



SIGMAQM

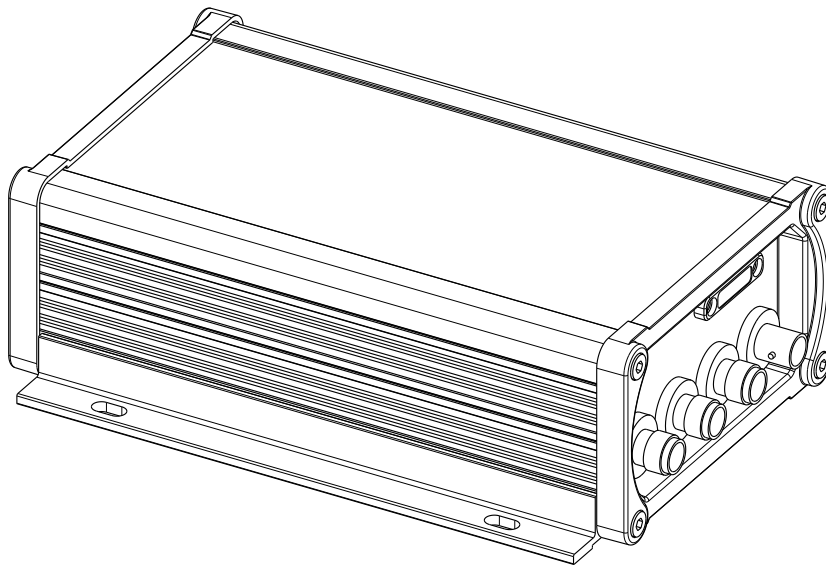
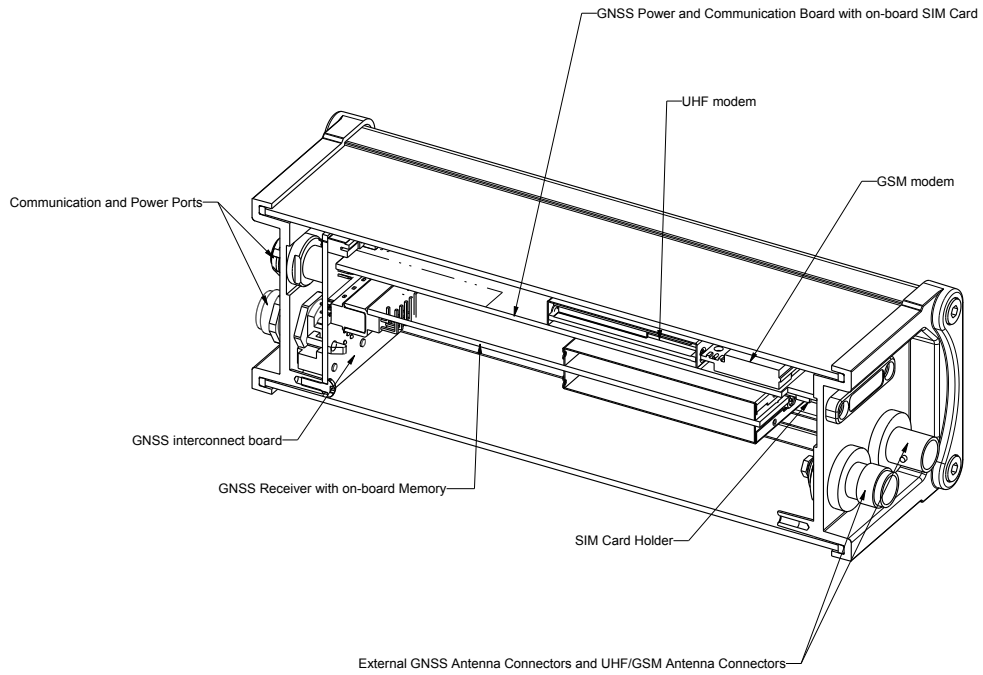
4 x GPS L1/L2, 4 x GLONASS L1/L2, 4 x GALILEO E1
4 x BeiDou B1, 4 x QZSS L1/L2, SBAS L1



SigmaQM is a powerful GNSS receiver designed for high accuracy applications with requirements of the three-dimensional position and attitude, linear and angular velocity determination of the four-antenna system using the dual frequency code and carrier data from four antennas.

864 channels of single or dual frequency GPS, GLONASS, Galileo, QZSS, and BeiDou in a small attractive, sturdy, and watertight box, which contains TRE-QUATTRO board.

Two external power inputs secure the power system redundancy and eliminate system failure. The on-board power supply on SigmaQM receiver accepts any voltage from +10 to +30 volts and delivers cleanly filtered voltage where needed.



Tracking Features*

- Total 864 channels: all-in-view
- GPS C/A, P1, P2, L2C (L+M)
- GLONASS C/A, L2C, P1, P2
- Galileo E1 (B+C)
- QZSS C/A, L1C(I+Q), SAIF
- BeiDou B1
- SBAS L1
- Advanced Multipath Reduction
- Fast acquisition channels
- High accuracy velocity measurement
- Almost unlimited altitude and velocity (for authorized users)

Performance Specifications

- Attitude accuracy:
 - Real time heading - $0.004/L$ [rad] RMS**
 - Roll/Pitch - $0.0065/L$ [rad] RMS**
 - Angular velocity determination - $0.05/L$ [rad/s]**
- Determination of antennas relative position - 10 mm RMS
- Autonomous: <2 m
- Static, Fast Static Accuracy:
 - Horizontal: $0.3 \text{ cm} + 0.1 \text{ ppm} * \text{base_line_length}^{***}$
 - Vertical: $0.35 \text{ cm} + 0.4 \text{ ppm} * \text{base_line_length}$
- Kinematic Accuracy:
 - Horizontal: $1 \text{ cm} + 1 \text{ ppm} * \text{base_line_length}$
 - Vertical: $1.5 \text{ cm} + 1 \text{ ppm} * \text{base_line_length}$
- RTK (OTF) Accuracy:
 - Horizontal: $1 \text{ cm} + 1 \text{ ppm} * \text{base_line_length}$
 - Vertical: $1.5 \text{ cm} + 1 \text{ ppm} * \text{base_line_length}$
- DGPS Accuracy: < 0.25 m post processing; < 0.5 m real-time
- Cold/Warm Start/ Reacquisition: <35 s / <5 s <1 s

Data Features

- Up to 20 Hz update rate for real time position and 100 Hz raw data (code and carrier)
- 10 cm code phase and 1 mm carrier phase precision
- IEEE 1588 protocol support
- Hardware Viterbi decoder
- RTCM SC104 versions 2.x and 3.x Input/Output
- NMEA 0183 versions 2.x and 3.0 Output
- Code Differential Rover
- Code Differential Base
- Geoid and Magnetic Variation models
- RAIM
- Different DATUMs support
- Output of grid coordinates

Data Storage

- Up to 16 GB of onboard non-removable memory for data storage

Radio Specification

- Internal GSM/GPRS/EDGE quad-band module, GPRS/EDGE Class 10
- Internal CDMA2000 dual band module 800/1900MHz
- Internal 360-470 MHz radio transceiver, up to 38.4 kbps
- Internal 138-174 MHz radio transceiver, up to 38.4 kbps
- Internal FH915 ISM radio transceiver, up to 64 kbps
- Internal L-Band/Beacon receiver

Input/Output

- Four GNSS antenna connectors: 50 Ohm TNC or SMA, +5 VDC (120 mA) to power LNA
- Two External Power ports
- Two high speed RS232 serial ports (up to 460.8 Kbps)
- Two high speed configurable RS232/RS422 serial ports (up to 460.8 Kbps)
- High speed USB 2.0 device port (480 Mbps)
- Full-duplex 10BASE-T/100BASE-TX Ethernet port
- CAN 2.0 port
- IRIG timecode output A134, A137, B124, B137
- Two 1 PPS outputs synchronized to GPS, GLONASS or UTC
- Two Event Marker inputs
- TriPad interface: Four external LED drivers, ON/OFF control and External Command inputs
- Bluetooth® Interface

Power Specification

- Two internal Li-Ion batteries (7.2 V, 5.9 Ah each) with internal charger
- Power consumption: 8 Watt
- Operating Time up to 15 hours
- Two External power inputs: 1 - primary, 1 - secondary port(s)

Environmental & Physical

- Operating Temperature: -40°C to $+75^{\circ}\text{C}^{****}$
- Storage Temperature: -45°C to $+85^{\circ}\text{C}^{*****}$
- Enclosure: Aluminum extrusion, waterproof IP67
- Humidity 100% condensing
- High shock and vibration resistance
- Dimensions: 5.2 x 2.4 x 7.48 inches (132x61x190 mm)
- Weight: 2.93 lbs (1.33 kg)

* For the full list of standard and optional features see www.javad.com

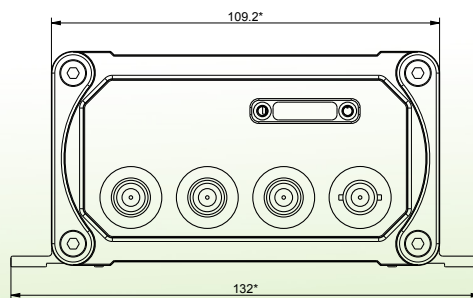
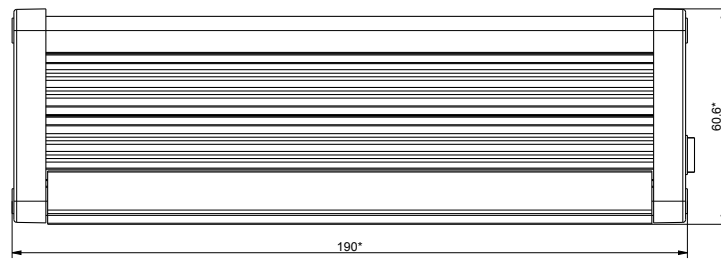
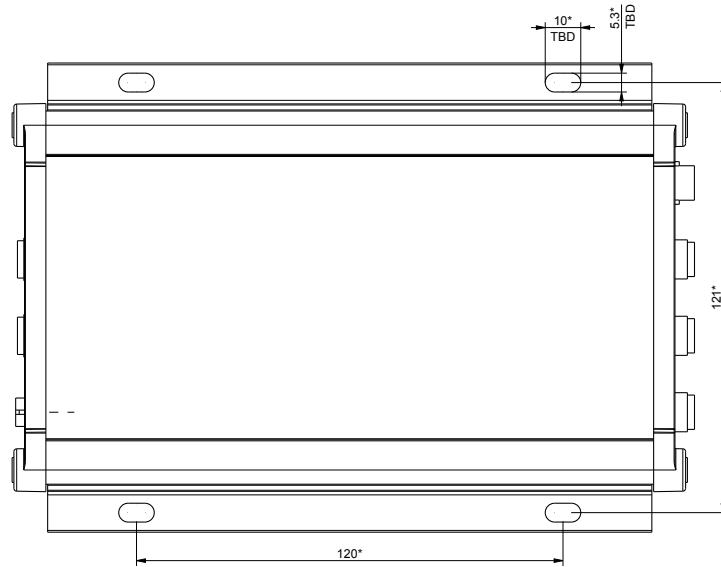
** Where L is the antenna separation in [m]

*** For good observation conditions and proper length of observation session

**** The operating temperature range of Li-Ion batteries is -30°C to $+55^{\circ}\text{C}$

***** The storage temperature of Li-Ion batteries is -20°C to $+45^{\circ}\text{C}$

SIGMA-QM



* All dimensions are in mm

Specifications are subject to change without notice



JAVAD GNSS
www.javad.com
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