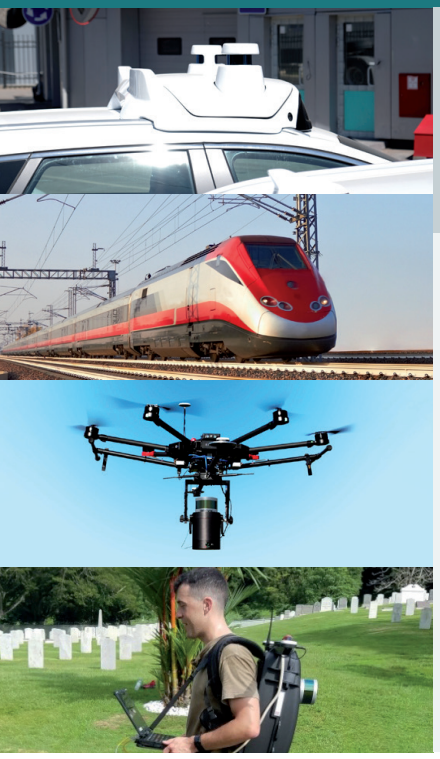
Quanta Extra

GNSS aided Inertial Navigation System

MADE IN FRANCE

0.005° ROLL/PITCH
0.01° YAW

Ultimate direct georeferencing performance for mobile mapping applications



With an OEM form factor and a separated IMU, Quanta Extra is the position sensor for survey payloads that require maximum accuracy.

- **High Performance IMU**
- **Temperature calibrated**
- **OEM format**
- **Resilient to vibrations**
- **Resilient to GNSS perturation**
- **Ethernet and PTP**

SBG SYSTEMS | Motion & Navigation you can trust

ISO 9001 BUREAU VERITAS Certification

Specifications

No Export Restriction

1-sigma errors over full temperature range [-20 to 60°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	5x TTL UART, full duplex
CAN	1x CAN 2.0 A/B bus, up to 1 Mbps
Output rate	200Hz (IMU, INS)
I/O	5x inputs: PPS, Events in up to 1kHz 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

MECHANICAL & ENVIRONMENTAL

Dimensions	GNSS+Processing: 51.5 x 78.75 x 20 mm IMU : 56 x 56 x 50.5 mm
Weight	64g + 260 g (IMU)
Temperature range	-20 to 60°C (specified) | 71°C (operating)
Operating vibrations	8 g RMS (MIL-STD-810G)
IMU Sensor range	± 400°/s | ± 10 g
Operational limits	515 m/s 18 km altitude
MTBF (computed)	150,000 h

SYSTEM PERFORMANCE *Performances during typical land mission*

Parameter	RTK	PPK	GNSS Outage 60s (PPK)
Roll/Pitch	0.008°	0.005°	0.008°
Heading	0.02°	0.01°	0.025°
Position	0.01 m + 0.5 ppm	0.01 m + 0.5 ppm	0.1 m

GNSS

Features	SBAS, RTK, PPK, HAS Advanced anti jamming/spoofing enabled
Signals	GPS: L1 C/A, L2, L2C, L5 GLONASS: L1 C/A, L2 C/A, L2P, L3 GALILEO: E1, E5a, E5b, E5_AltBOC, E6 BEIDOU: B1I, B1C, B2a, B2I, B3I QZSS: L1 C/A, L2C, L5 NAVIC: L5
Update rate	PVT: 5 Hz, RAW 1 Hz
Time to first fix	< 45 s (cold start)

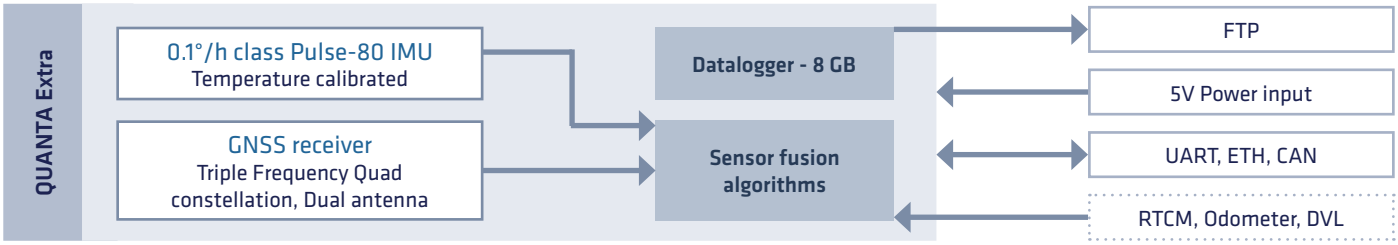
ELECTRICAL

Power supply range	5.0V DC +/- 5%
Power consumption	< 6.1 W
Antenna Ports	3-5.5V DC, 15-45 dB, max 150 mA per antenna Gain: 17 - 50 dB

TIMING SPECIFICATIONS

Timestamp accuracy	< 200 ns
PTP accuracy	< 1 µs
PPS accuracy	5-8 µs (jitter < 1 µs)
Drift in dead reckoning	1 ppm

BLOCK DIAGRAM



Development Kit

Jump start your integration with the development kit allowing you to fully test Quanta Extra and start the Software integration before your own system is available.

Qinertia

Qinertia post processing Software is a needed companion to get the maximum performances from Quanta Extra:

- Forward + Backward processing
- Tight coupling Inertial + GNSS
- Remove uncertainty of RTK availability
- Kinematic VBS, and much more...

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

SBG SYSTEMS

www.sbg-systems.com

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