



# DELTA DM

GPS L1/L2/L5, GLONASS L1/L2/L3  
GALILEO E1/E5A/E5B/ALTBOC, BEIDOU B1/B2  
QZSS L1/L2/L5, IRNSS L5, SBAS L1/L5



We offer the multi-frequency satellite-based two-antenna system DeltaDM 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. DeltaDM 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.

## Tracking Features\*

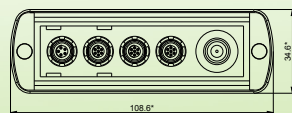
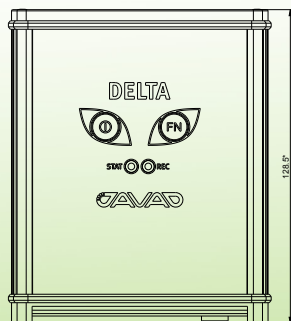
- Total 864 channels: all-in-view
- GPS: C/A, L1C (P+D), P1, P2, L2C (L+M), L5(I+Q)
- GLONASS: C/A, L2C, P1, P2, L3 (I+Q)
- Galileo: E1 (B+C), E5A (I+Q), E5B (I+Q), AltBoc
- BeiDou: B1, B1-2, B1C(P+D), B5A (I+Q), B2, B5B (I+Q)
- QZSS: C/A, L1C (P+D), L2C (L+M), L5 (I+Q), SAIF
- SBAS\*\*: L1, L5
- IRNSS 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:  $0.3 \text{ cm} + 0.1 \text{ ppm} * \text{base\_line\_length}^{***}$
  - 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
- Real-time heading accuracy:
  - $\sim 0.004/L$  [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

## Input/Output

- GNSS Antenna Connector: 2 50 Ohm TNC, +5 VDC (120 mA) to power LNA
- 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)
- 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)

## Environmental

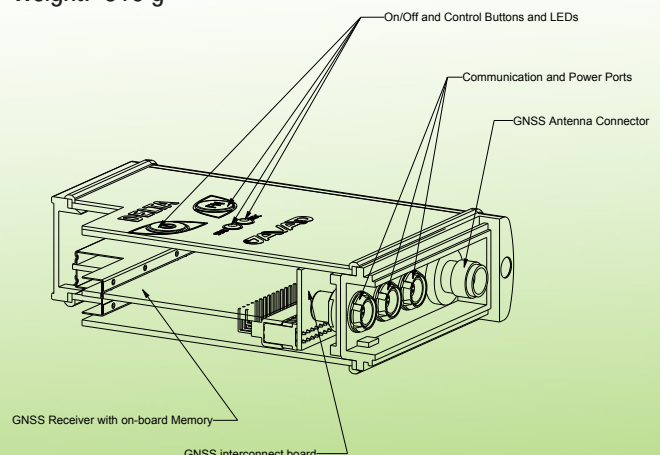
- Operating Temperature: -40°C to +70°C
- Storage Temperature: -45°C to +85°C
- Humidity: 95%
- High shock and vibration resistance)

## Power Specification

- External power input
- Power consumption: 3.9 Watt
- Input voltage: +6 to +35 Volts

## Physical

- Dimensions: 109 x 35 x 141/max 160 with connectors
- Weight: 518 g



\* For the full list of standard and optional features see [www.javad.com](http://www.javad.com)

\*\* US WAAS, European EGNOS, Russian SDCM, Indian GAGAN, Japanese MSAS, and similar future satellite systems

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

Specifications are subject to change without notice



**JAVAD GNSS**  
**www.javad.com**

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