Multi-Sensor RTK/PPP Module

WITH ANAVS SENSOR FUSION FRAMEWORK

Dual-Frequency & Multi-Constellation GNSS for fast convergence time

Multi-Sensor fusion on a single board for Autonomous Vehicles, Robots, UAVs and Vessels

Interfaces to GNSS, INS, Odometry, Camera, Lidar, LPS and Barometer data

High rate solution output
Accurate position and attitude
Overcomes signal outages

Breakthrough price
Easy System Integration
**SENSOR FUSION PERFORMANCE**

Accurate RTK Positioning * (1σ):
- Horizontal accuracy: 0.010 m + 1 ppm
- Vertical accuracy: 0.020 m + 1 ppm

Accurate PPP Positioning * (1σ):
- Horizontal accuracy: 0.20 m + 1 ppm
- Vertical accuracy: 0.40 m + 1 ppm

Accurate Attitude * (1σ):
- Accuracy: 0.25° (1m antenna spacing)

Velocity Accuracy: 0.03 m/s RMS

Time-Stamp Accuracy: 1 µs RMS

Solution Output-Rate: up to 120 Hz

RTK Initialization *:
- Initialization Time: < 10 sec

PPP Initialization *:
- Initialization Time: < 5 min

* Depends on Environment and used GNSS-Antenna

**PROCESSOR PERFORMANCE**

CPU: ARM 64Bit Quad-Core with 1.5 GHz

RAM: 1 to 4 Gbyte LPDDR2 RAM

Flash: 16 to 64 Gbyte

OS: Linux

**ELECTRICAL & INTERFACES**

Power Connector:
- USB-C 5V or
- Terminal connector up to 24V

Power Consumption:
- Peak: 17.5 W (3.5A @ 5V)
- Average: 10.5 W (2.1 A @ 5V)

Communication Interfaces:
- Ethernet, WLAN, CAN, USB, LTE

Output format:
- Standardized: NMEA format, ROS
- Proprietary: ANavS binary format

**GNSS FEATURES**

GNSS Constellations:
- Galileo, GPS, Glonass, Beidou, SBAS

GNSS Const. concurrent:
- All

GNSS-Bands:
- GPS L1C/A L2C, GLO L1OF L2OF, GAL E1B/C E5b, BDS B1I B2I, QZSS L1C/A L2C

Channels: 184

GNSS data rate: 20 Hz

Jamming detection: Yes

Timepulse-Output: Yes

**STANDARD* IMU FEATURES**

Linear acceleration meas. range:
- +/- 16 g (configurable)

Angular rate meas. range:
- +/- 4000 dps (configurable)

Linear acceleration sensitivity:
- 0.061 mg/LSB with +/-2 g range

Angular rate sensitivity:
- 4.37 mdps/LSB bei +/- 125 dps range

Angular random walk \((T=25°C)\):
- 0.21 deg/√h

Bias stability:
- 3 degree/ hour (typical)

* more powerful IMUs can be chosen.

**ODOMETRY FEATURES**

Performance:
- Depends on resolution and quality of user-based wheel/steering measurements

Input/Output:
- Configurable with DBC-files or according to customer specification

Communication Interfaces:
- CAN, Ethernet, USB
**PRINTED CASING**

- Dimension: 128 x 119 x 55 mm
- Weight: 250 g
- Operating Temperature: -25°C to +75°C
- Display: No

**INDUSTRIAL CASING**

- Dimension: 294 x 195 x 95 mm
- Weight: 1200 g
- Operating Temperature: -25°C to +75°C
- Display: Yes