

Manual: Laying out a grid using Rover

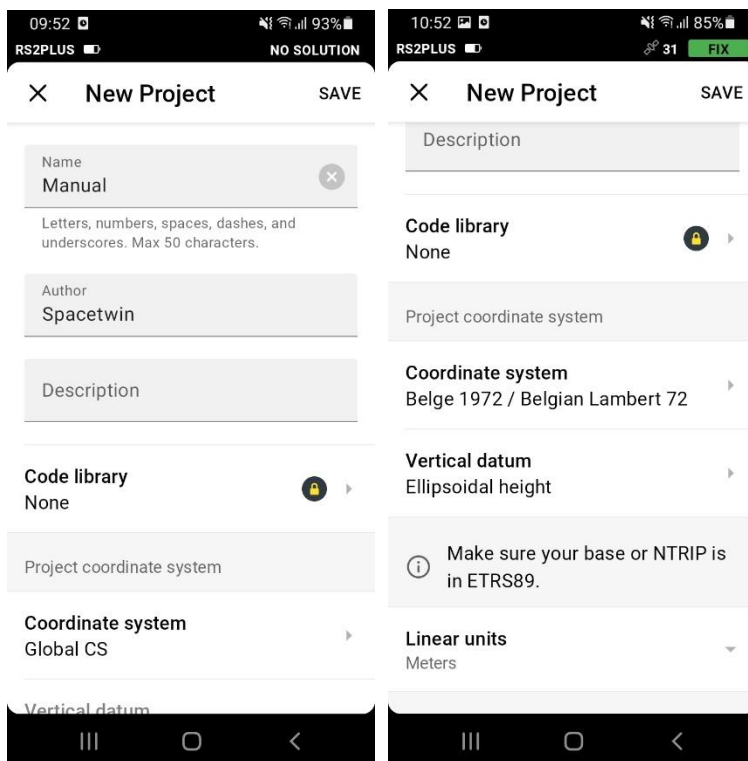
1. Base station and Rover set-up(see VZ400i manual)

2. Project setup

Create project:

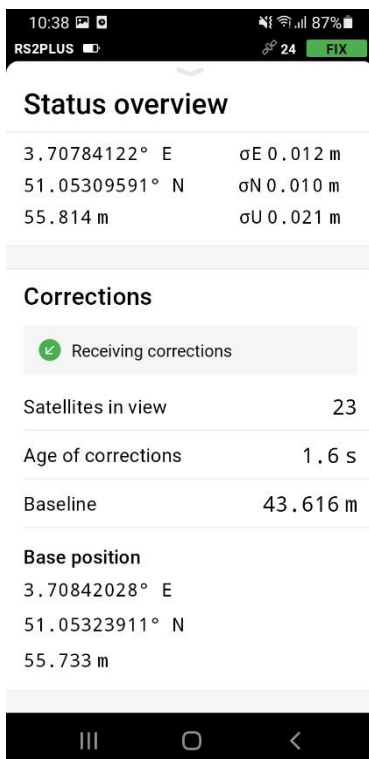
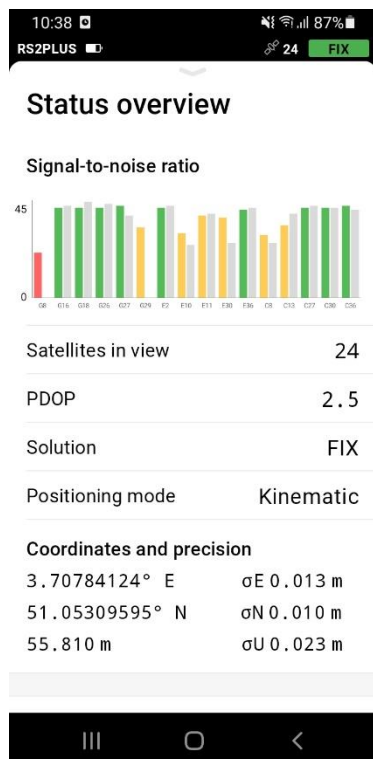
Make sure Coordinate System is not Global CS, but local coordinate system of field site. This may require a download, so set this up before going to the field.

(TODO: adapt script to global CS)

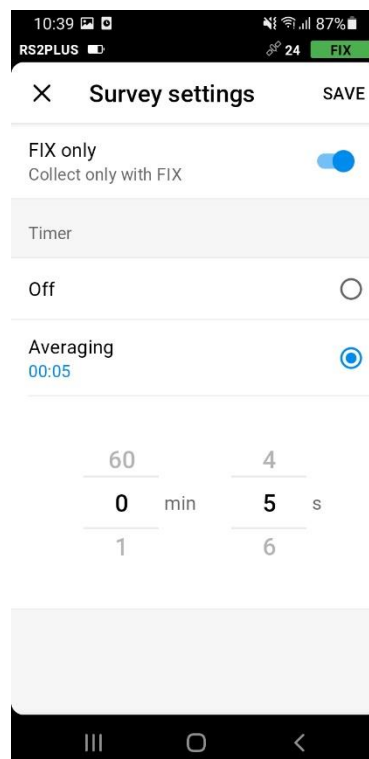
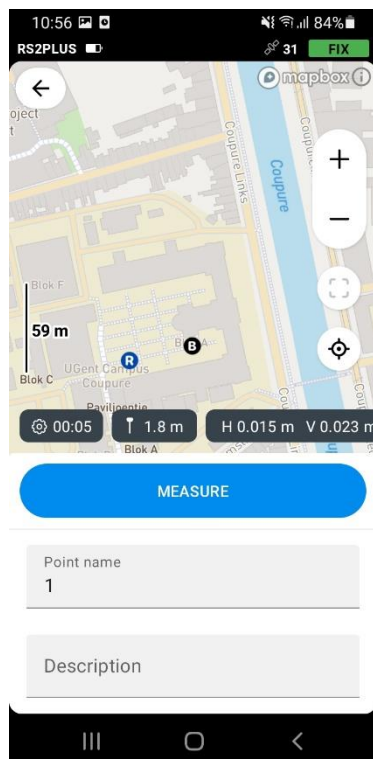


Measure first point (SW corner)/corners:

Wait for Rover to get FIX or FLOAT with low errors (check this by clicking yellow/green label in top right). Never touch the Rover on the top, this will disrupt the connection.



Walk to your first point in the SW corner. (Its possible to use a different corner as the first point, but you'll have to adjust the angle parameter of the grid creation script accordingly)



Try to carry the Rover smoothly and up in the air to avoid waiting long to obtain low error values. Setting the Rover super level is not necessary, but don't place it diagonally.

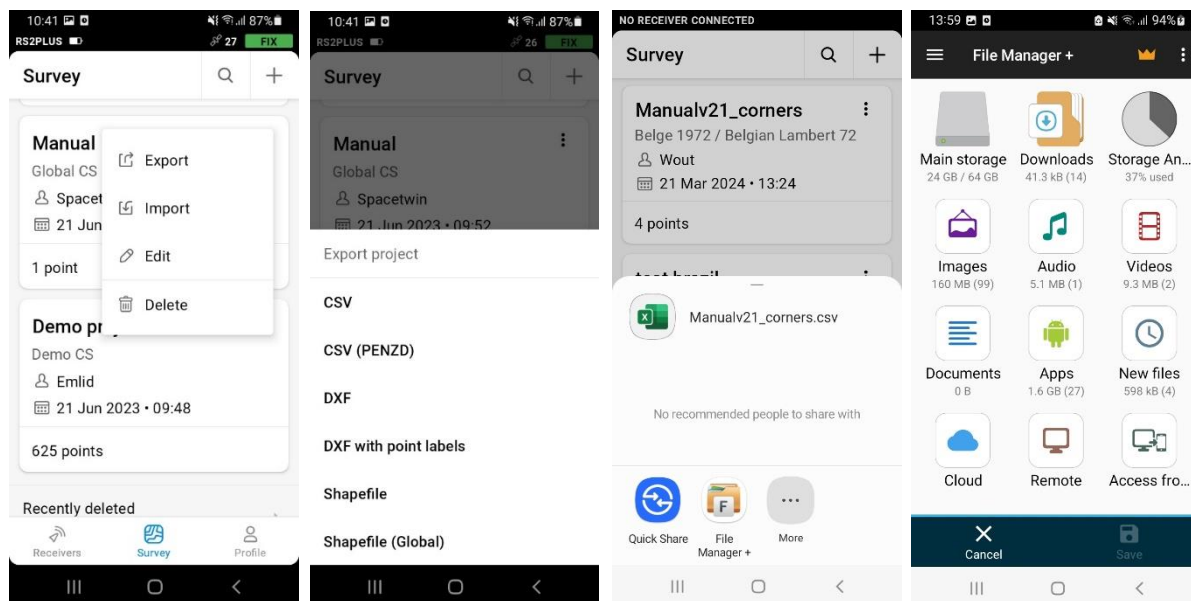
You can uncheck the FIX only option by pressing the settings icon on the left side of the screen, if satellite connection is bad. Make sure to check that the FLOAT errors are within an acceptable range. Pressing measure will record the point. Averaging over 5 seconds is recommended, but more, less or no averaging is possible in the settings.

If using multiple corners, repeat this process for each corner.

3. Run grid script

Export csv:

Click the three dots, select Export > CSV. Click the File Manager+ option and save the csv file to the Downloads directory (recommended, script is located here) or a different location of choice.



Run script:

Open the Pydroid 3 app on the fieldwork phone. Open the sidebar on the left and click Terminal. Navigate to the Downloads directory using 'cd Downloads'. In this folder, the grid generation scripts are located, you can view them using the 'ls' command. Run the grid generation by calling one of the scripts

The first screenshot shows the Replit interface with the 'new' button and a play button. The second screenshot shows the 'Get premium' button. The third screenshot shows the 'Interpreter' and 'Terminal' buttons. The fourth screenshot shows the code being executed in the terminal, which creates a grid of points.

The generated grid is in the Downloads folder as grid_generated.csv or at the chosen location/filename. Import the CSV into your project by clicking the three dots and selecting Import > CSV.

4. Load grid and set out coordinates

The screen will show the direction and distance you need to walk to the point. You can neglect the elevation. When you're close, the screen will zoom in automatically to give final corrections, and the circle will turn green when you're within the error range.

