

Multi-Sensor RTK/PPP Module



SENSOR FUSION FRAMEWORK

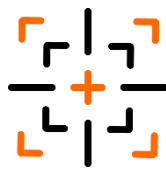
Dual-Frequency &
Multi-Constellation GNSS
for fast convergence time

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 μ s 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

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/ \sqrt{h}

Bias stability:

3 degree/ hour (typical)

* more powerful IMUs can be chosen.

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-PD: with min. 18 W

Terminal connector:

- Absolute max. voltage range: 9 – 36 V
- Nominal voltage range: 12 – 24 V

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 (as ROS- Ethernet Adapter),
ACOM

Proprietary: ANavS binary format

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



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