

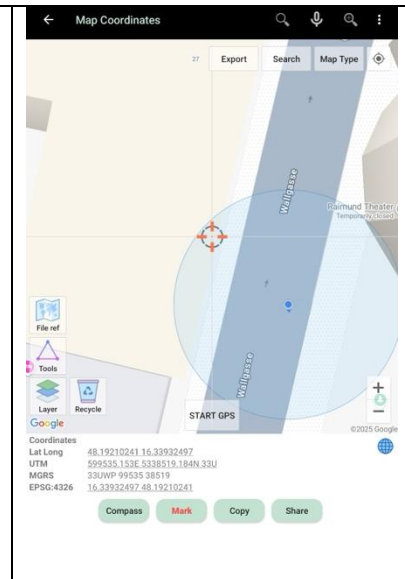
## Using the GLRM Receiver with UTM GEO Map



The UTM Geo Map app is a free application for surveying, topography, GIS, and spatial analysis. It allows for capturing and processing coordinates, measuring areas and distances, creating TINs, buffers, Voronoi diagrams, and supports offline GPS and coordinate conversion. This guide explains how to use the GLRM receiver in combination with the GL Connect app to provide precise positioning to UTM GEO Map on Android devices. GL Connect acts as a mock location provider, streaming corrected GNSS positions from the GLRM receiver and making them available to other apps. To use it with this app, you need to configure GL Connect with your NTRIP credentials and set it as the mock location app in the Android system settings.

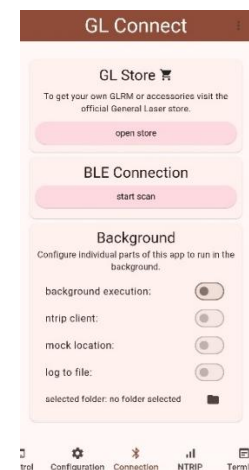
After installing and launching the app, a main menu will appear. Select what you want to measure. Once the project is loaded, the main map view will be displayed. In this view, the app shows current positioning data such as accuracy, coordinates, and elevation in the bottom bar.

The app is now ready to receive location data. However, to use the centimeter-level GNSS positions from the GLRM receiver, you need to set up GL Connect as the mock location app – as explained in the following steps.



To ensure proper communication between the GLRM GNSS receiver and QField, configure the GL Connect app as follows:

1. Open the GL Connect app.
2. Navigate to the "Connection" tab.
3. Enable the following options:
  - **Background Execution** – Allows the app to run continuously in the background.
  - **NTRIP Client** – Activates real-time correction data streaming via an NTRIP connection. Please note: this option becomes available only after completing the NTRIP configuration in GL Connect.
  - **Mock Location** – Enables the app to provide corrected GNSS coordinates to other applications by overriding the internal GPS location. Please note: this option becomes available only after selecting GL Connect as the mock location app in your Android device's developer settings.



### Adding an NTRIP Profile in GL Connect

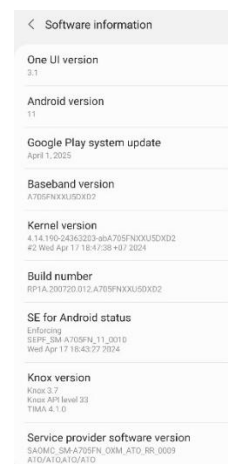
From the GL Connect main screen, navigate to the NTRIP section. Enter the required connection details, including the server address, port, username, and password. Then, select the appropriate mount point from the list. Once all fields are completed, initiate the connection by tapping Connect to NTRIP Client.



### Enabling Developer Options on Your Android Device

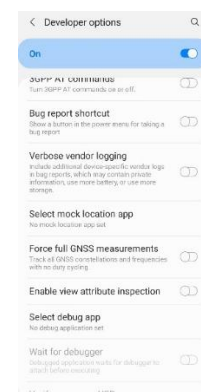
To allow the use of Mock Location with external GNSS receivers, you first need to unlock the Developer Options on your Android device:

1. Open your device's Settings.
2. Scroll down and select About Phone (or About Device, depending on your Android version).
3. Locate the Build Number entry.
4. Tap the Build Number repeatedly (approximately 7 times) until you see a message confirming that Developer Options have been unlocked.
5. Return to the main Settings menu, where you will now find a new section called Developer Options.



To allow your device to use corrected GNSS data from an external NTRIP client, follow these steps:


1. Navigate to Developer Options (previously unlocked).
2. Tap on Select mock location app.
3. From the list of available apps, select GL Connect.



Once the mock location app is selected and active, all applications on your Android device that use location services will automatically receive the high-accuracy positional data streamed from the GLRM GNSS receiver.

You can now open QField and begin surveying without any additional configuration. The app will use the corrected coordinates provided by the external receiver instead of the internal GPS.



<p>Once GL Connect has been configured and set as the mock location app, switch back to the UTM Geo Map app. If everything is set up correctly, the app will now receive positioning data from the GLRM receiver.</p> <p>You should see improved positioning accuracy in the status bar of the map view. Both vertical and horizontal accuracy should now reflect the high precision of the GLRM receiver. This confirms that UTM Geo Map is successfully using the corrected GNSS data stream for georeferenced data collection.</p>	 <p>The screenshot shows the 'Map Coordinates' screen of the UTM Geo Map app. The map displays a river labeled 'Walgasse'. A red location pin is placed on the map, with a 'START GPS' button below it. The bottom of the screen shows a list of coordinates: Lat Long (48.19208922, 16.33932799), UTM (599535.403E, 5338517.722N, 33U), MGRS (33UWP 99535 38518), and EPSG:4326 (16.33932799, 48.19208922). Below the coordinates are buttons for 'Compass', 'Mark', 'Copy', and 'Share'. The top of the screen has a navigation bar with a back arrow, 'Map Coordinates', and search, download, and settings icons. The left side has a sidebar with 'File not', 'Tools', 'Layer', and 'Recycle' icons.</p>