Quanta Micro

GNSS aided Inertial Navigation System

0.015° ROLL/PITCH
0.035° YAW

Outstanding Orientation & Navigation Performance, Disruptive SWaP-C

Best in class MEMS INS. Based on SBG Systems' renown expertise in IMU design, and calibration, Quanta Micro easily supports vibrations. Low noise gyros deliver ultra stable roll/pitch angles, while low bias (0.8°/h) maintains highly accurate single antenna heading in challenging condition like corridor mapping and low dynamic flights.

Reliability is key for robotics and autonomous applications. Quanta Micro has been designed from the ground-up to meet the most stringent requirements, delivering continuous navigation during GNSS outages, while featuring advanced interfacing capabilities in a tiny board level integration.

An optional secondary antenna maintains highly accurate heading in the lowest dynamic conditions!

Use anywhere: maximum performance

- Ideal for all UAV LiDAR mapping jobs
- Odometer and vehicle dynamic constraints in land applications
- 5 cm Heave for marine applications

KEY FEATURES

- Disruptive SWAP-C for a survey class INS
- Survey grade MEMS IMU maximizes performance and robustness
- Multi-frequency, quad-constellation GNSS, delivering cm accuracy
- Fast & robust dual antenna heading
- Smooth real time and post-processing workflows
- User friendly web interface
- Full featured REST API for seamless OEM integration

SBG SYSTEMS

Specifications

Preliminary

1-sigma errors over full temperature range [-40 to 85°C]

INTERFACES

Aiding sensors	GNSS, RTCM, NTRIP, Odometer, DVL
Protocols	NMEA, ASCII, sbgECom (binary), REST API
Ethernet	Full duplex (10/100 base-T) PTP / NTP, NTRIP, Web interface, FTP
Datalogger	8 GB or 48 h @ 200 Hz
Serial ports	3x TTL UART, full duplex
CAN	1x CAN 2.0 A/B bus, up to 1 Mbps
Output rate	200Hz (IMU, INS)
I/O	4x: Inputs : PPS, Events in up to 1 kHz 2x Outputs: SYNC out, PPS, Virtual odo LEDs drivers for status display
Connectors	44 pin contacts, 1.27 mm pitch, SMD 2x U.FL for antennas

GNSS

Features	SBAS, RTK, PPK
Signals	GPS: L1 C/A, L2C GLONASS: L1OF, L2OF GALILEO: E1, E5b BEIDOU: B1I, B2I
Update rate	PVT: 5 Hz, RAW 1 Hz
Cold start / Hot start	< 24 s / 2 s

SYSTEM PERFORMANCE

Parameter	**Single point**	**RTK**	**PPK**
Roll/Pitch	0.03°	0.02°	0.015°
Heading Single ant.*	0.1°	0.08°	0.035°
Heading Dual ant. 2m	0.06°	0.06°	0.035°
Velocity	0.05 m/s	0.02 m/s	0.01 m/s
Position	1.2 m	0.01 m + 0.5ppm	0.01 m + 0.5ppm

** Typical UAV mission, dependent on dynamics*

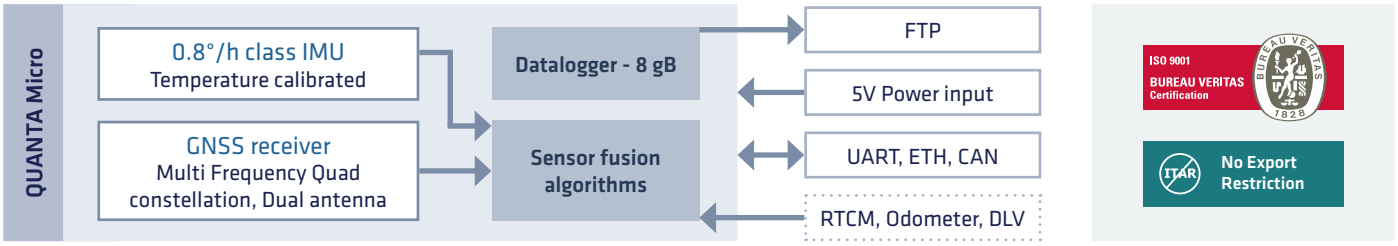
MECHANICAL & ENVIRONMENTAL

Dimensions	50 x 37 x 23 mm
Weight	38 g
Temperature range	-40 to 85°C
Operating vibrations	8 g RMS (MIL-STD-810G)
IMU Sensor range	490°/s | 40g
Operational limits	500 m/s 80 km altitude
MTBF (computed)	50,000 h

ELECTRICAL

Power supply range	5.0V DC +/- 10%
Power consumption	1.1 W
Antenna Ports	5V DC – max 150 mA Gain: 17 - 50 dB

BLOCK DIAGRAM



UAV Starter Kit: start in minutes

This set of accessories: evaluation board, antennas, cables, bundled with a Qinertia UAV License to speed-up your integration.

Qinertia

Intuitive web interface

A modern web interface makes configuration easy. The 3D view allows you to check your mechanical setup.

Free Technical Support | Unlimited Firmware Updates | 2-year Warranty

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