This manual provides a step-by-step guide on how to set up, connect, and perform field surveying using the GLRM GNSS receiver in combination with the GLA RTK application.

GLA RTK (Android)

Working with GLA RTK

Creating a Project in GLA RTK

1. Open the GLA RTK app.
2. Tap the folder icon at the top of the screen to access the project settings.
3. From there, you can create a new project by entering a name and configuring basic settings.

Creating a project is the first step before starting GNSS data collection.

Setting Up Project Details

In the dropdown menu, tap the first icon to configure the project:

- Name – Assign a clear and descriptive name to the project.
- Saving Location – Choose where the project data will be stored on your device.
- Format – Select the desired data format (e.g., CSV, TXT) for export and compatibility.

These settings ensure your project is organized and ready for accurate GNSS data collection.

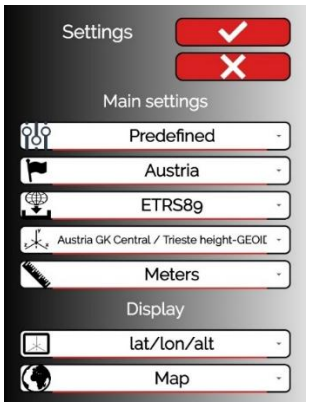
Configuring Coordinate System and Geoid Model

After creating the project:

1. Return to the main window of the GLA RTK app.
2. Tap the folder icon again and select “Other Settings” from the dropdown list.
3. In this menu, you can configure key survey parameters:

- Coordinate System – Choose the appropriate CRS (e.g., UTM, local grid, EPSG code).
- Geoid Model – Select a geoid model to enable accurate elevation data (e.g., EGM96).

These settings are essential to ensure your collected coordinates are referenced correctly.



Configuring Survey Layers

To organize your survey data, you can create and customize layers:

1. From the main menu, tap the colorful icon (orange-blue-green) to open the layer settings.
2. By default, one layer is already available.
3. To add a new layer, tap the folder icon with a plus sign at the top:
    - Define the layer name
    - Choose a color
    - Set the line type and line thickness
4. Once all desired layers are configured, tap the check mark to save and return to the main screen.

Custom layers help organize different feature types during data collection.

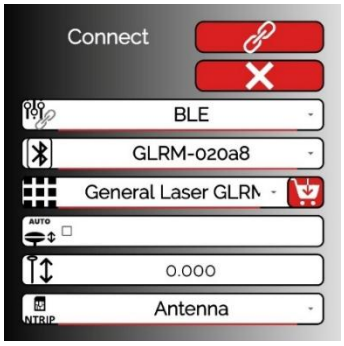
Connecting to the GLRM Receiver

With your project and layers set up, you can now connect to the GLRM GNSS receiver:

1. From the main menu, tap the “chain” icon to open the connection settings.
2. Select “Connect” to initiate the connection with the GLRM device.

Establishing Connection via BLE and Configuring NTRIP

1. In the connection settings, select “BLE” (Bluetooth Low Energy) as the connection method.
2. Choose your GLRM unit from the list of available devices.
3. Set the antenna height accurately for precise elevation measurements.
4. In the “NTRIP” dropdown menu, select “Android Device” to enable the use of your phone’s internet connection for receiving correction data from an NTRIP provider.



Configuring NTRIP Settings

In the NTRIP settings window, enter the following connection details provided by your correction service:

- NTRIP Address (e.g., caster IP or URL)
- Port Number
- Username
- Password

- Mount Point

After entering the required information:

1. Scroll back up in the settings.
2. Tap the chain icon again to initiate the connection.
3. You will be redirected to the main screen, and the app will begin receiving correction data from the NTRIP provider.

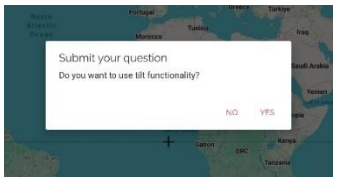
Tilt Compensation Prompt

During connection, a window may appear asking whether to enable tilt compensation.

You can choose to:

- Enable it – useful for projects where the pole is not held perfectly vertical (e.g., mapping hard-to-reach points).
- Disable it – recommended for high-precision surveys where vertical alignment is ensured.

Select the option that best suits your project requirements.

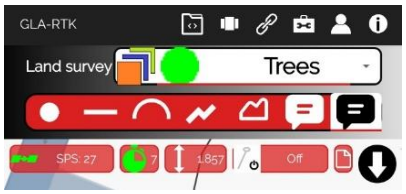


Verifying Connection and Starting Survey

Once the GLRM receiver is connected, you will see:

- The number of satellites currently in view
- The status of correction data

You can now select the desired layer and begin mapping features according to your survey plan.



Collecting Features in GLA RTK

GLA RTK supports the collection of various geometry types: Point, Line, Arc, Polyline, and Area. Here's how to map each:

Point

- Tap the left circle icon to record a point at your current GNSS position.

Line

- Survey the starting point.
- Move to the next location, then tap the line icon to draw the line between the two points.

Arc

- Survey the start point of the arc.
- At the midpoint, tap the line icon.
- At the end point, tap the arc icon to complete the arc geometry.

Polyline

- Record the first point.
- At each subsequent vertex, tap the polyline icon to extend the polyline.

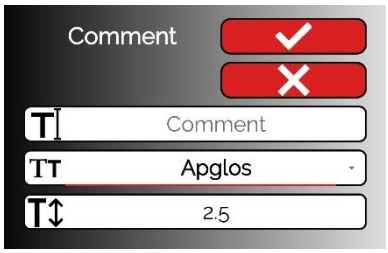
This flexible workflow allows for accurate mapping of both simple and complex geometries in the field.

Adding Comments to Features

You can add comments to features during data collection:

1. Select the desired object on the map.
2. Open the main menu and tap on the “Comment” option.
3. Enter your text and confirm.

This allows you to document observations or notes directly within the project.



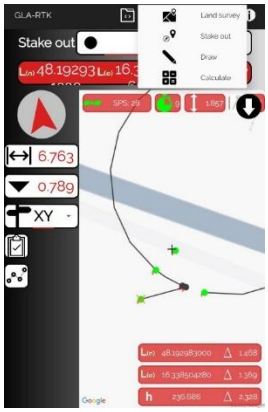
Using the Stake Out Function

GLA RTK also offers a Stake Out feature to guide you to predefined points in the field.

To access it:

1. In the main menu, tap the “three rectangles” icon in the top bar.
2. From the pop-up menu, select “Stake Out”.

Once in the Stake Out interface, follow the on-screen directions to navigate accurately to the target point.



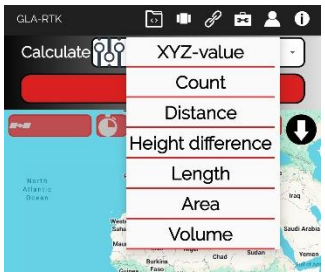
Using the Calculation Tools

GLA RTK includes built-in tools to calculate distances, areas, and height differences between collected features.

To access these tools:

1. Tap the “three rectangles” icon in the top bar of the main menu.
2. Select “Calculate” from the pop-up window.

From there, choose the desired calculation type and select the relevant features to perform measurements directly within your project.



Saving Your Survey Project

After completing your survey:

1. Tap the “folder” icon in the top bar.
2. From the pop-up menu, select “Save” to store your collected data.
3. Then tap the “check mark” icon to confirm and finalize the project save.

Your project is now safely stored and ready for export or further processing.