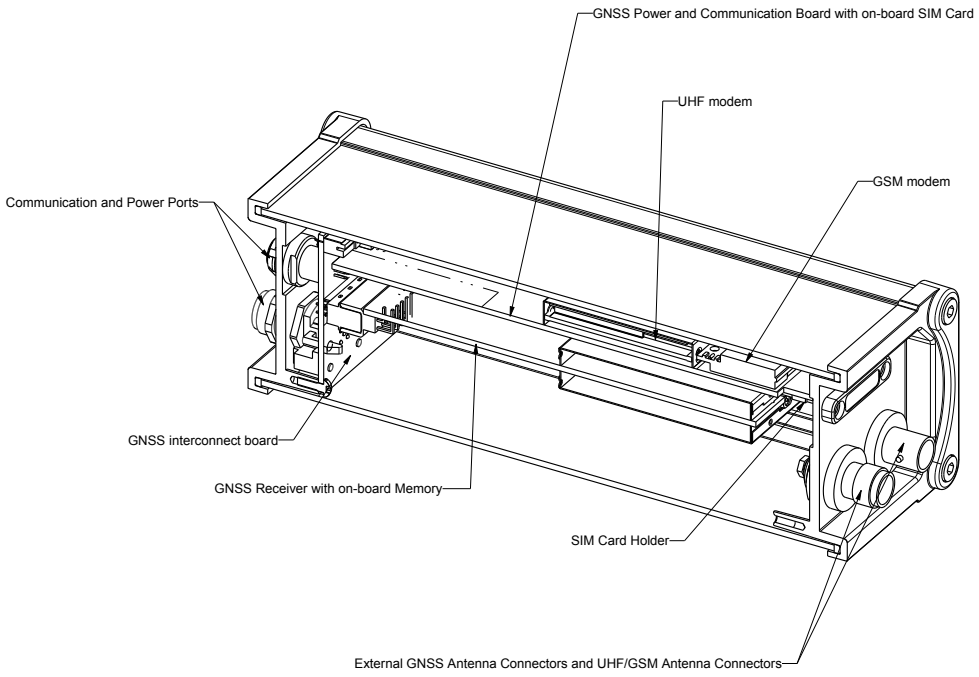
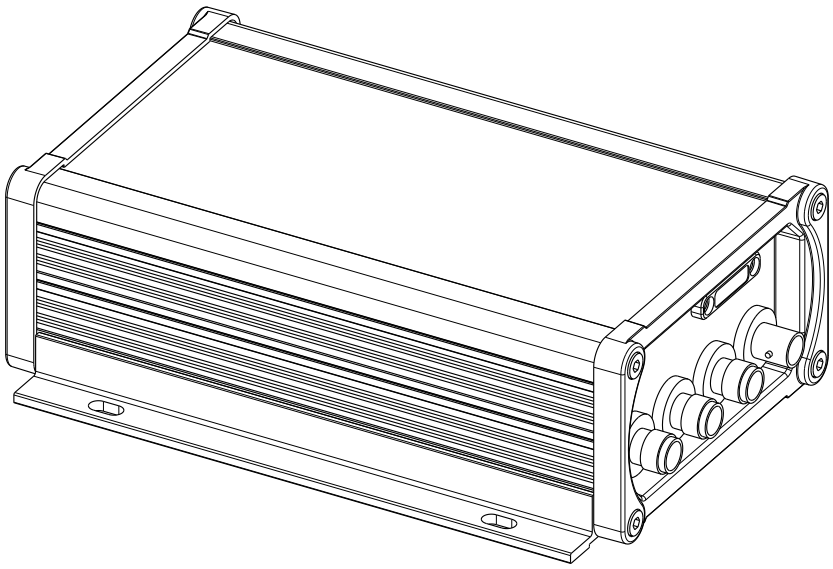
SigmaDM

2 x GPS L1/L2/L5, 2 x GLONASS L1/L2/L3
2 x Galileo E1/E5A/E5B/AltBoc , 2 x BeiDou B1/B2
2 x QZSS L1/L2/L5, 2 x IRNSS L5, SBAS L1/L5

We offer the multi-frequency satellite-based two-antenna system SigmaDM in a small nice-looking durable watertight box. The system is based on our TRIUMPH Technology implemented in the TRIUMPH2 Chip and includes 864 channels of multi-frequency GPS, Galileo, GLONASS, QZSS, BeiDou. The dual-frequency code and carrier phase data from two antennas are processed to determine the heading angle and the RTK positions of the two antennas up to 50 times per second. SigmaDM is a powerful and reliable receiver for high-precision navigation systems to be used in various applications, such as machine and traffic control, precision agriculture, etc.

The SigmaDM receiver also includes TriPad (two LEDs, ON/OFF and function button), 3.5G module,UHF/VHF modem, and batteries. In addition, the receiver comes with large amount of flash for data storage. Two external power inputs secure the power system redundancy and eliminate system failure.


GNSS Power and Communication Board with on-board SIM Card
UHF modem
GSM modem
Communication and Power Ports
GNSS interconnect board
GNSS Receiver with on-board Memory
SIM Card Holder
External GNSS Antenna Connectors and UHF/GSM Antenna Connectors



Tracking Features*

- Total 864 channels: all-in-view
- GPS: C/A, L1C (P+D), P1, P2, L2C (L+M), L5(I+Q)
- GLONASS: C/A, L2C, P1, P2, L3 (I+Q)
- Galileo: E1 (B+C), E5A (I+Q), E5B (I+Q), AltBoc
- BeiDou: B1, B1-2, B1C(P+D), B5A (I+Q), B2, B5B (I+Q)
- QZSS: C/A, L1C (P+D), L2C (L+M), L5 (I+Q), SAIF
- SBAS**: L1, L5
- IRNSS L5
- Advanced Multipath Reduction
- Fast acquisition channels
- High accuracy velocity measurement
- Almost unlimited altitude and velocity(for authorized users)

Performance Specifications

- Autonomous: <2 m
- Static, Fast Static Accuracy:
  Horizontal: 0.3 cm + 0.1 ppm * base_line_length***
  Vertical: 0.35 cm + 0.4 ppm * base_line_length
- Kinematic Accuracy:
  Horizontal: 1 cm + 1 ppm * base_line_length
  Vertical: 1.5 cm + 1 ppm * base_line_length
- RTK (OTF) Accuracy:
  Horizontal: 1 cm + 1 ppm * base_line_length
  Vertical: 1.5 cm + 1 ppm * base_line_length
- DGPS Accuracy:
  < 0.25 m post processing; < 0.5 m real-time
- Real-time heading accuracy:
  ~ 0.004/L [rad] RMS, where L is the antenna separation in [m]
- Cold/Warm Start/ Reacquisition:
  <35 seconds /<5 seconds/ <1 second

Data Features

- Up to 50Hz update rate for real time position and 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

- 3.5G UMTS/HSPA Module Global (850/1900/2100) /North America (850/1900/1700-2100AWS) / Europe (900/2100)
- 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

- 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

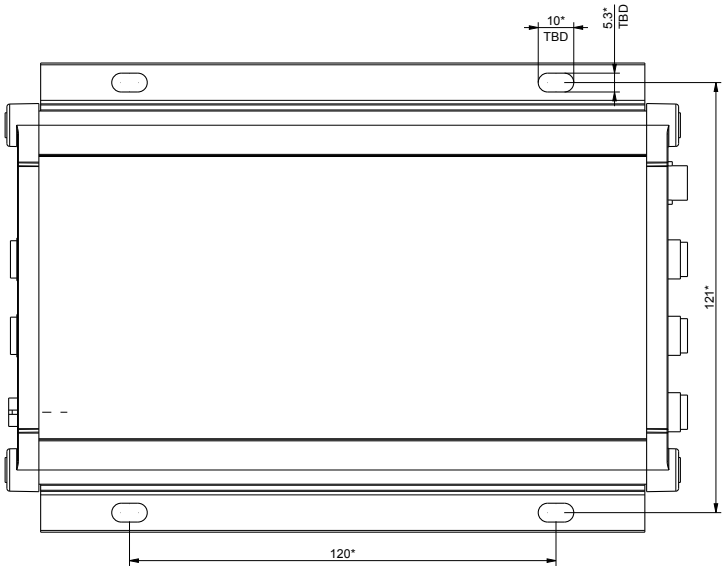
- Two internal Li-Ion batteries (7.4 V, 5.8 Ah each) with internal charger
- Power consumption: 4.8 Watt
- Input Voltage: +10...+30 VDC
- Operating Time up to 15 hours
- Two External power inputs: 1 - primary,1 - secondary port(s)

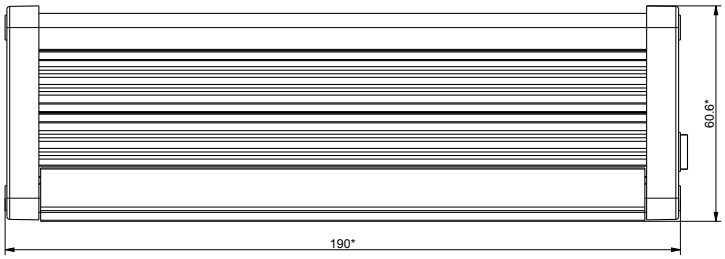
Environmental & Physical

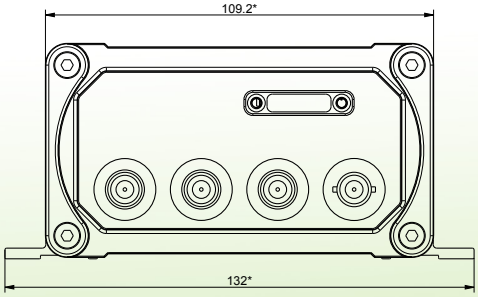
- Operating Temperature: -40°C to +75°C****
- Storage Temperature: -45°C to +85°C*****
- Enclosure: Aluminum extrusion, waterproof IP67
- Humidity 100% condensing
- High shock and vibration resistance
- Dimensions: 5.2 x 2.4 x 7.48 inches (132x61x190 mm)
- Weight: 2.8 lbs (1.27 kg)

* 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°
******The storage temperature of Li-Ion batteries is -20 ° C to +45°

SIGMA-DM







* All dimensions are in mm

Specifications are subject to change without notice

JAVAD GNSS

www.javad.com

Rev.1.3 December 8, 2017