GoSLAM

GoSLAM Mapping Master
User Manual

—————— Desktop Processing Software

/Contents

Software Features

GoSLAM Mapping Master
Operation Commands and
Function Descriptions

Software Features
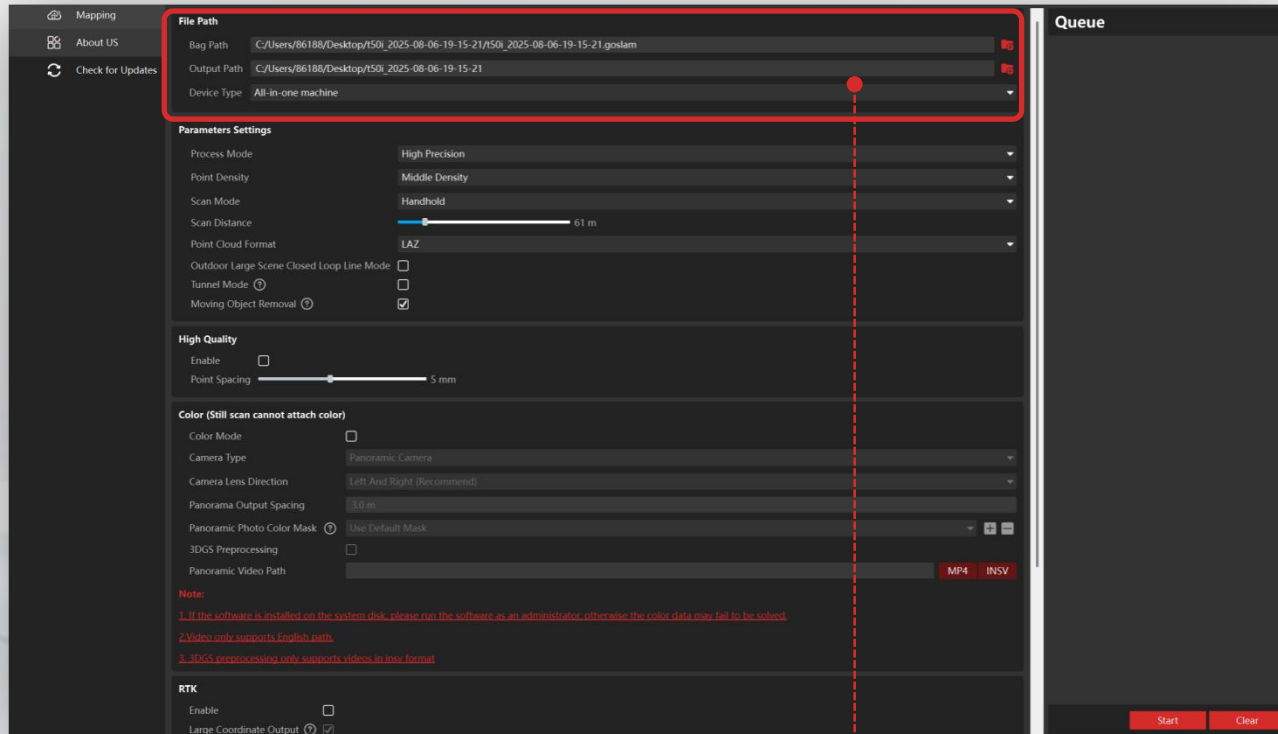
File Path

(1) Bag Path： After opening Mapping Master, click the icon button on the right side of the data package to select the data file for processing. (Note: The file path must not contain Chinese characters.)

(2) Output Path： Click the icon button on the right side of the output path to select the output folder. The default path is the same as the original data.
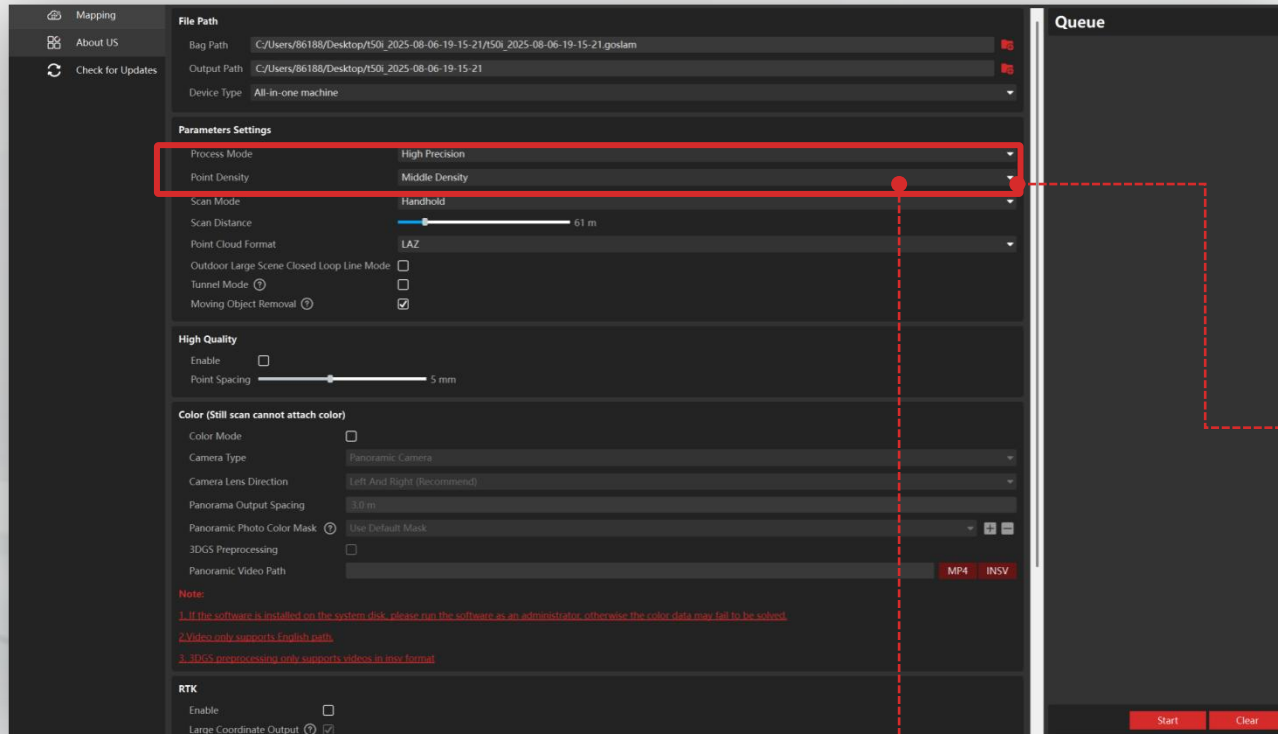
(3) Type

All-in-one machine: T series and T-i series devices.

Split machine：RS series devices.
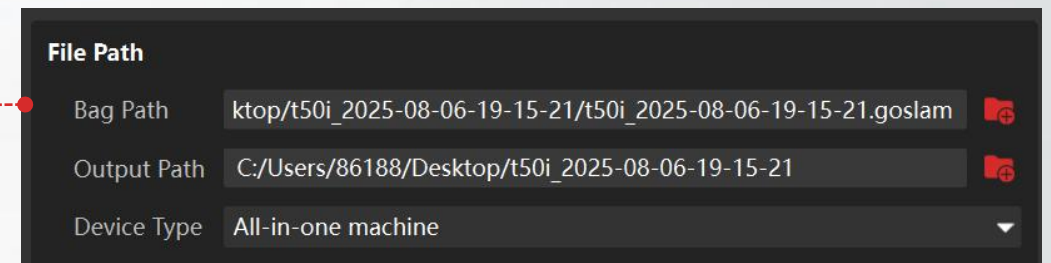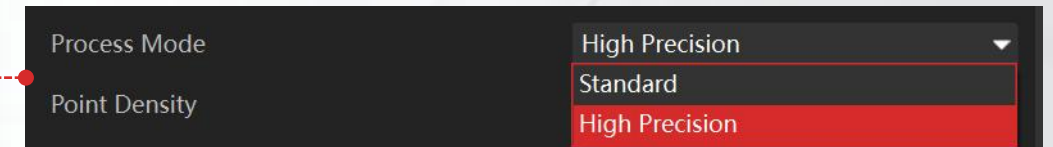
Software Features

Parameters Settings

(1) Process Mode

*Standard： Suitable for most scenarios (faster processing speed)；
*High Precision： Suitable for enclosed environments and outdoor scenarios requiring high accuracy.

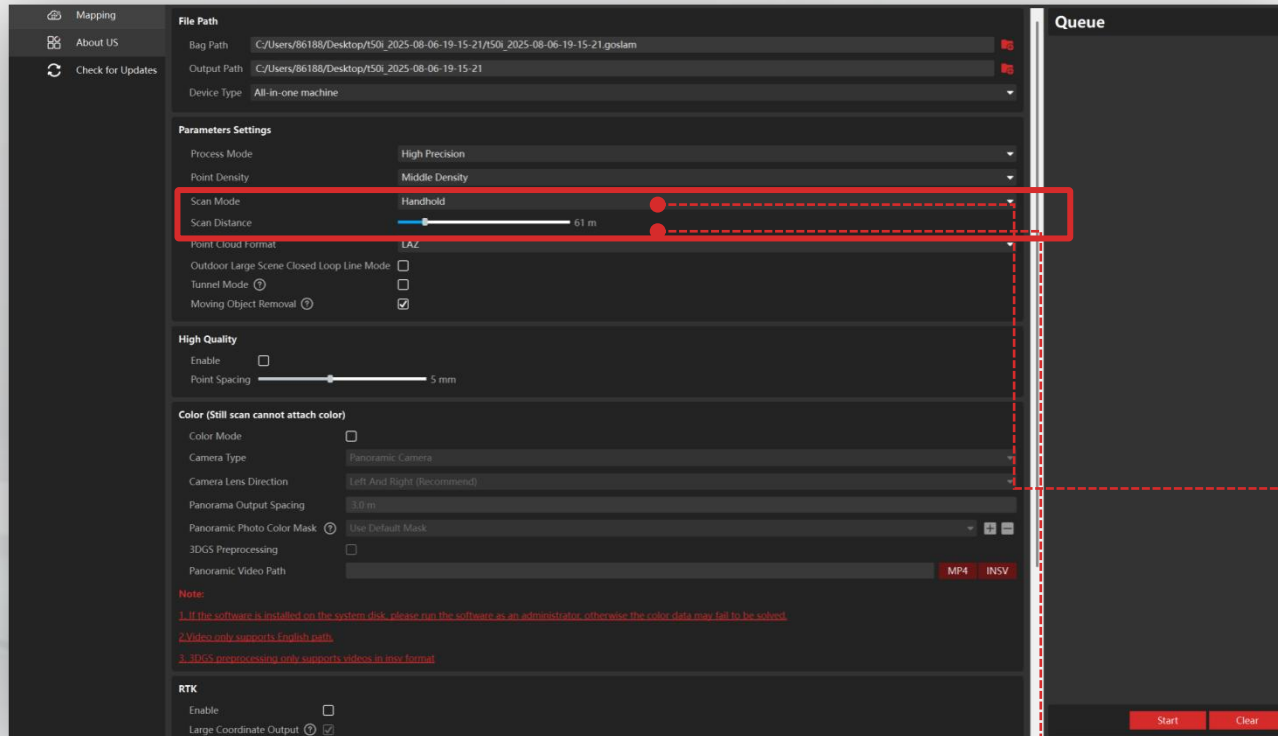### (2) Point Density： Adjusts the output points number from the raw point cloud.

*Middle Density： Standard output density from raw point cloud；
*High Density： Significantly increase the output density from raw point cloud.
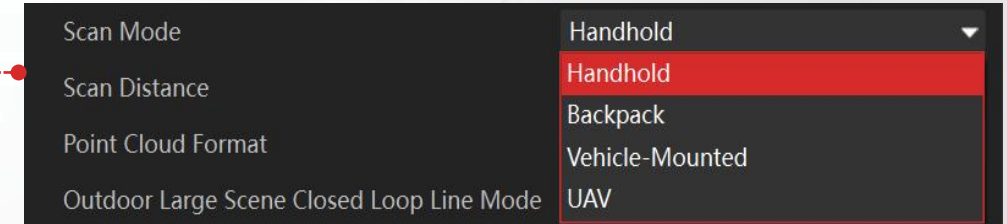
Software Features

Parameters Settings

(3) **Scan Mode**: Select based on the actual scanning method.

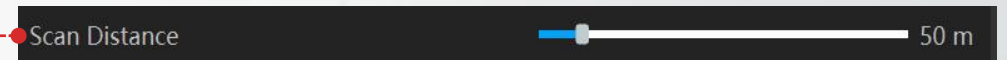*Handhold: Handhold Scanning

*Backpack: Backpack Scanning

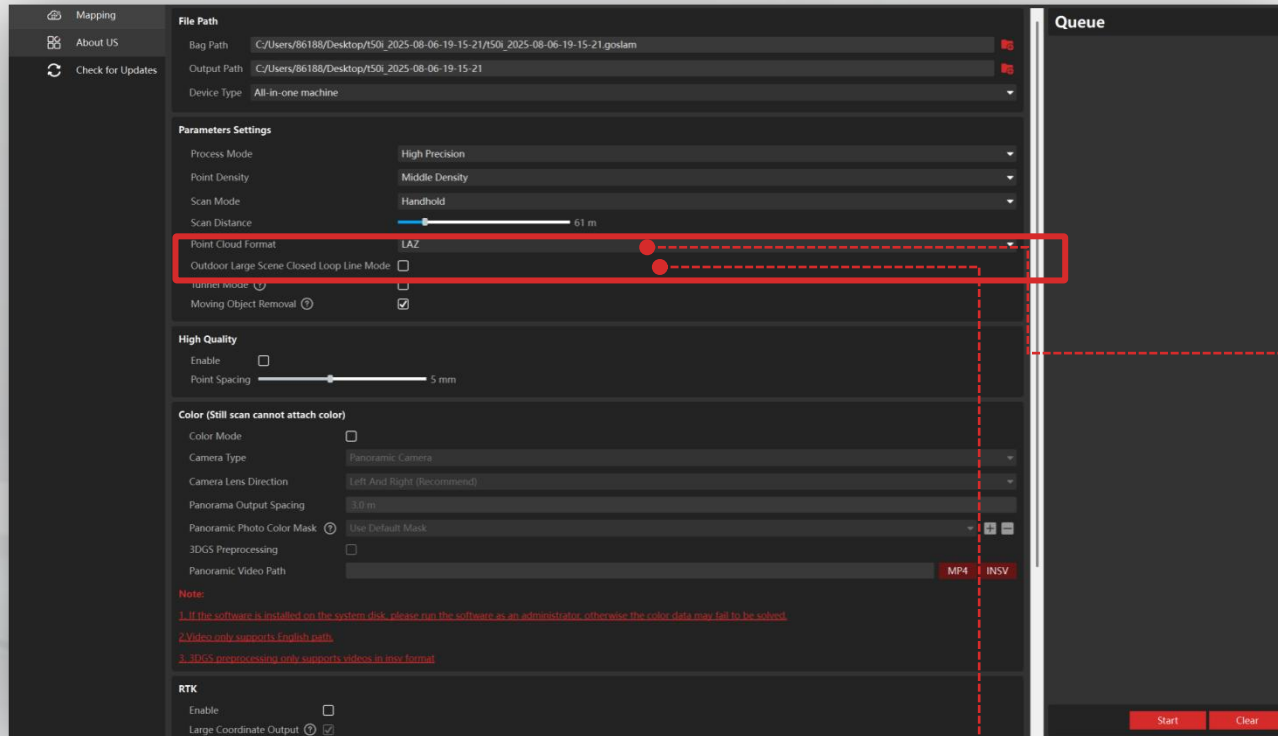*Vehicle-Mounted: Vehicle-mounted Scanning

*UAV: Drone Scanning

(4) **Scan Distance**: Adjust the output range of point cloud based on device models and actual demands.
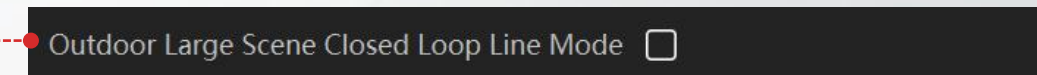
Software Features

Parameters Settings

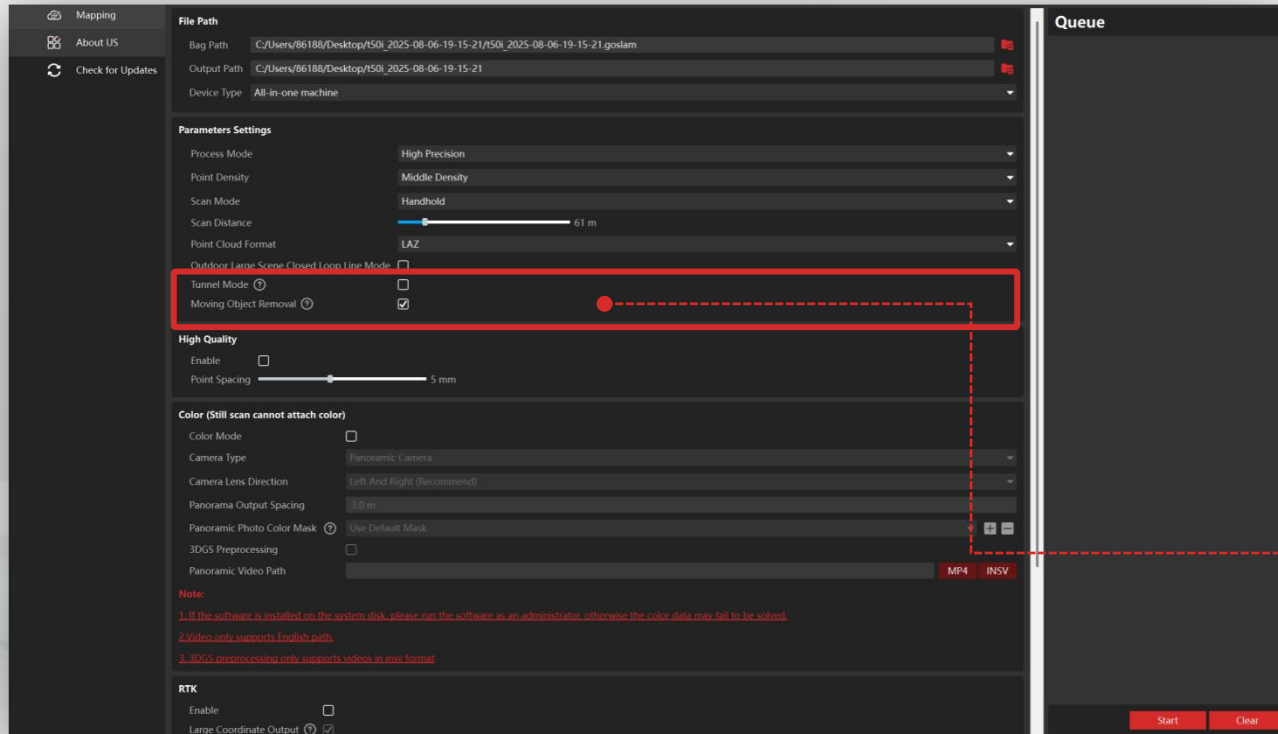**(5) Point Cloud Output Format：** Supports LAS (Better compatibility) and LAZ (Smaller file size).

(6) Outdoor Large Scene Closed Loop Line Mode: Design for large-scale outdoor scenes where natural small loops are difficult to form. It can improve data accuracy for outdoor scenes without loop closure within 4 minutes.
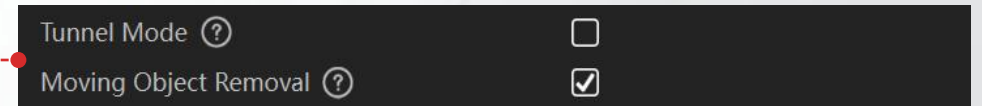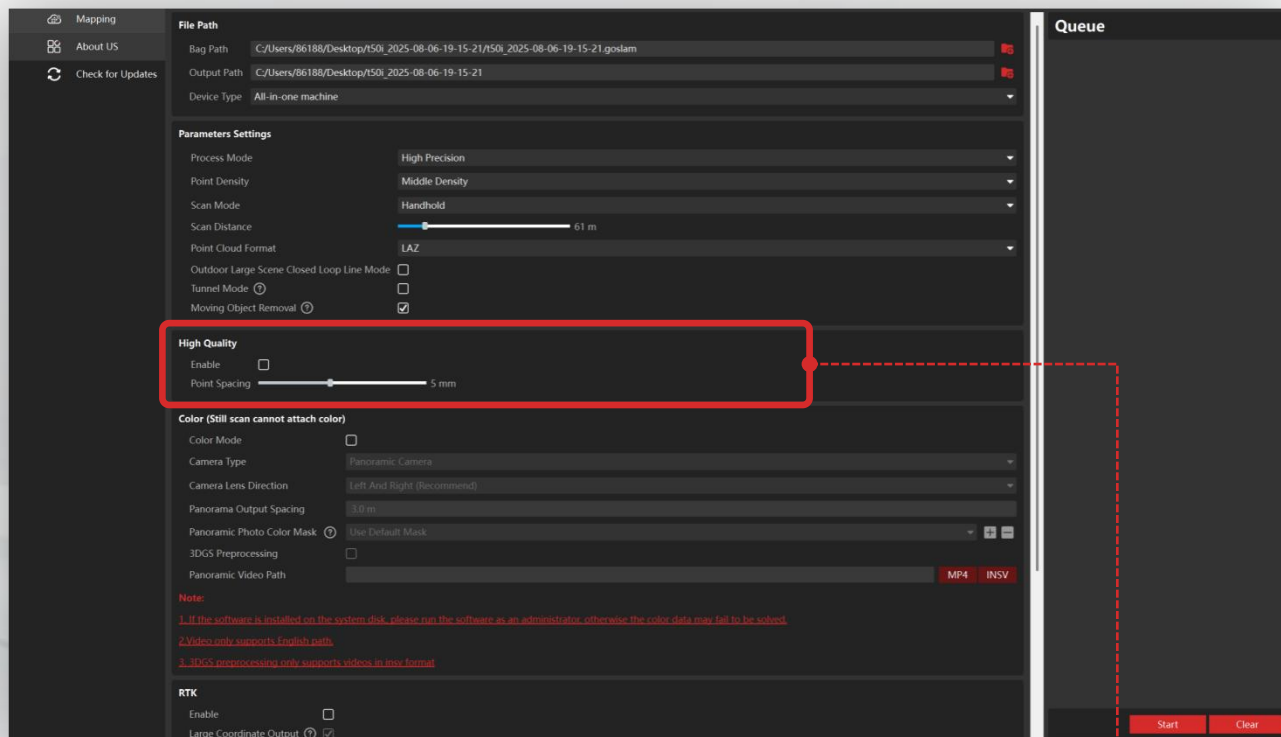
Software Features

Parameters Settings

(7) Tunnel Mode： Suitable for narrow, super low-feature enclosed environment.

(8) Moving Object Removal： Filter moving objects during scanning.
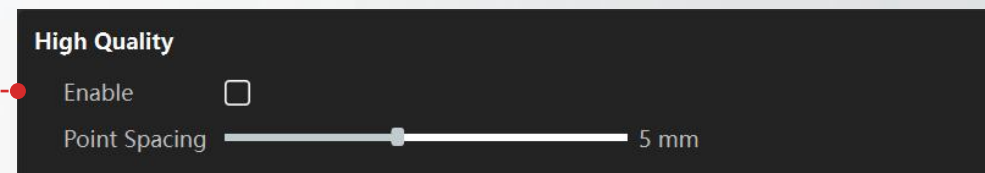
Software Features

High Quality

After the high-quality function is enabled, the program will perform processing based on the corresponding point spacing. This mode is only applicable to color data processing.

(1) Enable: Activate high-quality mode can increase the color point cloud resolution.

(2) Point Spacing: Adjust point spacing (2-9mm) to control resolution. After enabling high-quality mode, the amount of color point cloud data will increase significantly and the processing speed will drop significantly. If high resolution is not required, it can be turned off.

Software Features
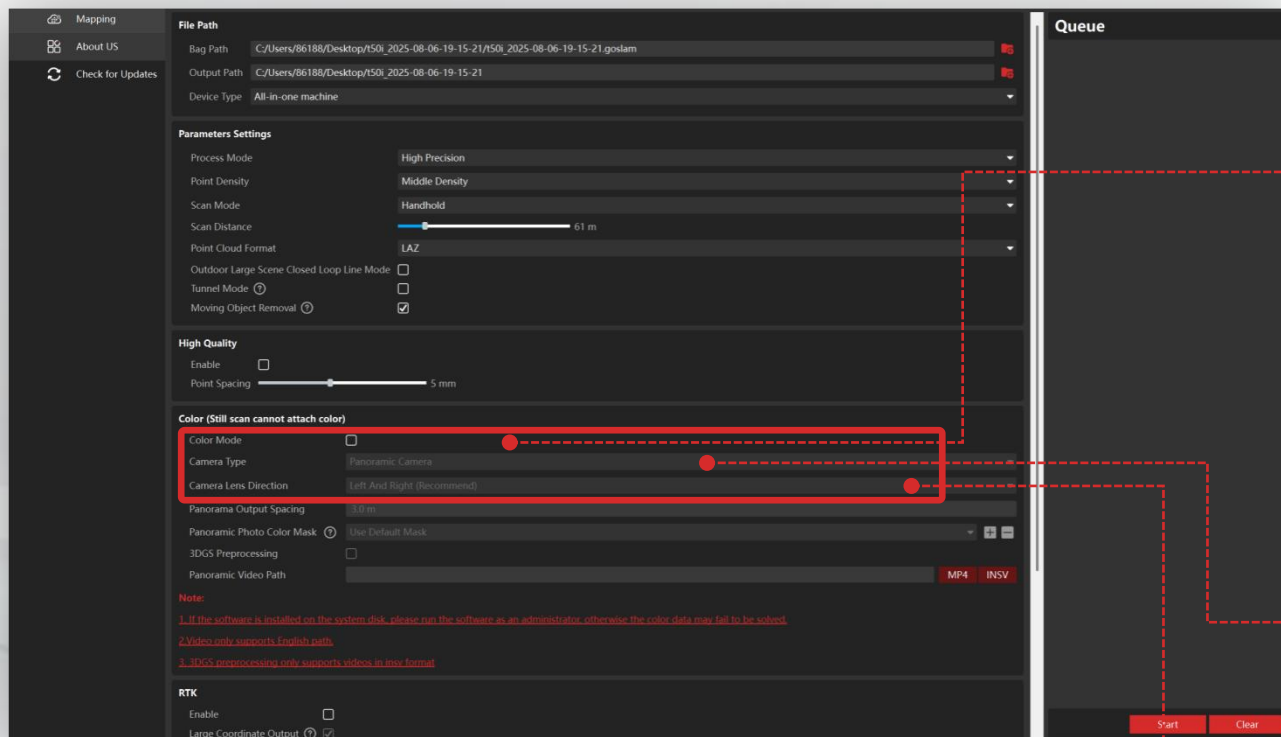
Color

(1) Color Mode: After turning on the color mode, you can colorize the point cloud by video.

(2) Camera Type

Panoramic Camera: For devices scanning with panoramic color module.

Built-in Camera: M40 and T-i seriee can select built-in one.

(3) Camera Lens Direction: Select based on the installing orientation during scanning. Default installation for scanning is left-right installation.
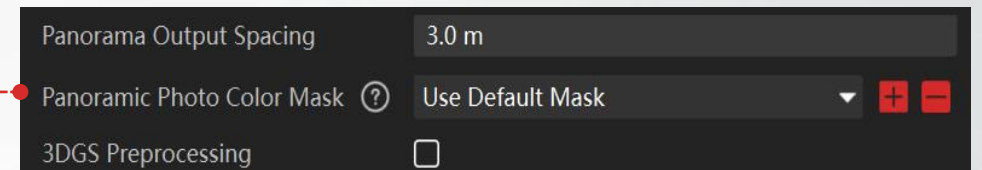
Software Features

Color

(4) Panorama Output Spacing: You can select the proper photo output interval distance according to your needs. The default output interval is 3 meters.

(5) Panoramic Photo Color Mask

Use Default Mask: By default, the software's built-in default mask is used. If you are not satisfied with the color effect, you can click the "+" icon on the right to use a custom mask.
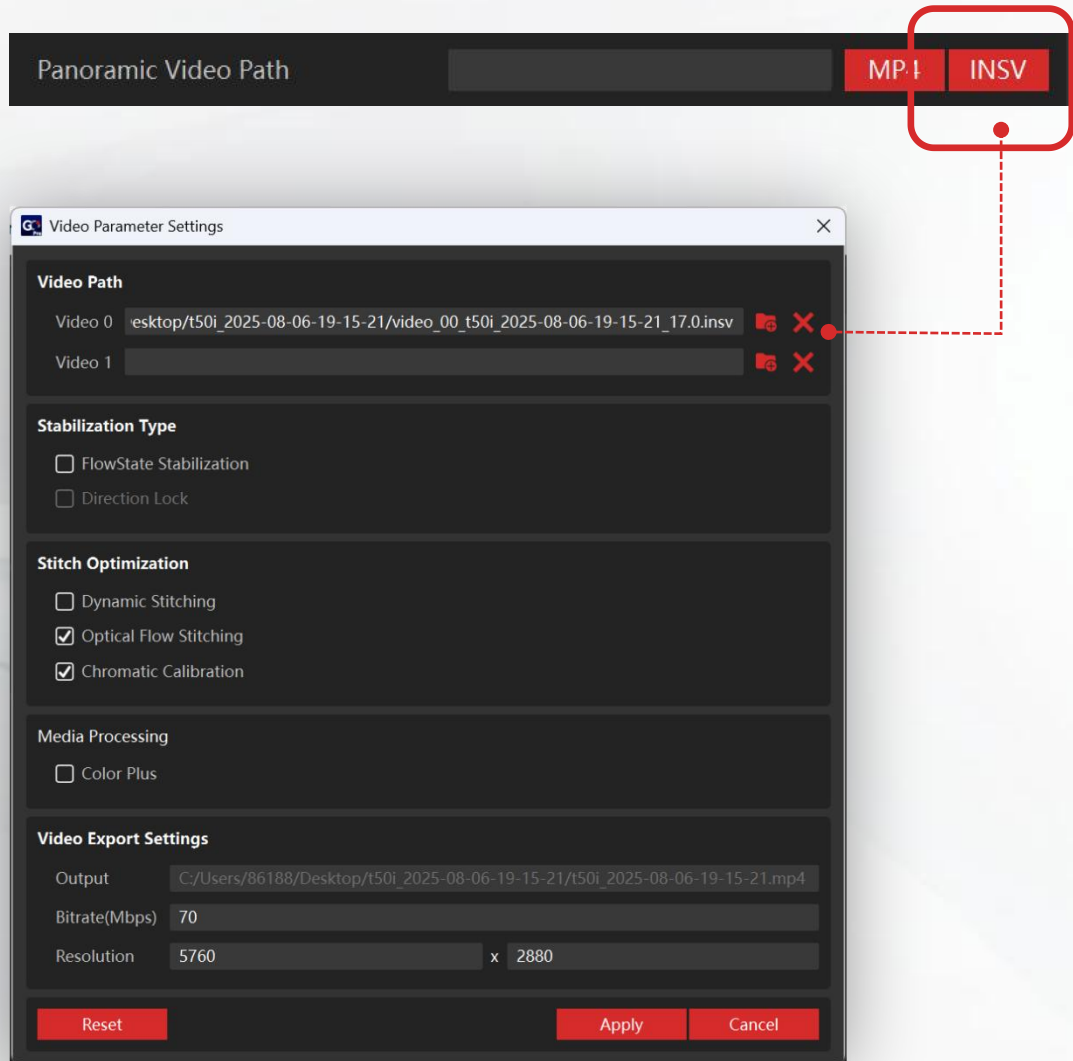
(6) 3DGS Preprocessing: Enabling 3DGS preprocessing generates a 3DGS preprocessing file. The 3DGS folder in the processed data is the data package required for 3DGS training.
(Note: If the 3DGS preprocessing function is used, the processed result will not generate color point cloud data.)

Software Features

Color

 (7) Panoramic Video Path: Video import supports synthesized panoramic MP4 files and original INSV files. INSV files are usually automatically being downloaded to the device after scanning, and then it can be copied from the device to the computer. Or it can be exported directly from the Panorama module.

*MP4: Simply select the synthesized MP4 panoramic video.
*INSV: Click this button will open the INSV data import and parameter setting interface.
Video Path & Parameter Settings:X4 and X5 cameras only generate one file, just click to import it.
If using an X3 camera, two INSV files will be generated (video 0 corresponds to the file prefixed with video_00; once selected, video_01 will automatically be imported).
Keep the default settings for stabilization type and stitching optimization. Once configured, click "Apply.
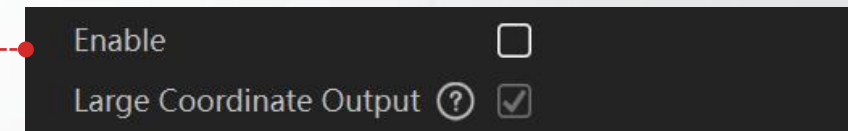
Software Features
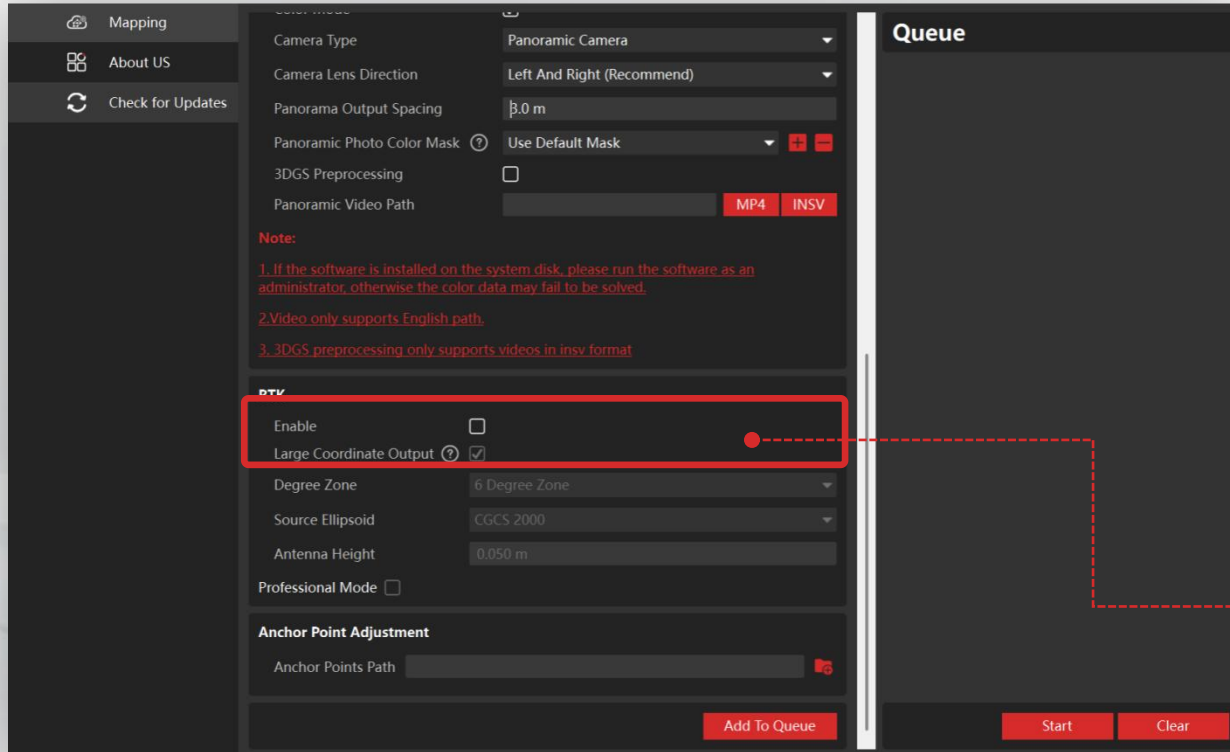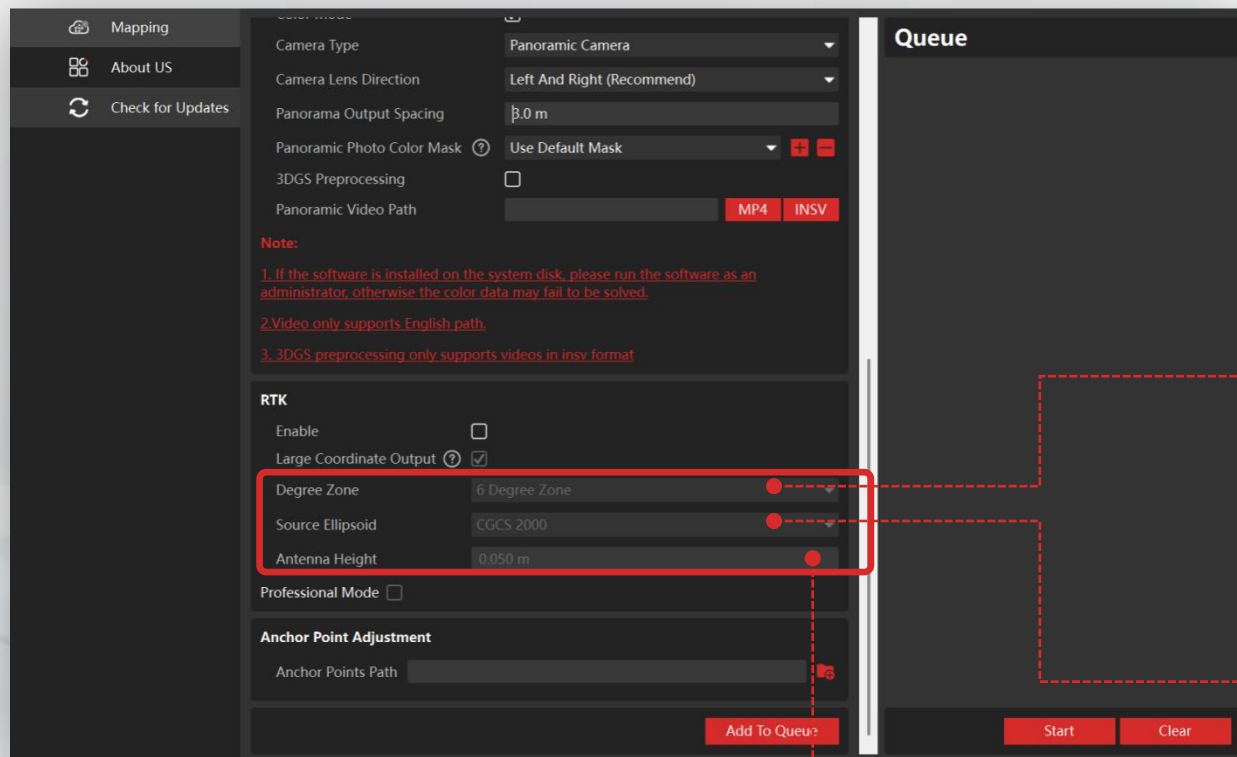

RTK

(1) Enable: Activate RTK setting.

(2) Large Coordinate Output: Check this option to output point clouds in real-world geodetic coordinates.

Note: If you need to reproject the data, disable this feature; otherwise, the geodetic coordinate data may not be reprojected properly.

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Software Features

RTK

(3) Degree Zone: When using CGCS2000 as the reference ellipsoid, the Gaussian projection mode is being used by default, and the zone mode needs to be set. If using WGS84 as the reference ellipsoid, the UTM projection mode is being used by default, and the zone mode does not need to be set.

*6 Degree Zone: If the source ellipsoid is CGCS2000, the 6-degree zone can be selected as required;

*3 Degree Zone: If the source ellipsoid is CGCS2000, a 3-degree zone can be selected as required.


(4) Source Ellipsoid:

*CGCS2000: China National Geodetic Coordinate System 2000
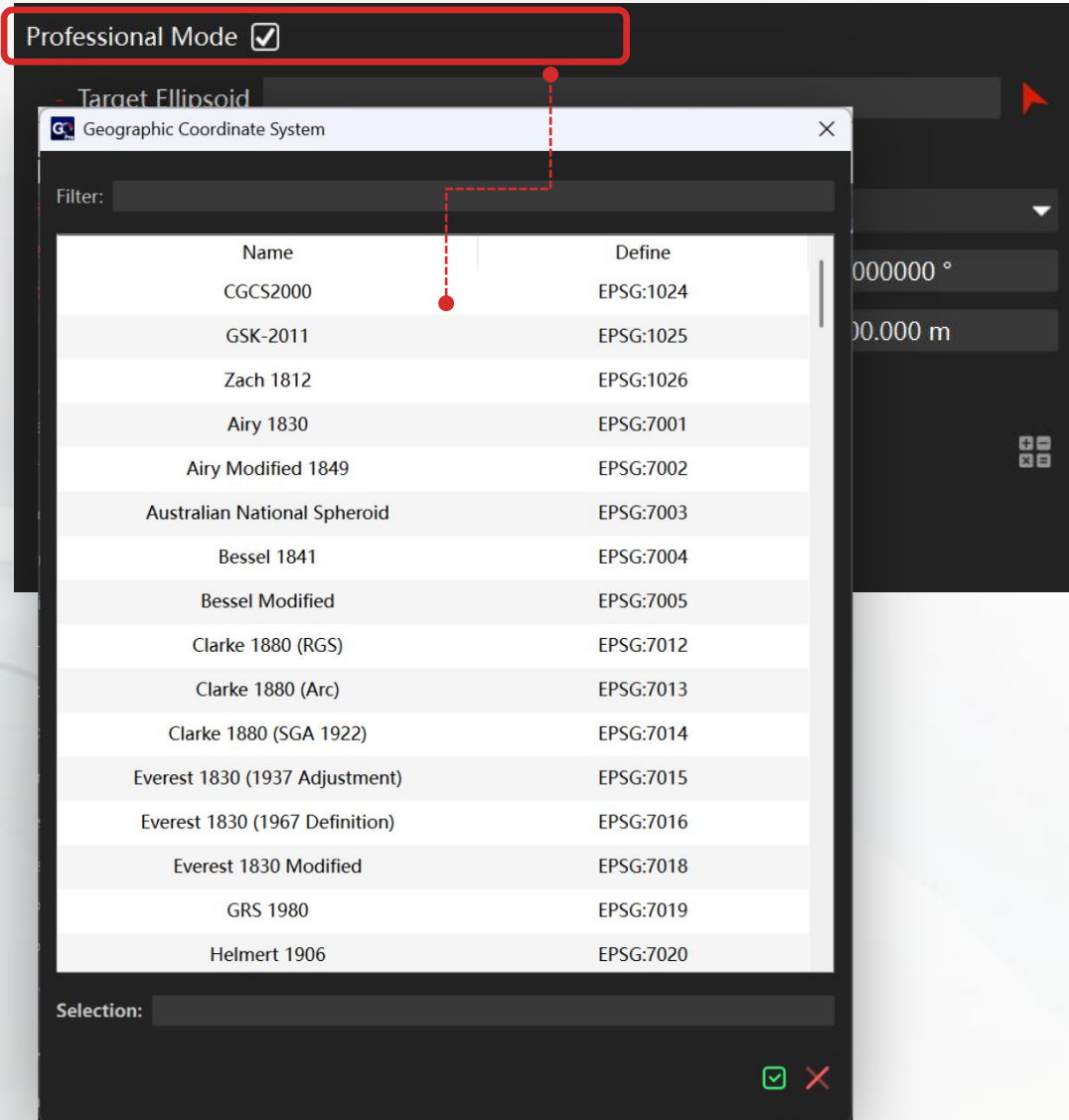
*WGS84: World Geodetic System 1984

(5) Antenna Height:

If you are using the original RTK kit from GoSLAM, there is no need to adjust the antenna height. If you are using a third-party RTK with GCM, you need to correctly fill in the antenna height of the third-party RTK used in the Antenna Height column.
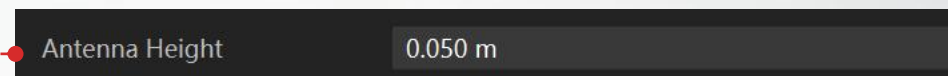
Software Features

RTK

(6) Professional Mode：

This mode allows for more specialized settings, including target ellipsoid, projection parameters, 4 parameters, 7 parameters, geoid files, and more.

*Target Ellipsoid：Select the target ellipsoid for conversion

Software Features

Professional Mode

* Projection Parameters： Parameters for converting coordinates on the ellipsoid surface to coordinates on the plane.

* 4 Parameters： The translation, rotation, and scaling parameters between two coordinate systems are suitable for small-scale coordinate transformations.

Software Features

Professional Mode

* 7 Parameters: Contains 3 translation, 3 rotation, and 1 scaling parameters, suitable for large-scale and high-precision coordinate transformations.
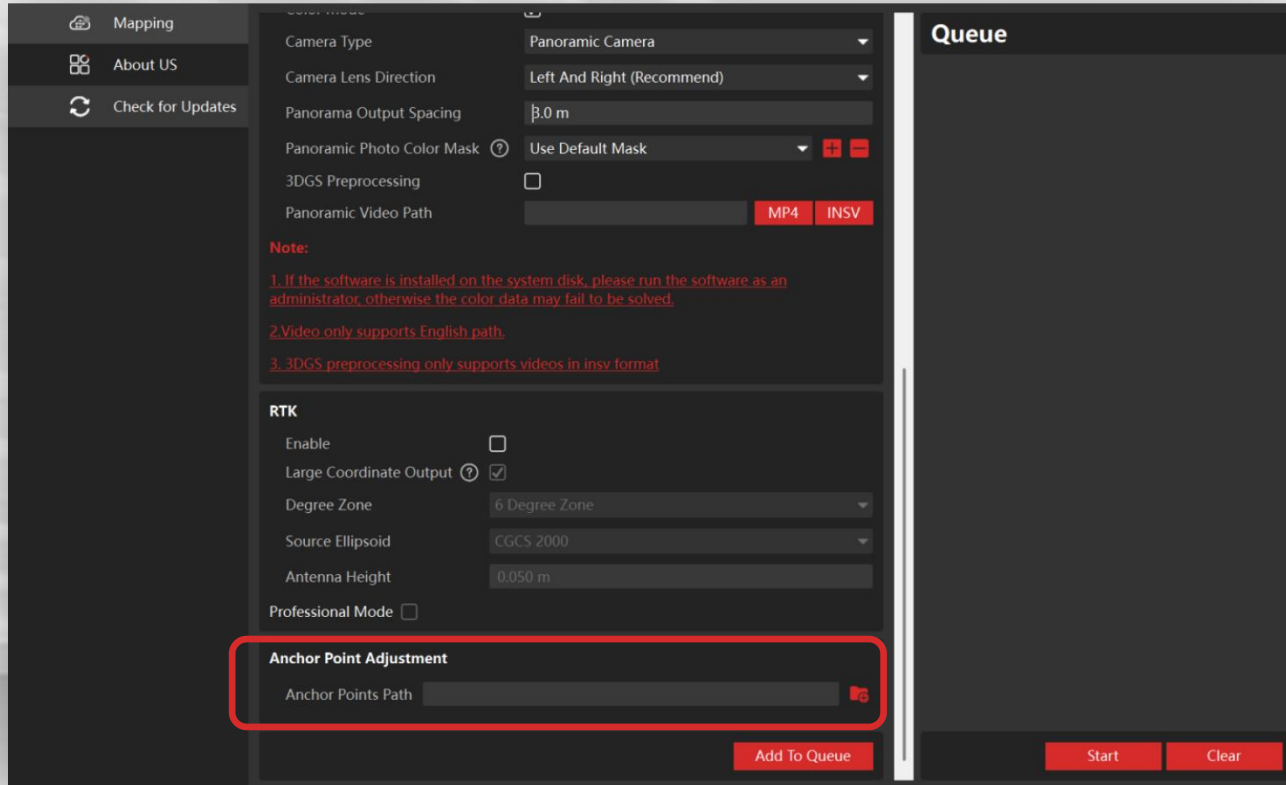

*Geoid File: A file that records geoid (gravity equipotential surface) data, used to convert ellipsoidal elevation to altitude.

Software Features

Anchor Point Adjustment

Anchor Point Adjustment: Align pre-determined geographic coordinates with control points recorded by the scanner to improve the accuracy of the final point cloud. This feature is primarily used in tunnels, underground spaces, and other locations requiring high accuracy.

Note: The anchor point adjustment function and the RTK module cannot be used simultaneously. If using this function, please disable the RTK module.
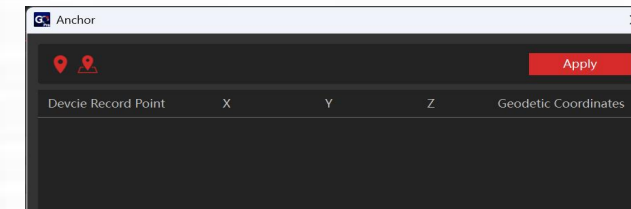
/ Contents

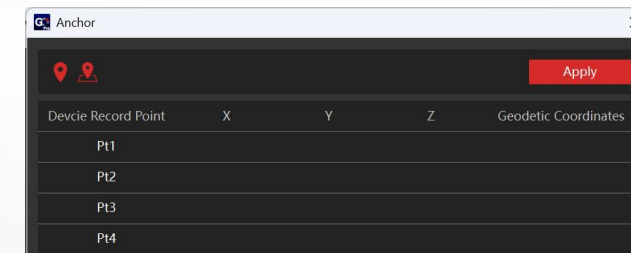# Software Features
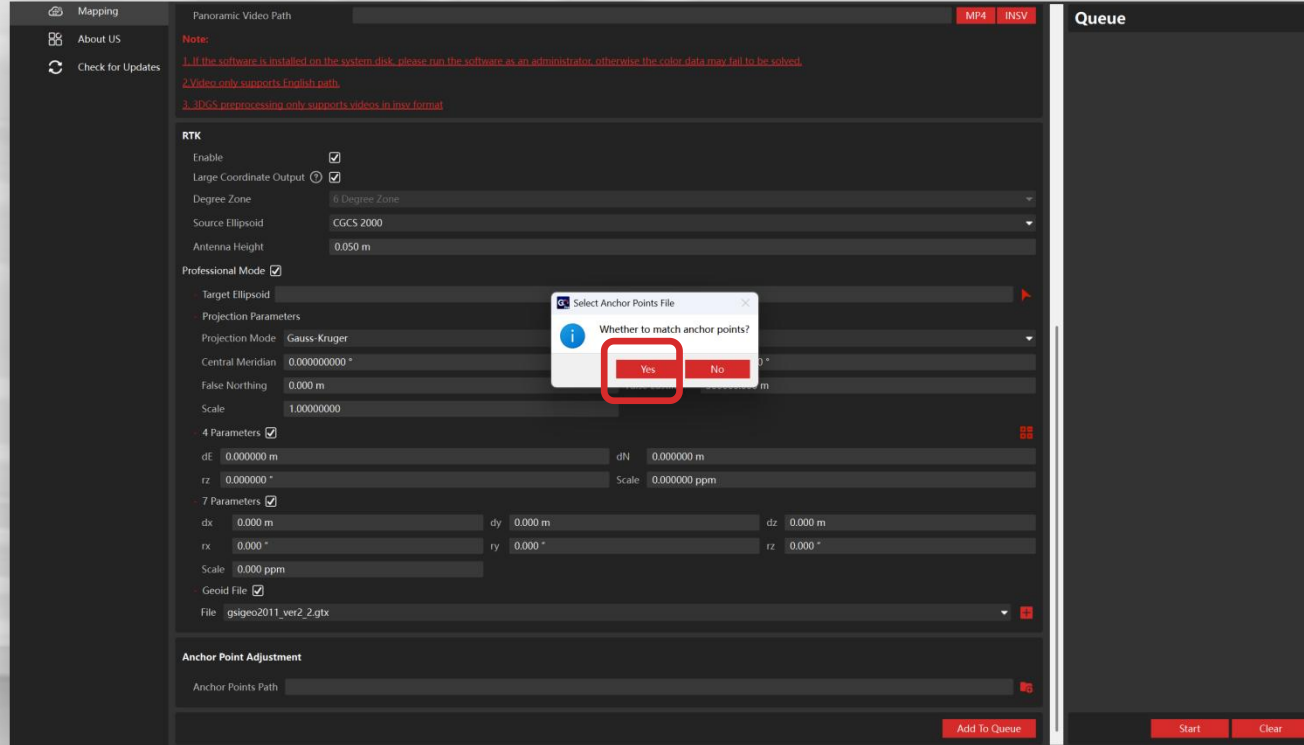
Anchor Point Adjustment

(1) Anchor Points Path

Click the "File Import" button on the right side of this module, click "Yes" to match the two sets of points, and click "No" to directly import the matched file.

Click "Yes" and enter the page. Click "Import device points" in the upper left corner of the page and select the file. The file is a txt file with the same name as the data package. After importing, you can see all the point numbers recorded during the scanning process.

Software Features

Anchor Point Adjustment

Click the "Import geodetic coordinates" button to import geodetic coordinate points. The coordinate file must be organized in txt or csv format. After importing, adjust the delimiter and the corresponding fields of the data coordinates according to the actual situation. The point cloud coordinate system XYZ corresponds to the geodetic coordinate order of E, N, Z. Please match them according to the actual situation. If the first few lines of the document contain text, you can filter them by using the Skip Lines option at the bottom. After the correct matching is completed, click "Apply" to complete the import.

After importing two sets of points, select the corresponding points in the "Geodetic Coordinates" column. If there is no corresponding known point for the scanned collection point, leave it blank. After all the correspondence is completed, click "Apply".
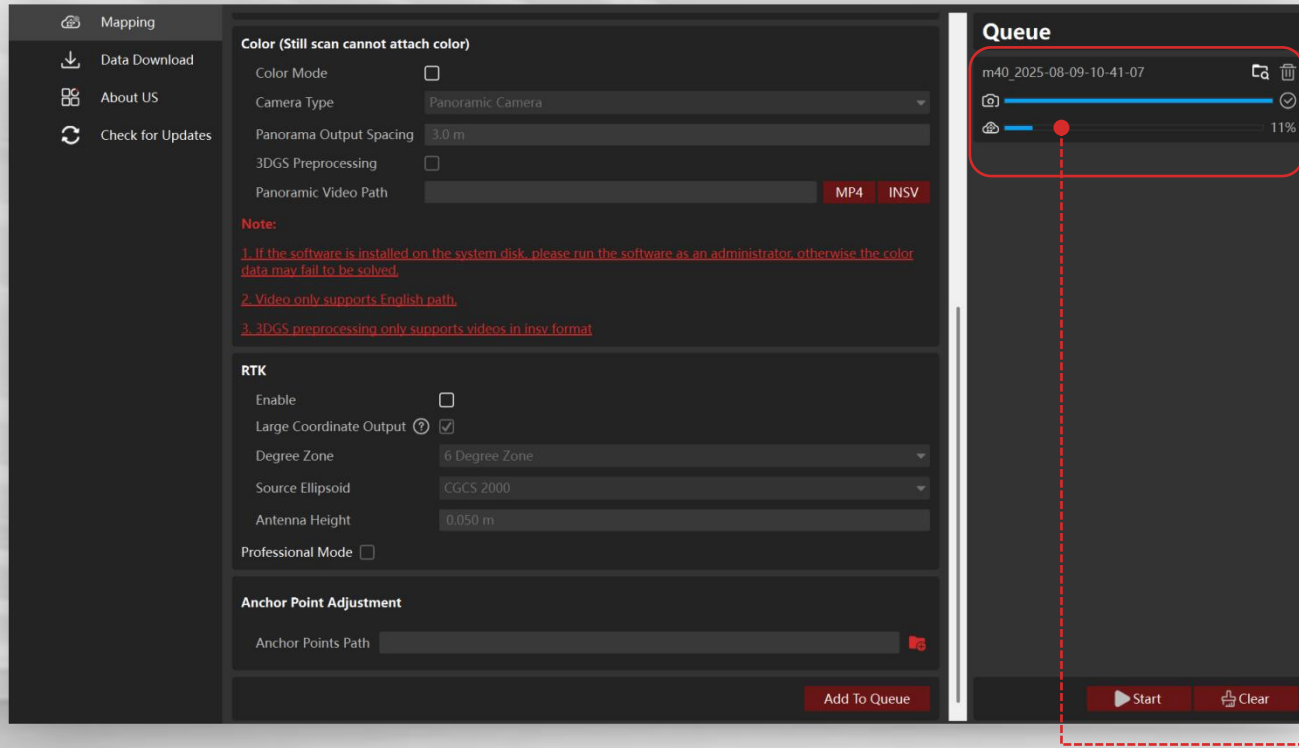
Software Features

Queue and Solving

(1) Add To Queue： After confirming that the parameter configuration is correct, click "Add to Queue". If you need to add other data, re-import the other data at this time and add all the data that needs to be processed to the queue.

(2) Start： Click "Start" after confirming the parameters and wait for all the data to be processed to view the data results.
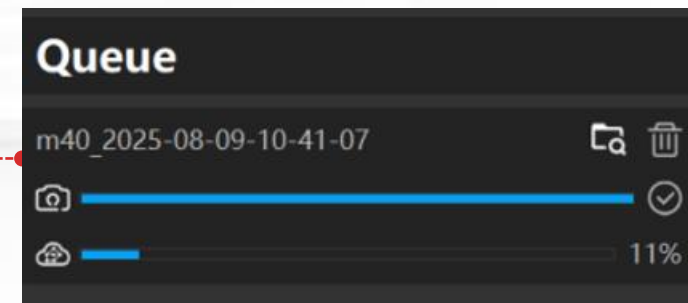
GoSLAM
Mapping Master

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