Piksi Multi - Using Simulation Mode

This can be done indoors and does not require an Internet connection.

Overview

Simulation mode will allow you to become familiar with the Swift Console operation before testing outside with Piksi® Multi receiving real GNSS signals. In simulation mode, Piksi Multi will output simulated position solutions, status information and differential corrections as if Piksi Multi were mounted on a vehicle flying in a large circle.

Prerequisites

USB to Serial Driver Installation Guide:
http://support.swiftnav.com/customer/portal/articles/2757197

Installing Swift Console:
http://support.swiftnav.com/customer/portal/articles/2756825

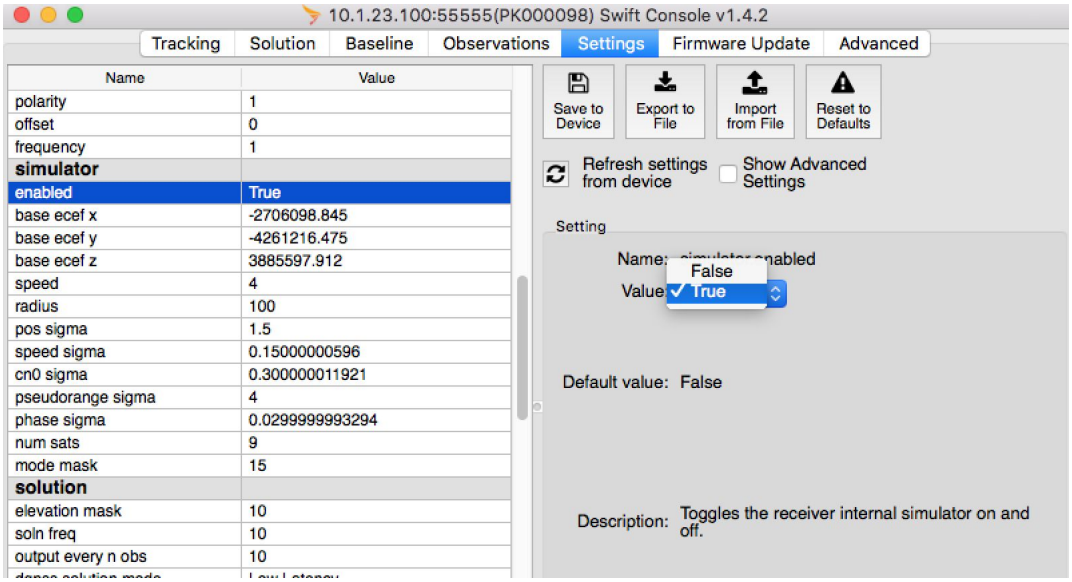
Powering Piksi Multi:
http://support.swiftnav.com/customer/en/portal/articles/2746937

Connecting to Piksi Multi - USB to Serial Adapter:
http://support.swiftnav.com/customer/en/portal/articles/2747195

Enabling Simulation Mode

With Piksi Multi connected to your computer and Swift Console running:

- Click the *Settings* tab
- In the *Simulator* section, you will see a value for *enabled*. Click on this.
- Set the value of *enabled* to *True* by selecting *True* from the drop-down menu right part of the tab.



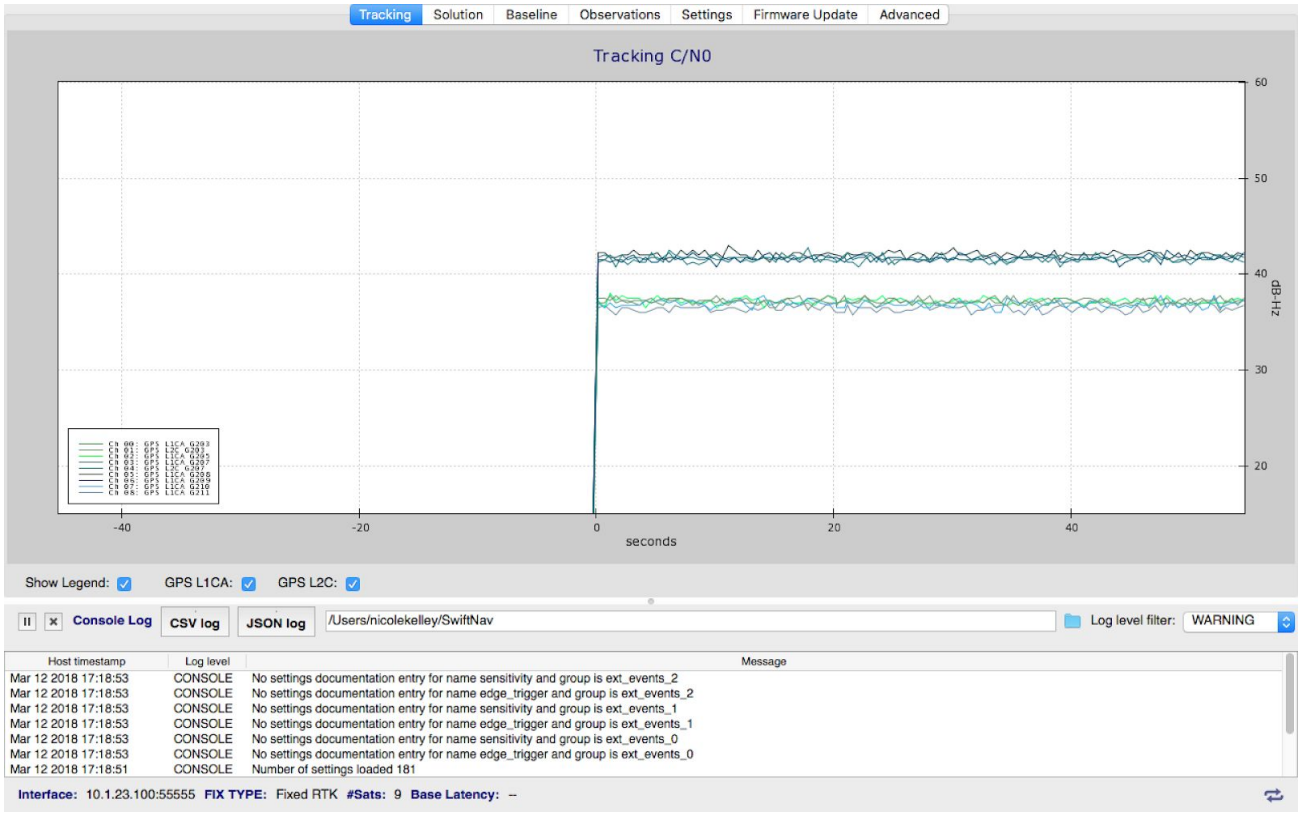
Your Piksi Multi will now be running in Simulation Mode. If you view the Tracking, Solution and Baseline tabs, you can now see the simulated output.

For more information about Piksi Multi setting, please see the Piksi Multi Software Settings Manual located in the Piksi Multi Specifications Article

Viewing Position Solutions

Asdf In this simulated set of solutions, the simulated rover is traveling counterclockwise around the simulated base station in a 100 meter radius circle. The way to view these results are through three primary screens in the Swift Console: Tracking, Solution, and Baseline.

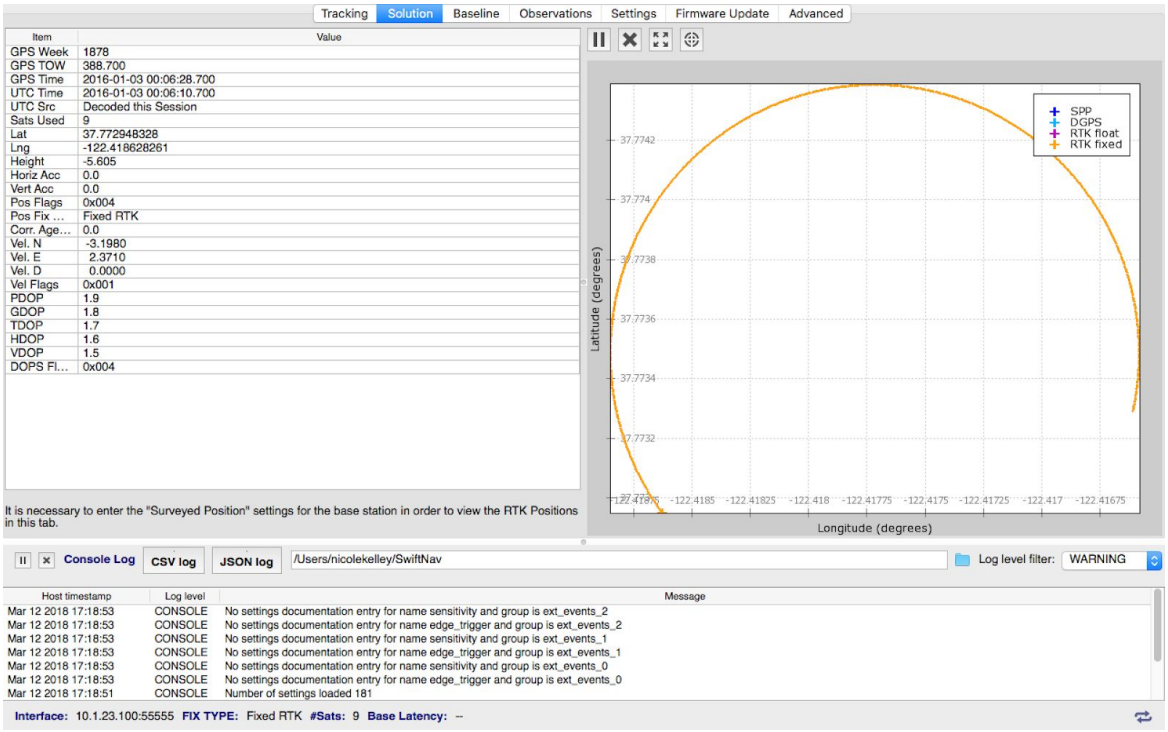
Tracking Tab



This tab shows the signals Piksi Multi is tracking. Each signal is represented by a colored line on the graph, and the line's position on the graph represents the strength of the satellite's signal over time.

The x axis is the time and the y axis is Carrier to Noise Ratio (C/No), in dB-Hz, which is the signal strength of the satellite. The most recent time is on the right hand side and the graph scrolls to the left.

Solution Tab

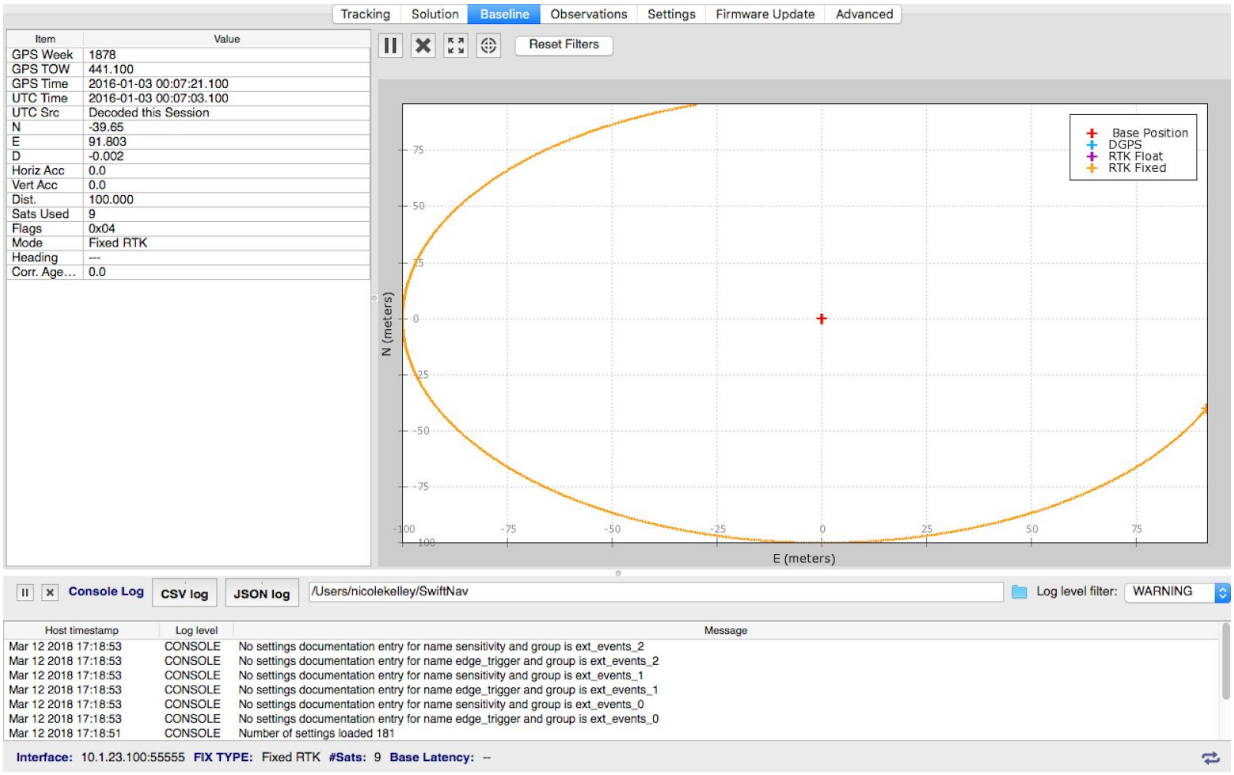


This tab shows Piksi Multi's position solution. The solution type is indicated by color:

- SPP - blue
- DGPS - cyan
- RTK float - purple
- RTK fixed - orange

In simulation mode, Piksi Multi has a fixed RTK solution, which will appear as an orange circle on the display.

Baseline Tab

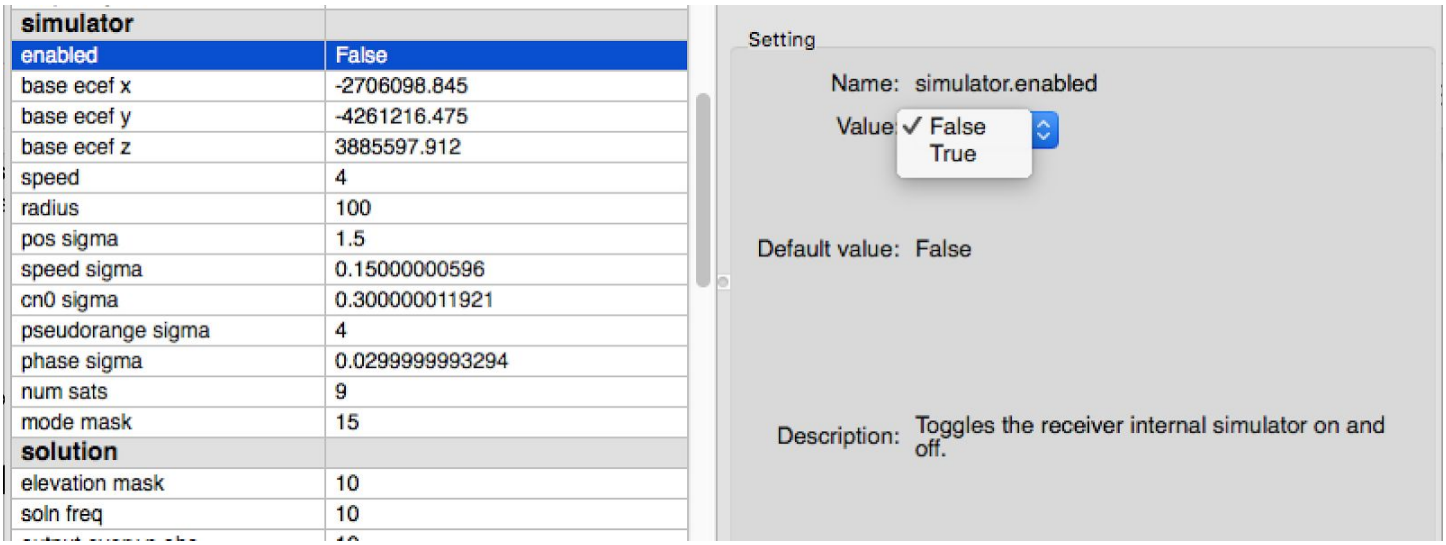


This tab shows Piksi Multi's RTK Baseline, a high-precision GPS position solution, with a relative position accuracy of few centimeters. This data visualization will show the base station as a red cross and the rover path in orange or blue.

The Piksi that is connected to the Console is always the Rover and the remote Piksi (not directly connected to this Console) is always the Base. Also, the base is always considered to be at coordinate [0,0,0].

The rover position data is a relative vector between the base and the rover, given as a distance North (graphed on the vertical axis, in meters), East (graphed on the horizontal axis, in meters), and Down (not graphed).

Disabling Simulation Mode



Disable the simulation mode by changing the enabled value back to *False* on the *Settings* tab.