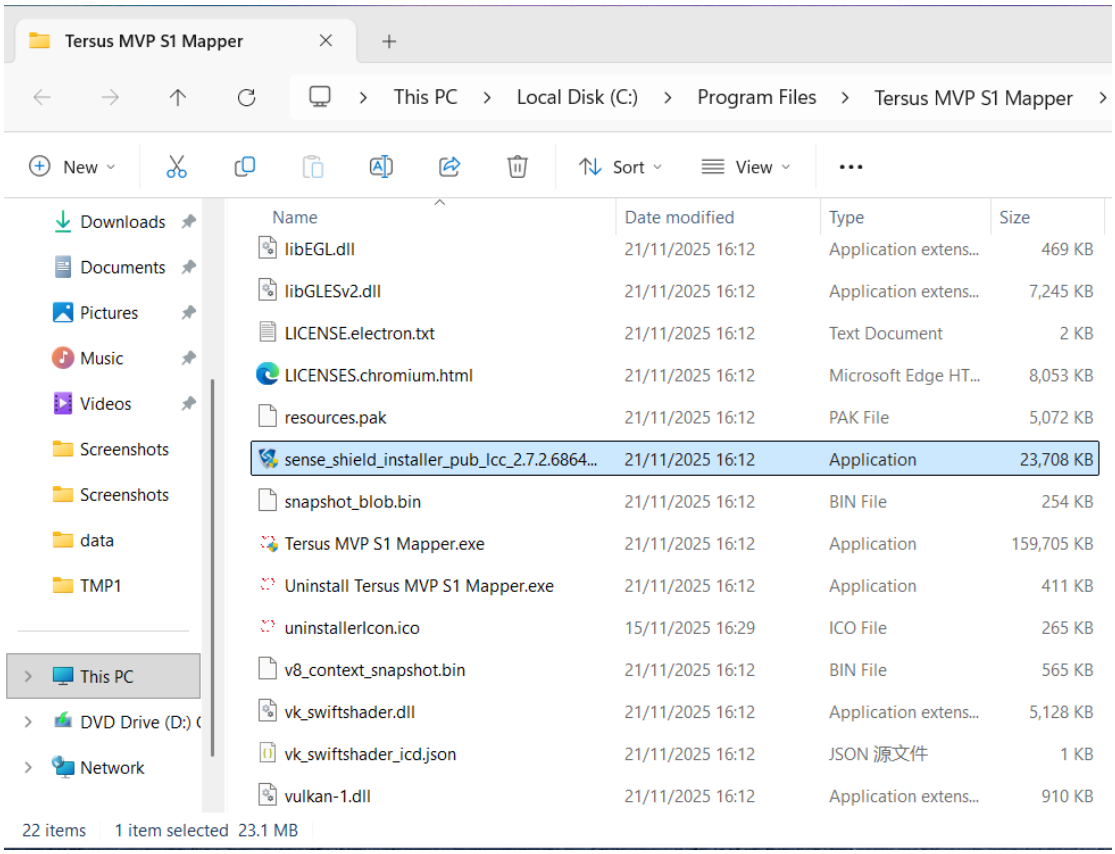


Figure: Dongle Driver Installer

Click Install Now and wait for the driver installation to complete.

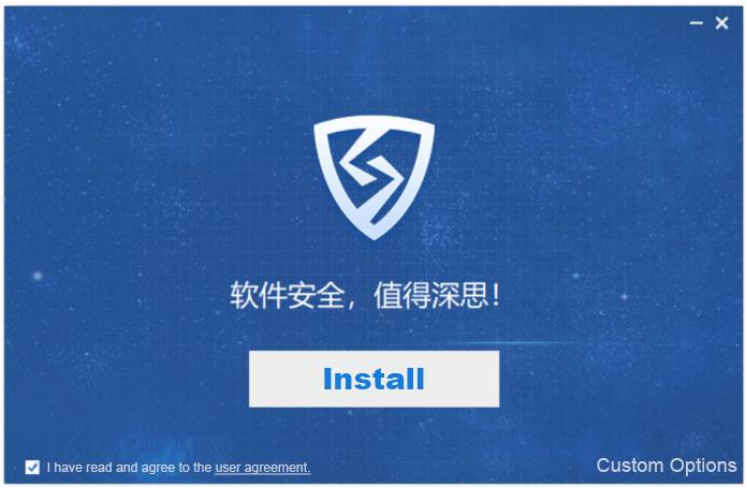


Figure: Dongle Driver Installation Interface

5.3.3 License Information

Insert the dongle into your computer, open the Virbox user tool, and check the [Hardware Key] – Local Dongle list to view license information.

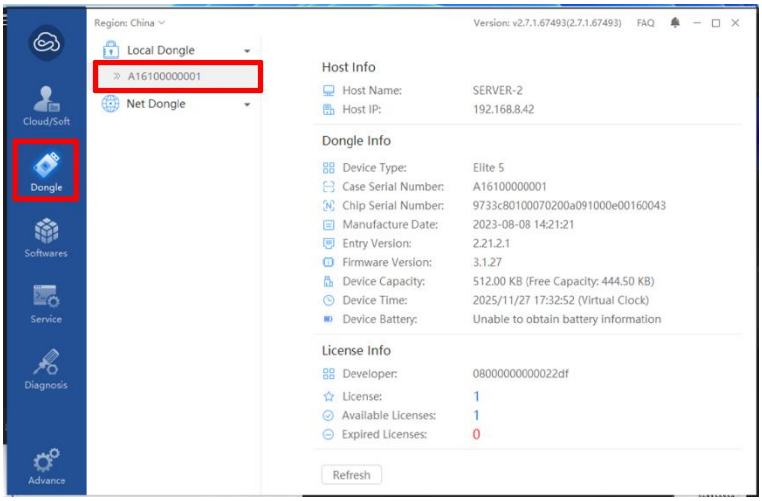


Figure: License Information Interface

5.4 User Registration and Login

When first using Tersus MVP S1 Mapper, a login window will appear. Log in with your Tersus GNSS account to use the software. If you do not have an account, register first. After the initial login, subsequent launches will skip the login step.

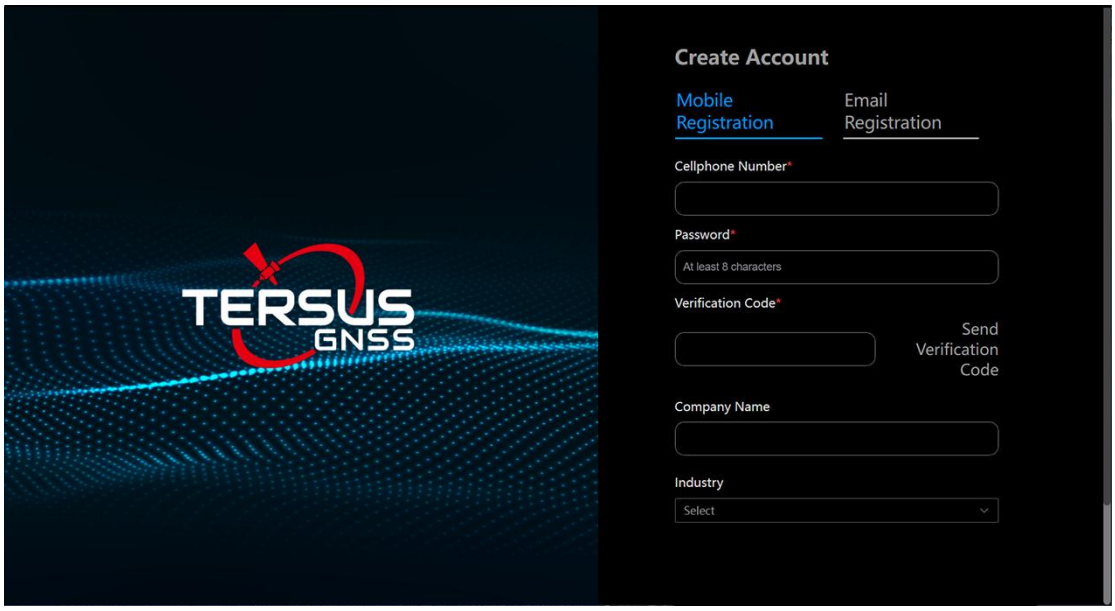


Figure: Tersus MVP S1 Mapper Registration Interface

5.5 Software Data Processing

Remove the TF card from the scanner and insert it into a card reader connected to your computer. Copy the raw scan data to your local machine. Open Tersus MVP S1 Mapper, select the copied data, and click Confirm to begin processing.

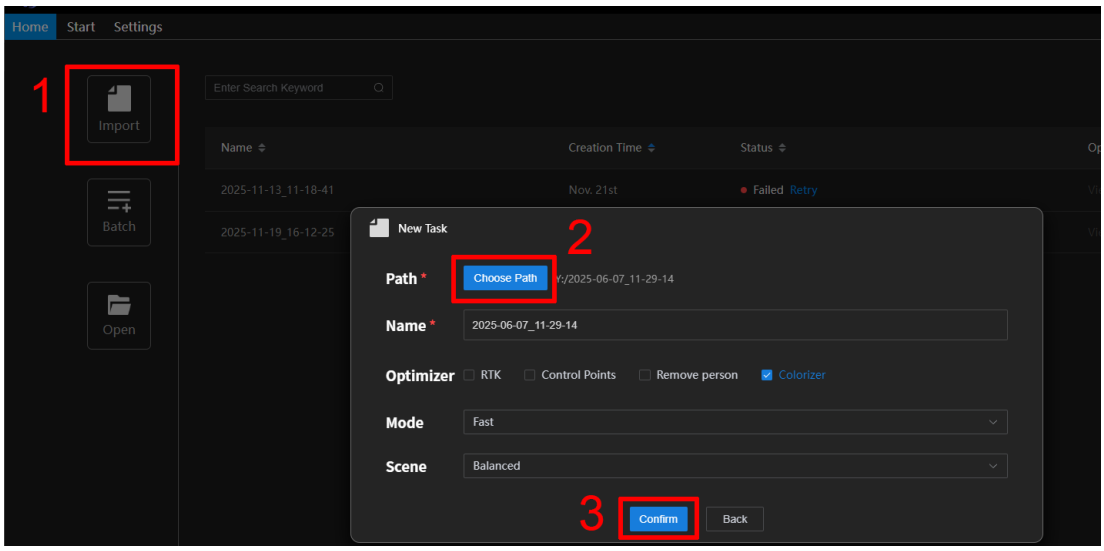


Figure: Tersus MVP S1 Mapper – New Task

Batch import is also supported by selecting Batch Import and adding multiple data paths.

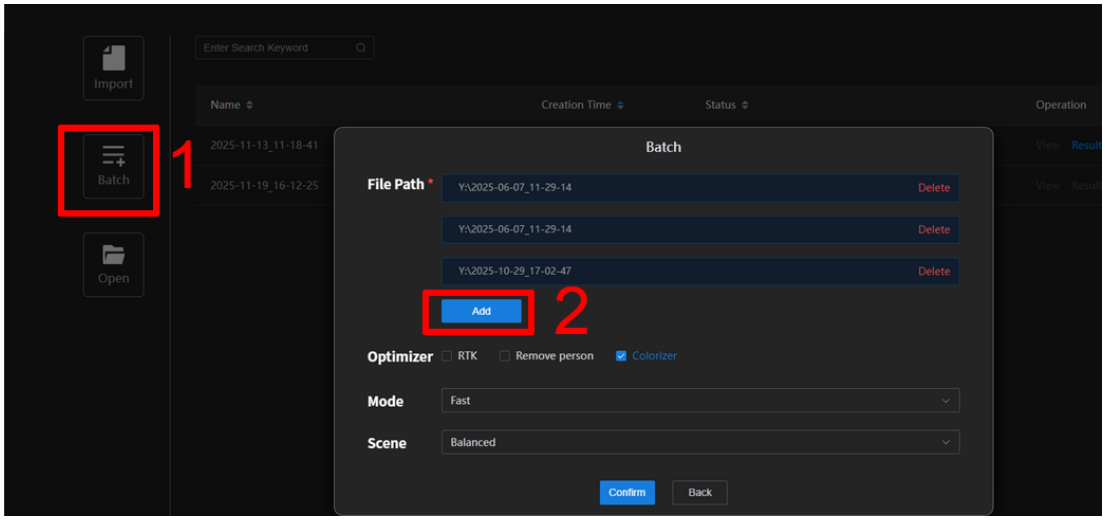


Figure: Tersus MVP S1 Mapper – Batch Import

Once data is successfully imported, click Start Processing. The status bar shows the processing progress. After rendering, the data will be marked as Processed. Select View on the right to inspect the processed point cloud.

5.6 Processed Data

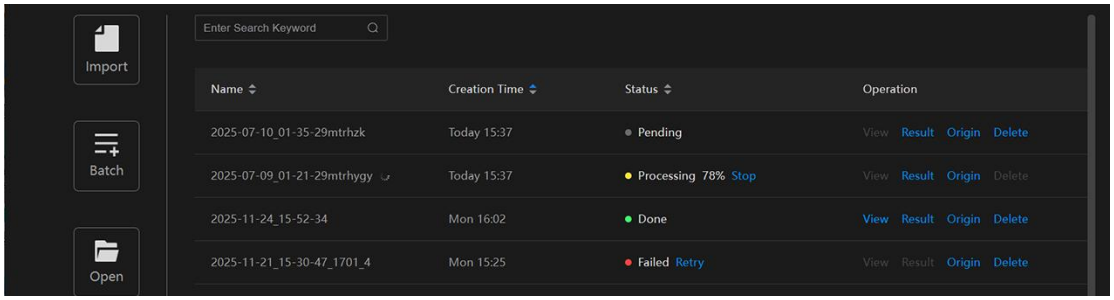


Figure: Tasks in Tersus MVP S1 Mapper

Open a completed task to view the results. Adjust the point cloud display as needed using the left toolbar. The right panel shows the corresponding plan view and captured photos in sync.

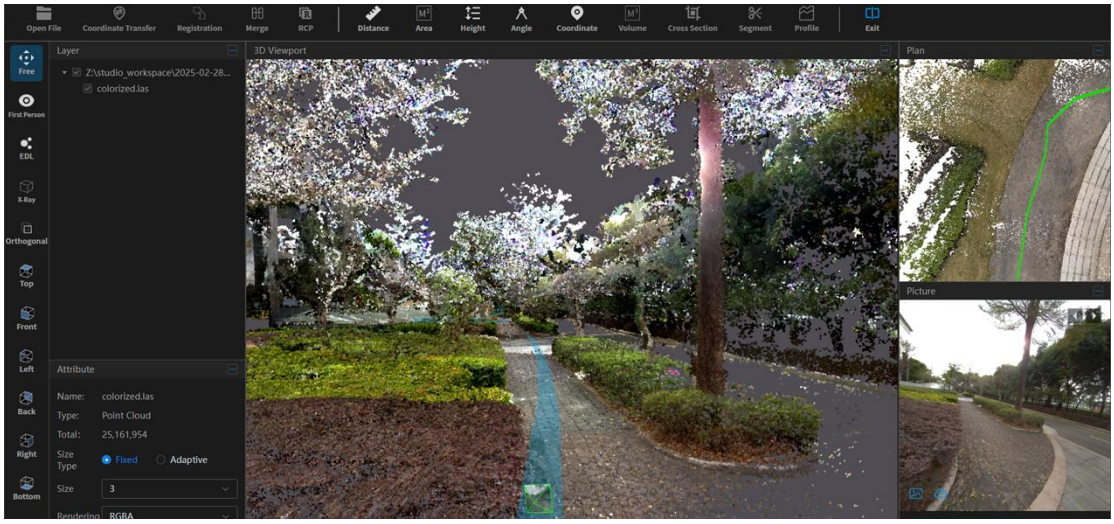


Figure: Point Cloud Result Interface

5.7 Software Window Overview

5.7.1 Layer Window

Displays loaded point cloud files or data in a tree structure, making it easy to manage and operate on multiple files or datasets.

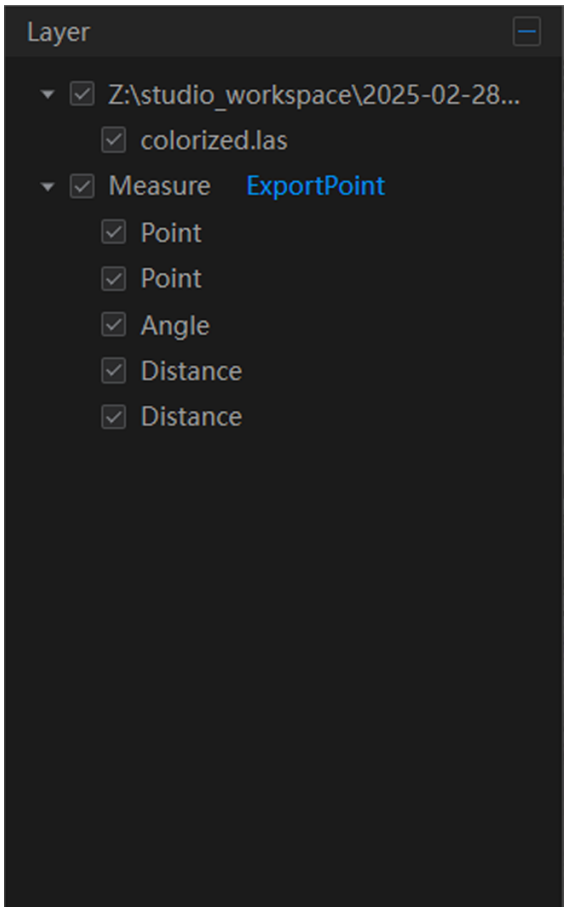


Figure: Layer Window

5.7.2 Show/Hide Layers

Click the small checkbox in front of a layer to toggle its visibility. When checked, the layer's data is displayed in the 3D viewport.

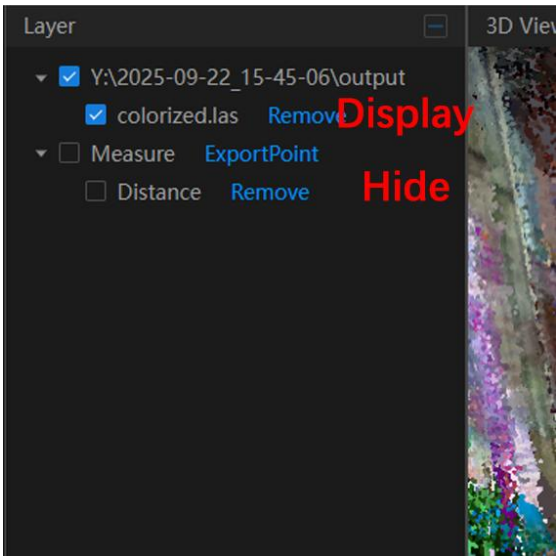


Figure: Layer Show/Hide Control

5.7.3 Remove Layer

Click Remove next to a layer to delete the current layer from the viewport.

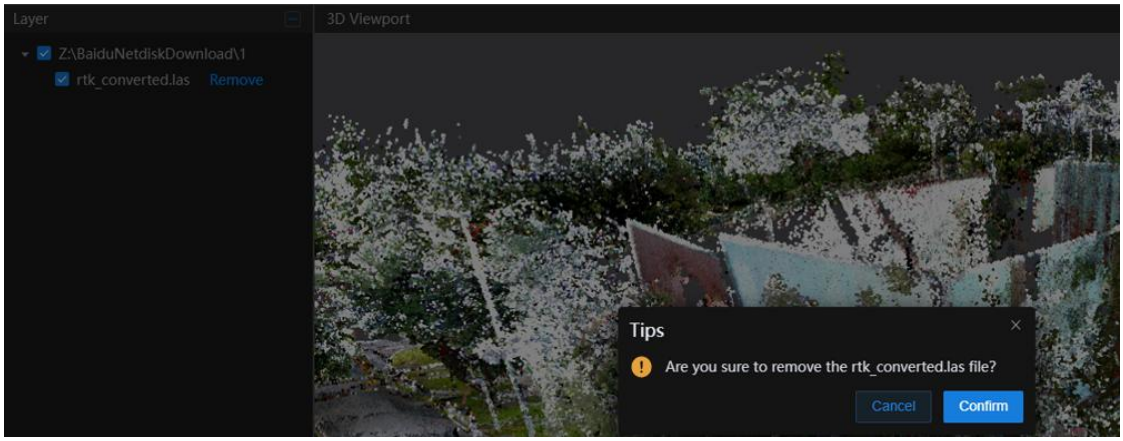


Figure: Remove Layer

5.7.4 Rename Layer

Select the layer to rename, right-click, and choose Rename.

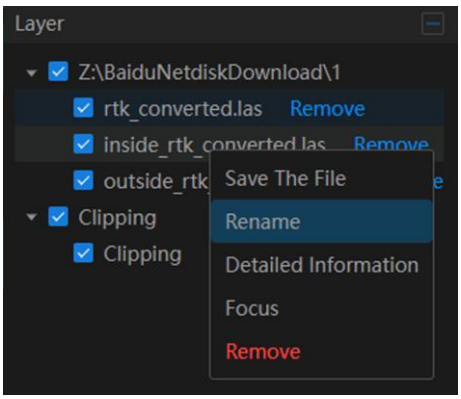


Figure: Rename Layer

Enter the new name in the popup window and click OK to confirm.

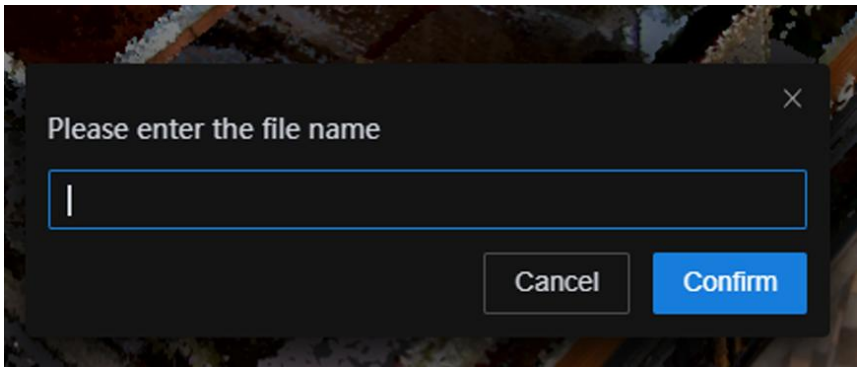


Figure: Rename Layer

5.7.5 Properties Window

Shows detailed properties of the selected layer or data from the Layer Window. Users can interactively adjust layer attributes.

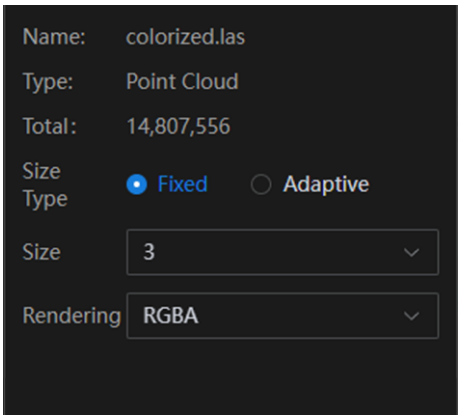


Figure: Properties Window

Select a point cloud layer to view its detailed properties and modify its settings.

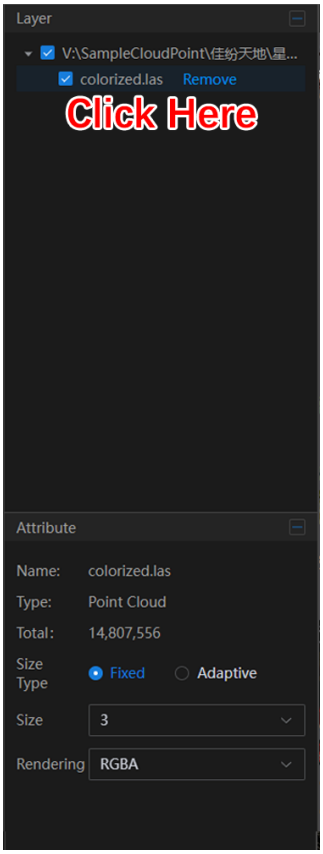


Figure: Properties Window

• Name: The point cloud file name.

• Type: File or data type; displayed as “Point Cloud”.

• Point Count: Number of points in the current file.

• Size Type: Controls display size in the scene. Select Fixed to manually adjust size under Point Cloud Size, or Adaptive to automatically scale.

• Point Cloud Size: Adjusts the display size in the 3D scene.

• Rendering Mode: Sets the point cloud rendering style. Default is True Color, optional modes include Elevation and Intensity.

Figure: True Color Rendering

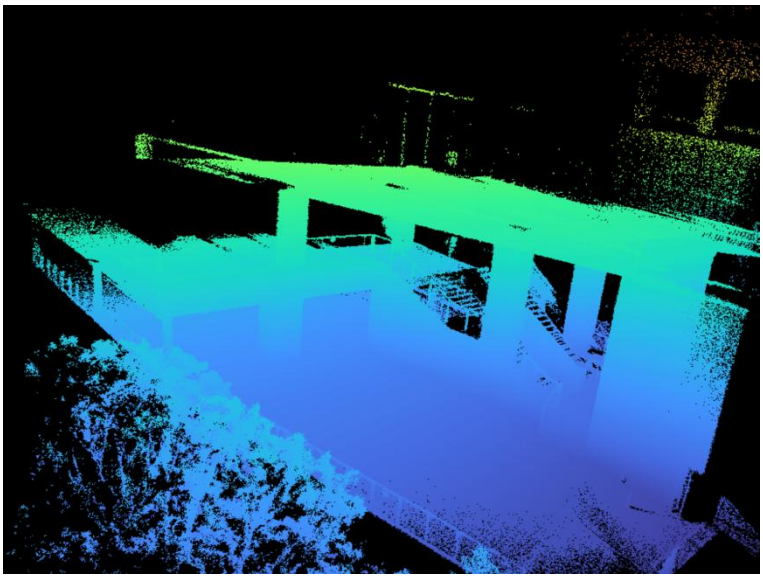


Figure: Elevation Rendering

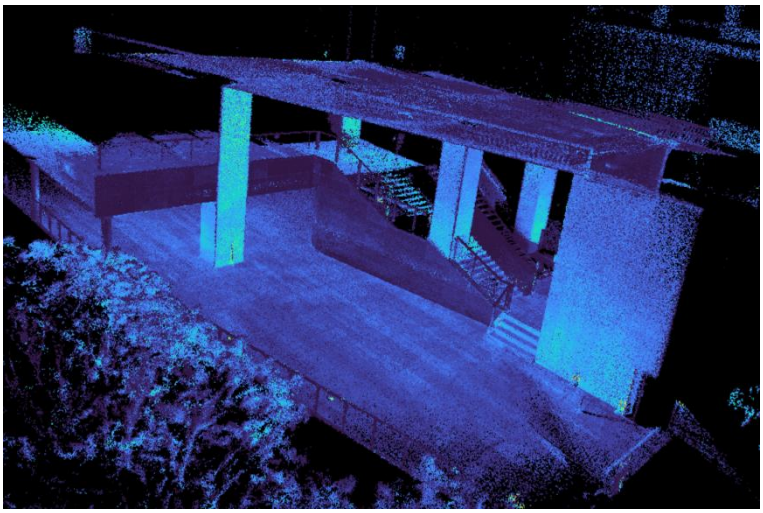


Figure: Intensity Rendering

Measurement Properties:Select the Measurement layer to view measurement results. Results can be copied for reporting or analysis.

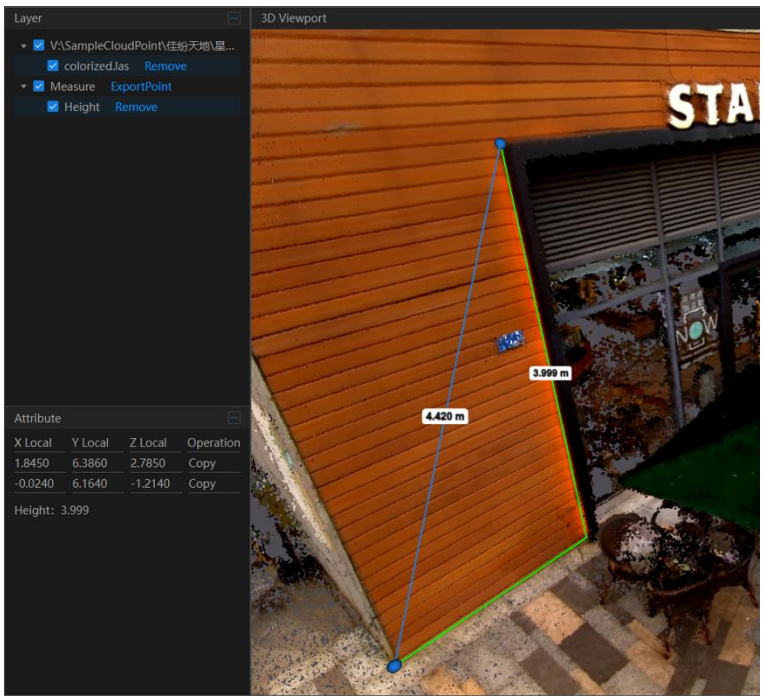


Figure: Distance Measurement Properties

5.7.6 3D Viewport

The 3D viewport is the main window for displaying point clouds. It supports interactive 3D visualization.

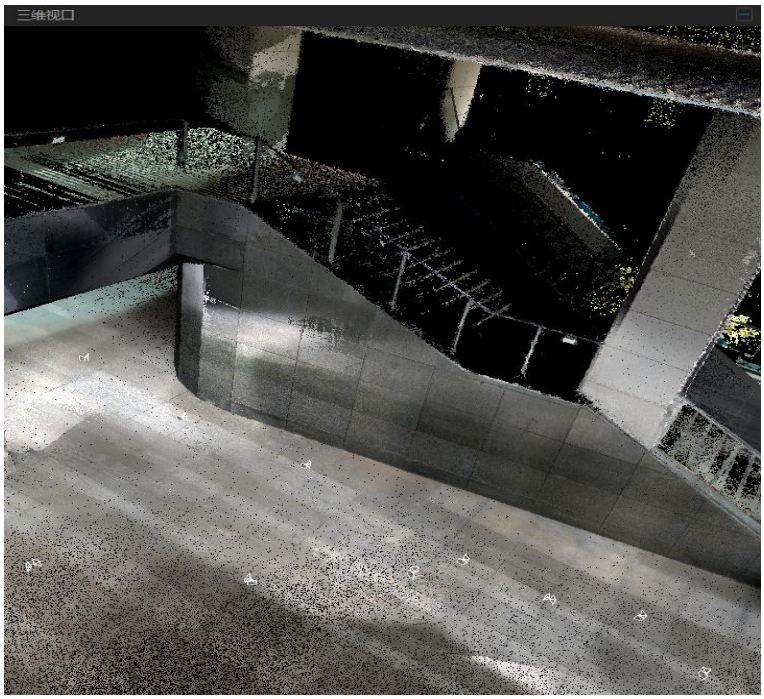


Figure: 3D Viewport

Mouse operations:

• Pan: Hold the left mouse button and drag to pan.

• Rotate: Hold the right mouse button and drag to rotate.

• Zoom: Scroll the mouse wheel to zoom in/out, centered on the cursor location.

Note: The Viewport Control Toolbar can also be used to manage the 3D view (see Section 5.8).

5.8 Viewport Control Toolbar

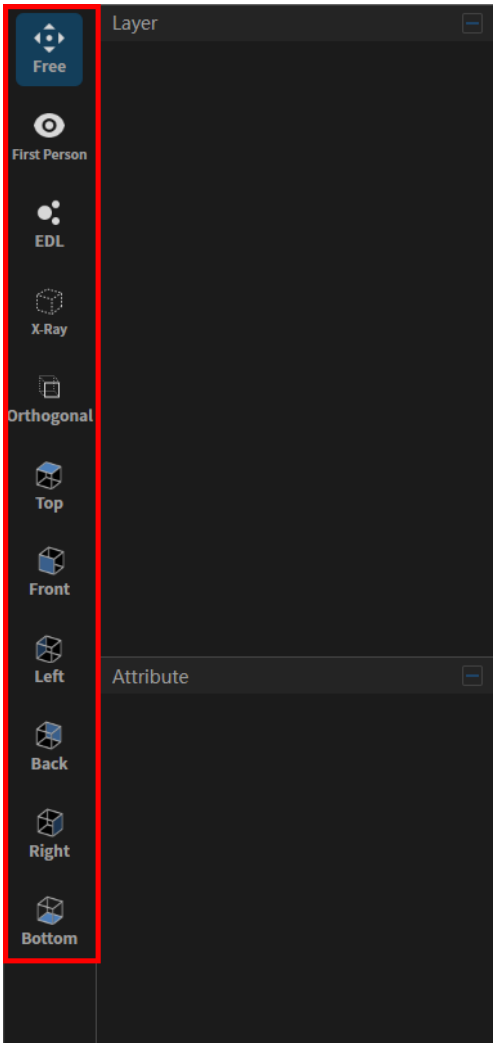


Figure: Viewport Control Toolbar

5.8.1 Free View / First-Person View

Free View: Use the mouse to navigate the 3D viewport (pan, zoom, rotate).

First-Person: Use the keyboard to navigate the 3D viewport:

W: Move forward	S: Move backward	A: Move left
D: Move right	Q: Move down	E: Move up

5.8.2 Orthographic / Perspective View

Default mode is Perspective. Click Orthographic to switch to an orthographic view.

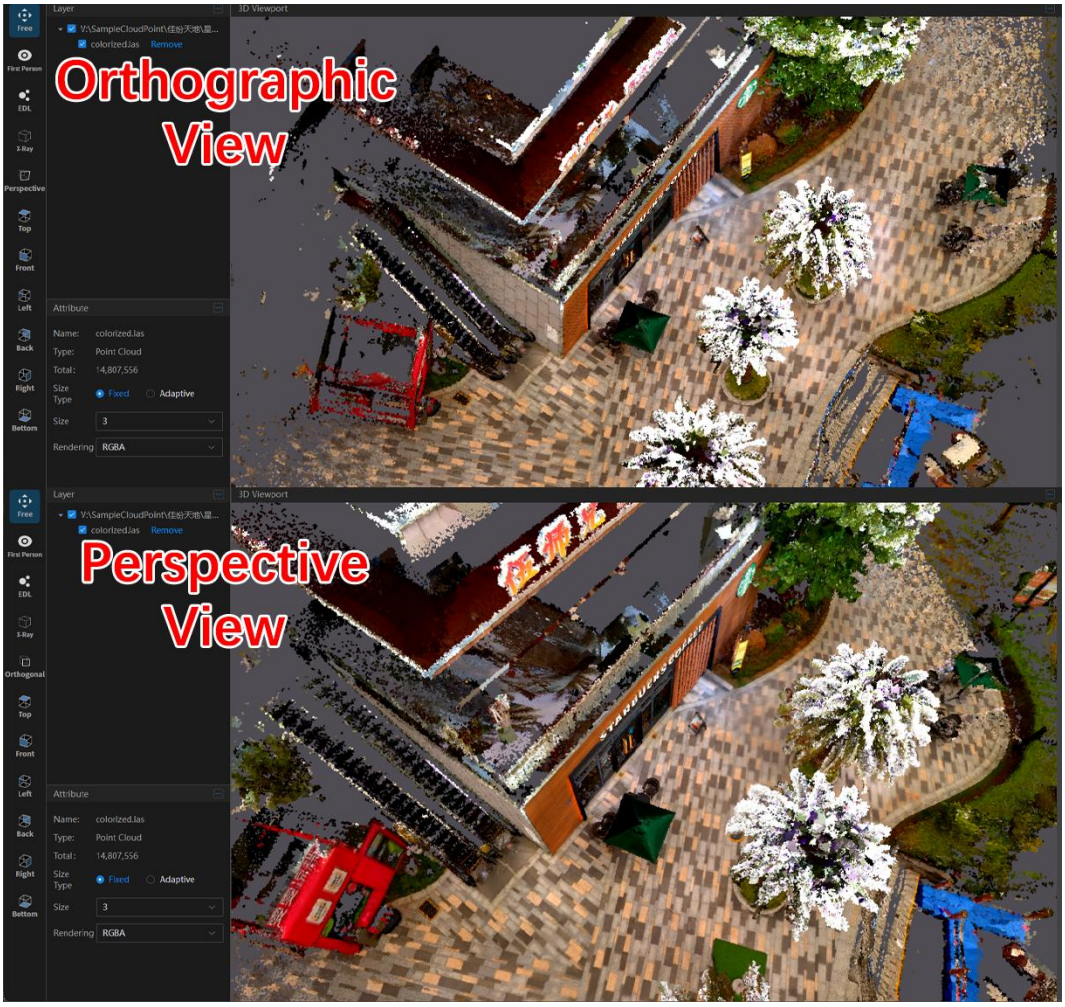


Figure: Different View Modes

5.8.3 EDL Effect

Enhances visual depth and contour clarity by simulating lighting, making model details more prominent.

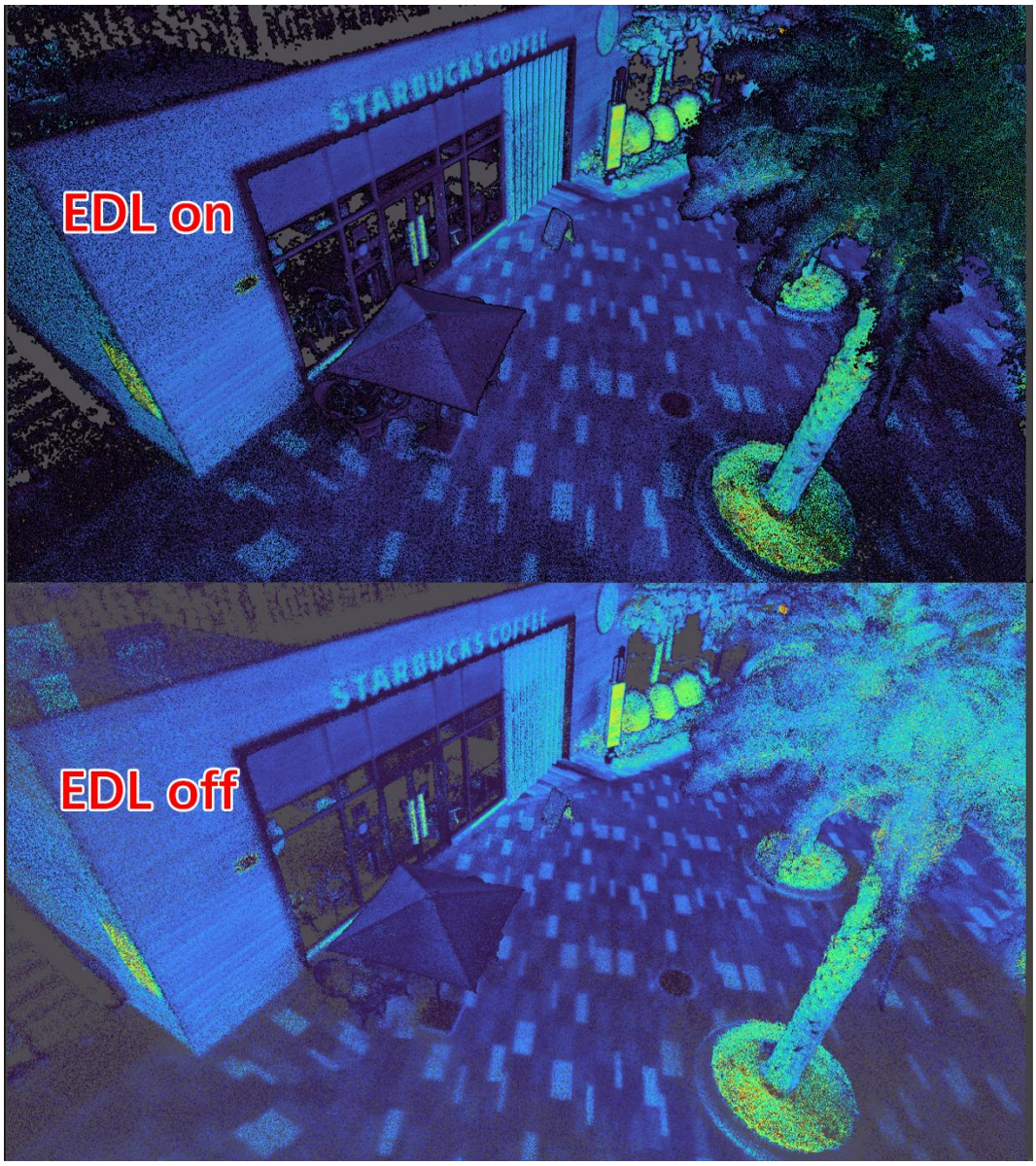


Figure: EDL Effect Comparison

5.8.4 Translucent View

Simulates an X-ray effect, allowing inspection of the model's internal structure.

Figure: Translucent View Enabled

5.8.5 View Orientation

Control the camera to view the point cloud from different angles: Top, Front, Left, Right, Bottom, Back.

5.9 Tools Menu

The Tools Menu provides common functions such as coordinate transformation, point cloud registration, measurement, height profile analysis, clipping, point cloud comparison, and photo comparison.

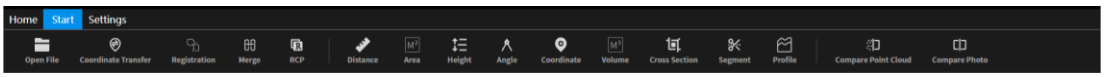


Figure: Tools Menu Bar

5.9.1 Coordinate Transformation

Click Coordinate Transformation to open the operation interface. Here, users can select the point cloud file to be transformed, the source coordinate system, the target coordinate system, the projection type, geoid file, and horizontal correction file. Finally, select the output folder and confirm to complete the transformation. Ensure the source coordinate system matches the one used during scanning.

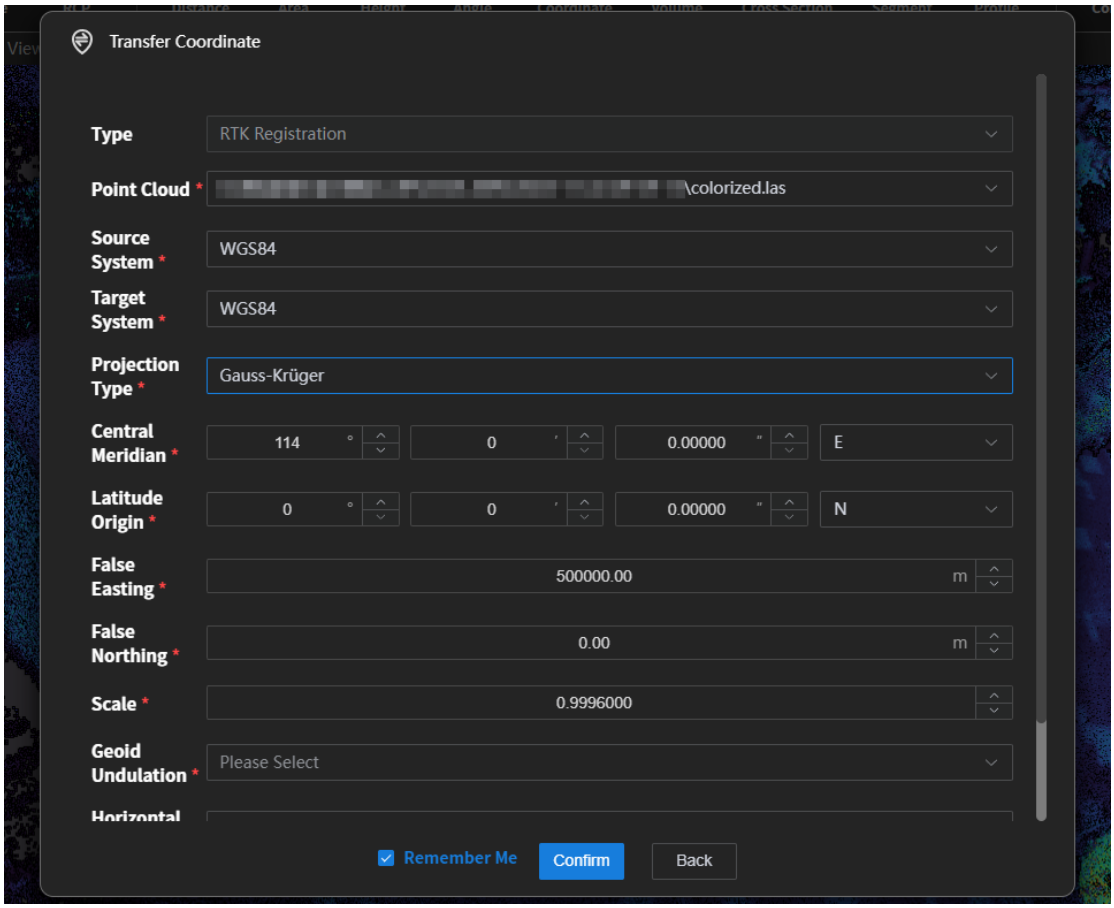


Figure: Coordinate Transformation Interface

After setting the parameters, click Confirm. The system automatically performs the transformation. Transformed data is saved in the geo folder under the results directory. The output .las files prefixed with RTK contain real-world coordinates.

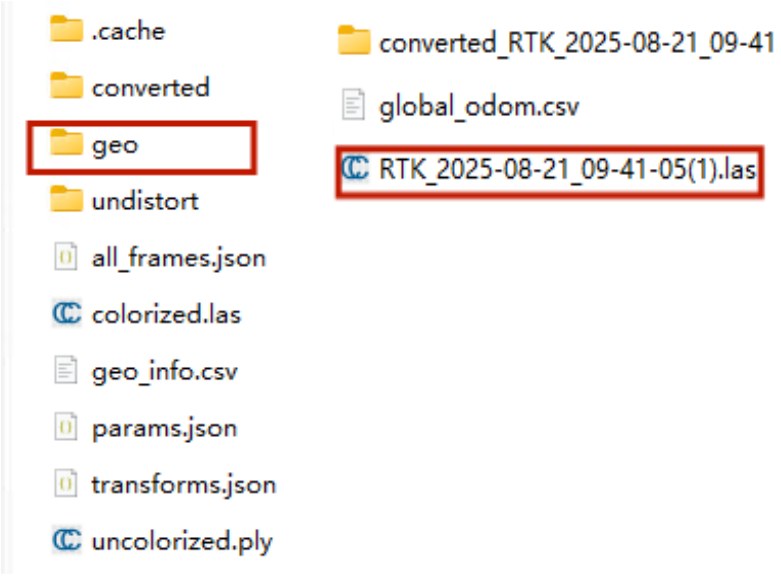


Figure: Point Cloud with Real Coordinates

5.9.2 Point Cloud Registration

Click Point Cloud Registration, and select the two point clouds to be registered. Each must have at least three common points to serve as reference points.

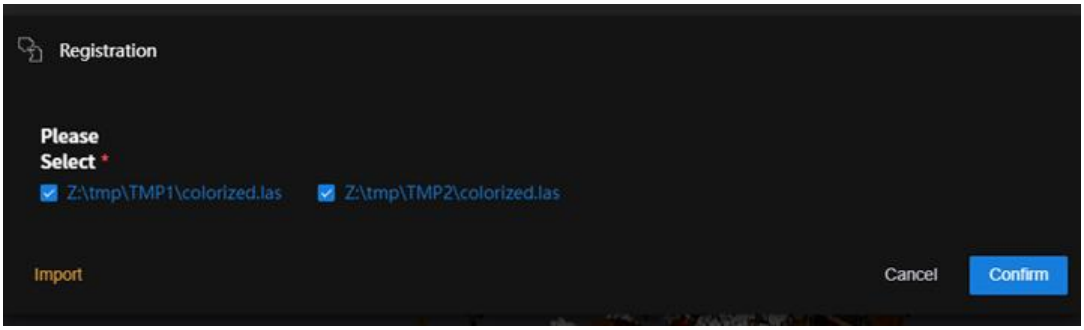


Figure: Import Two Point Clouds for Registration

After import, choose one point cloud as the reference, optionally using an intensity point cloud. Click corresponding points in both point clouds to select reference points. The points should be clear and easy to select. Pre-plan reference points before scanning, extending scanning time at these positions if needed. It is recommended to select at least three non-collinear points.

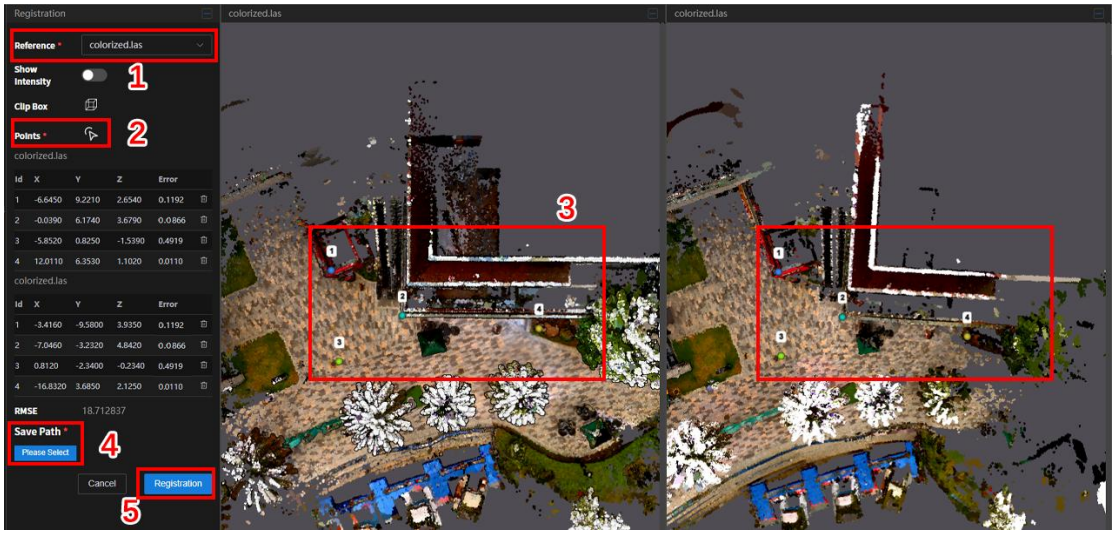


Figure: Select Common Points for Registration

5.9.3 Point Cloud Merging

Click Point Cloud Merge, select the previously registered point clouds, and click Confirm to merge them.

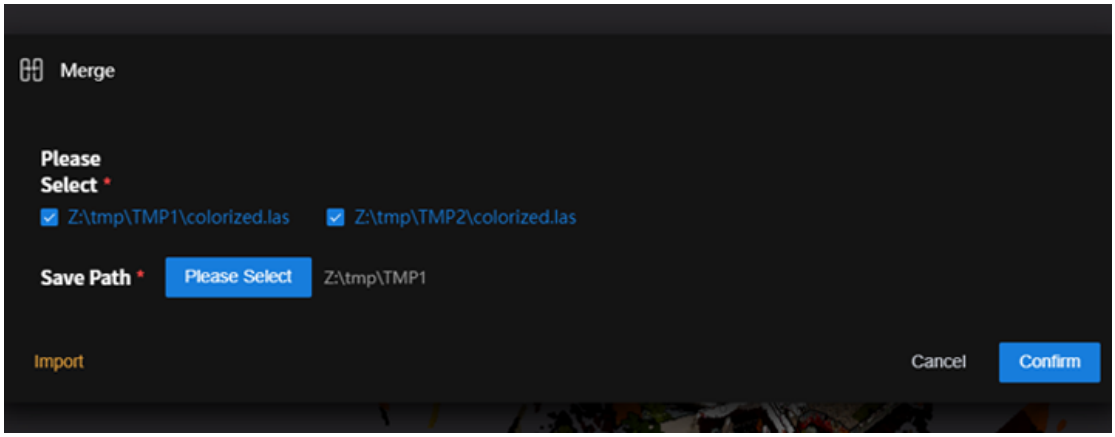


Figure: Point Cloud Merge Interface

5.9.4 RCP Conversion

When exporting point clouds to third-party software for industry-specific workflows, .las files sometimes need to be converted to .rcp. The platform integrates an RCP conversion tool for quick workflow compatibility. Click RCP, import the file, choose the save location, and click Confirm.

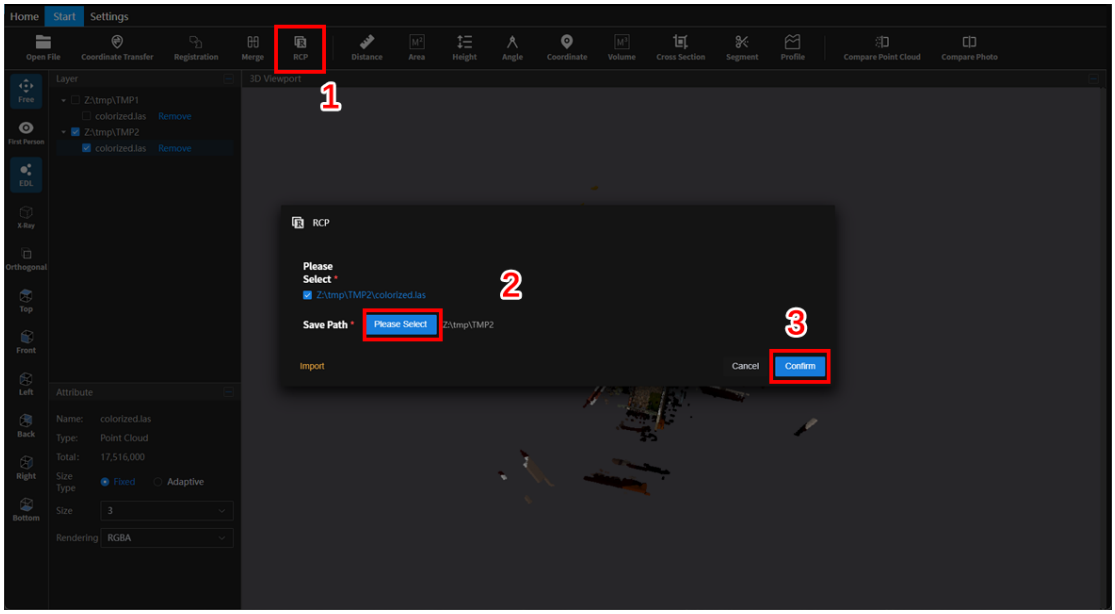


Figure: RCP Conversion Interface

5.9.5 Distance Measurement

Click Distance (Measure) to enable distance measurement. Click two points in the scene to measure the distance between them. Verify selected points for accuracy to avoid errors.

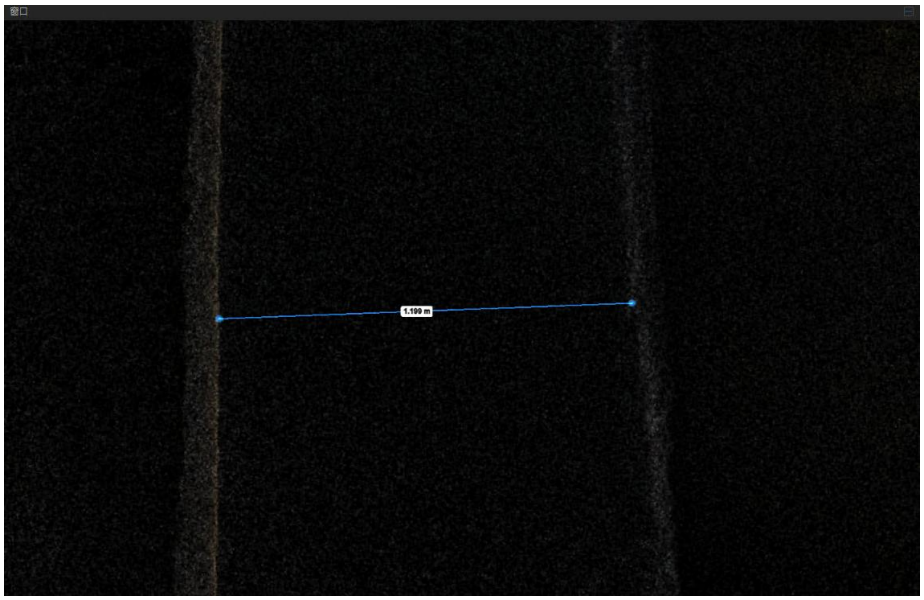


Figure: Distance Measurement

5.9.6 Area Measurement

Click Area (Measure) to measure the area of a polygon. Click points sequentially in the scene to define the polygon, and the area will be calculated automatically.

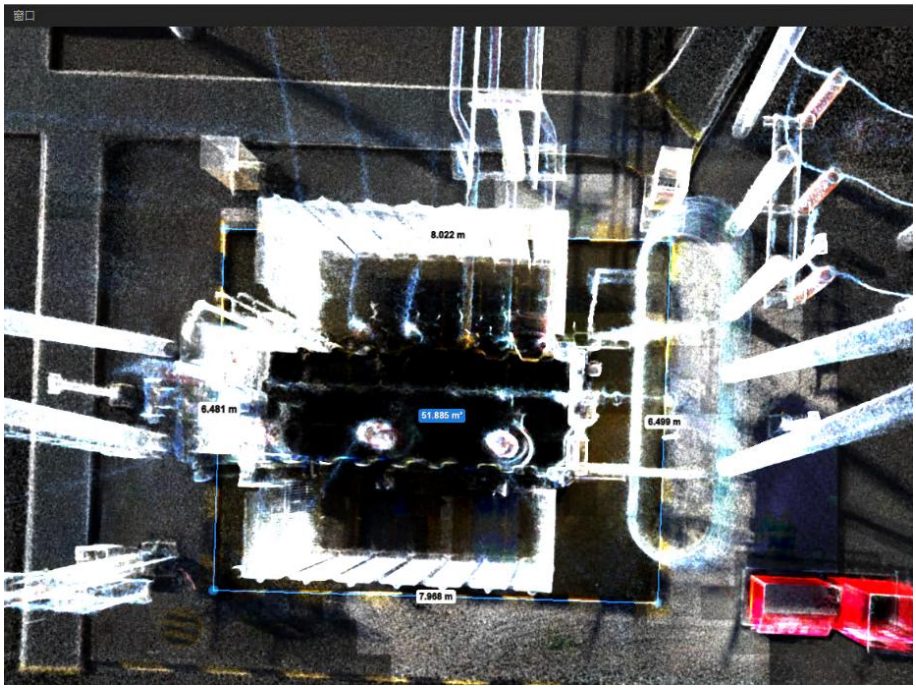


Figure: Area Measurement

5.9.7 Height Measurement

Click Height (Measure) to measure height between two planes. The platform calculates height using geometric relationships.

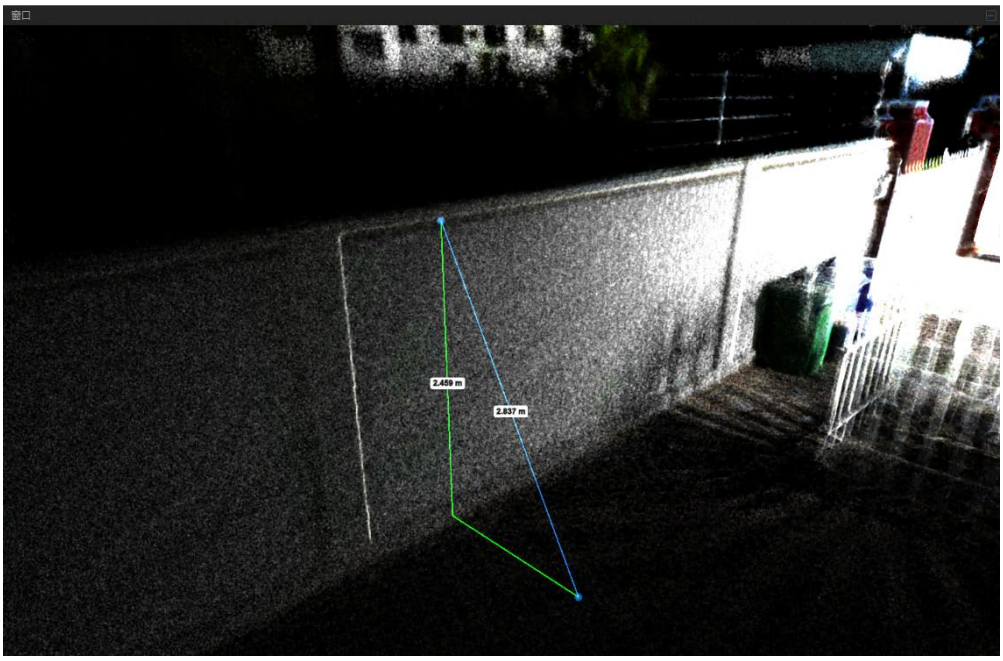


Figure: Height Measurement

5.9.8 Angle Measurement

Click Angle (Measure) to measure angles. Click points sequentially to measure the angle between two edges.

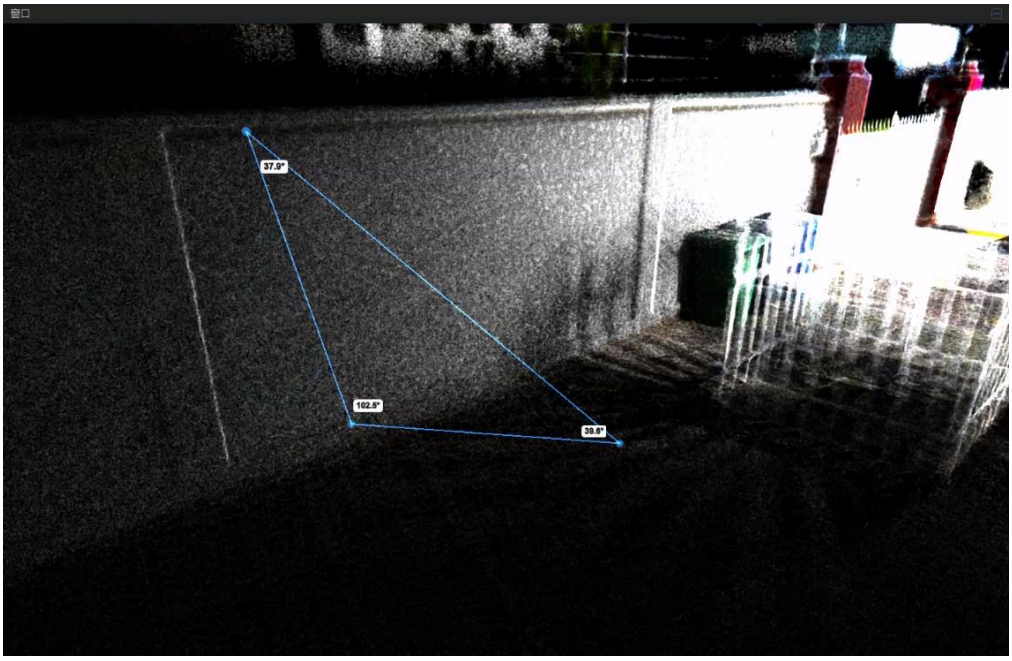


Figure: Angle Measurement

5.9.9 Coordinate Measurement

Click Position (Measure) to enable coordinate measurement. Select a point in the point cloud, and the cursor will display its coordinates.

Figure: Coordinate Measurement

5.9.10 Volume Measurement

Click Volume (Measure) to calculate the volume of a selected area. The system automatically determines height range, reference height, and grid size. Click Calculate to complete the measurement.

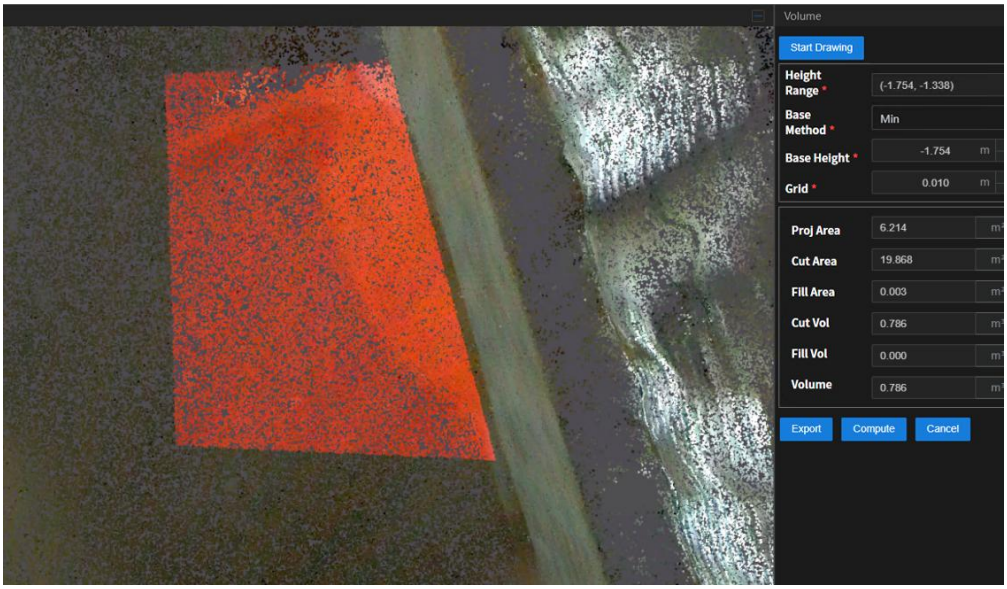


Figure: Volume Measurement

5.9.11 Cross Section

Click Cross Section to enclose the entire point cloud. Selecting the ring allows rotation along three axes. Selecting the arrows enables push/pull movement along six directions. Points outside the box are clipped; points inside are retained. Fine adjustments can be made using the box parameters on the right panel:

- X, Y, Z: Center position of the box
- Scale X, Y, Z: Offset in three directions
- Rotation X, Y, Z: Rotation around three axes

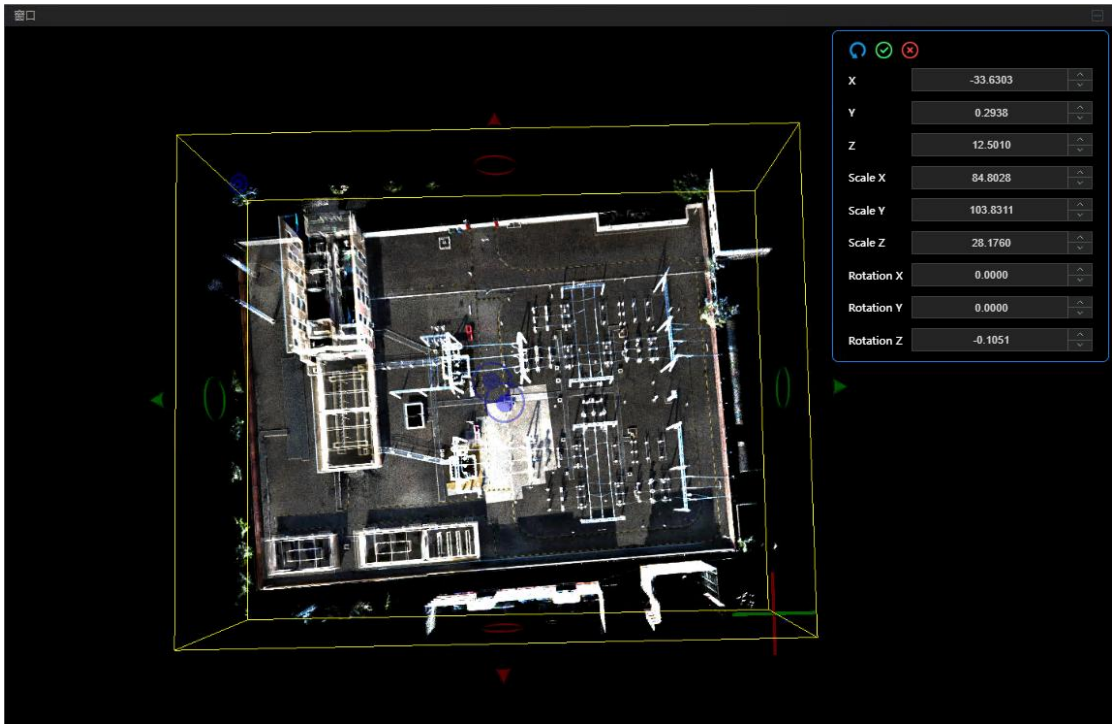


Figure: Cross Section Interface

5.9.12 Segment

Click the Segment button. Use the left mouse button to draw the region and right-click to finish drawing.

After completing the drawing, click **Inside** to display only the point cloud within the drawn area, or click **Outside** to retain only the point cloud outside the drawn area.

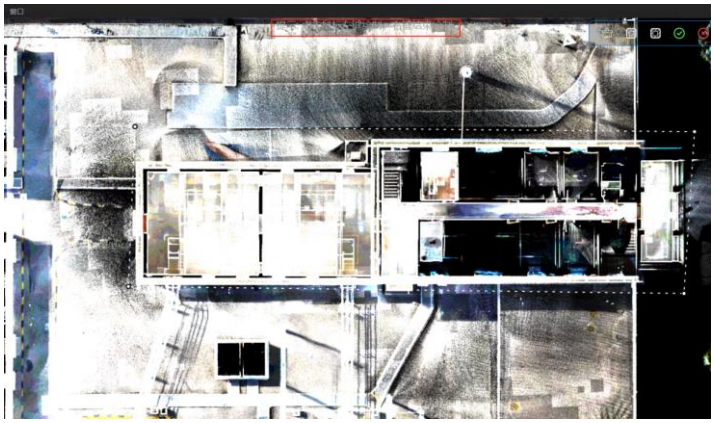


Figure: Segment Interface

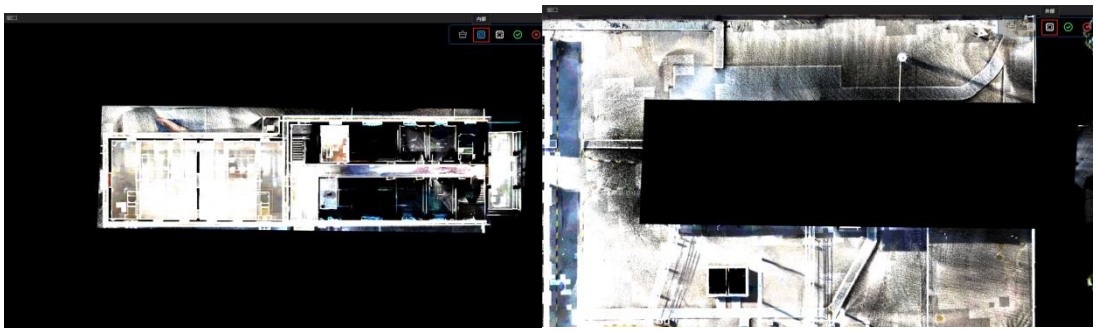


Figure: Clipping Inside / Outside

After selection, click Export. Two point clouds representing inside and outside the drawn area appear in the data frame. Right-click to save the desired point cloud.

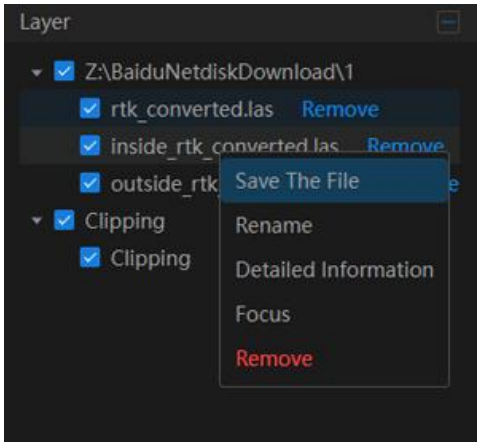


Figure: Save Clipped Point Cloud

5.9.13 Compare Point Clouds

Click Compare Point Clouds and select two point clouds for comparison. The display is divided into left and right panels. Moving one point cloud moves the other synchronously. Clicking the small lock in the middle disables synchronization. This feature clearly highlights differences between the two point clouds.

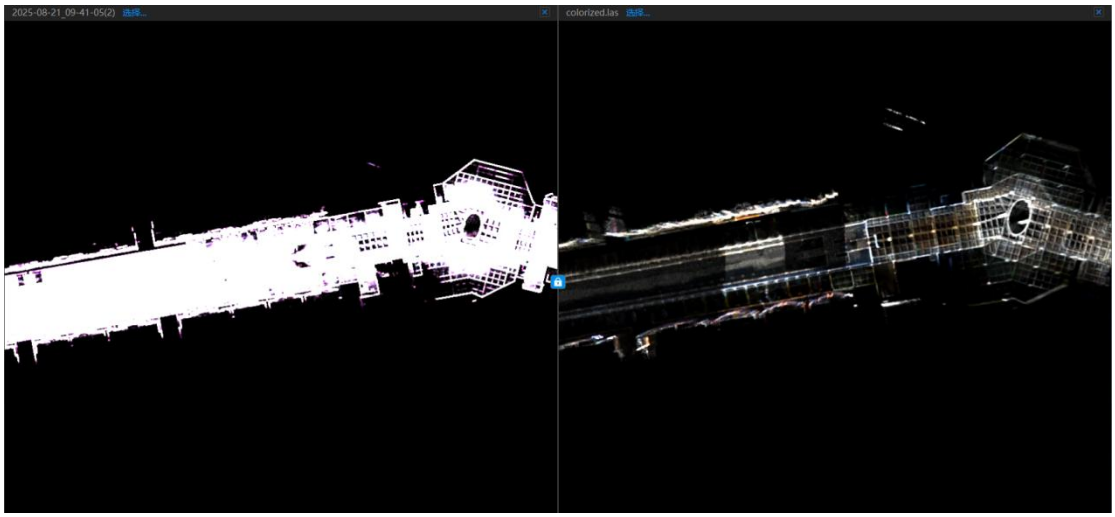


Figure: Point Cloud Comparison Interface

5.9.14 Compare Photos

This function allows comparison between point clouds, floor plans, and site photos for analysis.

Figure: Photo Comparison Interface

6. Handheld LiDAR Device Maintenance

※ Do not disassemble or modify the handheld LiDAR device without authorization.

The Tersus MVP S1 is calibrated and tested before leaving the factory. Any damage caused by unauthorized disassembly or modification shall be borne by the user. If you need to design or modify a mounting solution for the device, please contact Tersus GNSS Technical Support.

6.1 Battery

To charge the device, use the Tersus MVP S1 supplied charger. Insert the charger into the TYPE-C charging port on the handle. The power indicator on the handle will light up, indicating that the battery is connected to the charger. You can also press the battery button to check the remaining battery level. During charging, the number of indicator lights shows the charging progress.

6.2 Precautions

1. Store the device in a dry, ventilated environment at room temperature to prevent lens fogging. Recommended storage temperature: -20℃ to 60℃. If fogging occurs, it usually disappears automatically after the device warms up.
2. Avoid storing the device in locations with strong vibrations or near strong magnetic fields.
3. Do not move the device directly from a cold environment to a warm one to prevent condensation.
4. Do not expose the device to direct sunlight for prolonged periods.
5. Do not scratch the lens coating with fingers or hard objects.

6. Keep all device ports clean and dry.
7. When cleaning the lens, use a soft, dry cloth. Do not use organic solvents such as thinner or gasoline.
8. Do not use unstable power sources or voltage exceeding the device's specifications.
9. Avoid frequent power on/off cycles. Wait at least 60 seconds between consecutive startups to prevent shortening the lifespan of internal components.
10. The handheld LiDAR is a precision device. During transport, place it securely in its carrying case.

7. After-Sales Support

7.1 Transportation

All delivered devices must be packaged according to standard protective measures. Packaging should meet the specific requirements for long-distance transportation, moisture protection, shock resistance, and rust prevention to ensure the device is safely delivered.

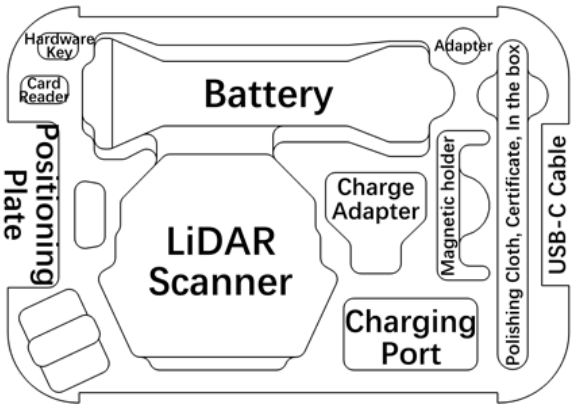


Figure: Interior Layout of the Handheld LiDAR Device Transport Case

The Tersus MVP S1 transport case is made with industrial-grade materials, featuring a foldable latch, a durable handle, and robust structure. Keep the case lid facing upward, never invert the case. Avoid severe shocks and bumps during transport.

7.2 Warranty & Support

1. Hardware warranty period: 12 months, starting from the date of delivery. During the warranty period, Tersus GNSS provides delivery, repair, and quality assurance within mainland China.
2. Warranty services:

Purchaser: User of Tersus GNSS products

Provider: Tersus GNSS Inc.

Warranty services are provided according to Tersus GNSS after-sales policies. Within the warranty period, the provider offers free technical support and covers repair or replacement costs due to product quality issues. Damage caused by water ingress is not covered. For non-quality-related damages, paid repair services are available. Do not remove or destroy “Void if removed” labels, otherwise the warranty will be void.

For any questions, please contact Tersus GNSS Inc.

For any questions, please contact:
Email: support@tersus-gnss.com
Tersus GNSS Inc.