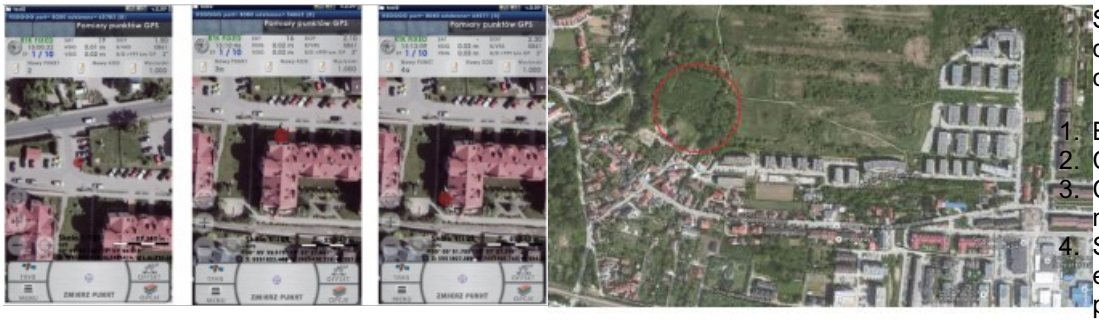
External Antenna Improves Performance of RTK Receiver in Forest

NR	Without external antenna			With external antenna			Differences[m]		Remarks
	X[m]	Y[m]	Accuracy	X[m]	Y[m]	Accuracy	X	Y	
1	5551852.533	7425414.139	1-2 cm	5551852.499	7425414.154	1 cm	0.034	-0.015	
2	5551833.473	7425432.314	2-3 cm	5551833.446	7425432.334	2-2 cm	0.027	-0.020	
3	5551807.127	7425423.096	4-5 cm	5551807.188	7425423.163	2-3 cm	-0.061	-0.067	Measurement beside wall

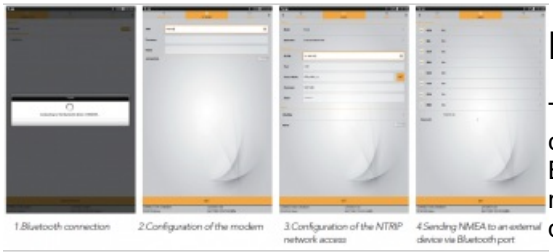
In October, we took the SatLab SLC GNSS Receiver to a forest area in Poland to test the SLC's performance under a tree canopy.

SatLab Toolbox:

The SATLAB Toolbox application is used for the one-time configuration of the SatLab SLC receiver to download RTK/RTN corrections.



1. Bluetooth connection
2. Configuration of the modem
3. Configuration of NTRIP network access
4. Sending NMEA to an external device via Bluetooth port



1.Bluetooth connection 2.Configuration of the modem 3.Configuration of the NTRIP network access 4.Sending NMEA to an external device via Bluetooth port

Power GPS – Application for Android

The test was conducted using the Power GPS application. The Power GPS configuration is only required to connect the application to the SatLab SLC via Bluetooth. Three points were measured to compare the performance of the receiver with an internal antenna and with an external antenna. The table of deviations is shown below.

Table with deviations.

Compared with the state surveying warp, the differences are about 1-2cm when measuring with and without an external antenna.

Screenshot of the measurements of 15 points on a forest road and in a ravine.

Tests in forest area

In the forest, the receiver only works with an additional external antenna, and the position accuracy is 2cm. When moving with the receiver, the accuracy is about 15-20cm. It is necessary to stop for a few seconds to obtain an accuracy of 2cm again. Screenshots from the application and photos from the measurement site are shown below.

The location of the test site in the forest area in Poland.

Conclusions

Great Performance

The SatLab SLC works very well. It searches satellites quickly and can track 18-20 satellites in the open air. In open areas, it can provide good accuracy and quick initialization and a stable connection with an external or internal antenna. The external antenna amplifies the signal, and there is a visible difference between measurements with and without the antenna near buildings and in the forest.

Simple Operation and Configuration

You only need to configure the SatLab SLC Toolbox once and it will remember all the settings. Therefore, from the second time on, all you need to do is switch it on and connect to a measuring application on your tablet or smartphone.

SatLab Toolbox.

ABOUT SATLAB GEOSOLUTIONS AB

Satlab Geosolutions is a Swedish-based global satellite positioning solutions company with offices strategically located around the world. Founded by a group of passionate and pioneering engineers, with a total of more than 40 years of experience in the GNSS industry, the management team is made up of veteran industry experts who value our customers' needs. Focusing on research and development, the Satlab Geosolutions team works around the clock to create innovative products for surveying professionals across the globe, providing superior complete solutions.

SWEDISH ENGINEERING AND TECHNOLOGY

In the geospatial world, surveying professionals depend on the most accurate and precise measurements to build the world we live in. At Satlab Geosolutions, we pride ourselves on creating solutions with Swedish engineering and technology. We ensure that every product meets our rigorous quality check and assurance standards, delivering Swedish innovation the moment you power it up: technology you can rely on, designed and engineered in Sweden.

SATLAB GEOSOLUTIONS MISSION STATEMENT

Satlab Geosolutions strives to maintain the quality of its high-performance and premium products coupled with innovative solutions.

For more information, see here.

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