

# ANELLO GNSS/INS EVALUATION KIT

The ANELLO GNSS/INS EVALUATION KIT is an independent, reliable and accurate navigation solution for an autonomous world.



ANELLO GNSS/INS EVK

Powered by ANELLO's unique optical gyroscope technology, the ANELLO Global Navigation Satellite System (GNSS) / Inertial Navigation System (INS) Evaluation Kit (EVK) can maintain centimeter accuracy in conditions where far more expensive reference grade systems degrade, including extended full GNSS loss operation. In addition, the system is also accurate over wide temperature ranges and under extreme vibration.

The Evaluation Kit contains everything needed to get started including the ANELLO GNSS/INS, two dual-band GNSS antennae, and cables.

## ANELLO PYTHON PROGRAM

ANELLO provides an open-source Python tool for configuration, logging, NTRIP relay, and plotting data.

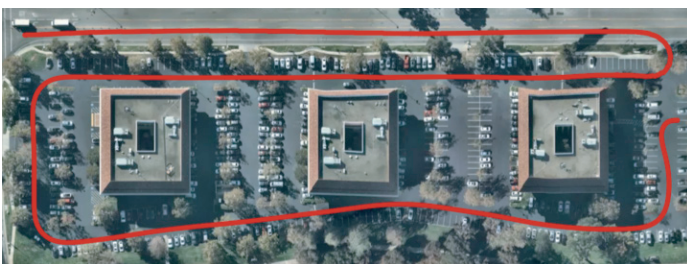


Fig. 1: ANELLO GNSS/INS EVK Data on Map

GPS: ON LOG: OFF Last GPS (s): 0.27

ANELLO

RIS DATA MAP

Lat. (deg):	37.3991189	Lon. (deg):	-121.979278
Altitude (m):	-17.09	Heading (deg):	0.00
Roll (deg):	0.18	Pitch (deg):	2.87
Speed (m/s):	0.000	State:	Stationary
Solution:	INS (Pos. Only)	Num Sats:	8
Carrier Soln:	No solution	GPS Fix:	3D-Fix

Fig. 2: Python Tool Monitor

## FEATURES

Reference-grade 100 Hz Position, Velocity, and Attitude

GPS, Glonass, Galileo, Beidou (Compass), QZSS

< 0.5°/Hr Un-aided Heading Drift

Reliable Autonomous Land Vehicles, Advanced ADAS Systems

Accurate in severe multipath and GNSS denied

Precise Heavy Equipment and Machine Control

Dual 184-channel five constellation dual-band GNSS receivers

Convenient and Fast Setup

## TECHNICAL SPECIFICATIONS (COMMERCIAL)

### Solution Accuracy<sup>1</sup>

Horizontal Position Accuracy	
SPS	1.2 m cep
RTK <sup>2</sup>	0.02 m cep
<b>60s GNSS Outage<sup>3</sup></b>	< 1.0 m rms
Velocity Accuracy	0.01 m/s rms
Heading Accuracy <sup>4</sup>	0.2° rms
Attitude Accuracy (Roll/Pitch)	0.02° rms

### IMU Performance

Optical Gyroscope (Heading/Z-Axis)		
Range	200°/s	
Bias Instability	< 0.5°/hr	
Angle Random Walk	< 0.05°/√hr	
MEMS IMU (6-Axis)	Accelerometer	Gyroscope
Range	8g	up to 400°/s
Bias Instability	20ug	1.5°/hr
Random Walk	0.03m/s/√hr	0.3°/√hr

### GNSS & Timing

Signal Bands	L1 C/A, L2C, L1OF, L2OF, B1I, B2I, E1, E5b and SBAS
RTK Initialization Time	< 1 min, using RTCM3 corrections
Output Data Rate	GPS: 4 Hz, IMU: 200 Hz, INS: 100 Hz

### Environment

Operating Temperature	-40 to +70°C
Vibration	IEC 60068-2-6 (5g)
Shock Survival	MIL-STD-810G (40g)

### Electrical

Input Voltage	8 to 30 VDC
Power Consumption	4 W typical
Digital Interface	Ethernet, USB C

### Physical

Size	4.2" x 1.5" x 5.0"
Weight	1 lbs.

#### Notes:

1. After Initialization
2. < 20km Baseline from Base
3. Additional Drift Post GNSS Loss, with Wheel Speed Aiding
4. Properly Installed Antennae